BIS

BIS Bulletin

No 75

Disinflation milestones

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19 May 2023

BIS Bulletins are written by staff members of the Bank for International Settlements, and from time to time by other economists, and are published by the Bank. The papers are on subjects of topical interest and are technical in character. The views expressed in them are those of their authors and not necessarily the views of the BIS. The authors are grateful to Emese Kuruc for excellent analysis and research assistance, and to Louisa Wagner for administrative support.

The editor of the BIS Bulletin series is Hyun Song Shin.

This publication is available on the BIS website (www.bis.org).

ISSN: 2708-0420 (online)
ISBN: 978-92-9259-659-0 (online)

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Disinflation milestones

Key takeaways

- *Insights into how the incomes of workers and firms absorb the disinflation burden in the euro area and the United States can be gained by decomposing changes in the GDP deflator into its underlying components.*
- *Nominal wage increases of 4–5% in the euro area and 3–4% in the United States this year and next year are compatible with bringing inflation within reach of 2% by end-2024, provided that import price growth slows and profit margins stabilise or slightly shrink.*
- *From a historical perspective, the 2023–24 disinflation path for prices and nominal wages is within the range of past disinflation episodes in both economies, although it remains uncertain how price and wage setters will react to the above-target inflation from 2021 onwards.*

Introduction

While inflation remains high, most forecasts see inflation falling rapidly in 2023 and 2024 in the euro area and the United States, as well as in most other advanced economies. For instance, CPI and PCE inflation in the euro area and the United States – which stood at 7–9.5% in the last quarter of 2022 – is expected to decline to 3–5% by the end of this year and to fall further, to around 2.5% in both economies, by the end of 2024 (see Table 1).

This Bulletin analyses the disinflation process in both jurisdictions to identify milestones that can shed light on whether and how far the current monetary policy stance will achieve its aims. To unpack the expected disinflation process, we decompose changes in the GDP deflator into its underlying wage, productivity and non-labour income components. This decomposition provides insights on how the income of workers and capitalists will absorb the disinflation burden.

For convenience, we use data and forecasts from the OECD Economic Outlook, which is published twice a year and includes forecasts over a two-year horizon for the main inflation components. These forecasts are detailed – presenting the split of variables we are interested in – publicly available, generally more accurate than alternatives, comparable across regions, and nearly identical to other available forecasts from prominent institutions (eg the Eurosystem projections for the euro area and those of the Congressional Budget Office for the United States). We compare the disinflation path, as currently implied by the forecasts, with historical episodes and use a simple model to assess some of the risks around the inflation outlook.

A simple accounting framework

A common measure of domestic prices is the GDP deflator, ie the price of domestic value added, gross of net indirect taxes. In turn, the GDP deflator may be thought of as being the combined measure of the cost of labour needed to produce one unit of output (whole-economy unit labour costs, ULC) and non-labour

costs (excluding intermediate goods). It is conventional in macro forecasting to define the "markup" as the multiple that connects unit labour costs (ULC) and the GDP deflator itself. In other words, markup is defined as:

*GDP deflator = markup * ULC,*

where, in nominal terms,

*ULC = (wages * number of workers)/real GDP = wages/labour productivity*

In the definition of ULC and in what follows (unit) "wages" also include social contributions.

We use this simple accounting framework to investigate the determinants of the disinflation implied by the forecasts for 2023–24. Specifically, we describe how the various components of domestic inflation (wage rate, productivity and the markup) need to adjust if consumer inflation is to decline from last year's peaks.

Inflation forecasts and their components

Year-on-year changes, in per cent — Table 1

	CPI	Import price deflator	GDP deflator	Mark up	Unit labour cost	Nominal wage[1]	Real wage[2]	Employment	Labour productivity[3]
Euro area									
5-year average[4]	0.9	0.0	1.3	–0.2	1.5	1.9	0.9	1.5	0.6
Q4 2022	9.6	15.7	5.7	0.6	5.1	5.1	–4.1	1.3	0.1
Q4 2023	4.9	3.1	4.3	–0.7	5.1	5.1	0.2	0.6	0.6
Q4 2024	2.9	2.0	2.7	0.0	2.8	4.1	1.2	0.5	1.2
United States									
5-year average[4]	1.5	–1.6	1.6	–0.4	2.0	4.4	2.8	1.7	0.7
Q4 2022	7.1	5.5	6.1	–0.7	6.8	7.0	0.0	2.8	–1.9
Q4 2023	3.1	3.0	2.9	–0.2	3.2	3.5	0.4	–0.4	0.7
Q4 2024	2.3	1.7	2.3	0.6	1.7	3.4	1.0	0.0	1.6

[1] Defined as compensation of employees/dependent employment. [2] Nominal wage deflated by CPI. [3] Output per worker, not adjusted for hours worked. [4] Over Q4 2014–Q4 2019.

