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Firm Data on AI*

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We survey nearly 6,000 senior business executives at US, UK, German, and Australian firms to develop new evidence on AI adoption and its effects on jobs, productivity, and output. Specifically, we ask executives about AI usage, its effects at their own firms over the past three years and, looking ahead, what they anticipate over the next three years. We find four main results. First, 69% of firms actively use AI, with higher usage rates at younger and more productive firms. Second, more than two thirds of executives regularly use AI, but their usage rate averages only 1.5 hours a week. Third, executives report little own-firm impact of AI over the *last 3 years*, with nine-in-ten reporting no impact on employment or productivity. Fourth, these same executives predict sizable effects over the *next 3 years*, predicting that AI will boost productivity at their firms by an average of 1.4%, raise output 0.8%, and cut employment 0.7%. In contrast, employees anticipate that AI will *raise* employment 0.5% at their firms in the next 3 years, highlighting an expectations gap between employers and employees.

Keywords: artificial intelligence, productivity, jobs, firms, survey data

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1. Introduction

How widespread is the adoption of artificial intelligence (AI) technologies in commercial enterprises? How have these technologies affected productivity, employment, and output in a broad cross section of firms? And how will AI affect productivity, employment, and output in the next few years?

To address these questions, we exploit new data based on surveys of our own design. Our samples cover senior business executives at nearly 6,000 firms in the United States, United Kingdom, Germany, and Australia. To elicit high response rates from executives, we collaborate with central banks in their respective countries. To facilitate comparisons across countries, we put the same questions to executives in each country. To compare the perceptions and expectations of executives with those of workers, we also put the same questions to employees in the United States. Our survey collections offer insights into the workplace diffusion of AI technologies and their effects.

News coverage of AI and the economy has exploded since 2022 (Figure 1). This pattern reflects a tremendous surge of interest in the economic and social ramifications of AI. Previous research draws on data derived from surveys, job postings, and other sources to estimate AI adoption rates. These estimates differ by more than a factor of ten across recent studies, underscoring the importance of measurement challenges related to sample size, representativeness, question design, and respondent incentives. Few sources capture the views of senior business executives, who have the best line of sight on how AI will affect their own firms in the next few years.

Forecasting the consequences of new AI technologies is a deeply challenging prediction problem. First, AI-related developments are unfolding in a highly non-stationary setting. Extrapolations from the recent past, even sophisticated ones, are prone to major errors. Second, some observers think AI technologies are unprecedented in the extent to which they will drive rapid transformations in how we work, produce, and live. That view argues for caution in forming predictions grounded mainly in historical analogies. A similar point holds for predictions grounded in theoretical models that lack compelling foundations in suitable data. Third, no one — including technologists, AI firms, and professional forecasters — possesses the information and expertise needed to independently predict how AI technologies and their effects will play out in all corners of the economy. The relevant information and expertise are highly dispersed. Fourth, and more constructively, **some people** have useful information and expertise on how AI adoption and its effects are likely to play out in their own corners of the

economy. In particular, senior business executives are likely to have informed views about their own firms.

Our prediction strategy exploits this last observation. Specifically, we ask senior business executives about AI usage and its effects **at their own firms** over the past three years and, **looking ahead**, what they anticipate over the next three years. We then aggregate their responses. Working with teams at the Federal Reserve Bank of Atlanta, Bank of England, Deutsche Bundesbank, and Macquarie University, we fielded parallel survey questions to broad samples of senior executives between November 2025 and January 2026. Our aim is to collect high-quality, representative data on AI usage and to understand its (future) effects.

Our survey data collection efforts yield four main results.

First, AI technologies are already in wide use. On average across our four countries, 69% of businesses currently use AI. The most common uses are ‘text generation using large language models,’ followed by ‘visual content creation’ and ‘data processing using machine learning.’ Larger, more productive, and higher-paying firms are more likely to deploy AI technologies. Older firms and those with older directors have lower usage rates. Looking ahead, 75% of executives expect their firms to use some forms of AI in the next three years.

Second, over two-thirds of survey respondents (mostly CEOs, CFOs, and senior finance managers) themselves use AI technologies in a typical work week, with an average usage of 1.5 hours per week. Usage rates have risen since early 2025 and are higher at better-paying firms and those with younger directors. CEOs are more likely to use AI than CFOs and other senior executives.

Third, most executives report small effects thus far on own-firm employment and productivity. More than 90% report no impact of AI on own-firm employment over the past three years, and 89% report no impact on labor productivity (sales per employee). A small percentage of executives report positive productivity effects to date.

Fourth, executives anticipate much larger future effects on their businesses. They expect AI technologies to raise productivity by 1.4%, on average, over the next three years. If correct, this prediction implies a sizable improvement relative to a long period of weak productivity growth in many advanced economies (Bloom et al. 2020, and Goldin et al. 2024). Executives at larger and higher-paying firms anticipate greater productivity gains from AI, as do those in the information, communications and administrative support sectors. US business executives

foresee a stronger AI productivity boost – 2.25% over the next three years – than executives in other countries we cover.

At the same time, executives expect AI to reduce own-firm employment by 0.7%, on average, over the next three years. That’s equivalent to about 1.75 million fewer jobs by 2028 across our four countries. Large-firm executives anticipate greater negative effects on employment, as do those in accommodation, food services, wholesale, and retail sectors. Of course, AI technologies can also raise employment at new firms, and firms yet to open, which are outside the scope of our sample frames.¹ Moreover, we don’t ask executives to forecast the equilibrium employment effects of the higher real incomes that productivity gains generate in the form of greater profits, higher real wages, or lower prices and better products. Our survey-based employment predictions should be understood in this light.

Related Literature: Our paper contributes to four literatures on AI technologies and their effects.

First, we build on studies that measure AI adoption. Earlier works yield a wide range of estimates, likely owing to differences in survey timing, question wording, sample mix, and respondent characteristics and incentives. Drawing on the 2019 US Annual Business Survey, Acemoglu et al. (2022) and McElheran et al. (2024) estimate that 3% of firms and 13% of workers use AI. Drawing on the US Business Trends and Outlook Survey (BTOS), Bonney et al. (2024) estimate that 5% of businesses (9% employment-weighted) use AI as of February 2024.² McKinsey (2025) estimates that 88% of organizations use AI in at least one business function as of 2025. Estimated AI adoption rates for the UK also vary widely. According to the Management and Expectations Survey, 9% of firms use AI as of 2023 (ONS 2025). An Institute of Directors survey (2025) finds that 49% of businesses use AI as of 2025, while an LSE-CBI survey finds that 25% of firms made specific investments in AI technologies by 2024 (Oliveira-Cunha 2024).

We ask business executives about AI usage and its effects at their own firms, a topic on which they have incentives to be well informed. We also lean on long-standing relationships between

¹ Since 2021, U.S. business formation rates – and derived projections of new employer businesses – have greatly outpaced their pre-pandemic counterparts. See, for example, the U.S. Census Bureau series on projected new employer business at <https://fred.stlouisfed.org/series/BFPBF4QTOTALSAUS>. This measure of new employer business has risen further since early 2025.

² As of December 2025, adoption rates in the BTOS have risen to 18% of businesses and are expected to rise to 21% over the ensuing six months. See <https://www.census.gov/hfp/btos/data>

central banks and business executives, and the desire of executives to maintain them. These features of our approach help us enlist a representative sample of senior business executives who are well positioned to supply informed responses to our survey questions.

We also contribute to a second literature that measures AI take-up rates across individuals. Bick et al. (2024), Hartley et al. (2025), Barrero et al. (2025), Sidoti and McClain (2025) and Bloom and Makridis (2026) all estimate individual AI usage rates at around 50%. Roughly half of this usage is work-related, and half is for other purposes.

A third literature considers the realized and expected impact of AI technologies on businesses and the economy. Some studies find large productivity gains from AI in specific settings. Brynjolfsson et al. (2025a) find that generative AI yields large gains among customer-support agents at a large software firm. del Rio-Chanona et al. (2025) review several studies that report large gains from generative AI in various settings. Noy and Zhang (2023) conduct an RCT and find that access to ChatGPT boosts productivity in writing assignments.³ Babina et al. (2024a) link AI investment to product innovation and greater firm value, and Eisfeldt et al. (forthcoming) find a 5% relative value gain at firms with highly AI-exposed workforces in the two weeks after ChatGPT's release. Babina et al. (2024b) develop evidence that AI investments expand firm-level growth options.

Despite large gains associated with AI in specific tasks and certain firms, the implications for economy-wide productivity are unclear. Adopting a task-based model and applying Hulten's Theorem, Acemoglu (2025) estimates that AI technologies will boost US total factor productivity by at most 0.66% over the next ten years. In sharp contrast, Briggs and Kodnani (2023) estimate that generative AI alone can boost US labor productivity by 1.5 percentage points per year over ten years. Misch et al. (2025), adopting the framework of Acemoglu (2025), estimate that AI will boost TFP in Europe by around 1.1% over five years.

Finally, we contribute to a literature on the labor market implications of AI. Survey evidence points to modest AI effects to date on overall employment (e.g., Abel et al. 2024, Cañas and Kerr 2024), with larger effects in certain occupations and age groups. Using ADP payroll data, Brynjolfsson et al. (2025b) estimate that generative AI has reduced the relative employment of young Americans (ages 22-25) by 16% in the most AI-exposed occupations, conditional on

³ Other research finds productivity gains from AI in legal analysis (Choi and Schwarcz 2025), consulting work (Dell'Acqua et al. 2023), and programming (Peng et al. 2023 and Cui et al. 2025)

firm-level shocks. Teutloff et al. (2025) develop evidence that ChatGPT shifted the structure of demand for freelance work, lowering the demand for writing and translation tasks by 20-50% while raising the demand for machine learning programming by 24%. Humlum and Vestergaard (2025) estimate near-zero effects of AI-powered chatbots on earnings and employment at the level of workers and workplaces in Denmark as of 2024.

The next section describes our main data sources. Section 3 validates our data, showing a tight relationship between our survey-based measures and national aggregates. Section 4 presents our results on firm-level AI adoption, AI usage rates by business executives, backward-looking assessments of AI effects on firm-level outcomes, and executive forecasts of how AI technologies will affect outcomes at their firms in the next three years. Section 5 presents perceptions and forecasts based on surveys of employees. Section 6 concludes.

2. Our Surveys of Business Executives

We now provide an overview of our surveys of business executives in the United States, United Kingdom, Germany, and Australia. Section 5 covers our employee survey.

The US Survey of Business Uncertainty (SBU)

The Survey of Business Uncertainty (SBU), fielded by the Federal Reserve Bank of Atlanta, is a monthly online panel survey of senior executives at US firms.⁴ The SBU aims to cover a broadly representative sample of firms across US regions, industries, and size categories. Potential survey participants are initially identified using proprietary and public sources of information, then recruited by telephone to confirm their position and company, and finally moved into the survey panel. Sponsorship by the Atlanta Fed greatly facilitates the recruitment of senior executives. Figure 2, Panel A shows that 70% of respondents are CEOs, CFOs or other senior managers, while Figure A1 shows the close match of SBU coverage to all US firms and across industries and Census geographic divisions.

