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What Are the Macroeconomic Implications of Recent Turmoil in Oil Markets?

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Key Takeaways

1. GDP falls and core prices rise when oil prices spike.
2. Oil price shocks have less bite in the U.S. than they used to, but are still significant.
3. The duration of the current price shock will matter, not just the magnitude.

The United States consumes roughly 20 million barrels of crude and petroleum products per day. Historically, oil price shocks have had large macroeconomic consequences. However, the so-called oil intensity of GDP, or the number of barrels needed to produce a dollar of inflation-adjusted output, has actually declined by more than 50% since 1973. Alongside the shift, the U.S. has become a much larger producer of energy products and oil specifically. What does all this mean for the likely macroeconomic repercussions of recent turmoil in energy markets?

As of this writing, oil prices have jumped about $25 since late February. If prices were to stay at that elevated level for a full quarter, recent U.S. experience suggests this would lead to roughly a 0.3% decline in real GDP after a year and a 0.3% rise in the core price level after a year.

The recent spike in oil prices

Following the U.S. and Israeli strikes on Iran that began on February 28, 2026, the price of oil went from around $65 per barrel in late February to about $90 as of this writing. This was an economically large price increase, in the 99th percentile of inflation-adjusted monthly price changes since 1975.[1] Of course, the situation remains volatile as of March 27, 2026: we do not know when the conflict will end, when the strait of Hormuz will reopen to commercial traffic, or how long it will take to repair the energy infrastructure needed for oil exports from the region. We also don't know what policy responses will be undertaken, including potential prohibitions of U.S. energy exports[2] and further relaxations or tightening of sanctions on oil-producing countries like Iran or Russia.

Regardless of exactly how the current situation unfolds, oil price shocks potentially matter to the U.S. economy even though the U.S. is a large oil producer and total petroleum net exporter. Oil prices are set in global markets, and though higher prices are a boon for U.S. producers, they are a cost for the many businesses and households that pay for oil products. For consumers, gasoline is an especially salient price, with potential implications for sentiment and inflation expectations. Oil is also a good for which substitutes can be tough to find, especially in the short run.

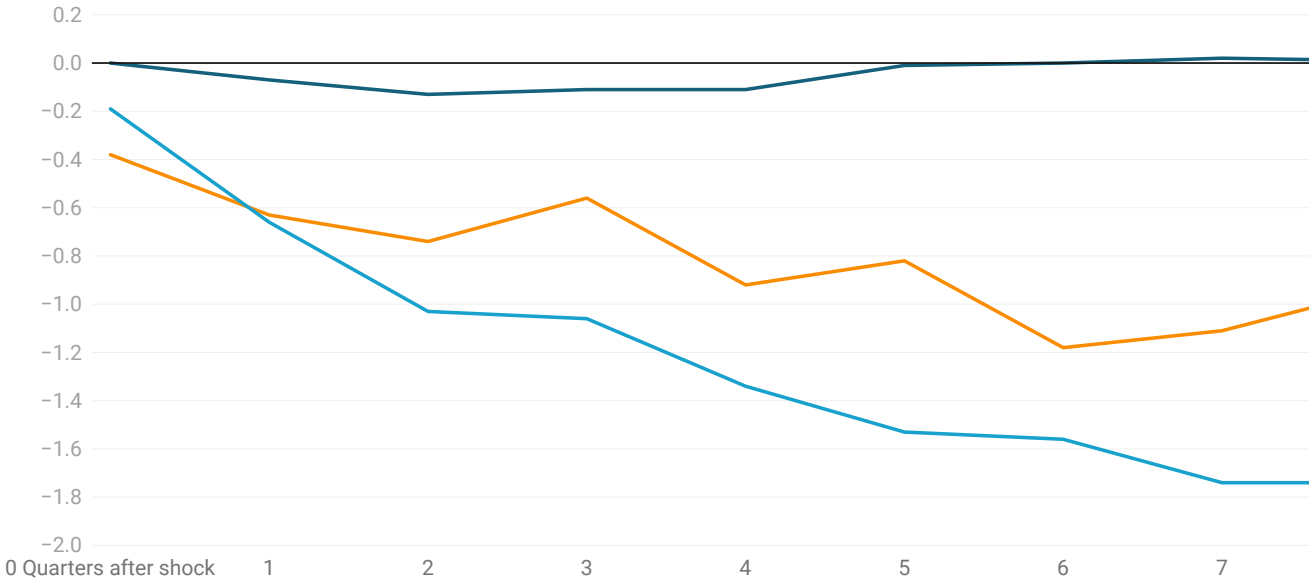
How can we assess macroeconomic impacts?