Sources: OECD, *Economic Outlook*; authors' calculations.

How inflation will come down to near 2% by end-2024

As shown in Table 1, both CPI headline and the GDP deflator inflation rates are expected to come down to around 2–3% (Q4 over Q4, as for all other variables mentioned below) by the last quarter of 2024. Import price growth is projected to be close to 2% in both the euro area and the United States, falling from the much higher levels recorded at the end of 2022: 5.5% in the United States and as much as 15.7% in the euro area. The rate of change of the GDP deflator is also predicted to reach about 2% by end-2024, from about 6% at the end of 2022.

Digging deeper into euro area domestic inflation developments, growth in ULC is expected to be well above its historical average in 2023, amid high nominal wage and low productivity growth, before starting to fall back as wage growth moderates and labour productivity growth picks up.

It is usual to calculate real wages by deflating nominal wages by the consumer price index (CPI). Although the CPI tends to move broadly in line with the GDP deflator in the long run, it can occasionally diverge when energy and food prices rise or fall sharply. Under this measure, real wages are expected to increase gradually, but not enough to fully recoup the purchasing power losses experienced in 2022. The

aggregate markup is expected to fall very mildly, buffering to some extent the relatively strong growth in labour costs.

The narrative for the United States is qualitatively similar to that for the euro area, although the dynamics of all inflation components are less extreme, so that external and domestic price pressures are expected to contribute more equally to the disinflation in 2023–24, mirroring their more even pressure on CPI inflation in 2022.

Importantly, in neither the euro area nor the United States does disinflation require subdued increases in nominal wages. Disinflation is expected to take place in the face of nominal wage increases hovering around 4–5% in the euro area and 3–4% in the United States (see also Graph 1). Inflation may thus come down even as nominal wage growth remains robust, provided that profit margins moderate somewhat. The markup is indeed projected to marginally weaken in both economies, although at different times. In the euro area, markup would decline in 2023 and remain stable in 2024, after having risen in 2022. In the United States, the markup, having declined in 2022, would remain basically flat in 2023, before partially recovering in the second half of 2024.

By contrast, the dynamics of real wages differ markedly on each side of the Atlantic. In the euro area, by the end of 2024, real wages will return to positive growth rates. But these will remain too low to fully recoup the fall incurred in 2022, following the surge in energy prices after the invasion of Ukraine. By contrast, the energy shock was much more muted in the United States; partly as a result, real wages had already stabilised by the end of 2022. They are expected to start rising again in both 2023 and 2024, albeit more slowly than productivity does. This would partially correct for the large increase in ULC recorded in 2022.

Also critical for CPI disinflation, particularly in the euro area, is that import price growth stays moderate. (Incidentally, that moderation has already taken place by and large, quarter-on-quarter growth rates having fallen from more than 5% on average in the first two quarters of 2002 to around 1% in the most recent quarter.)