First established in 2014, the SBU yields about 1,000 survey responses per month as of 2026. Core survey modules ask each executive about current, past, and future own-firm employment and sales revenue growth. Forward-looking questions elicit subjective probability distributions for these outcomes over the next year. Thus, SBU respondents are accustomed to providing complex forecasts in their survey responses. See Altig et al. (2022) for details and an extended

⁴ <https://www.atlantafed.org/research/surveys/business-uncertainty>

analysis of forecast characteristics and performance.

In addition to the core modules, each monthly edition of the SBU includes special questions on a topic of interest. The November 2025 edition contains several questions on AI adoption and usage intensity, the effects of AI on own-firm employment and productivity in the past three years, and expected own-firm effects of AI over the next three years. Figure B1 presents screenshots of these questions.

SBU respondents do not receive any monetary or in-kind compensation for joining the panel or completing the surveys. They are motivated to participate to share their views, maintain their relationships with the Federal Reserve System, receive information about the survey results, and perhaps out of a sense of civic responsibility. We view these motivations as a design feature. A challenge with paid online surveys of targeted populations, like senior executives, is that they can generate high impostor shares – as high as 80% according to Chandler and Paolacci (2017). See, also, Bell and Gift (2021). In contrast, the SBU is unpaid and respondent identities are verified by Atlanta Fed staff.

The UK Decision Maker Panel (DMP)

The Decision Maker Panel (DMP) is a monthly online panel survey of UK business executives.⁵ It is an economy-wide survey and matches the industry composition of the UK economy (Appendix Figure A2). Launched in 2016, the Bank of England runs the DMP. Since 2022, the DMP yields about 2,500 survey responses per month. Like the SBU, interviewees are unpaid and are initially recruited by telephone to confirm their position and company, and then moved into the survey panel.⁶ Sponsorship by the Bank of England greatly facilitates the recruitment of senior executives. Over 90% of respondents are either CFOs, CEOs, or in other senior management positions (Figure 2, Panel B).

Each month the DMP asks senior executives about the evolution of sales, prices, employment, wages, and capital expenditures at their firm over the past year and expectations for the year ahead. In addition to these standard questions, the DMP regularly includes special questions on topical issues. For further information, see Bunn et al. (2024) who provide a detailed overview of the survey, including the structure, quality checks against other datasets, and

⁵ <https://decisionmakerpanel.co.uk/>

⁶ A team at the University of Nottingham in the UK contacts businesses by phone to invite them to join the panel (Figure B6).

information on how to access the data.

Several DMP editions from February 2025 to January 2026 include questions about the adoption of AI technologies and the impact of AI on their employment and sales per employee (a proxy for productivity). In addition, survey respondents were asked how frequently they personally use AI technologies during the work week (Figure B2).

We match DMP data with firm-level financials in the Bureau van Dijk (BvD) database, which contains basic accounts and directors data for UK companies.⁷ BvD is based on the population of UK firms in Companies House.

The Bundesbank Online Panel of German Firms (BOP-F)

The Bundesbank Online Panel – Firms (BOP-F) is an online survey of a representative panel of firms in Germany. Operated by the Deutsche Bundesbank, Germany’s central bank, the survey began in June 2020. Since July 2021, the BOP-F yields 8,000 to 9,000 survey responses per quarter from the CEOs and CFOs of registered German companies.

The BOP-F sample is drawn from the Business Register, with the sponsorship of the Bundesbank supporting the recruitment of senior executives. Firms from nearly all economic sectors with more than 12,500 EUR annual turnover or at least one employee and a firm address are eligible for inclusion in the sample. See Boddin et al. (2024) for more information about how the sample is drawn.

While the survey operates at a quarterly frequency for any given firm, new responses are collected every month. This is because the survey design follows a rotating panel principle, whereby one third of all new firms in the sample are randomly selected into group A, B, or C, with one group surveyed each month.

The January 2026 BOP-F includes questions on the adoption of AI technologies, AI effects on employment and productivity, and average weekly AI usage by survey respondents. These questions follow analogous SBU and DMP questions (Figure B3), yielding responses from about 2,500 firms.

⁷ Figure A3 shows a very strong relationship between survey data in the DMP on employment and sales to matched annual company accounts data from BvD, an initial indicator of survey response quality.

The Australian Business Outlook Scenarios Survey (BOSS)

The Business Outlook Scenarios Survey (BOSS) is a monthly online survey of Australian business executives.⁸ The BOSS targets senior financial decision makers at a representative sample of Australian firms, covering all locations and industries. CFOs, CEOs, and other senior managers account for 87% of BOSS respondents. The BOSS was established in 2024 by Macquarie University. The BOSS obtains more than 500 responses per month. Questions pertain to one-year-ahead expectations of key macroeconomic variables such as inflation and interest rate and own-firm sales growth, prices, employment, wages and operating cost. BOSS procedures include various data checks to guard against response falsification.

The BOSS survey edition fielded from December 1 to 8 in 2025 included questions on AI adoption, realized and expected AI effects on productivity and employment, and personal AI usage by the respondents. See Figure B4. Executives from 602 firms participated in the December 2025 edition of the BOSS.

3. Data Validation

To validate the quality of our firm survey panels before showing our AI data we run two exercises.

First, in Figure 3 we show how 10 years of data on output and employment from our firm panels compare against aggregate data for the US SBU and UK DMP surveys. Output data from the US survey tracks US GDP growth (top-left) and private employment (top-right), as do UK data when compared to UK GDP growth (bottom-left) and private sector employment (bottom-right). Hence, our surveys are accurate and representative of macro aggregates over the past decade. Their performance is similar across the pre-pandemic period, the COVID recession and recovery, and post-pandemic stabilization. Hence, we are confident that, due to our large representative sample of senior executives, our data reflect aggregate trends across the business cycle.

Second, we show the performance of the sales and employment forecasting questions included in our surveys on a quarterly basis. Once a quarter, executives are asked to forecast their year-ahead (12 months ahead) sales growth and employment growth. One year later we compare

⁸ <https://www.mq.edu.au/macquarie-business-school/our-departments/departments-of-economics/our-research/business-outlook-scenarios-survey-boss>

these forecasts to actual realizations of sales and employment growth for these firms. This enables a large sample evaluation of our survey respondents' forecast accuracy. As we see in Figure 4, our responding executives make accurate forecasts, with sales and employment predictions lining up tightly with realizations occurring over the next year. This positive relationship suggests that our panel is well-equipped to predict the future business conditions for their firms, increasing our confidence in the accuracy of their forecasts of the impact of AI.

4. Main Results

Having established the broad representative nature of our four national firm surveys, and their strong track record in matching aggregate output and employment data and forecasting future growth, we now turn to their responses and predictions regarding AI. We present the overall results which combine firm-level results from each country into one figure, and also provide country-level values. Tables can also be downloaded from <https://bit.ly/3Zrvfs5>

4.1 Current and expected use of AI technologies

We begin by analyzing the current use of AI technologies by businesses. In all four surveys, firms are asked to select which of the following they are currently using, if any: data processing using machine learning; visual content creation; text generation using large language models; image processing using machine learning; robotics; autonomous vehicles; or other. Firms could select more than one technology.

Figure 5 presents the main results. The black bars in the figure correspond to the average across firms in all four surveys, weighted by the sample sizes of the respective surveys. Across all four countries, we find that a majority of businesses are currently using some AI technology. Adoption is highest in the US (78% of firms), followed by the UK (71%), Germany (65%), and Australia (59%). On average, 69% of all firms are currently using AI.

The figure also shows that adoption is not concentrated in a single use case. The most popular current use is 'text generation using LLMs' (by 41% of firms on average), but around 30% of firms also report using data processing using machine learning and visual content creation. Less commonly cited uses were image processing using machine learning (20%), robotics (9% of firms), and autonomous vehicles (3%), which are likely more specific to certain industries.

Adoption of AI technologies has increased since the start of 2025. Figure A4 compares the results on current AI adoption from the UK DMP between February-April 2025 and November

2025 to January 2026.⁹ We find that the use of all technologies has increased. On average, the percentage of businesses using at least one AI technology increased from 61% in February-April 2025 to 71% in November 2025-January 2026. This emphasizes the importance of having consistency in the timing of the questions across data sources during a time when adoption is increasing rapidly across businesses.

We next study the characteristics of firms which predict the current use of AI technologies. In Figure 6, we present a series of binned scatter plots of the relationships between current use of AI (on the vertical axes) and a series of firm characteristics. This figure uses data from the DMP survey, due to the larger sample size and the availability of more firm covariates.¹⁰ We find that more productive (Panel A), larger (Panel B), and higher-paying firms (Panel C) are more likely to be using AI.¹¹ In contrast, in Panels D and E, we show that firms with older directors on average, and older firms are *less* likely to be currently using AI. Use of AI technologies also varies by sector. In Figure A6 Panel A, we show that current AI adoption by UK firms is highest in the finance and insurance and professional and scientific sectors.

In Table 1, we test the robustness of these relationships in a regression table where we combine all the variables in a single specification and also control for industry and time fixed effects. The dependent variable across all columns is a dummy for whether a firm uses any AI technology, scaled by 100 for interpretability. In addition to all the univariate relationships (Columns 1-11), in Columns 12 and 13 we find that the most robust predictors of AI use from Figure 6 are labor productivity, firm employment, average wage per employee, and the average age of directors.¹² We also find that firms with higher average productivity growth in 2025 are more likely to be using some AI technology.¹³

Finally, we consider how firms expect adoption of AI technologies to change over the next

⁹ These national AI surveys will be run twice yearly from 2026 onwards to track the evolution of AI. However, the only survey prior to the current wave was run by the UK.

¹⁰ In Figure A5, we show similar results for a subset of variables from the US SBU. More productive (Panel A) and larger (Panel B) firms are more likely to be using an AI technology in US firms as well.

¹¹ Labor productivity is constructed using firm-level accounts data from BvD as the real gross value-added per employee. The data from the latest accounts available for each firm are used in the figure. The average wage per employee (Panel C) is constructed as the total wage bill per employee, again using accounts data.

¹² We do not include a regression of productivity growth, real sales growth, and employment growth in the same specification because productivity growth is defined in our analysis as real sales growth – employment growth. Running these three variables in the same specification would result in collinearity. Therefore, we split the results into Columns 12 and 13.

¹³ As further robustness, in Table A1 we use as a dependent variable the number of AI technologies currently used instead of a dummy for whether any AI technology is used. The results are consistent across the two specifications.

three years. Figure A7 shows that AI adoption is expected to increase on average. Across all four countries, 75% of firms expect to be using some AI technology over the next three years. Furthermore, we find that the most common technology firms expect to use is data processing using machine learning, suggesting firms are expecting to build capacity to use AI tools for data processing, even if they are not currently used as extensively.¹⁴

Overall, this section highlights that AI use is widespread across businesses in the US, UK, Germany, and Australia. Larger and more productive firms are more likely to be using AI technologies, as are higher-paying businesses. AI adoption has increased since the start of 2025 and is expected to increase over the coming years. One limitation of this analysis is that it only refers to the extensive margin of adoption, but not about how intensively firms are using these technologies or the impact on their businesses. In Sections 4.3 and 4.4, we present new evidence on how firms estimate that AI has been impacting their employment and productivity, and how they expect these effects to change in the next three years.

