

INFLATION: HOW WE GOT HERE AND WHERE WE'RE GOING

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Global inflation has shot up in the past year to multi-decade highs. But why has this happened and where do we go from here? To answer the first question, we have to start with the basics of Econ 101: supply and demand.

The laws of supply and demand dictate that higher prices will cause producers to increase supply, while consumers will subsequently scale back demand. This dynamic leads markets to clear at a price at which supply equals demand. This price mechanism, that Adam Smith termed “the invisible hand,” allocates resources without overt coercion.

While demand and supply changes are typically relatively slow and predictable, shocks do occasionally occur, most often on the supply side. A prominent example of a supply shock is the OPEC embargo of 1973/74, which led to the quadrupling of oil prices. And small supply shocks, often driven by weather events that curtail or expand supply, happen routinely. Demand shocks, on the other hand, are less frequent. An interesting, but perhaps little-known demand shock, took place in the mid-1930s when Clark Gable took off his button-down shirt and appeared bare-chested in a scene of *It Happened One Night*, wowing movie-goers. Legend has it that undershirt sales, driven almost entirely by women, plummeted overnight as wives longing for their husbands to look like Clark Gable took matters into their own hands.

The examples I cite above are for individual products and services. What happens when prices in general go up or down, leading to inflation or deflation? Classic economic theory stipulates that changes in the relative price for a single or set of items, like energy, should not influence the general price level. Look at it this way: if the price of gasoline goes up, it eats up a bigger share of income so consumers have less to spend on other things, thereby imparting downward pressure on the prices of all goods.

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I take a contrarian view about the link between relative price shocks and the general price level, as I argued in my MIT Master's thesis about inflation during the 1970s. Relative prices matter because relative incomes matter for both individuals and businesses. A large exogenous shock that sends energy prices higher results in a big shift of income from energy consumers to energy producers. Rather than simply accepting that their absolute and relative standards of living have fallen, economic actors fight to restore the status quo ante. That might involve an energy cost surcharge for certain businesses such as shipping companies. For individuals that might mean demands for higher wages. The classical economic model where a shock causes some relative price to rise and therefore other prices must fall ignores human nature. People fight to keep their income and standard of living relative to peers. Inflation is the process through which relative prices and incomes adjust to shocks.

I've mentioned that supply/demand shocks can impact price levels, but what else can drive inflation? A shocking example of inflation was the post-WWI scenario in Germany. The Weimar Republic, bound by the terms of the Versailles Treaty to pay reparations to the Allies, began to print vast sums of money, eventually leading to hyperinflation and the collapse of the currency (and the rise of the Nazi party).

As painful as inflation can be, deflation can also have terrible consequences. As consumers defer purchases under the assumption that prices will be lower in the future, economic activity slows. This was the backdrop that led to the Great Depression and the current situation in Japan. Today, central banks target a low, but positive rate of inflation at 2%. (The reason for this, however, isn't econometric: <https://www.nytimes.com/2014/12/21/upshot/of-kiwis-and-currencies-how-a-2-inflation-target-became-global-economic-gospel.html?referringSource=articleShare>).

