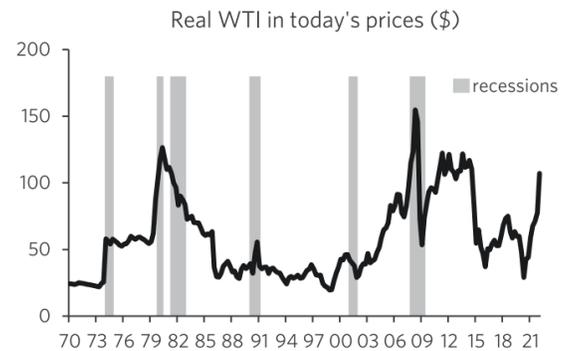


Drilling into the oil shock

by Benjamin Tal

While well off their highs, oil prices are still up a lot, and nobody, including Putin, knows how long they will stay elevated for. But given the nature of the crisis and the geopolitical chill it's created, it's hard to believe that the supply issues facing the market will be fully resolved anytime soon. What is the impact of higher oil prices on GDP growth and inflation? That's the most popular question we get these days. After all, a glance at Chart 1 is a bit scary, even if in real terms this spike isn't the worst we've seen. Many recessions in the past half a century were preceded by an oil shock. But of course, what triggered those recessions was less the actual increase in oil prices, and more the monetary policy response to them.

Chart 1: Oil price and recessions



Source: Statistics Canada, EIA/CME, CIBC

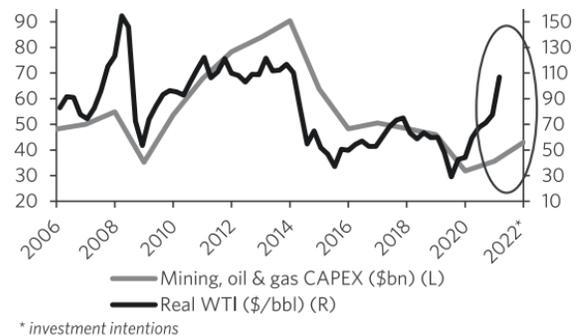
It's not so simple

So back to the original question — how bad is it? If you are looking for a simple “rule of thumb”, you are out of luck. There is no shortage of academic papers on this issue, but we will not take any of them to the bank. There are simply too many moving parts.

The ultimate impact of higher oil prices depends on the relative health of the economy at the onset of the shock. A weak economy is more vulnerable to any shock, and a strong economy is better insulated to endure the sting. We can make the point that today's economy is strong enough to deal with rising energy costs, but it is also an economy that has to deal with additional, unrelated cost pressures, and one that is still vulnerable to any negative developments related to Covid (which are worth watching given that hospitalizations in Europe are on the rise).

Another asymmetrical dimension of the impact of higher oil prices on the economy is that any increase in oil prices should be evaluated within the context of its starting level. A \$10 increase in prices that simply corrects for an earlier drop will have a relatively muted impact on the economy compared to a \$10 price increase that started from an already elevated level. In the current case, the pre-war surge in oil prices started from a Covid-inflicted depressed price level, but the recent spike started from an historically elevated level (take another look at Chart 1). Thus, if sustained, the current elevated level of oil prices might inflict more damage to the economy relative to historical shocks.

Chart 2: Capex in the energy patch unlikely to be as responsive to oil prices as in the past



Source: Statistics Canada, EIA/CME, CIBC

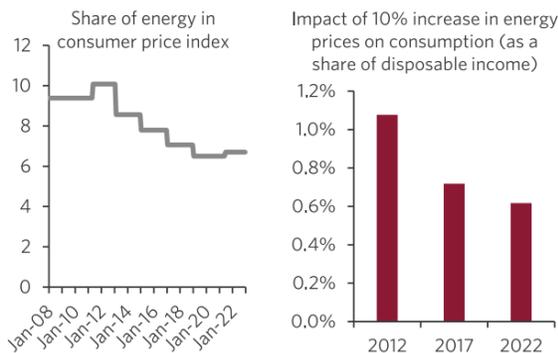
Furthermore, the response of Canadian oil executives this time around might be very different from what we have seen during previous oil shocks. With the transition to a low carbon economy only expected to accelerate, capital expenditures in the oil patch are unlikely to dance to the tune of oil prices as closely as in the past (Chart 2), depriving Canada’s economy of its usual positive offset during times of elevated energy prices.

