

# ECONOMIC VIEWPOINT

## The Global Economy Is Now Grappling with Domestic Inflation

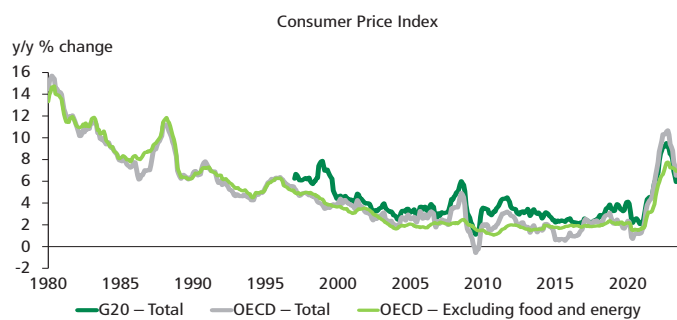
By Marc-Antoine Dumont, Economist, and Francis Généreux, Principal Economist

The disruptions caused by the pandemic, government assistance programs, major central bank monetary policies, the ensuing economic recovery and the war in Ukraine all changed the global inflation picture. In 2021, we started to see significant upward price pressures that in many countries pushed inflation to levels not seen since the early 1980s. Many of these global pressures have since eased. In this Economic Viewpoint, we try to determine how much global factors are still influencing inflation in major advanced economies and in China. Based on our analysis of inflationary shocks, the interconnectedness of the economies in question and possible spillover effects, it appears that domestic factors are now largely fuelling inflation. Hopefully these country-specific factors will soon abate.

### Global Inflation Today

The pandemic and the many measures governments and central banks implemented to mitigate its economic impacts changed global supply and demand dynamics. The biggest impact of the resulting supply-demand imbalance was a surge in inflation not seen since the 1980s (graph 1).

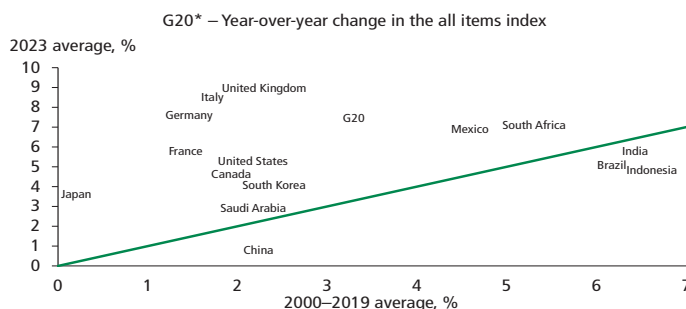
**GRAPH 1**  
Global Inflation Hit 1980s Levels



Sources: Organisation for Economic Co-operation and Development, Datastream and Desjardins Economic Studies

Inflation has since slowed on lower energy prices, especially on the oil and natural gas side. But headline inflation remains relatively high in most countries. As we can see within the G20, however, the situation varies between advanced and emerging economies (graph 2). China and other emerging economies are currently seeing more modest inflation than they did on average in the previous two economic cycles. But inflation in advanced economies like Germany, Italy, the United Kingdom and the G20

**GRAPH 2**  
Advanced Economies in Particular Are Still Grappling with High Inflation



\*Excludes Argentina, Russia, Turkey and the European Union.  
Sources: Organisation for Economic Co-operation and Development, Datastream and Desjardins Economic Studies

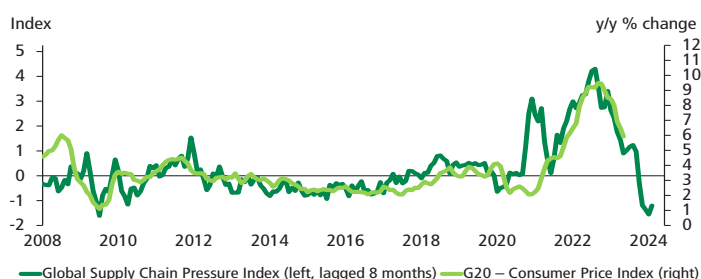
as a whole is much higher than it was on average in the 2000s and 2010s. This suggests that every economy is responding differently to the global factors driving inflation and that domestic factors are also affecting prices. Let's take a look at the global and domestic factors at play.

