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COUNTING THE COSTS

Impacts of the 2022 Oil Price Shock for Canadian Consumers and Workers

by **Jim Stanford** and **Erin Weir**
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This report is the first publication in ***False Profits***, a new project hosted by the Centre for Future Work, which will investigate the impact of fossil fuel prices and profits on inflation, real incomes, and living standards of Canadians. Learn more at:

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Summary

This report performs a retrospective empirical analysis of the painful inflationary cycle that Canadians experienced in the years after COVID lockdowns. It confirms that the biggest single cause of that surge in inflation was a dramatic spike in oil prices (and resulting prices for other fossil fuel products) that reached a peak with Russia's invasion of Ukraine. Higher fossil fuel prices directly caused 43% of the cumulative increase in Statistics Canada's all-items Consumer Price Index from January 2021 to June 2022 (when inflation peaked). Counting the indirect impact of higher fossil fuel prices on input costs in other industries (from transportation to construction to food), that share is even higher.

Other economists have confirmed the leading role of energy costs in both the rise and the fall of inflation in Canada and globally. However, it not *all* energy costs were to blame: only fossil fuel prices were the problem. Electricity costs in most of Canada rose no faster than overall inflation during this period. Moreover, many economists speak nebulously about 'supply shocks' as the reason for higher energy prices, when in fact there was no supply shock at all. World oil supply *continued growing* during and after the invasion—and Canada, meanwhile, has never produced so much oil. The oil price spike cannot be explained on the basis of real economic fundamentals (like supply and demand). Rather, the behaviour of speculative and highly unstable oil futures markets (where every physical barrel of oil is traded 13 times on paper, and where sudden changes in investor sentiment can cause prices to skyrocket or collapse) is the root problem. Because of Canada's decision to tie domestic energy prices directly to those world futures markets, our own fossil fuel prices surged in tandem. The first part of the paper reviews how oil futures markets operate, and shows there was no underlying supply problem to justify the 2022 price spike.

The main body of the report then compiles the costs to Canadian workers and consumers resulting from those price hikes. The report identifies and measures costs in four categories:

1. Higher prices for direct purchases by consumers of fossil fuel products (gasoline, natural gas, heating oil, and RV fuels).

2. Indirect costs passed onto consumers from businesses in other industries via inflated prices on their own fossil fuel inputs. Since businesses spend more on energy than consumers do, this impact is ultimately larger than the direct impact felt through consumer fossil fuel purchases.

3. Higher interest costs resulting from the Bank of Canada's rate hikes—engineered to fight the inflation caused in large part by higher fossil fuel prices. We ascribe 35% of the damage of higher interest payments to higher fossil fuel prices, based on the composition of sustained inflation from 2019 through 2022.

4. Reduced earnings resulting from a decline in employment (relative to population) in the wake of higher interest rates. Again, 35% of that cost is ascribed to fossil fuel prices based on the composition of sustained inflation.

Across these four categories, the total cumulative cost to Canadian workers and consumers of the fossil fuel price spike was almost $200 billion from 2022 through 2024 (see Table 1). That works out to an average of $12,000 per household. Fossil fuel prices and interest rates are still elevated (though down

from their peaks), and employment is still suppressed (though recovering). Hence those costs are still growing: by $5 billion (or $300 per household) per month.

Table 1
Total Costs to Canadians from the Fossil Fuel Price Spike
2022—2024

Effect	Cost ($billion)
Direct Consumer Price Impact	$61.4
Indirect Supply Chain Costs	$106.8
Extra Interest Expense[1]	$22.9
Lost Employment Income[1]	$7.5[2]
Total Costs	**$198.7**
Cost per Household ($)	$12,007

Source: Calculations from Statistics Canada data as described in text.
1. 35% of total costs ascribed to impact of fossil fuel prices.
2. Cost cumulated over 2023-2024.

The report also traces the dramatic rise in petroleum industry profits that resulted from higher fossil fuel prices, and shows what the industry did with that money. Relatively little was spent on reinvestment, and employment and wages in the industry are still below 2019 levels. Hence it cannot be argued this wealth 'trickled down' to average Canadians (even in the oil patch). It is ironic that so much anger during this inflationary episode has been directed at some other industries (such as supermarkets) for their high prices. Yes, food retail profits doubled, as supermarkets lifted prices faster than their own costs, and this exacerbated rising food costs. But the surge in profits in the upstream and downstream petroleum sectors as oil prices peaked in 2022 was 20 times larger than the growth in food retail profits.

Reviewing and understanding the effects of the 2022 oil price spike is not just a historical exercise. It is clear similar price shocks will happen again—and U.S. President Donald Trump's erratic behaviour heightens those risks. Whether due to financial instability, geopolitical tensions, or outright war, oil futures markets will continue to fluctuate wildly, with potential to spark future rounds of the painful inflation (and then disinflation) that Canadians have just endured.

Given the leading role of fossil fuel prices (determined in unstable, financialized, cartel-dominated futures markets) in overall inflation, Canadians need to be ready to repeat the whole painful exercise… unless we act to insulate the energy system and the whole macroeconomy from this continuing risk. TO that end, the report concludes with three policy recommendations:

1. Insulate Canadian energy prices from volatility in global futures markets.
2. Increase royalties, and tax excess profits of petroleum companies during episodes of price turbulence, using the funds to compensate Canadian consumers for extra costs.
3. Accelerate energy conservation and the transition toward renewable energy systems, so Canadians are less exposed to the gyrations of oil futures markets.

Introduction

Who's to Blame for Affordability Woes?

In the three years that followed the COVID pandemic, Canadians experienced a punishing round of inflation. Prices for essentials like energy, housing, and food soared, and many households had great difficulty paying their monthly bills. Making matters worse, the Bank of Canada hiked interest rates dramatically to fight inflation—adding escalating interest costs to the other rising bills faced by Canadians. The resulting challenges of affordability had many economic, human, and political consequences. They fostered widespread anger and social division in Canada, in addition to household financial stress and hardship.

More recently, affordability conditions have undeniably improved. Since mid-2024, inflation has receded back to the Bank of Canada's target of 2%. Wages picked up notably to catch up to post-pandemic inflation. Beginning in late 2022, wages began growing at an average annual rate of about 5%, and since early 2023 they have grown consistently faster than inflation. Thanks to stronger wage growth, the damage to average and median real wages has been repaired in Canada: real earnings are now higher than they were before the pandemic. Meanwhile, interest rates are now falling: at time of writing, the Bank of Canada had cut rates seven times, with more reductions likely in store. Fueled by rate cuts, labour market conditions are also improving.

Despite these positive changes, prices for most goods and services remain high. And while the rate of increase of prices (inflation) has slowed, the still-high level of prices leaves many Canadians hard-pressed to cover the high cost of essentials. An underlying concern with affordability continues to shape Canadians' attitudes to the economy and their governments.

Into this volatile environment, the petroleum industry has loudly argued that because of the cost of living, Canadians must abandon policies aimed at reducing consumption of fossil fuels and supporting the transition to renewable energy sources. Policies from the federal carbon price, to the Canadian Sustainable Jobs Act, to caps on emissions from the petroleum industry, to provincial and municipal policies (to reduce fossil fuel use in transportation, home heating, and other uses), are all under fire on grounds they will worsen the 'affordability crisis.' Television ads and billboards show families being forced to put food back on store shelves, or holding shrunken bags of miniature groceries, or abandoning family vacations—all because of the supposed impact of climate policies on affordability.

The petroleum industry's claim that Canadians can't 'afford' to protect the environment is ironic on several levels. First, thanks to new technology and efficiency improvements, renewable energy systems are now less expensive on a full-cost basis in many applications (including electricity generation, motor vehicles, and home heating) than fossil fuels.[1]

More relevant to current affordability challenges, dramatic increases in fossil fuel prices were the biggest single cause of the inflation that created so much hardship in Canada since the COVID pandemic. World oil prices surged dramatically in early 2022, rising by two-thirds (or $50 U.S. per barrel). This price spike was nominally caused by Russia's invasion of Ukraine. But price increases were amplified by the speculative behaviour of financial speculators, in oil futures markets where paper contracts tied to the

[1] See, for example, evidence reported by BloombergNEF (2024), Lindwall (2024), or Riddell and Belanger (2023).

price of oil and traded by the millions every day. In retrospect, no supply shortage of oil resulted from the Ukraine war or any other geopolitical or economic factor; world oil supply kept growing throughout 2022. In Canada, meanwhile, both production and exports set new all-time records. There was no 'supply shock' in any common-sense meaning of that term. More oil was available than ever. Rather, the price spike represented the painful appropriation of hundreds of billions of dollars in revenue by global oil companies and financial traders. They leveraged fear and uncertainty arising from dramatic world events (including a pandemic and war) into sky-high prices and unprecedented profits.

The price spike didn't last: by the end of 2022 world oil prices had returned to their levels before the Ukraine invasion. But the damage was done. Surging oil prices set off a cascade of inflationary pressures that quickly spread through other sectors of the economy. In Canada, year-over-year inflation peaked at 8.1% in June 2022—the same month fossil fuel prices peaked. Inflation spread from fossil fuels into other goods and services, because of higher prices paid by those industries for their own purchases of fossil fuel inputs. As fossil fuel prices retreated later that year and through 2023, inflation also slowed. But it took time and brutally high interest rates to wring this inflation from the economy. No other factor was more important than fossil fuel prices in explaining both the rise and the fall of inflation in Canada. This makes it gallingly hypocritical for petroleum industry lobbyists to now blame climate policy, not their own prices and profits, for the entire painful episode.

Conventional economic analysis readily acknowledges the leading role of surging oil prices in sparking worldwide inflation. Statistics Canada data shows clearly that rising fossil fuel prices were the first and most important manifestation of post-pandemic inflation. Several studies have attested to the role of higher energy prices in causing inflation, both internationally (Shore, 2025; Weber et al., 2024; Ha et al., 2023; Gagliardone and Gertler, 2023) and in Canada (Chen and Tombe, 2023a; Kelly, 2024; Wang, 2024). More recent studies confirm the retreat of energy prices was the most important factor in the subsequent deceleration of inflation back toward normal. As Chen and Tombe (2023b, p.1) conclude, "Most of the decline [in inflation] can be attributed to the falling price of energy."

However, conventional analyses discuss this problem in rather euphemistic terms. Reports speak of high energy prices, rather than specifying the impact of fossil fuels. As shown below, electricity prices (in all provinces other than Alberta) rose no faster through this period than overall consumer prices; dramatic price spikes were concentrated solely in fossil fuels. So this was not a problem of *energy* prices generally; it was a problem of *fossil fuel* prices specifically. Moreover, many studies (such as Wang, 2024, and Chen and Tombe, 2023a) speak of the oil price spike as representing a 'supply shock' or 'supply-push' problem—to distinguish it from demand-side factors (like excess consumer purchasing power) that are sometimes blamed for inflation. But as will also be shown in detail below, there was no shortage of oil supply, which kept growing throughout the period of surging prices.

This report revisits the historic surge (and subsequent partial retreat) of world oil prices in 2022, exploring its causes, and measuring its consequences. It shows that the price surge had no relation to fundamental economic forces of supply and demand, but rather was driven by financial speculation, fear, geopolitical instability, and monopoly power. Thanks to the mostly deregulated nature of Canadian oil prices, the consequences of that price spike were felt fully by Canadians in several ways:

- Higher prices for fossil fuel products purchased directly by Canadian consumers.

- Higher prices for other goods and services, which use fossil fuels in their production and hence faced higher input costs (passed on to consumers).
- Higher interest payments resulting from the Bank of Canada's rate hikes, designed to combat the inflation caused largely by higher fossil fuel prices.
- Lost income from the deterioration in employment outcomes resulting from those high interest rates.

This report quantifies those four components of costs to Canadian workers and consumers. Over the three years from 2022 through 2024, we estimate that the fossil fuel spike cost Canadians a cumulative total of almost $200 billion—or some $12,000 per household. No other single factor so damaged affordability or undermined the living standards of Canadians during this period. Thus, the petroleum industry's claim that the energy transition away from fossil fuels is 'unaffordable' is precisely backward. Continued reliance on fossil fuels—especially in the context of the current financialized, deregulated pricing system—will expose Canadians to more painful inflationary episodes in the future, whenever volatile futures markets are roiled again by geopolitical or speculative disruptions.

Key Findings

1. In the opening weeks of 2022, world oil prices surged $50 (U.S.) per barrel (rising by two-thirds). Prices peaked at almost $130 (U.S.) per barrel.

2. This price surge cannot be explained by changes in 'supply and demand'. In fact, world oil supply grew steadily, both before and after the Russian invasion.

3. World oil prices are determined in highly unstable futures markets, where financial investors and speculators bet on the ups and downs of oil prices.

4. These futures markets trade 13 barrels of paper oil, for every physical barrel of oil produced in the world. Crude oil futures trading is worth $25 trillion (U.S.) per year—or $100 billion (U.S.) each trading day.

5. Neither the world, nor Canada, faced a 'shortage' of oil in 2022. Rather, prices were driven up by financial traders and speculators profiting from fear and uncertainty about global geopolitics.

6. Thanks to this volatility, profits for commodities traders doubled in 2022. The top 11 oil trading firms alone made $77 billion (U.S.) in profit: not from producing and selling physical oil, but from trading futures contracts and other derivatives.

7. Rising oil prices were the first and most important cause of the take-off of inflation in Canada and other countries.

8. Average consumer prices for fossil fuels (including gasoline, natural gas, heating oil, and recreational vehicle fuels and lubricants[2]) rose 81% in Canada from January 2021 to June 2022 (their peak).

[2] Statistics Canada's consumer price index includes four fossil fuel commodities in its bundle of 'energy' products: gasoline, natural gas for home heating, home fuel oils, and fuel and other supplies for recreational vehicles.

9. Prices paid by Canadian businesses for fossil fuel inputs in their operations grew even faster: by 127% in the same time.
10. The direct impact of fossil fuels alone caused 43% of all consumer price inflation in Canada from January 2021 to June 2022.
11. Counting the indirect impact of supply chain purchases of fossil fuel inputs (leading to price hikes in other consumer products), the impact of fossil fuels on inflation was even larger.
12. Compared to pre-pandemic (2019) price levels, consumers paid $61 billion extra for fossil fuels from 2022 through 2024.
13. Compared to pre-pandemic (2019) prices levels, Canadian businesses paid $107 billion extra for fossil fuel inputs from 2022 through 2024.
14. Higher interest rates, imposed in response to this inflation, resulted in additional costs for Canadians: an extra $65 billion in interest payments from 2022 through 2024.
15. Higher interest rates, in turn, caused a painful downturn in Canadian employment levels (measured relative to the working age population). Foregone employment income from weaker labour markets cost Canadians another $21 billion in 2023 and 2024.
16. Based on analysis of Bank of Canada actions, at least 35% of the increase in interest rates (with resulting impacts on interest costs and employment income) was a response to the spike in fossil fuel prices.
17. Putting it all together (direct consumer costs, indirect business costs, extra interest costs, and lost employment income), the fossil fuel price spike cost Canadians almost $200 billion in cumulative losses between 2022 and 2024. That works out to an average loss of $12,000 for each household in Canada.
18. More recently, fossil fuel prices and interest rates have fallen, but are still elevated compared to pre-pandemic levels. And employment outcomes (while recovering) are still suppressed. So this cost is growing by over $5 billion with each passing month—or $300 per household per month.
19. The Canadian petroleum industry profited handsomely from the spike in prices in 2022 (and the resulting inflation). Industry operating profits grew by a cumulative total of $151 billion from 2022 through 2024, compared to pre-pandemic (2019) levels.
20. Much of that additional profit was retained by the companies, or paid out in dividends to shareholders and executive bonuses. Only a minority was reinvested in Canada. Employment and wages in the industry remain below 2019 levels.

In sum, the oil price spike of 2022 was a needless and very costly episode that caused a cascading worldwide disruption. It was not the result of fundamental economic forces; it was the result of speculation, financialization, geopolitics, and monopoly power. Canadians paid massively for this spike, and continue to do so. The petroleum industry profited, with higher consumer expenses flowing into industry profits on a near dollar-for-dollar basis. Canadians remain vulnerable to future price spikes—sparked by unpredictable events, potentially including the side-effects of U.S. President Donald Trump's

erratic trade and economic policies, or other disruptions (such as war, another pandemic, or climate disasters).

Continued reliance on fossil fuel energy, especially in the current context of deregulated and financialized pricing, poses a clear and ongoing danger to the living standards of Canadians. To prevent an eventual repeat of the entire painful experience Canadians endured after the pandemic, the policy implications are clear:

1. Governments should take measures to insulate day-to-day energy prices from the unstable gyrations of financialized oil futures markets. Possible measures in this regard include limits on price movements, the creation of buffer stocks, and price regulations.
2. When price spikes do occur, excess profits to the petroleum industry should be recouped by government through stronger royalties or excess profits taxes. Some of the proceeds of those measures should be redistributed to consumers to offset the impacts of higher fossil fuel prices on household spending, and to prevent another round of inflation.
3. Ultimately, the best protection against future oil price spikes is to support continued energy conservation measures, and accelerate the transition away from fossil fuels (toward renewable energy sources, not subject to the same geopolitical, monopoly, or financial distortions). Renewable energy systems are already less expensive in many applications (including electricity generation, motor vehicles, and home heating) on a full-cycle basis than fossil fuel alternatives—even without considering the externalized costs of carbon pollution resulting from fossil fuel use. Investing in renewable energy and greater energy efficiency, therefore, will both reduce energy costs and protect against inflationary disruptions from future volatility on oil futures markets.

How World Oil Prices are Determined

It is typically assumed that oil prices are set on 'world markets', determined by the ebbs and flows of supply and demand. Prices rise when supply is inadequate to meet demand. This is supposed to elicit a supply response, as producers invest in new output to profit from higher prices. In the end, an equilibrium price is reached which equalizes supply and demand. That price, presumably, reflects the actual cost of production (at least for the 'marginal' or incremental sources of supply). Like other competitive markets, this mechanism is supposed to be flexible, autonomous, and fundamentally efficient.

The Government of Canada endorses this rose-coloured view of the working of global oil market. According to Natural Resources Canada (2024a):

> "The price of oil is set in the global marketplace. Oil is traded globally and can move from one market to another easily by ship, pipeline, or barge. As a result, the supply/demand balance determines the price for crude oil around the world."

It seems to makes sense, in this optimistic framework, for Canada to 'go with the flow' of these efficient, self-adjusting world markets. Since the mid-1980s, therefore, prices for oil and fossil fuel products in Canada have been allowed, for the most part, to fluctuate with world markets—so that Canadian producers receive world prices for their output, and Canadian consumers pay world prices for their purchases. This transmits the supposedly efficient price signals arising from global oil markets directly to Canadians, who then adjust their own behaviour (producing more and consuming less when prices rise) accordingly.

The reality, unfortunately, is neither so simple, nor so efficient. World oil prices are not determined by fundamental physical supplies of, and demands for, actual petroleum. The leading benchmarks are set in highly volatile financial forums, called 'futures markets', in which the vast majority of participants have no intention of ever buying or using physical oil. Those markets trade millions of paper contracts for oil every day, representing volumes many times larger than the amount of physical oil produced in the entire world. They are dominated by speculative, financial interests seeking to profit from ups and downs in prices—similar to markets for stocks, bonds, foreign exchange, and derivatives. Like other financial markets, liquidity, expectations, and fears are far more important in shaping price movements than real economic fundamentals (like cost, productivity, and growth). Oil futures markets embody the famous conclusion of economist John Maynard Keynes (1936):

> "Speculators may do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise becomes the bubble on a whirlpool of speculation. When the capital development of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done."

Meanwhile, the relationship between price gyrations on futures markets and changes in the supply of physical oil is also corrupted by cartel behaviour, geopolitics, and monopoly power. It is not credible to interpret the world oil price as an efficient market signal, that should guide fundamental energy and economic decisions around the world.

In light of the instability and at times irrationality of the current global oil price system, it may be worth considering alternative ways to govern oil prices (and some possibilities in this regard are considered in the conclusion to this report). Countries must make their own decisions about how to regulate fossil fuel markets and prices.[3] Trying to insulate domestic prices from world trends has well-known challenges. But the price signals emanating from financialized, speculative global casinos should not be accepted as rational indicators of efficient market forces. And the costs and damage done to economies and living standards by those processes should never be accepted as natural, inevitable, or efficient.

This section of the paper will provide a brief introduction to world oil futures markets, their nature and behaviour. Then the experience of the 2022 world oil price spike is reviewed. In retrospect, that surge in oil prices was clearly driven by speculation and fear sparked by geopolitical instability, not by changes in real supply-demand balances. Commodity traders were enriched by the resulting escalation of trading volumes and prices. But that escalation was a dominant factor in the acceleration of worldwide inflation that followed the oil price spike. Finally, the section considers the links between those financialized world oil futures markets and Canadian fossil fuel prices, supply, and demand. Under present practices, gyrations in those global futures markets are full transmitted to Canada—even for fossil fuels produced, processed, and consumed here.

