## ECOCHARTS

The bank for a changing world

## CHART OF THE MONTH: Inflation differentials are narrowing in the euro area

In addition to the sharp decline in inflation in the euro area, the ECB will be relieved to note that the inflation gap between Member States is also narrowing. Measured as a standard deviation, the dispersion index fell again in November, after a slight rebound in the previous month. Croatia and Slovakia were the only Eurozone countries with headline inflation rates above 5\% in November. This phenomenon is expected in a phase of disinflation that is still largely driven by energy prices. A lower dispersion can also be observed on the core measure, but to a lesser extent at this juncture. An alternative measure of the gap between the highest and lowest inflation rate among euro area countries - also shown in this chart - remains above the level observed last August. From a longerterm perspective, the current level of dispersion remains high compared to the 2010s.

The countries that have seen the sharpest disinflation are, unsurprisingly, those that have been among the hardest hit by the energy crisis: the Baltic countries (Lithuania, Estonia, Latvia) and the Netherlands. Conversely, France is the euro area country where inflation variations in 2023 were the most contained.


## KEY POINTS: Falling inflation provides some respite to the bond market

- The latest inflation data from the major developed economies have helped fuel the decline in bond yields and reinforced the conviction that the first policy rate cuts will take place in the first half of 2024 in the US, the euro area and the UK.
- Harmonised inflation in the eurozone fell from $2.9 \%$ y/y in October to $2.4 \%$ in November. While this decline remains fuelled by greater energy deflation, the rise in industrial goods prices (excluding energy) and services is also slowing. Indeed, disinflation is tending to become more widespread: the share of CPI components with inflation above $4 \%$ now represents only about half of the total ( $51.3 \%$ to be precise), the lowest level since March 2022. The most significant decelerations in inflation came from Italy (-1.1 percentage points to $0.8 \%$ ), Germany ( -1.3 pp to $3.0 \%$ ) and Finland ( -1.6 pp to $0.8 \%$ ). France recorded a smaller decline (from -0.7 pp to $3.8 \%$ ), as did Spain ( -0.3 pp to $3.2 \%$ ). In addition, inflation differentials are narrowing across Member States (see chart of the month). The ECB will also take note of the decline in alternative inflation measures - in particularthe weighted median fell back below $3 \%$ - and the stabilisation of households' long-term inflation expectations.
- The decline in inflation in the United States was less significant than in the Eurozone, mainly due to the greater weight of the shelter component ( $+6.7 \% \mathrm{y} / \mathrm{y}$ in October), as well as a less negative contribution from energy. The ISM price paid indexes, for both manufacturing and services, have stabilised at pre-Covid levels, and are sending rather positive signals about further disinflation. However, household inflation expectations are surprisingly moving in the opposite direction: according to the University of Michigan survey, one-year and five-year expectations are rising again, the later reaching its highest level since 2011.
- In Japan, headline inflation rose by +0.3 pp to $3.3 \% \mathrm{y} / \mathrm{y}$ in October, while core inflation (excluding fresh food and energy) fell by -0.4 pp to $4.5 \%$. Gas and electricity prices rose sharply month-on-month in October, due to the reduction in energy subsidies at the end of September. Infation in services accelerated very slightly, supported by significant price increases in hotel charges $(+42.7 \% \mathrm{y} / \mathrm{y}$ in October). The breakeven inflation rate has continued to rise towards $2 \%$, while predictions from professional forecasters for next year (fiscal year 2024) have crossed this level.
- In the United Kingdom, disinflation is finally gaining traction, with a decline from $6.4 \%$ in September to $4.7 \%$ in October. A few days before the Bank of England's last meeting of 2023, due on December 14th, these data are likely to bring some members who were in favour of a rate hike in November (3 out of the 9 MPC members) back into the group asking for a status quo. The slight month-on-month decline in the CPI in October $(-0.2 \% \mathrm{~m} / \mathrm{m})$ was only the third in two years. However, price dynamics in services ( $+6.6 \% \mathrm{y} / \mathrm{y}$ ) remain supported by rapid wage growth $(+8.3 \% \mathrm{y} / \mathrm{y}$ in 0 ctober).


