7-14-2023

Monetary Policy and Stagflation: A trade-off between price stability and economic growth?

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Abstract

Several euro area economies are likely to experience a stagflation in 2023. This situation is characterized by a combination of economic stagnation, i.e., GDP growth falling below its potential growth rate, and a pronounced increase in inflation as was last observed during the 1970s' oil crisis. A stagflation presents the European Central Bank with a dilemma. Should it further tighten its monetary policy in an attempt to align euro area inflation (expectations) with its target of two per cent p.a. in the medium term? Or should the ECB re-adopt a more accommodative stance so as to stimulate economic growth in the monetary union?

> "Whenever a central bank realises that it has to change its monetary policy,
>
> it always wishes it had acted earlier."
>
> Benjamin Friedman

1. The European Central Bank's dilemma: Stagflation

1.1. HICP-inflation in the euro area

At 10.7% p.a. in October 2022, HICP inflation in the euro area (EA-19) reached an all-time high (Fig. 1). However, significant regional differences became apparent: While the inflation rate in economies such as Estonia and Lithuania was 24.1% p.a. and 22.5% p.a., respectively, it stood at (a comparatively moderate) 6.2% and 7.4% p.a. in France or Italy.

Figure. 1. Euro area HICP-Inflation (in % p.a.)
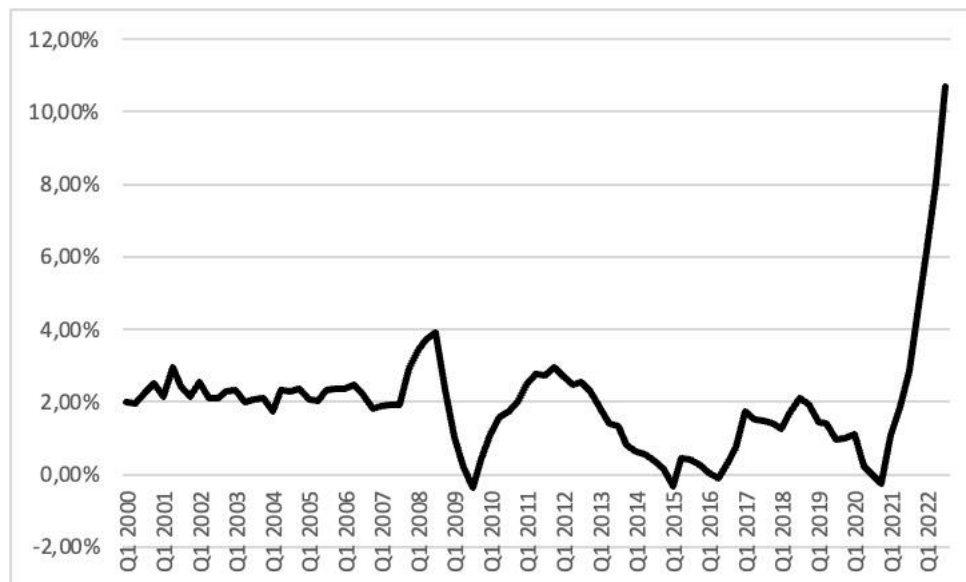
Source: FRED, 2022.

The rise in inflation was driven by both demand and supply-side factors. On the demand side, particularly consumption expenditures of private households proved to be more resilient than initially expected once the SARS-CoV-2 pandemic subsided (supported by the unexpectedly rapid recovery of the global economy after the pandemic-related recession). Further, household demand shifted from services to consumer goods during the pandemic. As a result, industrial production partly fell behind demand, further exacerbating price dynamics in both intermediate and final goods (Nagel 2022).

Also, virtually all euro area member states resorted to an expansive fiscal policy in recent months. These measures, whose effect may only unfold countercyclically due to (unavoidable) time-lags, will likely further stimulate inflation.

