SPEECH

# Beyond hysteresis: resilience in Europe's labour market

## Opening panel remarks by Christine Lagarde, President of the ECB, at the annual Economic Policy Symposium "The policy implications of labour market transition" organised by the Federal Reserve Bank of Kansas City in Jackson Hole

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Alexis de Tocqueville – one of the keenest observers of early American democracy – once wrote: "History is a gallery of pictures in which there are few originals and many copies."

In monetary policy, too, we often look to past cycles for guidance, expecting familiar patterns to repeat themselves. But this cycle has proven to be original in striking ways.

Major central banks have undertaken the most aggressive tightening in a generation. At the outset, there were understandable concerns about how such a rapid and substantial adjustment would affect labour markets.

Historically, disinflation has come at a cost. Since the 1960s, the "sacrifice ratio" has typically been around 1.[1] In practice, this means that permanently lowering inflation by 1 percentage point has cost about 1% of GDP in forgone output.

And given Europe's well-known structural rigidities, it was reasonable to assume that a sharp tightening could lead to rising unemployment[2], which might then become entrenched through hysteresis effects (Slide 2).[3]

Even in the United States – with its more flexible labour market – many feared that a significant rise in unemployment would be required to bring inflation under control.

Instead, we find ourselves in a very different position from what many expected: in both the euro area and the United States, inflation has fallen sharply, and at a remarkably low cost in terms of employment.[4]

In fact, in the euro area we have seen the opposite of hysteresis: employment growth has been significantly stronger than historical patterns would have predicted.

Traditionally, Okun's law suggests that employment tends to grow at roughly half the pace of real GDP. Yet between the end of 2021 and mid-2025, cumulative employment rose by 4.1% – an increase of 6.3 million of people in employment – while real GDP increased by 4.3%. That implies an employment elasticity nearly twice as high as Okun's relationship would suggest.

For monetary policymakers, the key question is why this atypical employment response has occurred – and whether it signals a broader shift in how inflation will respond to different types of shocks.

Part of the answer lies in global factors. Monetary tightening helped bring inflation back to target, but it coincided with other forces that supported activity: an easing of supply constraints worldwide, a steep drop in energy prices and proactive fiscal policies – all of which help explain the unusually low sacrifice ratio.[5]

At the same time, Europe's experience reflects distinctive domestic drivers. Three features have shaped its labour market performance.

First, a delayed wage response to inflation that supported higher employment; second, a reduction in hours worked, driven by labour hoarding and changing preferences; and third, an expansion in labour supply that kept pace with rising demand.

## The response of real wages to inflation

Although the euro area has faced a complex mix of shocks in recent years, the dominant force was a major negative supply shock, as post-pandemic bottlenecks coincided with the cut-off of Russian gas.[6] Historically, supply shocks of this scale would have quickly passed through to nominal wages, with real wage growth often outpacing productivity.[7]

For example, after the oil shocks of the 1970s, real wages[8] in Europe rose by around 20% between 1972 and 1976, while productivity increased by only 15% (Slide 3, left panel). A similar pattern occurred during major demand shocks such as the global financial crisis (Slide 3, middle panel).

This time, however, the response was different – which was the first distinctive feature of this episode. Real wages fell by nearly 2% between late 2021 and early 2023, and only gradually caught up with cumulative productivity growth early last year (Slide 3, right panel).

This unusual pattern reflects a European labour market that has become more flexible in some respects, while remaining rigid in others.

Most notably, formal automatic indexation of wages to inflation has all but disappeared: in the 1970s it covered around half of all private sector employees, whereas today it applies to only about 3%. For more than half of private sector workers, inflation now plays no formal or automatic role in wage setting.[9]

At the same time, nearly 60% of workers remain covered by multi-year collective agreements which take inflation into account but adjust only gradually – a nominal rigidity that created a lag in wage adjustment relative to prices.[10] Research also suggests that as the workforce ages, union priorities are shifting, with greater emphasis on pensions and employment protection relative to wage growth.[11]

ECB analysis confirms that this delayed real wage response acted as a shock absorber. By widening the gap between productivity and labour costs, it eased unit labour cost pressures and supported firms' profitability, while also making labour relatively more attractive than capital. Both dynamics encouraged firms to expand hiring.

