The Return of the World Economy to a High Inflation Regime

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Abstract

Global inflation is one of the most significant challenges for the post-pandemic world economy. After several decades of low inflation and even elements of deflationary processes in developed countries, the danger of falling into a new period of great inflation had seemed insignificant. Dovish monetary policy during the 2009–19 period did not provoke a spike in inflation, and the slowdown of the economy during the lockdown period put the vigilance to rest. However, the COVID-19 pandemic and anti-crisis measures it triggered, the Russia-Ukraine conflict, and sanctions and anti-sanctions solidified inflationary processes around the world, both in developed and developing countries. In this article, we show the inertial nature of inflation in both the U.S. and the European Union (EU) and argue that there has been a transition to a high inflation regime, despite the decline in developed country inflation in the first quarter of 2023 mentioned in the International Monetary Fund’s (IMF) January report. Getting out of this high inflation regime will require much more serious and time-consuming measures than those used to manage inflation in the low inflation regime.

Keywords: inflation, inflation inertia, high inflation regime

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At the moment we can say that the era of low inflation is over - the COVID-19 pandemic, anti-crisis support measures, the Russian-Ukrainian conflict and the ensuing sanctions and anti-sanctions have brought the global economy to the threshold of a period of high inflation or even stagflation, given the potential global recession and stagnation in the European Union (World Bank, 2022).

1. INFLATION IN MODERN THEORY

The issue of the relationship between inflation and indicators of the economic cycle was widely discussed in the academic debate of the second half of the XX century. The original Phillips curve, published in 1958 (Phillips, 1958), assumed that there was an inverse relationship between inflation and unemployment, corresponding to the behavior of inflation in the economic cycle - the higher inflation, the lower unemployment and vice versa. Attempts to exploit this relationship led to the period of the Great Inflation (although, of course, they were not the only factor), and to a reassessment of views on the formation of inflation. In the late 1960s, Edmund Phelps (Phelps, 1968) and Milton Friedman proposed the concept of the Phillips curve, in which inflation depends not only on the deviation of unemployment from the natural rate, but also on inflation expectations, which in their understanding are adaptive, that is, depend on previous values of inflation. Thus, the basic Phillips curve model describes inflation as an inertial process - the rate of price growth depends on its previous values. In the early 1970s, Robert Lucas, as well as Thomas Sargent and Neil Wallace in their works (Lucas, 1972; Lucas, 1973; Sargent, Wallace, 1975) criticize the use of adaptive expectations and insist on the use of models with microeconomic foundations, in particular, rational expectations.

Gradually, a neo-Keynesian approach to general equilibrium modeling is emerging in science, incorporating traditional Keynesian assumptions (e.g., price rigidity based on Taylor's step contracts (Taylor, 1980), Calvo's pricing model (Calvo, 1983), Rotemberg's price adjustment costs (Rotemberg, 1982)) into a real business cycle model. Neo-Keynesian Phillips curve (NKPC) formulated by John Roberts (Roberts, 1995) describes inflation as a function of expected inflation in the next period and marginal costs in the economy - it is assumed that firms will charge prices as a fixed premium over marginal costs, which in turn are proportional to the output of the economy. In Russian economic science the neo-Keynesian Phillips curve is considered in the paper "The Greatness and Fall of the Phillips Curve" (Entov, 1983).

At the same time, the neo-Keynesian Phillips curve assumes rational expectations, i.e. it, unlike the basic version, does not contain the inertia of inflation.

Empirical tests of the neo-Keynesian Phillips curve demonstrate that in the absence of previous lags of inflation rates in the equation, the dependence describes the ongoing processes rather poorly - inflation by its nature is an inertial or persistent process, it depends on its previous values (Fuhrer, 2010). In order to better fit the model to the data, taking into account the preservation of microfoundations in the model, a new class of so-called hybrid Phillips curve models is created. Hybrid models add past lags of inflation to the neo-Keynesian Phillips curve, for example, it is assumed that only a part of economic agents has rational expectations, while the other part is guided by adaptive expectations built on the basis of previous values of inflation (Gali, Gertler, 1999).

