

ECONOMIC VIEWPOINT

How Should Inflation Caused by Supply Problems Be Managed?

By Hendrix Vachon, Senior Economist

Supply-side problems account for much of the current surge in inflation in a number of countries. Yet this type of inflation is more difficult to tackle, and there's a risk of a monetary and fiscal policy mismatch. It is to be hoped that the problems on the supply side will not persist for too long and, above all, an inflationary spiral will be avoided. Otherwise, central banks might have to start raising key rates more quickly to keep inflation under control. Changing inflation expectations and wage trends should be the best indicators of the extent to which central bankers will be willing to exert patience.

Differences between a Supply Shock and a Demand Shock

A supply shock is a set of factors that can significantly and unexpectedly affect the production of goods and services. Depending on the shock, the effect on production can be favourable or adverse. Adverse shocks often garner more attention because of the downside for economic growth. They can be caused by a sudden and significant increase in commodity prices, regulatory tightening that pushes up business costs or simply a pandemic that forces numerous businesses to halt production.

In fact, the COVID-19 pandemic has hindered production in several ways. In addition to forced closures, some businesses have to operate at reduced capacity to meet health requirements. Additional costs are also incurred to protect workers. This is in addition to difficulties sourcing certain inputs. Pandemic-related changes in labour market behaviour are also weighing on businesses, which are hard put to find the necessary workforce to operate at full capacity.

The pandemic has affected not only the supply side but also the demand side. First, business closures have resulted in job and income losses. However, governments have offset the revenue shortfall with increases in transfers to individuals. Subsequently, fears of contracting COVID-19 may have caused many to scale back their activities, putting a damper on consumer spending. Yet, spending has also rebounded in some areas, such as housing, amid a boom in home improvement. Some recreational activities have surged in popularity due to consumers' more limited entertainment options.

Adverse Shocks Are Inflationary

A special trait of adverse supply shocks is their inflationary impact, despite hampering economic activity. With adverse demand shocks, inflation declines in step with economic activity. This distinction is readily depicted using graphs and economists' famed supply and demand curves (graphs 1 and 2 on page 2). In an adverse supply shock, the supply/demand equilibrium visibly shifts to a point where output is lower and prices are higher.

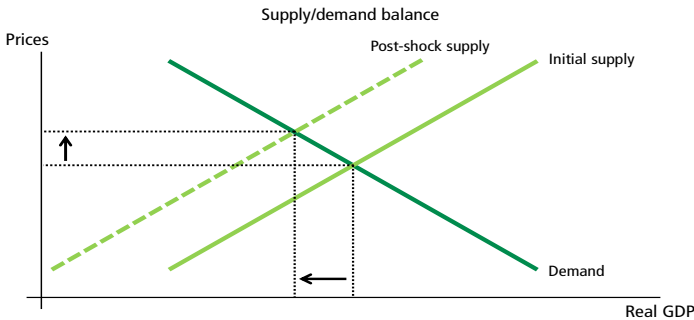
Conceptually, an adverse supply shock potentially sparks greater scarcity for some goods and services, which pushes up prices to maintain the supply/demand balance. It may also fuel higher production costs, passed on in part to consumers. However, consumers are then less willing to buy goods and services purchases, prompting businesses to cut production to maintain the supply/demand balance.

Fewer Options for Central Banks and Governments to Act

When the economy is adversely affected, central banks and governments typically enact economic stimulus policies. Keep in mind, however, that in the short term, these policies are designed to boost demand, not supply.