For example, the “factor substitution” effect is estimated to have accounted for around a quarter of total employment growth since the end of 2019, with most of this impact occurring after the onset of the energy crisis.[12]

This effect was particularly important in manufacturing, which was hit harder than services by negative shocks. That divergence helps explain some of the cross-country heterogeneity in employment growth in the euro area.[13] Yet, at the aggregate level, manufacturing employment still remained well above what Okun’s law would predict (Slide 4, left panel).

A key factor was firms’ ability to pass on higher input costs, which boosted profit margins and led to a steeper fall in sectoral real wages (Slide 4, right panel). Real wages in industry, measured using sectoral value-added deflators, fell by almost 11% at the trough.[14]

For comparison, in euro area countries where automatic wage indexation remains in place, the decline in real wages was more limited, and the link between output and employment was notably weaker than for the euro area aggregate.[15]

## The reaction of hours worked

However, the increase in employment in the euro area has been accompanied by a decline in average hours worked – the second distinctive feature of the labour market.

Average hours remain 1% below their pre-pandemic level, equivalent to about four hours fewer per worker per quarter, or a reduction in labour input of roughly 1.3 million full-time jobs (Slide 5).

Two factors help explain how employment could rise even as hours fell.[16]

The first is labour hoarding, which curbed job losses in firms facing weaker demand – particularly those hit by the energy crisis – but at the cost of fewer hours worked.

The ECB’s labour hoarding indicator rose to almost 30% in the third quarter of 2022 – nearly double its pre-pandemic average – and climbed even higher in manufacturing (Slide 6, left panel).

This behaviour reflected broader labour market tightness: survey evidence suggests employers viewed hoarding as less costly and less risky than rehiring later in an even more competitive market. Fears of future labour shortages – probably reinforced by Europe’s demographic outlook – also played a role.[17]

The fall in sectoral real wages, together with unusually high profit margins, in turn made it easier for firms to sustain this strategy.[18]

The second factor is a shift in worker preferences towards shorter hours, which constrained firms’ ability to raise hours per employee and left them more reliant on hiring.[19]

Average hours worked in Europe have been in long-term decline, driven roughly two-thirds by an increase in part-time employment, much of which is voluntary.[20] Since late 2021, however, the decline has

stemmed mostly from a fall in the number of long hours worked[21] and from reduced overtime among full-time workers, especially in industry.

While part of this shift is cyclical, it also has a structural component. Over the past decade, preferences for long working hours have declined in parallel with the recorded drop in overtime (Slide 6, right panel).[22]

## Increasing labour supply

Still, for these two features – lower real wages and fewer hours worked – to be compatible with higher employment, labour supply had to respond.

This is where the third feature comes in: the surge in the labour force in recent years.

On demographics alone, Europe's capacity to expand its labour supply is already constrained. By 2040, the working-age population[23] is projected to shrink by around 3.4 million. Since 2002, the number of people over 60 has risen by 28 million, while that of those aged 15–60 has fallen by 2.4 million, and of those under 14 by 2.8 million.

Yet after a brief dip during the lockdowns, the labour force was back to its pre-pandemic level by the end of 2021 – and has since grown by about six million people.

This reflects continued increases in participation and employment, particularly among women and older individuals, extending trends already in motion before the pandemic. ECB analysis suggests that without the compositional shift towards older workers – who often enter the labour market directly into employment – the unemployment rate today would be around 6.6% rather than 6.3%.[24]

Even more important, however, has been the rise in both the number and participation rate of foreign workers.

Although they represented only around 9% of the total labour force in 2022, foreign workers have accounted for half of its growth over the past three years.[25] Without this contribution, labour market conditions could be tighter[26] and output lower.

In Germany, for example, GDP would be around 6% lower than in 2019 without the contribution of foreign workers (assuming no behavioural changes among domestic workers). Spain's strong post-pandemic GDP performance – which has helped support the euro area aggregate – also owes much to the contribution of foreign labour.[27]

## Implications going forward

Looking ahead, it is difficult to say with confidence whether the patterns of recent years will persist, given the complex interplay of cyclical and structural forces. Drawing conclusions about future sacrifice ratios from current developments could therefore be misleading.

