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A new pattern among blue-collar and white-collar workers

The latest downturn in the Swedish labour market presents an unusual pattern. The number of people registered as unemployed has increased among white-collar workers, while decreasing among blue-collar workers. This report examines whether the pattern also differs between occupations with varying levels of exposure to generative AI.

KEY FINDINGS:

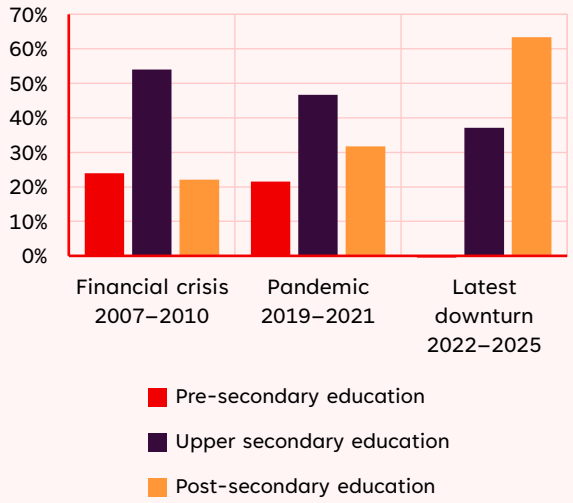
- Between November 2022 and July 2026, the number of people registered as unemployed increased by 45 per cent among white-collar workers and decreased by 6 per cent among blue-collar workers.
- AI exposure is clearly higher in white-collar occupations than in blue-collar occupations.
- Job vacancies have declined more in white-collar occupations than in blue-collar occupations since autumn 2022.
- Blue-collar workers still make up the largest group in the unemployment figures, but the share of white-collar workers has increased from 24 to 33 per cent since November 2022.
- The rise in the number of people registered as unemployed is concentrated in white-collar occupations that are more exposed to AI.

Generative AI has quickly become a key element of the debate on how the labour market might change. Early research has primarily mapped the tasks and jobs that are most exposed to the technology. However, less is known about whether differences in AI exposure are reflected in actual labour market trends.

The most recent economic downturn is particularly interesting in this regard, as the composition of the rise in unemployment differs clearly from previous downturns. Figure 1 compares how the increase in the number of people registered as unemployed was distributed across educational groups. During the financial crisis and the pandemic, people with at most an upper secondary school education accounted for the majority of the increase. In the most recent economic downturn, individuals with post-secondary education account for nearly two-thirds of the increase.

FIGURE 1

Breakdown of increase in unemployment
Three downturns, share of total increase



Source: Swedish Public Employment Service and our own calculations.
Note: The group's contribution is calculated as the change in the group divided by the total change during each period.

The shift in composition coincides with the breakthrough of generative AI. ChatGPT was launched in November 2022, making generative AI accessible to a broad user base. However, Swedish research shows that AI exposure is higher among highly educated and high-income individuals (Gardberg et al. 2024). This raises the question of whether occupations with greater AI exposure have developed differently in the labour market.

Initial studies paint a mixed picture. In the US and Sweden, research indicates weaker employment trends for young people in occupations with higher

AI exposure, while a Finnish study finds no corresponding pattern (Brynjolfsson et al. 2025; Lodefalk et al. 2026; Kauhanen and Rouvinen 2026).

This report examines these trends with a particular focus on the difference between blue-collar and white-collar occupations. The primary aim is to show how unemployment trends since 2022 are distributed both by AI exposure and across different occupational groups. Several of the figures take November 2022 – when ChatGPT was launched – as a reference point. This should not be interpreted as the exact point in time when generative AI may have begun to affect the labour market. Its use has spread gradually since that moment and there may have been a delay on any labour market impacts.