On the supply side, markets face an ongoing de-globalisation, which has triggered a decline in global trade volumes and a further tightening of supply. This development is exacerbated by logistics and supply chain restrictions

that have been impaired to this day as a result of the SARS-CoV-2 pandemic. In addition, the Russian attack on Ukraine led to a significant price rise for fossil fuels. However, driven by robust demand, this development had already become apparent earlier.

1.2. Sluggish Economic Growth

After a rate of around 3.0% in 2022, euro area economic growth is expected to significant slow in 2023. The gross domestic product (GDP) is estimated to grow by only 0.9% before experiencing a modest recovery (+1.9%) in 2024 (Fig. 2).

Figure 2. Euro area GDP growth (in % p.a.)
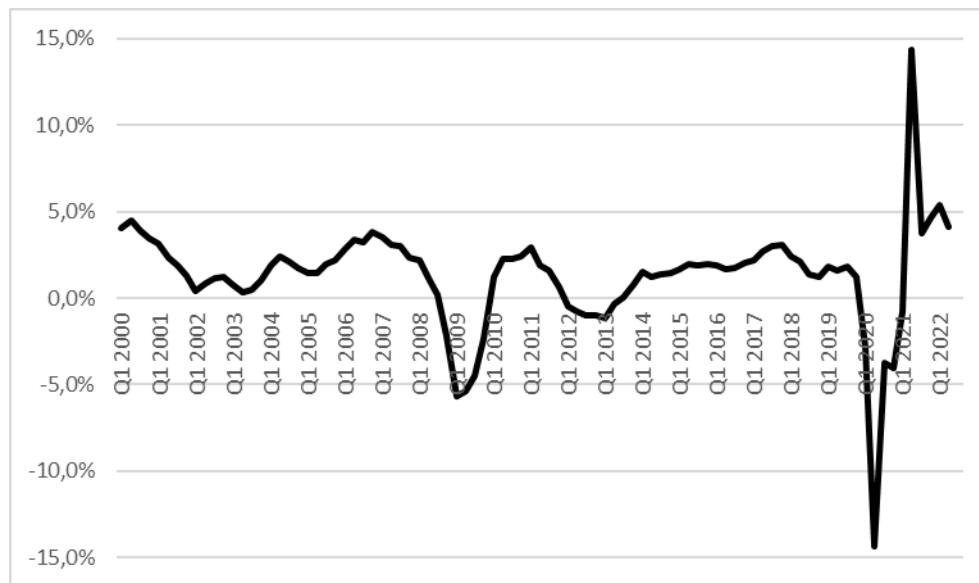
Source: FRED, Eurostat, ECB, 2022.

In this context, the second half of 2022 as well as the beginning of 2023 were characterised by economic stagnation, which can be attributed to several factors:

- Private consumption, which previously reliably supported economic growth, is weakening. One of the reasons for this is the decline in consumers' purchasing power as a result of high energy prices. More fundamentally, the high inflation rate is dampening spending and production at the macroeconomic level.

- Catch-up effects that occurred once the SARS-CoV-2 pandemic subsided, especially in the service sector, have weakened.

- The transition to a more restrictive monetary policy in most industrialised economies is weakening global demand. A deterioration in refinancing conditions is dampening demand for capital goods, among other things. In addition, the terms of trade, i.e., the relationship between the price one pays for imports and the price one receives for exports, are deteriorating. This results in less stimulus for the largely export-oriented economies of the European monetary union.

- In addition, market developments are overshadowed by supply chain bottlenecks as well as a declining market sentiment due to an ever-increasing uncertainty and volatility on the markets.

Despite the above-mentioned developments, euro area labour markets (still) are largely robust. At only 6.6%, the unemployment rate fell to a historic low in September 2022 (Fig. 3). Overall, the number of hours worked in the euro area is at a higher level than before the outbreak of the SARS-CoV-2 pandemic. However, the economic slowdown in 2023 is expected to lead to a (moderate) increase in the unemployment rate in the months ahead. Nonetheless, the labour market is likely to remain relatively resilient as it is essentially characterised by surplus demand.

