

Energy and the Outlook for the Economy and Monetary Policy

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The views expressed by the author are her own and do not necessarily reflect those of the Federal Reserve System, its governors, officers, or representatives.

Thank you for attending the seventh annual Energy Conference, hosted by the Kansas City and Dallas Federal Reserve Banks.

Energy is often in the spotlight given its central role in the economy, but the events of this past year have only further reinforced the importance of energy to our region, the economy, and the backdrop for conducting monetary policy. Today I will offer an outlook for the U.S. economy and my views on monetary policy. I'll set the stage for those perspectives by looking first at the impact of developments in energy markets.

Energy Prices on the Rise

Energy prices have been on a wild ride this year. Brent crude oil ran up above \$120 a barrel mid-year before falling back to \$95 a barrel. Even at the lower level, it is more than 10 percent higher than the price a year ago and far above the roughly \$60 a barrel average price that held over the five years prior to the pandemic. The moves in natural gas prices have been even more dramatic, with domestic natural gas prices doubling through the middle of this year, before retreating to a level below where they were last October (and even briefly falling below zero at one trading hub in recent weeks). However, like oil, natural gas prices remain far above pre-pandemic averages.

Similar to higher prices in the broader economy, the increase in energy prices primarily reflects a fundamental imbalance between supply and demand. Resurgent demand following the fading of pandemic lockdowns has run into a constrained supply side. Somewhat surprisingly, the oil and gas extraction and petroleum products industries have shown the least recovery of any sector in the U.S. economy, both producing at about 60 percent of pre-pandemic levels. This is even worse than the supply-chain addled motor vehicle dealer sector, where output is running at about 70 percent of pre-pandemic levels. The imbalance between supply and demand in the oil and gas sectors has unsurprisingly pushed up prices.

Of course, the increase in prices is not solely due to lagging production in the United States. Russia's invasion of Ukraine has upended the entire global system of energy trade, not just for oil, but for almost every form of energy. Russia accounts for more than 10 percent of global oil exports, close to 20 percent of global natural gas exports, and about 15 percent of global coal exports—with Europe being its primary market. This heavy reliance pushed European natural gas prices to historic highs, and the economic consequences of the energy

supply shock are likely to be sizeable for European economies. In addition to the disruption of trade, sanctions are likely to dent global production. The International Energy Agency estimates a potential loss of 2 percent of world oil supply as sanctions hit Russian production.

However, it is important to note that energy prices were on an upward trend before Russia's invasion of Ukraine. For example, the anemic response of the U.S. oil and gas sector to higher prices reflects years of relatively low investment due partly to a shift in investment towards other sources of energy, as well as increased capital discipline following the industry's poor returns during previous boom-bust cycles.

Energy Prices and Outlook

How will developments in energy markets affect the outlook for growth and inflation? Retail gasoline prices reached all-time highs earlier this year, and although prices at the pump have come down, gas prices continue to boost year-over-year inflation. In addition, the price of gasoline is perhaps the most salient price in the economy, and fluctuations in gas prices can play an outsized role in shaping consumers' inflation expectations. Currently, longer-term inflation expectations appear to be anchored, but if expectations were to shift, inflation could become more persistent and difficult to control. Highlighting this risk, research by my staff shows that an increase in salient prices, such as gasoline, can have an amplified effect on near-term inflation expectations in an already high-inflation environment.¹ Energy prices can also affect inflation as an input cost to other industries, like airfares and transportation costs.

What about the implications of higher energy prices for U.S. growth? Higher oil prices force households to spend a larger share of their income on gasoline, lowering their spending on other goods and services. Although it is a drag for everyone, it is a larger headwind for lower-income households that spend a higher share of income on energy. Overall, the negative effect of higher energy prices on consumption can be partly offset by a positive effect on capital investment in the energy sector. For example, U.S. oil investment boosted total business investment growth by about 1 percentage point from 2010 to 2014, when growth-oriented oil companies kept increasing their capacity as oil prices surged. In this cycle, the response of

¹ Nida Cakir Melek, Francis M. Dillion, and A. Lee Smith. "[Can Higher Gasoline Prices Set Off an Inflationary Spiral?](#)" Federal Reserve Bank of Kansas City. *Economic Review*. Forthcoming.

energy investment to higher prices has been lackluster, offering less of an offset to the negative consumption effects.

The more severe impact of the energy shock on Europe, particularly the disruption of natural gas shipments, will likely also have spillover effects for the U.S. economy. Natural gas is an important energy source in Europe, and the effects of a shortage could be particularly notable for Germany's gas-intensive chemicals, paper, and metals production sectors. Complex global supply chains can propagate and amplify such disruptions, a lesson learned during the pandemic.

The Outlook for Inflation and the Economy

This energy shock hits during a time of already heightened economic uncertainty. Although growth has slowed notably this year, the labor market remains tight, and inflation has been high and persistent. Prices, as measured by the CPI, increased 7.7 percent over the 12 months ending in October, down from, but still uncomfortably close to, the 9 percent 40-year high recorded in June. While lower energy prices have pulled down overall inflation in recent months, inflation (excluding energy prices) ran at 6.3 percent in October and has been stuck stubbornly at about that level throughout 2022.

A notable development in recent months has been the rotation of price pressures from goods to services. Goods inflation led the increase in inflation in 2021 and through the beginning of this year, as consumers stuck at home upgraded their living spaces and pushed demand for durable goods up against an impaired supply side, snarled by production disruptions and logistical jams. More recently, the combination of easing in supply chain disruptions, slowing global growth, and higher interest rates have contributed to a deceleration in core goods prices.

