

The EU automotive industry at a crossroads

The implications of structural transformation for employment and skills

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Key findings

The European Union's automotive sector employs over 6 million workers directly and remains a source of comparatively well-paid, secure employment. Yet the industry is undergoing deep structural change driven by electrification, digitalisation, intensifying competition from China, changing global demand patterns, evolving consumer preferences, and demographic shifts within its own workforce.

Employment has held up in aggregate but shifted across regions in the EU. The employment share of automotive in the EU held up between 2008 and 2025. Central and Eastern European Member States have seen a growing share of vehicle-assembly and supplier jobs, while traditional automotive economies in western Europe have seen their positions erode, particularly since 2019. In addition, aggregate stability masks a more recent downturn, with employment in vehicle manufacturing and among suppliers declining since 2019 alongside a marked contraction in production volumes.

Supply chains are more integrated across the EU, but new dependencies on China are emerging. Intra-EU sourcing of intermediate inputs rose from 17% in 1995 to 25% in 2022, while China's share grew from near zero to 3%, concentrated in batteries and advanced electronics central to the electric vehicle transition, and is likely to have increased further since.

Automotive jobs tend to be of high quality, but pressures are building. Low pay is less prevalent than in the economy at large and collective bargaining coverage remains high. However, nearly 80% of workers in car manufacturing report significant changes in their working environment, and roughly one third of those undergoing change do so without formal training, a share that rises to around 40% among suppliers.

Job displacement carries severe and lasting earnings costs. Displaced automotive workers see earnings drop by 57% in the first year after mass layoffs, compared with 43% for their counterparts in services. Six years later, earnings remain 20 to 25% below those of comparable non-displaced workers. The gap with services narrows over time but does not close within six years, and larger losses in the automotive and manufacturing sectors than in services are observed in all 11 countries analysed.

The capacity to anticipate and manage adjustment is unevenly distributed. Large manufacturers benefit from strong training infrastructure and collective bargaining, but smaller suppliers and car sales enterprises are considerably less well equipped, making their workers more vulnerable to the structural changes ahead.

1. Introduction

The automotive sector is a cornerstone of the European economy, contributing over 7% of EU gross domestic product, a third of private R&D spending, and some 6 million jobs (ACEA, 2024; Eurofound, 2025; European Commission, 2025). In several European countries, the industry is deeply embedded in regional industrial structures, anchoring complex ecosystems of suppliers, engineering services and training institutions built up over decades. For millions of European workers, automotive employment has long offered comparatively well-paid and secure jobs, making the sector a pillar of economic prosperity and security.

The current adjustment is not the sector's first. European automotive manufacturing has passed through successive waves of structural change, from the restructuring that followed the oil shocks of the 1970s, to the diffusion of lean production and just-in-time methods in the 1980s and 1990s, the eastward relocation of assembly and component production after enlargement, and the contraction that followed the 2008 financial crisis.

Yet the industry now stands at a crossroads of several powerful and mutually reinforcing megatrends. The shift towards electric vehicles is triggering a fundamental restructuring of the value chain, reducing the number of components needed in a vehicle, altering skills requirements and reshaping the relationship between manufacturers, suppliers and new entrants in batteries and electronics. Digitalisation is transforming vehicles into software-defined products, accelerating automation and creating demand for entirely new skills. Intensifying global competition, most notably from China, and changes in global demand patterns are challenging Europe's traditional strengths in high-value automotive components. Mobility demand is itself evolving. The volume of private car travel, the size and type of vehicles used, the pace of modal shift towards collective transport and the development of circular activities such as repair, refurbishment and remanufacturing will all influence the scale and the composition of future vehicle demand, and hence of automotive employment (ITF, 2023; ITF, 2023). And the sector's own workforce is ageing, with a declining capacity to attract younger workers precisely when the need for new skills is greatest.

This analysis examines employment trends, workforce composition, job quality and the institutional frameworks shaping adjustment in the EU automotive sector over the past two decades. It draws on a broad range of data sources, including the EU Labour Force Survey, the EU Structure of Earnings Survey, the OECD Survey of Adult Skills (PIAAC), OECD input-output tables, and harmonised linked employer-employee data from 11 European OECD countries. The future trajectory of the sector remains highly uncertain, requiring effective anticipation and management of change, bold transition planning and difficult strategic choices on the way. The trends documented here do not purport to predict how

these forces and choices will play out, but they offer evidence-based pointers for the design of employment, skills and industrial policies that can help ensure the automotive transition is managed in a way that is both economically efficient and socially fair.

2. Employment trends

Estimates of the employment footprint of the automotive industry vary considerably depending on the data source and the range of activities included. This analysis adopts a relatively broad definition of the automotive sector which encompasses not only core vehicle manufacturing and car sales as ACEA and Eurofound do but also upstream industries that are closely linked to car production – see Box 1.

Box 1: How is automotive defined?

Where data sources provide a 3-digit NACE classification (as in the EU Labour Force Survey and PIAAC), the automotive sector is defined as comprising three main segments:

Vehicle manufacturing: This covers the manufacture of motor vehicles (NACE C29.1) and the manufacture of bodies, trailers and semi-trailers (NACE C29.2). This segment is highly capital-intensive and dominated by a relatively small number of so-called original equipment manufacturers (OEMs), which operate large-scale industrial sites covering the main stages of vehicle production (stamping, body assembly, painting and final assembly) as well as the in-house manufacturing of key components such as engines and transmissions.

Supplier industry: This corresponds to the manufacture of parts and accessories for motor vehicles (NACE C29.3). The supplier industry is more fragmented than vehicle manufacturing and more exposed to the transition from internal combustion engines (ICE) to battery electric vehicles (BEV), as many of its firms specialise in components that will no longer be needed in electrified powertrains.

Sales and repair: This encompasses the wholesale and retail trade and repair of motor vehicles and motorcycles (NACE G45). The structure of this segment differs markedly from vehicle manufacturing. It is characterised by a very large number of small and micro-enterprises. Maintenance and repair activities, in particular, are dominated by small workshops, while large dealership chains and aftermarket retailers account for a significant share of overall employment in sales and the aftermarket (secondary parts).

In addition, the analysis also extends to those **industries which have a close degree of dependence on car manufacturing (“dependent industries”)**, identified as the three industries whose outputs flow most heavily into the automotive value chain according to OECD input-output tables: the manufacture of rubber and plastic products (NACE C22), the manufacture of basic metals (NACE C24), and the manufacture of fabricated metal products, except machinery and equipment (NACE C25). These upstream industries supply essential intermediate inputs to the automotive sector and, more than other industries, will be affected by shifts in vehicle production.