U.S. has plenty of experience with oil price fluctuations, many of them large and unexpected. The simplest way to understand likely effects in 2026 is to look back at what happened in those prior episodes. However, there are problems with extrapolating from that experience to oil price shocks of the last few weeks. For at least two primary reasons, the U.S. economy is much less energy intensive than it once was. Vehicles have improved their fuel efficiency or switched off of gasoline altogether. Additionally, economic growth in recent decades has skewed away from oil-intensive goods and services. For example, financial services are not especially oil-intensive.

Another development makes it difficult to naively extrapolate from previous experience: the widespread deployment of fracking technology and the rise of the U.S. as a key oil producer. In the 1970s, the negative effect of oil shocks on business and consumers far outweighed the positive effects on domestic producers. Today, those effects more nearly offset.[3]

Consistent with these developments, we find that macroeconomic responses to oil price shocks are smaller in recent years than they were in the 1970s up until the Great Recession. Using a local projections instrument variables approach, as described below, Figure 1 shows much larger responses of real GDP to oil price increases in the pre-fracking era than in the post-fracking era of 2011-2025 (omitting the pandemic years of 2020 and 2021).[4]

Figure 1. Real GDP: Response to +$10/bbl Oil Price Shock (2025 dollar, multiple eras)



Post-fracking era refers to 2011-19 and 2022-25.

Chart: The Budget Lab • Source: BEA, Federal Reserve Bank of St. Louis, Känzig (2011), and The Budget Lab analysis • Created with Datawrapper

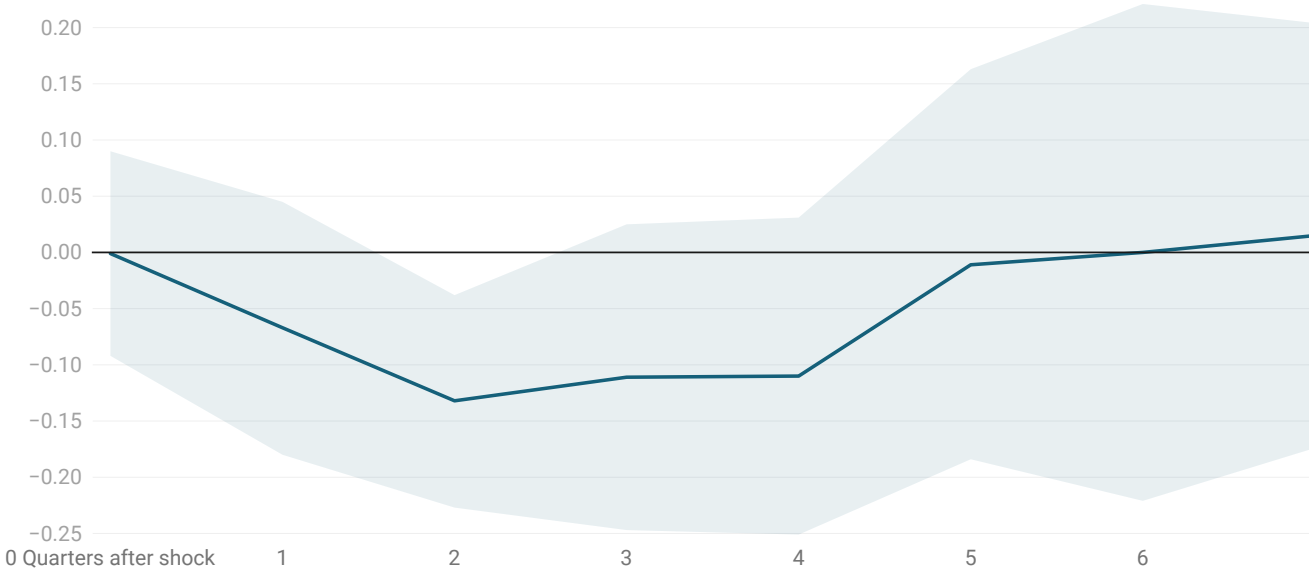
Unfortunately, this shift over time isn't the only methodological issue. An even more fundamental problem for identifying macroeconomic effects is that oil prices tend to go up when the economy booms and oil demand rises, leading to a spurious association between oil price increases and good economic times. In the figure above and in all the analysis below, we address this issue with an instrumental variables strategy. Economist Diego Känzig provides a regularly updated oil price shock series, based on his 2021 paper, that furnishes our instrument.[5] Känzig tracked oil futures prices in narrow windows around OPEC supply announcements, when price changes can be assumed to be