In contrast, services prices have firmed, with monthly increases that continue to be among the largest in decades. In addition, the rise in services prices has been broad-based. Whereas goods demand has slowed, and the Kansas City Fed Manufacturing Index has signaled contraction for the first time since 2020, services activity in the District continues to expand, contributing to a tight labor market

One compounding factor in the tightness of labor markets and the rise in prices has been the recent poor performance of labor productivity. Output per hour declined at the fastest pace on record in the first half of the year. While many factors could be behind this decline, including changes in the composition of employment, at this point it is uncertain how persistent this

disappointing productivity growth will be. We asked our District survey contacts about what factors might be behind the declines in labor productivity. The results point to labor mismatch as an important factor, with about a third of our contacts reporting a less-qualified workforce compared to pre-pandemic. In addition, the majority of firms reported increased spending and resources devoted to employee training.

There have been some early indicators that the labor market might be cooling, with reported vacancies trending down even as month-to-month changes remain volatile. The rate at which workers are quitting jobs is also declining, suggesting that workers are becoming a bit less confident that if they leave a job, they'll easily find a new one. Wage pressures will eventually respond to a cooling labor market, but with a lag. Analysis from my staff suggests that wage growth crests and starts to fall about a year after the Kansas City Labor Market Conditions Indicators (LMCI) activity indicator peaks. Even with the indicator turning down in October, we may still have some time before we see a sustained cooling of wage growth.

Prolonged high inflation could eventually lead to a shift in inflation expectations, a development that would make inflation more persistent and even harder to address, a lesson learned at some cost during the Volcker disinflation in the early 1980s. However, most indicators suggest that even as near-term inflation expectations have risen sharply, expectations are for inflation to return to near the Fed's 2 percent objective in the medium term. Notably, while every participant in the most recent Survey of Professional Forecasters marked up their expectations for 2022 inflation (and some substantially so), their forecasts of longer-term inflation expectations have scarcely budged.

With inflation still elevated and likely to be persistent, monetary policy clearly has more work to do. Earlier hopes that improving supply chains and easing production disruptions would significantly reduce inflation are fading. As price pressures have rotated from goods to services, the impetus for inflation has moved from tight product markets to tight labor markets. The lower responsiveness of services consumption (and prices) to interest rate increases highlights the challenging dynamics the Federal Reserve faces as it acts to restore price stability.

Outlook for Monetary Policy

Over the past year, the Federal Reserve has aggressively tightened monetary policy. The policy rate has increased 375 basis points, the fastest pace since the Fed began to explicitly target

interest rates. After more than doubling the size of its balance sheet during the pandemic, the Fed is now allowing up to \$95 billion in Treasuries and mortgage-backed securities to mature every month, shrinking its asset holdings and putting further upward pressure on interest rates. More broadly, tighter monetary policy has fed through to tighter financial conditions. And tighter financial conditions are showing through to the real economy as demand eases, especially in interest rate sensitive sectors, such as housing and durable goods.

Still, imbalances in the economy and the labor market persist, and inflation pressures have yet to let up, suggesting monetary policy and financial conditions must continue to tighten. With the direction of policy clear, the key questions are how far and how quickly will interest rates have to rise?

While it is tempting to speculate on how high rates might need to go, the degree of tightening necessary will only be determined by observing the dynamics of the economy and inflation and cannot be predetermined by theory or pre-pandemic benchmarks. For example, the sensitivity of the economy to interest rates can shift for any number of reasons, and judging sufficiently restrictive policy could well mean seeing the economy and inflation begin to respond in convincing ways. Some have argued that a minimum standard for a restrictive policy is a positive inflation-adjusted, or real, rate of interest. Currently, survey evidence indicates that consumers expect inflation to run at about 5 percent over the next year, above the current 3¾ to 4 percent target range for the policy interest rate, suggesting that the real interest rate remains negative. This measure would point to considerably higher rates than current levels.

One factor complicating the determination of how high rates will have to go is the large stock of liquid savings on household balance sheets. During the pandemic, fiscal policy transferred a tremendous amount of balance sheet capacity from the government to households and business. The government's borrowing was the private sector's saving. How households treat this accumulation of saving will be important for shaping the outlook for output, inflation, and interest rates. It could very well require a higher interest rate for some time to convince households to hold onto this saving rather than to spend it down and add to the inflationary impulse.

With inflation and a tight economy suggesting further increases in interest rates are necessary, at what pace should rates be increased? With a firm commitment to return inflation to target, the pace of hikes is less important than the strength and communication of this

commitment. I continue to see several advantages for a steady and deliberate approach to raising the policy rate.

A more measured approach to rate increases may be particularly useful as policymakers judge the economy's response to higher rates. Already, the Federal Open Market Committee's policy actions have led to a sharp tightening of financial conditions. The yield on the 10-year Treasury bond has increased 260 basis points since January, the fastest increase in almost 40 years. Mortgage rates have more than doubled. The dollar has appreciated 10 percent against a wide range of currencies, and stock market indices have declined by about 20 percent. These are big moves in financial markets, seen previously in only the most extraordinary times.

The speed at which rates have increased has likely contributed to the marked increase in policy rate uncertainty, if only by widening the range of possible action. Uncertainty around the policy rate is currently very high, in part reflecting an unsettled outlook, but also importantly, uncertainty over the central bank's reaction function. I expect some of the increase in uncertainty can be attributed to an aggressive front-loading strategy of policy tightening. As the tightening cycle continues, now is a particularly important time to avoid unduly contributing to financial market volatility, especially as volatility stresses market liquidity with the potential to complicate balance sheet run-off plans.

Restoring price stability is essential to the nation's long-run economic growth prospects. Without question, monetary policy must respond decisively to high inflation to avoid embedding expectations of future inflation. In my view, a steadfast commitment to returning inflation to the Committee's target is important. So is the pace of rate increases. Navigating the path ahead in this time of uncertainty and volatility will require attention to both.