4.2 Use of AI by survey respondents

In this section, we analyze how frequently the respondents themselves use AI during a typical work week. As these respondents typically hold senior positions in their firms (e.g. CEOs, CFOs, senior finance managers), these results are another useful proxy for AI adoption more broadly since they are in a position to instruct their subordinates to make use of AI as they see the opportunity. They are also less likely to be subject to measurement error, as the respondents are reporting about their personal use, rather than for the business as a whole. The survey asks whether they personally use AI technologies: “Not at all”; “Up to 1 hour a week”; “1 to 5 hours a week”; or “More than 5 hours a week”.

Figure 7 Panel A presents the distribution of responses across these categories for US, UK, German and Australian respondents. Across all firms, only 28% of respondents do not use AI at all during the working week. The modal response is up to 1 hour a week (41%), but more intensive AI use is not uncommon. 24% of respondents report 1-5 hours of AI use per week, and 7% report using AI more than five hours in a typical working week. In Panel B, we assign quantitative values to each of the categories to estimate the average number of hours of AI use. Across all firms, our respondents use AI around 1.5 hours per week on average. These results

¹⁴ AI adoption is also expected to increase across almost all industries over the next 3 years (Figure A6, Panel B)

are similar across all four countries, ranging from 1.7 hours in the US to 1.4 hours in the UK and Germany, and 1.5 hours in Australia.

We next consider how AI use varies with firm-level and respondent characteristics. Figure A8.a presents binned scatterplots with the average weekly AI use on the vertical axis for UK firms. We find that respondents in younger firms use AI technologies more often during the working week (Panel A), as do respondents in firms where the average age of directors is lower (Panel B). These relationships are similar to Figure 6, Panels D and E, where the firm age and average age of directors are shown to be negatively correlated with current AI adoption across the business.¹⁵ Figure A8.b shows that a similar negative relationship is present between firm age and average weekly AI use in US firms as well. In Figure A9 we split the frequency of AI use by the position of the respondent in the business. Specifically, we distinguish between CEOs, CFOs, and other senior executives. In both the US (Panel A) and UK (Panel B), we find that AI is more frequently used by CEOs than other respondents. Finally, in Figure A10 we analyze how the frequency of AI use has changed since the start of 2025. This figure is based on responses to the DMP survey. We find that AI use has increased sharply since the start of 2025. The percentage of respondents who did not use AI at all dropped from 45% to 25%, and the frequency in each of the other categories increased. On average, AI use by senior executives increased by around 50%, from 0.9 hours a week to 1.4 hours a week in less than a year.

4.3 Impact of AI on firm employment

In this section we present results on the impact of AI technologies on firm realized and expected employment. Firms are asked to estimate these impacts using five categories, ranging from a large positive impact (increasing employment by more than 5%) to a large negative impact (decreasing employment by more than 5%). Figure 8 presents the main results over the past three years. In Panel A, we show the distribution of responses across the five categories. Across the four surveys, more than 90% of firms on average estimate no impact over the last three years. This percentage is highest in Germany (95% of firms), followed by the US (89% of firms), UK (89%), and Australia (81%). Among the remaining firms which report some impact, the results are skewed slightly to the negative side in the UK and US, and slightly to the positive

¹⁵ In Table A2 we analyze the determinants of weekly AI use with univariate and multivariate regressions, following the structure presented in the remaining regression tables of the paper. In the most demanding specifications with sector and time fixed effects (Columns 12-13), we find that the average age of directors remains the most significant predictor of average weekly AI use.

in Germany and Australia.

To estimate an average quantitative impact of AI on employment, we assign numerical values to each of the five categories in Panel A. We assign values $\pm 7.5\%$ to large positive/negative impacts; $\pm 2.5\%$ to small positive/negative impacts; and 0% to no impact. In Figure 8, Panel B we present these average impacts. Across all firms, the impact of AI is essentially zero over the past three years. However, there is some heterogeneity across the four countries. In the UK, firms estimate that AI has lowered employment by around 0.14% over the last 3 years. In the US, there is also a small negative average impact at -0.09%. In contrast, in Germany firms estimate that AI has increased employment by 0.07%, and in Australia firms estimate a positive AI employment impact of around 0.32% over the past 3 years.

There is substantial sectoral heterogeneity in the realized employment impacts of AI. Figure A11, Panel A shows the average realized employment impacts from AI across industries in the UK. The impacts vary from positive in the Construction sector (+0.1%) to negative in the Accommodation and Food (-0.4%) and Transport and Storage (-0.4%).

In Figure 9, we present results on how firms expect AI to impact their employment over the next three years. The distribution of responses in Panel A looks markedly different from the realized employment impacts in Figure 8. In Figure 9 Panel A, 63% of all firms expect no impact over the next three years, with the distribution of responses being skewed much more to the negative side. 18% of all firms expect a small negative impact, lowering employment by less than 5%, and 8% expect a large negative impact on employment, greater than 5%. These results are similar across the US and UK. German firms record an expectation of a smaller change (positive or negative) compared to US and UK firms, which may reflect characteristics of the German labor market, but with a higher negative impact expected than a positive impact. In contrast, Australian firms remain more evenly balanced on the expected employment impacts of AI – 16% expect a negative impact and 16% expect a positive impact overall. Panel B of Figure 9 presents the corresponding quantitative estimate on the expected employment impacts of AI. Over the next three years, firms across the four countries expect AI to lower employment by around 0.7%. The largest effects are in the UK (-1.4%), followed by the US (-1.2%). German and Australian firms do not expect AI to have as large an effect on overall employment over the next three years, possibly due to more regulated labor markets.

To gauge how lower employment may be achieved, a sub-sample of UK firms were asked a follow up question about the expected importance of hiring fewer new employees versus

increased exits of existing employees.¹⁶ Around two-thirds of the reduction in employment is expected to come from firms hiring fewer new employees.

There remains heterogeneity across sectors in the expected employment impacts, as we show in Figure A11, Panel B. The expected impacts over the next three years are negative across all sectors of the economy for firms in the UK. The largest negative impacts are in the Accommodation and Food (-1.8%) and Wholesale and Retail (-2%) sectors.¹⁷

Beyond the sectoral differences, we also consider how the expected employment impacts vary with various firm-level characteristics. Table 2 presents the determinants of expected AI employment impacts using univariate and multivariate regressions for UK firms. We use the same set of variables here as those in Table 1 where we analyzed the determinants of current AI adoption. To maximize the sample size, the regressions use the latest firm observation on the expected employment impact using data collected over February-April 2025 and November 2025-January 2026. Focusing on Columns 12-13 which include all the variables as well as industry and time fixed effects, we find that larger firms expect more negative impacts of AI on employment. In contrast, higher realized employment growth in 2025 and higher expected employment growth in 2025 are both associated with *less* negative AI employment impacts.

4.4 Impact of AI on firm productivity

In this section we present results on the impact of AI technologies on firms' realized and expected productivity. The survey questions follow the same structure as the employment impacts. Productivity in this analysis is defined as the volume of sales per employee. Figure 10 presents the main results on realized productivity impacts over the past three years. In Panel A, we show the distribution of responses across the five categories. Across the four surveys, 89% of firms on average estimate no impact over the last three years. This percentage is highest in the US and Germany (91% of firms), followed by the UK (89%), and Australia (79%). Among the remaining firms which report some impact, the results are skewed to the positive across all four countries, indicating some positive impacts in the aggregate.

To estimate an average quantitative impact of AI on productivity, we assign numerical values

¹⁶ This question was included for half of the firms in the DMP survey in January 2026 (one-sixth of the total UK sample), and was only asked to firms who expected AI to lower their employment over the next three years.

¹⁷ The expected impacts of AI on employment have also become more negative since the questions were asked in the beginning of 2025 in the DMP survey. Over February-April, the expected impact on employment was -0.8% over the next three years, compared to the -1.4% expected impact for the same questions over November 2025-January 2026.

to each of the five categories in Panel A. As with the employment impact, we assign values $\pm 7.5\%$ to large positive/negative impacts; $\pm 2.5\%$ to small positive/negative impacts; and 0% to no impact. In Figure 10, Panel B we present these average impacts. Across all firms, AI is reported to have boosted productivity by around 0.29% over the past three years. The effects are very similar across the US, UK, and Germany, ranging from 0.24% to 0.29%. In contrast, in Australia firms estimate a larger positive AI productivity impact so far, at around 0.49% over the past 3 years. Figure A12, Panel A shows a breakdown of the realized AI productivity impacts by industry. These are positive across all industries in the UK. Firms in the Information and Communications and Professional and Scientific sectors report the largest positive productivity impacts from AI so far, at +0.8% and +0.5%, respectively.

In Figure 11, we present results on how firms expect AI to impact their productivity over the next three years. The distribution of responses in Panel A looks markedly different from the realized productivity impacts in Figure 10. 60% of all firms expect no impact over the next three years, with the distribution of responses being clearly skewed to the positive. 25% of all firms expect a small positive impact, increasing productivity by less than 5%, and 12% expect a large positive impact on productivity, greater than 5%. These results are similar across UK, US, German and Australian firms. Panel B of Figure 11 presents the corresponding quantitative estimates on the expected productivity impacts of AI. Over the next three years, firms across the four countries expect AI to increase productivity by an average of around 1.4%. The largest effects are in the US (+2.3%), followed by the UK (+1.9%), Australia (+0.9%), and Germany (+0.9%).

The productivity boost from AI is not expected to be equally distributed across sectors of the economy, as we show in Figure A12, Panel B. The largest impacts are in the information and communications and administrative and support sectors, which expect AI to increase productivity by 2.8% and 2.5% over the next three years, respectively.¹⁸ Much smaller impacts are expected by firms in Accommodation and Food, Construction, and Recreational Services.

As with the expected employment impacts, we also consider how the expected productivity impacts vary with various firm-level characteristics. Table 3 presents the determinants of expected AI productivity impacts using univariate and multivariate regressions for UK firms. We use the same set of variables here as those in Tables 1 and 2 for comparability. As was the

¹⁸ Between February-April 2025 and November 2025-January 2026, the expected productivity impacts of AI over the next three years increased from +1.5% to +1.9%

case for employment, the regressions use the latest firm observation on the expected productivity impact using data collected over February-April 2025 and November 2025-January 2026, which is again 2,793 unique firm observations. Focusing on Columns 12-13 which include all the variables as well as industry and time fixed effects, we find that larger firms, higher-paying firms, and those with higher expected employment growth have more positive expected impacts of AI on productivity.

Overall, the last two sections show that the adoption of AI technologies has had little impact on firm employment and only a small positive impact on firm productivity so far. However, firms anticipate large impacts over the next few years. On average, businesses expect AI to boost productivity by around 1.4% over the next three years, while lowering employment by around 0.7% over the same period. This also implies an increase in output of around 0.8%.

5. Estimated AI impacts by employees

So far, the evidence presented in Section 4 has focused on executives responding on behalf of their businesses. Are the perceived and expected impacts of AI similar across business executives and employees? To answer this, we asked the identical questions to employees using the Survey of Working Arrangements and Attitudes (SWAA).¹⁹ The SWAA is a monthly survey of between 2,500 and 10,000 US residents aged between 20 and 64. Specifically, we asked about the impact of AI on employment and productivity in their current firms over the last three years and looking ahead in the next three years. We also asked employees how frequently they used generative AI in their jobs. These questions were added in the December 2025 SWAA wave. Figure B5 shows screenshots of the questions in the SWAA. Around 3,000 people answered.