about that news and not broader macro trends like a booming economy. This allows us to examine the association between "as good as random" oil price changes and macroeconomic variables.[6]

Figures 2 and 3 implement this strategy, showing how real GDP and core PCE prices respond to an inflation-adjusted $10 per barrel increase in oil prices.[7] For reasons described above, we use only data starting in 2011 (when the advent of fracking in the U.S. began to drive production upwards) through 2025, excluding the pandemic years of 2020 and 2021. The graphs show results of a local projections analysis, with the vertical axis indicating the cumulative percent response of the outcome and the horizontal axis showing quarters since the oil price shock.[8] The appendix contains additional outcomes: consumption, investment, and PCE energy prices.[9]

Figure 2. Real GDP: Response to +$10/bbl Oil Price Shock (2025 dollars, post-fracking era)

Cumulative % response

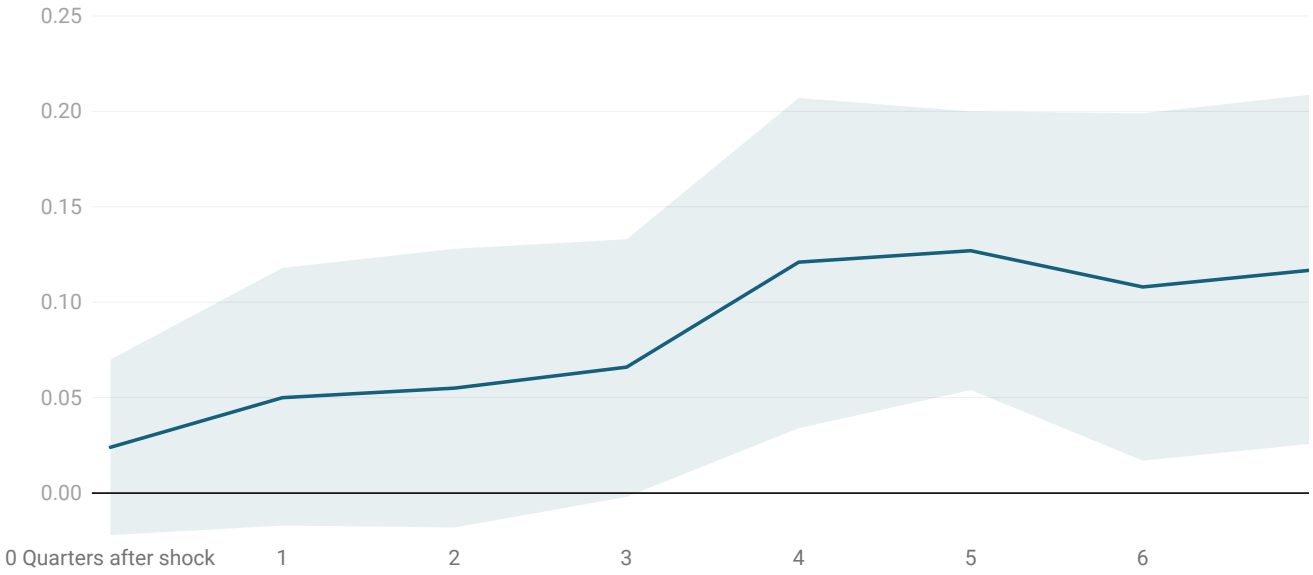


Post-fracking era refers to 2011-19 and 2022-25. Shaded areas are 90% confidence intervals.

