

Central Banks and Beyond: An Examination of the Factors Behind the Current Inflation Spike

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ABSTRACT

This article examines the factors that have contributed to the rise of inflation rates in developed economies since 2021, with a particular focus on the role of central banks. The main argument is that the unprecedented monetary and fiscal stimulus implemented by central banks and governments in response to the Covid-19 pandemic has been the primary, but not the sole, cause of the current inflation spike. To support this argument, the article proceeds as follows. First, it provides a conceptual and operational definition of inflation and reviews the main price indexes that are used to measure it. Second, it presents descriptive statistics on the average level and volatility of inflation in G7 countries over the last thirty years, highlighting the exceptional nature of the recent period. Third, it discusses four potential explanations for the current inflation episode: the expansionary monetary and fiscal policies in 2020-21, the supply chain disruptions caused by the pandemic and other shocks, the geopolitical tensions between Russia and Ukraine, and the structural changes in the global economy.

The Recent Surge of Inflation in G7 Countries

Inflation is defined by a general increase in the overall price level of the goods and services in the economy and is measured by several price indexes such as the personal consumption expenditures price index (PCE)¹, the consumer price index (CPI)², the producer price index (PPI)³, and the GDP price deflator⁴. There are also other specific indexes which measure, for example, wage inflation⁵. The CPI and PCE data measure costs for consumers, the PPI measure costs for producers, whereas the GDP price deflator measure price changes in goods and services purchased by consumers, businesses, government, and foreigners. Additionally, although both CPI and PCE are related to consumer goods, CPI sources data from consumers, while PCE sources from businesses and as a result they track different expenditures. Although Central Banks tend to analyze all the subcategories that make up the different price indexes, they focus mainly on the so called “core inflation”. This measure tends to exclude more volatile items such as energy and food and focuses at four quarters or rolling data, albeit considering the monthly evolution to identify trends.

¹ The PCE price index is calculated for the USA by the U.S. Bureau of Economic Analysis (Available at: <https://www.bea.gov/data/prices-inflation> Accessed: 18 December 2022).

² The CPI data is calculated for the USA by the US Bureau of Labor Statistics (Available at: <https://www.bls.gov/cpi/> Accessed: 18 December 2022).

³ The PPI data is calculated for the USA by the US Bureau of Labor Statistics (Available at: <https://www.bls.gov/ppi/> Accessed: 18 December 2022).

⁴ The GDP price deflator is calculated for the USA by the U.S. Bureau of Economic Analysis (Available at: <https://www.bea.gov/data/prices-inflation> Accessed: 18 December 2022).

⁵ The major source of wage inflation data in the U.S. is the average hourly earnings data from the Bureau of Labor Statistics (Available at: <https://www.bea.gov/data/employment-and-earnings/> Accessed: 18 December 2022).

Between 1992 and 2020, developed economies (defined as G7 countries) showed a long period of price stability with CPI averaging 1.7%⁶, somewhat below the 2% mark which can be considered as an “international standard across central banks around the globe” (Garringa and Werner, 2022, p. 1). In addition, this level of inflation was achieved with a very limited volatility shown by a standard deviation of 0.7%⁷. This statement holds true when also looking at extremely long datasets such as eight century of inflation data in the UK (Reis, 2022, pp. 3-4), where one can observe that the most recent period (1997-2016) was the outlier in terms of low inflation and related volatility. From the middle of 2021, inflation started to rise significantly and reached an average of 7.0% in 2022 for G7 countries⁸ (See Figure 1). Even though the reported data is boosted by more volatile components such as energy and food, “core inflation” also remains well above normal levels (see Figure 2).