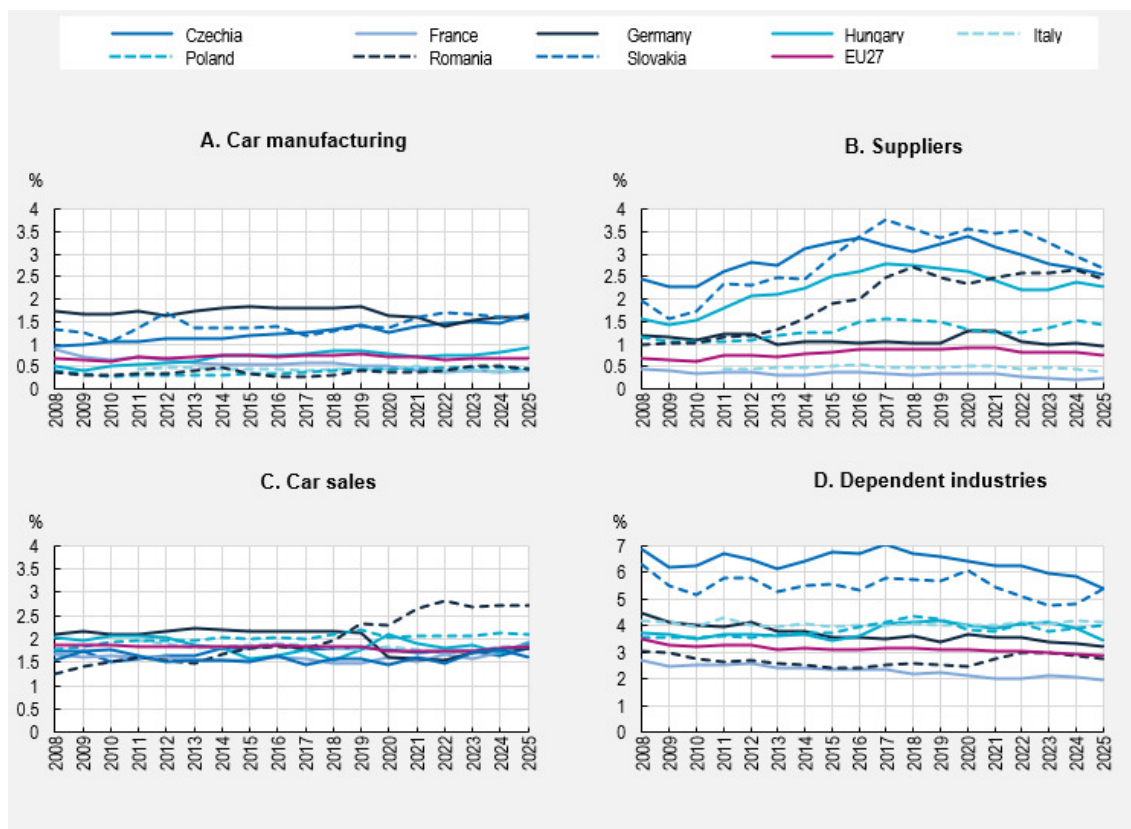
Where only 2-digit industry classification is available, as is the case in the Structure of Earnings Survey, vehicle manufacturing and the supplier industry are grouped together under NACE C29.

Although aggregate employment in the EU automotive sector (manufacturing, suppliers and sales) has held up over the past two decades, the composition and geography of these jobs have shifted markedly. The four panels of Figure 1 illustrate how the employment weight of each subsector has evolved across selected western and eastern European countries where the automotive industry is important. Beneath an apparently stable headline figure, the figure reveals divergent trajectories.

In addition, the aggregate picture masks the recent downturn: employment in EU vehicle manufacturing fell by close to 9% between 2019 and 2023, the supplier industry shed some 110 000 jobs over the same period, and announcements of large-scale restructuring accelerated markedly in 2024 and early 2025 (Eurofound, 2025; European Commission, 2025).

Figure 1. The employment share of automotive has remained broadly stable in the EU but shifted across regions

Percentage of total employment, 2008-2025



Source: EU-LFS.

In vehicle manufacturing (Panel 1), employment shares have remained broadly stable or increased slightly in several countries since 2008, despite the overall decline in manufacturing employment in the EU over the same period (Eurofound, 2025). Germany – employing more vehicle manufacturing workers than all other EU countries combined in 2019 – maintained a high and stable share until a marked decline after 2019. France, by contrast, recorded a steady and structural decline throughout the period. In central and eastern Europe, Czechia and, to a lesser extent, Slovakia and Hungary show rising or consistently high employment shares, reflecting their deeper integration into European automotive value chains.

The supplier industry (Panel 2) exhibits the strongest cross-country divergence. Employment shares expanded substantially in several central and eastern European Member States, notably Czechia, Hungary, Romania and Slovakia. This reflects both the outsourcing of non-core activities by OEMs and the increasing integration of European supply chains (see Box 2), with supplier operations relocating from western to eastern Europe to benefit from lower labour costs and proximity to new assembly plants. Germany, while still the largest supplier employer in absolute terms, experienced some decline since 2021, and France continued its longer-term contraction. In recent years, several eastern

European countries show a levelling off or reversal, coinciding with reports of some supplier activities shifting further to lower-cost locations outside the EU, including Africa and Asia (Eurofound, 2025).

Employment in sales and repair (Panel 3) has been the most stable of the four segments across all countries, consistent with the service-oriented and geographically distributed nature of this activity. Romania stands out as a partial exception, with a period of notable growth in recent years possibly linked to the ageing vehicle fleet and large imports of used cars which create strong demand for maintenance, repair services, and spare-parts retail. Unlike manufacturing, which is concentrated in specific industrial regions, vehicle sales, maintenance and repair operations are spread across national territories in response to local consumer demand. The pattern also reflects the dual structure of this segment, which combines a large number of small and micro-enterprises, particularly in vehicle repair, with larger dealerships that maintain steady employment levels.

Finally, industries more dependent on car manufacturing (Panel 4) present an overall declining trend. These upstream sectors, which include the manufacture of rubber and plastic products, basic metals, and fabricated metal products, are indirectly linked to the automotive value chain through their intermediate inputs. Their employment shares have contracted in most countries over the period, consistent with broader deindustrialisation trends affecting heavy and materials-intensive manufacturing in the EU. The only exception is central and eastern Europe where the share has held up.

3. Workforce characteristics

Alongside the geographical shifts described above, the composition of the automotive workforce has been evolving. Figure 2 illustrates the current workforce profile across subsectors and the changes that have occurred since 2008 in terms of gender, age, education, skills and firm size. Three main trends can be identified:

First, the automotive sector remains overwhelmingly male. In car manufacturing, women account for less than 20% of employment, 16% in car sales while it is higher among suppliers (32%). Since 2008, the female share of employment has increased most in car manufacturing, rising by almost 5 percentage points (Panel B). This is partly explained by increasing automation in manufacturing, which has reduced the share of physically demanding blue-collar roles and made the work more accessible to a broader range of workers (Eurofound, 2025).

Second, employment is concentrated among prime-age workers. Workers aged 30 to 49 make up around half of employment in car manufacturing and among suppliers, and close to half in the other subsectors. The share of workers aged 50 to 64 is substantial in all segments, ranging from roughly 28% in car