Hybrid models on the one hand use microfoundations to describe economic processes, on the other hand better describe historical data, i.e. as if they represent a compromise between the two
approaches, but for the same reason they are criticized (Rudd, Whelan, 2007), the academic debate on the correct approach to modeling inflation continues.

The nature of persistence of inflation is also discussed in academic papers. Researchers ask whether inflation is inertial in itself or inertia is inherited from the inertia of real business activity variables (output or unemployment). It is proposed to distinguish between structural (structural), i.e. internal, and reduced-form (reduced-form), i.e. inherited, persistence (Fuhrer, 2010).

Another stratum of academic literature is related to the study of different types of steady states of the general equilibrium model - equilibrium inflation may turn out to be low or high, depending on other macroeconomic parameters, while equilibrium with high inflation and equilibrium with low inflation may have different properties (Ball, 1992; Bruno, Fischer, 1990; Barro, Gordon, 1983).

Also, persistence of inflation is analyzed using the indicator of trend inflation - inflation cleared from short-term fluctuations (Ascari, Sbordone, 2014; Cogley, Sbordone, 2008; Ascari, Ropele, 2009). The concept of trend inflation is close to the concept of core inflation, in particular (Stock, Watson, 2014) talk about core inflation as one way of estimating trend inflation. There are estimates of trend inflation for the Russian economy as well (Drobyshevsky et al., 2022).

2. LOW INFLATION PERIOD AND INFLATION TRIGGERS IN 2021-2022.

In recent decades, since the Great Moderation, and especially in the period following the global financial crisis in 2010-2019, inflation rates in advanced economies have remained extremely low, averaging 2-3% (Figure 1).
In addition, the relationship between inflation and unemployment, which is traditionally described by the Phillips curve, has also changed significantly. According to the traditional relationship, during the Great Recession of 2009-2010, inflation should have fallen much lower - to negative levels, given the high unemployment rate (Ball, Mazumder, 2011). However, since the 1980s, the negative slope of the curve began to decline and the curve gradually became flat (Stock, Watson, 2020). Also, empirical studies show that the inertia of inflation decreased, and stable monetary policy is assumed to be the main reason (Benati, 1983).

For economic policy, this means that even fairly significant changes in the unemployment rate do not lead to significant changes in the inflation rate - such as the quantitative easing undertaken in the US after the Great Recession of 2008-2010.

The causes of low inflation and flat Phillips curve have been analyzed in the last decades in a large number of sources, but there is no consensus in the form of one or two factors that led to a long period of low inflation. Among the reasons for low inflation and flat Phillips curve are the following:

- transition of major central banks to inflation targeting policy and anchored inflation expectations (Bernanke, 2018), (Ball, Mazumder, 2011);
- accelerating technological development and globalization (Rogoff et al., 2003);
- demographic changes in developed economies - in particular, population aging (Bobeica et al., 2006);
- structural changes in the labor market (including the entry of Asian labor into the global labor market) and the loss of bargaining power by workers (Ratner, Sim, 2022);
- low growth rates of advanced economies in the period after the global financial crisis - from 2009 to 2019.

Пандемия COVID-19 прервала экономический цикл на позднем, но подъеме и создала очень необычные условия последующего выхода из кризиса (Григорьев и др., 2020). В первые месяцы она вынудила страны вводить серьезные локдауны, что принесло за собой снижение темпов роста цен за счет снижения экономической активности. Однако уже с середины 2020 года темпы инфляции начали быстро расти – отчасти за счет эффекта базы, но также и из-за шоков предложения (рис. 2).
One of the reasons for rising prices is the breakdown of global value chains and the emergence of so-called "bottleneck" in production chains. "Bottleneck" basically mean a mismatch between supply and demand for a particular raw material or intermediate commodity, due to which the further global value chain is disrupted - the shortage of an intermediate commodity leads to an increase in the price of both the intermediate commodity and the final commodity of the chain. Bottlenecks can be formed both under the influence of supply shocks and demand shocks. Supply shocks include lockdowns and stoppage of production of goods and blocking of activity in the services sector, changes in the labor market and shortage of labor, and logistical constraints.