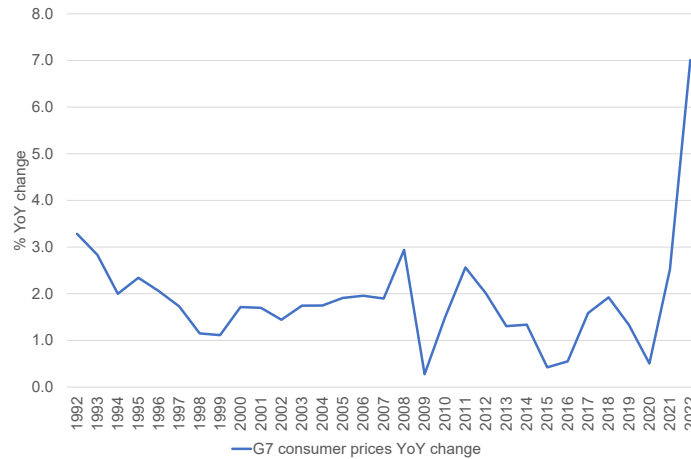
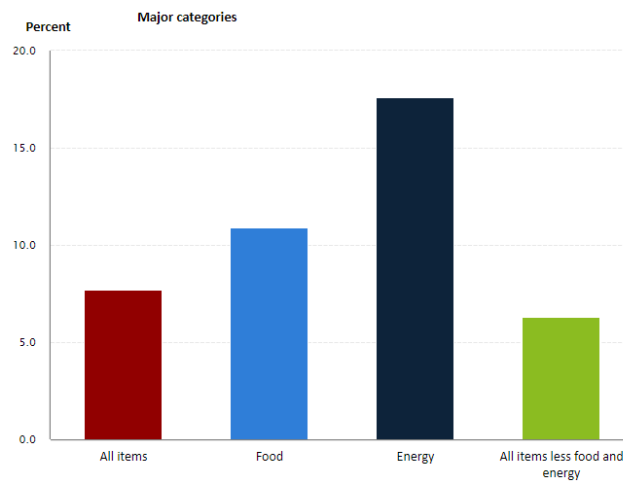


Figure 1. G7 consumer price change YoY (update). Source: our elaborations on IMF database as of October 2022, Available at: www.imf.org/eng/data Accessed: 20 December 2022



Source: U.S. Bureau of Labor Statistics.

Figure 2. 12M % change CPI selected categories (November 2022). Source: Available at: <https://www.bls.gov/cpi/> Accessed: 20 December 2022

⁶ My elaboration from International Monetary Fund (IMF) database, available at www.imf.org/eng/data (Accessed: 20 December 2022)

⁷ Ibid.

⁸ Ibid.

The Four Drivers of Inflation in 2021: Policy, Pandemic, Supply Chains and Geopolitics

Although I believe that the spike in inflation was mainly caused by the overly aggressive fiscal and monetary policy adopted by developed countries, there are two additional underlying contributing causes. Thus, all in all, four drivers can be identified:

- a. From March 2020, Central Banks reduced the level of short-term interest rates and committed to a quantitative easing policy purchasing bonds with the goal of lowering long-term interest rates to stimulate the economy;
- b. In 2020-21, governments introduced wage and employment subsidies and other income transfers to try to shelter households and corporates from the damages created by the COVID lockdowns;
- c. Global supply chains saw significant disruptions due to COVID lockdowns;
- d. The war between Russia and Ukraine caused a spike in commodity prices and in particular energy, wheat and fertilizers.

The two main developing countries blocs by nominal GDP size, namely the United States of America and Europe, adopted an expansionary monetary policy to avoid permanent wounds in the economy due to the pandemic. In the US, the Central Bank reduced the target funds rate corridor (i.e., the interest rate at which depository institutions trade liquidity with each other overnight) from 1.25%-1.0% in early March 2020 to 0.25%-0.0% in mid-March 2020 and kept it unchanged until mid-March 2022. In August 2020, the Federal Reserve System (FED) also adopted a revised statement on longer run goals and a monetary policy strategy with a flexible inflation target where “following periods when inflation has been running persistently below 2%, appropriate monetary policy will likely aim to achieve inflation moderately above 2% for some time” (Papell and Prodan, 2022, p. 6). In Europe, the European Central Bank (ECB) kept a loose monetary policy from September 2019 until July 2022 with a negative deposit facility rate of -0.5% and a marginal lending facility of 0.25%⁹.