# Generaldynamics ofinflation 

## Inflationandsurvey data

Inflation expectations (householits, foreceasters, marteets)

## Raw materials

Wacroeconomicdeterminants of inflation
(wayes, unemploymentrate, capacity utilization rate, exchanyer rate)

## General dynamics ofinflation

## General dynamics of inflation: decomposition of inflation



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## Infation dynamics in the United States: different metrics and degree of generalisation






> US: producer and consumer prices (y/y \%)



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## United States inflation heatmap

Difference between the current inflation rate ( $(\mathrm{y} / \mathrm{y}, \%$ ) and the 2010-2019 average

|  | Weight (\%) | Oct-22 | Nov-22 | Dec-22 | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 | Aug-23 | Sep-23 | Oct-23 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total | 100 | 5.99 | 5.36 | 4.67 | 4.58 | 4.21 | 3.22 | 3.19 | 2.36 | 1.32 | 1.53 | 1.94 | 1.92 | 1.46 |
| Food and non-alcoholic beverages | 7.6 | 11.25 | 10.76 | 10.69 | 10.16 | 8.96 | 7.13 | 5.82 | 4.45 | 3.39 | 2.29 | 1.70 | 1.18 | 0.85 |
| Alcoholic beverages, tobacco and narcotics | 1.2 | 2.82 | 3.04 | 2.98 | 3.37 | 3.06 | 2.95 | 2.68 | 2.68 | 2.08 | 1.96 | 1.56 | 1.86 | 2.52 |
| Clothing and footwear | 2.7 | 3.91 | 3.13 | 2.46 | 2.41 | 2.56 | 2.53 | 2.88 | 2.90 | 2.26 | 2.21 | 2.45 | 2.19 | 2.32 |
| Housing, water, electricity, gas and other fuels | 36.1 | 5.37 | 5.46 | 5.87 | 6.02 | 5.98 | 5.54 | 5.28 | 4.69 | 4.18 | 4.11 | 3.72 | 3.45 | 3.30 |
| Furnishings, household equipment and routine household maintenance | 4.0 | 8.94 | 8.04 | 7.04 | 6.01 | 5.83 | 5.22 | 4.90 | 3.72 | 2.97 | 2.21 | 1.44 | 1.13 | 1.20 |
| Health | 7.4 | 0.61 | 0.41 | 0.83 | 0.19 | -0.01 | -0.30 | -0.18 | 0.10 | 0.07 | -0.10 | -0.08 | 0.13 | 0.17 |
| Transports | 14.5 | 10.49 | 6.55 | 1.82 | 1.54 | 0.18 | -3.82 | -2.51 | -5.20 | -8.66 | -6.47 | -1.72 | -0.72 | -2.82 |
| Communications | 3.3 | -0.91 | 0.48 | 0.62 | 1.11 | 1.13 | 1.67 | 1.87 | 1.73 | 1.39 | 1.61 | 1.62 | 1.67 | 1.63 |
| Recreation and culture | 6.7 | 3.71 | 4.15 | 4.27 | 3.95 | 4.31 | 4.20 | 4.45 | 4.02 | 3.74 | 3.35 | 2.96 | 3.13 | 2.43 |
| Education | 2.7 | 1.16 | 1.39 | 1.62 | 0.05 | -0.18 | 0.14 | 0.03 | -0.39 | -0.85 | -0.64 | -0.59 | -1.55 | -1.70 |
| Restaurants and hotels | 7.8 | 6.06 | 5.58 | 5.35 | 5.41 | 4.76 | 4.04 | 3.43 | 2.81 | 2.49 | 2.41 | 2.33 | 2.52 | 2.08 |
| Miscellaneous goods and services | 6.1 | 6.90 | 6.57 | 5.85 | 5.27 | 4.41 | 3.80 | 3.60 | 3.53 | 2.76 | 2.26 | 1.99 | 1.35 | 2.28 |