Also, inflationary pressure on the global economy was exerted by the increase in energy prices, which began in early 2021. After the growth of energy prices in 2021 almost doubled due to natural factors and demand recovery after the COVID-19 pandemic (Grigoryev, Kheifets, 2022), it was expected that in 2022, after the slowdown in demand and the disappearance of bottlenecks, the growth of energy prices will slow down, although already at the end of 2021 the World Bank notes that otherwise inflation risks will increase significantly (World Bank, 2021).

Another reason for higher inflation rates is anti-crisis measures. To mitigate the consequences of the economic crisis caused by the COVID-19 pandemic both developed and developing countries have undertaken fiscal and monetary support measures of unprecedented volume. Among the most popular fiscal measures were support for the population and businesses, and investments in the health care system (Grigoriev et al., 2021). Monetary measures were aimed at providing liquidity to the market and easing credit conditions, included both traditional (mainly in the form of key rate cuts) and non-traditional measures (quantitative easing) (Fig. 3, 4).
According to the IMF study, in Europe, the contribution of demand shocks (i.e. the increase in demand caused by stimulative macroeconomic policies) to inflationary pressures remained higher than the contribution of supply shocks, although the share of the contribution of supply shocks increased over 2020-2021. The U.S. data show a similar dynamic, with the contribution of supply shocks increasing over time (Shapiro, 2022).

Despite the presence of all the above-mentioned pro-inflationary factors, in the middle of 2021, both experts and representatives of central banks of developed countries were inclined to believe that the increase in the rate of price growth is temporary, and inflation rates will gradually decline. A significant argument in favor of this opinion was the anchoring of inflation expectations - the values of inflation expected in a year remained virtually unchanged until the end of 2022 in the U.S., and in the EU their increase, although observed, it remained not very significant. At the same time, within the framework of the policy of "forward guidance" (policy of statements of intentions), which is followed by both the Fed and the ECB, the flexibility of monetary policy of central banks was limited - making decisions on a sharp change in the trajectory of interest rates could undermine market confidence and reduce the effectiveness of monetary policy.
Underlying the erroneous judgments about the temporary nature of inflation in 2021 is an underestimation of two major factors - pandemic changes in production chains and the labor market.

1. It was assumed that a substantial part of the acceleration in price growth in 2021 was on the demand side - due to economic recovery and anti-crisis support measures. Supply-side bottlenecks were also projected, but their magnitude was larger than expected. A study by the Bank for International Settlements in 2021 assumes that bottlenecks will not persist for long, will not have time to affect the level of wages in the extractive and manufacturing industries or inflation expectations, and therefore will cause only changes in relative prices, not sustainable inflation (Rees et al., 2021).

2. Some trends have developed in the labor market during the pandemic that were not taken into account in the inflation forecast. One of these trends is the “great layoff”, which the FRB Chicago estimates added 1.1 pp to the inflation rate (Faccini et al., 2022). One of the mechanisms of the transition to high inflation is the wage-price inflationary spiral (Blanchard, 1986), which is based on the increase in inflation expectations of workers. Assuming further price growth, workers demand higher wages, wage growth in turn leads to further price growth. This situation can occur when employment is near or above the equilibrium level. At the end of 2021, employment has not yet reached pre-pandemic levels, but wage growth has already begun - due to the decline in labor supply of a part of the population that decided not to return to work (Figures 5, 6). The largest employment dip was observed for low-skilled and older workers (Duval et al., 2022), so a possible explanation could be crisis support measures that delayed the return to work for some groups of the population.
At the end of 2021, central banks in advanced economies face a difficult choice between fighting inflation and thereby slowing the post-pandemic recovery or supporting the recovery by letting inflation go. The choice is complicated by the substantial public and corporate debts accumulated in both developed and developing economies during the pandemic - tightening monetary policy and lowering inflation rates will have a negative impact on the ability to service these debts.