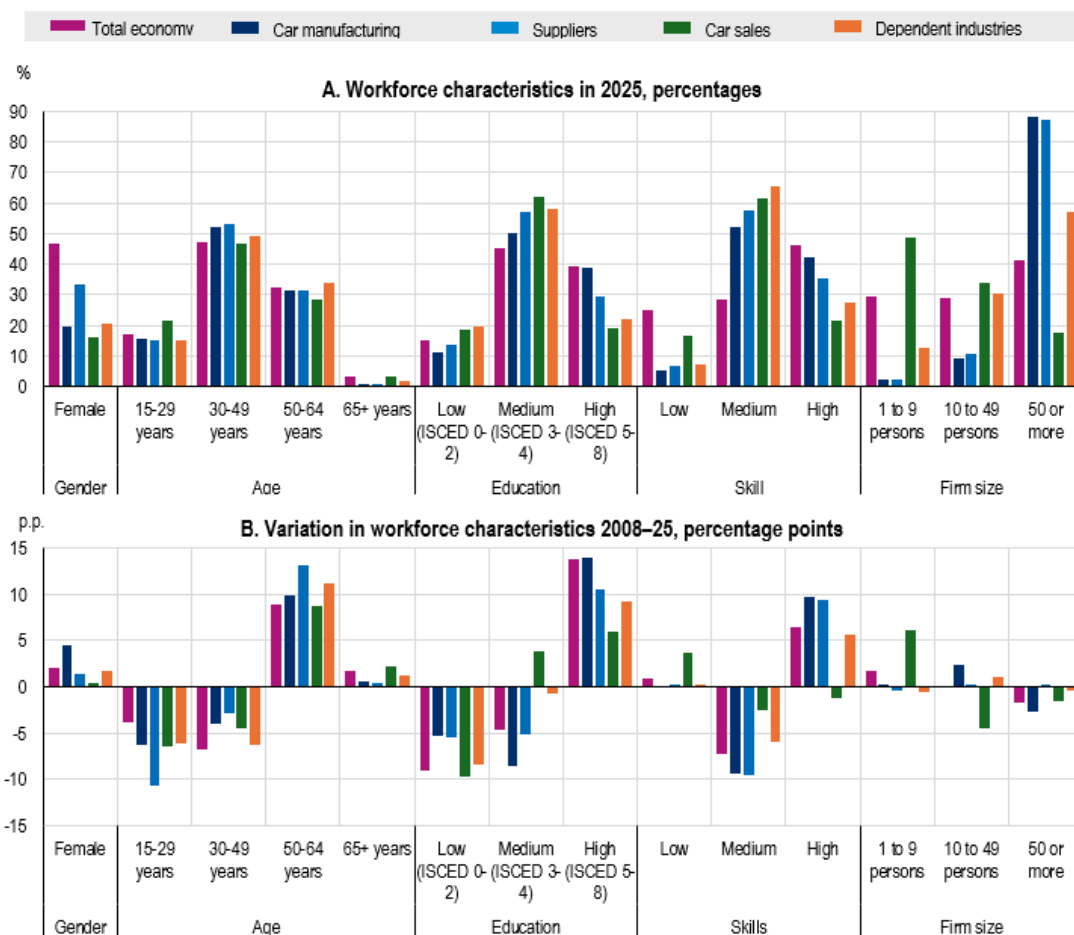
manufacturing and sales to over 30% in dependent industries. Since 2008, all automotive subsectors have recorded a marked increase in the share of workers aged 50 to 64, with gains of between 8 and 11 percentage points since 2008. There has also been a significant decline in the proportion of younger workers aged 15 to 29, which is stronger than in the total economy. This reflects not only general demographic ageing trends and the contraction of the sector but also challenges in attracting sufficient young talent to replace experienced workers approaching retirement (ACEA; Adecco, 2025).

Third, the educational profile of the automotive workforce differs considerably across subsectors. Medium-level qualifications (ISCED 3 to 4) dominate in all segments, accounting for nearly 60% or more of employment among suppliers, in car sales and in dependent industries but the share of workers with tertiary education (ISCED 5 to 8) is increasing. This reflects the growing demand for engineering, ICT and supervisory competencies driven by the increasing complexity of vehicle design, the integration of digital technologies and the progressive automation of production processes (ACEA; Adecco, 2025). The skills dimension, defined in terms of broad occupations, provides a broadly similar picture as education.

In addition, the firm-size dimension underscores the markedly different industrial structures across subsectors. Car manufacturing is overwhelmingly concentrated in large enterprises: almost 90% of workers are employed in firms with 50 or more employees. Among suppliers, roughly 83% of employment is in firms of 50 or more but firms are typically much more fragmented than in car manufacturing. This is consistent with the highly capital-intensive nature of vehicle and parts production, where scale economies and just-in-time supply chain integration favour large units. By contrast, employment in car sales and repair is concentrated in small and medium-sized firms. Firms with fewer than 10 employees account for over 40% of employment, and those with 10 to 49 employees for a further 30%.

Figure 2. An evolving workforce: persistent gender gaps, demographic ageing and growing skill needs

EU27 averages



Source: EU-LFS.

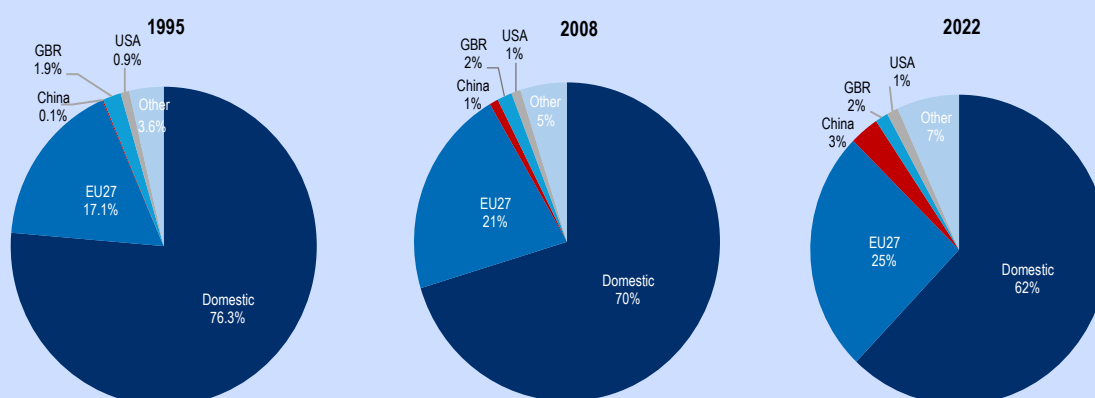
Box 2. Supply chains have become more integrated across Europe, but new dependencies – especially on China – are emerging

Europe's automotive industry has evolved over the past three decades from a collection of nationally segmented production systems into a tightly interdependent regional value chain. Figure 3 illustrates one key dimension of this integration: the origin of intermediate inputs used by the EU car industry. In 1995, domestic sourcing accounted for over 76% of all intermediate inputs, with other EU27 countries providing roughly 17% and the rest of the world a marginal share. By 2008, the domestic share had fallen to 70% while intra-EU sourcing rose to 21%, reflecting the deepening of cross-border supply relationships, particularly linking suppliers in central and eastern Europe with assembly

operations in Germany and France. By 2022, this pattern had intensified further: the domestic share dropped to 62% and intra-EU inputs rose to 25%, confirming the development of a "Factory Europe" model built on functional specialisation across territories.

Figure 3. Sourcing of intermediate inputs by the EU automotive industry has become more international

Share of intermediate inputs in total output used by the EU automotive industry, by origin, 1995, 2008, 2022, percentages



Source: OECD Inter-country Input-Output Tables, August 2025 edition
<https://www.oecd.org/en/data/datasets/inter-country-input-output-tables.html>

At the same time, China's share of intermediate inputs, negligible in 1995 and still marginal in 2008, had risen to 3% by 2022. This increase reflects the growing role of Chinese suppliers in strategic upstream technologies, most notably batteries, electric motors and advanced electronics, all of which are central to the shift towards electric vehicles. Chinese producers benefit from major competitive advantages, including control over mineral supply chains, economies of scale from a large domestic market, and sustained state-backed investment in electric-vehicle technologies (Eurofound, 2025). Europe's traditional strength in high-value automotive components, built on decades of cross-border specialisation and shared industrial commons, is now being tested by a new form of external dependency in precisely the technologies that will define the future of the industry (de Soyres, Fisgin, & Gaillard, 2025; Grjebine, Lefebvre, & Torres, 2026).

A similar pattern of integration happened on the demand side. Over the past three decades, the destination of European-made outputs shifted progressively away from domestic markets towards broader intra-EU and international sales. The share of automotive output¹ sold to final consumers in domestic markets fell from

¹ More precisely, it is the value of output from the automotive sectors that is purchased by households in each destination market for final consumption.

58.0% in 1995 to 43.4% in 2022, while the share going to final consumers in other EU countries increased from 23.8% to 29.7%. International markets also gained importance, with China emerging as a strategically significant export destination for European manufacturers: its share of all demand for European-made automotive output rose from virtually zero in the late 2000s to 2.3% in 2022. That configuration is now under strain as European brands are facing intensifying competition from Chinese players particularly in battery electric vehicles.