Financialization, Speculation, and Emotion

Thousands of different kinds of crude oil, with varying physical properties (such as density and sulphur content), are produced in far-flung locations around the world. Each trades at a particular price. Differences in prices reflect quality, location, access to transportation and refining infrastructure, and regional market factors. However, most of those specific prices are set in relation to a small number of so-called 'benchmark' types of crude oil. And prices for those benchmarks are dominated by financialized futures markets, which buy and sell financial contracts related to those specific types of crude.

The two dominant benchmark crudes which set the trend in world oil prices are Brent (a blend of crude oils produced in the North Sea) and West Texas Intermediate (WTI, a form of crude produced in Texas and New Mexico). Both these benchmarks are 'light' and 'sweet': meaning they have relatively little sulphur content and flow more easily than heavier crudes. Physical production of the two benchmarks is very small in the context of the overall global oil industry: they account for less than 1% of global oil production (Dunn and Holloway, 2012). But for historical, institutional, and geopolitical reasons, these two specific crudes have come to dominate world oil price determination.

Other varieties of crude oil serve as price reference points in particular regions: such as Tapis crude (produced in Malaysia and traded in Singapore), Oman and Murban crude (produced in the Persian Gulf region and traded in Abu Dhabi), or Urals crude (a benchmark Russian oil). Prices for those benchmarks, and then for other specific sub-varieties, are generally determined on the basis of differentials from WTI or Brent, reflecting quality differentials, transportation access, and regional factors.

Oil is the most valuable global commodity market, and it has attracted growing attention from financial institutions and investors hoping to profit from the vast volumes of oil that change hands (at least on

[3] Countries like Canada that are self-sufficient in energy production have more freedom to set an independent course in market regulation and price policies than countries which must import more energy and hence are more dependent on the behaviour of world markets.

paper) and resulting price volatility. Financial interest in oil trading paralleled the growth of other financialized activities after the 1980s—including derivatives, foreign exchange speculation, and high-frequency trading on stock and bond markets. Until then, oil prices were largely administered by governments (for oil-producing countries, such as members of OPEC, where government ownership of oil production was the norm) or set in physical spot markets (similar to traditional markets for agricultural commodities or other bulk physical products). But the development and rapid expansion of oil futures markets supplanted those older pricing systems. Deregulation of the financial industry also facilitated the rapid expansion of oil futures trading.[4]

Oil futures trading is dominated by the futures markets for WTI and Brent (although a few smaller futures markets also exist, like one trading futures in Murban crude in the UAE). The WTI futures market is owned and operated by the CME Group (2025), a global financial corporation which owns numerous derivatives trading systems. Similarly, the Brent futures market is owned and operated by Intercontinental Exchange Ltd. (or ICE, 2025), another multinational financial conglomerate operating multiple futures and other derivatives trading markets. Oil futures trading first came to prominence with WTI trading, initially operating at the New York Mercantile Exchange (NYMEX). NYMEX was taken over by CME in 2008, and now (like most financial markets) operates digitally. The Brent futures market has grown rapidly in recent years, and is now larger in terms of overall trading volume—in part because of growing participation by Middle East state-owned oil companies and related financial interests, and in part because of more flexible transportation links (Brent oil is delivered by ship, whereas WTI must delivered by pipeline in the U.S.).

A futures contract is a financial asset which obliges its holder to purchase a certain quantity of a certain kind of oil to a certain location at a certain time.[5] WTI futures are defined for 1000 barrels of WTI oil (or equivalent quality) to be delivered to a pipeline or storage facility in Cushing, Oklahoma (a major oil transshipment point). Brent futures are defined for 1000 barrels of Brent to be delivered to one of several shipping terminals in the North Sea. Futures contracts are specified for a particular month, and the contracts must be 'closed' (that is, either cancelled through an offsetting contract, or in a small minority of cases fulfilled through physical delivery of the oil) by the end of that month. The markets create and trade futures contracts for months running several years into the future. That provides ample opportunity for speculators to place bets on far-off oil price changes. It is the price for the current month's futures contract, however, that is widely reported as the 'current' oil price—setting the benchmark against which prices for other specific varieties of oil are determined.[6]

Some businesses have legitimate reasons to participate in futures trading. Companies which supply oil, for example, might offer futures contracts well into the future to try to 'lock in' currently attractive prices, and protect against the effects of future oil price declines. Companies which use oil and its products (like airlines or trucking firms) might do the opposite: entering contracts to buy oil in the future to protect against future price increases. However, financial and speculative motives have been the

[4] This deregulation included weakening the authority of the U.S. Commodities Futures Trading Commission (CFTC), which had been originally established in the 1970s to regulate commodities speculation. Most of its powers were abolished in the 1990s.

[5] See Dunn and Holloway (2012), CME Group (2025), Natural Resources Canada (2024a), and U.S. energy Information Administration (2024) for introductions to the working of oil futures markets.

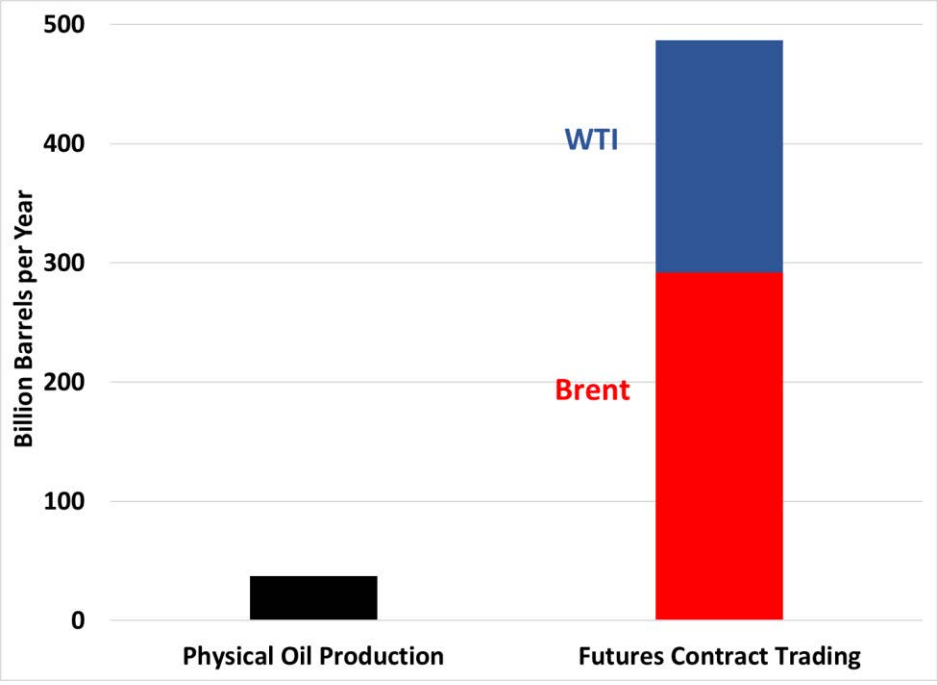
[6] Small amounts of oil are still bought and sold in residual physical spot markets, but prices in these markets follow the trends set on the futures markets.

dominant forces propelling the exponential growth of oil futures markets. The vast majority of trading on these markets is undertaken by firms with no direct connection to oil supply and demand at all. Less than 1% of futures contracts are eventually reflected in physical delivery of the oil specified in the contract (Dunn and Holloway, 2012). As the U.S. Energy Information Administration (2024) summarizes:

> "Banks, hedge funds, commodity trading advisors, and other money managers—who often do not have interests in trading physical oil—are also active in the market for energy derivatives to try to profit from changes in prices. In recent years, investors have also shown interest in adding energy and other commodities as alternatives to equity and bond investments to diversify their portfolios or to hedge inflation risks."

As if futures trading itself was not complicated enough, and far enough removed from the physical realities of oil production and use, futures contracts in turn serve as the basis for higher levels of financial derivatives and speculative opportunities. Many other derivatives can be layered on top of oil futures and their price gyrations. A common one is 'contracts for difference' (CFDs), which are a means of placing bets on differences in oil futures prices across time, or across different varieties of crude oil. Swaps and options of various kinds can also be designed and traded, all dependent on movements in underlying oil prices. Deregulation of credit creation and speculative activity, consistent with the overall dominance of financial institutions and motives in the broader economy (Epstein, 2005), add fuel to this frenetic fire. Traders participate in futures markets using borrowed funds (that is, they 'trade on margin'), hoping to use profits from successful bets to pay back their loans with interest. History has shown painfully that leveraged, speculative trading in any financial product carries enormous risks of manic bubbles followed by destructive collapse—and oil futures markets are no exception.

Figure 1. Physical and Futures Oil Markets, 2024

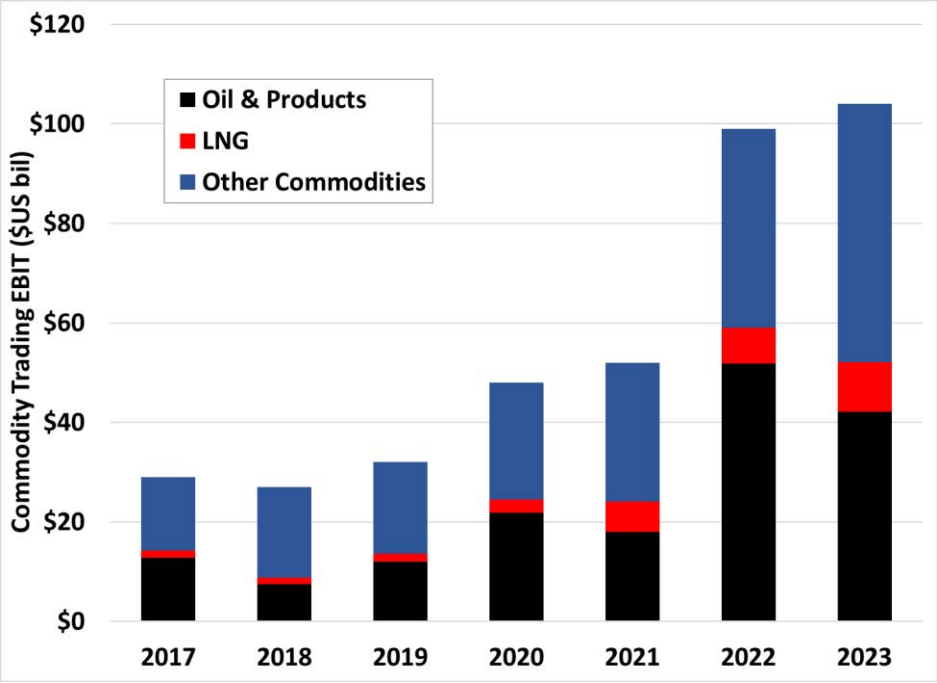


Source: Calculations from U.S. Energy Information Agency, ICE Ltd., and Investing.com data.

Because of the insatiable desire of financial interests to participate in speculative activities, the volume of futures market trading has come to dwarf the actual physical production of oil that purportedly underpins these casino-like markets. In 2024, the WTI futures market typically traded over 1 million contracts (each worth 1000 barrels of oil) per trading day—twice as many on some days. The Brent futures market traded about 1.5 million contracts per trading day on average in 2024. Over the year, close to 500 billion paper barrels of oil changed hands (in the contractual sense). In the same time, the world oil industry produced 37 billion barrels of oil. Each barrel of oil, therefore, changed hands 13 times on the futures markets (Figure 1). Crude oil futures trading is worth $25 trillion (U.S.) per year—or $100 billion (U.S.) each trading day.

The average open interest on the Brent and WTI futures markets (that is, the number of contracts outstanding at the end of each trading day, including those for months well into the future) was about 10 million contracts (representing 10 billion barrels of oil). As a result, if emotions or expectations about future oil supply or demand suddenly change, financial contracts representing 10 billion barrels (or 100 days of total global oil production) can suddenly flood into or out of these markets at once, driving wild swings in prices. That is exactly what happened during and after the COVID pandemic, as explored further in the next section.

Figure 2. Commodity Trading Profits, 2017-2023



Source: Pawlowski et al. (2024).

The frenetic activity of the oil futures markets is enormously profitable, driven both by the sheer volume of trading, and by the ability of traders (especially those with inside information networks, using high-tech automated trading systems) to profit from price fluctuations. Analysts at McKinsey & Co. (Pawlowski et al., 2024) report that profits (measured as earnings before interest and tax, EBIT) from commodity trading more than tripled after the COVID pandemic, driven by unprecedented volatility in economic and commodity variables (Figure 2). Profits from futures trading in oil and related products

quintupled from 2019 through 2022—the year of peak oil prices, and peak inflation. Mathis (2023) reports that just the 11 largest oil futures trading houses (including those run in-house by some major oil companies, such as BP and Shell) generated $77 billion (U.S.) in trading profits in 2022, doubling from 2021. Oil majors captured about 20% of their total corporate profits that year from trading—on top of their profits from producing and selling actual oil.

The connection between the volatile financialized activity of crude oil futures markets, and the real economics of oil supply and demand, is tenuous and unpredictable. In theory, higher market prices should stimulate producers to invest in increasing supply: tapping higher-cost reserves, or applying more expensive technologies. To some extent this happens, although typically with long lag times. It takes years for oil companies to design, approve, and execute new supply sources that have become viable at a certain level of prices. By that time, prices will almost certainly have moved far from whatever level may have sparked the new investments.

Supply responses to oil price signals are further complicated by the Organization of Petroleum Exporting Countries (OPEC) and a few allied countries. OPEC includes 12 countries with large oil reserves, which together account for about 30% of global oil supply. It functions as a cartel: the organization limits production from its member states (through production quotas assigned to each member) to elevate global oil prices. The original goal of OPEC, founded in 1960, was to support then-underdeveloped but oil-rich countries in negotiating better terms for their resources from the western oil companies that dominated the global industry. OPEC's actions have evolved in the face of geopolitical tensions (such as two oil embargos launched by OPEC in the 1970s during Middle East conflicts), the rise of financial power in major OPEC states (mainly Saudi Arabia and the UAE), and the growth of oil supply from non-OPEC sources (including, in recent years, major increases in oil supply from the U.S. itself, which recently supplanted Saudi Arabia as the world's largest oil producer). OPEC's price-fixing ability has weakened over time, partly due to growing non-OPEC supply, and partly because of lack of discipline (or 'cheating') by some OPEC members around assigned production quotas. In recent years OPEC has begun cooperating with selected non-OPEC countries to reinforce its influence over oil supply and prices. In 2016 OPEC signed formal agreements with 10 other countries (including Russia, Mexico, Kazakhstan, and Oman) that now participate in production-sharing efforts to limit supply and support prices. The alliance between OPEC and those 10 non-OPEC countries is known as 'OPEC+'.

Because of this strategy to constrain supply and lift prices, OPEC and OPEC+ countries always have significant excess supply available at any point in time. Incremental supply can be quickly pushed onto global markets whenever OPEC and OPEC+ leaders decide it is to their advantage. OPEC leaders generally tried to maintain oil prices at a level high enough to meet their needs for resource revenues, but not so high that it stimulates too much additional supply from alternative, costlier sources (such as U.S. shale oil or Canada's bitumen). The flattening of world oil demand in recent years, and its expected downturn in coming years (as oil and gas are replaced by renewable energy sources), also undermines OPEC's power to control prices.

These hyperactive futures markets set the benchmark prices for crude oil. Prices for specific varieties of crude oil are then derived from those benchmarks, based on quality differentials, location and transportation costs, regional market conditions, etc. Prices for refined petroleum products also respond quite predictably to changes in crude oil prices—since crude oil is the primary input from which those products are made. Prices for particular refined products may also reflect regional, market, or

transportation factors. For example, prices for diesel fuel are sometimes higher than gasoline, and sometimes lower, depending on various determinants. But both gasoline and diesel prices reliably follow swings in crude oil prices. Prices for other fossil fuels (such as natural gas and coal, which are substitutes for oil in many applications) are also strongly influenced by crude oil prices, although less directly than refined petroleum products. Prices for both coal and natural gas rose significantly in 2022 following the spike in oil prices, and for similar reasons: fears about geopolitical instability, the impact of war and sanctions on supplies from Russia and Ukraine, and financial speculation. In general, therefore, prices for all fossil fuels and their products are dominated by the unpredictable and exaggerated gyrations of crude oil futures markets.

For the purposes of this study, the key takeaway from this overview of world oil futures markets is to acknowledge that world oil prices are not guided by fundamental economic forces of supply and demand. They reflect a complex combination of financial speculation, geopolitics, and monopoly power. Fluctuations in those prices cannot be interpreted as natural, neutral, or inevitable. And they are far from economically efficient.

The 2022 Oil Price Spike

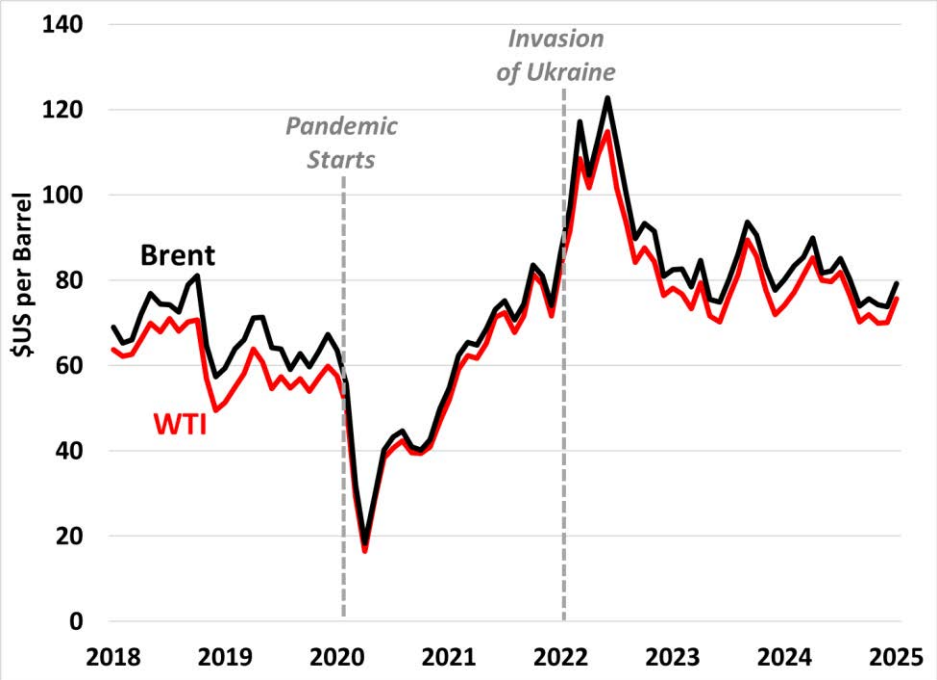
Prices for the WTI and Brent benchmark crudes hovered around $60 (U.S.) per barrel during most of 2019—the last year before COVID hit. That was down somewhat from previous years, reflecting tensions within OPEC and the growth of non-OPEC supply. The onset of the pandemic then caused a decline in world oil demand, due to shutdowns and recessions in most countries. In retrospect, that softening of oil demand was modest and temporary: worldwide consumption of refined petroleum products fell by only 9% in 2020, and within three years global consumption had recovered to its 2019 level (of just over 100 million barrels per day).[7]

The instability of world oil futures markets, however, dramatically amplified the impacts of this modest downturn in world demand. Within days of the World Health Organization officially declaring a global health emergency, oil futures prices plunged (see Figure 3). Bizarrely, for a short time in April 2020, WTI futures prices actually turned negative. Speculators were extremely pessimistic about the direction of future prices, and storage facilities at and near Cushing (where WTI contracts are physically settled) were nearing capacity. At that point, traders had to pay others to take ownership of the oil, and the price fell to negative -$40 (U.S.) per barrel (Ambrose, 2020). This did not last long. Once contracts for that month were cleared, the price recovered to above zero, but remained very low. It wasn't until mid-2020 that world prices returned to positive $40 (U.S.) per barrel, and until early 2021 before they regained their pre-pandemic levels (of about $60 U.S.). Even though it was an unusual and temporary phenomenon, the negative oil prices recorded in April, 2020 confirm the fundamental instability and, in many respects, irrationality of oil futures markets. Even a serious global economic downturn, and a significant (but modest) decline in world oil demand,[8] hardly justify a collapse in prices of that magnitude—let alone prices that fell below zero.

[7] Data from U.S. Energy Information Agency, "Petroleum and other liquids."

[8] In theory lower prices may have helped speed the recovery in oil demand, although that effect would be tempered by the widespread expectation that low prices were temporary; the rebound of global economic activity was by far the more important driver of the recovery in world oil consumption.

Figure 3. World Oil Futures Prices, 2018-2025



Source: U.S. Energy Information Agency.

The initial collapse of oil prices in the early stages of the pandemic might be interpreted as a positive sign, producing (short-lived) savings for consumers around the world. However, in practice it did more harm than good. First of all, the oil price collapse exacerbated the risk of deflation (falling general prices) during the early stages of the pandemic. Deflation heralds economic disaster: it reflects dramatic weakness in purchasing power, and can become self-propelling (since consumers, expecting prices to keep falling, defer purchases, thus causing further economic contraction). Central banks around the world (including Canada) took dramatic emergency measures to stop deflation and restore normal flows of credit and purchasing power. This response included cutting interest rates to near-zero (or even below zero in some countries), pumping additional purchasing power into the economy through quantitative easing, and other unconventional techniques. If oil prices had been more stable, those emergency measures would not have had to be so dramatic.