However, by January-February 2022, the major central banks began the transition to a restrained monetary policy - back in December, the Bank of England raised the rate by 0.15 p.p. (to 0.25%), followed by the Fed and the ECB announcing the winding down of asset purchase programs. The Fed announced its first key rate hike in March 2022, the ECB - only in July 2022; the Fed's rhetoric throughout 2022 remained tougher than that of the ECB.

The events that began on February 24, 2022 - the Russia-Ukraine conflict and the sanctions and anti-sanctions that followed - have increased inflationary pressures on the global economy,
primarily through the entrenchment of uncertainty and high energy and, to some extent, grain prices.

According to a study by Fed experts (Caldara et al., 2022), the events of 2022 - the Russian-Ukrainian conflict and the ensuing sanctions and anti-sanctions - raised global inflation by about 1.3 p.p. due to increased geopolitical risks, according to another study (Liadze, 2022), the increase in global inflation amounted to 2 p.p. in 2022 and another 1 p.p. in 2023.

The nature of the impact of events in 2022 differs for the US and European countries. In the US, core inflation remains around the January 2022 level of 5.15%. The August-September spike in core inflation is associated with the peak in energy prices in the spring of 2022, but by the end of 2022, inflation returns to late 2021 levels (Figure 7). The situation in European countries is different - core inflation in 2022 is rising relative to January 2022 values (Figure 8).

Thus, the stylized picture of global inflation 2021-2022 is as follows:
• The COVID-19 pandemic in terms of the Phillips curve is a series of supply shocks - lockdowns that limit economic activity, disruptions in logistics - that are not visible against the background of reduced economic activity in the first half of 2020, but start to put upward pressure on inflation from the second half of 2020;
• in 2021, developed economies begin to recover, including against the backdrop of significant fiscal stimulus, while labor supply is depressed by the "great layoff" and energy prices rise - the marginal cost of the economic cycle rises (albeit earlier than predicted by developed central banks), and the wage-price inflationary spiral is triggered;
• gradually high marginal costs become entrenched in the expectations of economic agents, which to some extent reflects the rise in core inflation;
• The Russian-Ukrainian conflict, from the point of view of the Phillips curve model, is a series of supply shocks, in particular, leading to an increase in energy and food prices. The latter are also anchored in the expectations of economic agents in Europe, but not in the U.S. due to their duration - in particular, due to the greater impact of the shocks on European economies (growth of gas prices, foreign trade relations with the conflict countries), as well as less stringent policy of the ECB compared to the Fed.

3. HIGH INFLATION REGIME: DEFINITION AND TRANSITION CRITERIA

Fears that the global economy is moving to high inflation or even stagflation are expressed both by think tanks and international organizations (World Bank, 2022). The economic equilibrium with high inflation or high inflation regime is understood not as a cyclical increase in the rate of price growth after the crisis, but a fundamentally different equilibrium of the economy with higher inflation in all phases of the cycle. The high inflation regime differs from the low inflation regime not only by the rate of price growth, but also by other characteristics (BIS, 2022). Among them, the Bank for International Settlements emphasizes, in particular, the volatility and inertia of inflation. Moreover, the Bank for International Settlements notes that the low inflation regime that has existed in the world economy in recent years is characterized by unsynchronized changes in relative prices, reflecting the process of searching for an equilibrium price; such changes remain relatively invisible to households and firms. In the high inflation regime, the growth of prices for different goods turns out to be correlated - as in the case of energy price increases and subsequent cost inflation; it no longer reflects the equilibrium search process, but begins to influence the decisions of economic agents (BIS, 2022).