4. Job quality

Figure 4 provides a comprehensive picture of job quality across automotive subsectors compared with the economy as a whole by looking at the main dimensions of the *OECD Job Quality Framework* (Cazes, Hijzen, & Saint-Martin, 2015):²

Earnings in the automotive sector, measured monthly, are broadly in line with those in the wider economy, both in terms of level and distribution. Median earnings in car manufacturing are above those in the general economy, while in car sales and dependent industries they are broadly aligned. The share of low-paid workers (those earning below two-thirds of the median) is also markedly lower in car manufacturing and among suppliers (5.8%) than in the economy as a whole (14.8%).³ By contrast, in car sales, at 13.8%, low pay is closer to the economy-wide average, consistent with its more fragmented, SME-dominated structure.

Labour-market security is comparatively strong in the automotive sector. Fixed-term contracts, including involuntary ones, are less prevalent in all car sectors than in the general economy, in particular in car manufacturing and suppliers.

Looking at the **quality of the working environment**, working-time arrangements reveal the distinctive rhythm of automotive manufacturing. While the share of workers on long hours and Saturday and Sunday work is generally lower than in the broader economy, shift work (and hence night work) in manufacturing is markedly more prevalent: 37% of workers in car manufacturing and 48% among suppliers work in shifts, compared with 18% in the economy at large. This reflects

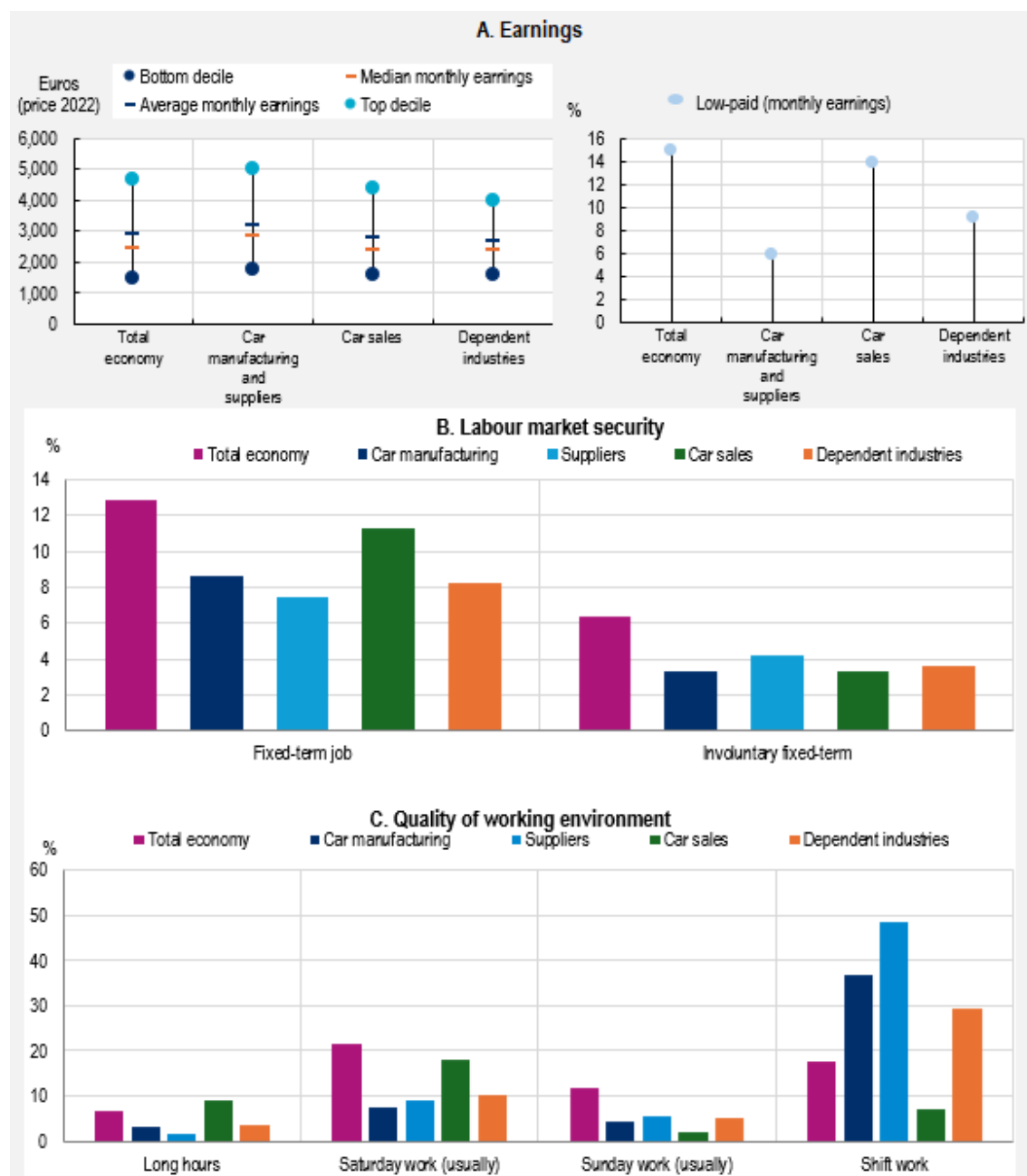
² Due to limitations in the availability of sectoral breakdowns in the data, the indicators presented in this brief capture each dimension of job quality only in part. Job strain, and physical health risk factors in particular, is not fully reflected in the working environment dimension.

³ Part-time work is also less prevalent in car manufacturing and among suppliers (respectively, 5.9% and 3.3% of employment) than in the economy as a whole (18.7%), and involuntary part-time is negligible across all automotive subsectors.

the continuous-production logic of large assembly plants and just-in-time supplier operations, where multi-shift systems are used to maximise capital utilisation.

Figure 4. Automotive jobs offer higher pay and greater labour market security than the rest of the economy, but shift work is more prevalent

EU 27 averages



Note: Panel B and C: Percentages of total employment, except for shift work: percentages of employees. Data refer to 2022 in Panel A and to 2025 in Panel B and C.

Source: Panel A: Structure of Earnings Survey; Panel B and C: EU-LFS.

The relatively strong job quality performance of the sector is closely associated with its historically high union density and bargaining coverage, discussed in Box 3.

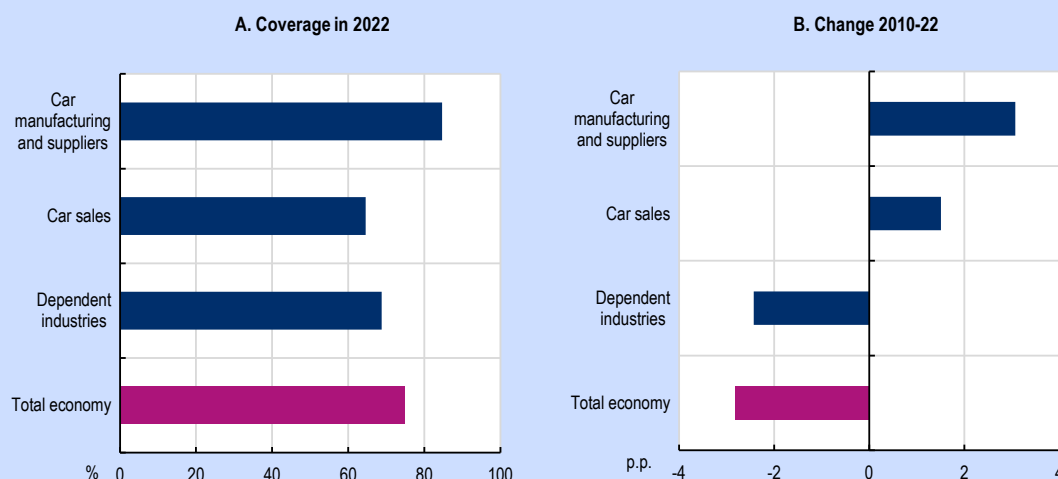
Box 3. Collective bargaining remains strong in car manufacturing