Later, when COVID lockdowns were lifted and economies re-opened, oil prices returned toward pre-pandemic levels. Those initial price increases could legitimately be seen as normalization after the collapse of 2020. Yet they nevertheless contributed to an acceleration of recorded inflation—even if that inflation, at first, was simply reversing deflation in the earlier period. That fostered increasing expectations of further inflation, and helped start the snowballing price rises that unfolded more painfully in 2022. It would have been better for oil prices to stay at or near their 2019 levels throughout this period; the short-lived price crash did more harm than good. But futures markets are not interested in stability: speculators only profit when prices are changing, and the more dramatically, the better.

The disruptions from the 2020 price collapse were overshadowed, however, by the much more painful consequences of the spike in oil prices that occurred in 2022. In the opening months of 2022, amid mounting fears of war in Ukraine, futures oil prices surged by two-thirds, or $50 (U.S.) per barrel (Figure

3). Prices peaked at near $130 (U.S.) per barrel in March (after the Russian invasion of Ukraine began), and stayed near there for the next three months. Like the collapse of prices two years earlier, the spike in prices was relatively short-lived: prices began falling in July, and by the end of 2022 had fully reversed the $50 (U.S.) per barrel increase experienced earlier in the year. Oil prices ended 2022 at around $80 (U.S.) per barrel: still significantly higher than before the pandemic began, but well down from the extremes of the spring market panic. However, even though prices retreated almost as quickly as they rose, the wild oil price swing was the biggest single factor setting off the subsequent inflationary surge that roiled economies (and politics) around the world.

The oil price spike of 2022 is often described as a 'supply shock', since most businesses experience the impacts of higher oil prices through their respective supply chains. But this is a euphemistic description: it implies that some crisis in oil supply caused prices to rise so dramatically. For those who accept that oil prices are determined rationally by 'supply and demand,' this assumption might be understandable. In reality, no shock to oil supply was experienced in this period.

Table 2
World Oil Supply Through the Price Shock
(Million barrels per day)

	3Q 2021	4Q2021	1Q2022	2Q2022	3Q2023	Change, 4Q21-2Q22
Russia	10.8	11.2	11.3	10.6	11.0	-0.6
Other Non-OPEC	54.9	55.5	55.3	56.0	56.9	0.6
OPEC	31.0	31.8	32.4	32.5	33.5	0.7
World Total	**96.7**	**98.5**	**99.0**	**99.2**	**101.3**	**0.7**

Source: Calculations from U.S. Energy Information Administration, "Quarterly petroleum and other liquids production."

Table 2 summarizes the evolution of world oil supply through the 12-month period covering both the extreme price spike in early 2022, and the subsequent normalization later that year. World oil production grew incrementally and steadily throughout the entire period. Russia's production declined modestly in early 2022, following its invasion of Ukraine: falling by about 600,000 barrels per day (or about 5% of pre-invasion output levels). This decline likely reflected a combination of genuine supply disruptions related to the war and the (limited) impact of Western sanctions. However, production in the rest of the world increased by more than enough to offset that slight decline. OPEC nations expanded output by more than enough to fully offset the Russian reduction. And non-OPEC producers (other than Russia) also boosted output by a similar amount. All told, global oil production *increased* by 700,000 barrels per day (or 0.7%) from the end of 2021 to the spring of 2022—simultaneous with the most extreme price increases. There was no 'supply shock' at all, and the dramatic and painful increases in oil prices experienced at that time cannot be characterized as an efficient market reaction to supply shortages.

Clearly, when the invasion of Ukraine began, fears of a wider conflict, with possible ramifications for world oil trade, were intense. But the operation of leveraged, financialized futures markets amplified those concerns into all-out market chaos—as traders rushed to protect their positions, or cash in on the

price surge. As with other financial markets, a shift in sentiment alone can become self-fulfilling, as more investors jump on board to profit from the expected price rise (thus propelling it even further). Some genuine supply problems were experienced in the European natural gas market, reliant on imports from Russia. But none of these factors justified the extreme reaction of oil futures markets to the invasion. By the end of 2022, oil prices were back to where they started the year. This wild roller-coaster ride—with prices rising $50 (U.S.) per barrel, and then falling the same amount—was a pointless but consequential detour. The surge in prices ignited a sustained inflationary explosion that quickly spread through the world economy, and carried on for some time after oil prices returned to earth.

The 2022 price spike constitutes just the latest example of how structural, geopolitical, financial, and even emotional forces cause gyrations in fossil fuel prices that bear no relation to fundamental economic conditions. Many other dramatic price swings have occurred in the past—including price collapses in 1986, 2009, and 2014, and price spikes in 1973, 1979, 1990, and 2008. None were justified by supply and demand fundamentals. More will occur again in the future—unless a fundamentally different system is introduced to set prices in a more rational and stable manner (including by limiting the power of financial speculation in oil price determination). Prospects for such a reform may seem remote. But regardless of whether the current oil price system can be meaningfully changed or not, Canadians should understand that these dramatic shocks have little to do with market fundamentals or efficient economic signals.

World Oil Markets and Canadian Energy Prices

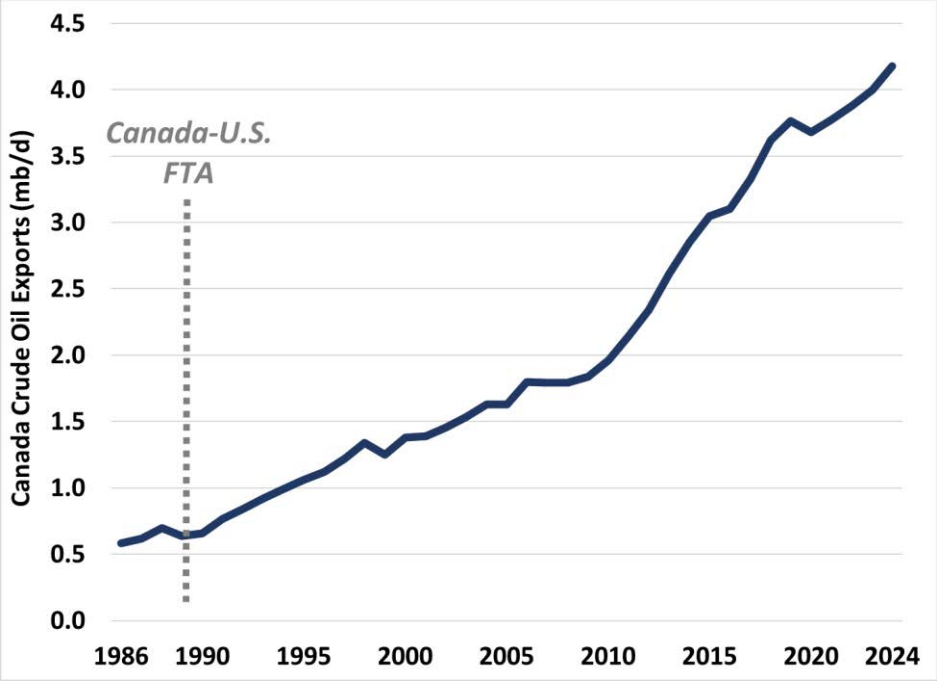
Through the first decades after World War II, Canada regulated oil prices through a range of different policies (Noakes, 2020). For many years, under the National Oil Policy beginning in 1961, consumers in Ontario and Western Canada were required to use Canadian-produced oil, in order to support domestic exploration and development. Consumers in Quebec and Atlantic Canada were allowed to use cheaper imported oil, largely from the Middle East. Following the twin OPEC shocks of the 1970s, the federal government set new regulations on prices for oil and petroleum products, hoping to buffer Canadians from the full impact of world price gyrations. It also created state-owned Petro-Canada, to enhance Canadian control in the oil industry and apply competitive pressure to the multinational oil companies that then dominated the industry. Later, the National Energy Program of 1980 continued to regulate prices; Canadian ownership of petroleum industry was promoted, and exploration subsidies and other incentives were offered to expand Canadian oil supply.

These efforts to regulate oil prices in Canada, and actively manage the Canadian petroleum industry, were mostly abandoned after 1985. The Conservative government of Brian Mulroney dismantled what remained of the National Energy Program, and largely deregulated oil prices—which would now be allowed to track world trends. While overall prices now follow world trends, governments retained some regulatory role in specific fossil fuel prices: including regulations on pipeline tolls and distribution charges for oil and natural gas, and regulations in some provinces limiting how quickly gasoline and fuel oil prices can change. But for the most part, fossil fuel prices in Canada closely track world trends. So what happens on world oil futures markets immediately affects the prices Canadians pay for fossil fuels, even those produced and consumed in Canada.

Another factor tightening the connection between Canadian and world oil prices has been the dramatic growth in Canadian oil exports. The original Canada-U.S. Free Trade Agreement (FTA), implemented by the Mulroney government in 1989, contained a unique proportional sharing clause that compelled

Canada to continue supplying energy (most importantly oil) to the U.S. in the event of a supply emergency, in the same proportion as it had been prior to such a crisis. This provision was a key concession to the U.S. government, still smarting from the OPEC oil embargoes of the previous decade. In the 30 years following that agreement, Canada's oil exports to the U.S. grew six-fold, underpinned by massive bitumen developments and expanded export pipelines (Figure 4). The FTA was later expanded to include Mexico in 1994 (in the North American Free Trade Agreement, NAFTA). NAFTA was renegotiated during Donald Trump's first term in office, replaced in 2019 by the Canada-U.S.-Mexico Agreement (CUSMA). The energy sharing provision was removed when the CUSMA was negotiated. But by then the orientation of Canada's petroleum sector around massive exports to the U.S. was firmly set, and the flow of exports south has continued to grow. In 2024 Canada ranked as the fourth-largest oil exporter in the world (behind Saudi Arabia, Russia, and the U.S.). Ironically, these oil exports constitute the largest component of the U.S. bilateral trade deficit with Canada, which President Donald Trump has invoked to justify his aggressive tariffs.[9] Yet Trump has also called for an expansion of oil pipelines from Canada to the U.S.—which would obviously increase America's purchases of Canadian oil, and hence increase its trade deficit with Canada!

Figure 4. Canadian Oil Exports, 1986-2024.



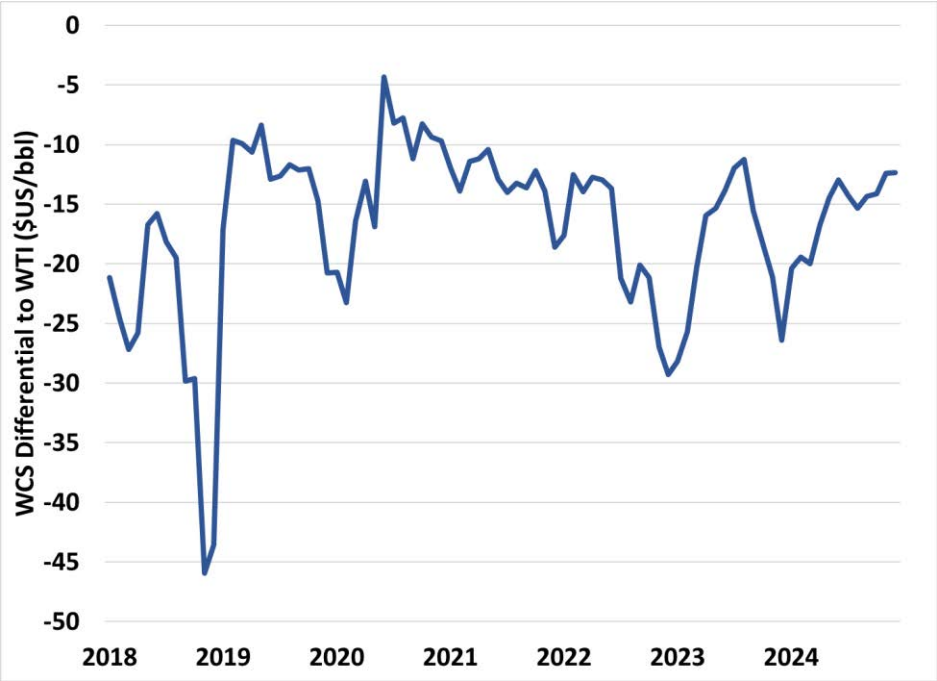
Source: Canadian Energy Regulator, "Crude Oil Export Summary."

Despite the growing quantity of oil exported to the U.S., its aggregate value has been partly offset by a large price differential between Canadian oil and global benchmarks. For various reasons—including quality differentials, transportation costs, and constraints on appropriate refining capacity in the U.S.—Canadian oil exports fetch prices well below other global brands of oil. The main benchmark price for Canadian oil is Western Canada Select (WCS), which represents an amalgam of heavier, relatively high-sulphur oils including conventional crude, processed bitumen, and diluents (liquids used to dilute

[9] See Stanford (2025) for a critique of Trump's false claims about Canada-U.S. trade.

bitumen so it can be transported by pipeline). Figure 5 portrays the evolution of the price differential between WCS and the WTI benchmark (both priced at Cushing, Oklahoma). WCS typically fetches $15-$30 (U.S.) less per barrel than WTI, depending on market conditions, pipeline availability, and refinery utilization in the U.S. Most other Canadian oils are priced in relation to the WTI and WCS benchmarks, again based on quality differentials and market factors. Newfoundland's offshore oil, however, is priced relative to the Brent benchmark. The lower prices fetched by Canadian oil reduce what the U.S. pays for our oil (relative to world prices) by $15-20 billion per year. This is another reason to question President Trump's (false) claims that the U.S. 'subsidizes' Canada through a trade deficit. To the contrary, below-world prices for Canadian oil exports constitute one of several ways that Canada effectively subsidizes the U.S. (Stanford, 2025).

Figure 5. Price Differential, Western Canada Select versus WTI, 2018-2024.

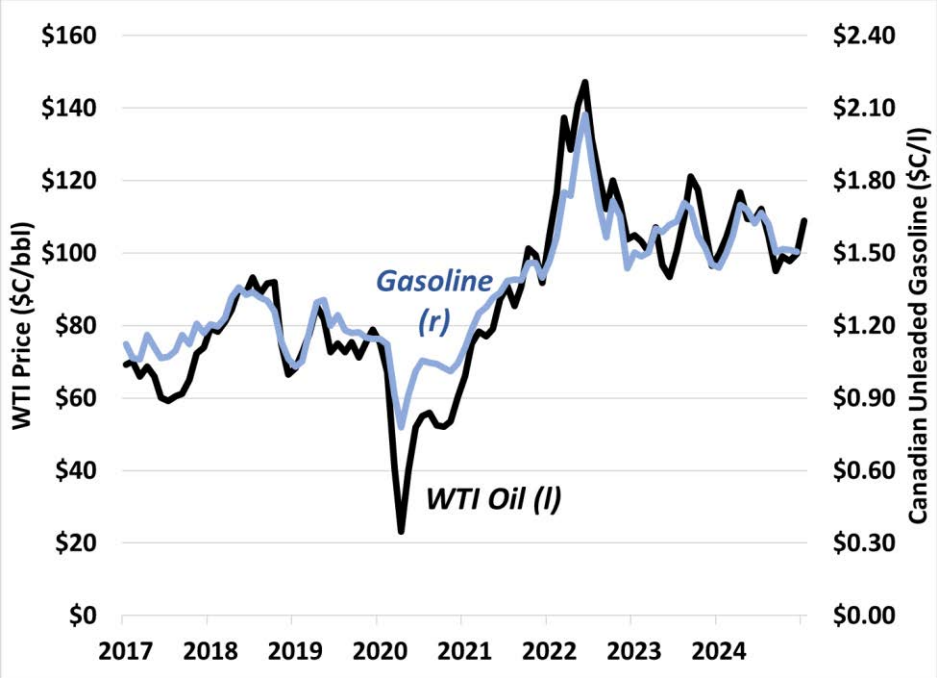


Source: Alberta Economic Dashboard, "WCS Oil Price".

The fact that Canada exports massive amounts of oil, which sells at a significant discount to world benchmarks, does not protect Canadian consumers from the effects of wild price swings in world oil futures markets. Under oil price deregulation, sellers of oil and refined petroleum products in Canada match world price trends. Consumer prices for fossil fuels in Canada rise quickly whenever world oil prices rise. This is true even if the oil was produced in Canada (as most domestically consumed oil is), and even if it was produced weeks or months before world prices increased. After all, it takes considerable time for oil to be produced, refined, and transported to gasoline stations and other retail facilities across Canada. So, there is no inherent reason why the price of gasoline sold in Canada should rise immediately with an increase in the world futures market price of oil—but it generally does. Benchmark world oil prices serve as a signal for refiners and retailers to collectively adjust their prices, even though those adjustments have no relation to changes in the cost of producing what they sell.

Figure 6 illustrates the average price of unleaded gasoline sold in Canada (measured in dollars per litre on the right axis), in comparison to the price of benchmark WTI (converted to Canadian dollars per barrel, measured on the left axis). The two series track very closely. Changes in the Canada-U.S. exchange rate are passed through into Canadian gasoline prices, indicating that it is the world price (in $U.S.) that is leading the evolution of domestic prices. The price differential between WTI and Canadian crude oil has no impact on Canadian gasoline prices. In general, *increases* in the WTI price are immediately reflected in higher gasoline prices. However, significant *drops* in oil prices are not always reflected in lower gasoline prices as quickly. Oil price drops in 2017, 2020-21, and mid-2023 had delayed reflection in gasoline prices. This reflects the acknowledged phenomenon that corporations are often able to lift prices in response to rising costs faster and more fully than they reduce prices in response to falling costs.[10]

Figure 6. Canadian Gasoline and WTI Prices, 2017-2024.



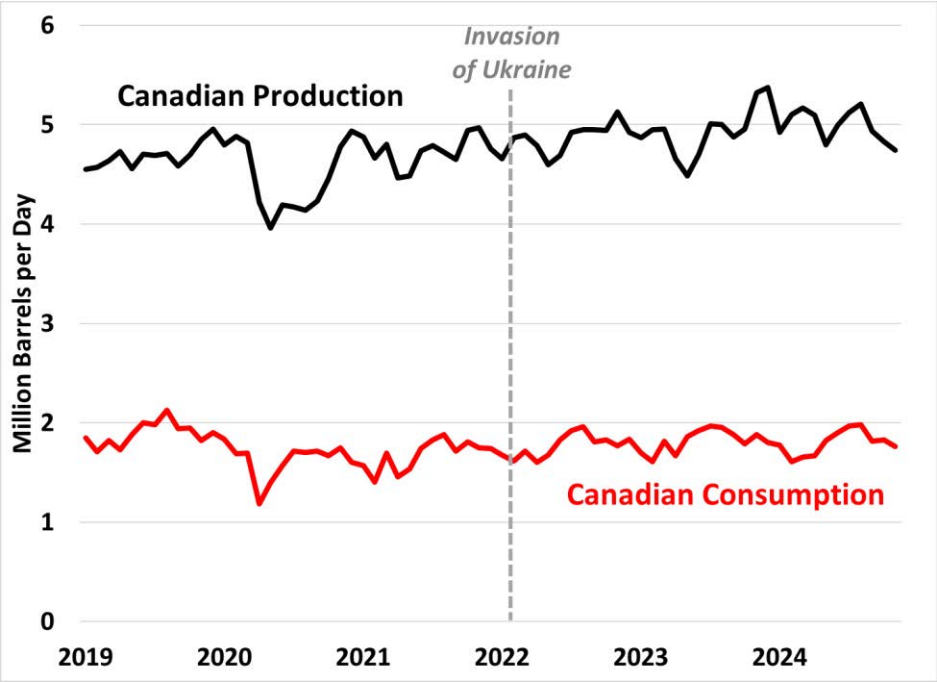
Source: Calculations from U.S. Energy Information Agency, Bank of Canada, and Statistics Canada Table 18-10-0001-01.

Production and consumption data in Canada also confirm that there was no 'supply shock' in Canadian oil production to justify the rapid rise in Canadian prices for oil and refined petroleum products in 2021 and 2022. Figure 7 illustrates Canadian oil production from 2019 through 2024. Output declined in 2020, as production was temporarily cut back in response to reduced demand from refineries (in both Canada and the U.S.) and limited storage capacity for unsold oil. Production bounced back fully by the end of 2020, and then set a new all-time record of almost 5 million barrels per day in November 2021. The invasion of Ukraine had no impact on Canadian output (other than normal seasonal and maintenance-related fluctuations). New production records were set in late 2022, and then again in 2023. The

[10] This asymmetric pattern is consistent with the so-called 'rocket versus feather' theory of seller's inflation advanced by economists such as Krugman (2022) or Tappata (2009).

ongoing increases in Canadian oil production reflect long-set investment and expansion plans in several locations—mostly new bitumen production. There was no impact of geopolitical events on Canadian production, nor should any be expected.

Figure 7. Canadian Oil Production and Consumption, 2019-2024.



Source: Canada Energy Regulator, Estimated Production of Canadian Crude Oil and Equivalent, and Statistics Canada Table 25-10-0081-01. Consumption equals domestic disposition of refined petroleum products (including imports less exports).