Energy prices – reduced pass through

While it’s impossible to precisely quantify the full impact of today’s higher oil prices, we can still say a few things that might help to put it into perspective. Let’s start with inflation. Clearly, higher energy prices contribute to inflation since they enter directly into the calculation of the CPI with a weight of around 6.5%. But if higher energy prices also slow economic growth, they may have a very different effect on what happens to the remaining 93.5% of the consumer price basket.

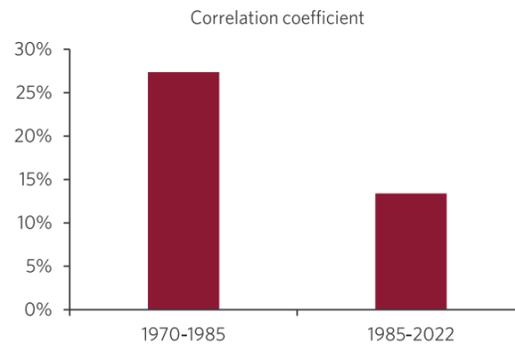
Zooming in on the headline inflation rate, it is apparent from Chart 3 that consumer prices have become less sensitive to oil price spikes. A little over a decade ago, the share of energy in the CPI basket was 4 percentage points higher than it is now. While the share of energy consumption is likely to rise with prices, all other things being equal, that means that a 10 percent increase in energy prices now is 40% less harmful to the consumer than it was a decade ago.

Chart 3: Energy—Lower weight in CPI basket



Source: Statistics Canada, CIBC

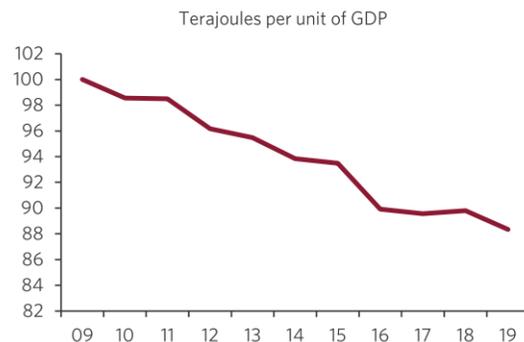
Chart 4: Reduced correlation between WTI and core inflation



Source: Statistics Canada, CIBC

But the real issue for monetary policy is, of course, not headline inflation, but the core measure of inflation which excludes the more volatile food and energy components. During the oil shocks of the 1970s and early 1980s, energy prices were a catalyst for an entire wage-price spiral that sent shockwaves through core inflation. But since then, the relationship between energy price spikes and core inflation has weakened notably (Chart 4).

Chart 5: Economy less energy intensive



Source: Statistics Canada, CIBC

Surely, much more responsive central bankers played an important role behind that reduced correlation, but other factors also contributed to the smaller pass

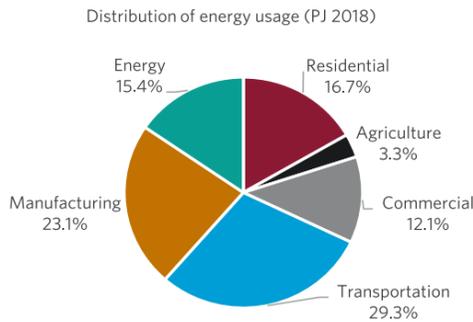
through of rising energy prices to consumer price inflation. Chief among them is the economy’s reduced reliance on energy. Over the past decade, the final energy demand necessary to create a unit of GDP in Canada has dropped by more than 10% (Chart 5).

Efficiency trumped increase usage

Let’s take a closer look and start with the transportation sector, which is the largest in terms of energy usage, as it accounts for 29% of end-use energy consumption (Chart 6).

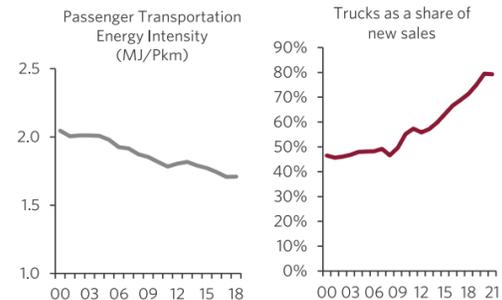
What makes it even more interesting from our perspective is that the transportation sector’s share swells to more than 70% of oil consumption in the form of gasoline, diesel, and jet fuel. And that’s despite the fact that the sector managed to improve fuel efficiency per kilometer by no less than 9% in the past decade (Chart 7, left). That improvement could have been even more impressive if it was not for the continued increase in the share of light trucks in the Canadian auto fleet (Chart 7, right).