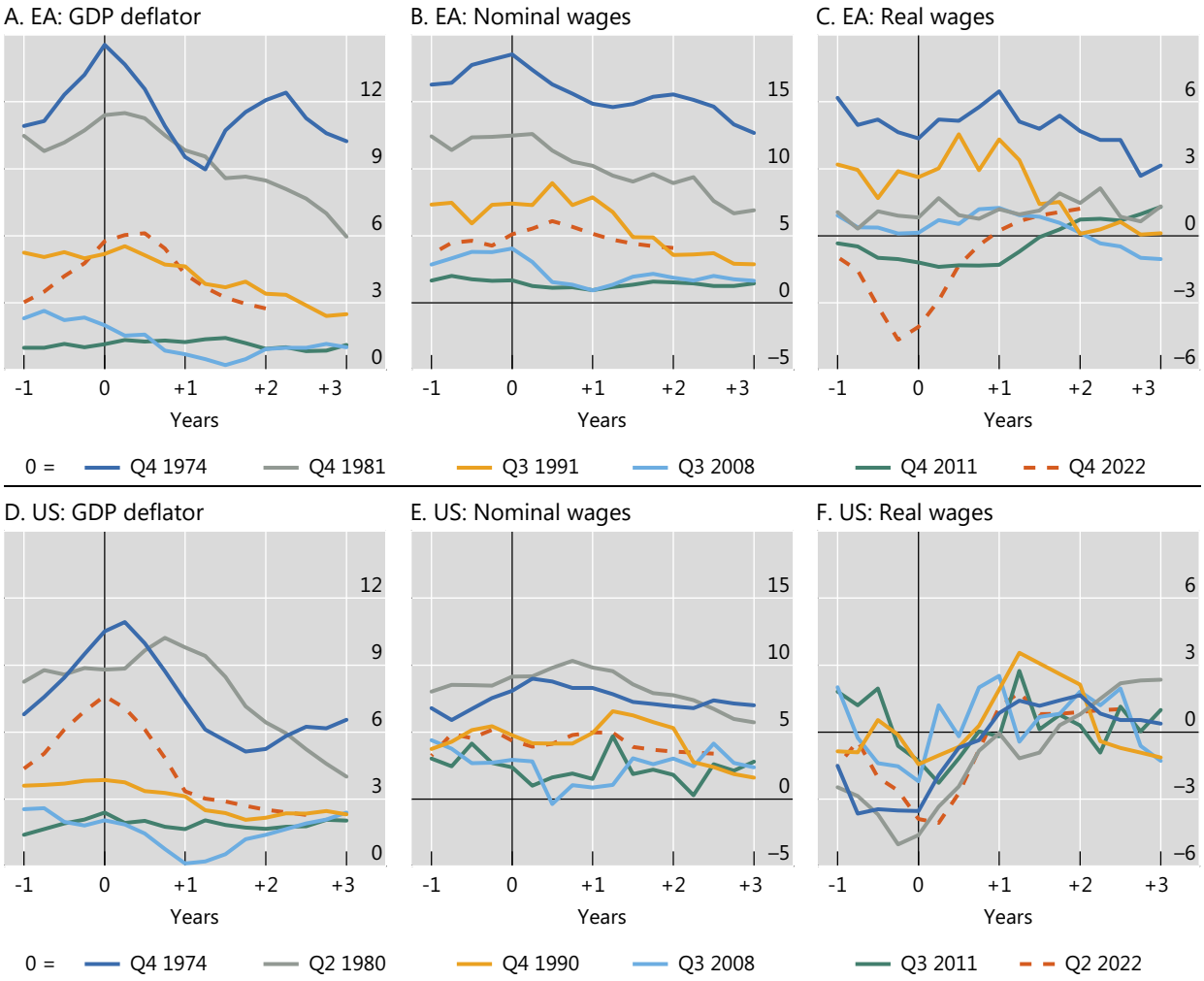
Sharing the burden of disinflation: lessons from the past

What are the risks to the currently envisaged disinflation path? First, we do not know how price and wage setters, ie firms and workers, will react to having experienced inflation well above 2% since 2021. They might try to recoup lost purchasing power, especially if they anticipate that high inflation will persist (Carstens (2022), BIS (2022), Borio et al (2023), Lagarde (2023), Lorenzoni and Werning (2023)). For their part, monetary authorities have sought to prevent such expectations of persistently high inflation from materialising. Second, tight labour markets may add more pressure to nominal and real wages than currently anticipated, especially if higher inflation results in a steepening of the Phillips curve. On the contrary, if a "low-inflation mindset" persists, imported inflation, wage inflation and markups in 2023 and 2024 may turn out lower than currently anticipated, in which case disinflation could be faster.

From a historical perspective, the 2023–24 disinflation path of domestic prices and nominal wages are within the range of past disinflations in both economies (Graph 1, left-hand and centre panels). However, two observations are in order. First, while US real wages always tend to decline around the time when US inflation peaks, the 2022 decline in euro area real wages was unprecedented (upper right-hand panel). Second, the projections imply that US markups will bear a somewhat larger burden of the disinflation process than typically seen in the past (see Graph 2), a point we will come back to. However, past patterns need not necessarily inform the current episode and higher increases in either wages or markups could jeopardise the disinflation.