But it is worth taking a broader look at some underlying trends.

First, the demographic trend is likely to continue. And this is not just a European story: new research suggests that 2023 was likely to have been the first year in human history when the global fertility rate fell below the replacement rate.[28]

Migration could, in principle, play a crucial role in easing labour supply constraints in selected regions. But in all plausible scenarios – even those assuming high migration – the euro area's working-age population will continue to shrink (see illustration for the 20-64 age group in Slide 7, left panel).

Moreover, political economy pressures may increasingly limit inflows, and even when migration is significant, its impact on easing labour shortages depends on how closely migrants' skills match vacancies in key sectors.[29]

Second, labour hoarding could persist as a feature of the employment landscape. As demographic trends constrain hiring and preferences shift towards shorter hours, firms may find it harder to increase labour input during upswings. This, in turn, could strengthen incentives to hoard labour during downturns.

Third, these same forces could weigh on labour productivity. In Europe, productivity growth has historically displayed a pronounced cyclical pattern (Slide 7, right panel), in part because firms tend to reduce hours rather than shed workers in downturns.[30]

If lower job turnover continues to slow labour reallocation, it is likely to reduce the efficiency of job matching. By contrast, the stronger post-pandemic productivity growth in the United States has been linked to higher labour market churn.[31] An ageing population is also found to slow productivity growth.[32]

In such a scenario, Europe might escape the unemployment hysteresis that plagued past cycles, but at the cost of a decline in productivity.

However, this is of course not the only possible path. This view focuses solely on labour market dynamics and overlooks the potential for automation and artificial intelligence to boost productivity and investment, which may well also be spurred by a shrinking population.

## Conclusion

Let me conclude.

The European labour market has come through recent shocks in unexpectedly good shape, helped by a mix of global tailwinds and domestic strengths.

But we should be cautious in assuming that this unique constellation of forces will last. To borrow from de Tocqueville, we should not expect copies of past cycles to guide us through original ones.

By understanding the sources of recent resilience, we can be better prepared for the next shock, whatever shape it may take.

### Annexes

23 August 2025

Slides

1.

Deutsche Bundesbank (2024), “The global disinflation process and its costs”, *Monthly Report*, July.

2.

However, the ECB staff macroeconomic projections did not expect a surge in unemployment. In March 2022, the projections saw unemployment at 7.3% in 2022, 7.2% in 2023 and 7.0% in 2024. In reality, it came in at 6.8%, 6.5% and 6.4%, respectively.

3.

Blanchard, O.J. and Summers, L.H. (1986), “Hysteresis and the European Unemployment Problem”, *NBER Macroeconomics Annual 1986*, Vol. 1, in Fischer, S. (ed.), MIT Press, Cambridge, pp. 15–90.

4.

For a discussion about the post-pandemic US labour market developments, see for example Eusepi, S. and Ayşegül, Ş (2025), “Assessing Maximum Employment: A Flow-based Approach”, *NBER Working Paper,* No 33878, May.

5.

See also the discussion in Forbes, K., Ha, J. and Kose, M.A. (2025), “The post-pandemic disinflation: Low sacrifice, high prices”, VoxEU, 28 July 2025.

6.

ECB (2025), “A strategic view on the economic and inflation environment in the euro area”, *Occasional Paper Series*, No 371, June.

7.

Battistini, N., Grapow, H., Hahn, E. and Soudan, M. (2022), "Wage share dynamics and second-round effects on inflation after energy price surges in the 1970s and today", *Economic Bulletin*, Issue 5, ECB.

8.

Compensation per employee deflated by the GDP deflator. The general pattern also holds if wages are deflated by HICP inflation or by the private consumption deflator.

9.

See footnote 6 and Koester, G. and Grapow, H. (2021), "The prevalence of private sector wage indexation in the euro area and its potential role for the impact of inflation on wages", *Economic Bulletin*, Issue 7,

ECB.