The demand side of the Canadian oil market remained similarly uneventful throughout the dramatic oil price spike of 2022. Demand shrank during the COVID lockdowns and recession of 2020. It partially recovered later that year, but remained well below pre-pandemic levels. It remained stagnant through 2021 and early 2022. By summer 2022, months after the Ukraine invasion, demand picked up notably, as normal travel patterns recommenced. However, Canadian consumption has remained below 2019 levels. The gap between growing Canadian production and stagnant consumption corresponds to the sustained rise in Canadian oil exports (pictured above in Figure 4). Clearly, there was no 'shortage' or 'supply shock' of oil in Canada during this time: Canada produced more oil than ever, while domestic consumption modestly declined. Despite that, prices of oil and related fossil fuel products surged. The spike in fossil fuel prices within Canada, therefore, had no relation to domestic supply and demand forces. Rather, it was the result of Canada's decision to tie its domestic fossil fuel prices directly to the wild fluctuations of world oil futures markets. And as we have seen, those global price fluctuations are similarly unconnected to fundamental supply and demand forces, but instead are dominated by financial, speculative, and geopolitical forces.

Neither in Canada, nor in the world, therefore, can the dramatic oil price swings experienced in 2022 be explained by the real forces of supply and demand. And the resulting prices can in no way be interpreted as signals about real costs of production, efficiently guiding the decisions of oil producers and

consumers. This understanding of the actual dynamics of oil price determination is important for understanding (and responding to) the resulting dislocation and hardship experienced by Canadian consumers in the wake of this price shock.

Impacts of the Oil Price Spike for Canadian Consumers and Workers

This section of the report tallies the economic costs incurred by Canadians as a result of the dramatic surge in fossil fuel prices in 2022. We identify and quantify four distinct components of that cost:

1. Consumers directly experienced higher fossil fuel prices immediately through higher prices for fossil fuel products they purchased (including gasoline, natural gas, home heating oil, and fuel and lubricants for recreational vehicles).
2. While changing prices on display at the local gas station are a highly visible sign of fossil fuel price instability, even larger costs were experienced indirectly. Businesses, not consumers, purchase the majority of fossil fuels used in Canada, as inputs to their own activities. Higher fossil fuel prices thus become embedded in higher production costs throughout the economic supply chain. Those costs are passed on to consumers in higher prices for other goods and services they purchase.
3. In response to the surge in inflation that closely corresponds to spiking fossil fuel prices, the Bank of Canada lifted interest rates dramatically—hiking its policy rate ten times, by a total of 4.75 percentage points, between March 2022 and July 2023. Those higher rates were largely a consequence of surging fossil fuel prices, and diverted tens of billions of dollars from Canadian households to lending institutions.
4. An obvious and intended consequence of higher interest rates is to slow down economic growth and job-creation. Higher interest rates resulted in fewer Canadians being employed than would otherwise have been the case, with a resulting loss of foregone employment income. Incomes for Canadian workers were suppressed as a result of higher interest rates, and the fossil fuel price hikes which largely motivated them.

This section measures each of these four costs arising from higher fossil fuel prices. In total, an enormous burden was placed on households by higher fossil fuel prices and their macroeconomic consequences: totaling almost $200 billion from 2022 through 2024, or an average of over $12,000 per household. Worse yet, since fossil fuel prices are still elevated above pre-pandemic norms (as are interest rates and unemployment), that aggregate cost continues to grow: by $5 billion per month (or $300 per household).

I. Direct Impacts on Consumer Prices

Consumers feel the cost of higher oil prices most immediately through the fossil fuel products they directly purchase. Statistics Canada's basket of consumer goods and services includes four fossil fuel products purchased by final consumers. Statistics Canada also ascribes weights to each of these categories of purchase, which in turn determine their relative influence on the overall estimated rate of inflation; below we report those weights for 2021 (prior to the 2022 price hikes):[11]

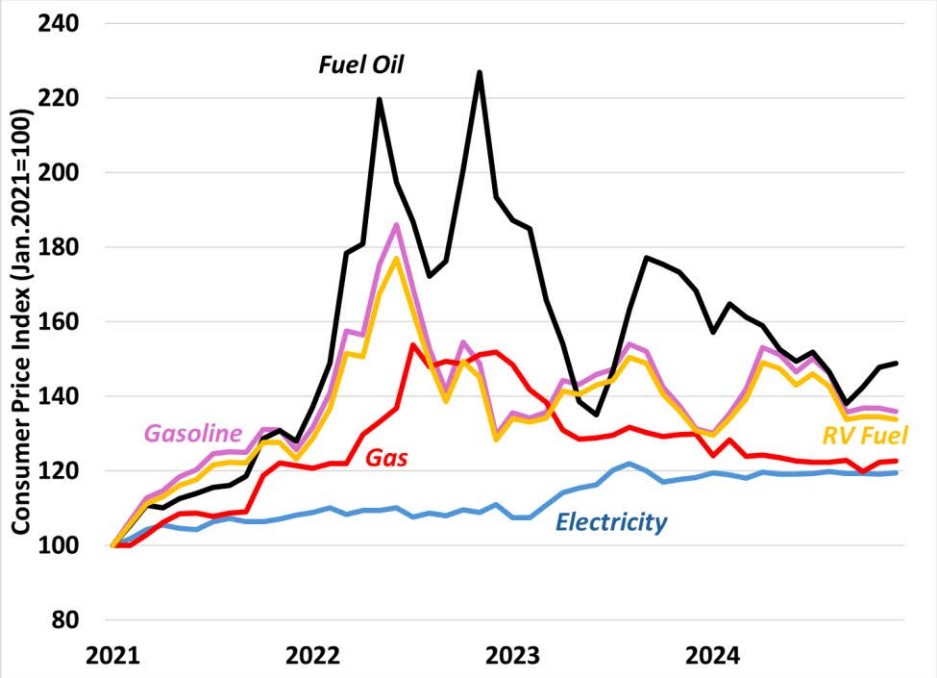
- Gasoline (4.28% of total consumer expenditure).

[11] Source: Statistics Canada Table 18-10-0007-01.

- Natural gas for home heating (0.78%).
- Fuel oil for home heating (0.32%).
- Fuel, and other supplies for recreational vehicles such as boats, campers, etc. (0.28%).
- Total fossil fuel consumer purchases (5.66%).

Each household in Canada allocates different proportions of its own spending to fossil fuels, and this results in differential effects from changes in fossil fuel prices.[12] The weights above are the average experienced by consumers across Canada.

Figure 8. Consumer Energy Price Indexes, 2018-2024



Source: Calculations from Statistics Canada Table 18-10-0004-01.

Figure 8 illustrates the dramatic changes in consumer prices for fossil fuel products after 2021 (following the post-pandemic reopening of the economy). Home fuel oil experienced the most dramatic increases in final consumer prices—more than doubling from January 2021 through mid- and late-2022. Even by late 2024 its price remained 50% higher than January 2021. The price of gasoline also rose dramatically, up over 80% between January 2021 and its peak in June 2022. Prices of recreational vehicle fuels track gasoline prices very closely. Both gasoline and RV fuel costs retreated in 2023 and 2024, but remained about 35% above opening 2021 levels at the end of 2024. Natural gas prices rose over 50% from January 2021 through mid-2022, but then retreated. Through most of 2024, consumer gas prices were only about 25% higher than their January 2021 starting point.

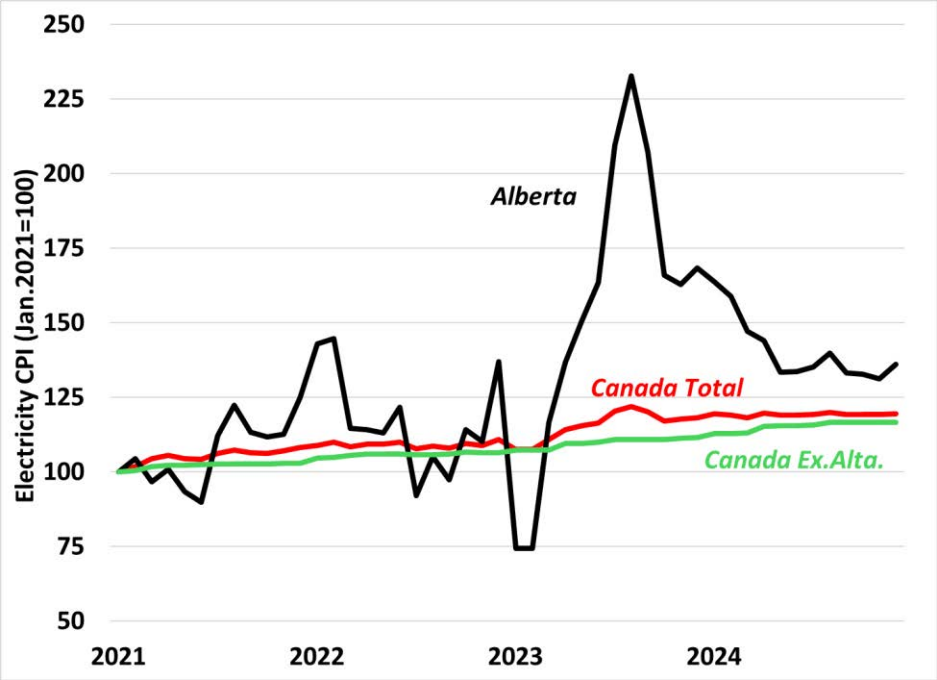
A fifth category of consumer energy spending tracked by Statistics Canada's CPI is home purchases of electricity; they made up 1.85% of total consumer spending in 2021. However, as indicated in Figure 8, electricity prices in Canada did not experience the same spikes as fossil fuel products since the COVID

[12] For example, while home fuel oil is a small proportion of total consumer spending in Canada, it is much larger in Atlantic Canada where many homes are heated this way.

pandemic. This is partly because most electricity in Canada (over 80% in 2022) is generated from non-emitting sources, including hydro, nuclear, wind, and solar. Fossil fuel prices, therefore, have relatively little impact on the electricity sector. Most provinces have publicly-owned electricity providers, which tend to be less aggressive in raising prices. Moreover, electricity prices are strictly regulated in most provinces, further insulating consumers from the effects of fossil fuel price hikes even in provinces that still use fossil fuels in power generation.

Figure 8 shows a noted upward shift in electricity prices in 2023. On closer inspection, it turns out that this acceleration was due solely to dramatic price increases in just one province: Alberta. Figure 9 breaks out the electricity consumer price index for Alberta, compared to other provinces. Alberta has a highly privatized and market-driven electricity system, which regularly produces wild swings in electricity prices.[13] Electricity prices for consumers in Alberta tripled between February and August 2023. That fully explains the upward shift in the national average electricity price—and indeed was severe enough to measurably elevate Canada's national inflation rate for some months in 2023. Excluding Alberta, however, electricity prices in the rest of Canada increased only in line with overall consumer prices: rising just 16% from January 2021 through end-2024, slightly less than the overall CPI.

Figure 9. Electricity Consumer Prices, Alberta and Other Provinces, 2018-2024.



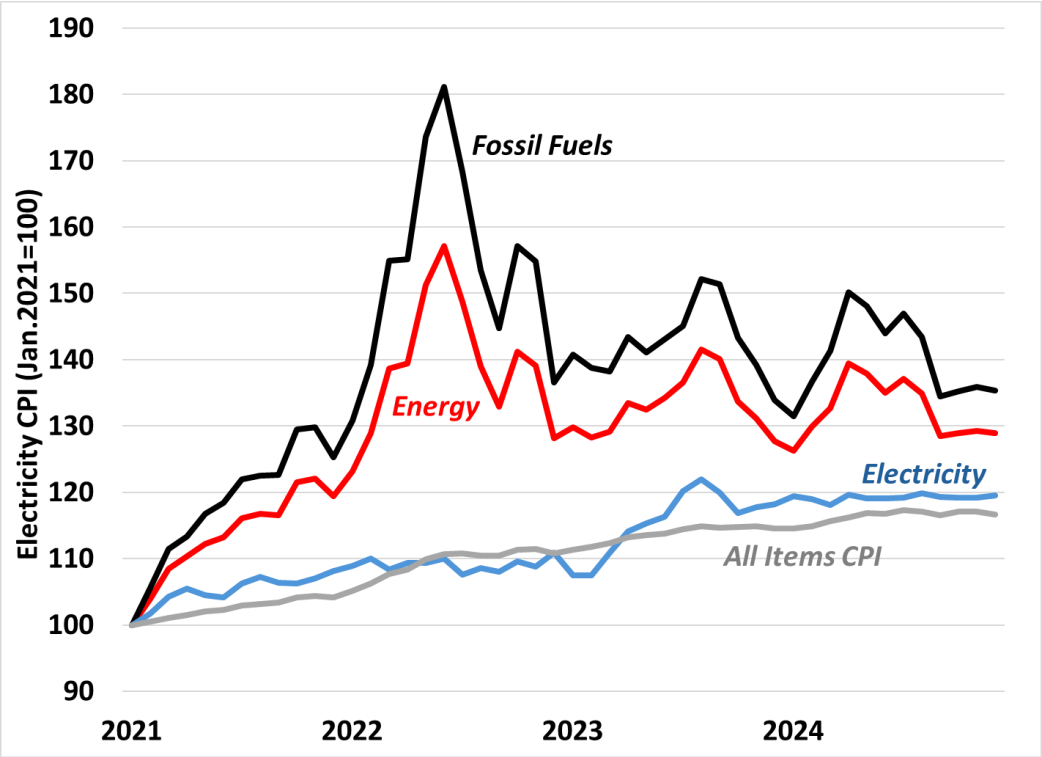
Source: Source: Calculations from Statistics Canada Table 18-10-0004-01. Canada excluding Alberta is unweighted average of 9 other provinces.

Statistics Canada reports a composite measure of consumer energy costs, including the four fossil fuel product categories plus electricity (Statistics Canada, 2019). However, given the very different

[13] The volatility of electricity prices in Alberta is especially ironic given that Alberta has the largest proportional reliance on wind generation of any provincial electric system (and the raw energy input to wind generation has not changed in price at all: it remains 'free'!).

trajectories followed by electricity and the four fossil fuel product groups, this composite measure can be misinterpreted. Electricity prices behaved similarly to overall consumer prices, whereas fossil fuel prices have been more inflation-prone and volatile. Blaming 'energy prices' for the resulting swings in overall consumer inflation (as many analysts have done) is thus a misnomer. Attention should be focused on *fossil fuel* products, not energy generally. For this reason, we calculate a composite measure of fossil fuel consumer prices, by weighting those four specific fossil fuel price indexes according to their expenditure weights in 2021. That composite measure of fossil fuel prices is illustrated in Figure 10.

Figure 10. Consumer Prices for Fossil Fuels and All Energy, 2018-2024.



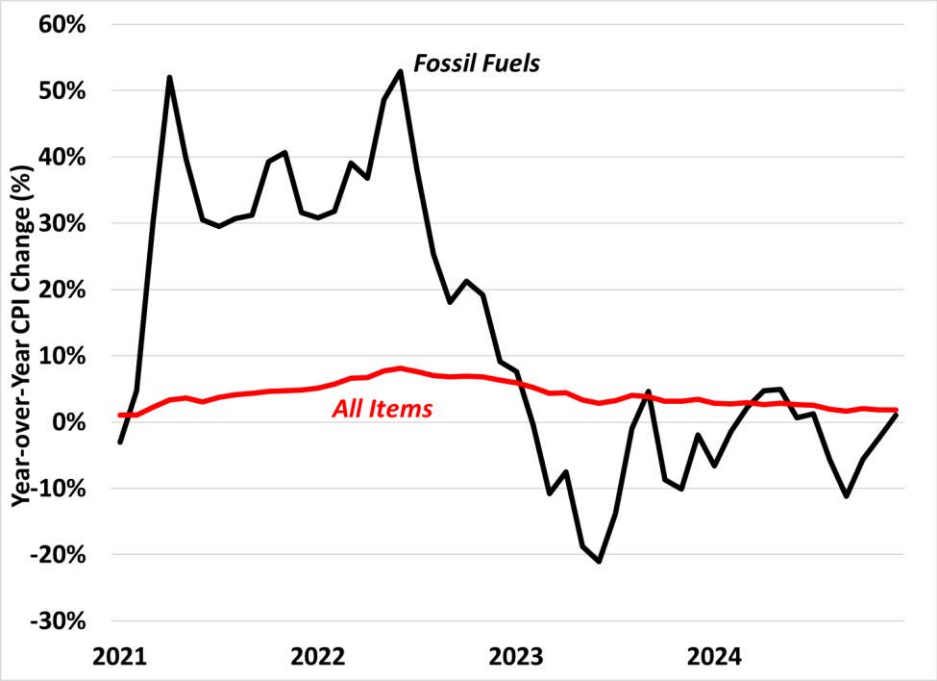
Source: Calculations from Statistics Canada Table 18-10-0004-01.

The sharp rise in Statistics Canada's 'energy price' measure in 2022 was solely due to surging fossil fuel prices. Electricity prices, in contrast, increased broadly in line with overall consumer prices (and more slowly than the overall CPI during the vital 2022 period). Moreover, as explained, excluding Alberta's unique and unstable pricing system, electricity prices increased more slowly than overall consumer prices.

Figure 11 portrays the year-over-year inflation rate for this composite fossil fuel price index, compared to the trend in overall consumer price inflation. It is clear that the rise in fossil fuel prices in the initial post-pandemic period was extreme, and clearly led the more gradual acceleration of overall consumer price inflation. In early 2021, both fossil fuel inflation and overall CPI inflation were relatively stable; the overall inflation rate was within the Bank of Canada's target band (2%, plus or minus one percentage point), and fossil fuel price inflation was even lower. Fossil fuel prices then began to rise dramatically, by as much as 50% on a year-over-year basis through 2021 and the first half of 2022. As discussed in the previous section, some of that initial inflation reflected a normalization of prices from unjustifiably low

prices during the pandemic lockdowns (when oil futures prices collapsed). However, even if those initial price hikes only represented a normalization of fossil fuel prices, they still were the major source of accelerating inflation even in 2021. This is a reminder that fossil fuel price volatility can be harmful, even when prices are falling: by artificially pulling overall consumer prices too low, the fossil fuel price crash set the stage for a needlessly extreme acceleration of inflation after the 2022 price shock.

Figure 11. Consumer Price Inflation, Fossil Fuels and All Items.



Source: Calculations from Statistics Canada Table 18-10-0004-01.

The more serious damage was done by the continued surge in fossil fuel prices later in 2021 and the first half of 2022, peaking in June 2022. By this time, fossil fuel prices were well above normal levels; these price hikes could no longer be interpreted as 'normalization' after the 2020 price crash. Pulled up by soaring fossil fuel prices, all-items consumer price inflation in Canada picked up steadily through late 2021 and the first half of 2022. Year-over-year CPI inflation peaked in Canada in June 2022, at just over 8%—the same month that weighted average fossil fuel prices peaked. The decline in fossil fuel prices through the latter half of 2022 and the first half of 2023 then exerted a powerful downward pull on overall consumer price inflation. By January 2024, all-items inflation was back within the Bank of Canada's target range (under 3%), and it continued to decelerate—helped by continued weakness on fossil fuel prices. By summer 2024, it reached and then fell below the Bank's 2% target.

This history makes it abundantly clear that the 2020 oil price collapse, then the 2021-22 oil price surge, and then the 2022-23 price decline, were the dominant drivers of the down-up-down pattern of overall consumer inflation during those years. Once again, while it may seem 'helpful' that oil (and related fossil fuel product) prices fell both in 2020 and again in late 2022 and early 2023, those price declines exaggerated the volatility in general inflation that caused so much turmoil for Canadians—including via interest rate hikes from the Bank of Canada.

We can isolate and quantify the specific role of fossil fuel prices in the acceleration of inflation in Canada after the pandemic as follows. In eighteen months, from January 2021 through June 2022, consumer price inflation in Canada rose eightfold: from 1.0% to 8.1% (measured on a year-over-year basis). The all-items CPI rose by a cumulative 10.6% in that period. Our composite index of consumer fossil fuel prices grew by 81% in that same period. Weighted for its 2021 share of total consumer expenditure, higher fossil fuel prices accounted for 4.59 points of the overall increase of 10.64 points in the all-items index.[14] Price increases for just these four categories of fossil fuel products, accounting for just 5.66% of total consumer spending in 2021, thus accounted for 43% of the total increase in consumer prices between January 2021 and peak inflation in June 2022 (see Table 3).

Table 3
Role of Fossil Fuels in Peak CPI Inflation

	Fossil Fuels	All Items
All Inflation		
Total Inflation, Jan.21-June22	81.2%	10.6%
Weighted Contribution to CPI (points)	4.59	10.64
Fossil Fuel Share	43.2%	
Over-Target Inflation		
Over-Target Inflation, Jan.21-June 22	76.1%	7.6%
Weighted Contribution to CPI (points)	4.43	7.79
Fossil Fuel Share	56.9%	

Source: Calculations from Statistics Canada Table 18-10-0004-01 as explained in text. CPI points measured relative to Jan.21=100.

