ANALYSIS

Wage indicators under scrutiny: What can they reveal about services inflation in the euro area?

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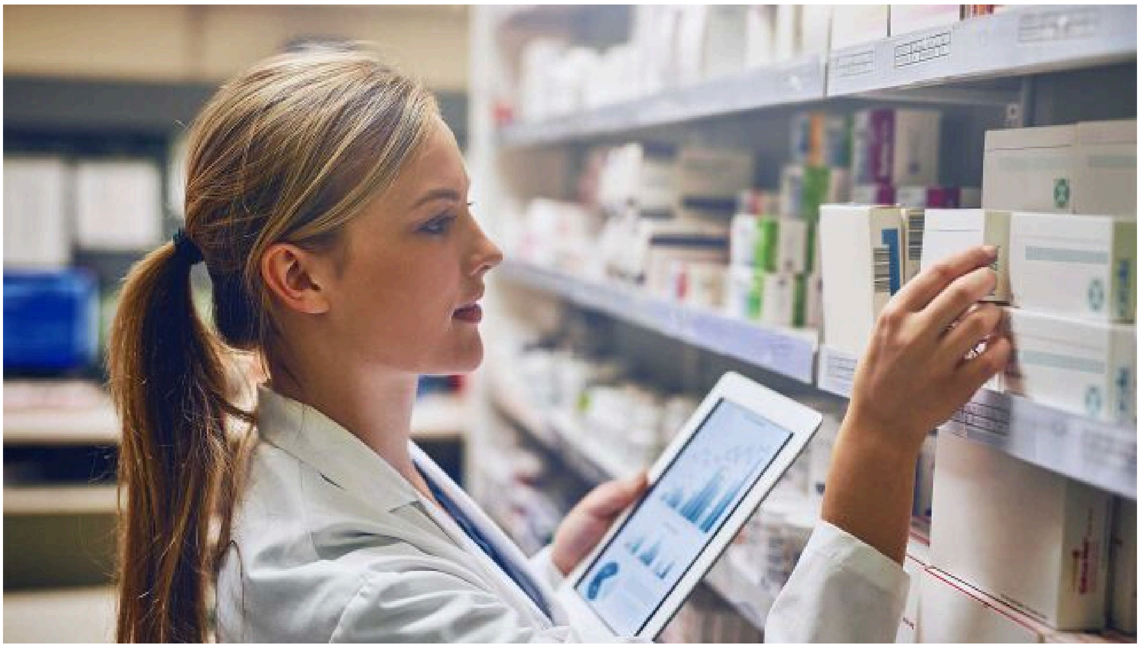
Wage inflation is one of the most significant factors affecting consumer price inflation, and its impact is strongest in the service industries. Wage inflation in the euro area is monitored using a variety of indicators that complement each other. In this article, we take a closer look at the main wage indicators for the euro area and examine how well they predict future services inflation in the euro area.



The European Central Bank (ECB) is responsible for maintaining price stability. The inflation target of the ECB and the Eurosystem is 2% over the medium term. Inflation is influenced by many factors. These can be broadly divided into transitory factors (for example, fluctuations in energy prices caused by geopolitical shocks, or the impact of natural phenomena on food prices) and more permanent factors. Wage inflation, which influences consumer prices through companies' production costs, is one of the key permanent factors. Wages make up a significant share of the costs of companies especially in the service industries.[1] Therefore, higher nominal wages generally also lead to higher consumer prices.

In 2021, euro area inflation accelerated very rapidly, peaking at 10.6% in October 2022. The surge in inflation resulted mainly from the strong rise in energy prices and later also food prices. Gradually, however, underlying inflation, which excludes energy and food prices, started to rise as well, reaching its highest level (5.7%) in March 2023. The increase in underlying inflation rekindled discussion of a topic that had lain dormant in recent decades: the wage-price spiral.[2] This was back in the headlines because the rise in energy and food prices caused by supply disruptions was lowering real wages and reducing consumers' purchasing power. There was particular concern over the rise in services inflation and the fact that it became stuck at around 4%. It was feared that high inflation would lead to substantial demands for wage increases, which would accelerate wage inflation and further raise consumer prices, and that this could ultimately result in a self-perpetuating spiral of high wage inflation and consumer price inflation. However, no such spiral was formed, despite wage inflation rising in 2022 and 2023 on the back of surging consumer price inflation, reaching its highest level so far in the history of the monetary union.[3] Wage increases were initially restrained by the slowdown in the economy and fall in corporate profits due to higher import prices. More recently, the spiralling pressure of wages and prices has been curbed by the fall in inflation, which has been attributable to the anchoring of inflation expectations, supported by the ECB's monetary policy, and the rapid moderation of energy and food inflation.[4] Wage inflation has in fact already declined somewhat.

