What Causes Inflation? – The Relationship between Central Bank Policies and Inflation*

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This article uses examples from economic history and crises to examine the factors that contribute to the development of periods of high inflation, with a particular focus on the role of different fields of economic policy. With reference to the economic theories underlying economic policy considerations, the paper also briefly introduces an emerging approach, the Modern Monetary Theory, and discusses its messages on inflation.

1. Introduction

Many have tried to give an explanation for the relatively low inflation rates seen in recent decades. In the years following the high inflation experienced internationally in the 1970s, it seemed reasonable to argue that – along with appropriate monetary policies and seemingly well-functioning prevailing economic theories – increasingly open global trade, such as China's entry into the world market, supported the low inflation environment. After the 2008–2009 crisis exposed the financial imbalances that had built up beneath the surface, the huge amount of liquidity injected into the financial system by central banks did not trickle down to the real economy, and inflation rates did not start to rise. The 2008–2009 crisis was followed by a protracted recovery period. The aim of different economic policy branches was no longer to bring down inflation, but to raise it to a target level.

The coronavirus crisis that erupted in 2020 was caused by a public health emergency, not by structural problems in the economic and financial system. In this environment, once recovery has started, demand recovers faster than supply, given that returning to previous capacities requires resources and time. This friction naturally leads to elevated inflation through an overdemand situation. This effect is reinforced by the huge amount of liquidity injected into the economy by the economic policy branches. What has changed, however, is that the programmes have been more targeted and have involved greater cooperation between the economic policy branches. Many policymakers emphasise the temporary nature of the phenomenon, given the underlying factors behind the rise in inflation. Nevertheless, if the current high inflationary trends become embedded in the

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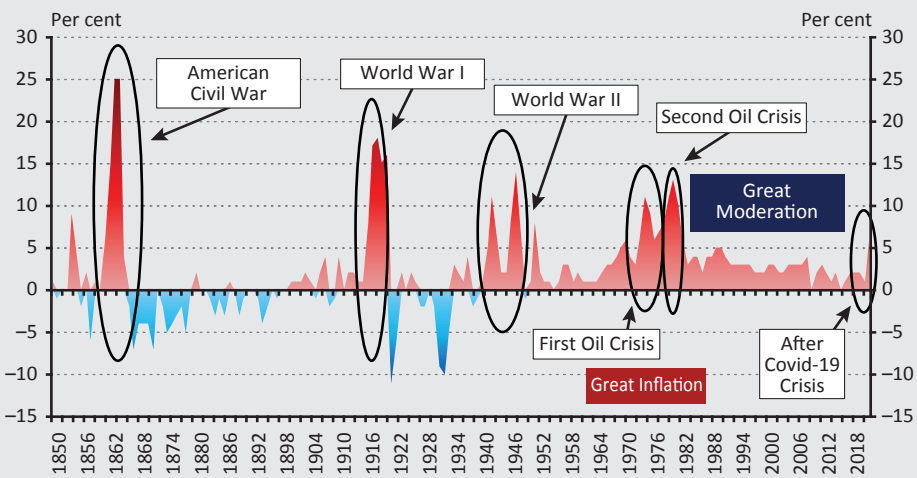
expectations of agents and influence their decisions, inflation, partly caused by temporary factors, may become persistent. However, based on an emerging economic approach, the Modern Monetary Theory (MMT), the current state of the economy does not allow us to take for granted that the high price dynamics we are currently experiencing will be sustained in the future.

2. Inflation from a historical perspective

If our goal is to understand the inflation that has emerged in the wake of the coronavirus pandemic, one important step in our investigation could be to summarise historical experiences. Inflation data for the United States over more than 150 years show that periods of particularly high inflation have been rare and, with few exceptions, relatively short, and were typically associated with wars and crises (*Figure 1*).

