

Financial Markets, Oil Prices, and Supply-Side Risks

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The relation between stocks and bonds indicates whether supply or demand shocks dominate the risks to economic activity. After two decades of concerns primarily about changes in demand, the stock-bond correlation recently flipped, suggesting that the perceived source of risk to the economy has shifted towards supply shocks. Other financial correlations, such as the stock-oil correlation, also changed accordingly and thus agree with this interpretation. In line with this evidence, financial market pricing now indicates that elevated oil prices and potential inflation are prominent sources of risk.

Economic news topics have changed substantially in the 2020s compared with previous decades. In much of the 2000s and 2010s, primary risks to economic growth stemmed from the demand side of the economy, such as concerns that the zero lower bound on interest rates and secular stagnation would lead to low investment and economic growth. By contrast, the 2020s have brought about a resurgence of supply-side factors. The decade started with the COVID-19 pandemic that disrupted both demand and supply, closing many businesses and moving demand to sectors that soon faced severe supply chain bottlenecks. More recently, energy price shocks resulting from geopolitical conflicts in Europe and the Middle East, developments in artificial intelligence, shifts in immigration patterns, and expanded tariff policies have all posed salient supply-driven risks to the global economy.

These indications of a change in the economic landscape are based on past events. To assess whether perceived risks to future economic activity have shifted, we turn to forward-looking asset prices, which incorporate investors' expectations about the future evolution of the economy. We build on prior work that shows how the stock-bond correlation can indicate the dominance of demand versus supply shocks (see Campbell, Pflueger, and Viceira 2020 and Bekaert, Engstrom, and Emolov 2026). Higher demand leads to more economic activity and thus higher stock valuations, as well as inflation that tends to push bond yields up. A positive stock-bond correlation emerges. Less supply lowers economic activity and stock valuations but raises inflation and bond yields, thus leading to a negative stock-bond correlation.

This *Economic Letter* documents that the stock-bond correlation has flipped from positive to negative recently, indicating a shift from demand-side to supply-side sources of risk. We corroborate this finding with evidence from energy markets, such as the stock-oil correlation, which changed sign around the same time. Furthermore, uncertainty around oil prices now coincides with higher valuations. We interpret these findings as indications of a structural shift in the perceived risks to the economic environment.

A change in the stock-bond correlation

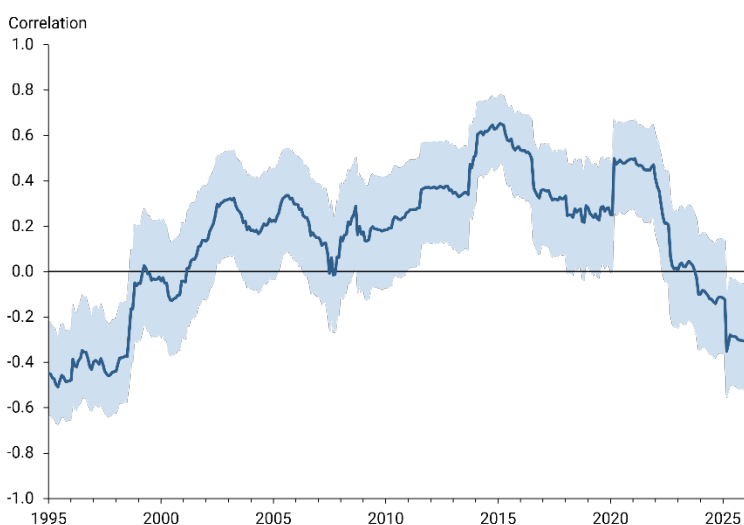
Financial correlations measure the comovement of two asset prices. Each correlation is a measure between negative one (-1), when asset prices move exactly in opposite directions, and positive one (1), when asset prices move perfectly in tandem. A correlation of zero means that the movement of one asset price provides no information about the direction of the other asset price movement. Correlation values between these extremes reveal the strength of the comovement. Since investors trade on a wide variety of economic outcomes, correlations between certain assets can shed light on how markets perceive relationships between many economic areas of interest, including the performance of businesses, debt contracts, inflation, and commodity prices (see Bok, Mertens, and Williams 2025).

