



Tracking individual wages with the Consumer Expectations Survey

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Introduction

We introduce a new wage growth tracker that was developed to address a data gap on individual-level wages free from compositional effects, thus providing a deeper understanding of wage dynamics in the euro area. The tracker leverages data from the Consumer Expectations Survey (CES), which, since July 2023, has collected quarterly information on wages and hours worked from actively employed respondents.

This new indicator offers insights into wage growth patterns, distinguishing between genuine wage increases and shifts in workforce composition. By focusing on individual-level data, the CES wage tracker captures the micro-dynamics of wage growth across sectors, countries, and worker characteristics.

Questionnaire

On a quarterly basis since July 2023, CES respondents who are actively working have been asked quantitative questions about their labour income and hours worked.

Labour income

Roughly speaking, what were your **total net personal earnings** (that is, your earnings after tax and compulsory deductions) from your **main job** during the **last month**?

Respondents may choose not to report their wages in a continuous form. In such cases, they receive a follow-up question with income brackets; however, these responses are not used in the wage tracker, as they could result in persistent zero growth. Most respondents (circa 80-90 percent) respond to the continuous form limiting possible non-response selection bias.

Wage data in the CES refer to net income, excluding one-off payments or bonuses. Since January 2024, the CES has collected data on bonuses and one-off payments annually. Beginning in January 2025, these bonus data will be incorporated into an additional indicator measuring annual wage growth including one-off payments.

Hours worked

How many hours per week have you usually worked in your **main job**, on average, over the **past 3 months**?

Similarly, if respondents do not answer the open-ended question on hours worked, they receive a bracketed question. Since hours worked tend to be more stable, we use the midpoints of the bracketed responses when open-ended data are missing.

Additional data

The wealth of micro data in the CES allows to explore the drivers of this indicator along several key dimensions, including country, sector, and job tenure.

Data validation

Our data validation for labour income and hours worked in the CES has shown positive results when compared with external benchmarks such as EU-SILC and other aggregate data sources (Fig. 1).