We present the main results in Figure 12. In Panel A, we see employees report using AI for about the same amount of time as executives do, averaging around 1.8 hours a week.²⁰ In Panel B we see employees are more optimistic over the last 3 years on the impact of AI on productivity and employment, suggesting this has had a moderately positive impact on both. Strikingly, in Panel C we see employees are far more optimistic than executives on the impact of AI on future employment, while *less* optimistic about the positive productivity impacts. In

¹⁹ <https://wfhresearch.com/data/>

²⁰ The identical question on average AI use was asked in a survey of approximately 2,000 UK employees in December 2025. On average, UK employees reported using AI for about two hours per week, similar to US employees.

particular, employees predict that AI will *increase* employment by approximately 0.5% in their firms over the next three years compared to the prediction from executives that it will *reduce* employment by 0.7% in all firms and 1.2% in US firms. Hence, there appears to be a large gap in the perceptions on the impact of AI, from a view by employees that AI will create jobs versus a view from executives that it will reduce jobs. Likewise, employees expect AI to increase productivity by around 0.9% over the next three years, compared to an expected increase of 1.4% across all firms and 2.3% by US firm executives in particular.

6. Concluding Remarks

Our study presents new evidence on how firms are using AI technologies, as well as their realized and expected effects on employment and productivity. We use survey evidence from four large, economy-wide business surveys – the US Survey of Business Uncertainty, the UK Decision Maker Panel, the German Bundesbank Online Panel - Firms, and the Australian Business Outlook Scenarios Survey – using identical questions asked between November 2025 and January 2026. We began asking AI-related questions in the UK Decision Maker Panel in February 2025, allowing for some evidence on AI developments over time.

We obtain four chief findings. First, AI technologies are currently used by around 70% of businesses, and adoption is expected to increase. Larger, more productive, and higher-paying firms are more likely to be using some AI technology. Second, we show that AI technologies are being actively used by senior survey respondents (typically CEOs, CFOs, and senior finance managers). On average, respondents use AI for around 1.5 hours in a typical working week, and this frequency has increased sharply since the start of 2025. Third, firms estimate that AI has had little impact on their employment so far, and only a modest boost to productivity over the past three years. Finally, firms expect AI to have larger impacts over the medium-term. Over the next three years, firms predict that the adoption of AI will boost productivity by around 1.4%, on average, while reducing employment by around 0.7%. This is in sharp contrast to expectations of employees, who expected higher job creation as a result of AI, along with smaller productivity gains over the next three years. Overall, our approach can be used to monitor the adoption and impacts of AI over time and across multiple countries. We furthermore emphasize the importance of consistency in survey design and timing for obtaining comparable, high-quality results across countries.

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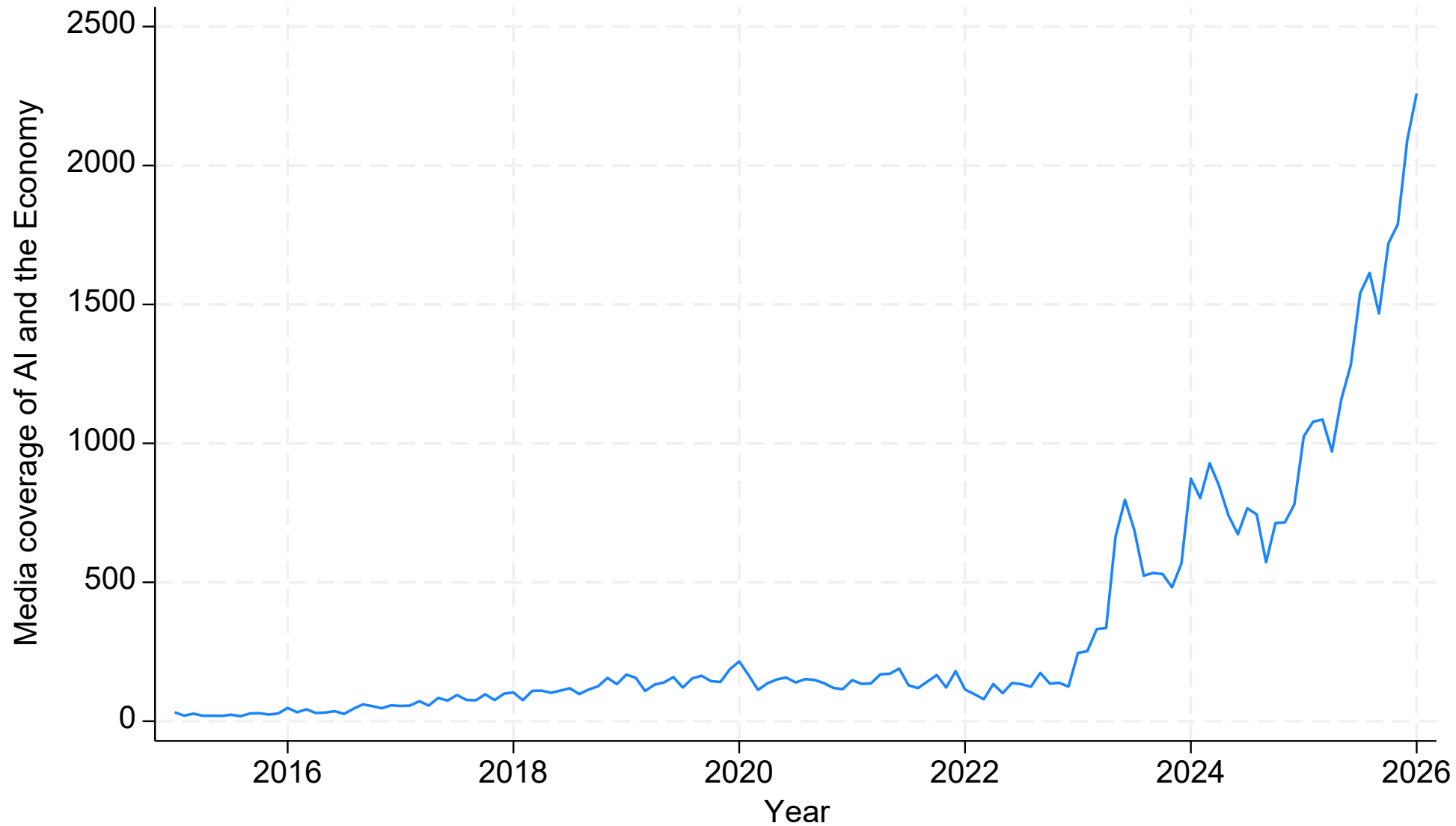
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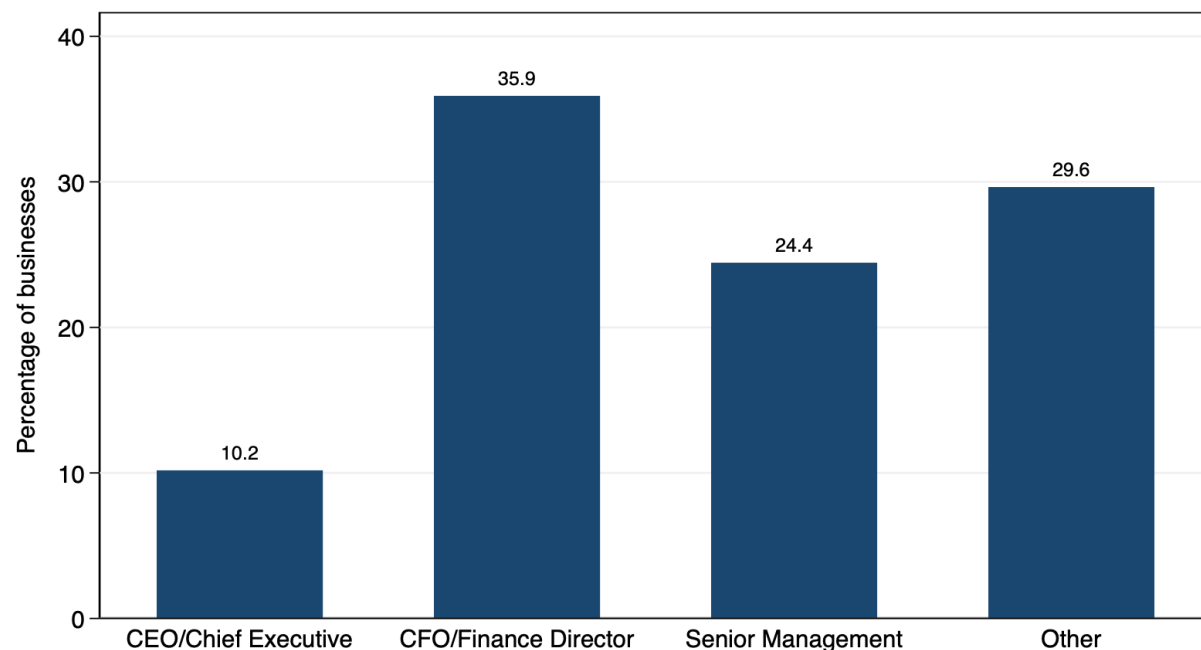
Figure 1 Media coverage of AI and the Economy since 2015



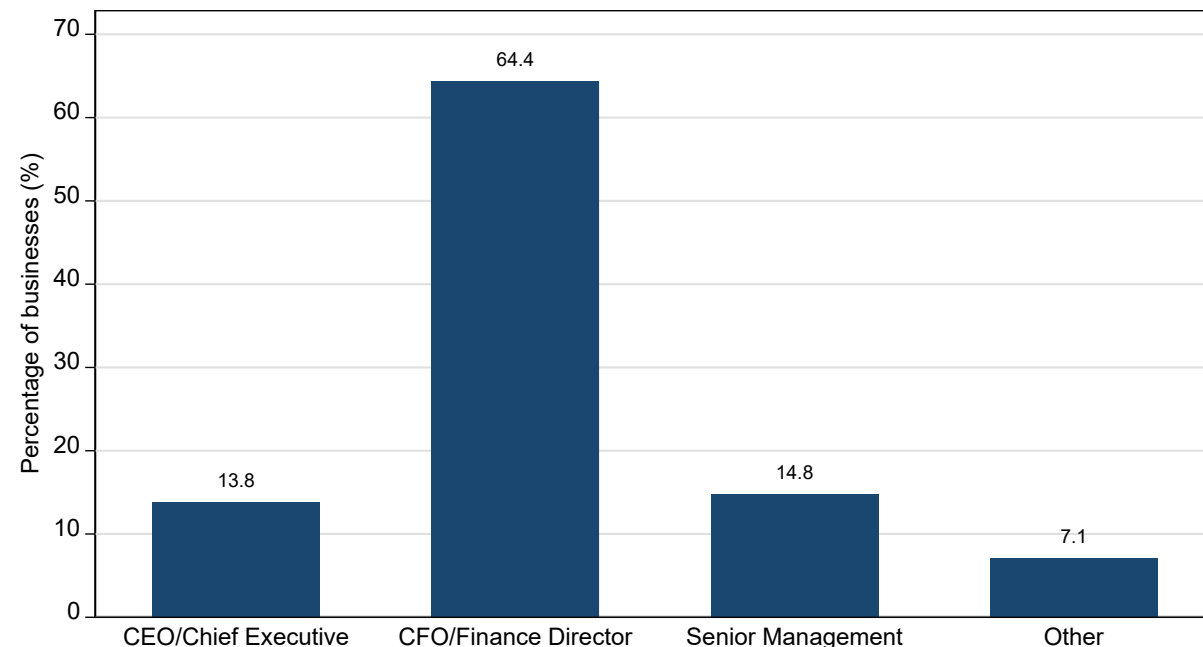
Source: AI Economic Uncertainty Index, measuring the coverage of AI in around 2000 daily newspapers in the US. Normalized to 100 on 2015 to 2021 inclusive. Coverage defined as articles that included (AI, artificial intelligence, genAI, machine learning, computer vision) AND (economic, economy). Based on the methodology of Baker, Bloom and Davis (2016) and provided on www.policyuncertainty.com