At the same time, real GDP rose between the second quarter of 2020 and the end of 2021 by 14.9% in the United States and 17.5% in the Euro Area (Reis, 2022, p. 6). In addition, monetary policy works with a time lag: “ECB model-based staff analysis suggests that, on average, the impact on inflation of a 100-basis point policy rate shock builds up gradually over time to reach its peak impact during the second year following the initial shock.” (Lane, 2022, p. 4). This evidence lets me conclude that the Central Banks kept a loose monetary policy for too long and should have acted quicker seen the rapid economic recovery to prevent the rise in inflation.

Additionally, Central Banks, in particular the FED, have often used policy rules as useful tools to dictate interest rates, among which the most relevant is the so-called ‘Taylor rule’ and its variations (Federal Reserve, 2022, pp. 46-47). This rule “has the feature that the federal funds rate rises if inflation increases above a target of 2% or if real GDP rises above trend GDP” (Taylor, 1993, p. 202). However, notwithstanding the signals during the COVID pandemic, the FED diverted from it. The Taylor rule is a numerical formula that relates the target for the federal funds rate to the current state of the economy. It prescribes that the federal funds rate equals the inflation rate plus 0.5 times the output gap (the difference between the real GDP from a target), plus 0.5 times the inflation gap (the difference between the inflation rate and the 2% inflation target), plus the neutral real interest rate.

⁹ The rate on the deposit facility and the rate on the marginal lending facility define a floor and a ceiling for the overnight interest rate at which banks lend to each other.

There are various versions of the Taylor rule, but the original indicates that (Taylor, 1993, p. 202):

$$r = p + 0.5y + 0.5(p - 2) + 2$$

where,

r = the federal funds rate

p = the rate of inflation over the previous four quarters

y = the percent deviation of real GDP from a target

Although policy rules are recognized to have limitations (FED, 2022, p. 48), a recent paper indicated that their use “would have provided a much more stable benchmark for liftoff from the Effective Lower Bound and projected rate increases through 2024 [...]. As of March 2022, the federal funds rate was between 1.0 and 1.25 percent below the rate prescribed by the inertial policy rules” (Papell, Prodan, 2022, p. 1). Looking at the elaborations of the Atlanta FED, I can reach the same conclusion observing that the strong historical correlation between Fed funds rate and Taylor rule broke in 2020-21¹⁰. (see Figure 3).