### Global Shocks

To determine what impact various factors have on inflation and to see if those factors are still at work, we used an analytical framework to look at the United States, Canada, the eurozone, the United Kingdom, Japan and China. (For more information, see the appendix on page 6.) The goal was to evaluate the effect of different unique global shocks of one standard deviation on inflation in each of these regions over a three-year horizon. The shocks analyzed are supply chain disruptions and the surge in energy prices.

COVID-19 snarled supply chains. The New York Fed's Global Supply Chain Pressure Index shows just how severe the supply chain disruptions were during and after the pandemic (graph 3). Supply chains have since largely recovered, and pressure is now below the historical average. According to our analytical framework, it takes a few months for the effects of a supply chain shock to show up in inflation. Because businesses have to place orders months in advance, higher prices aren't passed on to consumers right away. We estimate that when the New York Fed's Global Supply Chain Index rises 14% (one standard deviation), prices go up 3.2% in the US and 3.1% in Canada (table 1). But in China, inflation doesn't respond meaningfully to supply chain pressures. This is consistent with the economic literature, which suggests that inflation tends to be less sensitive to global shocks in emerging economies than in advanced economies ([Al-Nassar and Albahouth, 2023](#) and [Galesi and Lombardi, 2009](#)). This also partly explains the differences in graph 2 on page 1.

**GRAPH 3**  
Supply Chain Disruptions Fuelled Global Inflation, but That Trend Is Reversing Now



Sources: Federal Reserve Bank of New York, Organisation for Economic Co-operation and Development and Desjardins Economic Studies

**TABLE 1**  
Pressures from Global Supply Chain Shocks Tend to Be Long Lasting

COUNTRY/REGION	SUPPLY CHAIN SHOCK		CRUDE OIL PRICE SHOCK	
	MAXIMUM CUMULATIVE EFFECT ON CPI	MONTH OF MAXIMUM CUMULATIVE EFFECT	MAXIMUM CUMULATIVE EFFECT ON CPI	MONTH OF MAXIMUM CUMULATIVE EFFECT
United States	3.2%	26	2.2%	21
Eurozone	4.1%	31	2.0%	25
United Kingdom	3.3%	33	3.0%	24
Canada	3.1%	34	0.8%	11
China	NS	NS	0.6%	7
Japan	1.7%	36	2.4%	20

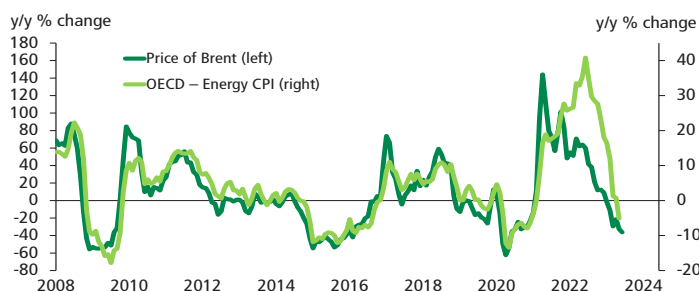
Shock following a Cholesky decomposition; NS: Not significant; CPI: Consumer Price Index

Source: Desjardins Economic Studies

The second global shock we looked at was the spike in energy prices after Russia's invasion of Ukraine. After falling early in the pandemic, oil prices rebounded in 2021 and continued to rally until mid-2022 as the war in Ukraine fuelled fears about the

global oil supply (graph 4). Surging natural gas prices in Europe last year also influenced global energy prices. According to our analysis of an oil shock, inflation in every country and region we looked at responds a month or two after energy prices go up. (The shock was an 8% increase in the price of Brent, which is one standard deviation). The initial spillover happens in gasoline prices, which usually respond within a month of crude prices changing. Then production and transportation costs go up, driving consumer goods prices higher. Again, China is more immune to this type of price pressure, mainly because the government has more control over energy prices. Excluding China, the average maximum cumulative effect is a 2.3% price increase.