Figure 1
Inflation developments in the United States



Note: Annual CPI data
Source: officialdata.org

However, the 1970s are an important exception. This period is described in the Anglo-Saxon literature as the "Great Inflation", when high inflation lasted for more than a decade due to a number of factors. While CPI inflation in the US averaged 2.4 per cent in the 1960s, it was 7.1 per cent in the 1970s. The first and second oil crises in 1973–1974 and in 1979 played a major role in the background of high inflation. However, high commodity prices alone do not guarantee the durability of high inflation, as the attitude of economic policymakers towards inflation was also a key determinant.

Economic policy was significantly influenced by the budget expenditures related to the Vietnam War and the collapse of the Bretton Woods gold standard system. At that time, full employment had been a key objective for policy makers for some time. Meanwhile, the Phillips curve view pervaded decisions, with policymakers believing that the only way to contain inflation was to increase unemployment. The rise in the oil price was seen by economists as a factor outside the central bank's control, but not the unemployment it caused. In this comparison, employment aspects were given higher priority. Inflation remained high, and the Federal Reserve allowed fiscal imbalances to increase, while unemployment did not fall (*Bryan 2013*).

The moderation in price dynamics was ultimately brought about by a significant change in economic policy and economic approach. By the late 1970s, inflation in the United States had become a clear enemy in the eye of the public: confidence in government and economic policy waned and business investments slowed. By 1979, with Paul Volcker at the helm of the Fed, the prevailing winds had shifted: reducing inflation was now seen as the key to policymaking targeting price stability and full employment. Volcker emphasised the Fed's commitment to fighting inflation, by raising interest rates while adjusting the pace of reserve growth to keep inflation down. In addition, gradual liberalisation of the labour market and the decreasing role of labour unions provided major support from the government in bringing down inflation (*Peters 2008*). Success did not come immediately, but credible monetary policy aimed at price stability laid the foundations for inflation control for decades to come.

At the same time, similar developments were occurring in the United Kingdom. Along with the liberalisation of the labour market under the Thatcher government formed in 1979, a tight central bank policy stance emphasising the monetary nature of inflation, in line with the international advance of monetarism marked by Milton Friedman, eventually resulted in a reduction in inflation in the UK (*DiCecio – Nelson 2009*).

The period of "Great Inflation" was followed by 25 years of inflation "peace". During this period, central banks moved more widely to inflation targeting, the structure of the economy changed significantly, and megatrends such as globalisation and digitalisation, and the increasing role of services all pointed towards lower and less volatile inflation, without any major shocks hitting the economy in this period. Good economic policies seem to have delivered results, but they masked the financial imbalances that the 2008–2009 crisis then relentlessly exposed. The onset of the crisis did not mark the end of decades of low inflation. By then, however, the subdued price dynamics were already a threat, foreshadowing the nightmare of

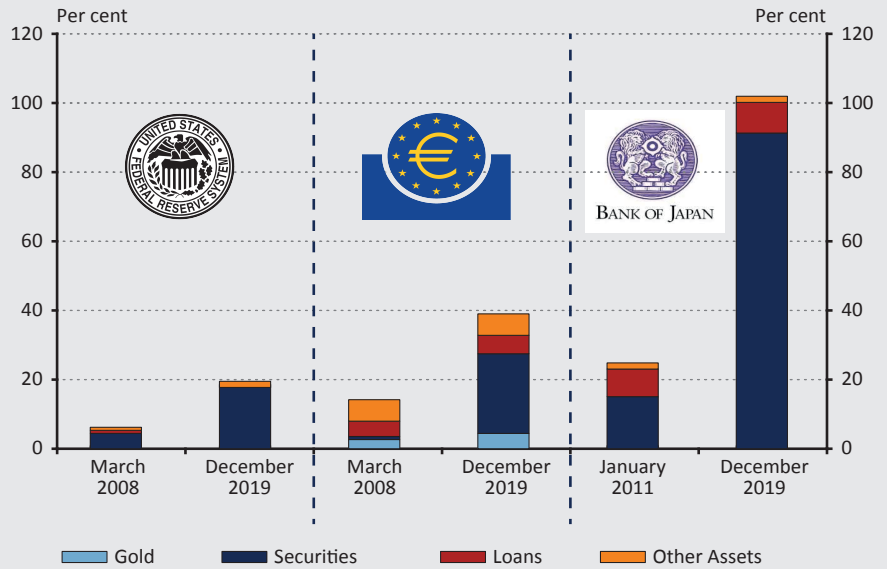
deflation. The winds changed again and, along with reviving economic activity, raising price levels in line with central bank targets became important.