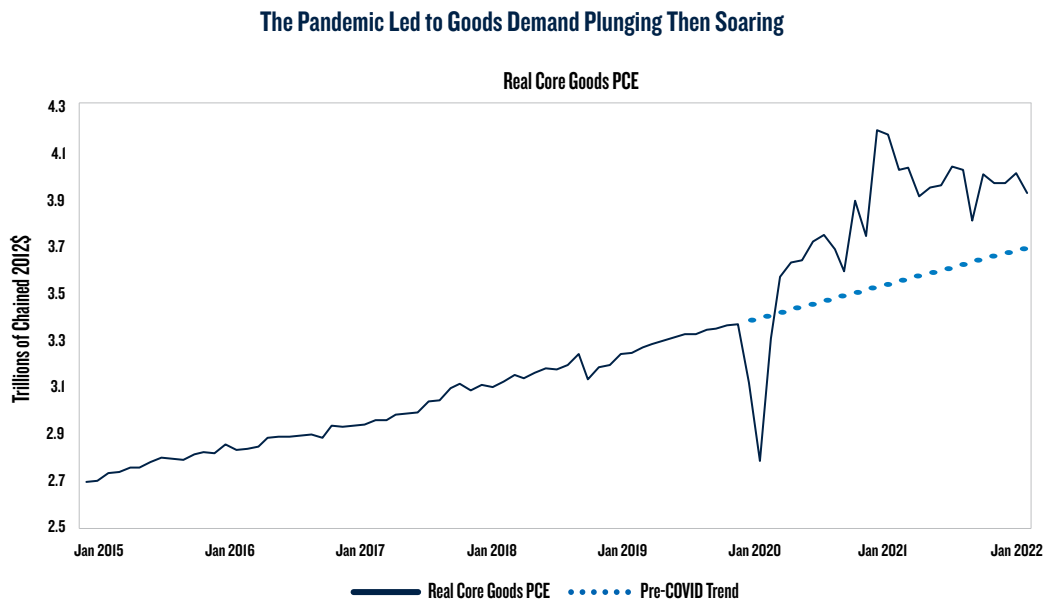
Low but positive inflation has other benefits besides avoiding deflation. It makes relative price and wage adjustments more palatable, serving as a social and economic lubricant, and leads to fewer constraints on the economy allowing for faster growth. But why has the job of creating conditions that lead to slow but low inflation fallen on the central bank and not on the government using fiscal policy to raise taxes or cut spending? Statute directs the Fed to have a dual mandate of promoting price stability and maximum employment. And importantly, politicians worried about facing an angry electorate are happy to let the Fed handle tough and unpopular inflation-fighting measures. So, when bringing down high inflation comes at the terrible cost of crushing the economy, as happened during Paul Volker's reign at the Fed in the 1980s, there's no doubt that the Fed can take the unpalatable but necessary steps.

Let's return to today. Chairman Powell says the Fed is shooting for a soft landing but historically this has been very tough to do with inflation at its current level. The key to understanding where we are and where we are going is to ask why, after decades of low inflation, is inflation so high?

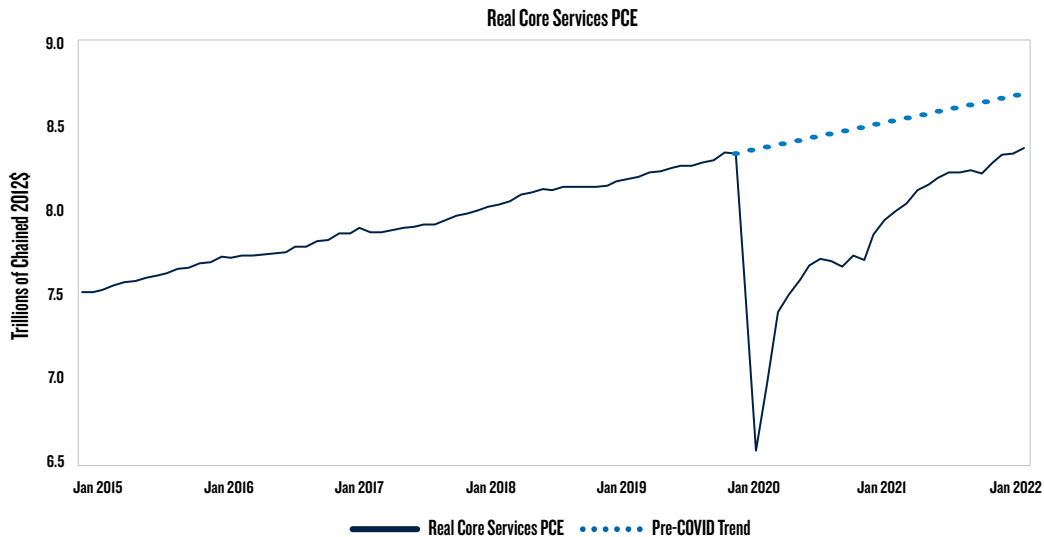
Part of the answer can be attributed to two policy mistakes. The \$1.9 trillion American Rescue plan pushed through in early 2021 to stimulate economic activity squelched by the pandemic was too big, especially given that the economy was already recovering. Larry Summers, former Secretary of the Treasury, notes that the Federal government replaced every dollar of lost income from the pandemic with \$3. Although highly successful at ameliorating economic and individual pain, the \$7 trillion total pandemic relief expenditure contributed 3% to inflation in 2021 according to Fed researchers. But the Fed, by maintaining easy monetary policy and near-zero interest rates since the Great Financial Crisis - long past needed - also bears some responsibility. Still, despite these stimulative measures, inflation stayed mostly below the Fed's 2% target. So, what's changed in the last 15 months and why did the Fed get it wrong?