Figure 3. Euro area unemployment rate (in %) (2022-2024 estimates)
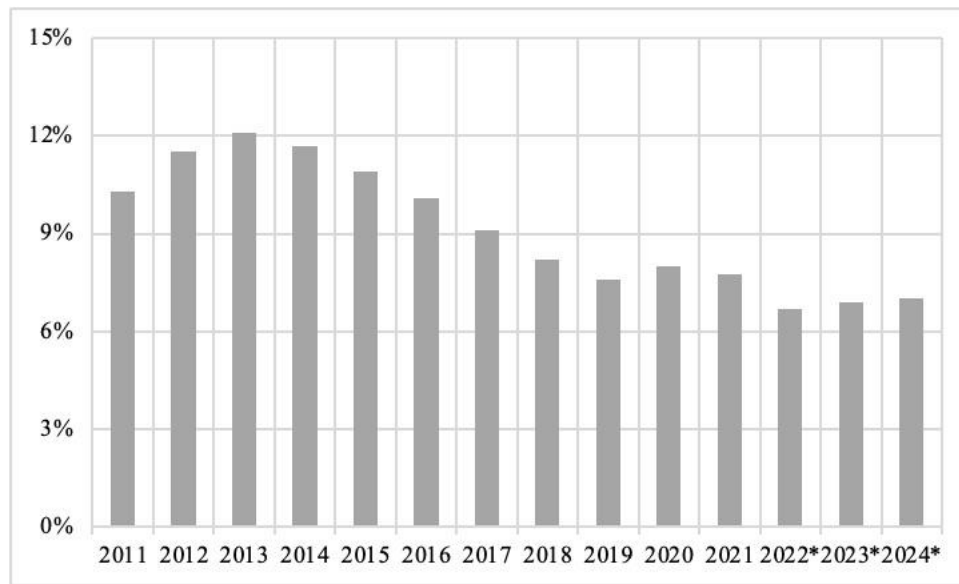
Source: Eurostat, 2022.

Any emerging stagflation, i.e., the combination of economic stagnation and rising inflation, as last seen during the oil crisis in the 1970s, poses a dilemma for the ECB (Fig. 4). Should it continue its course of further monetary tightening in order to ensure price stability in the euro area in the medium term? Or should it return to an accommodative monetary policy in order to support economic growth in the monetary union? The consequences of this trade-off will likely be decisive for the economic development in the coming years.

Figure 4. The ECB's dilemma
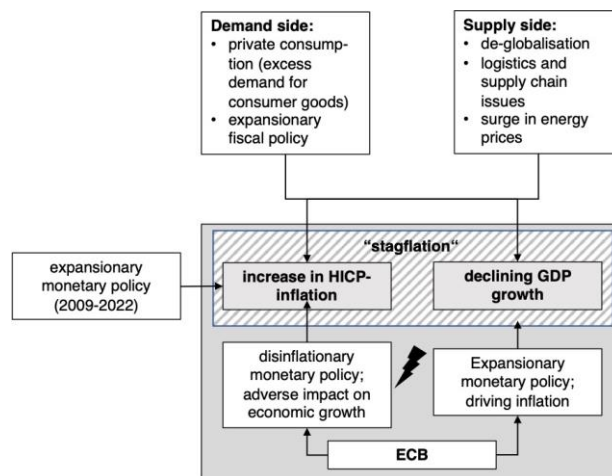
Source: author's own, 2023.

2. Monetary policy and stagflation

2.1. Monetary policy strategies

The monetary policy strategy of the European Central Bank (ECB) was originally defined in 1998. It was specified in a first review in 2003. The strategy adopted at that time still forms the basic framework for current monetary policy. It describes the conceptual approach of the ECB in pursuing its goals. In this respect, a strategy represents a consistent procedure with a medium to long-term orientation, according to which decisions are taken on the use of instruments to achieve monetary policy objectives in the sense of a fundamental decision. The monetary policy strategy thus includes the entire path from the available instruments to the operational objective of the central bank to the goals of monetary policy (Dierks 2023a, 2023b). Moreover, it is intended to facilitate both the monetary policy decision-making process within the central bank and the presentation and justification of decisions to the outside world. Essentially, the strategic problem of a stability-oriented monetary policy is to permanently anchor inflation expectations at a level compatible with price stability. The pursuit of a monetary policy strategy is recommended because of the still incomplete knowledge of the exact transmission process and the channels of monetary policy (ECB 2011, 2021; Görgens et al. 2014).