3. The 2008 crisis management did not cause consumer inflation, but did cause asset price inflation

The global financial crisis of 2008 posed a major challenge for economic policymakers, which also applied to monetary policy. On the one hand, in the initial, acute phase of the crisis, rapid intervention was needed in many countries to ensure the stability and proper functioning of the banking system and to mitigate the disruptions in market processes. On the other hand, the crisis proved to be extremely protracted, making the use of innovative monetary policy instruments essential to handle it. In the initial, acute phase of the crisis, central banks mostly tried to avert the interbank market turmoil and restore financial stability through various liquidity-providing measures. In addition, they reacted to adverse macroeconomic developments with significant monetary easing, starting with a cut in the reference interest rate, which reached or approached its effective lower bound within a relatively short period of time.

Responding to the problem of the lower bound of the policy rate, first the Federal Reserve and then other central banks introduced quantitative easing measures. In addition, most central banks sought to temper the longer-term interest rate expectations of economic agents with forward guidance to ensure further monetary easing. In addition to the globally important central banks, many other central banks pursued exceptionally loose monetary policies in the aftermath of the crisis. In general, with a few exceptions, unconventional easing measures led to a substantial increase in central banks' balance sheet aggregates following the crisis (*Figure 2*). The Fed's balance sheet total-to-GDP ratio more than tripled in just over 10 years, while the ECB's nearly tripled. The Japanese central bank's balance sheet as a share of GDP more than quadrupled in almost a decade. These balance sheet expansions were mainly driven by asset purchase programmes.

Figure 2
Breakdown of the expansion in central bank balance sheets as a share of GDP



Note: In the case of Japan, the earliest detailed balance sheet data, which is consistent with later balance sheet data, is for early 2011.

Source: Central banks' websites, FRED, Eurostat, Japanese Cabinet Office

The specific characteristics of the financial systems of the economies concerned and the nature of the problems that emerged during the crisis determined the effectiveness of each asset purchase programme. Overall, however, the programmes were successful in reducing long-term yields, although in the case of the ECB they had different effects in different regions of the euro area (*Eser – Schwaab 2016*). In addition, the programmes contributed to an increase in the inflation of the prices of some assets, with most of the developed stock market indices, real estate and commodity prices all rising significantly. The rise in asset prices is well represented by the fact that by the end of the decade, the US S&P 500 index had more than tripled, the NASDAQ had nearly quadrupled, while the German DAX index and the Japanese Nikkei index had doubled compared to their levels at the beginning of 2010.

However, the asset purchase programmes did not fully achieve their original targets. The real economic impacts of the programmes are controversial: there are large differences between the macroeconomic variables estimated in the literature (e.g. *Engen et al. 2015*; *Weale – Wieladek 2016*; *Baumeister – Benati 2010*; *Hammerman et al. 2019*; *Andrade et al. 2016*). Inflation rates have remained below the central bank's targets since the crisis. Moreover, the additional real economic impact of

the additional stages of asset purchase programmes is estimated to have been decreasing *(Chung et al. 2011*). The difficulty of measuring the exact impact of programmes further complicates the understanding of their real economic impact.