Chart: The Budget Lab • Source: BEA, Federal Reserve Bank of St. Louis, Känzig (2011), and The Budget Lab analysis • Created with Datawrapper

Figure 3. Core PCE Prices: Response to +$10/bbl Oil Price Shock (2025 dollars, post-fracking era)

Cumulative % response



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How we apply and interpret these results

So far, the oil shock has lasted about a month. We don't know how long it will continue or what the future path of oil prices will turn out to be. Both the duration and the magnitude of a shock matter.[10] If prices were to revert to their February level tomorrow—an unlikely scenario given that so much production has ceased and will take time to restart—the economic fallout would be reduced relative to a scenario in which prices remain elevated for a full quarter or more. Indeed, when looking at oil price shocks across the decades, we see that it typically takes 5-6 quarters for half of a shock's magnitude to revert. If the current shock dissipates more quickly, we could reasonably expect economic effects to be smaller; if it dissipates more slowly, we could expect larger effects.

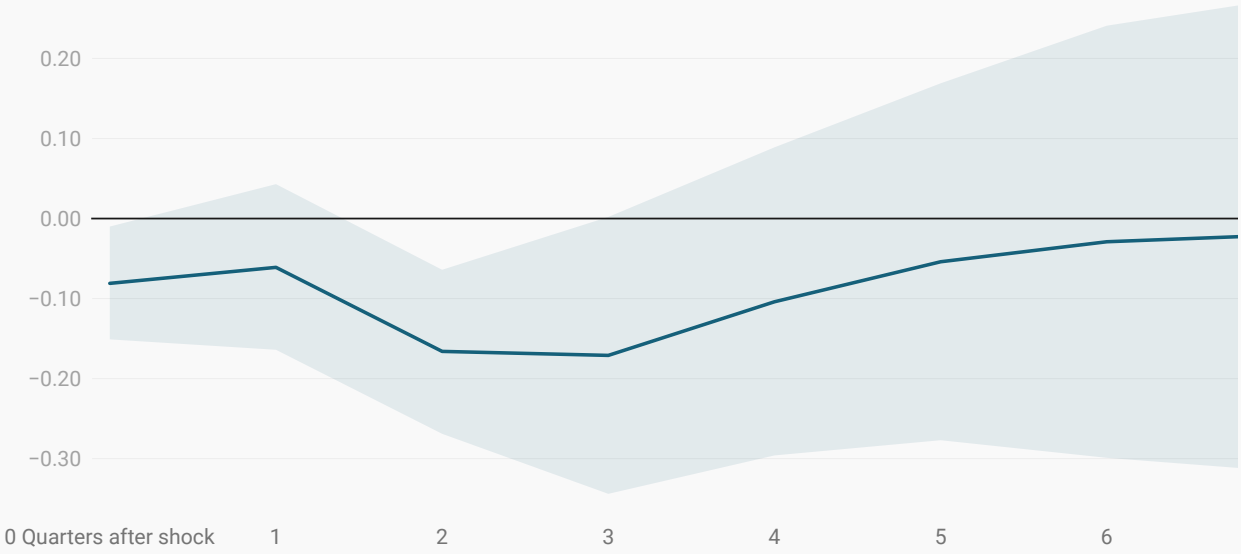
There are other complications to consider as well. For example, the current oil shock comes bundled with the advent of a new global conflict, which may have its own (likely negative) effects on economic activity. Another consideration is that historical effects may not linearly apply to an oil shock of this magnitude; in other words, we are on firmer ground when looking at changes that are common in the post-fracking historical experience. Extrapolating to larger changes may lead to inaccurate estimates. Finally, there have been reports of considerable damage to energy infrastructure in the Middle East. This destruction, along with persistently higher uncertainty, will tend to create larger long-run effects than would a simple embargo.