Collective bargaining coverage in car manufacturing and supply is markedly higher than economy-wide levels (85% vs 75%, see [Figure 5](#)), with sales and repair activities still reaching close to two-thirds coverage.⁴ Unlike the general decline observed in many EU countries (OECD, 2025), coverage in automotive has increased since 2010. Several structural factors underpin this resilience. Large manufacturers typically exhibit high union density and strong workplace representation, supported by works councils and, in some countries, board-level representation. Sectoral agreements in the metal industry, including Germany's Pforzheim framework and recent "future collective agreements", illustrate how social partners attempt to balance competitiveness, innovation and employment security, combining commitments to safeguard employment and production sites with investment in new technologies and worker training and qualification (Eurofound, 2025). Social dialogue has been central in managing the current wave of restructuring. Recent agreements at Volkswagen, Renault, Ford, SEAT and Stellantis have relied on collective bargaining to negotiate employment adjustments while avoiding compulsory redundancies and supporting large-scale retraining (Eurofound, 2025).

⁴ The estimate for sales and repair should be interpreted with specific caution because the EU Structure of Earnings Survey excludes firms with fewer than 10 employees, which account for over 40% of employment in that segment.

Figure 5. Collective bargaining coverage remains strong in car manufacturing and supply

Share of employees covered by a collective bargaining agreement, EU27



Note: The industry-level information in the EU Structure of Earnings Survey does not allow to separate manufacturing from suppliers.

Source: EU-SES 2022 and 2010. The collective bargaining coverage shown here is derived from the EU-SES microdata (variable 1.5 identifying the type of pay agreement covering at least 50% of the employees in the local unit) and is slightly higher than the official OECD/AIAS ICTWSS figures. Differences arise from methodology (EU-SES captures coverage as reported by employers, while ICTWSS relies mostly on institutional and administrative sources) and from sample design (EU-SES covers sector B-S of NACE Rev2, with the exception of O and excludes firms with less than 10 employees).

The largely favourable job quality indicators should not obscure the growing pressures that the automotive workforce faces. Data from the OECD Survey of Adult Skills (PIAAC) confirm that workers in the automotive sector are considerably more likely than those in the economy at large to report significant changes in their working environment, whether related to the introduction of new machinery, information and communication technologies, working methods, outsourcing or the nature of products and services. Figure 6 shows that nearly 80% of workers in car manufacturing reported experiencing a marked change in their working environment, compared with 64% across the economy as a whole. Among suppliers and in dependent industries, the share is also above average, at 71% and 67% respectively. Car sales, at around 65%, is closer to the economy-wide figure.⁵

An encouraging finding is that training participation in response to organisational change and skill disruption is also higher in the automotive sector, particularly in car manufacturing. Some 71% of car manufacturing workers who experienced

⁵ These results are consistent with other measures of skills disruption: for example, applying the Lightcast Skills Disruption Index to the PIAAC data points to above-average disruption in car manufacturing and supply, reflecting the combined impact of electrification, digitalisation, automation and shifting supply chain configurations.

change reported that this change was supported by training, compared with 57% across the economy as a whole. However, the figure also reveals a significant gap. Among suppliers, where firms are typically smaller than in car manufacturing, only around 60% of those experiencing change received training support, leaving around 40% of those affected navigating substantial workplace transformation without formal training. A similar gap is visible in car sales and dependent industries.

Figure 6. Two-thirds of automotive workers are experiencing significant change

% of employment, 2022-2023



Note: Share of employed responding “Marked” to one of the questions on changed working environment: Machinery; Information, and communication technologies; Working methods and practices; Outsourcing and relocation practices; Products or services; The amount of contact you have with clients or customers. (question H2_Q18a). Average for Austria, Belgium, Croatia, Czechia, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland, Portugal, Slovakia, Spain, Sweden.

Source: PIAAC, 2d Cycle.

5. The costs of job displacement

As documented above, a large share of the automotive workforce is experiencing marked change in the working environment. Where these pressures translate into actual job losses, the consequences for affected workers can be severe and long-lasting. This section examines the earnings costs of job displacement in the automotive sector, drawing on harmonised linked employer-employee data from 11 European-OECD countries (see Box 4 for methodological details).

Box 4. How is the cost of job loss in automotive estimated?

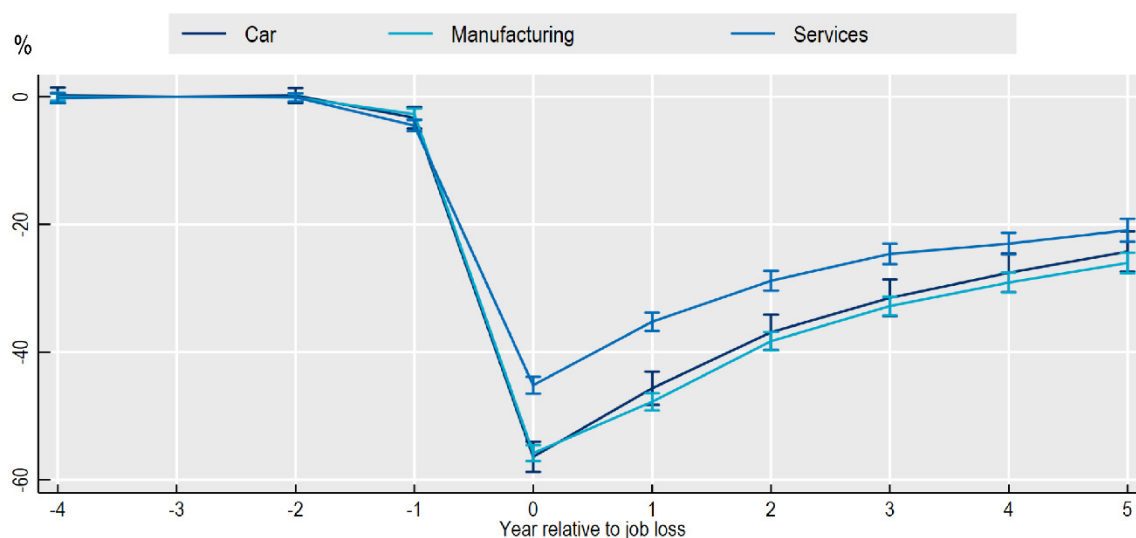
The methodology used in this section follows the job displacement literature by focusing on mass layoffs or firm closures, defined as events in which firms reduce employment by at least 30% in firms with at least 30 employees. To ensure comparability between displaced and non-displaced workers, each displaced worker is matched to a worker with the same gender and industry, and similar characteristics in terms of age, tenure, firm size, and past wages. This approach ensures that, conditional on observed characteristics, displacement through mass layoffs or firm closures is as good as random. Outcomes of displaced and similar non-displaced workers are then compared using an event-study design over a period of ten years from four years before displacement to six years after displacement. Regressions are estimated separately for each country as well as the automotive, manufacturing and service sectors. The outcomes of interest are annual earnings relative to pre-displacement earnings, with zero earnings imputed for non-employment. For further details on the methodology, see Barreto et al. (2024).