The idea behind the asset purchases is that the central bank's purchases will make lending to the real economy relatively more profitable for banks as long as money market yields fall, leading to increasing consumption and investments, which will ultimately boost the real economy and inflation. However, in reality, the transmission chains were long and damaged. The central bank's asset purchase programmes opened up favourable investment opportunities in the capital and commodity markets, ultimately leading to higher savings rates. Declining yields thus supported rising asset prices instead of boosting real economic growth and inflation.

There could be several reasons behind the missing, disputed real economic impact. One of these is that the private sector was heavily indebted at the onset of the crisis, which affected consumption and investment decisions during the crisis and in subsequent years. This led to protracted balance sheet adjustments in the private sector, which hampered the effective transmission of the programmes to the real economy (*Csortos – Szalai 2015*). In addition, there was insufficient coordination between monetary and fiscal policy: while the globally important central banks implemented large-scale programmes, there were no government programmes to stimulate demand (*Aizenman – Pasricha 2010*). Monetary and fiscal policy coordination was hampered, in the euro area in particular, which may have contributed to the smaller-than-expected macroeconomic effects. Moreover, the nature of inflation has changed in recent decades: the strength of the link between economic cycles and inflation has weakened (*Balatoni 2018*). Megatrends (such as demographic trends, digitalisation or globalisation) that may have a downward impact on inflation have continued to strengthen.

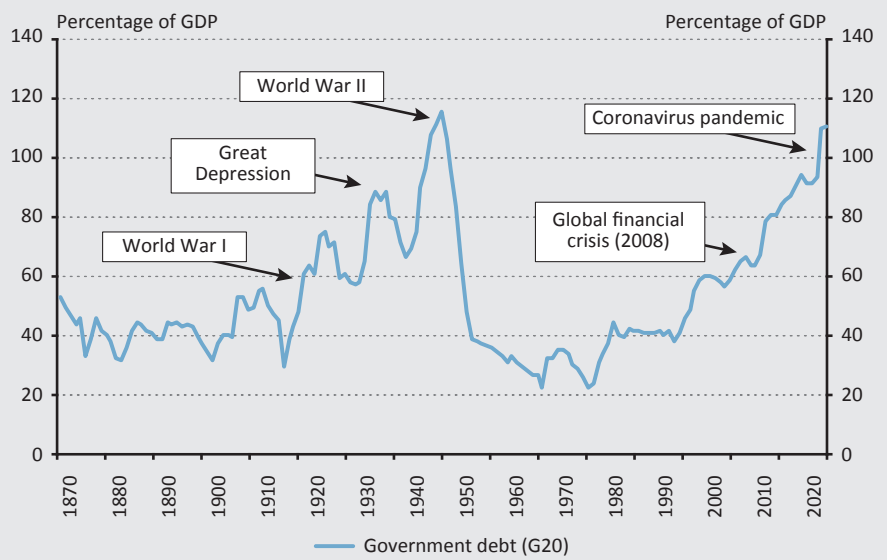
4. Why could the coronavirus pandemic trigger inflation?

The current crisis has different characteristics compared to the 2008 crisis. One important difference between the two crises is that the root cause of the current crisis does not stem from structural weaknesses in the economic and financial system, as was the case in 2008. In addition, there were no credit crunches during the crisis caused by the coronavirus pandemic, and credit markets remained functional. This is mainly due to the fact that the 2008 crisis brought about a strengthening of financial systems and prudential policies, and thus the negative economic effects of the coronavirus pandemic were felt in a context of stable financial systems. In addition, the fact that central banks had to learn to use unconventional instruments during the 2008 crisis, which have since become an integral part of their toolbox, helped them to deal with the current crisis. Taking all

these factors into account, recovery will be determined by the effective containment of the spread of the coronavirus pandemic.