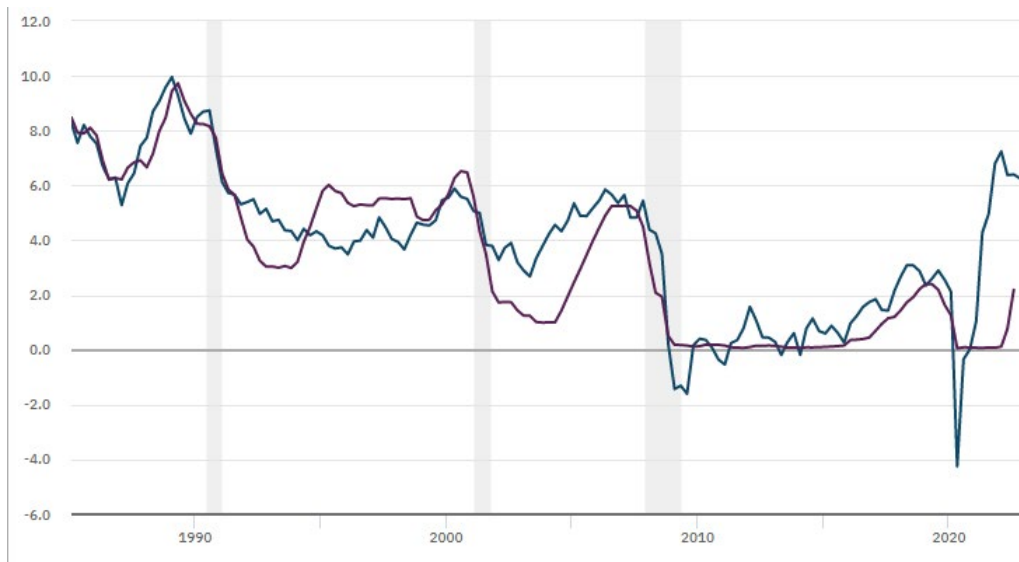


Figure 3. Actual Fed Funds rate and Taylor rule prescriptions. Source: Available at <https://www.atlantafed.org/cqer/research/taylor-rule> Accessed: 20 December 2022

As indicated earlier, I believe that fiscal policy and supply constraints are other relevant factors that contributed to push inflation. Looking at the USA, it could be estimated that in 2020 President Trump and in 2021 President Biden signed COVID relief packages worth \$7 trillion dollars¹¹ boosting the savings rate to a peak above 30%¹² and consequently pushing demand. At the same time, rising demand supported by expansive monetary and fiscal policies could not be met in full given supply constraints. Due to COVID lockdowns and restrictions, ports became clogged and the explosion of remote work and limitation in travel caused a boom in consumer electronics demand. This, in turn, caused scarcity in semiconductors creating further inflation in the supply chain and manufacturing problems in some key industrial segments, which could not be allocated their normal share of chips.

¹⁰ Available at <https://www.atlantafed.org/cqer/research/taylor-rule> Accessed: 20 December 2022

¹¹ Available at: <https://www.covidmoneytracker.org/> Accessed: 20 December 2022.

¹² Available at <https://fred.stlouisfed.org/series/PSAVERT> Accessed: 20 December 2022.

The last factor which further accelerated inflation is the war between Russia and Ukraine. The effects of the war are particularly negative for Europe, which relied for 36% of its gas supply from Russia before the start of the war. After sanctions have been put in place, Europe has seen a reduction in flows up to 80%¹³. This has pushed up prices despite reduced consumption, as liquified natural gas (LNG) imports could not fully compensate the demand given the lack of regassification infrastructure. Moreover, the Russia–Ukraine region is a major producer of staples like wheat and a major supplier of fertilizer worldwide. The disruption associated with the war caused reduced exports consequently pushing up food prices.

Conclusions

In conclusion, alongside the supply chain disruptions, the governments' fiscal policies, and the war in Ukraine, Central Banks are to blame for their slow reaction to tackle the inflation problem as even when the economy was recovering, they insisted on keeping a loose monetary policy. However, I believe that part of the reason Central Banks did not take preventive action is that when they saw the inflation spike, they were not as worried given that, pre-COVID, the fear was more about deflation and inability to reach the 2% mark. As highlighted before, this was also embedded in the FED new policy of tolerating inflation above 2% for some time. However, their choice of not tightening their monetary policy earlier has massively backfired and has caused a strong increase in inflation. To tackle the problem, the FED has been moving at an extremely fast pace in 2022 raising the level of interest rates several times and switching from quantitative easing to quantitative tightening.¹⁴ This may well slow inflation but comes with the potential risk of putting the economy in jeopardy (Guenette, Kose, and Sugawara, 2022).

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¹³ Available at <https://www.bruegel.org/dataset/european-natural-gas-imports> Accessed: 20 December 2022.

¹⁴ The FED, after keeping the target rate unchanged from March 2020 to March 2022 at 0.25%-0.0% coupled by a large asset purchase program, has increased interest rates four times by 75 basis points, two times by 50 basis points and one time by 25 basis points. Additionally, the FED brought an end in early 2022 to its purchases of Treasury and mortgage-backed securities, which are now declining by around \$100 billion a month from its peak near \$9 trillion. (Available at: <https://www.federalreserve.gov/monetarypolicy/fomcpresconf20221214.htm> Accessed: 20 December 2022)

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