2.2. Price stability as the ECB's primary objective

According to Article 127(1) of the Treaty on the Functioning of the European Union (TFEU), the primary objective of the Eurosystem is to maintain price stability, defined as a year-on-year increase in the euro area's harmonised index of consumer prices of 2.0%. In accordance with the monetary policy strategy, the Eurosystem aims for an inflation rate of 2.0% p.a. over the medium term. This target is symmetric, i.e., negative as well as positive deviations from the inflation target are equally undesirable. Price stability ought to be achieved over the medium term, i.e., temporary deviations (e.g., due to external shocks) are not necessarily incompatible with the target. The Eurosystem's definition refers to the general consumer price index (HICP) and not to the core inflation rate (Görgens et al. 2014).

Without compromising the objective of maintaining price stability the Eurosystem should support the euro area's general economic policy. In order for the Eurosystem to be able to effectively implement its primary objective, both the ECB and national central banks (NCBs) are independent in their decisions from instructions from other policy makers at national and EU level.

2.3. Adopting a monetary policy

To fully assess the ECB's dilemma, it is essential to correctly understand the transmission mechanisms and time-lags of monetary policy decisions on the economy and inflation. The ECB has various instruments at its disposal so as to influence economic developments (and thus inflation) (Dierks 2023). A central bank usually reacts to an emerging rise in inflation with an increasingly restrictive monetary policy. Among the conventional instruments at its disposal is the main refinancing rate, i.e., the interest rate which sets the conditions at which monetary financial institutions (MFIs) can obtain access to central bank money (Fig. 5).

In addition, the central bank can influence short-term interest rates by buying and selling securities in the secondary market. After the quantitative easing (QE) observed in recent years, in which an aggregate amount of €3,434bn was bought, reversing the instrument (quantitative tightening) would be conceivable. Selling the securities previously acquired potentially triggered a tightening of the amount of money in circulation and long-term interest rates could rise.

Figure 5. Euro area main refinancing rate (in % p.a.)
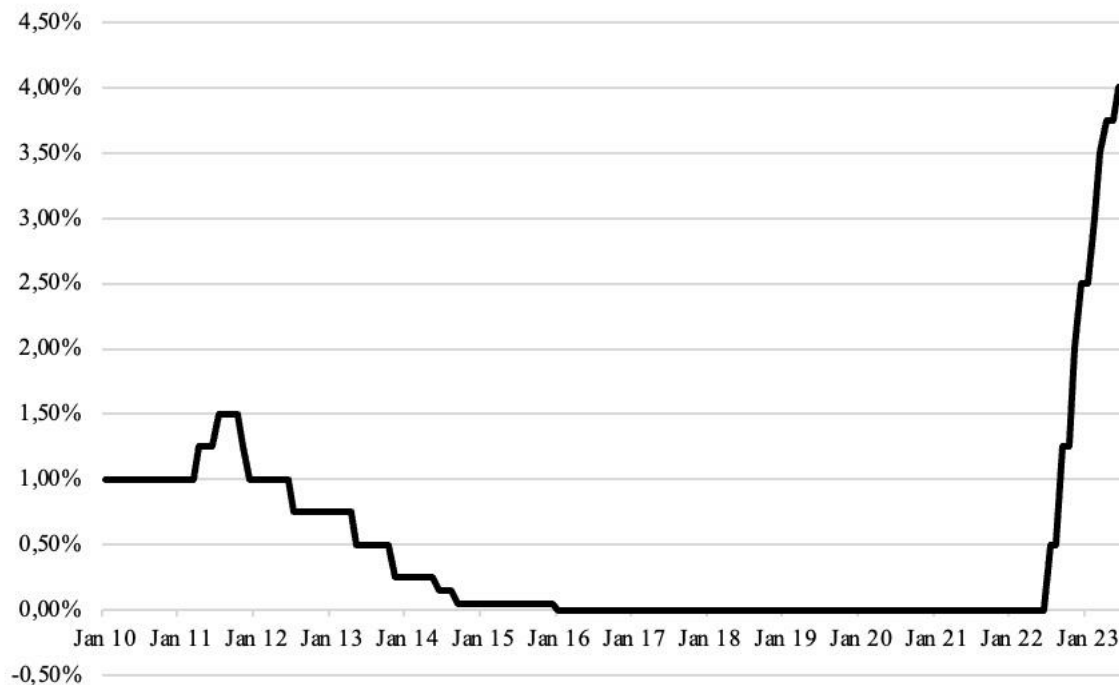
Source: ECB, 2023.