Figure 2 Position of respondents within their firm

Panel A US Firms (SBU)



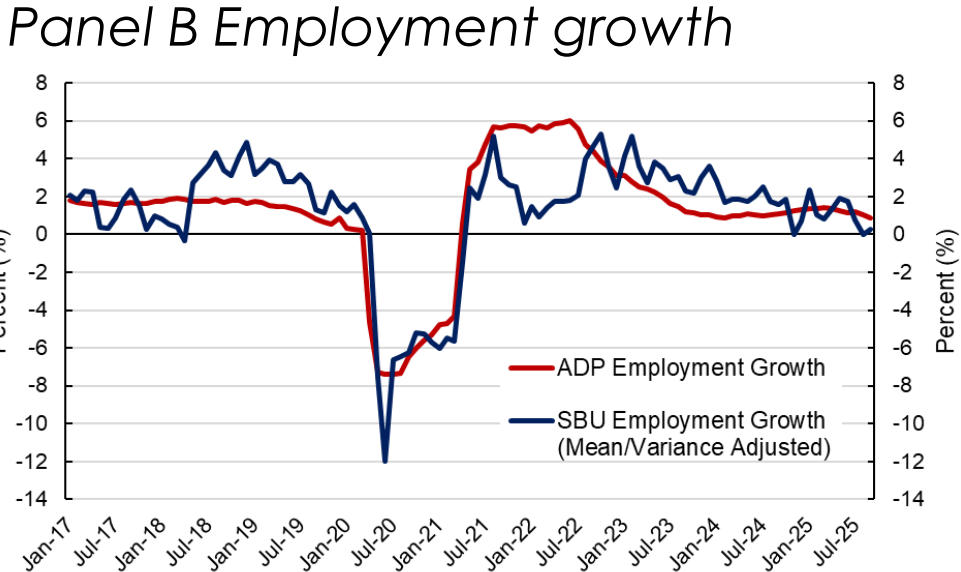
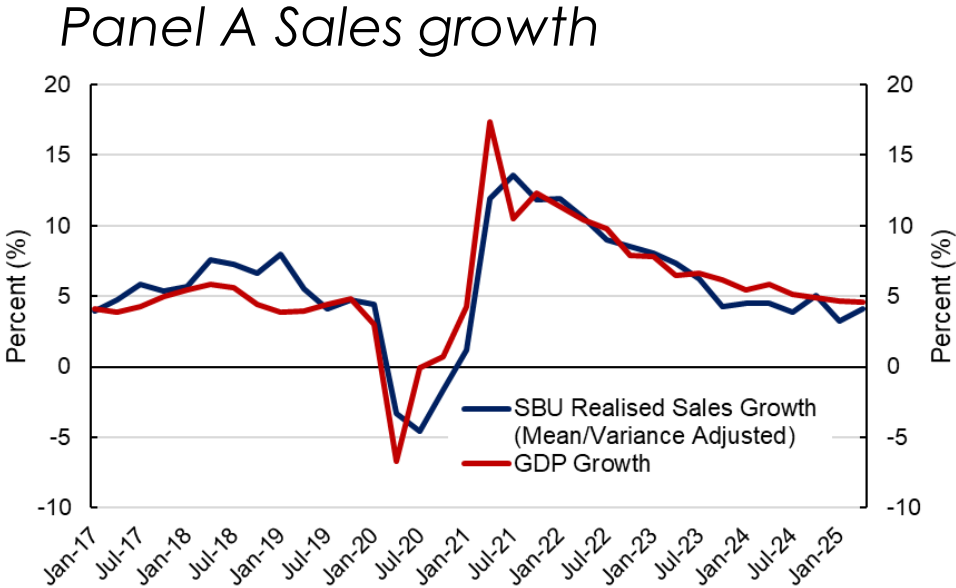
Panel B UK Firms (DMP)



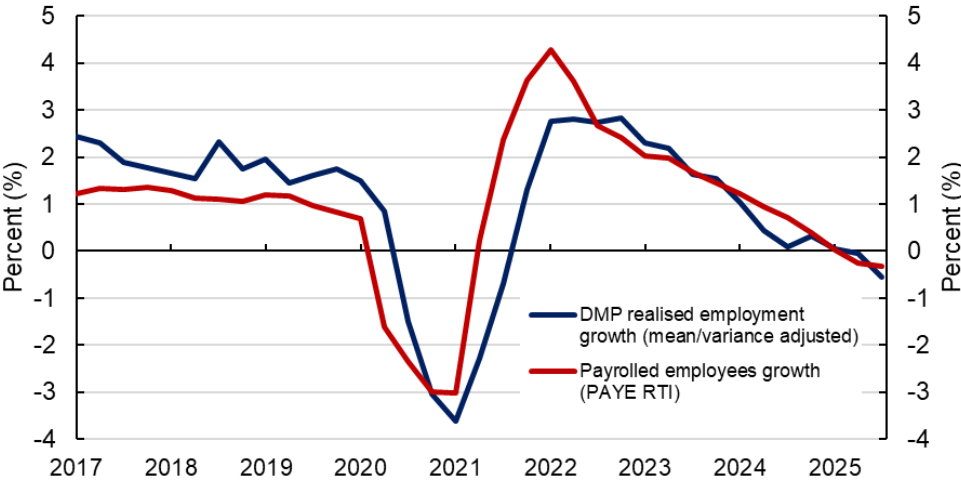
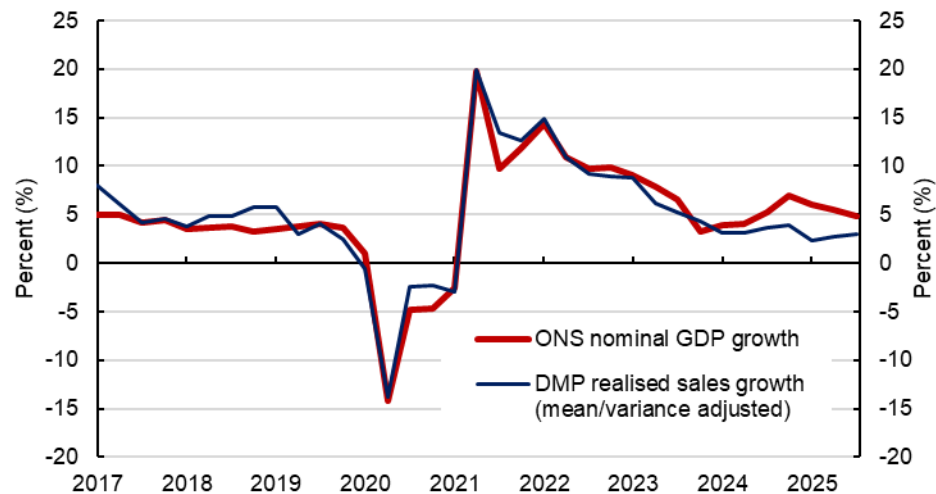
Notes: This figure shows the position of survey respondents. Panel A shows data from the US Survey of Business Uncertainty (SBU), averaged over January 2017 to January 2025. Panel B shows data from the UK Decision Maker Panel (DMP), averaged over 2017-2025.

Figure 3 Firm sales and employment growth vs aggregate statistics

US Firms
(SBU)



UK Firms
(DMP)

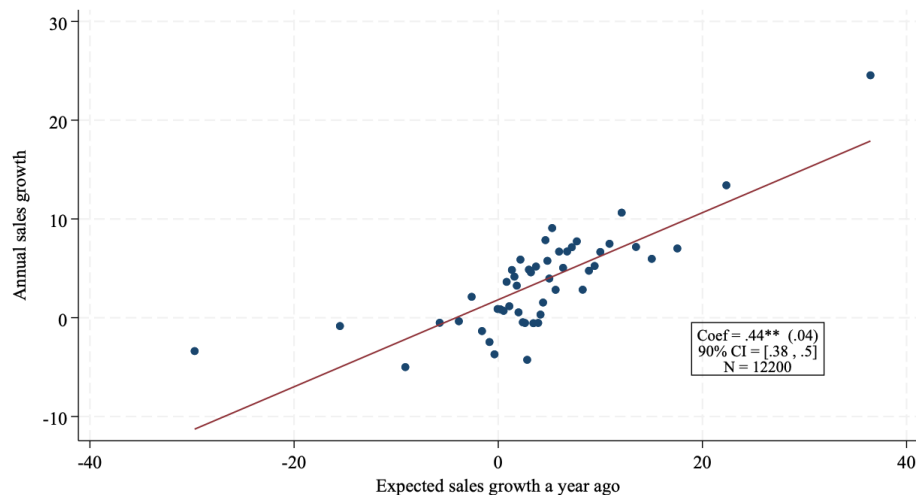


Sources: SBU; ADP; BEA; DMP; ONS; HMRS and authors' calculations. **Notes:** SBU sales data are compared to GDP growth from the BEA. SBU employment growth data are compared to ADP employment growth. DMP sales data are compared to whole economy nominal GDP growth at current market prices. DMP employment (for the private sector) is compared to ONS/HMRC data on the number of payrolled employees. DMP and SBU data are adjusted to match the mean and variance of growth in the corresponding ONS, HMRC, GDP, and ADP series over the time period shown on each chart.