In "Inflation Regimes and Hyperinflation. A Post-Keynesian/Structuralist typology" (Charles et al., 2021) in addition to the regime of low and high inflation distinguish also the regime of moderate inflation. In the low inflation regime, according to the authors, the inflation rate is determined by the adjustment to the equilibrium level of wages depending on the bargaining power of workers and firms.

The main characteristic of the moderate inflation regime is the emergence of institutionalized mechanisms of wage indexation, which are designed to reduce uncertainty for economic agents. Inflationary processes acquire greater inertia, in particular due to indexation.

According to the authors, exogenous shocks, in particular supply shocks, can act as a trigger for the transition from low inflation to moderate inflation and then to high inflation; in the case of transition from moderate inflation, indexation can act as a gas pedal of this process.

As the main features of the high inflation regime, the authors emphasize the extension of indexation mechanisms to other areas of the economy (for example, pegging prices to foreign currency), reduction of the duration of contracts. It should be noted that the authors do not equate the high inflation regime with hyperinflation, which exists only for a short period of time, while the high inflation regime can exist for a long time.
The reasons for switching inflationary regimes are studied in the academic literature mainly with the help of Markov chains. Among the factors that lead to switching between different inflation regimes are money supply growth (Amisano, Fagan, 2013), low real interest rates and fixed exchange rate (Vansteenkiste, 2009).

The most striking historical example of a high inflation regime to compare with today's situation is the period of the Great Inflation in the 1970s in the United States. The causes of the inflation surge in those years are similar to those of today: soft monetary policy and negative interest rates, growth in government spending, rising energy prices; among the consequences - debt crisis in emerging markets, transition to stagflation. At the same time, many experts (for example, the World Bank (World Bank, 2022)) note that the current situation is still not as dangerous as in the 1970s: central banks have much more experience and market confidence, the inflationary shock is not as large as in the 1970s, besides, the fundamental disinflationary factors, about which we wrote in the first section, continue to operate. Note that there are other differences that do not favor the current situation: in today's labor market employment is closer to full employment, supply shocks in the form of disrupted supply chains continue to affect the economy in the form of increased inflationary pressure.

The Bank for International Settlements suggests as a criterion for the transition to a high inflation regime the exceeding of the five-year average inflation boundary of 5% (BIS, 2022), but this criterion is rather intended to highlight the period of high inflation in the historical data than to determine the exact moment of the change of the inflation regime. At the end of 2022, five-year average inflation has not even exceeded 4% in the major advanced economies. This section will discuss transition criteria that are more sensitive to inflation regime shifts.

3.1 Inflation volatility

Inflation volatility itself to some extent reflects systemic changes in the behavior of inflation, but to determine the transition to the high inflation regime it is more important the co-directionality of price movements in different sectors of the economy - in the low inflation regime the correlation between prices in different sectors remains low, while in the high inflation regime it increases significantly, which provokes further price increases. Figure 6 shows the breakdown of the total variation of inflation into sectoral variation and covariance. The methodology of graphing is similar to that of the Bank for International Settlements (BIS, 2022).

Let us take a closer look at the relationship between sectoral covariance and variation for the United States. We note a significant increase in both the total variation and the covariance between sectors, which began as early as the end of 2021. This kind of increase in the total variation of inflation and the significant prevalence of the covariance component was observed during the inflation crisis that began in 1973 and ended in the early 1980s and during the subsequent period of gradual decline in inflation. Note that the nature of the surge in inflation volatility after the global financial crisis of 2007-2009 is different - the share of covariance between sectors in total inflation is much lower (Figure 9).
In general, a similar trend can be observed in all developed countries - the share of covariance in total variation starts to grow from mid- to late 2021, although the ratio of covariance to total variation differs from country to country (Table 1). For European countries, the trend can be illustrated by the examples of France and Germany, and for Asian advanced economies by the example of Korea, the dynamics of the variation structure is similar to the structure in the times after the Asian economic crisis. Japan stands out, where inflationary processes are specific, so the share of covariance in the variation is still low, although it is also growing.