One well-known measure of asset price comovement is the stock-bond correlation. A positive stock-bond correlation means that stock valuations are high at times of high interest rates and low at times of low interest rates. In groundbreaking research, Campbell, Pflueger, and Viceira (2020) demonstrated that a positive stock-bond correlation is associated with a prevalence of demand shocks, whereas a negative stock-bond correlation occurs when supply shocks are the primary source of risks to the economy.

Intuitively, higher demand leads to more economic activity and higher prices, resulting in inflation. Higher economic activity tends to raise stock valuations, while higher inflation tends to boost bond yields, leading to a positive stock-bond correlation. A negative shock to supply, on the other hand, makes goods scarcer, leading to lower economic activity but higher prices. While stock valuations decline due to lower activity, inflation raises bond yields, such that the comovement of stocks and bonds is negative.

Figure 1 shows the stock-bond correlation, computed from monthly Standard & Poor's (S&P) 500 stock index prices and 10-year Treasury bond yields over a five-year trailing window, along with 95% confidence bands. The correlation displays considerable persistence, which suggests that it may reflect fundamental information about the economy rather than temporary fluctuations. The stock-bond correlation rose from a negative level of about -0.5 to close to zero before turning positive in the early 2000s. It stayed mostly positive until the early 2020s when it turned negative again (also see Duffee 2023).

Figure 1
Stock-bond correlation



Source: Bloomberg and authors' calculations. Shaded areas represent 95% confidence bands.

These changes in sign indicate a meaningful shift in the source of risks to the economy. In line with the negative stock-bond correlation, the 1990s marked a transformative era in information technology, leading to significant investment. After the dot-com boom ended, these supply-driven developments gave way to more pronounced demand-side risks.

By the early 2000s, interest rates had fallen to the degree that short-term interest rates became more likely to fall to the zero lower bound, a risk that works similar to a demand shock. The zero lower bound is the notion that a central bank would avoid policy rates below 0%, even in the face of a severe economic crisis. Should such a crisis materialize, economic activity would slow. And since policy rates would not fall below 0%, there would be insufficient monetary stimulus to prevent low inflation. The combination of low activity and low inflation would lower stock valuations and bond yields, similar to a negative demand shock, and thus result in a positive stock-bond correlation.

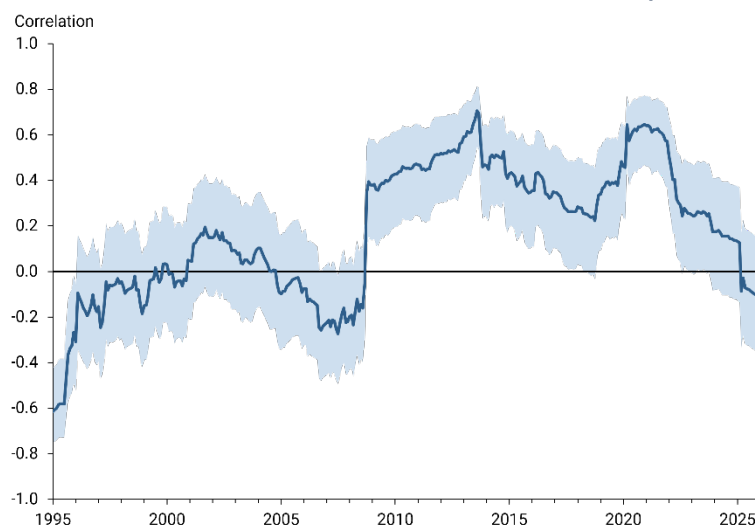
The reemergence of supply-side risks due to the pandemic, swings in immigration, changing tariff policies, and disruptions to energy markets led to significant repricing in asset markets (see Kwan and Mertens 2020 and Garimella, Kwan, and Mertens 2025). These events led the stock-bond correlation to change to negative again in the early 2020s. The correlation has remained negative since then, implying that investors may not expect a quick return to a demand shock-driven economy. Instead, the forward-looking nature of asset prices and the persistence of the stock-bond correlation suggest that a supply-driven economy may be the new normal for some time.