Shocks that affect wages are usually transmitted to inflation with a significant lag, because economic shocks are difficult to consider in wage negotiations before their impacts have been felt or are at least strongly anticipated (for example, the higher energy prices in 2022). Furthermore, wages are negotiated at different times in different industries, depending on when the existing agreement expires, and wage agreements are usually concluded for one year at a time. For these reasons, the full transmission of wage growth to inflation can take a relatively long time, making the monitoring of wage growth crucial for ensuring that monetary policy is timely and appropriate. This also underlines the need for up-to-date and predictive wage indicators for determining the pace of wage inflation.

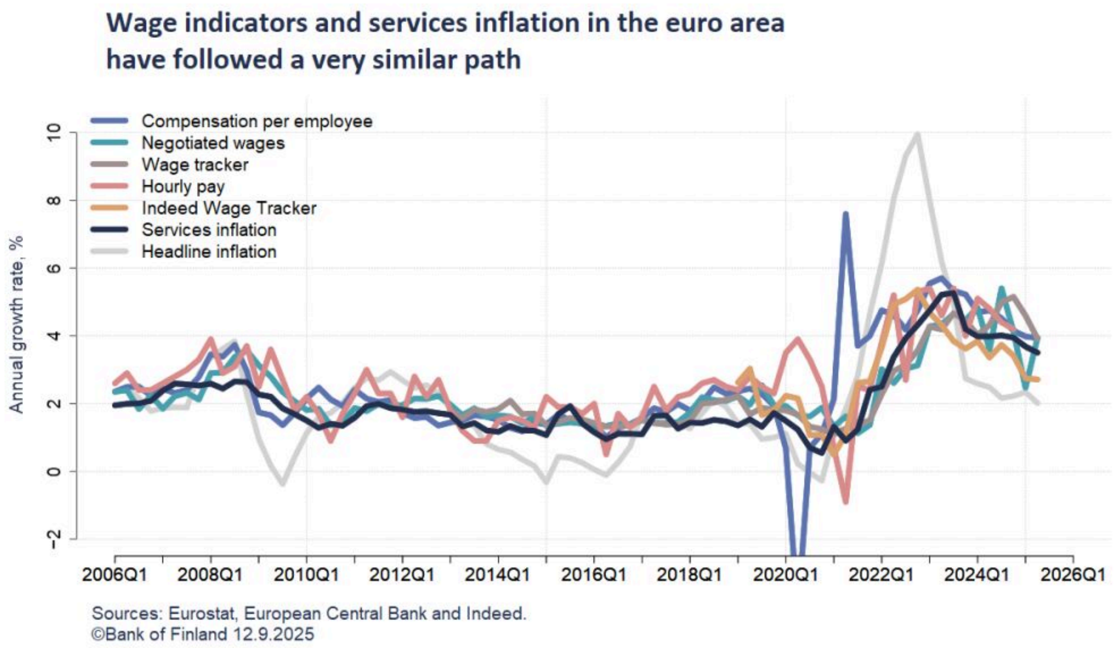
Main euro area wage statistics are based on National Accounts

In the euro area, wage formation varies between Member States due to structural differences in their economies and institutions and different national practices. This means that national wage and labour cost data are also often based on different definitions, making the merging of country-specific data difficult.

The primary wage indicator for the entire euro area is the (average) compensation per employee derived from National Accounts data. It is derived by dividing the employers' total labour costs by the number of employees, and it includes all direct earned income and indirect compensation, including the employer's social security contributions. It is also the ECB's primary wage indicator and is among the variables for which forecasts are made in the Eurosystem's quarterly macroeconomic projections. Labour costs in the National Accounts data can also be measured in terms of hours worked, which gives the average hourly pay of all employees.

Wages in the euro area started to rise during 2021 when the COVID-19 pandemic and the consequent production bottlenecks started to ease gradually. The annual growth rate of both the compensation of employees per worker and hourly pay accelerated to 4% by the beginning of 2022. At its highest, wage inflation based on these indicators reached more than 5% (see Chart 1). The acceleration of wage inflation was exceptionally strong, as in 2010–2019 the average annual growth rate of both the compensation per employee and hourly pay was just 1.8%. The most recent wage indicator figures point to the easing of wage inflation, but annual wage growth is nevertheless still quite high. In the first quarter of 2025, both the compensation per employee and hourly pay showed a year-on-year increase of 3.8%.