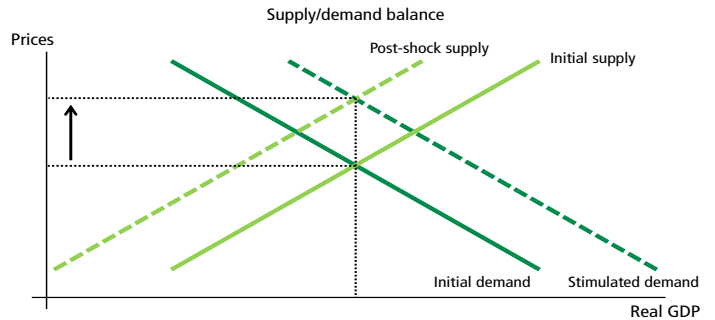
After an adverse demand shock, an expansionary monetary or fiscal policy sparks greater demand to allow economic activity and inflation to return to normal. The response is perfectly fit to purpose. It's less straightforward with adverse supply shocks, with three options available to central banks and governments. The first is to drive up demand to help the economy get back to normal. However, this generates even more inflation and becomes problematic for central banks striving to stay within

GRAPH 1
An adverse supply shock reduces real GDP and increases inflationary pressures



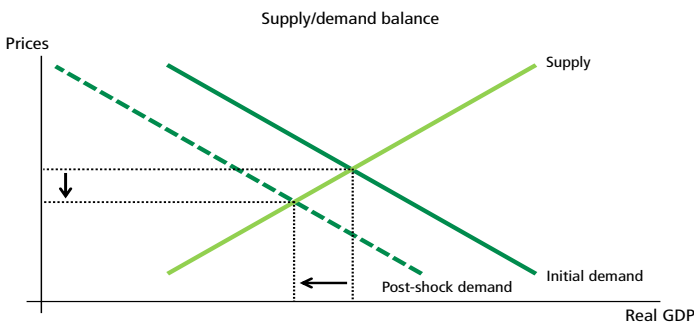
Source: Desjardins, Economic Studies

GRAPH 3
Fuelling demand after a supply shock sparks even more inflation



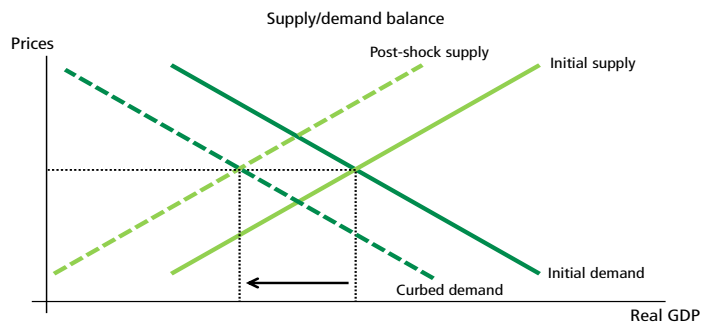
Source: Desjardins, Economic Studies

GRAPH 2
An adverse demand shock reduces real GDP and reduces inflationary pressures



Source: Desjardins, Economic Studies

GRAPH 4
After a supply shock, restricting demand to curb inflation would further reduce real GDP



Source: Desjardins, Economic Studies

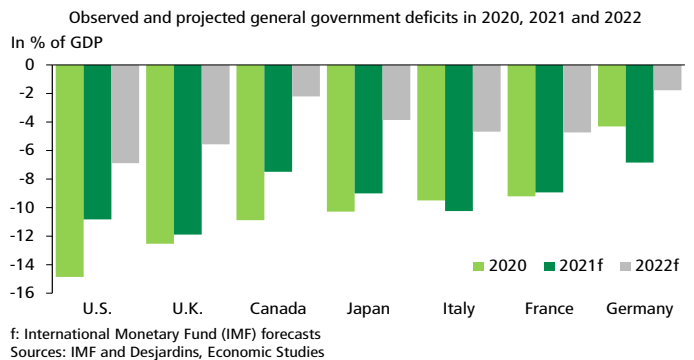
a target range for inflation (graph 3). The second option is to tamp down demand to meet the inflation target. However, this further dampens economic activity (graph 4). Lastly, they can also sit on their hands, particularly where shocks are short-lived. Higher-than-desired inflation will persist for a while, with activity remaining shy of normal levels. In short, there's no magic bullet for dealing with a supply shock.

In response to the pandemic, central bankers and governments around the world have tended to be highly interventionist. Interest rates were slashed in short order and asset purchase programs adopted, with governments embarking on a spending spree. All of this fuelled demand, which needed it. Most countries saw the economy recoup the lion's share of losses. However, supply has also been constrained by the pandemic which is part of the explanation why inflation is above target today. On top of this, there's now a new supply shock linked to surging energy prices.