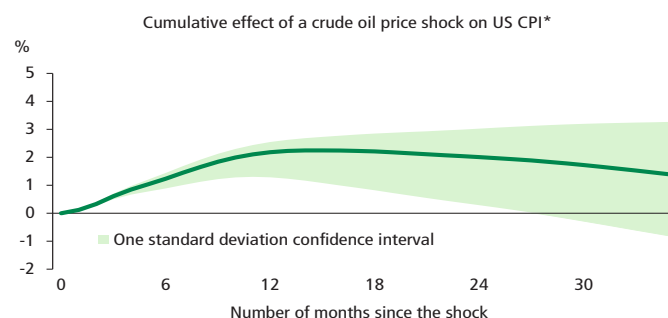
**GRAPH 4**  
Oil Price Fluctuations Show Up Quickly and Directly in the Energy Prices of Advanced Economies



Sources: Datastream, Organisation for Economic Co-operation and Development and Desjardins Economic Studies

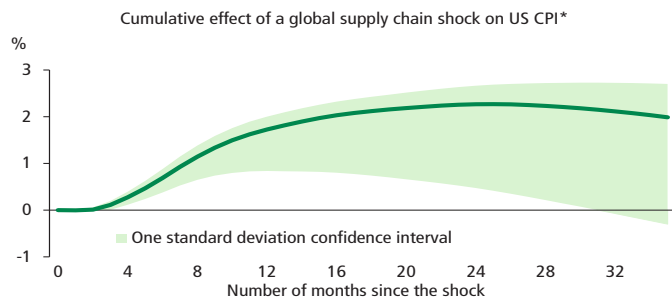
In both cases, the shocks we looked at were smaller than those we've seen in recent years. That means actual effects on inflation have been much bigger. That said, our analysis shows that inflationary pressure from an oil shock starts to abate in most countries after about a year and a half, as we're seeing in the US right now (graph 5). But it takes two to three years for supply chain pressures to ease (graph 6 on page 3). Since these shocks occurred in early 2022 and early 2020 respectively,

**GRAPH 5**  
Oil Shocks Trigger a Quick Inflation Response



\*Brent crude oil shock following a Cholesky decomposition.  
Source: Desjardins Economic Studies

**GRAPH 6**  
Supply Chain Shocks Last Longer



\*Shock on the New York Fed's Global Supply Chain Pressure Index following a Cholesky decomposition.  
Source: Desjardins Economic Studies

we're currently in the phase of easing inflationary pressure. But there have been several supply shocks of varying magnitudes since 2020, like the shocks associated with each wave of COVID-19 (including the late waves in China), the war in Ukraine and disruptive weather events. Sooner or later, the effects of the latest disruptions will dissipate. That's good news for central banks as well as for households and businesses, which have been contending with higher prices in recent years. But inflation from global factors is only part of the problem.

### Is Domestic Inflation Spilling Over?

While both global and domestic factors have driven up prices in many countries, spillover has also amplified inflation, especially spillover between advanced economies that are highly interconnected. One of the big takeaways from our analysis is the magnitude and persistence of US inflation spillover into every country and region we looked at due to the sheer size of America's economy and the greenback's dominant role in global markets. An increase in annual price growth of just 0.3% (one standard deviation) quickly amplifies through feedback loops, driving up prices by 1.1% in Canada at peak effect (table 2). Again, our analytical framework doesn't reflect the scope of the surge in inflation we've seen in recent years or the cumulative effect of multiple simultaneous inflationary shocks. But based

**TABLE 2**  
Global Spillover of Domestic Inflation Drives Up Prices (1)

MAXIMUM IMPACT ON CPI (%)		COUNTRY/REGION WHERE THE SHOCK STARTED*					
		UNITED STATES	EUROZONE	UNITED KINGDOM	CANADA	CHINA**	JAPAN
COUNTRY/REGION AFFECTED BY THE SHOCK	United States		1.1	0.4	0.8	-0.9	0.2
	Eurozone	1.4		0.8	0.9	-0.8	0.2
	United Kingdom	1.9	2.8		0.7	-0.5	0.4
	Canada	1.1	1.5	0.6		NS	0.2
	China	0.6	NS	NS	NS		NS
	Japan	1.2	0.9	0.7	0.3	-1.2	