<table>
<thead>
<tr>
<th>Country name</th>
<th>Share of covariance in total variation (end 2022)</th>
<th>Share of covariance in total variation (average for 2010)</th>
<th>Median value of the proportion of covariance in total variation (2000-2021)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>0.8 (average for 2022Q3)</td>
<td>0.48</td>
<td>0.41</td>
</tr>
<tr>
<td>UK</td>
<td>0.81 (7-11 month average 2022)</td>
<td>Negative covariance between sectors</td>
<td>0.35</td>
</tr>
<tr>
<td>France</td>
<td>0.52 (7-11 month average 2022)</td>
<td>0.42</td>
<td>0.45</td>
</tr>
<tr>
<td>Germany</td>
<td>0.74 (7-11 month average 2022)</td>
<td>0.36</td>
<td>0.36</td>
</tr>
</tbody>
</table>
Japan | 0.38 (9-11 month average 2022) | 0.56 | 0.53
Korea | 0.71 (7-12 month average 2022) | 0.68 | 0.31

Source: authors' calculations

A similar trend is observed in developing countries - in Latin America (Chile, Mexico, Colombia), South Asia (Thailand, Philippines), Africa (Nigeria). However, the study of inflation behavior in developing countries by many indicators is different, so it requires a separate study.

3.2 Inflation inertia

As it was mentioned above, inflation by its nature is an inertia process, but the degree of inertia is higher when the economy is in a high inflation regime (BIS, 2022). For the purposes of this paper we will understand inertia as the tendency of a time series to maintain a trend over a long period of time. The degree of inertia in this case will mean the speed with which inflation returns to its long-term average value.

There is a wide body of works using different approaches to assess inflation inertia: Mean reversion (Dias, Marques, 2010), unit root tests (Ball, Cecchetti, Gordon, 1990; Culver, Papell, 1997), the largest autoregressive root method and estimation of the sum of coefficients of the autoregressive process (Pivetta, Reis, 2007), estimation of the Phillips curve with trend inflation (Cogley, Sbordone, 2008), within the framework of the VAR model with variable coefficients (Cogley et al., 2010) and others.

In order to measure the degree of inertia we used the methodology presented in (Dias, Marques, 2010). The methodology is based on the idea that an inertial series, having a peculiarity of slow return to equilibrium values, will rarely cross its long-term mean (mean reversion). In turn, a less inertial series will oscillate around the long-term average and cross it quite often. To assess the degree of inertia, the paper proposes the following measure.

\[ \hat{\gamma} = 1 - \frac{n}{T} \tag{3} \]

where \( n \) is the number of crossings of the mean value of the series for the period containing \( T+1 \) observations.

Analyzing the dynamics of inflation inertia in the U.S. allows us to distinguish a period of the Great Inflation from the mid-1960s to the mid-1980s with a systematically high coefficient of inflation inertia, and a period from the mid-2000s almost to the end of the 2010s with a systematically lower coefficient of inertia. The decline in the coefficient of inertia in 2020 is explained by the change in the inflation trend due to the COVID-19 pandemic shock and the subsequent fluctuation of inflation around low values.

It is interesting to note that the inflation inertia index in the US starts to rise in 2018, which may indirectly support the hypothesis that the COVID-19 pandemic "caught" the economy on the cusp of the peak of the economic cycle, although the relationship of inflation inertia to the economic cycle and monetary policy deserves a separate study.

In 2022, there is a rather sharp increase in the inertia index, which may also indicate the transition to a high inflation regime (Figure 10).
It should be noted that the inertia index calculated using this approach is a rather "noisy" indicator, it takes high values even in periods of low inflation. In addition, the very approach to the assessment of inertia using the intersections of the average value in the academic discussion is gradually replaced by the approach using the so-called inflation gap, the deviation of inflation from its trend values (Ascari, Sbordone, 2014). Therefore, meaningful interpretation of such a coefficient is possible only in conjunction with other data.