Appendix

Using the same methodology as above, impulse responses for additional outcomes are shown below. The offsetting signs of investment and consumption responses are what one would expect if higher oil prices induced additional energy investment but depressed oil-reliant consumption.

Figure A1. Real Consumption: Response to +$10/bbl Oil Price Shock (2025 dollars, post-fracking era)

Cumulative % response



Post-fracking era refers to 2011-19 and 2022-25. Shaded areas are 90% confidence intervals.

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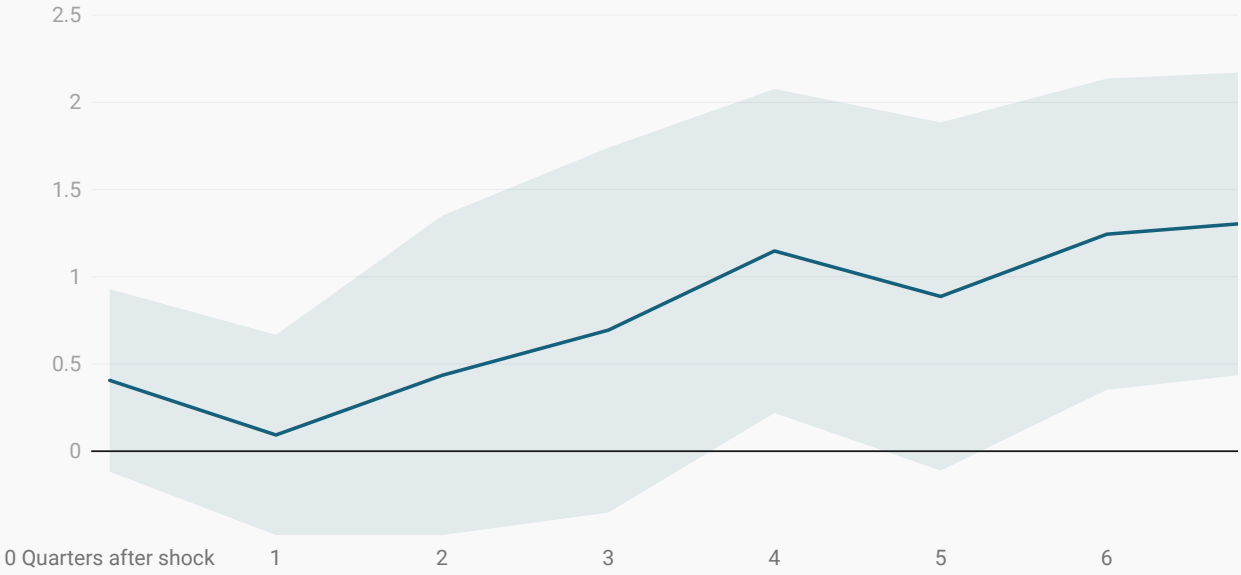
Figure A2. Real Investment: Response to +$10/bbl Oil Price Shock (2025 dollars, post-fracking era)