Chart 1.



Although the employee compensation and hourly pay indicators are among the best wage indicators in terms of coverage and uniformity, a key challenge in using them for monetary policy decision-making is their significant publication delay. Being based on National Accounts data, they are updated quarterly (instead of being monthly statistics), around two months after the end of the quarter in question. For the purposes of monetary policy decision-making, such a delay is very long, especially at times when rapid responses are needed, as in the case of the COVID-19 pandemic, the Ukraine war and the energy crisis. When major shocks occur, it is of course important to know what exactly the indicators are measuring. For example, during the COVID-19 pandemic, wages per worker and hourly pay indicated contradictory trends in wage pressures. In the first half of 2020, average hourly pay increased as the number of hours worked fell by an exceptional amount, but at the same time various support measures (such as temporary layoffs in Finland) were applied to keep employees at work and avoid dismissals. For the same reason, there was a decrease in the average compensation per employee. When the situation normalised in 2021, these two trends reversed. The situation was evident especially in wages per worker, which contracted in the second quarter of 2020 by 4.2% and grew in the second quarter of 2021 by as much as 7.6% on a year-on-year basis. Since 2022, compensation of employees per hour and per worker have returned to a situation where their trends are very similar.

Wage negotiations set the course for wage growth

In addition to wage indicators based on the National Accounts, one of the key wage indicators in the euro area is the indicator of negotiated wages compiled by the ECB since 2002 (green line in Chart 1). It tracks annual wage growth and is based on country-specific, mutually non-harmonised data in which the outcomes of wage negotiations are used as the data source. The indicator of negotiated wages for the euro area is formed on the basis of monthly or quarterly data from 10 euro area Member States and calculated as the weighted average of year-on-year growth rates of wages agreed in national wage negotiations. All the largest euro area countries are included, giving coverage of around 95% of the euro area.[5]

The purpose of the indicator of negotiated wages is to foresee wage pressures arising from wage settlements reached in labour market negotiations in the euro area in a way that is as close to real time as possible. One of the advantages of the indicator is its shorter publication lag compared with the National Accounts.[6]

The indicator of negotiated wages also has its own challenges, which should be kept in mind when analysing wage inflation in the euro area. First, as mentioned above, the indicator does not include all euro area countries, and the country-specific statistics are not mutually comparable. Second, as in the case of indicators based on National Accounts data, the indicator of negotiated wages is a backward-looking indicator, i.e. it only relates to wage agreements already in force at the time of its publication. Wage negotiations also react with a lag to economic shocks and changes in the labour market, and so it takes time before it is possible to react to higher living costs or a changing labour market cycle in wage negotiations.[7] In addition, actual wages may be updated more often than agreed wages, because of the turnover of staff. The growth rate of negotiated wages started to properly pick up at the start of 2022, exceeding 4% only in 2023 (Chart 1). The average growth rate of negotiated wages was 1.7% in 2010–2019. In the first quarter of 2025, the annual growth rate of the indicator was 2.5%.

In the indicator of negotiated wages, the various countries’ statistics are not fully harmonised. For example, various bonuses and one-off compensation are included in the negotiated wage data in some countries (e.g. Germany) but not in others. One-off compensation and bonuses were paid especially during the COVID-19 pandemic and its aftermath, instead of permanent pay rises. This has caused some fluctuation in the indicator of negotiated wages in recent years. To support its monetary policy analysis, the ECB also uses, for internal purposes, a euro area negotiated wages indicator that excludes bonuses, as this provides a clearer picture of the more permanent development of wage pressures.[8]

Bonuses are partly responsible for the spikes seen in the annual year-on-year growth rates of negotiated wages in the first quarters of 2022 and 2023. The impact of bonuses is most clearly visible in 2024 as a strong rise in the indicator of negotiated wages. As a consequence of the large bonuses early in that year, the year-on-year data for the first quarter of 2025 indicate a steep decline.

Developed quite recently in collaboration between the Indeed recruitment service and the Central Bank of Ireland, the Indeed Wage Tracker can also be used in evaluating and anticipating the direction and turning points of negotiated wages. It gives the annual change in the nominal wages of new job advertisements published in the Indeed recruitment service. The tracker is updated every month and is based on millions of job advertisements in Germany, France, Italy, Spain, the Netherlands and Ireland.[9]

The Indeed Wage Tracker reflects the state of the labour market and provides an indication of employers' wage expectations: in a tight labour market, when labour supply is scarce, employers are prepared to offer higher pay to attract employees. At the same time, it must be considered that in a tight labour market the growth rate of recruitment wages will probably exceed the growth rate of existing employees' wages. Thus, in these situations, the Indeed Wage Tracker may overestimate the overall future growth of negotiated wages. In fact, it mainly offers an insight into the direction of wage developments and the possible turning points of wage dynamics. For example, in summer 2021 the Indeed Wage Tracker foresaw an increase in negotiated wages, and this did subsequently take place in early 2022. Another example is that the Indeed Wage Tracker's annual growth rate started to slow in the first half of 2023 just when the growth rate in negotiated wages was beginning to slow.