Difference with the 2010-2019 average

| Less than 0 |  |
| :--- | :--- |
| Between 0 and 1 |  |
| Between 1 and 2 |  |
| Between 2 and 4 |  |
| Between 4 and 7 |  |
| Greater than 7 |  |

## Inflation dynamics in the Eurozone: different metrics and degree of generalisation



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## Inflation dynamics in the Eurozone by country (1)




## Infation dynamics in the Eurozone by country (2)



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## Eurozone inflation heatmap

Difference between the current inflation rate ( $(\mathrm{y} / \mathrm{y}, \%$ ) and the 2010-2019 average

|  | Weight (\%) | Oct-22 | Nov-22 | Dec-22 | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 | Aug-23 | Sep-23 | Oct-23 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total | 100 | 9.27 | 8.70 | 7.84 | 7.29 | 7.15 | 5.53 | 5.61 | 4.75 | 4.17 | 3.96 | 3.89 | 2.98 | 1.55 |
| Food and non-alcoholic beverages | 17 | 14.02 | 14.54 | 14.55 | 14.83 | 15.87 | 16.08 | 13.54 | 12.25 | 11.12 | 10.13 | 8.84 | 7.71 | 6.10 |
| Alcoholic beverages, tobacco and narcotics | 4 | 1.10 | 1.46 | 2.11 | 2.47 | 2.96 | 4.23 | 4.51 | 4.46 | 4.56 | 4.47 | 4.39 | 4.22 | 3.94 |
| Clothing and footwear | 5 | 3.29 | 2.83 | 3.14 | 4.42 | 4.81 | 4.19 | 3.59 | 3.66 | 3.74 | 3.27 | 3.37 | 2.44 | 2.03 |
| Housing, water, electricity, gas and other fuels | 18 | 21.38 | 18.80 | 14.43 | 10.13 | 8.23 | 2.79 | 2.98 | 2.23 | 0.72 | -1.02 | -2.50 | -4.17 | -7.90 |
| Furnishings, household equipment and routine household maintenance | 7 | 7.94 | 8.08 | 8.53 | 8.54 | 8.32 | 7.98 | 7.52 | 6.69 | 6.06 | 5.50 | 4.85 | 4.27 | 3.39 |
| Health | 5 | 0.80 | 0.72 | 0.76 | 1.51 | 1.64 | 1.62 | 1.78 | 1.83 | 1.96 | 1.99 | 2.01 | 1.90 | 1.92 |
| Transports | 15 | 8.13 | 6.84 | 5.08 | 5.31 | 3.96 | -1.24 | 1.24 | -1.75 | -2.42 | -1.02 | 2.41 | 1.74 | 0.47 |
| Communications | 3 | 0.82 | 0.73 | 0.89 | 1.54 | 2.09 | 2.02 | 2.04 | 2.25 | 1.46 | 1.66 | 1.74 | 1.48 | 1.52 |
| Recreation and culture | 8 | 4.16 | 4.00 | 4.76 | 3.53 | 4.37 | 5.58 | 4.89 | 5.02 | 5.12 | 5.84 | 5.87 | 4.89 | 4.13 |
| Education | 1 | 3.22 | 3.26 | 3.24 | 3.37 | 3.53 | 3.59 | 3.68 | 3.64 | 3.75 | 3.68 | 3.68 | 2.37 | 3.04 |
| Restaurants and hotels | 8 | 6.60 | 6.27 | 6.44 | 6.33 | 6.80 | 6.68 | 7.02 | 6.55 | 5.86 | 5.85 | 5.47 | 4.94 | 4.85 |
| Miscellaneous goods and services | 10 | 2.39 | 2.68 | 2.81 | 3.65 | 3.85 | 3.86 | 3.86 | 3.87 | 4.11 | 3.95 | 3.87 | 3.76 | 3.31 |