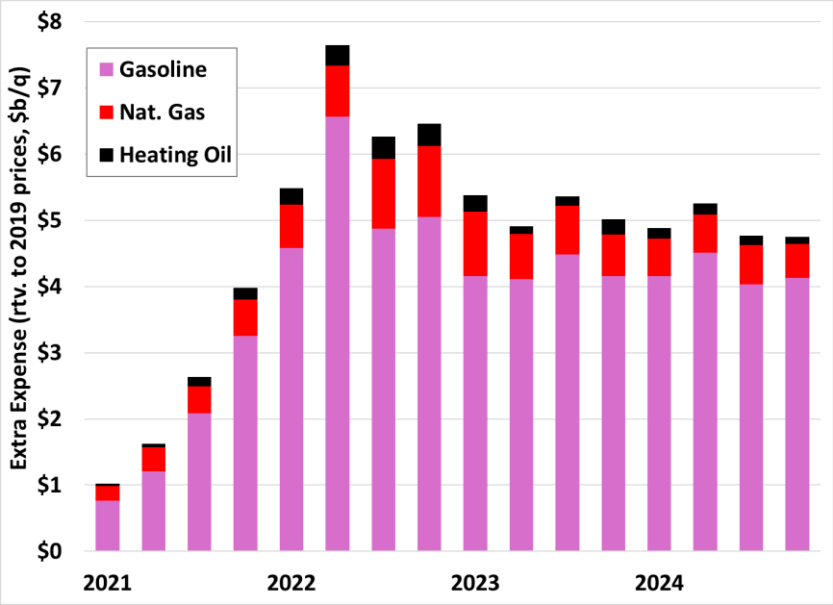
The disproportionate role of fossil fuel prices in the inflation crisis of 2022 is even worse than that. Remember, the Bank of Canada has a target for inflation of 2%, reflecting the view that a stable, slow rate of inflation is most desirable for the economy—preferable to no inflation at all. Low, stable inflation is thought to facilitate relative price adjustments and maintain stable aggregate demand conditions. So, a certain amount of inflation during this period was considered desirable. It is only when inflation accelerates above that target that is becomes a problem, motivating painful interest rate interventions by the Bank of Canada. At the 2% target rate, the all-items CPI would have increased by less than 3% between January 2021 and June 2022. In reality, it increased 7.6 percentage points beyond that. Fossil fuel prices grew much faster, rising 76.1 percentage points above what would have occurred at target inflation (2% per year). Weighted for expenditures shares, fossil fuels thus accounted for 4.43 points out of the 7.79 points of above-target inflation experienced in the all-items index (measured relative to January 2021). In other words, fossil fuel prices accounted for over half (57%) of all above-target inflation in Canada from January 2021 through inflation's peak in June 2022. No other component of

[14] We have converted all price indexes to a January 2021=100 basis to eliminate bias from the higher starting levels of fossil fuel prices on the standard 2002=100 CPI published by Statistics Canada.

consumer spending—not housing, not food, not travel—had as dramatic and painful an impact on overall inflation during the post-reopening price surge as fossil fuels.

We can generate an estimate of the aggregate expense incurred by Canadian consumers as a result of surging fossil fuel prices in the following manner. We use 2019 (the last full pre-pandemic year) as a benchmark for prices. Fossil fuel prices that year were broadly similar to the average prices that had prevailed over the previous five years. We use an annual average price benchmark so our analysis not distorted by price fluctuations in any particular month. Statistics Canada produces detailed quarterly data on consumer spending by category,[15] measured in both nominal and inflation-adjusted real values. This data source includes three categories of fossil fuel purchases described above: gasoline, natural gas, and other fuels and lubricants.[16] Because it includes both nominal and real values, this data source allows the calculation of implicit price deflators for each category of expense (which are similar to, but not as detailed as, the product-specific consumer price indexes discussed above). We then adjust those implicit price deflators to strip out the effects of increases in carbon prices;[17] we are thus measuring only the impact of higher pre-carbon-price fossil fuel prices. We contrast actual nominal spending by Canadians in each of these categories, with what Canadians would have spent if 2019 prices had prevailed (applied to the real quantities purchased each quarter). The difference between the two series—actual nominal spending, and counterfactual spending based on actual real volumes and 2019 benchmark prices—measures extra expenses paid by Canadians due to the post-pandemic price surge.

Figure 12. Excess Consumer Spending on Fossil Fuel Products, 2021-2024



Source: Calculations from Statistics Canada Table 36-10-0124-01 as described in text. Extra costs do not include effects of consumer carbon price.

[15] Published in Statistics Canada Table 36-10-0124-01.
[16] The latter category consists mostly of home heating fuels, but also includes purchases of RV fuels which are reported separately in Statistics Canada's consumer price index.
[17] As of November 2023 the federal carbon price was removed from home heating oil (Finance Canada 2023).

Figure 12 illustrates the scale of this excess spending on fossil fuel products by Canadian consumers. At peak, in the second quarter of 2022, consumers spent $7.6 billion more on fossil fuel products, than they would have paid at prevailing 2019 prices. Most of the excess spending was due to higher gasoline prices (again, measured without the impact of the federal carbon price). Those excess payments moderated through latter 2022 and 2023, as fossil fuel prices came down. But prices remain significantly higher than they were in 2019. Hence, by this method, Canadian consumers are still directly paying over $4 billion more per quarter for fossil fuels than they would be at 2019 prices.[18] Over the full 2022-2024 period, Canadian consumers directly paid an aggregate total of $61.4 billion extra because of higher fossil fuel prices.

The massive scale of this extra expense has not generated corresponding public attention or concern, in contrast to other sources of consumer hardship experienced during the post-pandemic inflation (such as widespread outrage directed at grocery stores). Moreover, public concern over fossil fuel costs has also been disproportionately focused on the federal consumer-facing carbon pricing system (now being effectively eliminated by the federal government under new Prime Minister Mark Carney). Compared to the dramatic surges in (pre-carbon-price) fossil fuel prices during this period, the effect of annual increments in the carbon price were both small and predictable. The carbon price was increased each year since 2019: starting at $20 per tonne of carbon in 2019, growing by $10 per year from 2020 through 2023, and then by $15 per tonne each year since. Inflation (especially for fossil fuel products) fluctuated wildly during this time: falling in 2020 (right after the carbon price was introduced), surging in 2021 and 2022 (when annual carbon price increases were the smallest), and then falling since then (even as the annual increment in the carbon price increased). There is no statistical or theoretical reason to believe that the enormous swings in fossil fuel prices to consumers described above were caused by the carbon price.

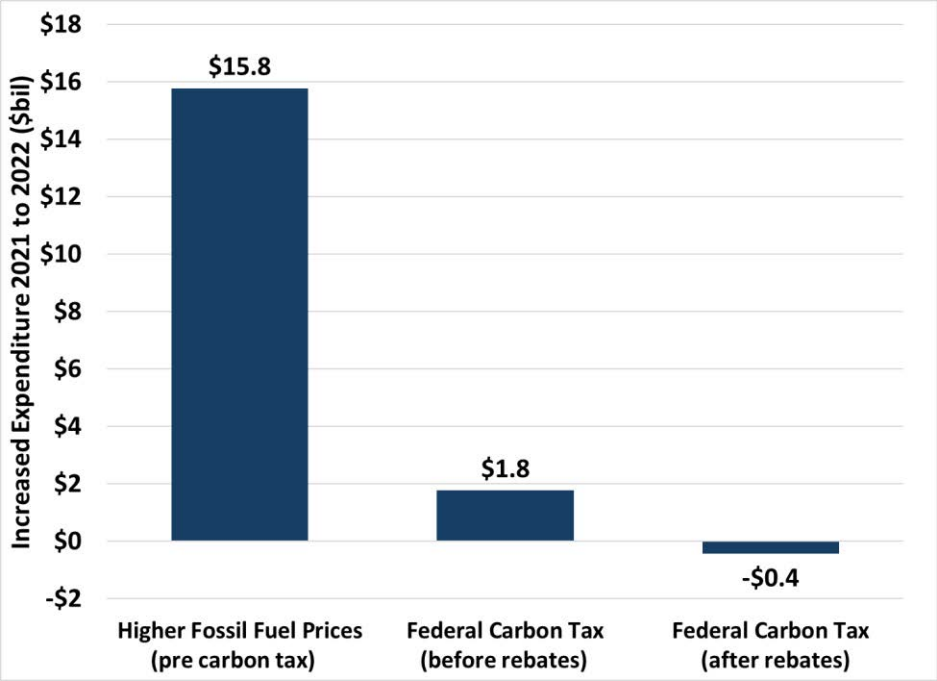
Figure 13 indicates that the scale of extra expenses arising from price hikes (excluding the carbon price) dwarfed extra expenses associated with the higher carbon price in 2022, the year of peak inflation. Gross revenues from the federal pollution pricing system grew $1.8 billion in calendar 2022, compared to the previous year (Finance Canada, 2024). Additional expenses for fossil fuel purchases grew $16.6 billion that year, nine times as much. Of course, proceeds from the carbon tax were refunded to Canadians, resulting in effectively zero net cost.[19] Proceeds from higher pre-tax fossil fuel prices, in contrast, are not reimbursed. To the contrary (as described in the last section of this report), they are captured by petroleum companies in the form of higher profits. In this context, it is clear that public anger over high fossil fuel costs has been largely misdirected. There has been little attention to the role

[18] The damage to consumers was partly offset by reductions in the quantity of fossil fuels purchased by consumers. Due to high prices, energy conservation, and the ongoing transition to alternative energy sources, the quantity of fossil fuel products purchased by consumers has declined, despite Canada's growing population: down by 11% between 2019 and 2024 for natural gas, and down 4% for gasoline (fuel oil use has been roughly stable). These reductions in demand produced savings that offset some of the impacts of higher prices. If real demand had persisted at 2019 levels, then the impact of higher prices would have been worse.

[19] Carbon price gross and net changes in Figure 13 are calculated on a calendar year basis, interpolating fiscal year totals reported in Finance Canada (2024). Because of the lag in payments of carbon price rebates, combined with effects of the pandemic on fossil fuel purchases (which rebounded strongly in calendar 2021), rebates increased slightly more in calendar 2022 than revenues, resulting in a small reduction in net cost after rebates.

of petroleum firms in raising and profiting from fossil fuel prices—in contrast both to heated debate over the carbon price, and strong public anger regarding supermarkets.[20]

Figure 13. Extra Consumer Expenses from Fossil Fuel Prices and Carbon Pricing, 2022



Source: Calculations from Statistics Canada Table 36-10-0124-01 and Finance Canada (2024), as described in text.

II. Indirect Impacts on Supply Chain Input Costs

The direct impact of surging fossil fuel prices on consumer price inflation in Canada in 2021 and 2022 was dramatic and painful. Higher prices for fossil fuel products directly purchased by consumers (including gasoline, residential natural gas, home fuel oil, and fuel and other supplies for RVs) accounted for 43% of the cumulative growth in Canada's consumer price index between January 2021 and June 2022 (when both fossil fuels, and economy-wide consumer price inflation, peaked), and over half of the *excess* inflation in that period above the Bank of Canada's 2% target.

However, those direct effects on consumer prices do not tell the full story of the impact of fossil fuel prices and profits on the cost of living. The flow-through impact of prices of fossil fuel purchases made by Canadian businesses in other industries is even larger. Final household consumption accounts for a minority of total energy demand in Canada. As shown in Table 4, end-use demand in the residential sector accounts for only 13% of total energy demand in Canada. The broader transportation sector (including both personal use and transportation activities undertaken by businesses) accounts for 20%. Together, direct final consumption by Canadian consumers therefore accounts for only around one-quarter of total energy demand. The majority of energy use arises from business uses of various kinds—including industrial use (over half of total end-use energy demand), commercial energy demand (13% of

[20] As shown in Table 15 below, net income in the upstream and downstream petroleum sectors grew by over 20 times as much between 2019 and 2022, as net income in the food and beverage retail sector.

end use, about the same as residential use), and transportation activities for the business sector. Table 4 does not distinguish sector demand by type of energy (broken out between fossil and non-fossil forms of energy), but it is safe to conclude that most fossil fuels used in Canada are purchased by businesses, not by consumers.

Table 4
End-Use Energy Demand by Sector, 2021

Sector	End-Use (PJ)	Share Total (%)
Industrial	6,082	53.7%
Transportation	2,350	20.7%
Residential	1,468	13.0%
Commercial	1,436	12.7%
Total	11,336	100.0%

Source: Calculations from Canadian Energy Regulator, Canada's Energy Future 2023, Data Appendix.

Businesses in all sectors need energy for industrial and chemical processes, heating, transportation, and power. The costs of that energy are inevitably reflected in the final prices they charge for the goods and services they sell, experienced through the web of overlapping supply chain relationships that constitute Canada's economy. Businesses consume more energy than households do, and hence a bigger impact on total costs from the surge in fossil fuel prices in 2022 was experienced by businesses. However, consumers eventually bear the burden of those costs through the higher prices they pay for all the goods and services they purchase (not just their direct purchases of fossil fuels).

Table 5
Industry Purchases of Fossil Fuel Products, 2021

Input	Amount ($b)
Oil and Gas Extraction[1]	$15.8
Refined Products	$55.2
Coal	$1.8
Natural Gas Distribution	$3.2
Pipeline Services	$2.9
Gasoline Stations	$1.9
Total	**$80.8**
As Share Total Input Costs	1.98%

Source: Calculations from Statistics Canada Table 36-10-0001-01. Excludes fossil fuel purchases by fossil fuel industries to avoid double counting.
1. Includes services to the petroleum sector.

A broad indication of the consequences of higher fossil fuel prices for Canadian businesses can be derived through data reported by Statistics Canada in its detailed input-output tables. These tables describe the input purchases of various detailed industry categories across an equally broad array of supply chain providers. Supply sectors tracked by these tables also include business purchases from original factors of production—including the costs of labour, capital, and indirect (value-added) taxes. Table 5 reports the demand by Canadian businesses, public service sectors, and non-profit organizations for fossil fuels in 2021 (the year prior to the invasion of Ukraine and resulting fossil fuel price increases). These purchases are broken down across specific fossil fuels and directly related services (including oil and gas field services, natural gas distribution, and gasoline stations). To avoid double-counting, Table 5 excludes purchases of fossil fuels by fossil fuel-producing sectors of the economy.[21]

Across the six fossil fuel and related service sectors categorized in Table 5, Canadian businesses (excluding fossil fuel sectors themselves) purchased $80 billion in fossil fuel inputs in 2021. That is 60% more than the combined direct expenditure on fossil fuels by final consumers (excluding the carbon price) in the same year. As a share of total production costs to those businesses (again excluding fossil fuel sectors), fossil fuel purchases represent just under 2% of total input costs (including firms' expenses for labour and capital). Refined petroleum products are the largest single form of fossil fuel purchased by Canadian businesses, totalling $55 billion in 2021 (almost 70% of the total). However, business purchase smaller amounts of other forms of fossil fuel and related inputs.

Table 6
Industries Exposed to Fossil Fuel Cost Increases

Sector	Fossil Fuel Input Purchases ($bil), 2021	As Share all Input Costs (%)
Transportation[1]	$15.6	13.4%
Forestry	$2.0	12.1%
Chemical Manufacturing	$6.9	9.8%
Electrical Power	$4.4	8.2%
Primary Metal Manufacturing	$2.4	5.7%
Building Services	$1.2	4.6%
Agriculture	$3.9	4.4%
Construction	$7.7	2.1%
All Industries	**$80.8**	**1.98%**

Source: Calculations from Statistics Canada Table 36-10-0001-01. Excludes fossil fuel industries.
1. Excluding pipelines.

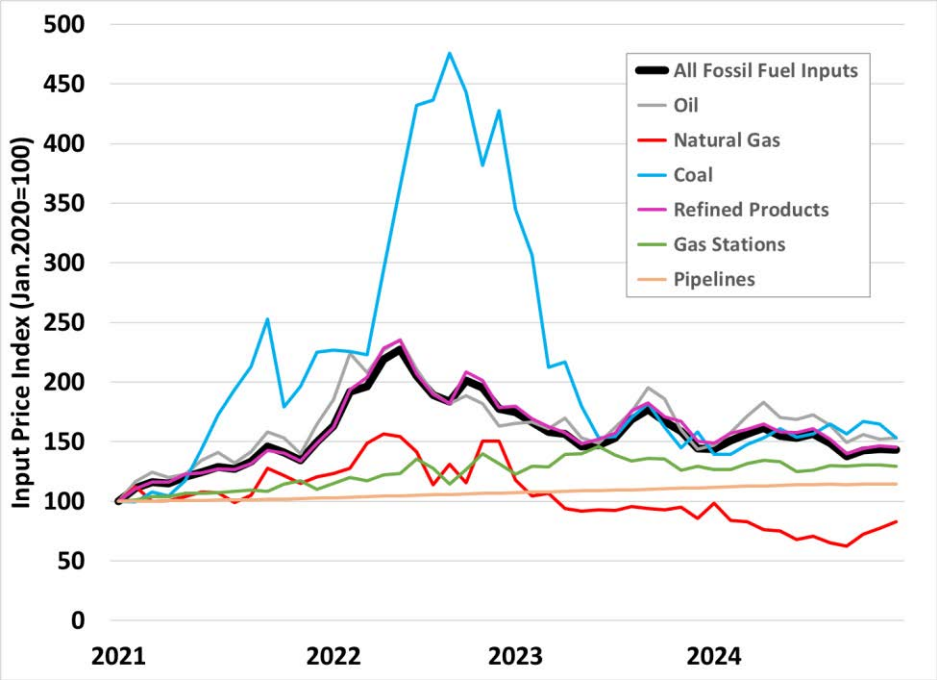
Some industries are particularly exposed to fossil fuel prices—either because the amount of fossil fuels purchased is large, or because they account for a large proportion of total production costs. Table 6 identifies eight specific sectors which purchase large amounts of fossil fuels, and/or for which fossil fuels

[21] For example, the petroleum refining sector purchases large quantities of crude oil; these purchases are excluded from Table 5, to avoid duplicating values of refined petroleum products then sold by that sector to other industries.

account for an especially large share of total production costs. Not surprisingly, the transportation industry is the biggest single user: $15 billion in total fossil fuel purchases in 2021, accounting for over 13% of the industry's total costs. Chemical manufacturing, construction, and electricity generation are also major fossil fuel buyers. The electricity sector has been reducing fossil fuel use considerably (with the phase-out of coal-fired generation, and the expansion of renewable power), but still purchased over $4 billion in fossil fuels (mostly gas and coal) in 2021, accounting for over 8% of the sector's total costs. Forestry, metal manufacturing, building services, and agriculture are other sectors for which fossil fuel inputs account for significant shares of total production costs.

The eight sectors listed in Table 6 together accounted for over one-half of total fossil fuel purchases by non-fossil-fuel businesses in Canada in 2021. However, every other industrial sector (including public services and non-profit organizations) depends on fossil fuels to some degree. Hence the sharp rise in fossil fuel prices in 2021 and 2022 constituted a cost shock experienced across the whole economy.

Figure 14. Fossil Fuel Input Price Indexes



Source: Calculations from Statistics Canada Tables 18-10-0268-01, 36-10-0106-01, and 36-10-0001-01.1.

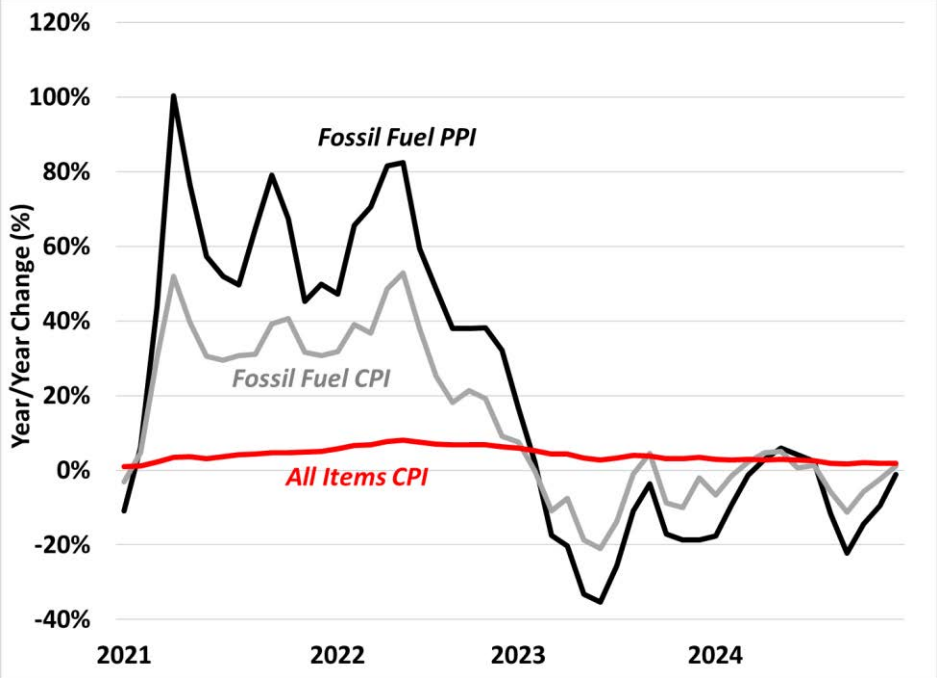
For industrial and business purchasers, the increase in fossil fuel costs was even more dramatic than experienced directly by consumers. Figure 14 illustrates prices indexes for the six forms of fossil fuels and related services categorized in Table 6,[22] based on a January 2021 benchmark (equal to 100). Figure 14 also includes a composite fossil fuel input cost index (the thick black line), calculated as a weighted

[22] Industrial and producer price indexes are available for five of the six fossil fuel sectors listed in Table 5. No price index is available for the cost of pipeline services; as a proxy Figure 14 utilizes the GDP deflator for services, interpolated to a monthly frequency. This likely underestimates the true cost of pipeline services, hence making our subsequent aggregate fossil fuel input price index somewhat conservative—although since pipeline costs are regulated by federal and provincial energy authorities, they were not subject to the same upward price pressures as other fossil fuel-related services.

average of the six individual series (with weightings corresponding to the share of each fuel or service in total business fossil fuel purchases in 2021). This composite index closely follows the industrial input price index for refined petroleum products—for the obvious reason that refined petroleum products made up the large majority of total business fossil fuel purchases in 2021.