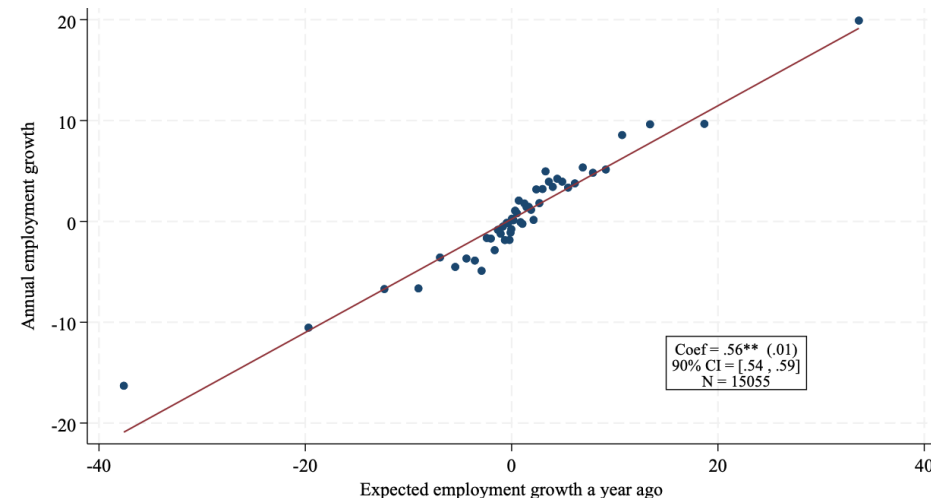
Figure 4 Sales and Employment Forecasts vs Realizations

US Firms
(SBU)

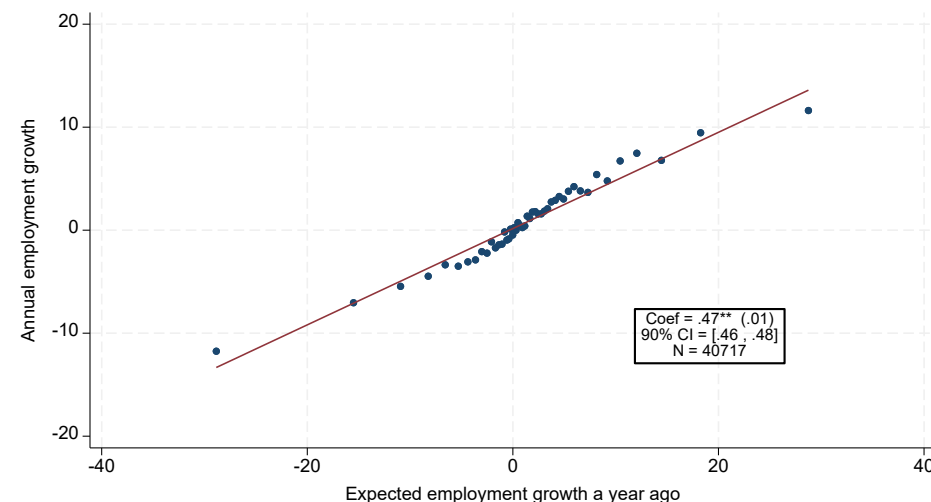
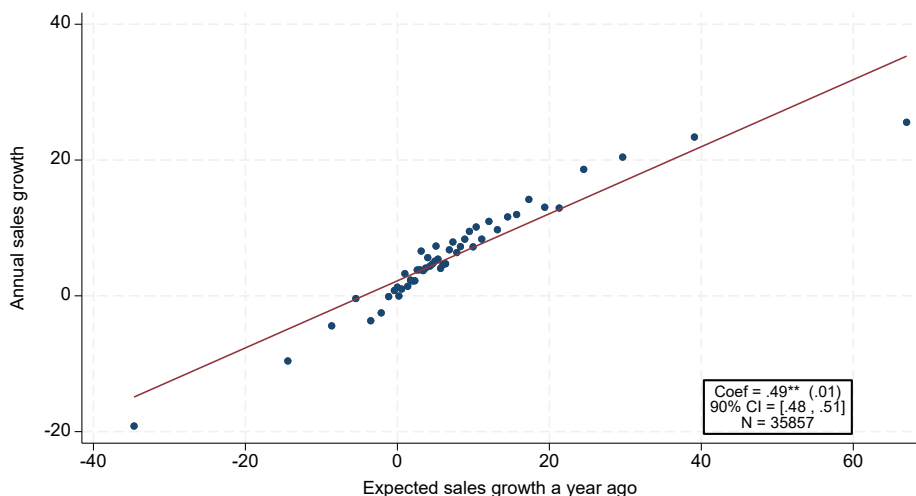
Panel A Sales growth



Panel B Employment growth

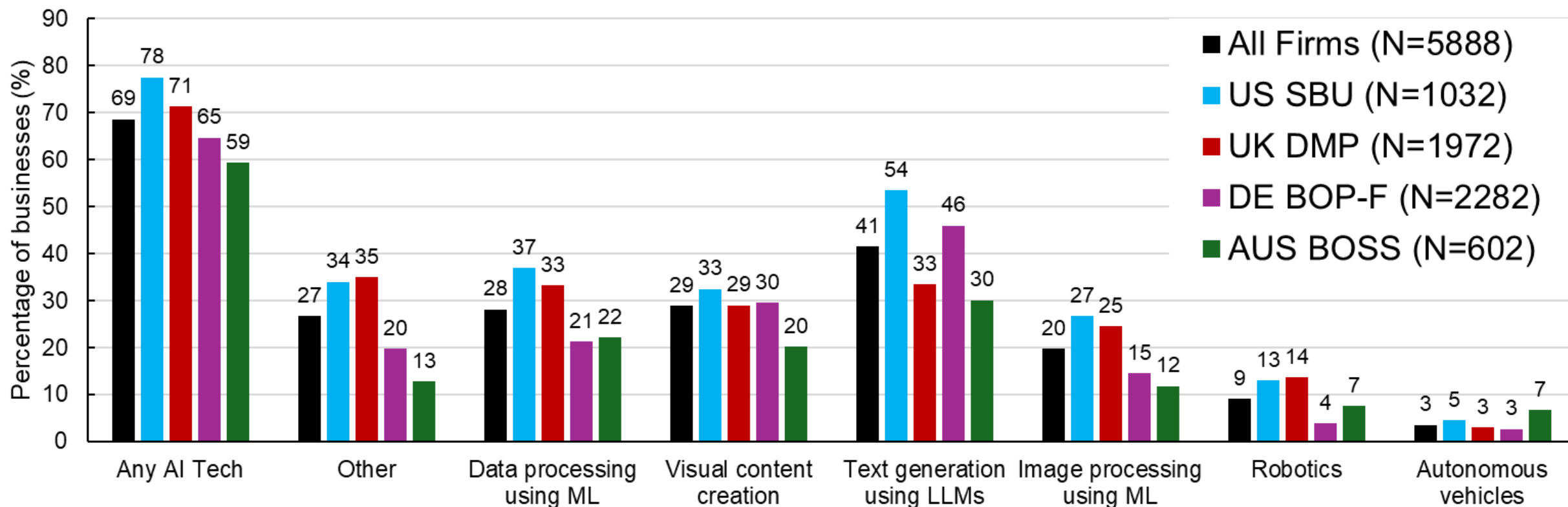


UK Firms
(DMP)



Notes: This figure shows binned scatter plots of the relationship between expected year-ahead sales growth and annual sales growth a year later at the firm level (Panel A) and expected year-ahead employment growth and annual employment growth a year later (Panel B). The sample from the SBU covers 2014-2025. The sample from the UK DMP covers 2017-2025.

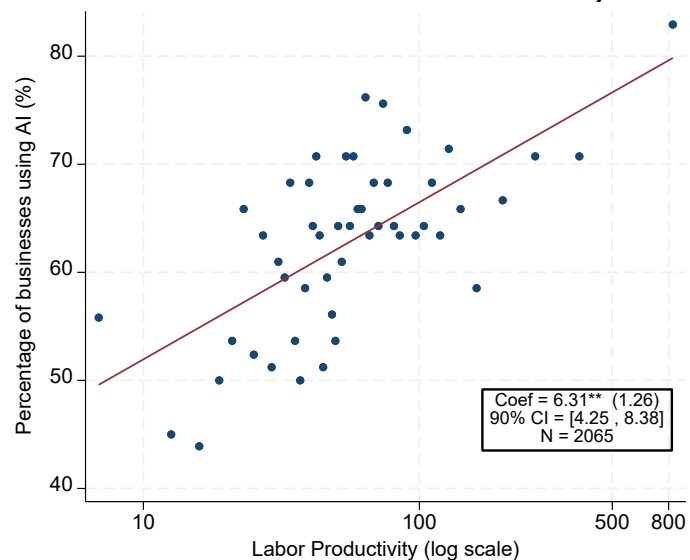
Figure 5 Current use of AI technologies by businesses



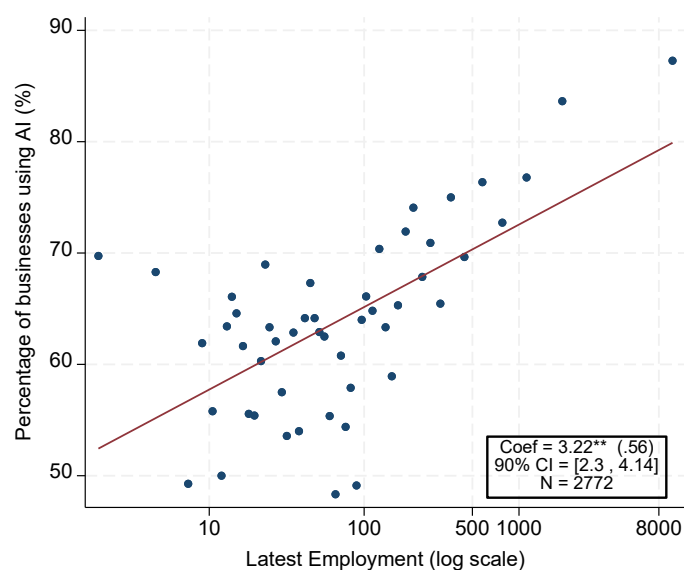
Notes: This figure is based on responses to the question: “Which of the following artificial intelligence technologies, if any, does your business currently use?” Firms could select more than one option. The data from the US Survey of Business Uncertainty was collected in November 2025. The data from the UK Decision Maker Panel was collected over November 2025 – January 2026. The data from the German Bundesbank Online Panel-Firms (BOP-F) was collected in January 2026. The data from the Australian Business Outlook Scenarios Survey was collected in December 2025. The data results from the SBU, DMP, and BOP-F are employment-weighted; the results from the BOSS are unweighted. The results for all firms is the average of the four surveys, weighted by the respective number of responses.

Figure 6 Characteristics of firms using AI technologies (UK Firms)