![Fig. 11. Inertia Index for the United States](image)

*Source:* authors' calculations.

The inertia index for Germany behaves similarly - there is a period of lower inertia before the COVID-19 pandemic, a subsequent drop in the index in the pandemic, a further rise in 2021-2022.

In other European countries, the dynamics of inertia are different - there is no period of low inertia in the 2000s-2010s, e.g. in the UK inertia has remained at a high level since 2011 without significant declines even during the pandemic, and in France inertia declined only during the pandemic.

In Asian advanced economies, the rise in inertia is seen in Korea but not in Japan, where it remains at a relatively low level compared to 2014-2019 when the massive quantitative easing program took place.

From the above figures on the proportion of covariance in the correlation as well as the coefficient of inertia, we can infer a transition to a high inflation regime - or a moderate inflation regime in the sense of (Charles et al., 2021) - for the US, European countries, but not yet for Japan.

**4. HOW TO PUT THE GENIE BACK IN THE BOTTLE: THE ISSUE OF GETTING OUT OF THE HIGH INFLATION REGIME**

Inflation in developed Western countries in 2022-2023 is in a higher and fundamentally different equilibrium. At the same time, inflationary pressures and the resulting global uncertainty complicate the post-pandemic recovery - rising energy prices slow production, capital moves to safer assets (which puts additional pressure on the recovery of developing countries). Thus, these events act as a secondary trigger and complicate the balancing act of central banks between fighting inflation and supporting economic recovery.
Central banks of developed countries in 2022-2023 are actively implementing a restraining monetary policy - raising interest rates, conducting quantitative tightening, as well as using verbal interventions to demonstrate readiness for further tightening of monetary policy to slow down inflationary processes (Table 3). At the same time, the position of the key central banks - the Fed and the ECB - is different today. Inflation in the US started earlier, so the Fed was forced to take response measures earlier than the ECB, so today we can already observe some slowdown of inflation in the US. Another - and maybe more important for inflationary processes - difference is the nature of inflation formation: in European countries the role of existing and potential supply shocks is higher. The Russian-Ukrainian conflict and subsequent sanctions have negatively affected both trade flows within the European Union and logistics chains in Europe (in addition to the general impact on the European economy through higher energy and food prices), i.e. the share of supply shocks in explaining inflation dynamics is likely to increase for European countries in the near future, which means that the ECB's ability to fight inflation is limited - tight monetary policy can limit demand, but cannot eliminate bottle necks.

Table 2

<table>
<thead>
<tr>
<th>Country</th>
<th>Key rate (February 2023)</th>
<th>Key rate (January 2021)</th>
<th>Inflation rate (January 2023)</th>
<th>Real interest rate (February 2023)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>3.35</td>
<td>0.1</td>
<td>7.8</td>
<td>-4.45</td>
</tr>
<tr>
<td>UK</td>
<td>4</td>
<td>0.1</td>
<td>10.1</td>
<td>-6.1</td>
</tr>
<tr>
<td>EU</td>
<td>3</td>
<td>0</td>
<td>8.5</td>
<td>-5.5</td>
</tr>
<tr>
<td>Canada</td>
<td>4.5</td>
<td>0.25</td>
<td>5.9</td>
<td>-1.4</td>
</tr>
<tr>
<td>USA</td>
<td>4.75</td>
<td>0.125</td>
<td>6.4</td>
<td>-1.65</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1</td>
<td>-0.75</td>
<td>3.3</td>
<td>-2.3</td>
</tr>
<tr>
<td>Japan</td>
<td>-0.1</td>
<td>-0.1</td>
<td>4</td>
<td>-4.1</td>
</tr>
</tbody>
</table>

Source: BIS, IMF

A transition to a high inflation regime does not mean that a return to a low inflation regime is impossible over a long period of time - we believe that a return to a low inflation regime is possible, given the high degree of competence of developed country central banks and the level of market confidence. However, the effort required to return to low inflation would be considerably greater than in a low inflation regime. Under a flat Phillips curve, sufficiently large changes in the unemployment rate do not lead to significant changes in the inflation rate - and this is true both for the interpretation of the weak inflation response to the stimulus measures in 2009-2019 and for the tightening measures starting at the end of 2021. This implies that, assuming that the small slope of the Phillips curve remains small, a return to a low-inflation regime would require more severe tightening measures that would make the so-called "soft landing" more difficult.