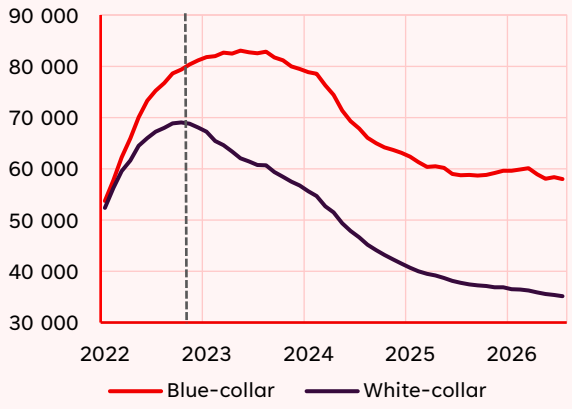
Blue-collar and white-collar workers heading in different directions

In early 2022, the number of newly posted job vacancies was roughly the same for blue-collar and white-collar occupations, but since then the decline has been more pronounced for white-collar workers. Between November 2022 and July 2026, the number of newly posted job vacancies fell by around 49 per cent in white-collar occupations and 28 per cent in blue-collar occupations.

FIGURE 2

Newly posted job vacancies

Blue-collar and white-collar workers, number per month, rolling 12-month average



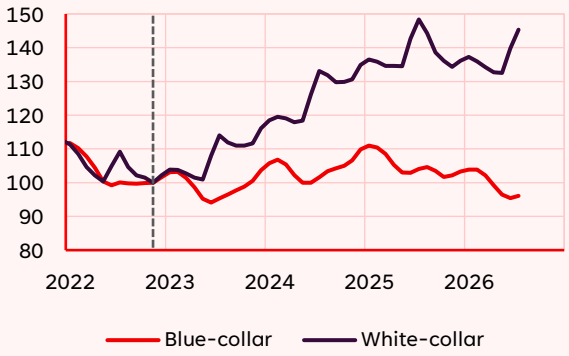
Source: Swedish Public Employment Service and our own calculations.

A similar pattern is evident in unemployment. Up until early 2023, the two groups followed relatively similar trajectories, but since then the number of people registered as unemployed has increased among white-collar workers while decreasing among blue-collar workers. The number of white-collar workers registered as unemployed has risen by 45 per cent since the launch of ChatGPT, while falling by 6 per cent for blue-collar workers. Blue-collar workers still make up the largest group in the unemployment figures, but the share of white-collar workers has increased from 24 to 33 per cent.

FIGURE 3

People registered as unemployed

Blue-collar and white-collar workers, index November 2022 = 100



Source: Swedish Public Employment Service and our own calculations.

How AI exposure is measured

The analysis covers 369 occupations at the four-digit level in the Swedish Standard Classification of Occupations (SSYK). The Swedish Public Employment Service's statistics on newly posted job vacancies and people registered as unemployed have been linked to a research-based measure of exposure to generative AI. Based on the standard classification, the occupations have also been divided into blue-collar and white-collar groups.

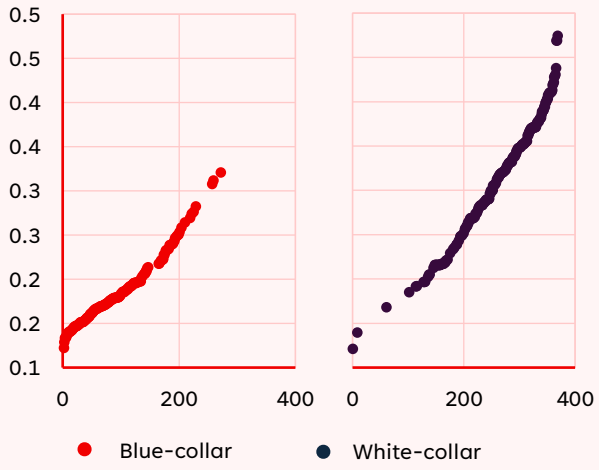
AI exposure is measured using the Dynamic AI Occupational Exposure (DAIOE) index, developed by Engberg et al. (2024). This index describes how AI's capabilities overlap with the capabilities required in various occupations. High exposure thus does not mean that an occupation is likely to be automated or disappear. Statistics Sweden's salary structure statistics are used to describe the number of employees in the various occupations.

As Figure 4 shows, blue-collar and white-collar occupations largely fall into different parts of the exposure scale. High exposure is more common in occupations involving a large amount of text, analysis and information management, while practical and physical occupations typically score lower. Only one blue-collar occupation sits above the median for white-collar occupations.

FIGURE 4

AI exposure by occupation

One occupation per point, sorted from lowest to highest AI exposure



Source: Engberg et al. (2024) and our own calculations.
Note: Occupations with identical raw values are listed as separate points. The metric describes exposure to generative AI, not the probability that an occupation will be automated or disappear.