The economic policy response to the crisis has been swift and decisive in advanced economies. The globally important central banks' balance sheets have grown more than in the previous crisis: Between 2008 and 2013, the balance sheet total-to-GDP ratio of advanced central banks typically increased by an average of 2 to 4 percentage points per year, while in the year after February 2020, we observed an increase of 14 to 28 percentage points. This is mainly due to the higher volume of central bank programmes. Programmes have also been better targeted, helping to preserve the liquidity situation of markets. Crisis management has also been supported by stronger coordination between monetary and fiscal policy, with several programmes resulting from central bank-government cooperation. In Hungary, for example, a credit moratorium supported the stability of the private sector demand during the crisis. In addition, governments have implemented substantial fiscal economic recovery programmes. Consequently, negative impacts on the labour market have been less substantial. Due to the significant involvement of the government sector, public debt ratios have risen sharply (*Figure 3*).

Figure 3
Gross government debt-to-GDP ratio in G20 countries



Source: IMF, MNB

Money supply or the monetary base has risen massively in both the United States and the euro area as a result of the huge amount of money issued through the enormous central bank programmes that were implemented in a short period of time. By August 2021, money supply had expanded by almost 40 per cent in the euro area and by more than 80 per cent in the US, compared with January 2020. While the rate of expansion was significant, it should be noted that the increase in money supply does not necessarily imply a surge in inflation: if it is not reflected in consumption but in household savings and corporate balance sheet cleaning, no significant acceleration in consumer prices can be expected (*Bofinger 2020*).

While there has been a rarely seen consensus between central banks and governments on how to deal with the crisis, there are views according to which the handling of the crisis itself has a potential inflationary impact. It is argued that, in addition to being in part a demand shock, the coronavirus crisis has had prolonged negative impacts on the supply side in relative terms. By contrast, the crisis response by different fields of economic policy has been mainly driven by demand stimulation, which could further widen the gap between supply and demand, potentially amplifying inflationary effects (*Larsen 2021*).

In any case, inflation is on the rise again: the negative inflation rate registered in the euro area in the last months of last year has now risen to over 3 per cent. On average, in the first half of 2021, the prices of all major commodities reached or exceeded their pre-crisis levels in 2019 by up to 70 per cent. The slower recovery of global value chains relative to demand has led to increasing cost pressures in global transport and industrial production. Compared to June 2020, the cost of shipments from China to Europe had increased by more than 8.5 times by the beginning of September 2021.

Although temporary at the individual level, the inflationary effects of reopening, and the global increases in commodity prices and transport costs entail the risk that – combined with the demand effects of crisis management – the ensuing higher price dynamics will become embedded in economic agents' expectations, possibly leading to a persistent high-inflation environment. Rising commodity prices open the door to further market speculation, which could push prices higher. Rising wages in a tightening labour market also point to the longer persistence of higher inflation and could even lead to a wage-price spiral. The role of expectations is reflected in the fact that long-term inflation expectations in the US and Europe have been rising steadily since mid-2020, while for the US they have been consistently above target since autumn 2020.

In addition to the above, as a structural factor, some of the current global megatrends may point towards relatively higher inflation in the longer term. Climate change could have an additional inflationary impact on commodity prices, and a shrinking working-age population could lead to tighter labour markets and thus higher wages. With the coronavirus pandemic and geopolitical developments in recent years, the world has moved away from globalisation towards deglobalisation or regional integration. Fragmentation of global supply chains and the appreciation of regional economic policies and production chains may ensue, as economies and major powers become more closed. The transition may also have a price-increasing effect, due to the reorganisation of supply chains.

As in the "Great Inflation" of the 1970s, cost-push inflation is back in the form of rising commodity prices and transport costs. In addition, the crisis management measures implemented by the different fields of economic policy may, within certain limits, contribute to making inflation more protracted, given that buoyant demand is coupled with slowly recovering supply. Expectations play an important role in this framework.

5. Introduction to Modern Monetary Theory (MMT)

In the last century, crises have always brought the strengthening of new economic theories. In the wake of the Great Depression, which began in 1929, Keynesian economics came to the fore. In response to the "Great Inflation" of the 1970s Friedman's ideas and monetarism came to the, and the ideas of the so-called Modern Monetary Theory (MMT) have increasingly emerged in the economic policy debates during the global financial crisis that began in 2008.