10.

Bates, C., Bodnár, K., Healy, P. and Roca I Llevadot, M. (2025), "Wage developments during and after the high inflation period", *Economic Bulletin*, Issue 1, ECB.

11.

Lesch, H. (2004), "Ageing societies and challenges for collective bargaining policy", *Intereconomics*, Vol. 39, Issue 2, pp. 102-108. For some recent examples of how collective agreements take the interests of older workers into account, see Eurofound (2025), *Keeping older workers in the labour force*, Publications Office of the European Union, Luxembourg.

12.

Consolo, A. and Foroni, C. (2024), "Drivers of employment growth in the euro area after the pandemic – a model-based perspective", *Economic Bulletin*, Issue 4, ECB.

13.

For example, in Germany employment in manufacturing has declined by 4.2% since the end of 2019.

14.

The fall in real wages was also facilitated by fiscal measures, which – according to ECB analysis – compensated households for about a third of their welfare loss, though with significant differences between countries. See Amores, A. F., Basso, H.S., Bischl, S., De Agostini, P., De Poli, S., Dicarlo, E., Flevotomou, M., Freier, M., Maier, S., García-Miralles, E., Pidkuyko, M., Ricci, M. and Riscado, S. (2023), "Inflation, fiscal policy and inequality: The distributional impact of fiscal measures to compensate consumer inflation", *Occasional Paper Series,* No 330, ECB.

15.

For example, in Belgium real wages (deflated by the GDP deflator) did not decline and had already caught up with productivity by early 2023. In turn, employment grew cumulatively at only around half the pace of output.

16.

For an overview of other factors supporting this trend, see Arce, O., Consolo, A., Dias da Silva, A. and Mohr, M. (2023), "More jobs but fewer working hours", *The ECB Blog*, ECB, 7 June.

17.

Berson, C., Botelho, V., Dias da Silva, A., Foroni, C., Mohr, M., Schroeder, C. and Weissler, M. (2024), "Explaining the resilience of the euro area labour market between 2022 and 2024", *Economic Bulletin*, Issue 8, ECB.

18.

Botelho, V. (2024), "Higher profit margins have helped firms hoard labour", *Economic Bulletin*, Issue 4, ECB.

19.

Arce, O and Sondermann, D. (2024), "Low for long? Reasons for the recent decline in productivity", *The ECB Blog*, ECB, 6 May.

20.

Botelho, V., Consolo, A. and Dias da Silva, A. (2021), "Hours worked in the euro area", *Economic Bulletin*, Issue 6, ECB.

21.

Defined as more than 49 hours per week.

22.

Berson, C. and Weissler, M. (2025), "Who wants to work more? Revisiting the decline in average hours worked", *Economic Bulletin*, Issue 3, ECB.

23.

Aged 15-74.

24.

Berson, C., Dias da Silva, A. and Weissler, M. (2025), "The role of demographics in recent developments in the unemployment rate", *Economic Bulletin*, Issue 1, ECB.

25.

Foreign workers are defined as members of the euro area labour force who are not citizens of a euro area country.

26.

Immigration increases both labour supply and demand, so the net effect of lower inflows can be ambiguous.

27.

Arce, O., Consolo, A., Dias da Silva, A. and Weissler, M. (2025), "Foreign workers: a lever for economic growth", *The ECB Blog*, ECB, 8 May.

28.

Fernández-Villaverde, J. (2025), "The Demographic Future of Humanity: Facts and Consequences", slides, Penn Institute for the Study of Markets, 31 May

29.

See footnote 27.

30.

See footnote 19.

31.

Dias da Silva, A., Di Casola, P., Gomez-Salvador, R. and Mohr, M. (2024), "Labour productivity growth in the euro area and the United States: short and long-term developments", *Economic Bulletin*, Issue 6, ECB.

32.

Maestas, N., Mullen, K. J. and Powell, D. (2023), "The Effect of Population Aging on Economic Growth, the Labor Force, and Productivity", *American Economic Journal: Macroeconomics*, Vol. 15, No 2, pp. 306–332.



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