In my view, the biggest causes of current inflation are the unprecedented supply and demand shocks attributed to the pandemic and the war in Ukraine. For the five years from 2015-early 2020, goods demand rose at a modest yet steady pace. This predictable pattern meant companies and employees could plan efficiently. But amid pandemic-related restrictions imposed in March of 2020, goods demand plummeted by about 20%, almost overnight. Over the course of the next year, demand soared 50% from the low, hitting almost 20% above the pre-pandemic trend. It remains elevated at about 10% above trend. Services spending also fell by about 20% at the height of restrictions. Although it has rebounded, it remains about 5% below the trend line and slightly below pre-pandemic levels.

Figure 1: Pandemic-related Decrease in Goods and Services Demand



Services Also Plunged and Recovered, But Not Yet Back to Trend



*Pre-COVID Trend based on Feb 2017 - Feb 2020. Data from January 2015 – June 2022. Source: PGIM Quantitative Solutions, FactSet.

The picture in certain industries is even more dramatic than these charts depict. On June 19, 2019, 2.72 million passengers passed through TSA checkpoints at US airports. One year later, that number fell by almost 80% to only 590,000. Yet a year after that, in the summer of 2021, travel recovered and demand soared 3.5 times to 2.1 million passengers. In 2022 demand remains about 15% below the pre-pandemic level, but it is up four-fold from the low in 2020.

In the dark days of March 2020, facing collapsing sales and huge losses, businesses cut costs and capacity to avoid bankruptcy. Restaurants closed, rental car companies sold off their fleets, and unemployment soared. No one was thinking about production expansion to meet a possible demand surge. And as mentioned earlier, demand changes typically occur slowly and are quite predictable. When supply shocks happen, they are usually limited to specific sectors or industries. But during the pandemic, the violent swings in supply and demand impacted broad swathes of the economy simultaneously and very quickly. The recession and bear market that followed were short but dramatic. The combination of rapid and extensive monetary and fiscal stimulus prevented a deeper, longer downturn. The amazing success of working from home, a vast social experiment that we never would have tried voluntarily, allowed many companies to continue operating and their workforce to remain employed despite the pandemic. This was not a normal recession.

In a normal recession, supply and demand both decline. As sales soften, businesses cut back spending and initiate lay-offs, and rising unemployment further pressures consumer spending. In the COVID-induced recession, supply dropped as businesses shut down, but demand stayed high as the combination of work-from-home and government stimulus meant that incomes did not. The sudden and violent mismatch between supply and demand, typically addressed by production increases in response to higher prices, persisted (and still does to this day, in some respects) due to shutdowns and restrictions. In essence, the current bout of inflation can be seen as the pricing mechanism trying to rectify this imbalance.

Amid the huge shocks to supply and demand entire industries had to swing from cutting production to scrambling to add both capacity and employees in a matter of a few months, a process that normally takes years. The most notable price changes were seen in industries that experienced the biggest swings in supply and demand. For example, used car prices soared in 2021 as car rental companies, usually a huge source of used cars, suddenly found themselves holding on to every car they had left as travel demand rebounded.