Oil prices and supply-side risks

To further investigate the sources of risk, we turn to oil markets. When oil supply is squeezed, the price of oil rises. And because oil is an important input into the supply chain and the production and transportation of many goods, low oil supply tends to weaken economic activity. This can create a decline in stock prices with a simultaneous increase in oil prices. In other words, oil supply shocks can lead to a negative stock-oil correlation. The same logic explains the financial market consequences of large overall demand shocks to the economy. When high demand leads to a booming economy with high equity valuations, demand for oil rises along with its price. In this case, the stock-oil correlation would tend to be positive.

Figure 2 shows the five-year trailing-window correlation between monthly observations of the S&P 500 index and the price of the next-to-mature oil futures contract over time. Because futures contracts are binding agreements to buy or sell oil at a specified date, their prices reflect the expectations of market participants about supply and demand conditions for oil in the short run. Oil prices are not only sensitive to the oil supply but also respond to shocks to aggregate demand.

Figure 2
Correlation between stock market and oil futures prices



Source: Bloomberg and authors' calculations. Shaded areas represent 95% confidence bands.

The stock market's correlation with oil futures prices broadly mirrors the evolution of the stock-bond correlation, with the important exception of a more pronounced dip during the oil-price boom of the mid-2000s. This pattern reaffirms the evidence from stocks and bonds that the economy shifted fundamentally towards being supply-driven in recent years.

Uncertainty and its pricing in oil markets

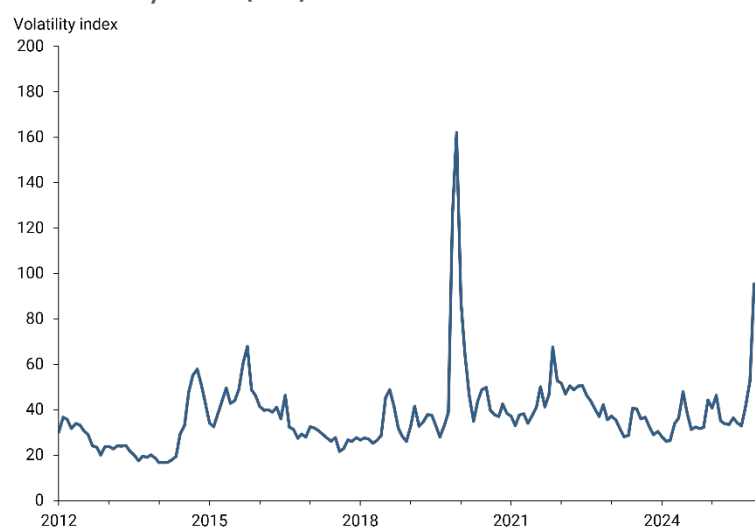
To dive deeper into the importance of supply as reflected in oil prices over the past few years, we turn to additional analysis of energy-related markets. Because risks to energy prices vary significantly over time, we analyze a market-based measure of uncertainty around oil prices. The Chicago Board Options Exchange Crude Oil Volatility Index (Oil VIX), based on options on the United States Oil Fund, reflects the expected near-term volatility of crude oil prices. We start the sample in May 2012 for consistency with our analysis below.

While Figure 3 shows that uncertainty around oil prices typically varies over time, the series displays several sharp increases followed by sudden reversals. Two spikes in the data during the 2020s stand out. The first spike is related to the onset of the pandemic, when the Oil VIX shot up and quickly retreated. The second substantial spike is associated with the recent conflict in the Middle East and subsequent severe energy market disruptions.

The relation between uncertainty and the underlying oil price has changed recently. To establish this connection, we study the correlation of the Oil VIX with underlying oil futures prices. We again compute five-year trailing-window correlations using monthly observations.