The instruments mentioned above have in common that they change the credit conditions of corporates and private households. Monetary policy thus unfolds its effectiveness by steering private demand. In other words, a restrictive monetary policy makes financing conditions of private households and companies more expensive and thus dampens aggregate demand. A decline in demand for goods and services reduces the ability of firms to raise prices, which in turn has a moderating effect on inflation. However, much of the increase in inflation is not demand-side driven, but can be attributed to supply-side developments such as higher commodity prices or supply bottlenecks. This tiggers the question of the extent to which it is at all possible for the ECB to affect inflation by influencing demand.

2.4. The relevance of inflation expectations

Not least because of the importance of inflation expectations on price developments, current inflation dynamics might trigger a self-fulfilling prophecy. To the extent that market participants base their economic decisions on the expectation that the inflation rate will be above the ECB's target in the years ahead, the expectation will be reflected in wage demands (and price developments). Thus, it is up to the central bank to carefully weigh when to act against inflationary tendencies. This is true even if, as in the case of an external shock (such as a rise in commodity prices), it cannot directly influence the causes.

After the abrupt increase in 2022, the inflation rate remains at a level that cannot be brought into line with the ECB's mandate. Estimates of the average inflation rate amount to 5.5% p.a. for 2023 after 8.1% p.a. in 2022 (Fig. 1). This development is increasingly overshadowing the inflation expectations of market participants in the euro area, which have risen noticeably in recent months. However, the deviation from the ECB's target value of 2.0% p.a. on average in the medium term is comparatively moderate, so that it can be assumed that inflation expectations in the euro area are (still) firmly anchored (Fig. 6).

Figure 6. Euro area HICP-inflation expectations (in % p.a.)
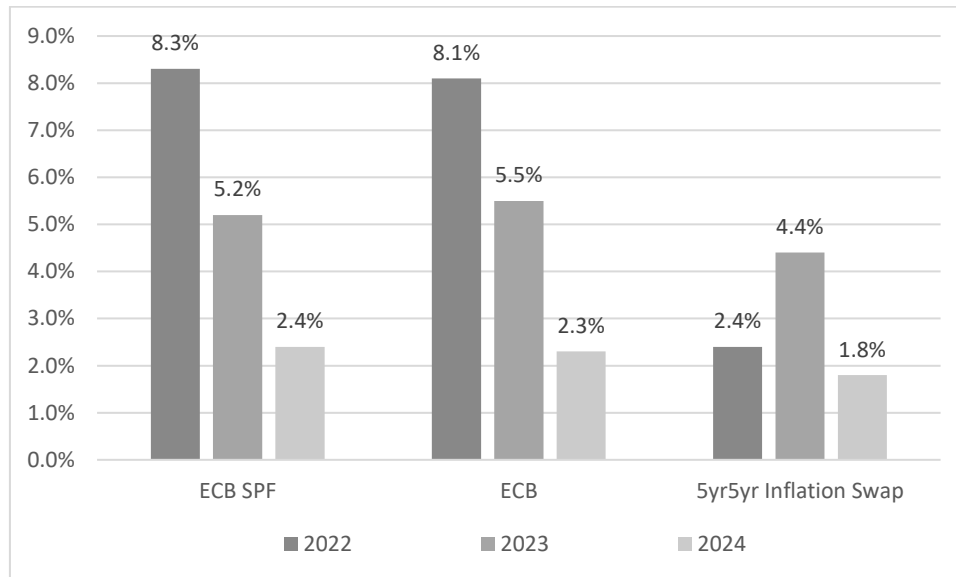
Source: ECB, Bloomberg, Deutsche Bundesbank, 2022.