\*Positive shock on domestic CPI following a Cholesky decomposition; \*\*Negative shock on Chinese CPI; NS: Not significant; CPI: Consumer Price Index.  
Source: Desjardins Economic Studies

**TABLE 3**  
Global Spillover of Domestic Inflation Drives Up Prices (2)

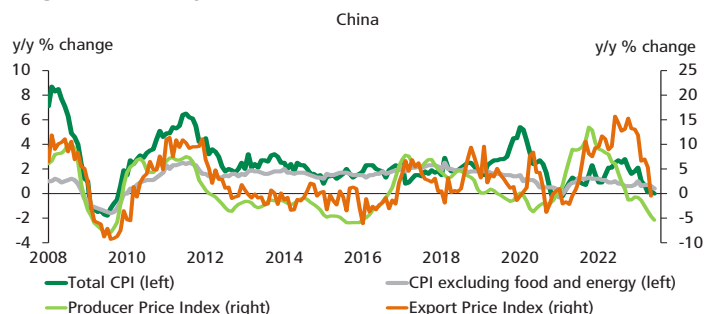
DURATION OF THE SPOILOVER PHASE (IN MONTHS) **		COUNTRY/REGION WHERE THE SHOCK STARTED*					
		UNITED STATES	EUROZONE	UNITED KINGDOM	CANADA	CHINA***	JAPAN
COUNTRY/REGION AFFECTED BY THE SHOCK	United States		15	6	11	9	4
	Eurozone	19		14	20	10	5
	United Kingdom	25	26		17	7	8
	Canada	14	20	10		NS	4
	China	6	NS	NS	NS		NS
	Japan	16	24	22	6	14	

\*Positive shock on domestic CPI following a Cholesky decomposition; \*\*The duration of the spillover phase is the number of months during which the shock is significant; \*\*\*Negative shock on Chinese CPI; NS: Not significant; CPI: Consumer Price Index.  
Source: Desjardins Economic Studies

on our estimates, spillover effects take one to two years to fade (table 3). That means we're currently in the slowing phase.

Meanwhile China is seeing very modest inflation (graph 7). According to our analysis, a 0.4% drop in China's CPI (one standard deviation) causes a 0.9% cumulative decline in US prices at peak effect. Apart from Canada, every country and region we looked at benefits from lower Chinese inflation. Japan is a case in point given how interconnected the Japanese and Chinese economies are and their respective sizes. Weak price growth in China should therefore help cool global inflation.

**GRAPH 7**  
Inflation Is Very Low in China, and Export Prices Just Entered Negative Territory



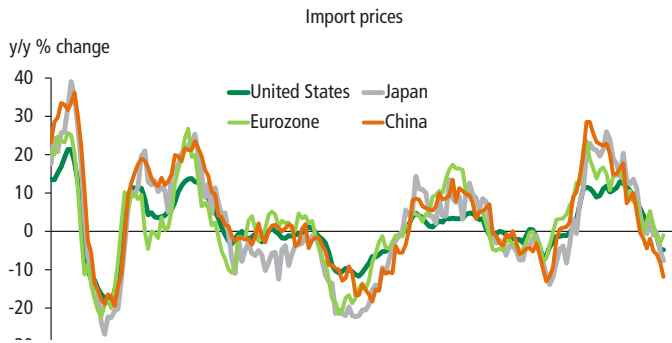
Sources: Datastream, National Bureau of Statistics of China and Desjardins Economic Studies

### There Are Signs Price Growth Will Continue to Slow

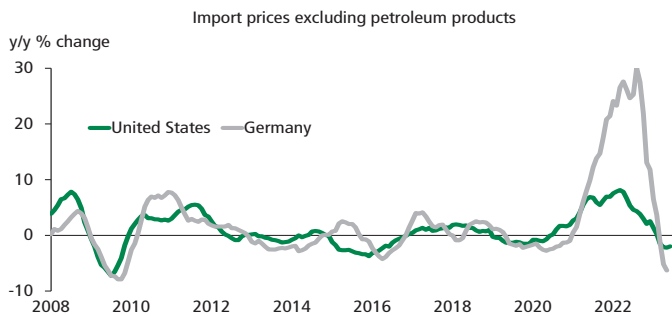
Easing global inflationary pressures, weakening upward spillover effects and new downward effects out of China suggest price growth will continue to slow around the world. Import prices are also down sharply just about everywhere (graph 8 on page 4), even if we strip out energy (graph 9 on page 4).