Cyclical indicators and surveys support wage analysis

In addition to examining actual wage statistics, the direction of wage developments can also be estimated using cyclical indicators and surveys. Indicators of the general economic situation include the output gap and the capacity utilisation rate. The former measures actual output in relation to the estimated potential output of the economy, while the latter refers to the proportion of the economy's available production capacity in use at any one time. At the time of writing, the output gap in the euro area predicts that economic growth will remain slightly below its potential in the immediate years ahead.[10] The capacity utilisation rate has also slowed in recent times, although the decline has been mainly in the manufacturing industries, while in services, capacity has continued to be in near full use.[11]

Cyclical conditions are reflected in the labour market and thus also in wages. In an upswing, competition for employees increases, typically causing wages to rise more strongly. Demand for labour is indicated by, for example, the employment rate and number of hours worked, the unemployment rate and the number of job vacancies in relation to jobseekers. The unemployment rate in the euro area is currently at a record low (6.2% in June).[12] The number of job vacancies in relation to all jobs peaked in 2022 but has since contracted at a steady rate to near 2019 levels.

In addition to hard data, wage pressures can also be evaluated using various surveys. Assessments of the current state and direction of the labour market are provided by analyst firm S&P Global's monthly purchasing managers' index (PMI) surveys and the European Commission's business surveys. The surveys describe companies' employment outlooks and intentions to employ, prices of inputs (relevant especially in labour-intensive service industries) and the extent to which the availability of labour is an obstacle or limiting factor to production (in the view of the companies concerned).

Future wage growth is also indicated by the ECB Survey of Professional Forecasters (SPF), which gathers views on the growth in wages per employee both in the current year and in the immediate years ahead. In the latest SPF survey, the average expectations regarding wage growth in the coming years were 3.3% (2025), 2.8% (2026), 2.8% (2027) and 2.7% (5 years ahead).[13] The figures are broadly in line with the ECB's own wage forecast published in June (2025: 3.2%, 2026: 2.8% and 2027: 2.8%). In addition to the SPF survey, the ECB produces two quarterly business surveys (CTS and SAFE). In the most recently published CTS survey, the average wage growth rate for 2025 was estimated to be 3.0% (2.5% in 2026).[14] In the SAFE survey, wages were estimated to grow by 2.8% during the next 12 months.[15]

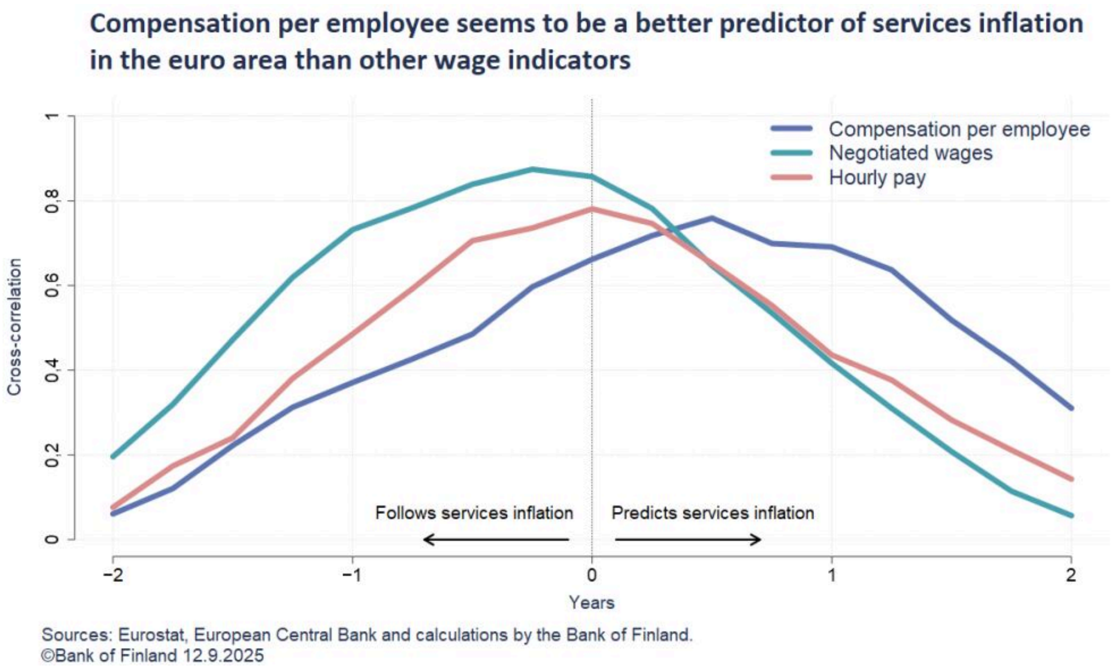
Finally, it is worth emphasising that when analysing the inflationary pressures from wages and labour costs, labour productivity should also be taken into consideration, in addition to monitoring nominal wages. In this regard, unit labour costs are a suitable measure. Unit labour costs describe the overall cost of labour per production unit and are calculated as the ratio of employee compensation and labour productivity. If labour productivity grows at the same rate as wages, there would be no labour-market pressure on companies to raise selling prices. However, if wage costs grow more quickly than productivity, unit labour costs will rise and companies will strive to raise their prices.[16]