In the January report, the IMF writes that the peak of the general inflation rate in developed countries has passed in the third quarter of 2022, including due to the actions of central banks, which cooled demand and core inflation, and also says that medium-term inflation expectations remain anchored. Thus, the IMF assumes a further decline in inflation, characteristic of a cyclical process in the face of tighter monetary policy. However, in our view, the report places insufficient emphasis on the increase in the inertia of inflation - unprecedented for the last decades - and a
fundamental increase in its equilibrium level. In the February bulletin of the ECB, the authors write about a significant shift in consumer inflation expectations relative to the inflation target of 2% (Georgarakos et al., 2023); according to the Federal Reserve Bank of New York, medium-term inflation expectations in the U.S. also remain above the target and amount to 2.7% on a three-year horizon and 2.6% on a five-year horizon. Both Markus Brunnermeier (Brunnermeier, 2023) and Michael Weber (Weber, 2023) write about signs of expectations unwinding in the IMF's Finance & Development journal. In addition, core inflation in the U.S., as described above, is not declining, while in the EU countries it continues to rise.

It is possible that the IMF forecast is partly created as a verbal intervention as a tool of monetary policy in an attempt to influence the expectations of economic agents and contain inflation. The statement of the G20 leaders regarding inflation containment looks similar: "Central banks remain firmly committed to achieving price stability in line with their mandates. They will ensure that inflation expectations are anchored and (...)". While developed country central banks are indeed committed to achieving price stability, in the current environment this does not guarantee anchoring of inflation expectations, especially in the pursuit of a soft landing.

Central banks today operate in a different economic reality of high inflation, high leverage and low growth. In this reality, tightening monetary policy to fight inflation threatens financial stability - especially given the emerging fears of a banking crisis in the wake of the Silicon Valley Bank collapse. The inertial inflation mechanism that kicked in in advanced economies in 2022, unlike capital investment and stock markets, is less sensitive to fine-tuning tools and will persist over the medium term. A return to a low-inflation regime will require more powerful and longer-term measures, which will be the subject of search, risk and research.

5. CONCLUSION

The reasons for low inflation in the period after the global financial crisis were related not only to the taming of inflation by experienced central banks, but also to the fundamental disinflationary factors - aging of the population, globalization and technological development, entry of cheaper labor into the international labor market, low rates of economic growth in this period. The COVID-19 pandemic put on pause a substantial part of economic activity in developed countries, deflationary trends manifested themselves, which, however, masked very serious pro-inflationary factors in the form of disrupted production chains and new changes in the labor market. In 2021, these supply shocks manifested themselves, creating inflationary pressures that were supported by increased demand fueled by anti-crisis macroeconomic policies.

The events of 2022 act as a secondary trigger: rising food and energy prices create additional rather prolonged pressure on the price level, and to a greater extent for European countries than for the United States. At the end of 2022, inflation in a number of developed countries is fixed at a higher level, and self-sustaining mechanisms are activated. The persistence of the existing pro-inflationary factors will also be a significant fork in the road for the global economy: "bottle necks" and logistical constraints, as well as the state of the Russian-Ukrainian conflict. By the beginning of 2023, the developed Western countries are not on the upswing of the economic cycle, which is traditionally accompanied by inflation, but in the so-called high inflation mode, the exit from which is possible, but a "soft landing" will be much more difficult.

REFERENCES


**APPENDIX 1**

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<th>Total and sectoral variation of inflation, covariance between inflation in different sectors (left axis), inflation (right axis) in different countries</th>
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