## Difference with the 2010-2019 average

| Less than 0 |  |
| :--- | :--- | :--- |
| Between 0 and 1 |  |
| Between 1 and 2 |  |
| Between 2 and 4 |  |
| Between 4 and 7 |  |
| Greater than 7 |  |

## Inflation dynamics in the United Kingdom: different metrics and degree of generalisation



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## United Kingdom inflation heatmap

Difference between the current inflation rate ( $(\mathrm{y} / \mathrm{y}, \%$ ) and the 2010-2019 average

|  | Weight (\%) | Oct-22 | Nov-22 | Dec-22 | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 | Aug-23 | Sep-23 | Oct-23 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total | 100 | 8.82 | 8.44 | 8.30 | 7.82 | 8.19 | 7.83 | 6.43 | 6.45 | 5.72 | 4.60 | 4.43 | 4.42 | 2.37 |
| Food and non-alcoholic beverages | 9.3 | 14.60 | 14.77 | 15.17 | 15.04 | 16.40 | 17.51 | 17.40 | 16.66 | 15.68 | 13.19 | 11.94 | 10.50 | 8.47 |
| Alcoholic beverages, tobacco and narcotics | 3.9 | 1.39 | -0.63 | -1.02 | 0.39 | 0.96 | 0.59 | 4.42 | 4.58 | 4.54 | 4.70 | 5.83 | 6.47 | 6.29 |
| Clothing and footwear | 4.9 | 7.88 | 6.88 | 5.84 | 5.58 | 7.43 | 6.53 | 6.15 | 6.42 | 6.59 | 5.95 | 6.36 | 6.29 | 5.59 |
| Housing, water, electricity, gas and other fuels | 31.4 | 24.19 | 24.12 | 24.11 | 24.28 | 24.14 | 23.61 | 9.86 | 9.68 | 9.50 | 4.33 | 4.52 | 4.45 | -5.96 |
| Furnishings, household equipment and routine household maintenance | 6.3 | 8.81 | 8.92 | 8.08 | 7.43 | 6.94 | 6.31 | 5.73 | 5.78 | 4.80 | 4.51 | 3.33 | 1.92 | 1.36 |
| Health | 1.8 | 1.62 | 2.20 | 2.50 | 3.70 | 4.23 | 4.53 | 4.42 | 5.72 | 5.54 | 6.30 | 5.84 | 5.59 | 5.41 |
| Transports | 11.1 | 6.01 | 4.31 | 3.57 | 0.21 | -0.01 | -2.11 | -1.45 | -1.72 | -4.69 | -4.95 | -3.47 | -2.22 | -2.48 |
| Communications | 1.9 | 0.44 | -0.23 | -0.80 | -0.41 | 0.89 | 0.88 | 5.06 | 6.26 | 6.67 | 4.28 | 5.41 | 5.31 | 5.29 |
| Recreation and culture | 10.5 | 4.74 | 4.24 | 3.79 | 3.91 | 2.96 | 3.53 | 5.18 | 5.59 | 5.61 | 5.47 | 4.72 | 4.93 | 5.28 |
| Education | 2.6 | -3.82 | -3.82 | -3.82 | -3.82 | -3.82 | -3.82 | -3.82 | -3.82 | -3.82 | -3.82 | -3.82 | -2.86 | -2.52 |
| Restaurants and hotels | 9.0 | 6.72 | 7.41 | 8.51 | 7.93 | 9.27 | 8.47 | 7.36 | 7.46 | 6.69 | 6.78 | 5.51 | 5.75 | 4.71 |
| Miscellaneous goods and services | 7.3 | 3.87 | 4.15 | 4.15 | 4.62 | 5.35 | 5.51 | 5.58 | 5.54 | 5.32 | 4.76 | 4.38 | 4.08 | 3.91 |