As a result of rising wages, the growth rate of unit labour costs accelerated to 6.7% and 4.7% in 2023 and 2024, and the impact of this was amplified by productivity growth slowing to zero at the same time. The ECB predicts that the growth of unit labour costs will slow in the immediate years ahead back to near 2% as annual wage growth moderates to 3% and productivity growth returns to near 1%.

Compensation per employee is a good predictor of services inflation

As Chart 1 illustrates, the paths taken by the different wage indicators strongly reflect that of services inflation. However, the chart does not indicate whether wage indicators reveal anything about future services inflation or whether they just track actual services inflation. By focusing on the cross-correlations between wage indicators and services inflation instead of simple correlations, we can better answer these kinds of questions. Cross-correlations indicate how well the past or future values of wage indicators correlate with services inflation.[17] Chart 2 presents cross-correlations of the main wage indicators and services inflation for the compensation per employee, negotiated wages and hourly pay in 2002–2024.[18]

Chart 2.



Interpreting Chart 2 is straightforward. On the horizontal axis, the position of the curve at 1 year indicates the correlation between the indicator in question and services inflation a year from now.[19] The higher the cross-correlation value, the better the current values of the indicator predict next year's services inflation. In contrast, at the 0 position on the horizontal axis, the value of the curve refers to the simple correlation between the wage indicator and services inflation, which can be interpreted as a measure of the overlap of the indicator curve in question and the services inflation curve in Chart 1.

Although, on the basis of Chart 1, negotiated wages and hourly pay seem to correlate with services inflation better than compensation per employee, Chart 2 shows that they mainly follow actual services inflation rather than revealing something about future services inflation. On the other hand, compensation per employee does not follow the current values of services inflation nearly as closely, but it does seem to contain much more information about *future* services price inflation.

ECB's new tool predicts wage inflation will moderate

The most recent analytical tool in the group of indicators monitoring wage growth in the euro area is the wage tracker developed by the ECB in conjunction with the national central banks of the Eurosystem. The indicator makes use of information on negotiated wages by including agreements that are already in force and those that will enter into force in the (near) future. Unlike the wage indicators presented above, it is the first wage indicator for the euro area that is forward looking. The indicator currently includes the data of eight countries (Germany, France, Italy, Spain, the Netherlands, Greece, Austria and Belgium),[20] covering around 90% of the euro area.[21]

The wage tracker monitors the growth rate of negotiated wages both with and without bonuses[22] (Chart 3). When the indicator is published, a figure is also reported that indicates the proportion of the collective agreements used in forming the indicator in relation to all collective agreements in force in the euro area (i.e. the wage tracker's coverage of collective agreements; see grey area in Chart 3). The indicator is updated every six to eight weeks using the latest wage negotiation data, and the updated figures are always published after the monetary policy meeting of the Governing Council of the ECB.[23]

The greatest advantage of the wage tracker is that it is much more up to date than other wage indicators. Other wage indicators, such as compensation of employees per employee or the ECB's indicator of negotiated wages, are usually not available until several months after the end of the period to which the data relates. The wage tracker, on the other hand, monitors the growth rate of negotiated wages for a period of about one year further than the indicator of negotiated wages. However, the coverage of the forward-looking portion of the indicator is typically weaker than its historical portion, and thus, the picture of future negotiated wages offered by it is prone to variation as new collective agreements are negotiated.