The basic assumption of modern monetary theory is that inflationary pressures depend on the extent to which capacities in the economy are under- or over-utilised (*Powell 2020*). This means that as long as the economy is moving towards full capacity utilisation, there is no risk of persistently high inflation. However, MMT representatives later nuanced the theory: there are many sources of rising inflation that are not reflected in the general state of demand. For this reason, it is important to look at capacity utilisation by sector, even if the economy as a whole is still below full capacity utilisation (*FT 2019*).

As far as economic policy is concerned, according to MMT, the main role is played by fiscal policy, which is responsible for correcting situations of under- or even overutilisation in response to the position of the domestic and foreign private sectors (*Szalai 2019*). Tax policy is an appropriate instrument of correction, and has subsequently been complemented by the development of appropriate regulation, which in some cases can become a more effective instrument. Fiscal policy can take

many forms: green programmes and investments, universal social security, or the solution receiving the most attention: public employment guarantee schemes (Job Guarantee). Anyone can participate in the public employment scheme at a fixed wage below the market rate. The programme contributes to full employment and acts as an automatic stabiliser in times of crisis. This means that in times of crisis, the number of people participating in the programme increases, while the workforce automatically flows back into the competitive sector after the recovery. As a result, there can be less downturn in times of crisis, less erosion of human capital and the basic wage provided under the scheme also supports the achievement of price stability. According to the proponents of MMT, the budget should be planned taking into account real inflation dynamics, and thus changing tax rates and other inflation-reducing items should be taken into account as early as when planning the budget for the year (*FT 2019*).

By contrast, according to the theory, monetary policy has to support fiscal policy and play a role in promoting financial stability (*Matthews 2019*; *Shirai 2019*). According to the advocates of MMT, monetary policy cannot control inflation and is not independent. This is because fiscal policy, through its spending or tax collection, affects the liquidity of the interbank market, which shifts yields. For example, if the government increases spending, interbank liquidity increases and yields fall. If the central bank wants to neutralise this effect, it sterilises the excess liquidity in central bank deposits. Debt is also monetised through government bond purchase programmes. Ultimately, the impact of fiscal programmes could lead to a rise in central bank balance sheets. Moreover, according to the representatives of MMT, interest rate policy leads to a redistribution among heterogeneous actors, and therefore it is not appropriate to rely on monetary policy alone.

MMT advocates take a novel and welcome approach in their theory. The job of economic policy is to move the economy towards full capacity utilisation. The theory welcomes capacity-increasing investments, encourages the stimulation of demand and is based on the principle that as long as the economy is moving towards potential output, inflation should not be a serious problem.

In theory, however, inflation is controlled by the government. Although with different economic historical and structural features, such as the presence of strong trade unions, the “Great Inflation” of the 1970s was first tackled by governmental means, including wage policy, without success. Moreover, the high public debt ratios of our time increase the risk of fiscal dominance, which suggests that keeping inflation high could be a good way to inflate away huge debts. Government operations are driven by political interests. In this context, reducing inflation through tax measures is a political risk: tax increases are unpopular with the public, and frequent tax changes make the tax system and price developments unpredictable.

The era of the "Great Inflation" ended when central banks stopped passively supporting fiscal policy and began to take full responsibility for fighting inflation. In practice, this laid the foundation of the concept of central bank independence, one of the pillars of which is that the political cycle and the mandate of central bank governors differ in time: central bank operations are not determined by election cycles, but by the primacy of price stability.

In the coronavirus pandemic, fiscal and monetary policies needed to work together to help economies recover as quickly as possible. Historical experience shows that, within the framework of this cooperation, when the current crisis is over central banks – working as the primary responsible agents for price stability, empowered by economic actors – can do the most to achieve the new goal: maintaining economic stability.

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