During the SARS-CoV-2 pandemic, medium-term inflation expectations (i.e., over a three-year horizon) were firmly anchored at the ECB's 2.0% p.a. inflation target. In the meantime, however, the median of expectations is closer to 3.0% p.a.; the mean even stands at 5.0% p.a. (ECB 2022). Option prices as well as the so-called Survey of Professional Forecasters (SPF), which conveys a historically high average value of 2.2% p.a. support these findings. Generally speaking, a noticeable rightward shift in the distribution can be observed, i.e., an increase in the number of respondents who assume that the inflation rate will settle well above the ECB's 2.0% p.a. target. In the 1970s, this development preceded a rightward shift of the mean, i.e., an increase in inflation (Schnabel 2022).

Ideally, a central bank creates an environment in which its monetary policy neither stimulates nor slows economic growth. However, according to the current interest rate level, the ECB's monetary policy continues to be (strongly) expansionary. A nominal interest rate of 2.5% p.a., taking into account an inflation rate of around 10.0% p.a. (as of December 2022), corresponds to a real interest rate of -7.5% p.a. It can thus be assumed that monetary policy continues to stimulate aggregate demand (Fig. 7).

3. A trade-off: price stability or economic growth?

3.1. The sacrifice ratio

Any contemporary monetary policy is confronted with a trade-off between a disinflationary monetary policy and a reduction in output in the case of an inflation rate exceeding its target value. The economic costs of such a disinflationary monetary policy can be measured using the so-called sacrifice ratio. This indicates by how many percent real GDP growth will fall (which is typically accompanied by an increase in unemployment) in order to reduce the inflation rate by one percentage point. Such a quantification of output losses due to disinflationary monetary policy is important insofar as disinflation is considered one of the main causes of recessions in industrialised countries (Ball 1994).

Figure 7. Real interest rate in the euro area (in % p.a.)
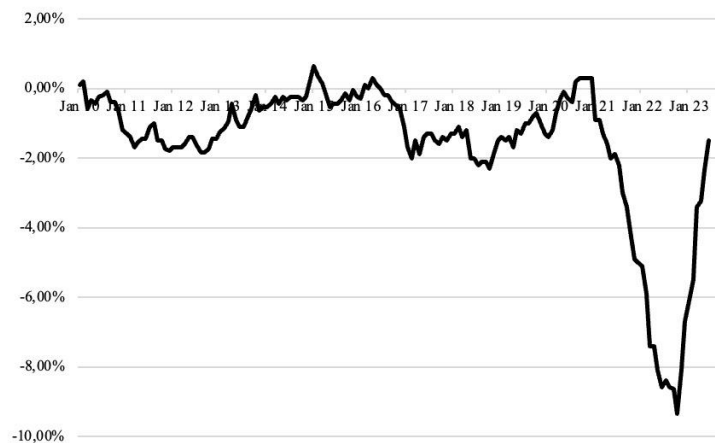
Source: author's own, 2023.