Danger of Sparking an Inflationary Spiral

As the economy recovers, governments have already begun winding down support measures. Projected deficits for 2021

GRAPH 5
Deficits expected to fall in most G7 countries



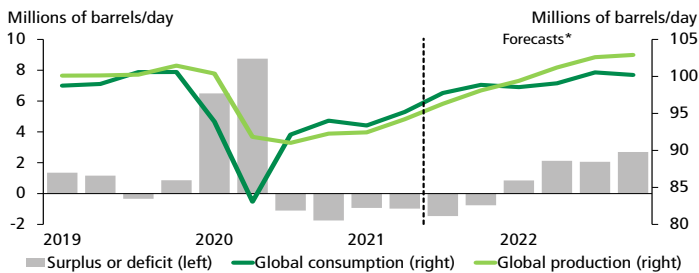
and 2022 will be smaller than last year's (graph 5). Central banks have also begun or are considering tapering support measures. The rise in bond yields has already tightened financial conditions. But is this enough to keep inflation from getting too comfortably above target?

The best-case scenario would be for a swift clear-up of current supply constraints. Inflation could then more readily fall back without precipitous central bank or government interventions.

However, the too slow pace of global vaccination against COVID-19, the risk of new variants and the loss of vaccine efficacy over time heighten the risk of a prolonged pandemic and with it, supply-side problems. This may test central bankers' patience in the coming months. On a more encouraging note, waves of infection tend to be smaller and smaller with fewer economic restrictions required. And even if COVID-19 were to become endemic, supply problems could gradually fade, as companies find ways to operate as normally as possible despite the virus. They could also find solutions to constraints such as chip shortages and ballooning sea freight costs.

As for energy prices, pressures could ease in the coming months if production picks up sufficiently. For oil, the International Energy Agency forecasts a production surplus for next year (graph 6). However, there is greater uncertainty for natural gas, particularly in Europe. There are also concerns that power generation will be under pressure in some emerging markets over the winter, potentially disrupting manufacturing output.

GRAPH 6
Oil market expected return to surplus situation in 2022



* International Energy Agency (IEA) outlook assuming members' compliance with the October 2021 production agreement and the continuation of sanctions against Iran.
Sources: IEA and Desjardins, Economic Studies

Stabilizing supply-side problems, without a complete reversal, would be enough to improve the inflation picture, however. As the inflation rate reflects price changes over a year, it will start to moderate if monthly price changes fall back to more normal levels. This may be what we're beginning to see in the United States and Canada. The next few months may confirm or debunk this scenario. Past price increases will not necessarily disappear, but they may at least gradually give way to smaller hikes in inflation rate calculations as time goes on.

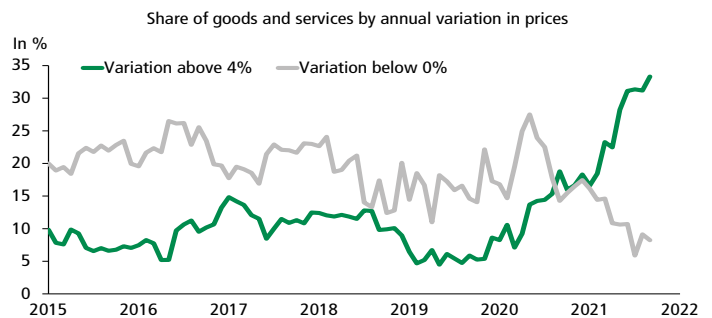
Other scenarios are much less rosy and would further test central bankers' patience. Recent price increases could spread to a growing number of goods and services, further entrenching

the inflation problem. An inflationary spiral could set in fuelled by successive price and wage adjustments. There would be no comparison to the inflationary spiral of the 1980s, but it could still help keep inflation near current levels for an extended period of time. An increase in inflation expectations would be another aggravating factor.