Chart 6: Distribution of energy consumption



Source: Statistics Canada, CIBC

Chart 7: Transportation: Better mileage efficiency despite rising number of light trucks

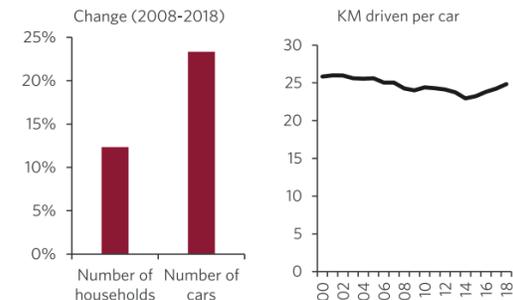


Source: Statistics Canada, CIBC

CIBC Capital Markets

Furthermore, while Canadian drivers haven’t changed their average annual distance traveled in any meaningful way, the number of cars per family has been rising steadily, offsetting a portion of the efficiency improvement (Chart 8). Overall, we estimate the net result of the tug of war between efficiency improvement and increased usage is a transportation sector as a whole that is 14% less energy intensive (energy consumption per unit of GDP) relative to 10 years ago.

Chart 8: Same distance, but more cars per family

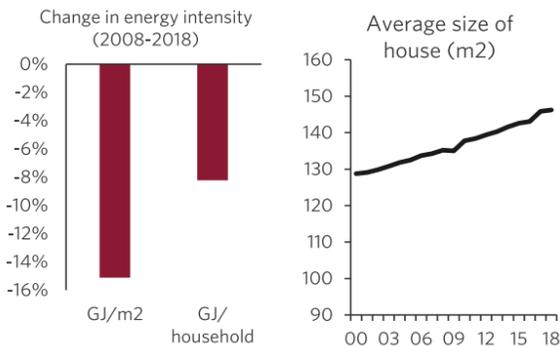


Source: Statistics Canada, CIBC

That efficiency paradox, in which consumption rises in part due to improved efficiency, is also evident in the residential sector that accounts for close to 17% of total energy consumption in Canada. While over the past decade, energy usage per meter squared of residential space was reduced by no less than 15% (Chart 9, left), the reduction of energy consumption per household was only 8% — reflecting the ongoing increase in the average home size (Chart 9, right).

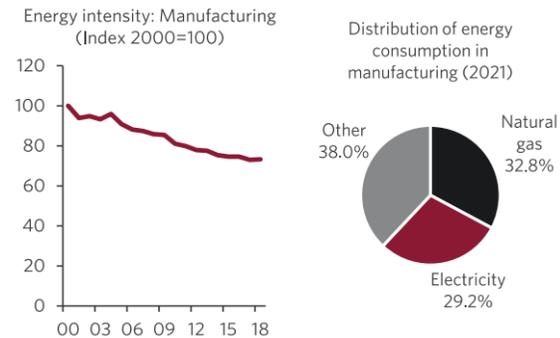
As for manufacturing, the sector is highly energy intensive, consuming 40% more energy than the oil patch. Industries such as pulp and paper products, primary metals, wood products, and metal smelting and refining are major energy consumers, and account for a notably larger share of aggregate output relative to the US. The manufacturing sector is 15% less energy intensive relative to its position a decade ago (Chart 10, left). Furthermore, manufacturers generally don't use oil-based fuels as an input. They instead use electricity, due to the availability of cheap hydro-electric power, and, more so, natural gas. Accordingly, given the manufacturing sector's heavy reliance on electricity, the surge in oil prices will not be fully felt in the cost of production (Chart 10, right).

Chart 9: Better efficiency in residential partly offset by larger homes



Source: Statistics Canada, CIBC

Chart 10: Manufacturing: A significant reduction in energy intensity (left), heavy reliance on natural gas and electricity



Source: Statistics Canada, CIBC

So?