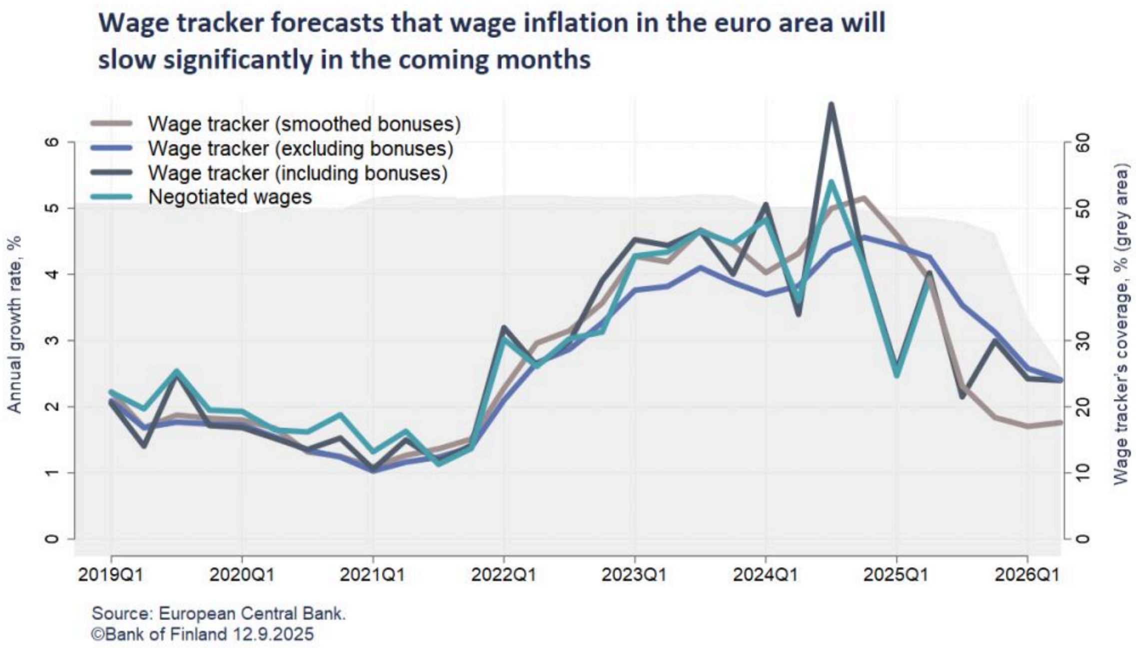
The forward-looking nature of the wage tracker helps anticipate trends in wage inflation and possible turning points better than the backward-looking indicator of negotiated wages. As our analysis presented above indicates (see Chart 2), the current values of negotiated wages correlate even more strongly than employee compensation with the current values of services inflation, but current negotiated wages do not reveal very much about future services inflation. Since the forward-looking part of the wage tracker also monitors agreements that are known about and will enter into force in the near future, in addition to agreements already in force, it is a good indicator of negotiated wages in the near future and can, according to our analysis, forecast future services inflation even better than is forecast by the compensation per employee.

However, as our analysis focuses on the indicator of negotiated wages rather than the wage tracker, this interpretation requires some minor assumptions.[24] Since the indicator of negotiated wages and the wage tracker are composed of the same data with a few exceptions and their historical values correspond to each other quite closely, we can assume that their cross-correlations also correspond with each other quite closely.[25] If we also assume that the forward-looking values of the wage tracker provide a sufficiently good estimate of negotiated wages in the near future, we can deduce that the wage tracker predicts future services inflation quite well.[26] However, our interpretation is dependent on the wage tracker's ability to predict negotiated wages in the near future sufficiently accurately.[27]

The wage tracker (smoothed bonuses) updated in the run-up to the July 2025 meeting of the ECB's Governing Council forecasts wage growth of 3.2% in 2025 (Chart 3).[28] The slowing of wage inflation predicted by the wage tracker is explained partly by the mechanical impacts of large one-off payments (paid in 2024 but absent in 2025) and the front-loaded nature of pay rises in some industries in 2024. The wage tracker excluding one-off items indicates slightly faster annual growth of negotiated wages in 2025, at 3.8%.

The wage tracker indicates a clear slowing of the euro area's wage growth. In the first quarter of 2026, the wage tracker estimate is 1.7% with smoothed bonuses and 2.5% with unsmoothed bonuses. The figure excluding one-off payments is 2.6%. However, the coverage of the indicator in the first quarter of 2026 is much lower than in the last quarter of 2025 (32.5% vs 45.3%). The indicator will be updated as new collective agreements are successfully negotiated. All in all, the message of the wage tracker regarding wage inflation is clear: wage inflation will continue to moderate, and the slowing of services inflation, which has already started, is likely to continue, following the exceptional surge of recent years.[29]

Chart 3.