Indicators of an Inflationary Spiral

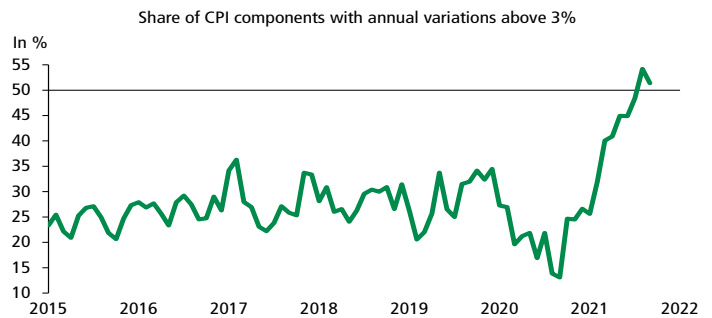
Consumer price data already show that price increases are spreading to a growing range of goods and services. In the United States, where the inflation rate is currently the highest among the major advanced economies, increases for about a third of the consumption basket are above 4% (graph 7). In Canada, prices rose for over 50% of the consumption basket exceed 3% (graph 8). Note that the 3% threshold is the upper limit of the Bank of Canada's (BoC) inflation target range.

GRAPH 7
High price increases reported for growing range of U.S. goods and services



Sources: Bureau of Labor Statistics and Desjardins, Economic Studies

GRAPH 8
Over half of CPI basket components with inflation above 3% in Canada



CPI: Consumer price index
Sources: Statistics Canada and Desjardins, Economic Studies

For wages, two mechanisms could support an acceleration. First, in response to higher inflation, workers could demand bigger wage increases. Then there are labour shortages, resulting not only from the pandemic, but also from demographic shifts.

Employment rates are likely to make a limited recovery in a number of countries, particularly the United States.¹

U.S. wage data already point to the beginning of an acceleration. However, the data must be interpreted with caution. High volatility has been observed in the average wage over the past year and a half due to greater movement in low-wage jobs. The data for median wages has been less volatile over this period and may paint a more accurate picture. It currently highlights a rise in wages not seen since 2007 (graph 9). Whether the trend continues in the next few months and is also reported in several other countries as more data is released will be interesting to see. In Canada, the BoC's *Business Outlook Survey* shows an increase in expected wages (graph 10). Of the firms surveyed, 57% expect stronger wage growth, while only 8% expect the opposite.

Note that the effect of accelerating wages is not in itself a bad thing. It would help workers maintain or grow their purchasing power. However, productivity gains should ideally accompany rising wages to stave off further price increases in goods and services. U.S. productivity data is quite encouraging (graph 11). It remains to be seen whether the picture will stay the same once we're further along in the labour market recovery. Unfortunately, the same cannot be said of Canada. Having a tougher time hiring workers in recent quarters likely forced U.S. firms to find ways to produce more despite being short-handed. This may not be sustainable.

GRAPH 11
Productivity has accelerated in the United States potentially justifying higher wages



Sources: Bureau of Labor Statistics and Desjardins, Economic Studies

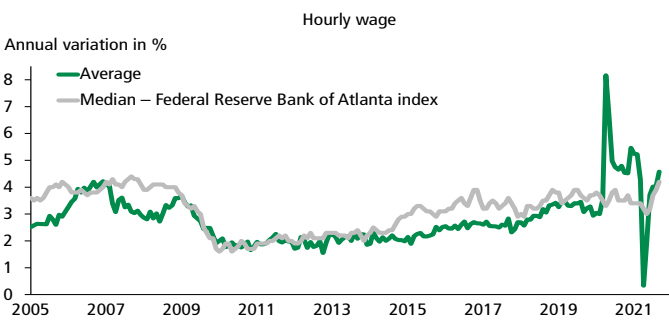
Even without sustained productivity gains, the risk of an inflationary spiral could remain limited if multiple businesses had the capacity and intention to absorb a decent portion of wage increases into their profit margins. Currently, non-financial corporate profits account for 16% of GDP in the United States, a historically high share (graph 12). However, this is only a general picture. Industries with slimmer profit margins may find it more difficult to absorb wage increases, and industries with less competition may find it easier to pass on additional costs to customers.