Our working assumption is that supply chain issues will ease notably towards the end of the year. Other inflationary forces such as wage pressures and rent will be stickier. The Fed and the Bank of Canada will continue to raise rates to combat those forces. All the numbers and charts you had to go through reading this piece suggest that even if energy prices remain elevated, the offsetting forces of less responsive energy sector capital spending, alongside reduced energy intensity in the Canadian economy and a smaller pass through of rising energy prices to consumer price inflation, will work to soften the inflationary sting. Therefore, we do not expect the current energy shock to notably alter the Bank of Canada's rate trajectory.

Canadian Forecast Table

Variable	2022 7-Mar	2022 Jun	2022 Sep	2022 Dec	2023 Mar	2023 Jun	2023 Sep	2023 Dec
Overnight target rate	0.50	1.00	1.25	1.25	1.50	1.75	1.75	1.75
98-Day Treasury Bills	0.59	0.75	1.00	1.20	1.70	1.75	1.75	1.75
2-Year Government Bond	1.40	1.70	1.85	1.90	2.15	2.20	2.25	2.30
10-Year Government Bond	1.70	2.15	2.25	2.30	2.40	2.45	2.50	2.55
30-Year Government Bond	2.00	2.35	2.40	2.40	2.40	2.45	2.50	2.55
Canada - US T-Bill Spread	0.24	-0.15	-0.15	-0.15	0.10	-0.10	-0.05	-0.10
Canada - US 10-Year Bond Spread	-0.08	0.00	0.05	0.05	0.10	0.05	0.05	0.05
Canada Yield Curve (10-year — 2-year)	0.30	0.45	0.40	0.40	0.25	0.25	0.25	0.25



	Real GDP Y/Y % Chg				Nominal GDP Y/Y % Chg				Unemployment Rate %				Housing Starts 000s Units				Consumer Price Index Y/Y % Chg			
	2020E	2021F	2022F	2023F	2020A	2021F	2022F	2023F	2020A	2021A	2022F	2023F	2020A	2021A	2022F	2023F	2020A	2021A	2022F	2023F
BC	-3.4	4.4	3.7	2.9	-0.5	11.9	7.7	4.5	9.0	6.5	5.3	4.8	37.9	47.6	40.0	38.0	0.8	2.8	4.5	2.1
Alta	-7.9	6.5	4.3	3.6	-16.1	24.5	15.3	3.1	11.5	8.6	7.2	6.6	24.0	31.9	35.0	36.0	1.1	3.2	4.0	1.8
Sask	-4.9	3.9	3.3	2.6	-6.6	16.9	13.3	2.6	8.4	6.5	5.4	5.0	3.1	4.2	5.0	5.0	0.6	2.6	4.2	1.9
Man	-4.6	3.9	3.2	2.3	-1.4	9.9	7.2	3.9	8.0	6.4	5.2	5.2	7.3	8.0	9.0	8.0	0.5	3.2	4.8	1.9
Ont	-5.1	4.0	3.9	2.8	-2.8	10.5	8.4	4.3	9.6	8.0	5.8	5.6	80.8	99.6	83.0	77.0	0.6	3.5	4.8	1.9
Qué	-5.5	5.8	3.2	2.1	-2.4	12.3	7.7	3.8	8.9	6.1	4.9	4.6	53.4	67.8	54.0	48.0	0.8	3.8	4.3	1.7
NB	-3.2	3.3	2.3	2.2	-1.3	9.3	6.3	3.8	10.1	8.9	7.7	7.6	3.5	3.8	4.0	4.0	0.2	3.8	4.5	1.7
NS	-2.5	3.4	2.2	2.7	0.7	9.4	6.2	4.3	9.8	8.4	7.7	7.4	4.8	6.0	6.0	5.5	0.3	4.1	4.5	1.7
PEI	-1.7	2.7	2.3	3.1	0.9	8.7	6.3	4.7	10.6	9.3	8.0	7.7	1.2	1.3	1.0	1.5	0.0	5.1	5.2	1.9
N&L	-5.4	3.4	3.0	2.2	-10.7	17.4	14.0	1.2	14.2	12.9	11.8	11.4	0.8	1.0	1.5	2.0	0.2	3.7	4.0	1.9
Canada	-5.2	4.6	3.6	2.8	-4.5	13.1	9.3	3.9	9.5	7.4	5.8	5.5	217	271	239	225	0.7	3.4	4.5	1.9

Sources: Statistics Canada, Bank of Canada, CIBC World Markets Inc.

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