Job displacement carries substantial earnings losses for affected workers across all sectors, but particularly so for workers in the automotive and manufacturing sectors. In the first year following a mass layoff, workers displaced from the car sector see their earnings drop by 57% compared with non-displaced workers on average across countries (Figure 7).⁶ Displaced workers in manufacturing face a very similar earnings drop of 56%. Earnings losses for workers displaced from the service sector are less severe, albeit still considerable: these workers see their earnings fall by 43% compared with non-displaced workers in the services sector in the year immediately after mass layoff. While these differences become smaller with time they remain present even six years after displacement.

⁶ Earnings losses capture the loss of earnings during joblessness as well as losses due to lower pay upon re-employment. Earnings are measured in gross terms and hence do not take account of taxes and benefits (e.g. unemployment benefit or social assistance).

Figure 7. Earnings losses after displacement are large and persist over time

Percentage change in earnings due to job displacement between t-1 and t=0



Note: Average across countries of earnings losses of displaced workers relative to observationally comparable non-displaced workers. The point estimates show the impact of job loss on earnings in event time, where workers are displaced between time -1 and time 0, such that time 0 is the first post-displacement year. The reference period for earnings losses is $k=-3$. Point estimates and 95% confidence intervals are averaged across countries assigning each country an equal weight. The countries included are: Austria, Denmark, Estonia, Finland, France, Germany, Hungary, the Netherlands, Norway, Portugal, Sweden.
Source: OECD estimates based on national linked employer-employee data (Lombardi, et al., 2026).

Within the automotive sector, the earnings losses from displacement vary by subsector (Figure 8). Workers in car manufacturing and dependent industries experience immediate earnings drops of 58% and 57% respectively compared with non-displaced workers in the same subsectors. These losses closely mirror the immediate displacement costs observed in the automotive and manufacturing sectors more broadly. Workers in car sales and repair face somewhat less pronounced losses of 49% compared with non-displaced workers in the same subsector, placing them between the automotive and service sector averages. This pattern is consistent with the structural characteristics of the subsectors described earlier: manufacturing and supplier jobs tend to be concentrated in large firms with specialised skill profiles and relatively compressed wage structures, meaning that displaced workers may find it harder to find comparable re-employment. Car sales and repair, by contrast, is more dispersed across the economy and closer in structure to the broader services sector, which may facilitate a somewhat faster reallocation of workers.

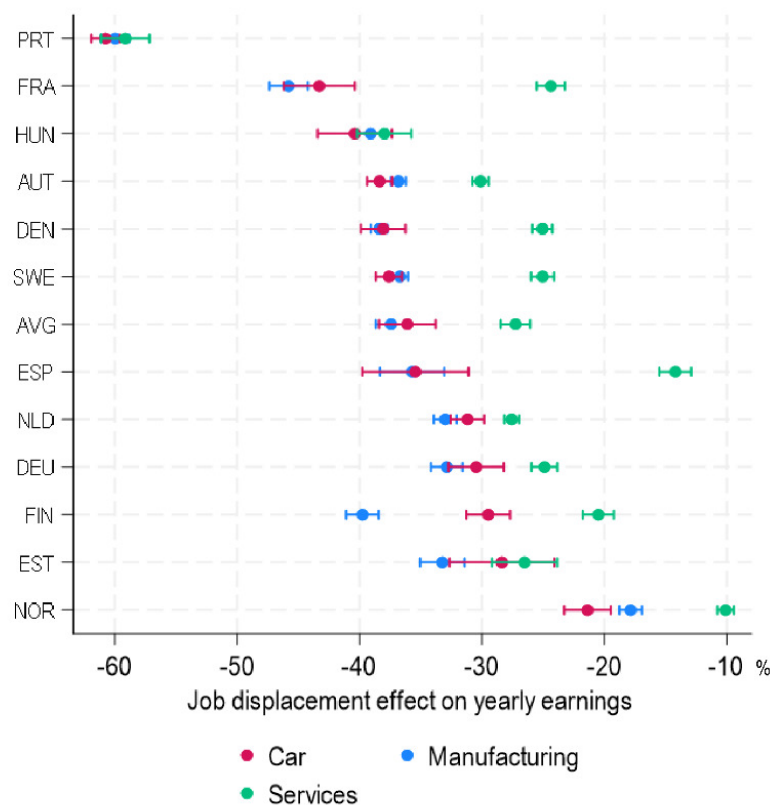
Earnings losses persist over time but narrow gradually, with the recovery proceeding faster in the automotive and manufacturing sectors than in services. While the gap between the costs of job displacement in the automotive and service sectors stands at 14 percentage points in the first year after mass layoff, it narrows to 5 percentage points after six years. The recovery initially proceeds

at a similar pace across sectors but slows somewhat for service sector workers four years after displacement, leading to a gradual closing of the gap with the automotive sector. Nevertheless, automotive and manufacturing workers are unable to fully close the gap with service sector workers within six years. Moreover, workers across all three sectors do not fully recover their earnings losses within this period, with earnings remaining 20 to 25% below those of comparable non-displaced workers six years after displacement. These findings underscore the lasting nature of displacement costs in the automotive sector and point to the importance of early and sustained policy interventions, including retraining, income support and active labour market measures, to help affected workers navigate transitions that carry significant and enduring economic consequences. The design and the timing of that support matter. Provision that builds on the technical profile of automotive workers, and that is made available before separation rather than only after it, is likely to be more effective (ITF, 2021). These points are developed in the concluding remarks.

While the magnitude of displacement costs varies across countries, reflecting differences in industrial structures and labour market policies (OECD, 2024), the pattern of larger losses in the automotive and manufacturing sectors compared with services is consistent: in all 11 countries analysed, displaced workers in the automotive and manufacturing sectors face larger earnings losses than those displaced from the service sector. The gap in earnings losses between the automotive and service sectors is smallest in Portugal, Estonia and Hungary, where losses do not differ significantly across the three sectors. By contrast, the gap is largest in France, Denmark and Sweden, where earnings losses are significantly more pronounced in both the automotive and manufacturing sectors compared with services, with differences between automotive and services ranging from 13 to 19 percentage points.

Figure 8. Earnings losses after displacement vary across countries and sectors

Percentage change in earnings of displaced workers relative to observationally comparable non-displaced workers averaged over six years after job loss



Note: Country-level earnings losses of displaced workers relative to observationally comparable non-displaced workers. The point estimates show the impact of job loss effects averaged in the 6-year post-event period with corresponding 95% confidence intervals.

Source: OECD estimates based on national linked employer-employee data (Lombardi, et al., 2026).

6. Policy initiatives

Supporting the automotive sector and its workforce through the ongoing transition is a key priority for the EU, as reflected in the Competitiveness Compass (European Commission, 2024). In March 2025, the European Commission adopted an Industrial Action Plan for the European automotive sector which sets out concrete actions to strengthen innovation, clean mobility, competitiveness, and support workers (European Commission, 2025). The plan builds on a public consultation and a strategic dialogue with industry leaders, social partners and other relevant stakeholders.

Actions addressing the skills and social dimensions focus on increasing the flexibility of funding for up- and reskilling initiatives and strengthening the evidence base. Amendments to the European Social Fund Plus (ESF+) grant Member States greater flexibility to reallocate funding towards skills development

in the automotive and other strategic sectors. The ESF+ is the EU's main instrument for investing in people with a budget of nearly EUR 143 billion for 2021-2027 (European Commission, 2026). Whereas longer-term anticipatory assistance falls under the ESF+, the European Globalisation Adjustment Fund for Displaced Workers (EGF) is a reactive emergency instrument to respond to unforeseen major restructuring events. The EGF co-finances active labour market policies to help displaced workers find new sustainable employment. As one of the flagship actions of the Industrial Action plan, the EGF Regulation has been amended to also assist workers threatened by imminent job displacement. The aim is to avoid spells of unemployment by providing assistance while still in employment, to smoothen transition into a new role within the same company, or to change jobs (European Commission, 2026). Furthermore, the European Fair Transition Observatory, a flagship initiative under the Clean Industrial Deal, was officially launched in March 2026. It will compile granular data on employment trends and identify effective practices at national, regional, sectoral and company levels, to inform forward-looking policy responses in the automotive and other strategic sectors (European Commission, 2026).