Difference with the 2010-2019 average
Less than 0
Between 0 and 1
Between 1 and 2
Between 2 and 4
Between 4 and 7
Greater than 7

## Inflation dynamics in Japan: different metrics and degree of generalisation



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## Japan inflation heatmap

Difference between the current inflation rate $(y / y, \%)$ and the 2010-2019 average

|  | Weight (\%) | Oct-22 | Nov-22 | Dec-22 | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 | Aug-23 | Sep-23 | Oct-23 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total | 100 | 3.33 | 3.33 | 3.53 | 3.92 | 2.81 | 2.79 | 3.08 | 2.77 | 2.87 | 2.85 | 2.65 | 2.54 | 2.81 |
| Food | 9.3 | 5.20 | 5.89 | 5.89 | 6.30 | 6.48 | 6.66 | 7.40 | 7.46 | 7.25 | 7.70 | 7.56 | 7.85 | 7.54 |
| Clothing and footwear | 3.9 | 1.96 | 2.15 | 2.27 | 2.63 | 2.92 | 3.08 | 3.22 | 3.22 | 3.33 | 3.48 | 3.83 | 2.79 | 2.38 |
| Housing | 4.9 | 1.23 | 1.33 | 1.43 | 1.43 | 1.43 | 1.43 | 1.33 | 1.33 | 1.23 | 1.33 | 1.23 | 1.32 | 0.83 |
| Fuel, light and water charges | 31.4 | 12.97 | 12.47 | 13.37 | 13.27 | -2.03 | -4.43 | -5.53 | -10.03 | -8.33 | -11.33 | -14.03 | -16.03 | -11.73 |
| Furniture and household utensils | 6.3 | 7.84 | 8.31 | 8.48 | 8.60 | 9.62 | 10.39 | 10.99 | 10.57 | 9.57 | 9.43 | 8.08 | 7.05 | 7.86 |
| Medical care | 1.8 | -0.13 | -0.03 | -0.03 | 0.17 | 0.58 | 0.98 | 1.39 | 1.79 | 1.99 | 1.89 | 1.99 | 2.09 | 1.98 |
| Transportation and communication | 11.1 | 1.70 | 1.26 | 1.69 | 1.80 | 1.37 | 1.14 | 1.36 | 1.90 | 1.79 | 1.87 | 2.93 | 3.04 | 2.82 |
| Culture and recreation | 1.9 | 0.77 | -0.21 | -0.11 | 1.47 | 1.46 | 2.14 | 2.99 | 3.27 | 3.41 | 4.64 | 4.85 | 4.51 | 6.30 |
| Education | 10.5 | 1.20 | 1.20 | 1.20 | 1.20 | 1.60 | 1.50 | 1.89 | 1.89 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 |
| Miscellaneous goods and services | 2.6 | -0.43 | -0.34 | -0.04 | -0.04 | 0.16 | 0.15 | -0.04 | 0.05 | 0.25 | 0.05 | 0.44 | 0.54 | 0.34 |

Difference with the 2010-2019 average
Less than 0
Between 0 and 1
Between 1 and 2
Between 2 and 4
Between 4 and 7
Greater than 7

## Inflation and survey data

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## PMI surveys: an indication of inflationary pressures (1)



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## PMI surveys: an indication of inflationary pressures (2)



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## Inflation expectations (households,forecasters, markets)

## Inflation expectations in the United States



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## Inflation expectations in the Eurozone




## Inflation expectations in the United Kingdom




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## Inflation expectations in Japan



* Weighted average of respondents' answers from the consumer confidence survey (Cabinet Office)


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## Market expectations: breakeven inflation rate



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## Raw materials

## Raw materials




## Macroeconomic determinants ofinjlation

## (wayes, unemployment rate, capacity utilisation rate, exchangerate)

## Determinants of inflation in the United States






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## Determinants of inflation in the Eurozone




## Determinants of inflation in the United Kingdom



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## Determinants of inflation in Japan



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## BNP PARIBAS ECONOMIC RESEARCH

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