This composite fossil fuel input cost index more than doubled between January 2021 and June 2022, rising 127%. Most of that increase occurred after October 2021. Business input fossil fuel prices peaked in June 2022—coincident with peaks in fossil fuel prices paid by consumers (discussed above), and overall consumer price inflation in Canada. Some fossil fuel costs rose even more dramatically. Coal prices more than tripled in this period, peaking in September 2022.[23] Coal prices are also set on futures markets, which were also shocked by geopolitical fears and speculation following the invasion of Ukraine. Industrial natural gas prices, in contrast, grew much less dramatically than other fossil fuel input costs. They rose by just over 50%, peaking in May 2022. By early 2023, industrial gas prices had fallen below their January 2021 starting point.

Figure 15. Fossil Fuel Consumer and Producer Price Indexes, 2021-2024



Source: Calculations from Statistics Canada Tables 18-10-0004-01, 18-10-0268-01, 36-10-0106-01, and 36-10-0001-01.

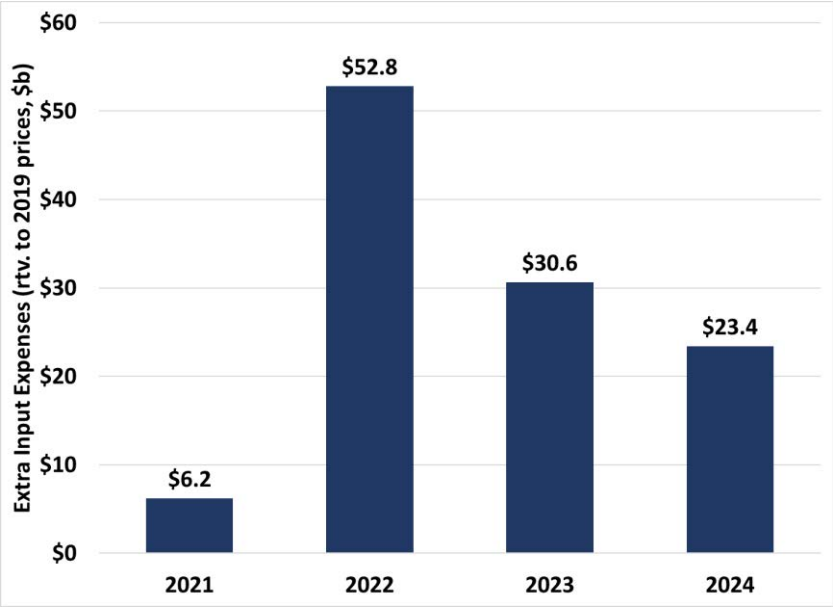
It is notable that the surge in fossil fuel prices paid by industrial and business customers was even more severe than the price hikes experienced by consumers. As indicated in Figure 15, year-over-year inflation in the composite business fossil fuel price index ranged between 60 and 100% through much of 2021

[23] Since very little coal is purchased directly by consumers, coal prices are not included in Statistics Canada's consumer price index. But higher coal prices can nevertheless affect consumer prices via prices for final products and services which use coal as an input in production. See Natural Resources Canada (2024b) for more detail on the surge coal prices.

and 2022—whereas year-over-year inflation in the consumer-facing fossil fuel price index (described in Figure 11) ranged between 30-50% during the same period. The contribution of both consumer and business fossil fuel prices to the rise and fall of overall economy-wide inflation is also clear in Figure 15. Fossil fuel purchases account for a small share of total spending by consumers (5.7% of total consumer spending) and businesses (around 2% of total input costs, including labour and capital charges). But the run-up in fossil fuel prices was so large, that they caused a noted acceleration of economy-wide inflation in the 18 months to June 2022—and also were the most important single factor in the subsequent deceleration in overall inflation after that.

We utilize a similar methodology[24] as above to estimate the extra expenditure incurred by Canadian businesses (excluding fossil fuel sectors, and including public services and non-profit organizations) as a result of the fossil fuel price shock. Statistics Canada's input-output tables describe the value of fossil fuel purchases in 2021. As a benchmark for fossil fuel input prices, we use average prices in 2019 (the last year prior to the pandemic). Based on subsequent changes in fossil fuel input prices, this implies increases in annual fossil fuel expenses of $53 billion in 2022 (the year of peak fossil fuel inflation), $30 billion in 2023, and $23 billion in 2024 (Figure 16), all measured relative to what businesses would have paid at 2019 fossil fuel input prices. At time of writing, fossil fuel costs for businesses remain elevated compared to 2019 levels, so the cumulative cost of the price shock continues to grow.

Figure 16. Extra Fossil Fuel Input Costs, Canadian Industries, 2022-2024

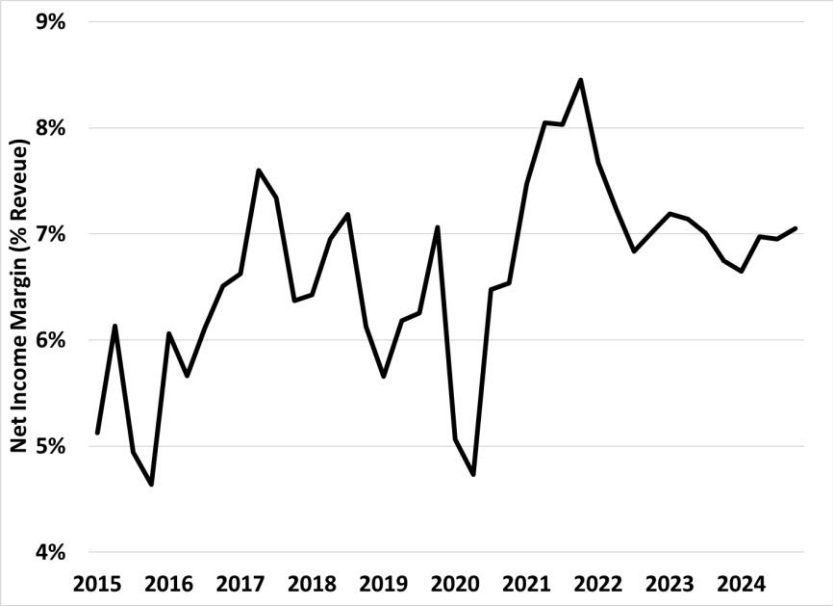


Source: Calculations from Statistics Canada Tables 18-10-0268-01, 36-10-0106-01, and 36-10-0001-01.1.

[24] Treatment of carbon pricing differs between our estimates of extra fossil fuel expenses for businesses versus consumers. Major industrial and some business use of fossil fuels is governed under Canada's Output Based Pricing System, consisting mostly of province-specific revenue, regulatory, and cap-and-trade arrangements which vary across provinces and sectors. Most of those measures impact industrial and business demand for fossil fuels, rather than input costs directly. At any rate, it is not possible to identify the partial impact of those measures on the input price indexes portrayed in Figure 14 (whereas the consumer price indexes in the previous section were reported net of the more transparent impact of the consumer-facing carbon price).

The extra costs paid by Canadian businesses (outside of the fossil fuel sector itself) for their own fossil fuel input purchases were transmitted to consumers in the form of higher prices for all the other goods and services Canadians purchase. It is conceivable that higher input costs could be absorbed by businesses themselves through reduced profit margins. However, in general this did not occur during the acceleration of inflation that accompanied that surge in fossil fuel prices. In fact, the reverse occurred: non-fossil fuel industries were able to *expand* their profit margins during this period. Figure 17 illustrates net income as a share of total revenue for non-financial businesses excluding fossil fuel producers.[25] Profit margins averaged 6.2% of revenue during the five years before the COVID pandemic (2015 through 2019). Margins fell during the initial COVID lockdowns and recession, but then soared as the economy re-opened. Average margins in non-fossil-fuel, non-financial sectors reached 8.0% in 2021, and 7.2% during 2022—well above pre-pandemic norms. Margins have since hovered around 7%, still higher than was typical before the pandemic. There is thus no question that increases in fossil fuel input costs (and other higher cost faced by non-fossil-fuel businesses) were ultimately paid by consumers.[26]

Figure 17. Profit Margins for Non-Fossil Non-Financial Industries, 2015-2024



Source: Calculations from Statistics Canada Table 33-10-0225-01.

[25] Excluding three fossil fuel sectors broken out in Statistics Canada's quarterly data on business financial performance: oil and gas extraction, petroleum and coal product manufacturing, and pipelines. Figure 17 also excludes profit margins for financial industries, which are much higher as a share of revenue than non-financial industries, and which also grew during the post-pandemic acceleration of inflation; at any rate, financial businesses are not major consumers of fossil fuels, and hence we would not expect much impact on their costs, prices, or profit margins from higher fossil fuel prices.

[26] Some of those higher fossil fuel input costs would have been passed on to foreign customers via exports of non-fossil-fuel products and services. However, by the same token, Canadian consumers would also pay extra for embodied fossil fuel input costs in imported goods and services they purchase (which are not considered here). Non-fossil-fuel industries in Canada experienced a small net trade deficit in the base year for our input-output analysis (2021), and hence the impact of two-way foreign trade on the extra fossil fuel costs paid indirectly by Canadian consumers would add slightly to the cost estimates described above.

Not surprisingly, profit margins in fossil fuel industries themselves surged much more dramatically during the fossil fuel price spike. Fossil fuel profit margins[27] averaged 5% of total revenue in the pre-pandemic period (2015-19), and turned negative during 2020 following the oil price crash. Margins then quadrupled during the price hikes: reaching 18% in 2021, and 22% in 2022. Fossil fuel profit margins have remained elevated, fluctuating between 15% and 20% of revenue since 2023, as a result of continued high fossil fuel prices.[28] However, while it was fossil fuel companies that profited most from those price spikes, most non-fossil-fuel businesses were able to pass on higher input costs (including for fossil fuels) to consumers during the inflationary episode, and then some. In some non-fossil fuel sectors, firms exercised pricing power to widen profit margins despite the macroeconomic pressures arising from post-pandemic inflation. It is clear that consumers have ultimately borne the burden of higher fossil fuel prices: both directly through fossil fuel products they purchase, and indirectly through higher prices for other goods and services which used fossil fuels as inputs in their own production.

III. Higher Interest Costs for Canadian Households

The acceleration of inflation in Canada sparked a dramatic and painful monetary policy response. The Bank of Canada is charged with maintaining inflation around 2% per year (plus or minus 1 percentage point). By late 2021, inflation accelerated above the Bank's target range. Some of that acceleration reflected a correction to the short-lived deflation experienced during the initial COVID lockdowns in 2020 (including the collapse of oil prices). Some reflected temporary effects of pandemic-induced supply chain disruptions (for products like semiconductors, automobiles, and building materials), and shifts in the composition of consumer spending (away from pandemic-constrained services like retail, hospitality, and travel, and towards goods purchases).

Initially the Bank was prepared to tolerate some above-target inflation in recognition of those transitory factors. However, after the global oil price shock in early 2022, which the Bank rightly feared would further accelerate inflation, it embarked on a historic campaign to lift interest rates, to curtail spending and reduce inflationary pressures. The Bank raised its policy rate ten times in the next 16 months, by a total of 4.75 percentage points. That was one of the steepest tightening cycles in Canadian history, and it dramatically curtailed spending, economic growth, and job-creation. Household incomes were diverted from consumer spending to debt service charges. Major purchases (like homes, cars, and higher education) became more expensive to finance. Business investment (including both residential construction projects and non-residential capital spending) was discouraged by high borrowing costs.

Rates reached their highest level in July 2023, and stayed there for another year. By mid-2024, inflation had slowed: partly because of lower fossil fuel prices, and partly because of weaker macroeconomic conditions. The Bank of Canada then began cutting rates. At time of writing, it had reduced its policy rate seven times, by a total of 2.25 percentage points. Further monetary policy actions will depend on economic developments, including the unpredictable impacts of U.S. President Donald Trump's aggressive trade actions. But continued moderation in inflation, and the expected negative impact of Trump's actions on Canadian investment and consumer spending, likely portend further rate cuts in the future.

[27] Consisting of the three fossil fuel sectors excluded above.

[28] The final section of this paper describes petroleum industry profit trends during and after the price spike in more detail.

Since surging fossil fuel prices were the largest single contributor to the acceleration in Canadian inflation (which peaked in June 2022), it is reasonable to ascribe a significant share of the painful rise in interest rates in 2022 and 2023 to that fossil fuel price shock. In general, the Bank of Canada does not respond immediately to fluctuations in volatile prices like energy or food. Rather, it monitors a range of adjusted inflation measures that it believes best depict the overall state of inflation (without being unduly influenced by a few highly volatile prices). The Bank will adjust interest rates on the basis of sustained evidence of inflation rising above or below its target band. However, while the Bank acknowledges that changes in volatile prices (like energy) may not persist (and hence should not on their own motivate rapid shifts in interest rates), it closely monitors how those changes feed through into the broader array of prices. It is willing to 'see through' the temporary impact of specific price changes for volatile items, but will respond firmly when those changes come to be reflected in broader inflation. As described above, most of the impact of higher fossil fuel prices is felt through indirect supply chain linkages, and the Bank will respond forcefully to such a broadening of inflationary pressure.

As discussed above, higher prices for fossil fuel products purchased directly by consumers explained almost half of the increase in the overall all-items CPI from January 2021 through June 2022 (when inflation peaked), and over half of above-target inflation. Meanwhile, our analysis of the impact of fossil fuel prices on industrial input costs, above, confirms that the surge in fossil fuel prices (especially in 2022) led to widespread cost pressures throughout the economy. This added to broader inflationary pressures, hence further motivating the rapid increases in interest rates that began coincidentally with the surge in world oil prices in early 2022.

Even from a longer-term perspective, it is clear that rising fossil fuel prices played a pivotal role in the Bank of Canada's decision to raise interest rates starting in March 2022. We evaluate the relative importance of fossil fuel prices in the overall increase in the consumer price index between 2019 (before the pandemic) and 2022 (the year of peak inflation). We use annual average levels of the index to discount monthly fluctuations—since the Bank of Canada prefers to focus on longer-term trends in inflation rather than month-to-month movement.

Table 7
Combined Fossil Fuel Cost Impacts on CPI Inflation, 2019-22

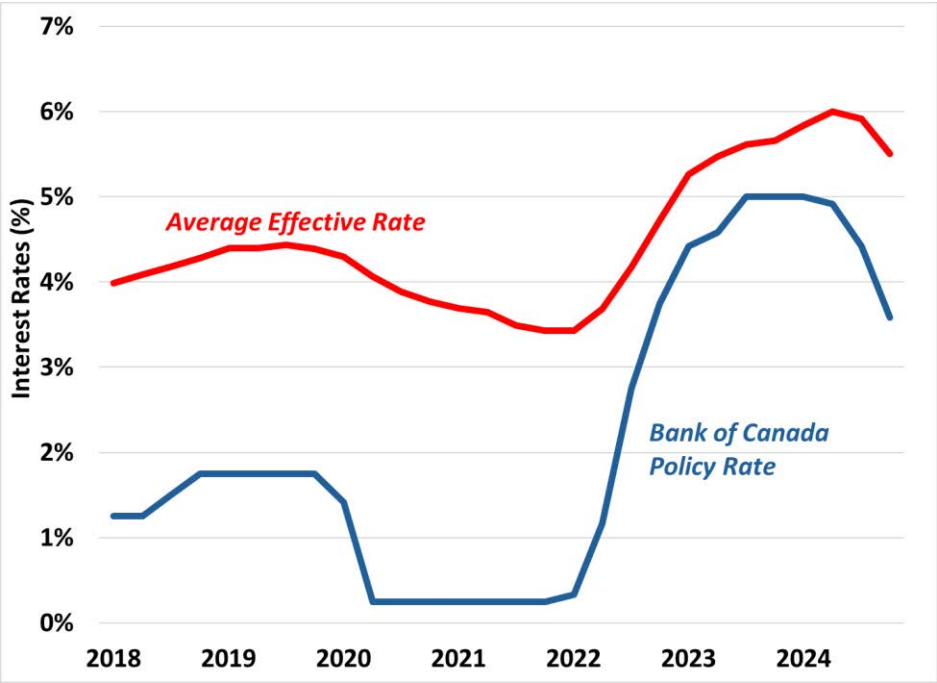
Direct Impact on CPI	2.66%
Indirect Impact on Industry Input Costs	1.30%
Total Impact	3.96%
Total Change in All-Items CPI	11.22%
Share From Fossil Fuels	35.27%

Source: Calculations from Statistics Canada Tables 18-10-0004-01, 18-10-0268-01, and 36-10-0001-01, as described in text.

As summarized in Table 7, from 2019 through 2022 the overall consumer price index grew by 11.22% (comparing annual averages for both years). Increases in fossil fuel prices (including gasoline, natural gas, home heating oil, and RV fuels) directly accounted for 2.66 percentage points of that increase

(based on 2021 weightings in the CPI basket). Meanwhile, higher producer prices for fossil fuels and directly related services, for non-fossil-fuel business purchasers, added 1.30% to the total supply costs of those sectors (again based on 2021 weightings of fossil fuel purchases).[29] Assuming those higher costs were fully passed on to consumers,[30] the direct and indirect impact of fossil fuels on consumer prices account for just under 4 percentage points of the total rise in the CPI between 2019 and 2022. That represents 35% of the increase in the CPI in that time. By using this annual-average approach, we mute the impact of the more extreme, but not sustained, spikes in fossil fuel prices experienced during the most rapid acceleration of inflation. Even by this cautious approach, fossil fuel prices constituted the largest single source of initial post-pandemic inflation. We conclude that 35% of the subsequent rise in interest rates can reasonably be attributed to the impact of higher fossil fuel prices through this period. We think this estimate is conservative.

Figure 18. Interest Rates, Canada, 2018-2024



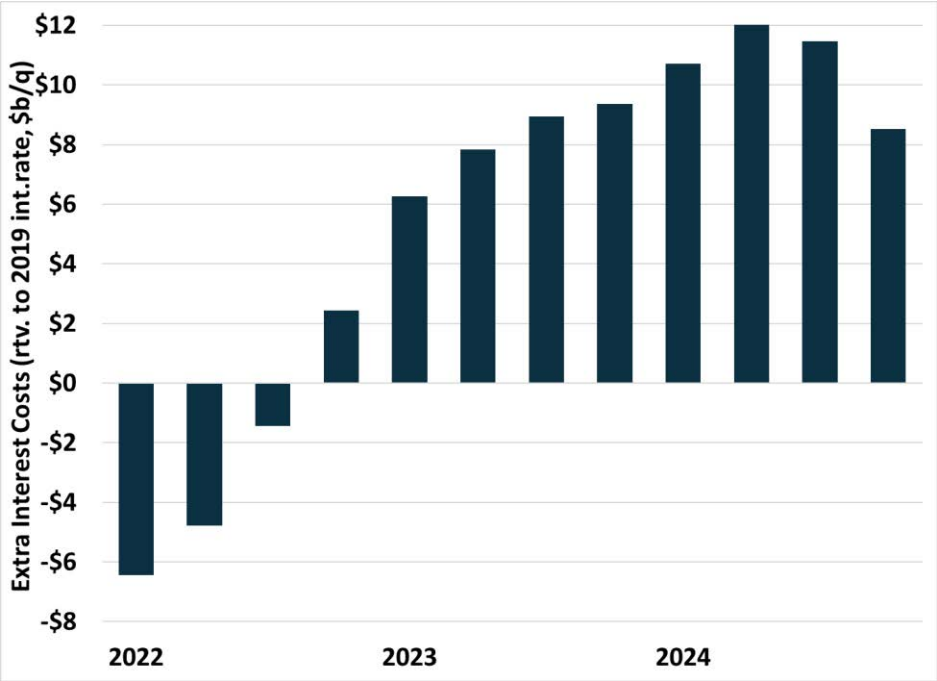
Source: Calculations from Statistics Canada Tables 11-10-0065-01 and 38-10-0238-01, Bank of Canada.