In addition to the measures outlined in the Action Plan, several other initiatives support skills development in the automotive sector and its value chain. The Automotive Skills Alliance brings together industry representatives, social partners, education and training providers as well as regional and local authorities and provides a commitment and framework for the up- and reskilling of 5% of the automotive workforce annually by 2030 (Automotive Skills Alliance, 2020). Actions include establishing a Skills Hub with over 500 training courses and launching a Regional Skills Partnership for the Automotive Regions' Twin Transition (European Commission, 2025). This partnership aims to identify emerging skills needs linked to the green and digital transitions, strengthen cooperation across regions, align training more closely with labour market demand, and raise awareness of available funding opportunities. To support workers at risk of unemployment, the Commission also launched a Skills Guarantee Pilot (budget EUR 14.5 million), running from July 2026 for up to 24 months (European Commission, 2026). The pilot tests different job-to-job transition schemes to enable workers to transition to companies in growing sectors. It will shape the design of a future large-scale Skills Guarantee under the next EU long-term budget (2028-2034).

The European Commission has also proposed a new Regulation to address growing dependencies on non-EU suppliers in the automotive and other strategic sectors, and to strengthen domestic production capacities (European Commission, 2026). The proposed "Industrial Accelerator Act" aims to ensure that foreign direct investment contributes to the creation of quality jobs and skills development in the EU, among other measures. Specifically, investments exceeding EUR 100 million in electric vehicles, batteries and other emerging sectors from third countries that account for at least 40% of global manufacturing capacity in that sector must guarantee a 50% minimum level of European

employment across all occupational categories. Furthermore, such employment must be accompanied by appropriate training and capacity-building measures.

The EU complements these efforts by providing guidance to Member States and other stakeholders on supporting workers, companies and regions affected by structural change. The 2022 Council Recommendation on ensuring a fair transition towards climate neutrality encourages measures to facilitate job-to-job transitions and up- and re-skilling efforts (Council of the European Union, 2022). A 2025 progress review of the Recommendation's implementation highlighted that most Member States have implemented or planned measures in the area of labour market activation and skills development to support workers most affected by the green transition. Nonetheless, further efforts are needed to promote quality job creation in the green economy and strengthen social partner involvement in the implementation of transition measures (Council of the European Union, 2025).

Several EU countries have also introduced specific strategies or programmes to support employment and skills adjustment in the automotive sector. In Germany, programmes under the future fund for the automotive industry (*Zukunftsfonds Automobilindustrie*) combine regional transformation support with upgrading skills and competences in the workforce (Federal Ministry for Economic Affairs and Energy, 2021). France's Strategic Sector Contract for the Automotive Industry (*Contrat stratégique de la filière automobile*) includes actions to anticipate skills needs and support worker reconversion in affected regions (National Industry Council, 2024). In Slovakia (Alliance of Sectoral Councils, 2025) or Czechia (Czech Automotive Industry Association, 2024), strategies to support transformation in employment and skills are often driven by sector- or cluster-level partnerships. At the same time, electromobility has been formalised as a study field in a number of EU countries, including Germany, Czechia, Slovakia, Spain, or Poland (Alliance for Batteries Technology, Training and Skills, 2020).

7. Concluding remarks

The European Union automotive sector has remained broadly resilient, maintaining stable employment and comparatively good job quality despite a long-term decline in manufacturing's share of total employment. Jobs in the sector continue to offer relatively high wages, strong employment security and extensive collective bargaining coverage. At the same time, the sector is undergoing significant structural change: nearly 80% of workers in car manufacturing have experienced a marked change in their working environment. Production has shifted towards Central and Eastern Europe, supply chains have become more integrated yet more exposed to external dependencies - especially

in batteries and advanced electronics - and the workforce is ageing, more educated and increasingly concentrated in higher-skilled roles.

These developments create uneven adjustment pressures across the value chain. Large manufacturers generally have the institutional capacity, training systems and social dialogue structures needed to anticipate and manage restructuring effectively. Smaller suppliers, sales and repair firms and upstream industries face greater constraints, including weaker training provision and lower access to adjustment support: a bit less than half of the supplier workforce navigates substantial workplace transformation without formal training. Losing a job in the automotive sector results in significant and long-lasting earnings losses (a reduction in earnings of 57% in the first year, narrowing to 25% after six years), emphasising the importance of effective support measures combining income support, retraining, and active labour market policies.

The design of training provision matters: programmes that are grounded in the technical profile of automotive workers, delivered through accessible sectoral infrastructure and recognised through portable qualifications, are likely to be more effective than generic provision. Whereas reactive emergency assistance to displaced workers and communities affected by unforeseen restructuring events remains important, authorities should consider making structured retraining pathways proactively available to workers facing restructuring. The rising skill intensity of automotive work, together with the accelerating pace of workplace change, increases the urgency of scalable lifelong-learning systems. Current training infrastructures are concentrated in large manufacturing firms, with significant gaps in training among small and medium enterprises where they are most needed. Expanding sector-wide training alliances, regional skills hubs or accessible public funding could help close these gaps.

Strong collective-bargaining institutions remain an important asset for managing transitions, and extending effective social dialogue to less-unionised parts of the supply chain would improve adjustment outcomes. Social partners can help anticipating change and improving the relevance and reach of training initiatives. Ensuring that automotive workers have access to the skills, support and protections required is essential not only for fairness but also for the sector's long-term competitiveness.

Three further avenues extend beyond adjustment within the sector itself. The first is the reorientation of parts of the industrial base towards sectors where demand is growing. Some EU countries are already pursuing this, including towards defence. France and Germany are implementing concrete initiatives to repurpose specific facilities, redeploy skilled workers and integrate civilian suppliers into defence value chains. In Germany, firm-level investments and industry-led conversions are already under way. In France, direct state coordination has been combined with binding contracts to scale up output in areas such as ammunition, armoured vehicles and emerging defence technologies. While the skill base of the automotive workforce makes such transitions feasible in principle, they also

raise important practical considerations relating to work organisation and culture, managerial practices and workers' preferences. These dimensions merit careful attention as reorientation efforts are scaled up.

The second concerns how mobility demand itself evolves, which will shape the scale and composition of future automotive employment. Electrification is central to the decarbonisation of road transport, but it is unlikely to take the form of a one-for-one replacement of internal combustion vehicles by electric ones. A move towards smaller and lighter vehicles and towards shared mobility would change both the volume of vehicles produced and the mix of activities required to produce and service them (ITF, 2023; ITF, 2023). The growth of circular activities points in the same direction. Rules that extend vehicle lifetimes through repair, refurbishment and the remanufacturing of components would sustain employment in maintenance and aftermarket activities, which are more geographically dispersed than vehicle assembly and draw on skills profiles that differ from those of the current manufacturing workforce. Anticipating these developments in skills strategies and in social dialogue would allow the sector to treat them as an opportunity to develop new business models rather than only as a further source of adjustment pressure.

The third is the attraction of new investment to strengthen the industrial base and expand the domestic production of electric vehicles and their components, which is essential to the sector's long-term sustainability. Realising this potential depends, in part, on investors being able to rely on labour market frameworks that ensure a sufficient and appropriately skilled workforce. Well-designed active labour market policies, combined with robust training and qualification systems, are therefore not only instruments of worker protection but also key determinants of the investment environment. Reinforcing these frameworks would help maintain and strengthen the European Union's position as a competitive destination for the next generation of automotive investment. All three avenues rest on the same foundation: a workforce whose skills are anticipated, renewed and recognised across the value chain rather than only in its largest firms.