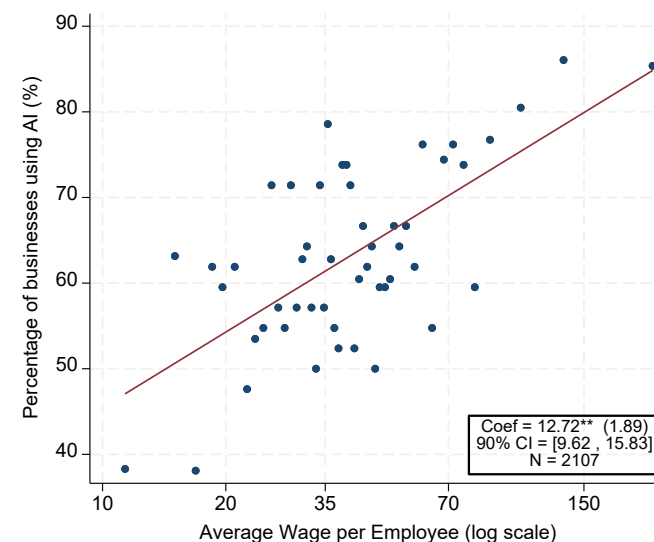
Panel A Labor Productivity



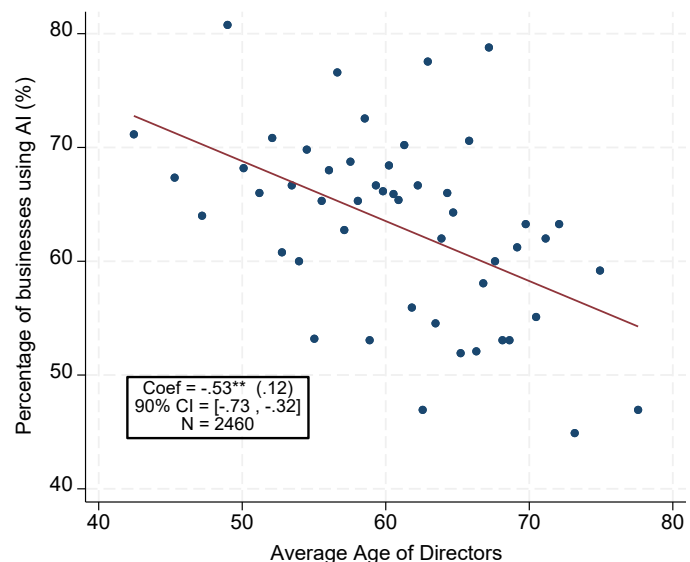
Panel B Firm employment



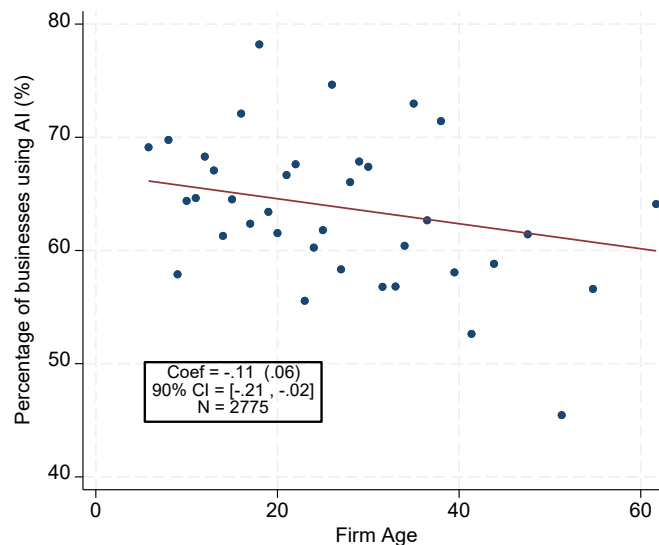
Panel C Average wage per employee



Panel D Average age of directors



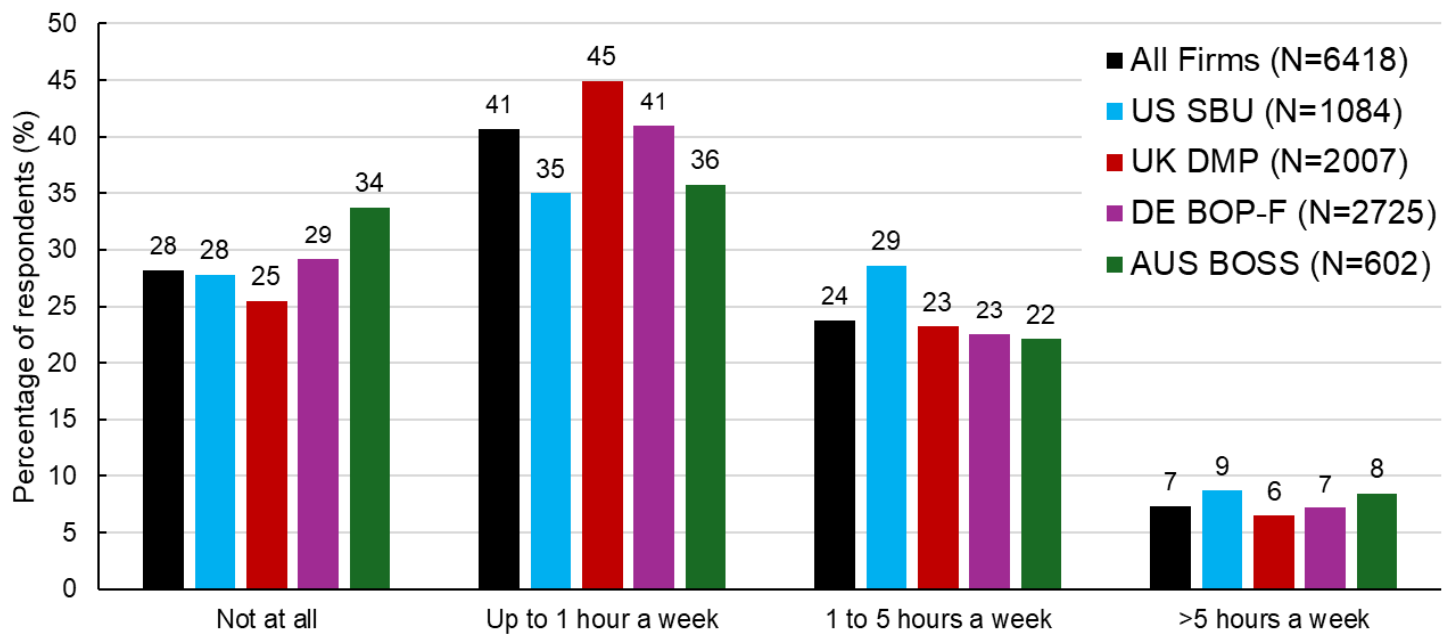
Panel E Firm age



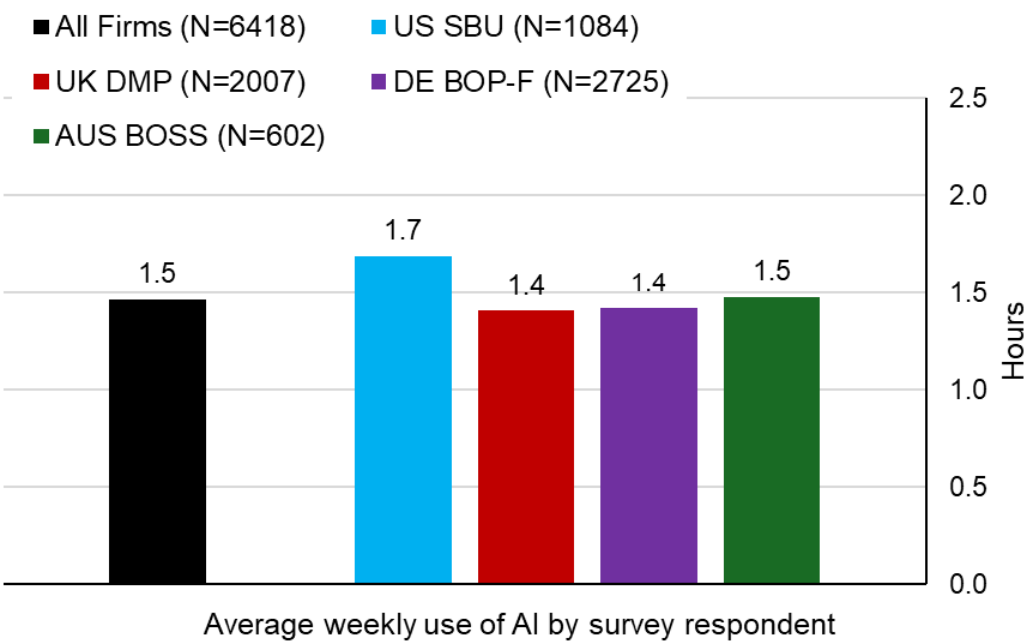
Notes: This figure shows binned scatter plots. The vertical axis is the percentage of businesses currently using any AI technology. The data are from the UK Decision Maker Panel, collected over February-April 2025 and November 2025 – January 2026, with the latest firm observation used in the figures.