GRAPH 12
Corporate profits are high, which could ease the pressure on consumer prices



Sources: Bureau of Economic Analysis and Desjardins, Economic Studies

GRAPH 9
U.S. median wage growth at highest since 2007



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

GRAPH 10
Canadian businesses expect to have to raise wages faster

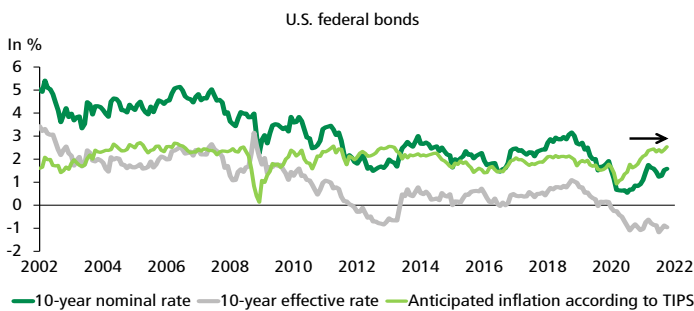


Sources: Bank of Canada and Desjardins, Economic Studies

¹ For more information, see: [The U.S. Job Market: A Recovery Where Underemployment and Labour Shortage Coexist](#), Desjardins, Economic Studies, *Economic Viewpoint*, September 24, 2021, 8 p.

Lastly, inflation expectations will also influence how long price increases remain an issue. Typically, the more price hikes are anticipated by people and businesses, the more likely they are to materialize. There are a few indicators that track inflation expectations. First, bond market data can provide an estimate of expected inflation. For example, in the United States, the difference between the nominal 10-year bond yield and the real yield suggests that expected inflation for the next few years rose in the late spring and early summer, and levelled off afterward (graph 13). It's still a tad higher than what we've been accustomed to seeing for a number of years.

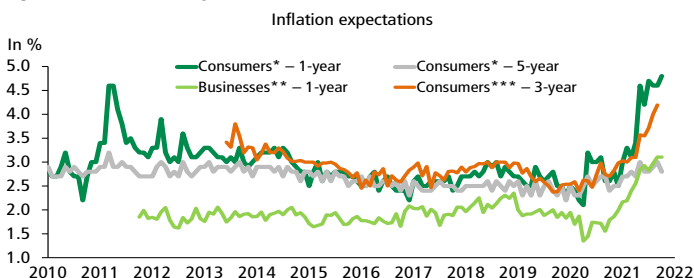
GRAPH 13
Market inflation expectations stabilized during the summer



TIPS: Treasury Inflation Protected Securities
Sources: Datastream and Desjardins, Economic Studies

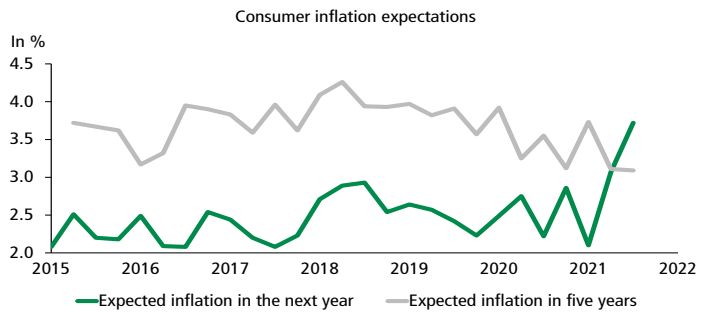
Other indicators reveal a more sustained increase in inflation expectations in the United States. This is the case for the University of Michigan and Federal Reserve Bank of Atlanta indexes (graph 14). However, increases in expectations appear to be smaller over longer horizons. This reflects favourably on central banks' credibility in keeping inflation in check. That being said, the Federal Reserve Bank of New York's increase in three-year expectations sparked jitters recently. In Canada, a BoC survey reports an increase in short- but not long-term inflation expectations (graph 15).