We can then estimate the additional interest costs paid by Canadian consumers as a result of the Bank of Canada's rate hikes in the following manner. We estimate the interest payments that would have been made at the 2019 average effective interest rate (4.38%) applied to the actual outstanding credit market debt of households. By using the 2019 average effective interest rate, rather than the lower rate which prevailed when the fossil fuel price surge initially occurred,[31] we are measuring interest costs

[29] Fossil fuel purchases by non-fossil-fuel industries amounted to just under 2% of total input costs (including labour and capital charges). Weighted average fossil fuel producer prices rose 65% between 2019 and 2022. Those price increases thus represent a 1.3% increase in total input costs for those sectors.
[30] As discussed above, the increase in profit margins in 2021 and 2022 suggest that that business selling prices increased by even more than the increase in input costs, so this assumption is conservative.
[31] The average effective rate was 3.69% in the second quarter of 2022.

against a pre-pandemic benchmark unaffected by the lower rates in place during the pandemic (which, in turn, partly reflected unusually low fossil fuel prices in 2020). Again, this is a conservative approach. On this basis, we estimate extra interest costs paid by Canadians due to rising Bank of Canada rates, illustrated in Figure 19. Initially, interest payments were lower than would have occurred at the 2019 average effective interest rate—because rates were still below-normal in response to the initial crisis of the pandemic. By late 2022, however, the average effective rate had risen above its 2019 level, and Canadian households began paying unusually high interest expenses. In the second quarter of 2024 (as the Bank prepared to begin cutting rates), those excess interest payments peaked at $12 billion in the quarter.

Figure 19. Excess Interest Expenses by Canadian Households, 2022-2024



Source: Calculations from Statistics Canada Tables 11-10-0065-01 and 38-10-0238-01, Bank of Canada.

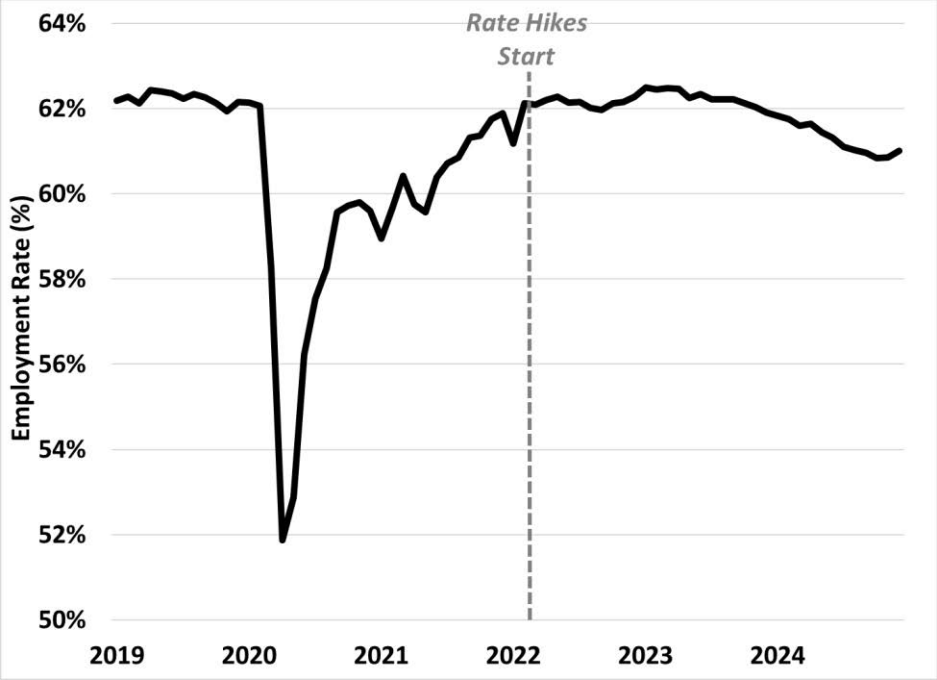
Over the full 2022-2024 period, those incremental interest costs by Canadian consumers totaled a cumulative $65 billion (even taking into account the below-normal interest payments consumers still enjoyed during the first part of 2022). On the basis of our estimate that surging fossil fuel prices accounted for at least 35% of the Bank of Canada's interest rate actions, we apportion these extra interest costs accordingly. We conclude that Canadian consumers paid a net $22.9 billion (35% of the total extra expense) in above-normal interest payments as a result of the surge in fossil fuel prices during the initial post-pandemic period.

IV. Foregone Employment Income for Canadian Workers

The Bank of Canada's rationale for lifting interest rates was to reduce the level of purchasing power in the economy, and thus defuse inflationary pressures. The Bank committed firmly to that strategy, even though much of that inflation clearly arose from external supply-side factors (rather than genuine excess

demand within Canada's economy).[32] Higher interest rates reduce spending power through multiple potential channels. One is the direct impact on household cash flow: with tens of billions of dollars redirected from consumption spending to debt-service charges (now received by lending institutions), consumption expenditure is curtailed. Another channel is through the labour market. By constraining aggregate demand, economic growth, and job-creation, higher interest rates produce lower employment (and higher unemployment) than would otherwise have prevailed. That in turn leads to reduced labour incomes: both from lower employment, and from slower wage growth under weaker labour market conditions. As explained by Bank of Canada Governor Tiff Macklem (2022), it was an explicit goal of the Bank's tightening strategy to increase unemployment in Canada—and that policy 'worked'. This one-sided focus on reducing inflation without equal consideration for sustaining employment seems to violate new wording in the Bank's most recent monetary policy framework, agreed with the federal government in 2021 (Weir, 2023). Nevertheless, it is clear that an underlying goal of the Bank's actions was to suppress employment below what otherwise would have prevailed, in order to restrain the growth of employment income[33] and hence purchasing power.

Figure 20. Employment Rate, Canada, 2019 to 2024



Source: Calculations from Statistics Canada Table 14-10-0287-01.

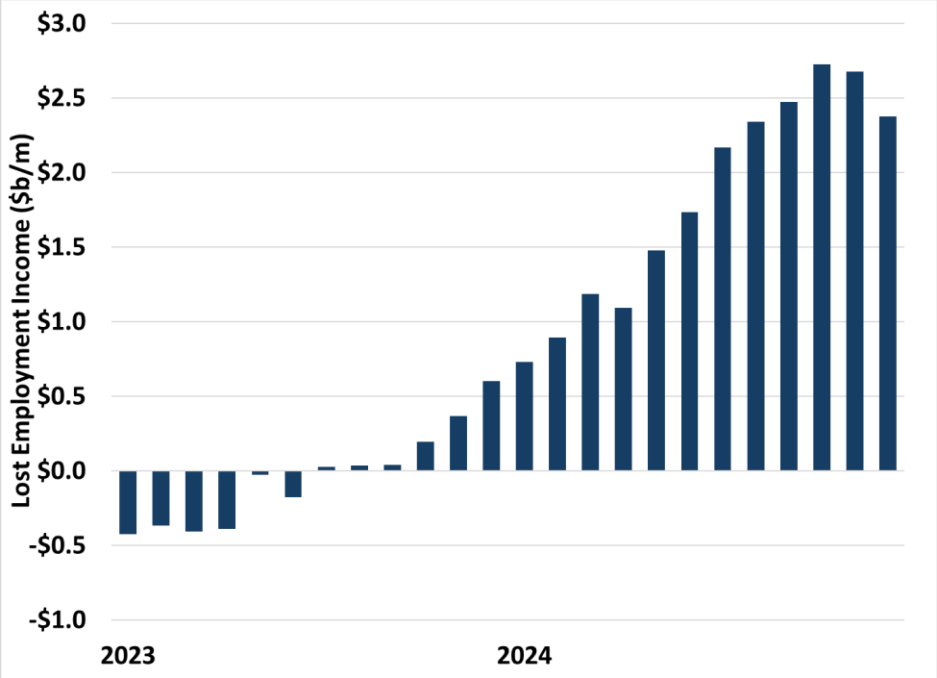
The impact of interest rates on labour markets is typically felt with a lag of several months, since it takes time for consumers and businesses to adjust their spending decisions, and for employers to then alter their employment decisions, in response to higher rates. When the Bank of Canada began hiking rates in

[32] See Stanford (2022) for critical discussion of the nature of post-pandemic inflation and alternative strategies for reducing price pressures.

[33] Note that monetary tightening will reduce employment impact through two related channels: lower employment, and slower nominal wage growth. The analysis below considers only the former, and does not integrate the impact of higher interest rates on the growth of nominal wages.

March 2022, the employment rate (which measures the proportion of working-age Canadians in employment[34]) had not quite regained its pre-pandemic 2019 level, at about 62% (see Figure 20). In the first months of the Bank's rate hike campaign, the employment rate held steady, even increasing slightly later in 2022. However, by early 2023 the employment rate began to gradually decline. It fell to a cyclical low of 60.8% by October 2024. Then, helped by falling interest rates, the employment rate began to rebound. By the end of 2024 it had increased to 61.1%. The unemployment rate behaved in a comparable, mirror-image manner through this tightening cycle: from 5.0% in March 2023, it rose steadily to a peak of 6.9% by November 2024. Then, spurred by rate cuts, it began to ease, falling to 6.6% at time of writing. Hopefully, as interest rates continue to fall, employment conditions will strengthen further—although President Donald Trump's aggressive and erratic tariff threats have obviously caused enormous uncertainty for Canada's economic trajectory.

Figure 21. Lost Employment Income, 2023-2024



Source: Calculations from Statistics Canada Tables 14-10-0287-01 and 14-10-0063-01.

The decline in the employment rate through 2023 and most of 2024 was a clear and intended result of the Bank of Canada's monetary tightening. On top of the human and social consequences of reduced employment opportunities, it reduced the incomes of Canadian households through foregone wages and salaries. We estimate the value of that foregone income by comparing actual to pre-pandemic employment rates, and then multiplying that differential by both the size of Canada's working age population and average employment earnings.[35] Once again we use the last pre-pandemic year (2019)

[34] Particularly during times of economic weakness (when labour force participation rates may be suppressed by a perceived lack of job opportunities), the employment rate provides a more accurate depiction of labour market slackness than the traditional unemployment rate (which can be distorted by changes in participation).
[35] Statistics Canada reports average employment earnings on a weekly basis; we convert that to a monthly flow by multiplying by 4.33=52/12. We have taken the level of nominal weekly earnings as given; in reality, the growth of

as the benchmark for 'normal' labour market conditions.[36] Figure 21 illustrates the lost employment earnings resulting from the Bank of Canada's interest rate hikes, through 2023 and 2024.[37] Initially in early 2023 employment incomes were still higher than their benchmark 2019 level, until the employment rate fell below its 2019 average. Monthly employment income losses then grew, as the employment rate fell. At peak, in late 2024, Canadian workers were losing over $2.5 billion per month in foregone employment income, as a result of the decline in the employment rate resulting from higher interest rates. By end-2024 that foregone income began to moderate, as the employment rate started responding to Bank of Canada rate cuts. Over the full 2023-2024 period (taking into account higher-than-benchmark employment income in the first months of 2023), workers lost a cumulative total of $21.3 billion in foregone employment income. Ascribing 35% of the damage to the role of higher fossil fuel prices in motivating the Bank of Canada's tightening, this implies a cost to Canadian workers of $7.5 billion in lost income.

V. Combined Costs for Canadians

We have identified four distinct components of the dollars-and-cents costs incurred by Canadian consumers and workers because of the surge in fossil fuel prices following the post-pandemic economic reopening and the Russian invasion of Ukraine:

1. Higher prices for fossil fuels purchased directly by consumers.
2. Higher indirect costs passed on by businesses which paid higher prices for fossil fuel inputs.
3. Higher interest expenses paid by households due to Bank of Canada rate hikes (motivated in large part by inflation from fossil fuels).
4. Lost employment income experienced by workers due to weaker labour markets also resulting from those rate hikes.

Table 8 aggregates those four categories of expense. In every case, the extra cost (or foregone income) is measured relative to a 2019 pre-COVID benchmark (reflecting 'normal' consumer and producer prices, interest rates, and employment outcomes prevailing before the pandemic). In three of the cases, costs are calculated on a cumulative basis over the three calendar years covering the oil price spike and its aftermath: 2022 through 2024. Given the significant lag with which employment outcomes respond to interest rates, foregone employment income is cumulated across the last two years (2023 and 2024). Those four expenses cumulated to a painful total of $198.7 billion over the three years from 2022 through 2024. As of July 1, 2024, Statistics Canada estimated there were just over 16.5 million households in Canada. The aggregate cost of the fossil fuel price hikes, therefore, translates into an extra expense of over $12,000 per household. These huge numbers confirm that fossil fuel price hikes (and the resulting profits they generated for petroleum producers) were a dominant cause of the affordability challenges faced by Canadians in recent years. Fossil fuels are not protecting Canadians against cost-of-living challenges. To the contrary, their prices substantially *contributed* to those cost-of-living challenges.

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earnings will have also been reduced by high interest rates, and in this regard our estimate of lost employment income is conservative.

[36] And once again, this methodology is conservative, since that 2019 average employment rate was lower than the rate that prevailed when the Bank of Canada's tightening began.

[37] Because of the delay in the effect of higher interest rates on employment, we estimate the cost of foregone employment earnings only starting in 2023, rather than starting in 2022 as in the preceding sections.

Table 8 Total Costs to Canadians from Fossil Fuel Price Spike 2022—2024		
Effect	**Benchmark**	**Cost ($bil.)**
Direct CPI Impact	2019 CPI	$61.4
Indirect Supply Chain Costs	2019 PPI	$106.8
Extra Interest Expense	2019 effective interest rate	$22.9
Lost Employment Income	2019 employment rate	$7.5[1]
Total Costs		**$198.7**
Number of Households (July 1 2024, m)		16.547
Cost per Household ($)		$12,007
Source: Calculations from Statistics Canada data as described in text. 21. Cost cumulated over 2023-2024.		

It is important to note that even though fossil fuel prices have moderated significantly since the price spike in 2022, the costs to Canadian consumers and workers continue to accumulate. Weighted average fossil fuel prices for both consumers and Canadian businesses remain higher than they were in 2019—the benchmark year for the analysis above. Interest rates, while falling in recent months, also remain above pre-pandemic norms, and the employment rate remains lower. Across the four expense categories, aggregate costs continue to accumulate by at least $5 billion per month. That works out to an additional $300 per month in additional costs per Canadian household.

Worse yet, continuing economic and geopolitical uncertainty in the world always raises the spectre that fossil fuel prices could shoot up again, repeating the painful sequence of events that hurt so many Canadians during the past three years. Donald Trump's erratic actions, and their geopolitical and financial fallout, are likely to roil world oil futures markets again—thus launching a sequel to the whole painful saga.

Follow the Money: Petroleum Profits and their Disposition

The preceding sections documented the substantial costs of volatile fossil-fuel prices to Canadian consumers and workers. But since Canada produces far more oil and gas than it consumes, the proceeds from selling these resources exceed the costs of buying them. How these proceeds are distributed and used is critical to an overall assessment of the 2022 price spike.

This section of the report 'follows the money' collected from the dramatic increases in oil and related prices after the COVID pandemic. Our analysis considers revenues, royalties, profits, taxes, dividends, investment, and employment in Canada's petroleum sector.

The Oil Price Windfall

From 2019 through 2024, the annual volume of Canadian oil production (including both crude oil and liquified gas products) edged up from 1.7 to 1.9 billion barrels. Natural gas production grew a bit faster, rising from 7 to 8 billion gigajoules (see Table 9).

Table 9
Canadian Oil & Gas Production, 2019 – 2024
(millions of oil barrels or gas gigajoules)

	2019	2020	2021	2022	2023	2024
Crude Oil	1,552	1,476	1,568	1,603	1,626	1,687
Equivalent Products	160	159	164	173	175	193
Natural Gas	6,938	6,788	7,060	7,578	7,801	7,979

Source: Statistics Canada Tables 25-10-0063-01 and 25-10-0055-01.

Beyond this modest growth in the quantities of oil and gas extracted, price fluctuations have been the major factor altering the value of petroleum revenues. In 2020, lower prices temporarily reduced oil and gas revenues during the COVID-19 pandemic. But significant price increases in 2021 and 2022 then drove revenues far above pre-pandemic levels.

About half of the 2021 increase simply represented a recovery from the previous year's unduly low prices. In 2022, with the industry producing only slightly more oil and gas than in prior years, its annual revenues jumped by almost $100 billion. This windfall reflected higher world oil prices following the Ukraine invasion.

Statistics Canada (2023) summarized the dramatic increase in industry revenues in 2022 as follows:

> "In 2022, total revenue for the Canadian oil and gas extraction industry rose 53.6% to $269.9 billion, following an 87.5% increase in 2021… According to the Raw materials price index, the price of crude oil and bitumen in 2022 increased by 49.0% from 2021, while the price of natural gas increased by 25.6%. Total production for crude oil rose by 2.3% in 2022, while total natural gas production increased by 7.3%."

In other words, the industry received nearly $100 billion of extra revenue, overwhelmingly reflecting higher oil prices (with little change in oil production). Natural gas is a much smaller part of the story, but it likewise saw prices rise far faster than production.

Revenues, Royalties, and Payrolls

Table 10
Oil and Gas Extraction Revenues and Royalties, 2019 – 2023 ($ billions)

	2019	2020	2021	2022	2023
Extraction Revenues	$131.7	$93.7	$175.7	$269.7	$216.0
Royalty Payments	$9.8	$4.1	$14.8	$34.3	$23.1

Source: Calculations from Statistics Canada Table 25-10-0065-01.

One might assume that most of the increase in oil and gas revenues would accrue to the owners of these resources: the residents of the provinces where those resources were produced. Most of Canada's non-renewable resources belong to the public through Crown ownership of mineral rights. To extract oil and gas, companies must generally pay royalties to the relevant provincial government.

Oil and gas royalty payments have increased along with commodity prices. But royalties collect only a small share of oil and gas sales. Statistics Canada figures indicate that, between 2021 and 2022, the increase of nearly $100 billion in industry revenues yielded less than $20 billion in additional royalties (Table 10).

To save royalty revenues for future generations, Alberta established its Heritage Fund in 1976—two decades before Norway began saving oil revenues in its sovereign wealth fund. Yet at the end of 2024, Alberta's Heritage Savings Trust Fund was worth $25 billion, just 1% of the $2.5 *trillion* (Canadian) Norway has accumulated from less production in less time (Government of Alberta, 2024; Norges Bank Investment Management, 2025). Part of the story is that Alberta has not consistently saved any portion of its royalty revenues. The other aspect is that Alberta has collected very low royalty revenues relative to the value of oil and gas extracted (Roy, 2015; Boychuk, 2010).

Various incentives and deductions substantially reduce royalty revenues. For example, British Columbia's Public Accounts report notes:

> "Oil and gas royalty revenues are reported after adjustments for various royalty deduction programs such as producer cost of service allowances, deep well, marginal, ultra marginal, low production, net profit, new pool discovery and road construction." (Office of the Comptroller General of B.C., 2024, p. 85)

These deductions in B.C. cost $1.5 billion in the 2021-22 fiscal year (almost as much as the provincial revenue collected), and $1.7 billion (or half the revenue collected) in 2022-23. Other provinces are less transparent about the cost of such deductions, but their royalty payments are clearly undercut by these far-reaching exemptions and loopholes.

Saskatchewan ranks second to Alberta in Canadian oil production, but reports the least revenue from oil and gas royalties among the producing provinces. The Government of Saskatchewan has provided

incentives for horizontal drilling for almost four decades. Since 2002, it has maintained a royalty of only 2.5% for the first 38,000 barrels from each horizontal well (Weir, 2022; Government of Saskatchewan, 2013). Horizontal drilling surpassed vertical drilling in Saskatchewan in 2008, and has almost completely replaced it since 2015, so almost every well now enjoys this generous incentive.

As indicated in Table 11, total provincial royalty revenue increased by only $10.7 billion between fiscal years 2021-22 and 2022-23,[38] a small fraction of the dramatic expansion in petroleum industry revenues. Closing loopholes in provincial royalty structures is an obvious way to ensure the public receives a better return from the depletion of non-renewable resources. To the extent that provincial royalties fail to collect resource windfalls, there may also be room for a federal tax on excess profits.

Table 11
Provincial Oil and Gas Revenues, 2021-22 and 2022-23 ($ billions)

	2021-22	2022-23	Increase
British Columbia	$1.8	$3.4	$1.6
Alberta	$16.2	$25.2	$9.0
Saskatchewan	$1.0	$1.1	$0.1
Newfoundland and Labrador	$1.2	$1.2	$0.0
Total	**$20.2**	**$30.9**	**$10.7**

Source: Compilation from provincial public accounts.

Surging Profits and Dividends

With royalties collecting only a small fraction of the increased revenues resulting from higher oil and gas prices, most of the resulting windfall landed in the coffers of the companies that extract and refine oil and gas. Statistics Canada reports that oil and gas operating profits quintupled from 2019 to 2022 (Table 12). In 2022 alone, they jumped by $55 billion—almost three times the increase in reported royalties. Even after moderating in subsequent years, operating profits were still almost three times higher in 2024 than in 2019.