The occupations are then divided into four roughly equal groups, from quartile 1 (Q1) with the lowest exposure to Q4 with the highest. The difference between blue-collar and white-collar occupations is clear. Q4 contains no blue-collar occupations, while 90 of the 93 occupations in Q1 are blue-collar occupations.

TABLE 1

Composition of the exposure groups

Exposure group	No. of occupations	Blue-collar	White-collar	No. of employees
Q1	93	90	3	718 000
Q2	92	59	33	1 265 000
Q3	92	18	74	824 000
Q4	92	0	92	1 185 000

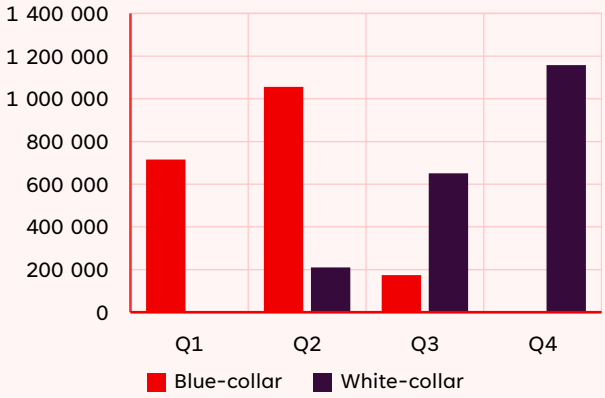
Source: Swedish Public Employment Service, Engberg et al. (2024), Statistics Sweden (SCB) and our own calculations.
Note: Data on the number of employees is missing for 77 occupations due to confidentiality in Statistics Sweden's salary structure statistics.

The difference persists when the occupations are weighted by the number of employees. Around 91 per cent of blue-collar workers are in Q1–Q2, while about 90 per cent of white-collar workers fall into Q3–Q4.

FIGURE 5

Number of employees by exposure level

Blue-collar and white-collar workers



Source: Engberg et al. (2024), Statistics Sweden (SCB) and our own calculations.

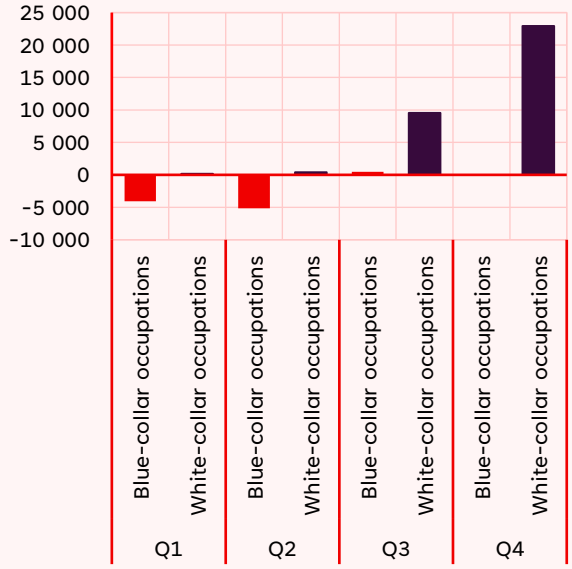
Unemployment rising in white-collar occupations with higher AI exposure

When the trend is broken down by both AI exposure and occupational group, the differences become clear. Among white-collar workers, unemployment has increased most in the more AI-exposed groups, Q3 and Q4. For blue-collar workers, the trend is in the opposite direction: the number of people registered as unemployed has fallen by a total of just over 9,200 in Q1 and Q2, while Q3 remains roughly unchanged. Of the total increase in the groups where unemployment is rising, 68 per cent is accounted for by white-collar workers in Q4.