The concept is derived from the modified Phillips curve (Samuelson and Solow 1960), which illustrates the relationship between unemployment and inflation. However, determining the sacrifice ratio on the basis of a Phillips curve is problematic as the trade-off between inflation and output is formally identical in both inflationary and disinflationary phases. One of the most widely used methods for determining the sacrifice ratio therefore is that of Ball (1994). It is based exclusively on disinflation phases instead of estimating the sacrifice ratio on the basis of a Phillips curve. Such an approach also makes it possible to separate disinflationary phases induced by monetary policy from fluctuations attributable to external shocks.

Literature reviews (Mazumder 2014, among others), indicate that sacrifice ratios are usually negative and statistically significantly related to the speed of disinflation. In other words, the faster the disinflationary process, the lower the output losses for the respective economy. Against this background, a "cold turkey" approach might well represent a justifiable strategy for a sustainable reduction of the inflation rate.

Furthermore, the potential costs (economic as well as social) of acting too hesitantly, i.e., only at a time when a high inflation rate is already reflected in market participants' expectations, support decisive countermeasures. It can thus be observed that the disinflationary monetary policy witnessed in the early 1980s was accompanied by a sharp rise in unemployment. This phenomenon continues to be observable - and there are several reasons to believe that today's output and employment losses may be even more pronounced (Schnabel 2022).

According to Ball's (1994) approach, the sacrifice ratio can be determined on both a quarterly and annual basis. Both methods are almost identical: In a first step, the inflation trend is defined as a moving average of the HICP inflation rate of a total of eight quarters around the year *t*. The inflation rate for the year *t* is defined as the moving average of the HICP inflation rate of a total of eight quarters around the year *t*. The inflation rate for year *t* thus corresponds to the average of the quarterly inflation rates of the four quarters of year *t* as well as the last two quarters of year *t-1* and the first two quarters of year *t+1*. A year t in which the inflation rate is higher (lower) than in the year before *(t-1)* or after *(t+1)* represents a local maximum (minimum). A disinflation phase is a period that begins with a local maximum and ends with a minimum - and within which a disinflation of at least 1.5 percentage points can be observed. Finally, the trend growth of output (i.e., real GDP growth) is determined. This is assumed to be equal to its trend at the time of the local inflation maximum and to return to it four quarters after the end of a disinflation phase. Between the two points in time, trend growth is logarithmic. Finally, the sacrifice ratio is the sum of the deviations

between the regression curve of the trend growth of output and the logarithm of the actual output, divided by the change in the inflation rate in the same period.

According to this approach, two disinflationary phases can be identified (using annual data) for the period from 2000 to 2021 in the euro area (Fig. 2). (The average decline in the period of the HICP inflation rate between 2018 and 2020 was lower than the 1.5 percentage points mentioned above). However, determining a meaningful sacrifice ratio is not possible. The decline in HICP inflation over the respective periods cannot be (causally) attributed to a disinflationary monetary policy. Instead, in order to mitigate the contraction of GDP, the ECB lowered the main refinancing rate (Fig. 8).

In this context, an economic stagnation proves to be fundamentally problematic. It distorts the implications of the sacrifice ratio, since output declines even without central banks adopting restrictive monetary policies. Also, GDP growth may be more strongly affected by hysteresis due to disinflationary tendencies than the methodology presented above is able to capture.

3.2. Declining interest rate sensitivities

Over time, advanced economies have become much less sensitive to interest rate changes. In order to trigger a certain decline in inflation, a (much) stronger restrictive monetary policy is required than before. This is partly due to the increasing importance of intangible assets, whose share of total investment in the euro area has doubled from 12% in 1995 to currently around 23% (Caggese and Pérez-Orive 2022, Döttling and Ratnovski 2020). Since intangible assets can only be used as collateral for loans to a limited extent, the companies concerned often are net savers, which makes borrowing costs less relevant. These effects are reinforced by structural shifts towards services, which (compared to more capital-intensive sectors such as manufacturing) tend to react less strongly to monetary policy stimuli.