Disinflation episodes

Year-on-year changes, in per cent — Graph 1



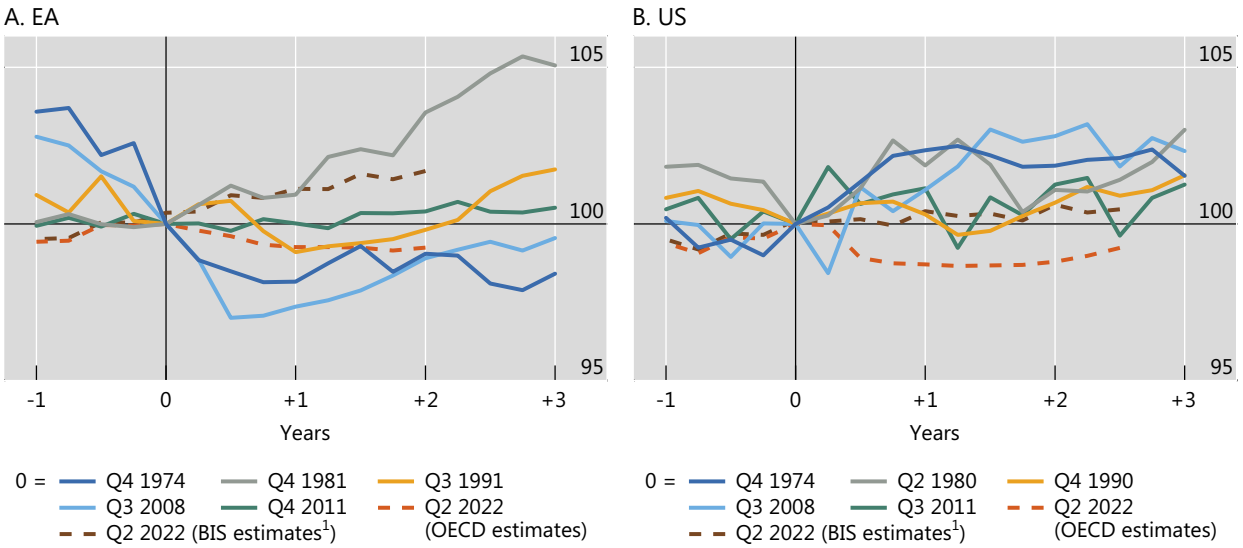
Sources: Euro Area Business Cycle Network, Area Wide Model for the Euro Area; OECD, *Economic Outlook*; authors' calculations.

To assess how plausible this implicit burden-sharing of the disinflation process between workers and firms might be, we estimate simple models for the markup, which is closely related to the "non-labour share" of GDP. A higher markup implies a lower labour share of GDP and vice versa. The estimated models show that the labour share tends to revert to its long-run average, a feature that we use to project a benchmark path of the euro area and US markups over 2023–24.[1] The results are reported in Graph 2. In both economies, our estimated model projects the non-labour share (the dark red dotted line) to remain roughly unchanged over the next two years. This is about 1% above the OECD's forecast trajectory (the orange dotted line). In the United States the non-labour share projected by the OECD appears lower than both the prediction of our simple model and the behaviour in past disinflation episodes, possibly signalling a moderate upward risk to inflation projections.

[1] See the Online Appendix for details on the estimated equation.