8. References

- ACEA. (2024). *The Automobile Industry Pocket Guide 2024/2025*. Retrieved from <https://www.acea.auto/files/ACEA-Pocket-Guide-2024-2025.pdf>
- ACEA; Adecco. (2025). *The race to reskill. Speeding up the European automotive workforce transition*. Retrieved from <https://www.adeccogroup.com/-/media/Project/Adecco-Group/AdeccoGroup/Automotive-workforce-reports/pdf/TAG-LHH-ACEAReport-updated.pdf>
- Alliance for Batteries Technology, Training and Skills. (2020). *Report on state-of-art of job roles and education in the sector*. Retrieved from https://project-albatts.automotive-skills-alliance.eu/Media/Publications/6/Publications_6_20201011_133916.pdf
- Alliance of Sectoral Councils. (2025). *Stratégia rozvoja ľudských zdrojov v nových demografických, technologických a environmentálnych podmienkach*. Retrieved from https://www.alianciasr.sk/wp-content/uploads/2025/12/SSRLZ-2025_Automotbilovy-priem.-a-strojarstvo_APZD_01.pdf
- Automotive Skills Alliance. (2020). *A Skills Partnership for the Automotive Ecosystem*. Retrieved from https://automotive-skills-alliance.eu/pact_for_skills/
- Barreto, C., Fluchtmann, J., Hijzen, A., Lombardi, S., Bennett, P., Bertheau, A., . . . Vejlin, R. (2024). The “clean energy transition” and the cost of job displacement in energy-intensive industries. In *OECD Social, Employment and Migration Working Papers*. OECD Publishing, Paris. doi:10.1787/abf614d1-en
- Cazes, S., Hijzen, A., & Saint-Martin, A. (2015). Measuring and Assessing Job Quality: The OECD Job Quality Framework. In *OECD Social, Employment and Migration Working Papers* (Vol. 2015). OECD Publishing, Paris. doi:10.1787/5jrp02kpw1mr-en
- Council of the European Union. (2022). *Council Recommendation on ensuring a fair transition towards climate neutrality*. Retrieved from [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022H0627\(04\)](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022H0627(04))
- Council of the European Union. (2025). *Key messages from EMCO and SPC on the implementation of the Council Recommendation on ensuring a fair transition towards climate neutrality*. Retrieved from <https://data.consilium.europa.eu/doc/document/ST-14891-2025-INIT/en/pdf>

- Czech Automotive Industry Association. (2024). *Strategický dokument doporučení pro zlepšení agendy celoživotního vzdělávání v automobilovém průmyslu České republiky*. Retrieved from <https://autosap.cz/wp-content/uploads/2024/06/fast-strategicky-dokument-cz.pdf>
- de Soyres, F., Fisgin, E., & Gaillard, A. (2025). *From partner to rival: The sectoral evolution of China's trade*. Retrieved from <https://cepr.org/voxeu/columns/partner-rival-sectoral-evolution-chinas-trade>
- Eurofound. (2025). *Crisis in the EU automotive industry: Remaining competitive amid the twin transitions*. doi:10.2806/6972911
- European Commission. (2024). *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions. A Competitiveness Compass for the EU*. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52025DC0030>
- European Commission. (2025). *Boosting the European car sector*. Retrieved from https://commission.europa.eu/topics/business-and-industry/boosting-european-car-sector_en
- European Commission. (2025). *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Industrial Action Plan for the European automotive sector*. Retrieved from https://transport.ec.europa.eu/document/download/89b3143e-09b6-4ae6-a826-932b90ed0816_en
- European Commission. (2025). *Mapping the impact of industrial decline on European regions*. Luxembourg: Publications Office of the European Union. doi:10.2873/0801182
- European Commission. (2025). *Regional Skills Partnership for the Automotive Regions' Twin Transition*. Retrieved from https://pact-for-skills.ec.europa.eu/about/regional-skills-partnerships/regional-skills-partnership-automotive-regions-twin-transition_en
- European Commission. (2026). *European Fair Transition Observatory*. Retrieved from <https://www.youtube.com/watch?v=LMkPce5vxBA>
- European Commission. (2026). *European Globalisation Adjustment Fund for Displaced Workers (EGF)*. Retrieved from https://employment-social-affairs.ec.europa.eu/policies-and-activities/funding/european-globalisation-adjustment-fund-displaced-workers-egf_en

- European Commission. (2026). *European Skills Guarantee*. Retrieved from https://employment-social-affairs.ec.europa.eu/policies-and-activities/skills-and-qualifications/union-skills/european-skills-guarantee_en
- European Commission. (2026). *European Social Fund Plus*. Retrieved from <https://european-social-fund-plus.ec.europa.eu/en>
- European Commission. (2026). *Proposal for a regulation of the European Parliament and of the Council establishing a framework of measures for the acceleration of industrial capacity and decarbonisation in strategic sectors*. Retrieved from https://single-market-economy.ec.europa.eu/document/download/9bc8eb85-4d43-4025-be7b-c86b9f3648ec_en
- Federal Ministry for Economic Affairs and Energy. (2021). *Bericht des Experten Ausschuss zum Zukunftsfonds Automobilindustrie*. Retrieved from <https://www.bundeswirtschaftsministerium.de/Redaktion/DE/Publikationen/Wirtschaft/bericht-des-experten Ausschuss-zum-zukunftsfonds-automobilindustrie-forderschwerpunkte-fur-den-weg-in-die-mobilitat-der-zukunft.html>
- Grjebine, T., Lefebvre, P., & Torres, M. (2026). *L'industrie européenne face au rouleau compresseur chinois*. Haut-commissariat à la Stratégie et au Plan, Paris. Retrieved from <https://www.strategie-plan.gouv.fr/files/files/Publications/2026/2026-02-09%20-%20Rouleau%20compresseur%20chinois/HCSP-2026-RAPPORT-CHINE-18fevrier15h30FINAL-COUV.pdf>
- ITF. (2021). *Cleaner Vehicles: Achieving a Resilient Technology Transition*. Paris: OECD Publishing. Retrieved from <https://www.itf-oecd.org/cleaner-vehicles-achieving-resilient-technology-transition>
- ITF. (2023). *ITF Transport Outlook 2023*. Paris: OECD Publishing. Retrieved from https://www.oecd.org/en/publications/itf-transport-outlook-2023_b6cc9ad5-en.html
- ITF. (2023). *Shifting the Focus: Smaller Electric Vehicles for Sustainable Cities. International Transport Forum Policy Papers*. Paris: OECD Publishing. Retrieved from https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/09/shifting-the-focus_969b5d03/4f6e22fc-en.pdf
- Lombardi, S., Barreto, C., Hijzen, A., Nordström Skans, O., Bennett, P., Bertheau, A., . . . Mehdi, T. (2026). *Mass layoffs across 15 economies reveal unequal reallocation costs of the green transition*. mimeo.

- National Industry Council. (2024). *Contrat stratégique de la filière automobile*. Retrieved from <https://www.entreprises.gouv.fr/files/files/Entites/CNI/2024/1835-contrat-strategique-de-la-filiere-automobile-vehicules-legers-et-vehicules-lourds-2024-2027.pdf>
- OECD. (2024). OECD Employment Outlook 2024: The Net-Zero Transition and the Labour Market. doi:10.1787/ac8b3538-en
- OECD. (2025). *Membership of unions and employers' organisations, and bargaining coverage: Standing, but losing ground*. OECD Publishing, Paris. doi:10.1787/fe47107c-en

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