Of course, profits are subject to corporate income tax. From 2021 to 2022, current and deferred income taxes in the industry rose by $13 billion. Since royalties also rose by $20 billion, federal and provincial governments together collected about one-third of the industry's $100-billion revenue windfall in 2022. This share is hardly adequate given the resources belong to the public.

A significant portion of the resulting after-tax profits are paid out to shareholders as dividends. Oil and gas companies more than doubled their dividends—from about $8 billion annually in 2019, 2020 and 2021, to a high of $19 billion in 2023.

[38] The increase between fiscal years reported by provinces is less than the increase between calendar years reported by Statistics Canada because part of the oil price spike in the first half of 2022 fell into the 2021-22 fiscal year.

These companies are largely owned by foreign investors. In 2022, oil and gas extraction in Canada was 37% foreign-controlled.[39] Foreign investors also own many shares in Canadian-controlled companies. As a result, St.-Arnaud (2022) estimates that three-quarters of oil and gas dividends go to non-Canadians.

Table 12
Canadian Oil and Gas Profits, Taxes and Dividends, 2019 – 2024 ($ billions)

	2019	2020	2021	2022	2023	2024
Operating Profits (Loss)	$18.0	($20.6)	$38.5	$93.9	$59.6	$51.7
Current & Deferred Income Tax	($1.3)	($6.9)	$2.0	$14.8	$11.5	$10.2
Declared Dividends	$8.4	$8.4	$8.5	$18.9	$19.0	$17.4

Source: Calculations from Statistics Canada Table 33-10-0225-01. Includes "Oil and gas extraction and support services" plus "Petroleum and coal product manufacturing."

Faltering Investment and Employment

Foreign ownership and light taxation of oil and gas are often defended based on the sector's purported contributions to investment and employment. In the past, high oil prices spurred investments in new projects (especially bitumen developments) that created spinoff jobs in construction, manufacturing and other sectors. Even though governments failed to collect a fair share of oil and gas profits, they did collect some additional income and sales tax from the resulting economic activity.

In contrast, the 2022 oil price spike has not significantly spurred new capital investment or employment in the petroleum industry. Annual capital investment in the sector in 2022 and 2023 was only half as high as the 2014 peak (Natural Resources Canada, 2024c, p. 22). Alberta's bitumen industry has experienced little new development or hiring (St.-Arnaud, 2022). On the conventional side, Saskatchewan drilled over 3,000 wells each year during the early 2010s boom. This total fell to 1,880 by 2019, and has not exceeded 1,500 in any subsequent year despite the oil price spike (Government of Saskatchewan, 2025).

Table 13
Canadian Oil and Gas Capital Investment, 2019 – 2024 ($ billions)

	2019	2020	2021	2022	2023	2024
Depreciation, Depletion & Amortization	$44.8	$44.2	$40.1	$45.4	$45.7	$47.2
Gross Operating Surplus	$62.8	$23.6	$78.6	$139.3	$105.3	$98.8
Total Capital Expenditures	$29.9	$34.1	$37.9	$41.9	$39.5	$38.6
Share of Surplus Reinvested	48 %	144 %	48 %	30 %	38 %	39 %

Source: Calculations from Statistics Canada Table 33-10-0225-01.

[39] Statistics Canada Table 33-10-0570-01.

Statistics Canada figures indicate that annual oil and gas investment has increased by about $10 billion since 2019 (Table 13), accounting for only a small share of the increase in revenues and profits. Indeed, in each year since 2019, the industry's capital expenditures have fallen short of the depreciation, depletion and amortization of its existing assets. In other words, companies are not even investing enough to offset the depreciation of existing physical capital and the depletion of fossil-fuel reserves.

Total capital expenditures include that share of investment needed simply to cover depreciation. Yet depreciation is subtracted to calculate profits. To properly compare investment and profits, both should include depreciation. We therefore estimate the oil and gas sector's gross operating surplus (before depreciation) by adding the non-cash charge for depreciation, depletion and amortization back into operating profits. That allows an apples-to-apples comparison of gross investment with the gross operating surplus, both including depreciation.

Since 2019, the oil and gas industry has consistently reinvested less than half of its operating surplus. The only exception was 2020, when capital spending exceeded the operating surplus, suppressed by that year's temporary drop in oil prices and profits. Since the 2022 price spike, the industry has invested an average of just 35% of its gross operating surplus.

Nor can it be argued that workers have shared widely in petroleum industry revenues since the oil price spike. The number of Canadians employed in oil and gas extraction, services, and refining in 2023 was slightly below the 2019 level, despite much higher prices and profits (see Table 14). And aggregate wages and salaries paid in oil and gas extraction also remain below 2019 levels in nominal terms, despite significant inflation during that time (indicating a loss of real income for those workers).

Table 14
Canadian Oil and Gas Compensation and Employment, 2019 – 2023

	2019	2020	2021	2022	2023
Oil & Gas Extraction Wages & Salaries ($ billions)	$ 7.7	$ 6.0	$ 7.1	$ 7.3	$ 7.3
Employment (thousands of employees)					
Oil & Gas Extraction	55.9	54.3	52.5	54.7	56.2
Support Activities[1]	73.2	60.2	65.3	71.7	74.0
Oil & Coal Refining	17.9	15.6	16.3	16.0	16.0
Total	146.9	130.0	134.1	142.4	146.2

Source: Statistics Canada Tables 14-10-0202-01 and 25-10-0065-01.
1. Includes non-petroleum mining services.

Cross-Industry Comparisons

It is interesting to compare the spectacular increase in profits in the petroleum industry during the run-up of inflation after the pandemic, to the experience of other sectors of the economy. As described above, overall profit margins in Canada's economy rose during the acceleration of inflation in 2022. Corporate profits reached their highest share of GDP in Canadian history—even as Canadians grappled

with both the health risks and the economic challenges of the pandemic and its aftermath. Many Canadians expressed anger at those record profits, and the contribution they made to higher prices.

Table 15 lists after-tax corporate net income[40] for 20 sectors of Canada's economy (out of 56 defined and tracked by Statistics Canada) which enjoyed especially strong profitability during the initial post-pandemic inflation. These sectors either increased their net income by more than $5 billion, or by more than 100%, between 2019 and 2022 (some sectors did both). They are listed in order of the absolute increase in net income.

Table 15
Twenty Super-Profitable Industries
Profit Growth from 2019 to 2022

Industry	Growth in Net Income ($b)	Growth in Net Income (%)
Oil and Gas Extraction	$43.9	996%
Real Estate	$22.8	68%
Banking	$18.3	65%
Construction	$14.6	69%
Misc. Financial Intermediation	$14.5	34%
Agriculture & Forestry	$10.6	287%
Wood & Paper Products	$10.1	527%
Securities Exchanges	$8.3	54%
Mining (Excl. Oil & Gas)	$8.2	485%
Other Wholesale Trade	$7.8	65%
Primary Metals Manufacturing	$7.7	161%
Petroleum and Coal Products	$7.5	63%
Property & Casualty Insurance	$5.9	135%
Building Products Wholesale	$5.3	144%
Other Retail Trade	$5.1	113%
Motor Vehicle Dealers	$3.8	147%
Motor Vehicle Wholesale	$2.4	132%
Food & Beverage Retail	$2.4	101%
Financial Processing	$1.0	128%
Securities Dealers	$0.9	155%
TOP 20 TOTAL	**$201.2**	**142%**

Source: Calculations from Statistics Canada Tables 33-10-0225-01 and 33-10-0227-01. Includes sectors with more than $5 billion and/or 100% increase in net income between 2019 and 2022.

[40] Calculated net of royalty payments, depreciation and depletion, and income taxes.

The petroleum sector experienced by far the biggest growth of profits between 2019 and 2022, much more than other sectors (including those, like food retail, that attracted particular public anger during this time). The upstream oil and gas extraction sector tops the list, increasing its annual nete income by $43.9 billion in that period (or almost 1000%). The downstream petroleum products sector also did very well, increasing net income by almost two-thirds, or $7.5 billion.

Other big 'winners' during the inflationary upsurge included real estate, banking, construction, building materials, and other forms of financial intermediation. In general, companies which occupy strategic locations in the overall economic supply chain, giving them ability to leverage supply shortages (such as existed for building products, new automobiles, and some other products after the pandemic), and fully or more-than-fully pass on higher input costs (including for fossil fuels), experienced the strongest profit performance.[41] The food retail sector appears on this list, but well down it. Its net income more than doubled in this time—refuting the claims of supermarket executives that higher food prices were solely caused by higher costs for inventory and inputs, not higher profits. So public anger at the major food chains is justified. But in absolute terms, the $2.4 billion increase in net income captured by the food retail sector in this period is small change relative to the extra profits captured in the petroleum sector. The increase in aggregate profits to the upstream and downstream petroleum sectors ($51.4 billion more in 2022 than 2019) was more than 20 times larger than the increase in profits in food retail.

Summary and Implications

Table 16
Oil and Gas Profits, Taxes and Dividends, Increases from 2019 ($ billions)

	2022 vs 2019	2023 vs 2019	2024 vs 2019	Total
Operating Profits	$75.9	$41.6	$33.7	$151.2
Current & Deferred Tax	$16.1	$12.8	$11.5	$ 40.4
Declared Dividends	$10.5	$10.6	$ 9.0	$ 30.1
Capital Expenditures	$12.0	$ 9.6	$ 8.7	$ 30.3

Source: Calculations from Statistics Canada Table 33-10-0225-01.

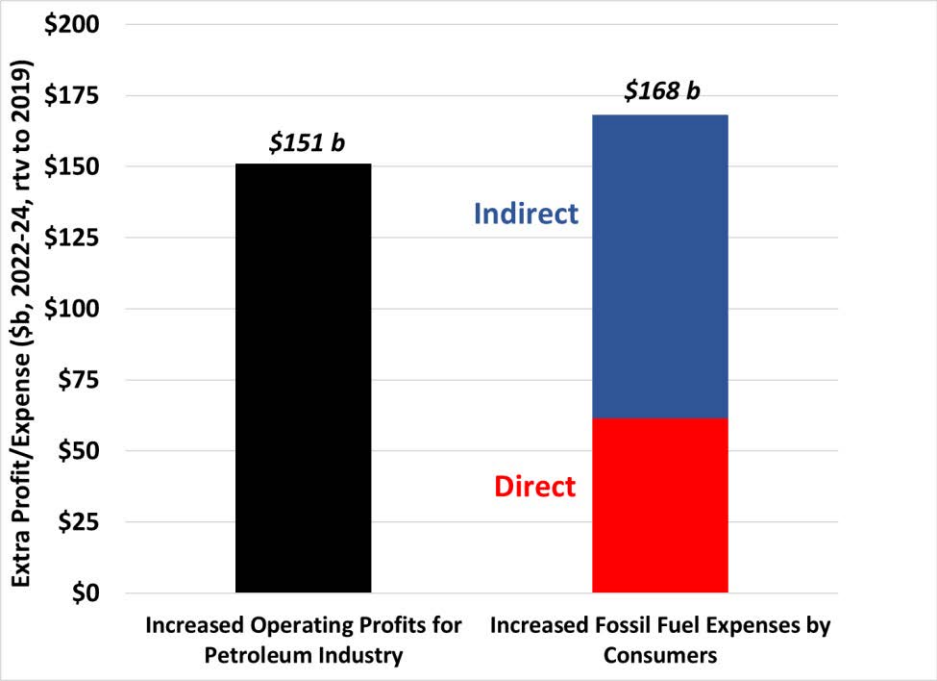
Petroleum industry profits were the main beneficiary of the surge in fossil fuel prices experienced since 2022. Oil and gas operating profits exceeded their 2019 level by a cumulative total of $151 billion from 2022 through 2024 (Table 16). As shown in Figure 22, this large sum is close to our estimate of the cumulative extra cost (direct and indirect) paid by Canadian consumers from higher fossil fuel prices in Canada during the same period—and that is not a coincidence. Above, we estimated that consumers paid $61.4 billion directly in higher fossil fuel prices, and another $106.8 billion indirectly through higher input costs to producers of other goods and services, for total extra consumer spending of $168 billion.[42]

[41] The variability in sectoral profit performance through the acceleration of inflation is consistent with the analysis of Weber and Wasner (2023), showing the importance of certain systemically important sectors in sparking and propagating inflation after the pandemic.

[42] This does not include the costs of higher interest payments or foregone employment income, since those components of the total burden experienced by Canadian workers and consumers did not constitute revenue for the petroleum sector.

It's not hard to 'follow the money': most of that additional expense incurred by consumers as a result of higher fossil fuel prices ended up in increased profits for the companies selling those products. Those higher prices were not justified by higher operating costs, nor can they be explained by fundamental supply and demand forces. And surprisingly little of the resulting windfall was shared with oil and gas workers, paid in royalties and taxes to governments, or reinvested in this industry.

Figure 22. Cumulative Increases in Fossil Fuel Expenses and Profits, 2022-2024



Source: Calculations from Statistics Canada data as described in text.

These additional profits increased federal and provincial corporate tax obligations by $40 billion (payment of some of which was deferred to future years). Companies also boosted their dividends by $30 billion and capital expenditures by another $30 billion. Billions more funded share repurchases or other corporate strategies that mostly benefit shareholders outside Canada. Oil and gas investment remains well below the level needed to cover capital depreciation and resource depletion. Employment and payrolls remain below pre-pandemic levels.

In sum, recent experience and data confirm that Canadian policymakers cannot rely on the oil and gas industry to translate higher resource prices into investment, jobs, or broad economic benefits—let alone count on the industry to take responsibility for the environmental costs of fossil fuel production and use. The industry has transitioned from a growth sector that once boosted production and employment, to a mature industry that simply collects more profit from existing production. Thanks to the spike in global futures market prices, transmitted so directly to Canadian consumers, that existing production proved to be more profitable than ever.

Conclusion and Policy Recommendations

Advertising from the petroleum industry claims expanding fossil fuel production is essential to Canadians' ability to put food on the table. However, fossil fuel prices did the most damage to affordability in Canada during the upsurge of inflation that followed the pandemic.

The oil price shock of 2022 imposed massive costs on Canadians. Over the three years from 2022 (when the price spike occurred) to 2024, cumulative costs for Canadian workers and consumers from direct fossil fuel price hikes, indirect supply chain costs, higher interest expenses, and foregone employment income totaled almost $200 billion. That is equivalent to $12,000 per household. While fossil fuel prices and interest rates have moderated somewhat, and employment outcomes are now recovering, those costs continue at a rate of $5 billion more (or $300 per household) with each passing month.

Moreover, history shows that this episode will be repeated—anytime another shock or disruption in world economic, geopolitical, or climate conditions sparks another round of frenzied speculation and price hikes in global futures markets. Canadians and their governments should carefully study the history of the 2022 oil price spike and its consequences, for two reasons.

First, we need to correctly attribute blame for the resulting challenges experienced in Canadian affordability and living standards. Clearly, that blame should not be directed at carbon prices or other climate measures. Nor can it be attributed to natural and efficient 'market forces.' The self-interest of fossil fuel companies—facilitated by financialized global futures markets, cartel power, and a misplaced faith in the efficiency of deregulated markets—is where anger over recent affordability challenges should first be directed.

Second, we must understand that future volatility in the global futures markets that have currently been given the power to set fossil fuel prices in Canada (even for fossil fuels produced, processed, and consumed right here) will cause similar shocks in oil and related prices in the future. Without reforms to our energy systems, those shocks will result in macroeconomic disruptions similar to that which Canadians have just painfully experienced.

There are obvious priorities for policy reforms that would help to protect against further costly episodes of fossil fuel-inspired inflation in the future. These include:

1. *Insulating Canadian energy prices from volatility in global futures markets*. Even without reverting to a fully made-in-Canada fossil fuel pricing system, there are many measures which could reduce the extent to which future oil price spikes transmit quickly and fully into Canadian inflation. Government buffer stocks of strategic commodities can help to smooth the gyrations of speculative futures markets.[43] Limits or circuit breakers can constrain the scale and rapidity of sudden price changes. Direct regulation of certain prices can also be helpful in stabilizing inflation. Several European countries and Australia directly regulated prices of fossil fuel energy during the worst periods of the 2022 price spike, with considerable effect.[44] The benefits of price

[43] The case for buffer stocks was classically put by John Maynard and Keynes and Richard Kahn (see Fantacci et al., 2012), and more recently by Weber and Schulken (2024).

[44] Álvarez (2022) reviews the Spanish government's successful use of energy price caps and excess profits taxes on energy companies in reducing inflation; Spain was the first European country to reduce inflation back to the 2% target.

regulation are visible in Canada, too—such as the stability of electricity prices throughout this episode (in all provinces other than Alberta), and the more muted price increases for natural gas compared to oil (due in part to regulation of the pipeline and distribution charges that make up much of the cost of delivered gas).

2. *Closing loopholes in provincial oil and gas royalties, and taxing the excess profits of petroleum companies*. As explained above, the surge in fossil fuel prices in 2022 and afterward led to historic profits captured by the petroleum industry. But this windfall should have gone to the provincial residents who own the oil and gas. Closing loopholes in provincial royalty regimes would ensure a fair public return from the depletion of our non-renewable resources. To the extent that price spikes cannot be prevented through regulations or captured by royalties, their proceeds can be redistributed. Excess profit taxes can be applied when returns on investment vastly exceed normal levels during crisis situations. Canada imposed such measures on the banking and insurance industries in the wake of the COVID pandemic, and that precedent could be applied to other sectors benefiting from extreme price hikes and the resulting hardship.[45] The proceeds from excess profits taxes could then be redistributed to consumers (through measures such as GST rebates or other channels) to partly compensate them for the effects of high prices. Depending on how this compensation was delivered, it could also help to reduce recorded inflation rates.[46] Several European countries imposed excess profit taxes on energy companies during and after the 2022 price spike.

3. *Promoting energy conservation, and accelerating the transition away from fossil fuels toward renewable energy sources*. Ultimately, the best protection against the painful macroeconomic consequences of future oil price spikes will be to use other forms of energy instead, and use all forms of energy more efficiently. For environmental reasons, of course, Canada and most other countries have agreed to phase out most uses of fossil fuels to meet net-zero commitments by 2050. But that phase-out will also have many economic benefits: including jobs and investments in growing renewable energy production and infrastructure, full-cycle cost savings provided by sustainable energy systems in many applications,[47] and improved stability in energy prices from reduced reliance on fossil fuels. Canada's experience since 2022 showed electricity prices, other than in Alberta, were very stable despite the chaos experienced on world oil futures markets and resulting fossil fuel price hikes. This attests to the stability of non-fossil-fuel energy systems (as well as the virtues of close regulation and, in most provinces, public ownership). In this regard, efforts by the petroleum industry—the biggest single cause of the affordability challenges of recent years—to slow or even reverse this energy transition are self-serving and economically dangerous, and will reinforce the exposure of Canadians to future fossil fuel price shocks.

The impact of higher fossil fuel prices on Canadian inflation, real living standards, and subsequently interest rates and employment, has received disproportionately little attention since 2022, and this is

[45] Xuereb (2024) describes one possible model.

[46] In Australia a federally-funded energy rebate (for natural gas and electricity) was applied at the wholesale stage of the supply chain, and hence measurably reduced the national inflation rate; see Jericho (2024).

[47] Full-cycle costs of electricity generation, motor vehicles, and home heating are now cheaper with renewable energy than traditional fossil fuels, and that cost advantage is growing as renewable energy technologies improve. See evidence reported by BloombergNEF (2024), Lindwall (2024), or Riddell and Belanger (2023).

puzzling. Fossil fuel prices were the biggest single cause of the acceleration of inflation in 2021 and 2022, and prices are still elevated relative to pre-pandemic levels. Meanwhile, the expansion in oil industry profits resulting from these price hikes dwarf the higher profits that occurred in other sectors (including some, like food retail, that have attracted much public ire). Most public dialogue about fossil fuel expenses has been focused on the federal carbon pricing system. However, the analysis above makes it clear carbon pricing cannot explain the rise and fall of fossil fuel prices, and the contribution of carbon prices (even before considering the rebate of resulting revenues) was tiny compared to the pre-carbon-price surge in fossil fuel prices. New Prime Minister Mark Carney has announced the effective cancellation of the consumer-facing carbon price effective April 1.[48] Carbon pricing clearly did not cause the spike in fossil fuel prices that occurred after the pandemic. And cancelling the carbon pricing system will not protect Canadians against the inflationary effects of the next price spike, either.

The worst of the inflationary challenges that followed the COVID pandemic are now behind Canadians. Inflation has returned to its target rate, real wages have been repaired for most workers, and labour markets are recovering. Of course, Donald Trump's erratic actions create a major new source of risk and uncertainty—including the meaningful possibility that his policies could cause further turmoil in global oil futures markets (and other financial instability). The evidence presented here confirms that the oil price spike following post-pandemic reopening was the biggest single cause of the subsequent inflationary episode. That price spike cost Canadian consumers and workers almost $200 billion, most of which ended up in the coffers of petroleum companies. And the cost of that episode continues to mount: not just in dollar terms, but in the human and social costs that persist after the challenging economic circumstances of recent years. We should study that experience carefully, correctly identify its causes, and prepare to protect ourselves against repeat episodes in the future.

[48] Effected, at least initially, through regulations setting the price at 0.

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