The wage tracker indicator can also be updated if agreements are renegotiated during a contract period, which is nevertheless quite rare. Furthermore, in many countries, wage negotiations are mainly in the early part of the year, which means that the coverage of the indicator declines as the year progresses. The macroeconomic projections of the Eurosystem and ECB staff continue to provide the most reliable forecast regarding wage developments in the euro area. However, the wage tracker remains an important and up-to-date tool for monitoring and anticipating wage pressures, and the information produced by it is also considered in the ECB's forecasts and monetary policy decision-making.

Conclusion

The ECB's inflation target is 2% over the medium term, and wage growth is one of the key factors affecting inflation in the long term. Changes in wage inflation are especially visible in services inflation, as labour costs make up a larger portion of the overall costs in the service industries than in other sectors of the economy. Wage inflation in the euro area is monitored using various wage indicators that complement each other.

According to our results, the indicator of negotiated wages, which monitors negotiated wage growth, has the strongest correlation with services inflation but does not predict future services inflation very well. Compensation per employee, on the other hand, does not correlate as strongly with current services inflation, but changes in compensation per employee seem to be better indicators of future services inflation than the other indicators examined, which makes compensation per employee an especially useful wage indicator from the perspective of monetary policy decision-making. This is also the ECB's primary wage indicator, which is included in its quarterly macroeconomic projections. However, statistics on compensation per employee are published with a very long lag from the perspective of monetary policy decision-making. A need has therefore emerged for a more real-time analysis tool that also foresees wage developments.

The ECB has also recently developed a forward-looking tool that monitors the growth of negotiated wages. Just like the indicator of negotiated wages, the ECB wage tracker tool monitors negotiated wages, but in addition to collective agreements that have already entered into force, it takes account of agreements that have already been concluded but not yet entered into force. This enables assessments of the level of the euro area's negotiated wages several months into the future, which, according to our analysis, makes the wage tracker a good indicator for predicting services inflation.

At the time of writing, the wage tracker predicts a clear slowdown in the annual growth rate of negotiated wages in the latter part of 2025, which is well aligned with the ECB's forecast regarding compensation per employee. All in all, the euro area wage indicators forecast that wage pressures will moderate in the remaining part of 2025, which also indicates that the moderate slowing of the elevated level of services inflation will continue.

References

Ampudia, M., Lombardi, M.J. and Renault, T. (2024), 'The wage-price pass-through across sectors: evidence from the euro area', *Working Paper Series* 2948, European Central Bank.

Ardjan, P. and Lydon, R. (2022), 'Wage Growth in Europe: Evidence From Job Ads', *Economic Letter*, Central Bank of Ireland, Vol. 2022, No. 7.

Ardjan, P. and Lydon, R. (2023), 'What Do Wages in Online Job Postings Tell Us about Wage Growth?' SSRN: https://ssrn.com/abstract=4451751 or http://dx.doi.org/10.2139/ssrn.4451751.

Blanchard, O. (1986), 'The Wage Price Spiral', *The Quarterly Journal of Economics*, August 1986, 101(3), pp. 543–566.

ECB (2025), 'A strategic view on the economic and inflation environment in the euro area', *ECB Occasional Paper* no. 371.

Fagandini, B., Gonçalves, E., Rubene, I., Kouvavas, O., Bodnár, K. and Koester, G. (2024), 'Decomposing HICPX inflation into energy-sensitive and wage-sensitive items', *ECB Economic Bulletin* 3/2024, European Central Bank.

Juvonen, P., Nelimarkka, J., Obstbaum, M. and Vilmi, L. (2025), 'Drivers of post-pandemic price dynamics and labour market tightness in the euro area', *BoF Economic Review* 1/2025, Bank of Finland.

Górnicka, L. and Koester, G. (2024), 'A forward-looking tracker of negotiated wages in the euro area', *Occasional Working Papers*, European Central Bank, No. 338.

Oinonen, S. and Vilmi, L. (2024), 'What factors have influenced the dynamics of euro area prices and wages?' *Bank of Finland Bulletin* 1/2024, Bank of Finland.