And other factors that don't feature prominently in our analytical framework could play a role in the coming quarters. Prices haven't just fallen on the energy side in the past year. Fears of a global economic slowdown have also sent many other global

**GRAPH 8**  
Import Prices Are Now Down in Major Economies



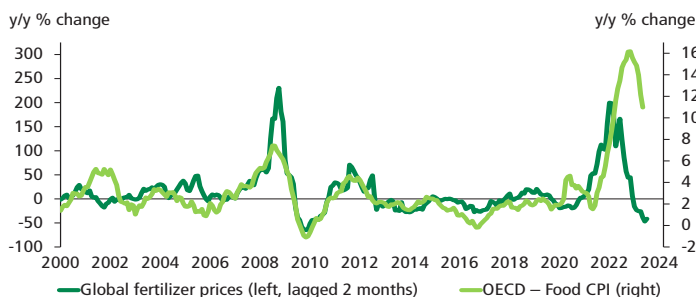
**GRAPH 9**  
Even excluding Oil, US and German Import Prices Are Down



Sources: Bureau of Labor Statistics, Federal Statistical Office and Desjardins Economic Studies

commodity prices lower. The London Metal Exchange Index, which comprises six non-ferrous metals, is down 32% from its March 2022 peak. Food inflation is also slowing, and lower fertilizer prices point to less rampant price growth in the grocery aisle (graph 10).

**GRAPH 10**  
There's Also Downward Pressure on Food Prices



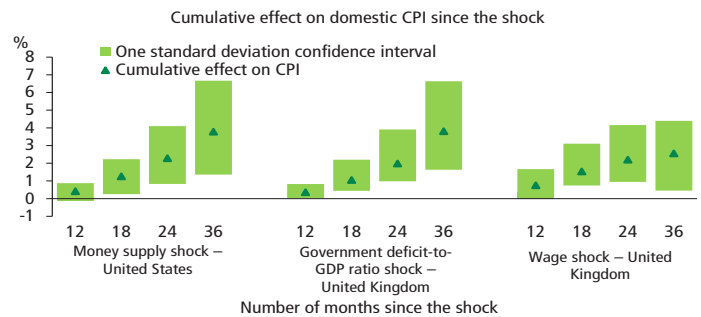
Sources: World Bank, Organisation for Economic Co-operation and Development and Desjardins Economic Studies

**But Other Factors Are Propping up Core Inflation in Many Countries**

Aside from energy and food prices, goods prices are the primary beneficiaries of lower global inflationary pressure and less spillover. But other factors are still very much at play and propping up price indexes, especially on the services side. These factors are less global in nature and more likely to be country specific. Unlike global factors, these factors contribute to the variations we see in domestic inflation.

These domestic factors include monetary and fiscal policy and economic agents' response to it. In the United States, the money supply is up 34%. According to our analysis, this type of increase takes over a year to show up in inflation, but once it does it has a lasting effect (graph 11). In the United Kingdom, both the government deficit-to-GDP ratio and wages are up, causing lagging price movements.