This swift rebound in goods demand caused another problem: transporting the goods. Trucks and truck drivers were scarce, container ships holding merchandise rapidly going out of season waited outside ports, and shipping costs soared. Logistics companies, typically relying on steady changes in demand, were unable to plan for the resources they needed to fulfill their responsibilities. Food prices have also increased substantially, driven by both pandemic effects as well as by the war in Ukraine. Let's consider first why food prices rose following the onset of the pandemic: As the pandemic hit, much food went to waste as farmers unable to source migrant labor couldn't harvest or transport crops. In a remarkably unfortunate twist of timing, weather impacts led to lower harvests of soybeans in Brazil and wheat in China. So, in addition to higher grain prices, these shortages in turn boosted animal feed prices, and therefore, the prices of meat and eggs. And just as toilet paper hoarding will forever be a hallmark of the pandemic, fear of scarcity led to constrained supply of some commodities, like palm oil, which was held back from market to ensure supply for the citizens of Indonesia.

The terrible human tragedy of the war in Ukraine has been compounded by supply issues, especially for energy, key metals, grains, and fertilizer. Ukraine and Russia account for about 30% of global wheat production and roughly two-thirds of the sunflower oil used for cooking. Ukraine was the world's fourth-largest exporter of corn, and Russia and Belarus account for much of the global supply of fertilizer. High food prices are likely to continue until the war in Ukraine eases. But supply constraints could be longer-term forces as export infrastructure destroyed during the war will need to be rebuilt.

Figure 2: Wheat Is Well Above Pre-War Level but 20% Off Peak

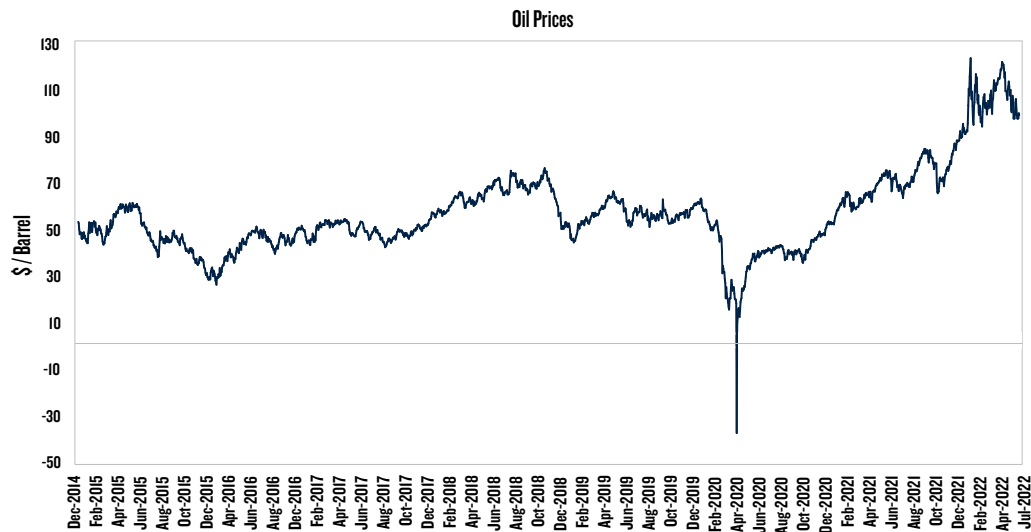


From December 31, 2014 – July 28, 2022. Source: PGIM Quantitative Solutions, Thomson Reuters DataStream.

It's clear that there remain many unknowns. What we do know, however, is that we don't have an aggregate demand problem; inflation has not risen due to excess aggregate demand. According to the St. Louis Fed's FRED data, real personal consumption expenditures (PCE) were running at a \$14 trillion annual rate in April 2022. Although that's above the \$13.3 trillion pre-pandemic level, the pace of growth has been under 2% annually, versus about 2.5% in the previous eight years. Overall, PCE is on or slightly below trend (although the mix of goods versus services has changed dramatically), so using a Volker-style economic cudgel to bring inflation down is unnecessary. What's required now, in my opinion, is patience to let the markets and prices recalibrate.