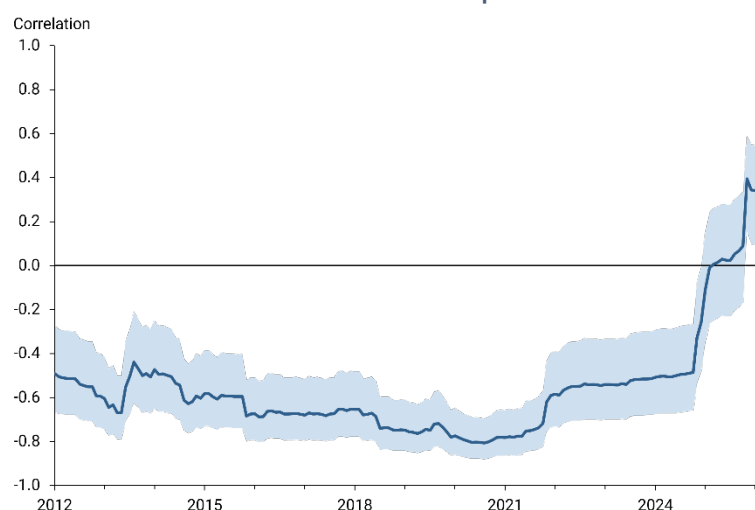
Figure 4 demonstrates significant changes in the correlation between the Oil VIX and oil futures prices. The correlation was negative until 2025, with levels as low as -0.8 around 2020. Starting in 2025, the correlation

Figure 3
Oil volatility index (VIX)



Source: Chicago Board Options Exchange via Bloomberg.

Figure 4
Correlation of Oil VIX with oil futures prices



Source: Bloomberg and authors' calculations. Shaded areas represent 95% confidence bands.

increased sharply and switched to positive. As a result, increased uncertainty around the oil market is now associated with higher oil prices, whereas it used to coincide with lower prices.

We interpret this as evidence that oil markets have become a key driver towards a more supply-driven economy. Uncertainty from negative demand shocks typically manifests itself through lower oil prices, leading to a negative correlation. The recent positive correlation indicates that negative supply shocks and the uncertainty around them are driving up oil prices.

Conclusion

In this *Economic Letter*, we analyze financial correlations and find evidence of a shift from a demand-driven economy to a supply-driven economy. The stock-bond correlation switched from positive to negative a few years ago and has fallen further since then. We identify shocks to oil prices as a potential key supply-side factor. Uncertainty in oil markets spiked during the pandemic and recent geopolitical events. In line with evidence on the stock-bond correlation, the stock-oil correlation also switched to negative. Recent uncertainty in oil markets has also been associated with higher oil prices, which is a stark change from the previous decade. Consequently, policymakers may face more frequent supply shocks as well as an uncomfortable combination of elevated inflation with softer economic activity in the near term.

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References

- Bekaert, Geert, Eric Engstrom, and Andrey Ermolov. 2026. “Uncertainty and the Economy: The Evolving Distributions of Aggregate Supply and Demand Shocks.” *American Economic Journal: Macroeconomics* 18(1), pp. 102–148.
- Bok, Brandyn, Thomas M. Mertens, and John C. Williams. 2025. “Macroeconomic Drivers and the Pricing of Uncertainty, Inflation, and Bonds.” *Journal of Financial Economics* 172, pp. 104–130.
- Campbell, John Y., Carolin Pflueger, and Luis M. Viceira. 2020. “Macroeconomic Drivers of Bond and Equity Risks.” *Journal of Political Economy* 128(8), pp. 3,148–3,185.
- Duffee, Gregory R. 2023. “Macroeconomic News and Stock-Bond Comovement.” *Review of Finance* 27(5) pp. 1,859–1,882.
- Garimella, Rohit, Simon H. Kwan, and Thomas M. Mertens. 2025. “[Market Reactions to Tariff Announcements](#).” *FRBSF Economic Letter* 2025-23 (October 6).
- Kwan, Simon H., and Thomas M. Mertens. 2020. “[Market Assessment of COVID-19](#).” *FRBSF Economic Letter* 2020-14 (May 28).

Data

[Download data for figures](#) (Excel, 376 kb)

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