Figure 8. Inflation, GDP-growth and the main refinancing rate in the euro area (in bp)
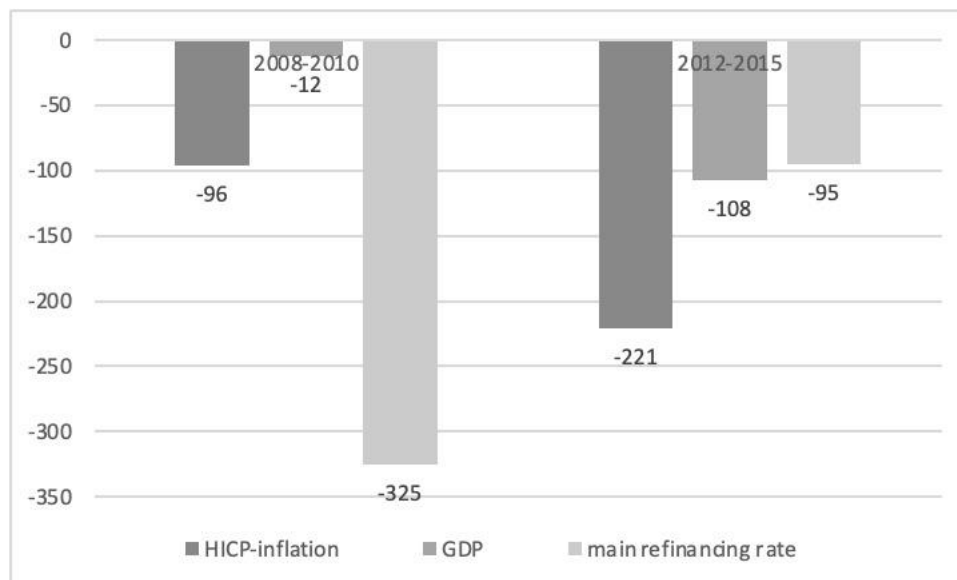
Source: author's own, 2023.

Another reason why the correction of (excessively) high inflation expectations is associated with considerable economic costs is the slope of the Phillips curve. Numerous studies indicate that the Phillips curve has flattened in

recent decades (Del Negro et al. 2020, and Ratner and Sim 2022). Before the SARS-CoV-2 pandemic, this implied that central banks could allow a GDP growth rate that was above potential growth. Only when this became entrenched did they adopt a more restrictive monetary policy so as to mitigate inflationary tendencies. In today's market environment, however, a flat Phillips curve implies that a potentially much sharper contraction in GDP growth is required to sustainably lower inflation expectations anchored at a higher level.

Finally, even if the slope of the Phillips curve were steeper than initially assumed, the sensitivity of (advanced) economies to interest rate changes remains limited. This is because it is usually (excess) capacity (slack) at the global (rather than national) level that is the main determinant of pricing.

4.   Conclusion

Even though euro area inflation is largely driven by the rise in commodity prices and supply chain issues, i.e., factors beyond the reach of a central bank, the ECB must act decisively. The dynamics of inflation have reached a point where the risk of a self-reinforcing trend is high. Thus, after a decade of a zero-interest rate policy (ZIRP), the ECB will not be able to avoid continuing to meaningfully tighten its monetary policy; even if this triggers a weakening of aggregate demand.

Inflation as a global phenomenon makes it difficult for the ECB to sustainably reverse the loss of purchasing power of the euro area's single currency. Even if the sensitivity of prices to changes in economic activity is higher than before, it is to be feared that the sacrifice ratio in the euro area will be higher than during the highly inflationary 1980s. In case of doubt, however, the costs of a "laisser-faire" monetary policy likely were (even) higher.

Normalising monetary policy at an earlier stage might not have prevented the trade-off between price stability and economic growth that can be observed now. However, it would have been a strong signal with regard to the fulfilment of the ECB's mandate - and thus to its credibility and reputation, as well as, directly related to this, market participants' anchoring of inflation expectations.

Declaration of Interest

The author declares that there are no conflicts interest.

Data Availability

The author declares that there are no conflicts interest.

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