Cumulative % response

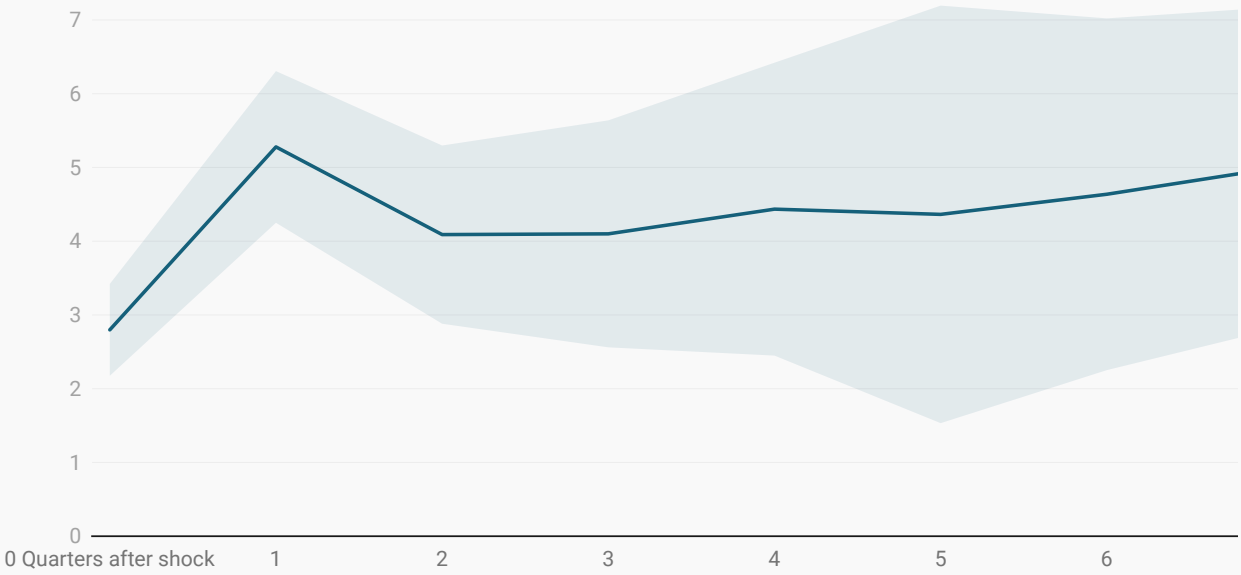


Post-fracking era refers to 2011-19 and 2022-25. Shaded areas are 90% confidence intervals.

Chart: The Budget Lab • Source: BEA, Federal Reserve Bank of St. Louis, Känzig (2011), and The Budget Lab analysis • Created with Datawrapper

Figure A3. PCE Energy Prices: Response to +$10/bbl Oil Price Shock (2025 dollars, post-fracking era)

Cumulative % response



Post-fracking era refers to 2011-19 and 2022-25. Shaded areas are 90% confidence intervals.

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Footnotes

1 For this calculation, we used monthly changes in WTI prices. For the Feb-Mar 2026 change, we used prices of $65.62 on February 23, 2026 (in order to predate the armed conflict) and $89.33 on March 23, 2026.

2 The Administration recently stated that they were not considering this option. Were it to be considered in the future, it is worth noting that prior research indicates that this type of policy would not significantly lower U.S. oil and gas prices.

3 While fracking-based output historically has scaled quickly in response to price changes, this responsiveness has fallen in recent years. With this decline, aggregate investment and domestic oil production should increase less in response to an unexpected oil price increase.

4 We are grateful to David Ratner for suggesting a similar econometric strategy to the one ultimately employed in this article. Thanks also to Ryan Cummings for insightful feedback on an earlier draft.

5 The underlying shocks are constructed at the monthly frequency; we sum the shocks to use in our quarterly analysis.

6 Results that do not instrument for oil price energy changes are different, typically indicating "better" effects of oil price changes. This is to be expected given that some increases in oil prices are historically caused by a rapidly expanding economy.

7 We implement a local projections analysis at the quarterly frequency, with the Känzig oil supply news shock used as an instrument for actual inflation-adjusted oil price changes. Regressions are specified in long differences relative to period *t-1*, and the right-hand side of each specification consists of four quarterly lags of the dependent variable, the oil price change (instrumented with the Känzig shock), and four quarterly lags of the oil price change.

8 Confidence intervals are shown for the 90% level using Newey-West standard errors.

9 Results are not qualitatively different when including additional lags like the Fed funds rate, a broad exchange rate measure, and GDP and core PCE prices.

10 Our analysis is at the quarterly frequency, and the impulse responses shown in the figures pertain to a shock of one-quarter duration.