In some ways, the price mechanism is itself an economic actor, a kind of referee or arbitrator trying to get producers and consumers to agree on quantity. That referee has been extraordinarily busy, but I think, despite some spot shortages, the referee is doing a good job. Some critical prices, like used cars, have started to fall and some shortages are easing. Economist Nancy Lazard reported in June that manufacturing supply and demand are essentially in balance and that inventories have risen to a normal level. Indeed, Wal-Mart and Target both reported disappointing earnings, driven in part by excess inventories that required sales to make room for new goods. Semiconductor imports have risen 50% in the past year and oil and other commodity prices are off their peaks.

Figure 3: Oil, Commodity Prices off Peaks:





From December 31, 2014 – July 28, 2022. Source: PGIM Quantitative Solutions, Thomson Reuters DataStream.
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So, what is the outlook for inflation? That depends on the Fed. In June the Fed raised rates by 75 basis points (bps), after signaling its intent to do so a few days earlier. Fed Chair Powell cited May’s hot CPI report and increased inflation expectation data as reasons for the 75bps hike versus the previously signaled 50bps. Not only have prices continued to rise, but the breadth of price rises is widening. Following June’s CPI print, the highest in nearly 41 years, the Fed’s July meeting brought another 75bps rate hike, although policymakers’ tone was somewhat more sanguine, with indications that future rate policy will be dependent on growth data. The “transitory” moniker has been retired, and in just a few months the Fed has turned from dovish to hawkish, which has already had an effect. Mortgage rates are up from their recent lows and housing activity is lower, even if prices have yet to follow. The stock market has fallen 20%, though stocks have rebounded from the worst levels, tightening financial conditions. And many commodity prices, though still elevated, are coming down.

Higher rates and expectations of higher rates often lead to a stronger currency, which is clearly happening with the US dollar, particularly versus the yen, euro and British pound. A stronger dollar also helps inflation by reducing import prices in dollars and limiting price increases for those who compete with imports.

Calling a peak of inflation has proved a fool’s errand. Certainly, there is significant inflation momentum, but aggregate demand isn’t the problem; instead we’re faced with a large number of individual supply and demand issues driving relative prices out of whack. The aforementioned link between disruptions to relative prices and the general price level is what is playing out now. But if those disruptions ease, the pressure on prices generally should ease. These are the issues that the pricing mechanism is designed to correct. And while it may take some time, it will work. The Fed has repeatedly stated its intent to orchestrate a soft landing. While I think that may be too much to hope for, I think a Volker-style scenario that leads to a deep recession is even less likely. Household and business balance sheets remain in great shape. On the consumer side, for example, the net worth of households is currently at about \$140 trillion; compare that to \$117 trillion at the end of 2019 and \$70 trillion in 2007. Mortgage debt as percent of disposable personal income is now at 3.8%, compared to 7.2% in 2007, and overall debt service, which was at 13% in 2007 and about 10% pre-pandemic, is now at 9.5%. And while corporate profits are likely to come under pressure as the economy cools and inventories rise, especially with the strong dollar, without the excesses associated with past recessions, I expect that this one, when and if it comes, will be relatively mild.

In my opinion, the key to the intermediate term outlook for inflation, economic growth, and financial markets is patience. The Fed’s actions and rhetoric have already changed expectations for economic variables and contributed to changes in asset prices. Markets are working; some of the commodities with the biggest price increases have seen some of the biggest subsequent drops. The shortages of many goods have eased, logistical problems have abated, and the switch back towards services is underway. Month-over-month inflation readings are likely to moderate considerably in the next few months, in my opinion. With a bit of patience by the Fed, other policy makers, and the general public, I think we might see lower inflation and a slower but not strongly negative economy by year end. If I’m right, financial markets may recover some of the losses suffered year to date. And as bleak as things seem to many people now, we might be toasting a brighter day by New Year’s Eve.

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