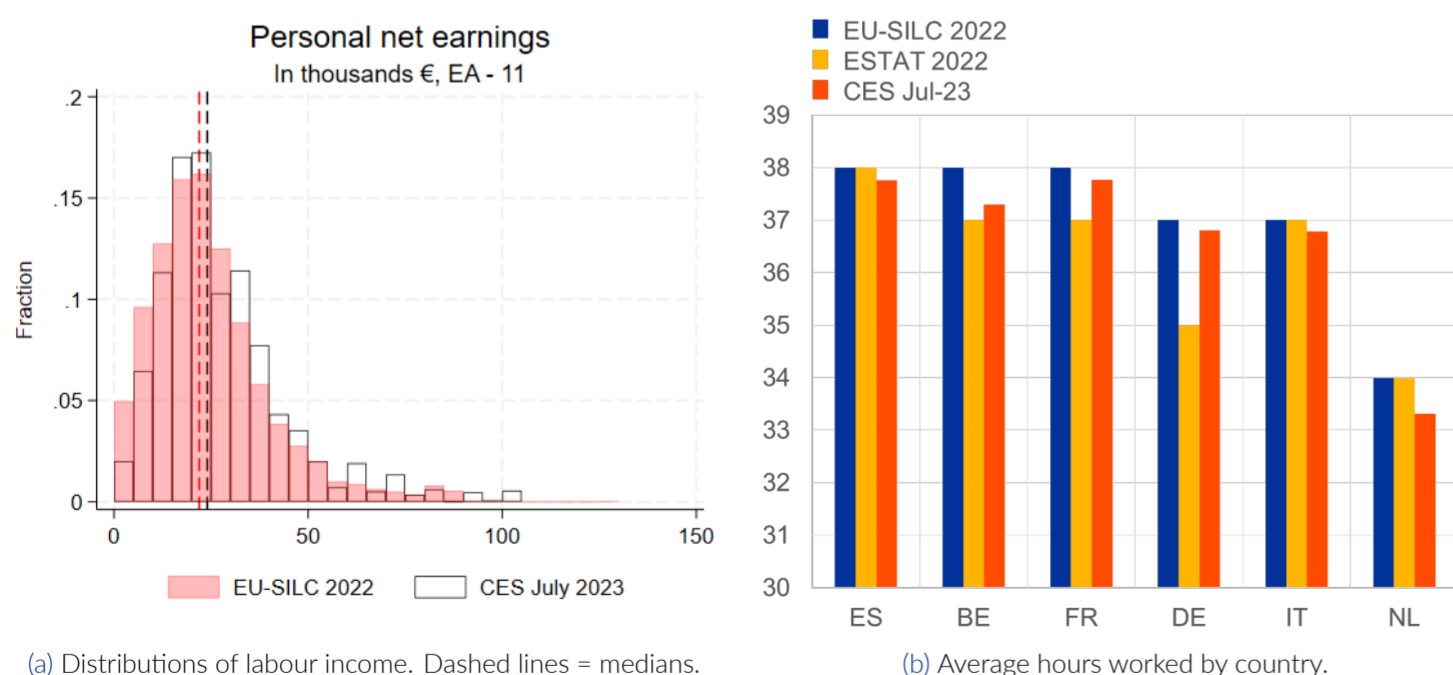


Figure 1. Data validations.

For net labour earnings, CES outcomes align closely with aggregate figures from national statistical agencies data across countries. The distribution of earnings at the euro area level also matches well with that of EU-SILC, though the CES data exhibit a longer upper tail. This is likely due to EU-SILC's top-coding and the one-year difference in reference periods between the two datasets. At the country level, CES data also demonstrate a strong fit in the histograms of labour income (Fig. 1a)

Finally, Fig. 1b shows that, for hours worked, our country-level aggregate results also compare well with benchmarks such as EU-SILC and Eurostat. This consistency across multiple external sources reinforces the reliability of the CES data in capturing labour market dynamics across the euro area.

Methodology

Our wage growth tracker measures the nominal wage growth of **individuals**, defined as the median of the individual level percentage change in hourly wages of the same individuals observed 12 months apart.

Based on Daly et al. (2012), our tracker focuses on net earnings for active workers. Earnings are reported on a per-month basis, after taxes. To convert monthly earnings into hourly wages, we divide reported labour income by the product of usual weekly hours worked and 4 (approximating total monthly hours). We winsorise hourly earnings at the 2-98 level to mitigate the impact of outliers.

We exclude individuals aged 71 years or more due to their small sample size, which could disproportionately affect the results. We also drop individuals with zero or top-coded earnings, as these would inaccurately appear to show zero wage growth.

After constructing the individual hourly earnings data, we match individuals' earnings in the current month with their earnings from 12 months prior. For July 2024, this resulted in approximately 2,500 individual wage growth observations, representing 12.4% of the full monthly sample. Finally, we compute the median of the weighted distribution of individual 12-month wage changes.

We apply longitudinal weights when calculating the median, ensuring a more representative measure of wage growth across the population. These weights are constructed for respondents that appear in both survey rounds. They are calibrated to each country's population benchmarks for gender, age and region. Longitudinal weights help us to correct for differential attrition patterns across demographic subgroups over time. They also ensure a stable contribution of each country when computing EA results.

Our matched dataset has a slightly higher proportion of older, male, and more educated respondents compared to our overall working sample since those groups of workers tend to have more stable employment patterns.

Results

Euro area wage growth remains elevated, with a high degree of cross-country heterogeneity. In July 2024, wages grew by 3.9% in the euro area year-on-year, ranging from 2.6% in the Netherlands to 9.5% in Portugal. This cross-country dispersion is also present when looking at compensation per hour derived from national accounts (Fig. 2).