Notes

1. See e.g. Ampudia et al. (2024) and Fagandini et al. (2024). ↑
2. See e.g. Blanchard (1986) and Ampudia et al. (2024). ↑
3. Juvonen et al. (2025). ↑
4. See e.g. Oinonen and Vilmi (2024) and ECB (2025). ↑
5. See e.g. https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op338~dd97c1f69e.en.pdf. ↑
6. Hourly pay is generally agreed upon in collective agreements, and so the indicator of negotiated wages is somewhat comparable to the indicator of hourly pay (excluding social security and other contributions). Since negotiated wages are not measured on a per employee basis, the indicator of negotiated wages is not compatible with the indicator of compensation per employee. ↑
7. In a tightening labour market, actual aggregate wages usually exceed those agreed in collective agreements, as employers compete for labour with higher wages. Moreover, overtime pay and any bonuses increase this wage drift. As unemployment grows, paid overtime and bonuses are reduced, and wage drift decreases. ↑
8. The ECB also uses internally a monthly indicator of negotiated wages in the euro area, both with and without bonuses, which facilitates the fastest possible reaction to changes in wage pressures and helps analyse the impacts of one-off compensation and more permanent wage pressures. Monthly and quarterly statistics on negotiated wages with and without bonuses are also available from the statistical authorities in some euro area countries. ↑
9. See Ardjan and Lydon (2023 and 2022). ↑
10. European Commission forecast. ↑
11. European Commission. ↑

12. According to the Commission's estimate, the unemployment rate is slightly below the non-accelerating wage rate of unemployment (NAWRU). A rate lower than the NAWRU signifies that wages are pushing up inflation. ↑
13. See https://www.ecb.europa.eu/stats/ecb_surveys/survey_of_professional_forecasters/html/ecb.spf2025q3.en.html. ↑
14. See https://www.ecb.europa.eu/press/economic-bulletin/focus/2025/html/ecb.ebbox202503_04~e39f433da9.en.html. ↑
15. See https://www.ecb.europa.eu/stats/ecb_surveys/safe/html/ecb.safe202507.en.html. ↑
16. If wages rise more quickly than productivity, it is of course also possible for companies to reduce their profit margins instead of raising selling prices. ↑
17. In this article, simple correlation means the mutual correlation of current values. Cross-correlation, on the other hand, is closely related to autocorrelation, which can be defined as the cross-correlation of the variable with itself. ↑
18. Inclusion of the Indeed Wage Tracker in the analysis is not possible because of the short timescale of the data. ↑
19. Due to delays in the release of data, the current value of the indicator is typically not observed until a few months later. Thus, the correlation at 1 year on the horizontal axis, for example, actually indicates the ability of the indicator on the release date to predict services inflation up to slightly less than a year from now. ↑
20. Finland will also be included in the wage tracker in the near future. ↑
21. See the ECB's more detailed description of the wage tracker: https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op338~dd97c1f69e.en.pdf. ↑
22. For negotiated wages with bonuses there are two series: one includes the bonuses at their time of payment (which is thus quite volatile), and the other smooths the bonuses over a 12-month period. ↑
23. The ECB's Governing Council has access to the information prior to its meeting, as part of the preparatory materials for the monetary policy meeting. ↑
24. The cross-correlations of Chart 2 are based on data that extends from the first quarter of 2002 to the first quarter of 2024. However, as historical data on the wage tracker is only available from 2013 onwards, we cannot estimate cross-correlations for it that would be comparable with Chart 2. Furthermore, the ECB does not publish the history of the wage tracker's forward-looking values. ↑
25. We ensured that this is true by using a shorter dataset beginning in 2013 for estimating the cross-correlations. We also estimated the cross-correlations using a dataset ending in 2019 to ensure that our results are not explained solely by the events of the COVID-19 pandemic and the rapid inflation that followed it. ↑
26. Roughly speaking, we can estimate that the cross-correlation of the wage tracker's

forward-looking portion and services inflation follows the curve estimated for negotiated wages in Chart 2 if we shift the curve to the right by the amount of the forward-looking portion. ↑

27. Górnicka and Koester (2024) examine the ability of the wage tracker to anticipate the annual growth rate of negotiated wages in the near future. Although the study indicates that the wage tracker can predict negotiated wages well, it also indicates that the estimates of the wage tracker include some uncertainty. ↑
28. An indicator that includes unsmoothed one-off payments (which follows the ECB's indicator of negotiated wages quite closely, see Chart 3) forecasts average annual growth of negotiated wages to be 2.9% in 2025. This estimate is based on wage agreements that are in force or will enter into force in 2025, covering 47% of the total labour force included in the indicator. ↑
29. This year, annual services inflation in the euro area was significantly below 4% for the first time since 2022, with the July figure being 3.1%. ↑

Key words

inflation, monetary policy, wages