Markup projections

Index, time zero = 100 — Graph 2

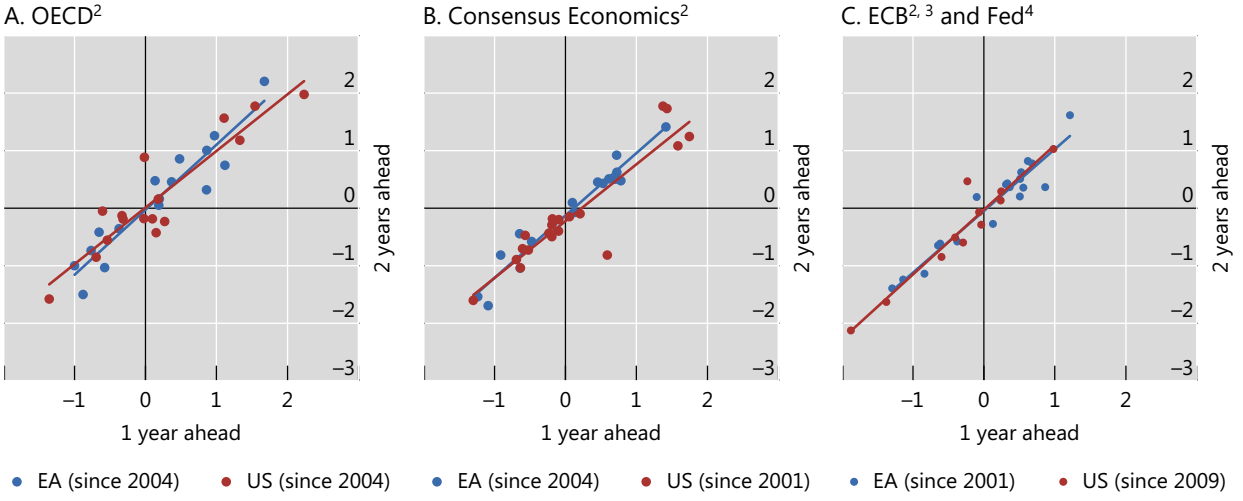


More details of the projection of the equation are described in the online appendix. Sample period: for EA, Q1 1985–Q3 2022; for US, Q1 2005–Q3 2022.

Sources: Euro Area Business Cycle Network, Area Wide Model for the Euro Area; OECD, *Economic Outlook*; authors' calculations.

The term structure of consumer price inflation forecast errors[1]

Year-on-year change, in percentage points — Graph 3



[1] Forecasts until 2019 to exclude pandemic-related outliers. [2] Based on quarterly figures. Forecasts made in Q4, except for the two-years-ahead Consensus forecasts, where seven-quarters-ahead forecasts made in Q1 are plotted as closest proxies. [3] Using Eurosystem staff projections. [4] Using annual actual PCE and PCE inflation projections of Federal Reserve Board members and Federal Reserve Bank presidents. Forecasts made in Q4; median or mid-point of the forecast range; due to data availability.

Sources: Euro Area Business Cycle Network, Area Wide Model for the Euro Area; OECD, *Economic Outlook*; Consensus Economics; Refinitiv Datastream; national data; authors' calculations.

The timing of disinflation and monetary policy

The above analysis sheds light on labour and non-labour shares that can be used to assess the likelihood of a benign disinflation scenario. It shows what disinflation could mean in terms of wages, productivity and profits. And it helps us understand how decisions by workers and firms on wages and prices may

undermine the process. In particular, central bankers have stressed the dangers of strategies where workers and firms aim to increase their income share of GDP. These could lead to tit-for-tat runaway inflation at the expense, eventually, of everybody's purchasing power (Visco (2022), Arce et al (2023)).

The above analysis suggests that inflation may fall to within reach of 2% by late 2024 in both the euro area and the United States, even if nominal wages rise about twice as much, provided that import price growth slows and profit margins at least stabilise. If developments in any of the inflation components put the disinflation process in jeopardy at some point over the course of the next 18 months, when should an alarm bell ring? The answer is: relatively soon. This is because a striking feature of inflation forecast errors is that they correlate strongly across time horizons. This point cannot be taken for granted, as consumer inflation may be highly volatile and one might surmise that short-term projection errors are largely unrelated to medium-term ones. Yet this is not generally the case. Instead, if actual inflation next year is above the forecast formulated now, inflation in the following year is also highly likely to overshoot the forecast. This pattern applies to all forecasters: as shown in Graph 3, the OECD, Consensus, ECB and the Fed forecast errors over an eight-quarter horizon are very highly correlated with the forecast errors over the four-quarter horizon. What is more, the slope of the line that relates medium- to short-term projection errors is not far from unity, implying that forecast errors are not only highly correlated but they tend to be similar in size. This implies that, if inflation in 2023 turns out higher than projected, the benign disinflation currently expected over the medium term would become less likely. Thus, actual inflation and its components in 2023 will provide an early indication of whether the monetary policy stance needs adjusting.

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