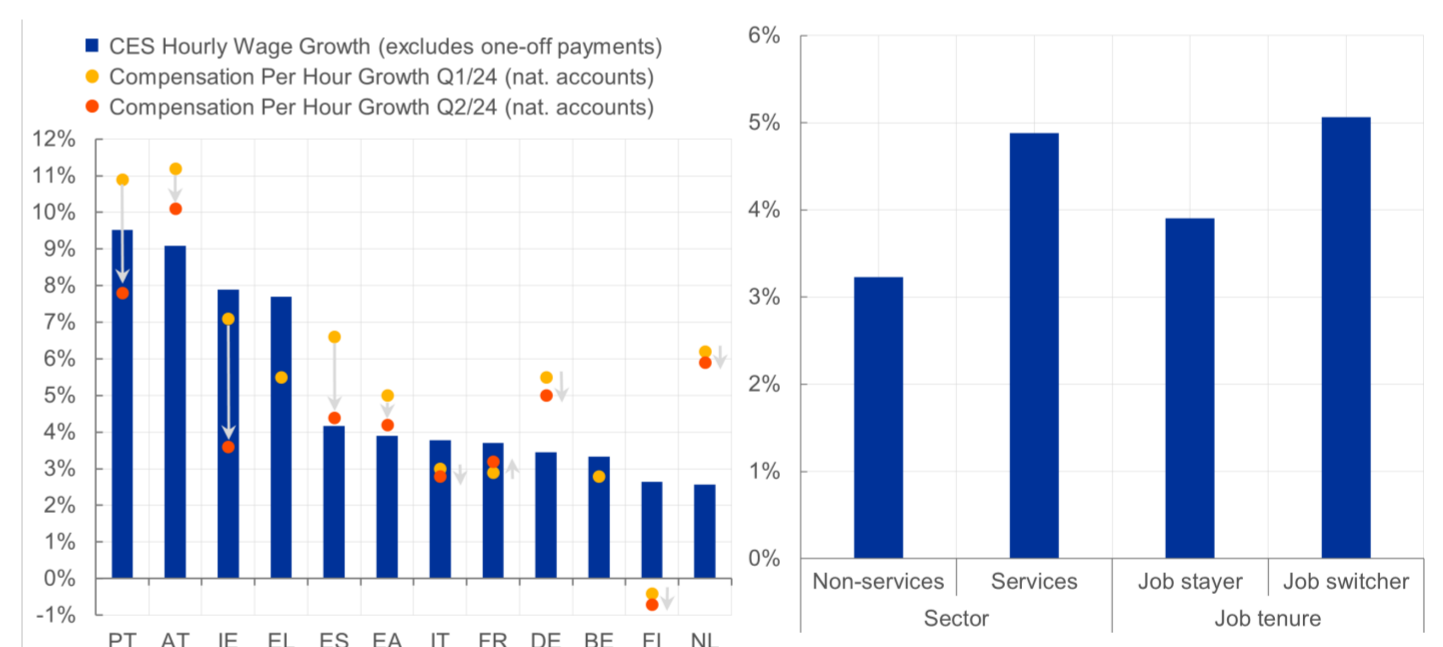


Figure 2. CES Wages and CPH by country.

Figure 3. CES Wages by sector and job tenure.

Aggregations of the micro data suggest that those who switched jobs have seen their wages grow faster, while the wage growth appears to be stronger for those working in services (Fig. 3). These results suggest the bargaining power that individuals hold in a still tight labour market.

Contributions

Interpreting aggregate wage dynamics presents challenges, particularly in distinguishing between actual wage growth and shifts in workforce composition, such as an increased share of higher- or lower-paid workers (see Christodouloupoulou and Kouvavas, 2022). A microdata-based wage tracker provides a more nuanced understanding of these trends, allowing for measure free from compositional effects as well as the identification of whether wage growth is broad-based or concentrated among particular groups or sectors. Moreover, the tracker allows for a detailed examination of wage dynamics, differentiating between wage changes for workers who remain in their jobs (stayers) and those who switch jobs (switchers) as well as other factors that can affect labour market dynamics (skills, job search and matching quality).

Future research will extend this analysis by examining the time evolution of the series, the effects of minimum wage increases, and wage expectation formation.

References

Christodouloupoulou, S. and O. Kouvavas (2022). Wages, compositional effects and the business cycle. ECB Working Paper Series 2653, European Central Bank.
Daly, M. C., B. Hobijn, and T. S. Wiles (2012). Dissecting aggregate real wage fluctuations: Individual wage growth and the composition effect. Working paper 2011-23, Federal Reserve Bank of San Francisco.