FIGURE 6

People registered as unemployed by AI exposure and occupational group

Number of people, November 2022–July 2026



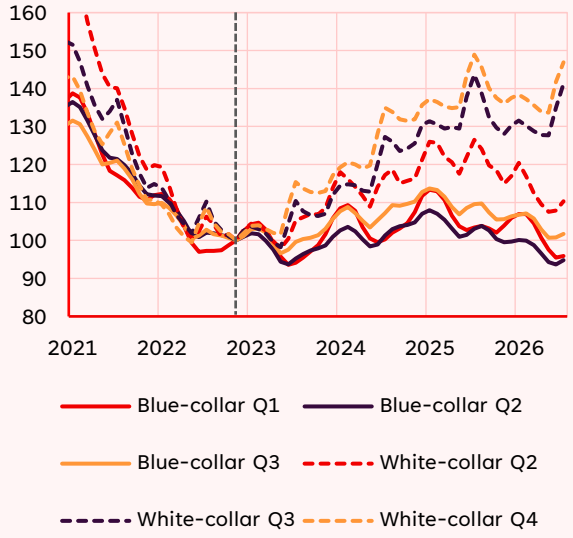
Source: Swedish Public Employment Service, Engberg et al. (2024) and our own calculations.

Since November 2022, the number of white-collar workers registered as unemployed has increased by around 10 per cent in Q2, 41 per cent in Q3 and 47 per cent in Q4. Among blue-collar workers, however, the numbers are down by about 4–5 per cent in Q1 and Q2, and up by just under 2 per cent in Q3.

FIGURE 7

People registered as unemployed by AI exposure and occupational group

Index November 2022 = 100



Source: Swedish Public Employment Service, Engberg et al. (2024) and our own calculations.
Note: White-collar occupations in Q1 are not reported because the group comprised only three occupations and just over 100 unemployed individuals at the reference date. Q4 does not have any blue-collar occupations.

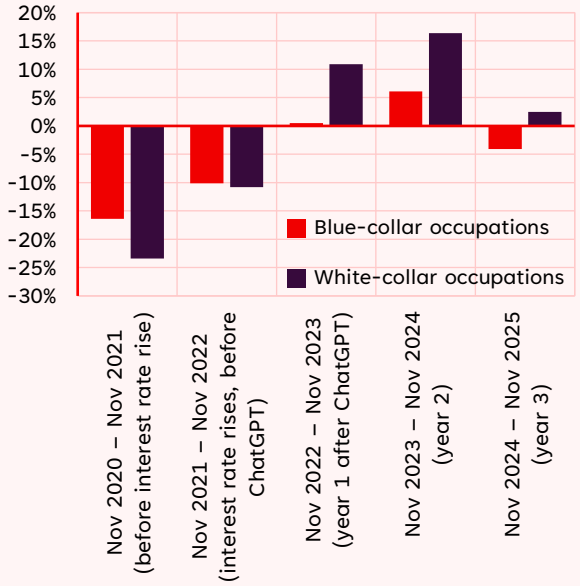
Over the year leading up to November 2022, the number of people registered as unemployed fell by around 10 per cent in both the blue-collar and white-collar groups. The following year, the number remained largely unchanged for blue-collar workers but rose by 11 per cent among white-collar workers. The increases were then 6 per cent and 16 per cent, respectively, in the subsequent years. The difference between the groups had therefore not yet emerged at the point when ChatGPT was launched. However, this does not explain what caused the later trend. Similar differences are evident among the exposure groups.[1]

[1] The exposure groups are not shown in Figure 8. Between November 2021 and November 2022, unemployment fell by around 10 per cent in both Q1 and Q4. The following year, it increased by 2 per cent in Q1 and 13 per cent in Q4.

FIGURE 8

Change in the number of people registered as unemployed

November to November, per cent



Source: Swedish Public Employment Service and our own calculations.

Conclusions

The recent deterioration in the labour market has a different composition from previous crises. AI exposure is clearly higher in white-collar occupations, and the increase in the number of people registered as unemployed since autumn 2022 is particularly concentrated among white-collar workers in the groups most exposed to AI. The number of newly posted job vacancies has also declined more sharply in white-collar occupations.

However, it is not possible to determine what role AI has played in this development. The breakthrough of generative AI coincides with a weaker economic cycle, and research to date paints a mixed picture. High AI exposure also does not necessarily mean that an occupation is going to disappear. The technology is capable of both replacing and complementing workplace tasks.

LO takes a generally positive view of technological advances, but the transition must be accompanied by job security, skills development and trade union influence. Changing career path over the course of a person's working life also needs to be made easier. Vocational training must meet the needs of the labour market, higher vocational education must be expanded, and the social partners must have a strong say in the content and quality of the educational programmes.

References

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The Swedish Trade Union Confederation, LO, is the central organisation for 13 affiliates which organise 1.3 million workers within both the private and the public sectors.