GRAPH 14
U.S. consumers and businesses revising inflation expectations upward, but mostly short term



* University of Michigan consumer confidence index; ** Federal Reserve Bank of Atlanta; *** Federal Reserve Bank of New York
Sources: University of Michigan, Federal Reserve Bank of Atlanta, Federal Reserve Bank of New York and Desjardins, Economic Studies

GRAPH 15
Canadian long-term inflation expectations still appear firmly rooted



Sources: Bank of Canada and Desjardins, Economic Studies

Trending toward Earlier Interest Rate Hikes? Let's Not Rule It Out...

Any move by central banks to give up on inflation would be surprising. Low, stable and predictable inflation is key to long-term economic prosperity.² If indicators were to signal more convincingly that we're headed for a prolonged period of high inflation, many central banks would likely bring forward or accelerate monetary tightening.

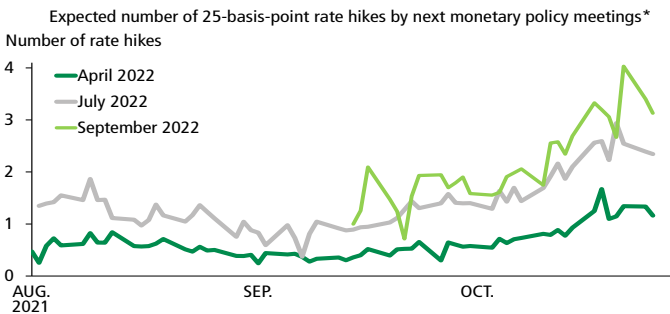
Developments in supply constraints, wage growth and inflation expectations, particularly over the longer term, will continue to be closely monitored. That does not factor in the savings glut built up during the pandemic, which could become another inflation driver in a few quarters if consumers go on a spending spree.

We recently moved up our forecast for a first rate hike in Canada to July 2022 (previously October 2022). In the United States, we now consider that the first hike could occur in September 2022 (previously December 2022). Financial markets are positioning themselves for even earlier tightening, particularly in Canada, with a fully priced-in increase for the April 2022 monetary policy meeting (graph 16 on page 6). Markets are also betting on three rate hikes in Canada by September 2022. Among major advanced economies, expectations of monetary tightening are strongest in the United Kingdom (graph 17 on page 6). This market adjustment follows a fairly strong signal from the Governor of the Bank of England that he will not let inflation deviate from its target for too long.

In any event, the effect these interest rate hikes would really have is what ultimately matters. As we've seen, they would do nothing to resolve supply-side issues. They'd dampen demand and economic growth. The main advantage of hiking key rates

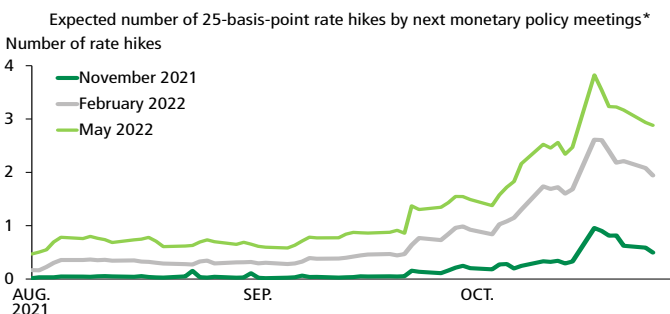
² For more information, see: [Low, Stable and Predictable Inflation Is Still a Winning Strategy in the Long Run](#), Desjardins, Economic Studies, *Economic Viewpoint*, June 29, 2021, 4 p.

GRAPH 16
Markets price in faster rate hikes in Canada



* Based on money market futures.
 Sources: Bloomberg and Desjardins, Economic Studies

GRAPH 17
Bank of England sends stronger signal for rate hikes



* Based on money market futures.
 Sources: Bloomberg and Desjardins, Economic Studies

despite a prevailing supply shock would be to maintain central bankers' credibility in targeting inflation. They would likely not have to raise rates several times to get the message across. Accordingly, although earlier key rate hikes are possible, it would be surprising to see several increases in the coming quarters.