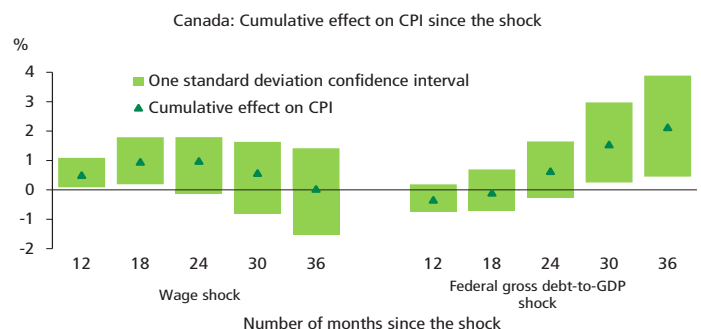
**GRAPH 11**  
Multiple Domestic Shocks Are Propping up Inflation



Source: Desjardins Economic Studies

In Canada, some variables have more of an impact than others. Inflationary pressures from higher wages seem to have a real impact on inflation, but it wears off after two years. And while an increase in the federal gross debt-to-GDP ratio has a lagged effect, it has a more lasting impact on prices (graph 12).

**GRAPH 12**  
A federal deficit-to-GDP ratio shock has a lasting effect on Canadian inflation



Source: Desjardins Economic Studies

The decline in global inflationary pressures is therefore being partly offset by some ongoing domestic shocks. According to our three-year analytical framework, these upward domestic price pressures haven't all yet peaked. But hopefully they will abate in the near to medium term.

### Conclusion

The global economy seems to be at a turning point in the fight against pandemic inflation. Global factors that drove up prices in recent years have eased, and cross-border spillover is abating as well. This is starting to show up in consumer prices, but the war isn't won yet. Inflation is still far too high in most advanced economies, and core inflation remains stubborn. Country-specific factors are slow to ease, and economic growth is still too strong to cool demand enough to bring inflation closer to central bank targets. These domestic effects might eventually dissipate on their own. But waiting too long for that to happen would be a risky bet, as inflation expectations could rise further. And there's always a chance that other global factors like new supply constraints could emerge, clouding the global inflation picture. More action is therefore needed, notably through additional rate hikes from central banks. But we may also need better coordination of monetary and fiscal policy as well as sustained efforts to boost productivity and supply. We discuss ways to tame inflation that don't involve interest rate hikes in a recently published [Economic Viewpoint](#).



## APPENDIX

To analyze the causes and effects of the global spread of inflation, we recreated the model used by [Hall, Tavlas and Wang \(2022\)](#). It's a structural vector autoregression (VAR) model that can be expressed as follows:

$$Y_t = A_0^{-1}B + A_0^{-1}A(L)Y_{t-1} + A_0^{-1}A(L)Y_{t-1} + u_t$$

where  $Y_t$  is an (nx1) vector of endogenous variables,  $A_0$  is an (nxn) matrix with unity down the main diagonal,  $B$  is an (nx1) vector of constants,  $A(L)$  is a matrix of lag polynomials up to some suitable lag length  $q$  determined by information criteria, and  $u$  is an (nx1) vector of error terms. The usual procedure is to use a Cholesky decomposition of the covariance matrix of the reduced form residuals to identify the structural errors along with an assumption about a causal ordering of the variables.

A VAR is built for each country using variables that best represent the causes of domestic inflation in recent years and that are tested for cointegration (table 4). The regional VARs are then augmented with inflation in the other countries, where  $Y_{t-1}$  is inflation in the other countries. We apply standard impulse response analysis—that is, we apply a one standard deviation shock to each of the variables in the first zero period and then the effect is fully worked through the complete VAR.

**TABLE 4**  
**List of variables**

Variable	United States	Canada	Eurozone	United Kingdom	Japan	China
Consumer price index	x	x	x	x	x	x
Money supply	x	x	x	x	x	x
Price of Brent	x	x	x	x	x	x
Real GDP	x					
Industrial production			x		x	x
10-year bond yield	x			x		
Government spending-to-GDP ratio	x				x	
Government deficit-to-GDP ratio				x		
Government gross debt-to-GDP ratio		x				
Unemployment rate			x			
Wages		x		x		
Exchange rate with the US dollar		x	x		x	
Retail sales						x
Foreign exchange reserves						x
New York Fed's Global Supply Chain Pressure Index	x	x	x	x	x	x

All variables have been transformed into an annual log difference, with the exception of the unemployment rate, the bond yield, the government spending-to-GDP ratio and the government deficit-to-GDP ratio.