Figure 7 Frequency of AI use by survey respondent

Panel A Distribution of responses



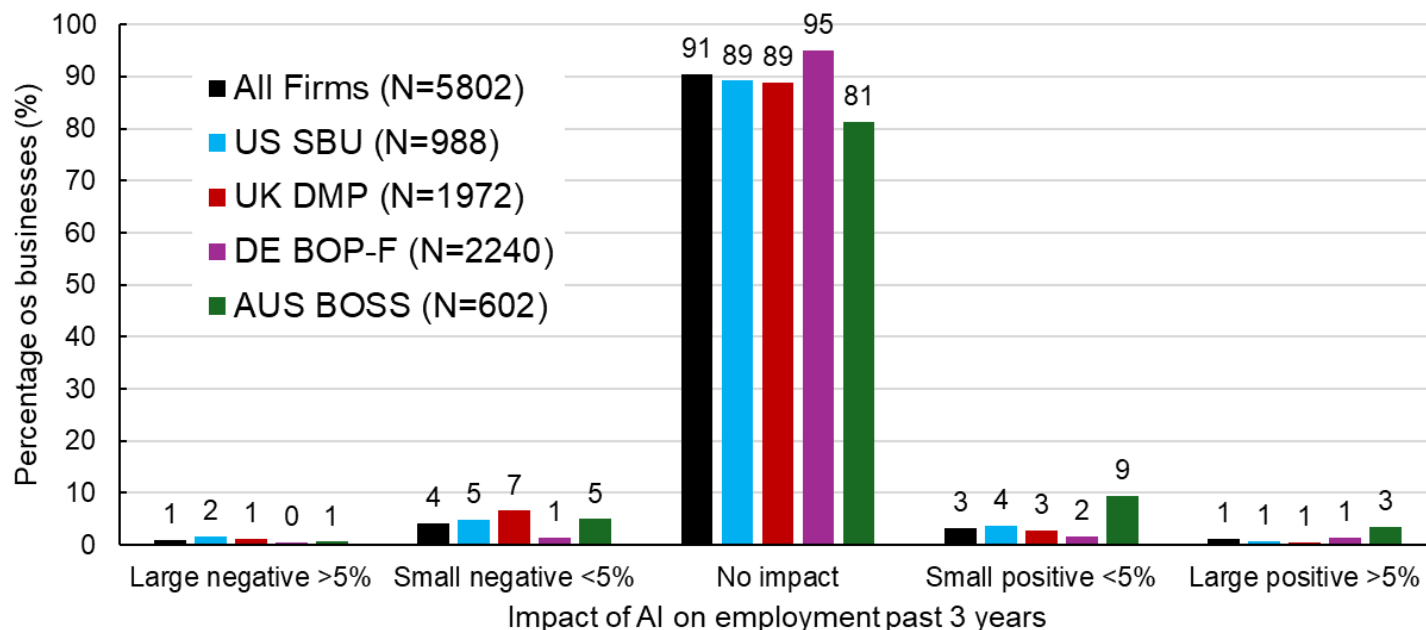
Panel B Average AI use per week



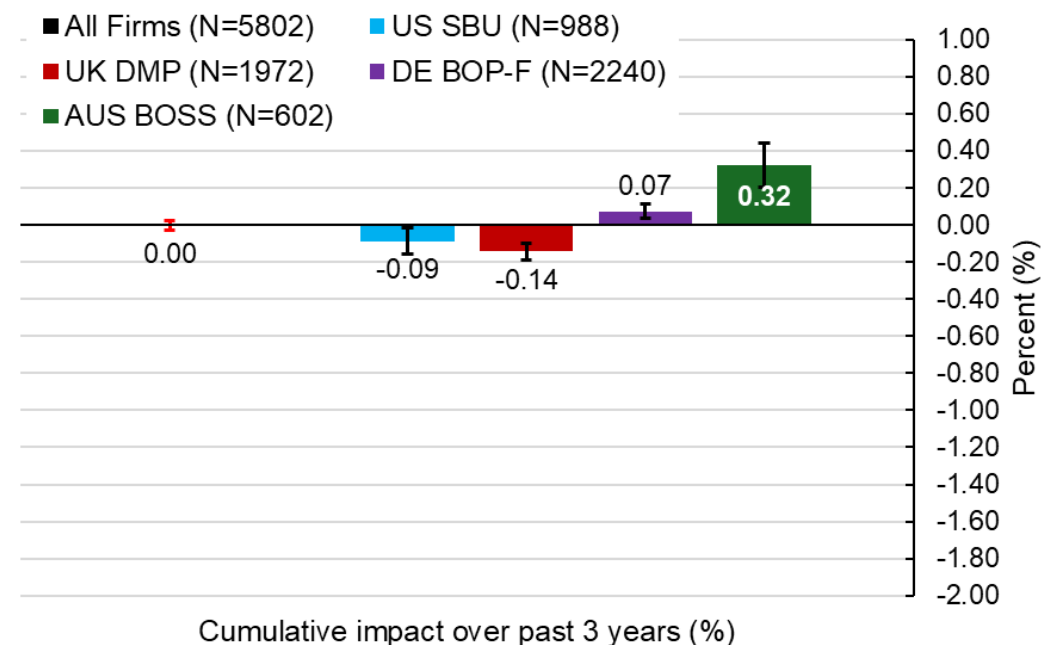
Notes: This figure is based on responses to the question: “On average, how frequently do you personally use artificial intelligence technologies in a typical working week?” The data from the US Survey of Business Uncertainty was collected in November 2025. The data from the UK Decision Maker Panel was collected over November 2025 – January 2026. The data from the Australian Business Outlook Scenarios Survey was collected in December 2025. The data from the German Bundesbank Online Panel – Firms (BOP-F) were collected in January 2026. The data results from the SBU, DMP, and BOP-F are employment-weighted; the results from the BOSS are unweighted. The results for all firms is the average of the four surveys, weighted by the respective number of responses. To calculate the average use per week (Panel B), values are assigned to each of the options in Panel A: 0 to “Not at all”; 0.5 to “up to 1 hour a week”; 3 to “1 to 5 hours a week”; 7.5 to “>5 hours a week”.

Figure 8 Impact of AI on employment over past 3 years

Panel A Distribution of responses



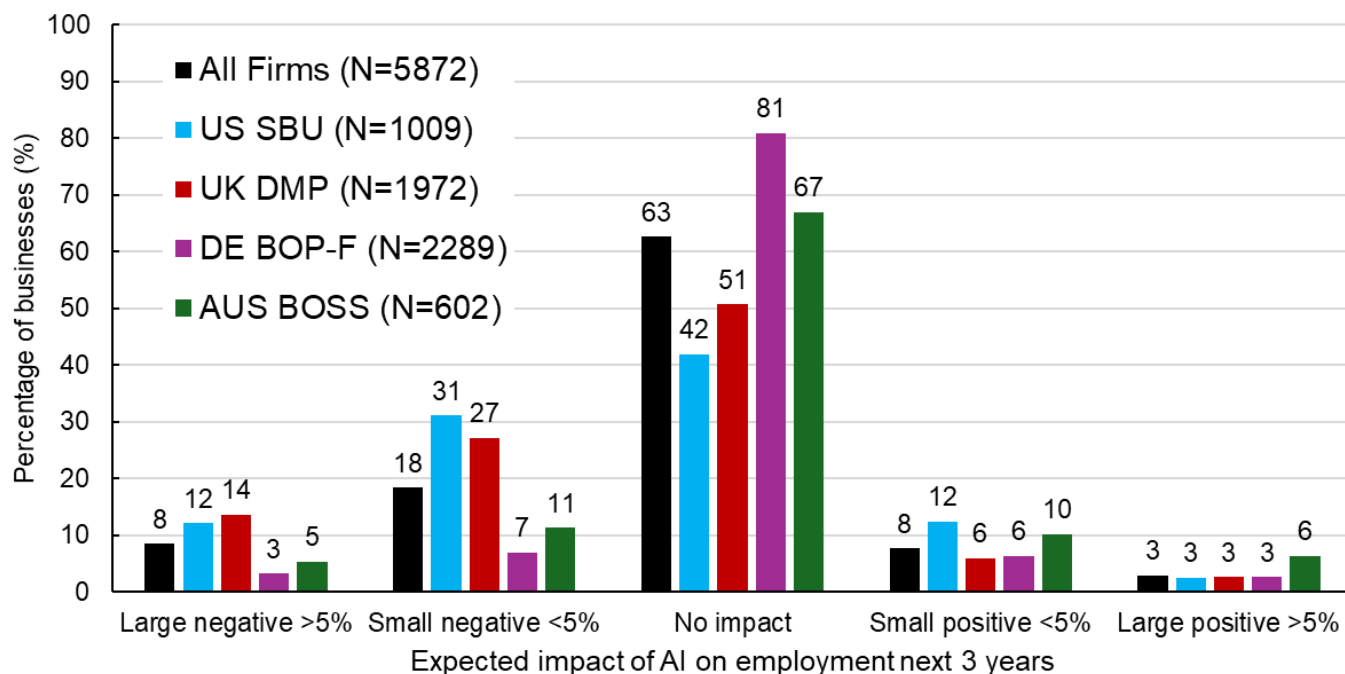
Panel B Average impacts



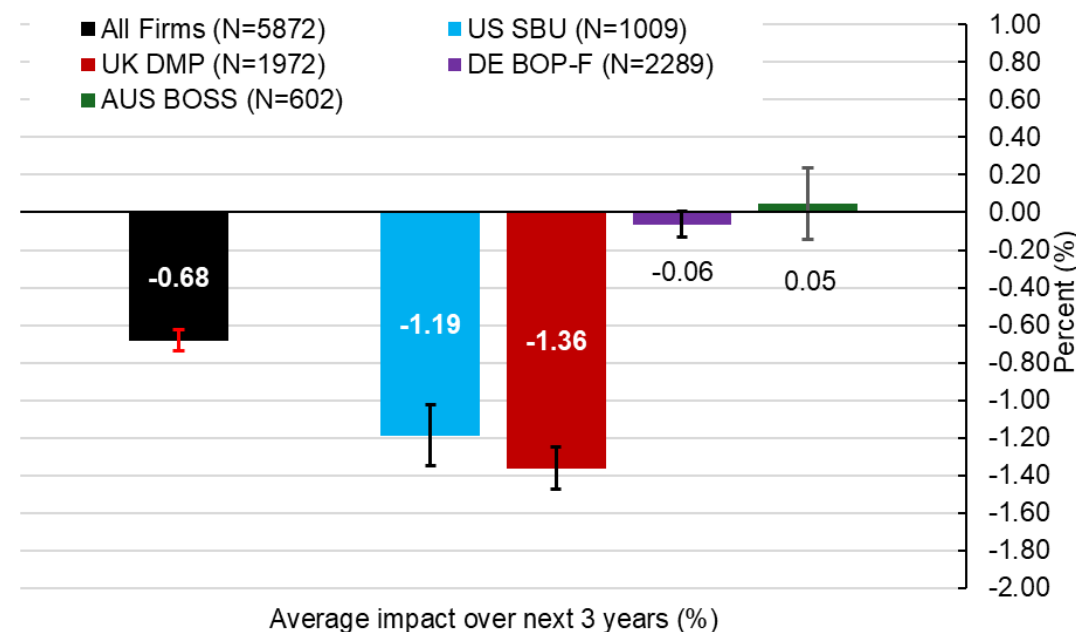
Notes: This figure is based on responses to the question: “How has the adoption of artificial intelligence technologies affected the number of employees in your business over the past three years?” The data from the US Survey of Business Uncertainty was collected in November 2025. The data from the UK Decision Maker Panel was collected over November 2025 – January 2026. The data from the German Bundesbank Online Panel-Firms (BOP-F) was collected in January 2026. The data from the Australian Business Outlook Scenarios Survey was collected in December 2025. The data results from the SBU, DMP, and BOP-F are employment-weighted; the results from the BOSS are unweighted. To calculate the average impacts (Panel B), values are assigned to each of the options in Panel A: large negative/large positive impacts are treated as $\pm 7.5\%$; small negative/small positive impacts are treated as $\pm 2.5\%$. The impact for all firms is the average of the impacts for the four surveys, weighted by the respective number of responses. 90% confidence intervals are shown for these impacts.

Figure 9 Expected impact of AI on employment over next 3 years

Panel A Distribution of responses



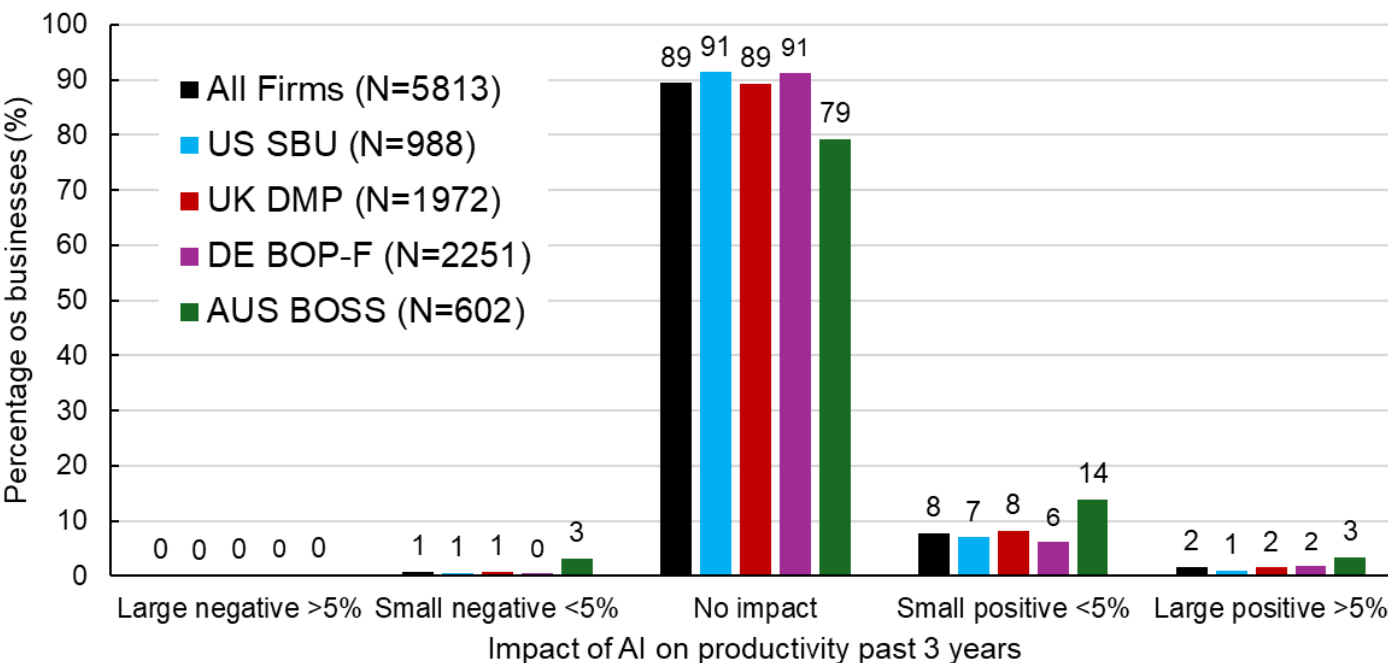
Panel B Average impacts



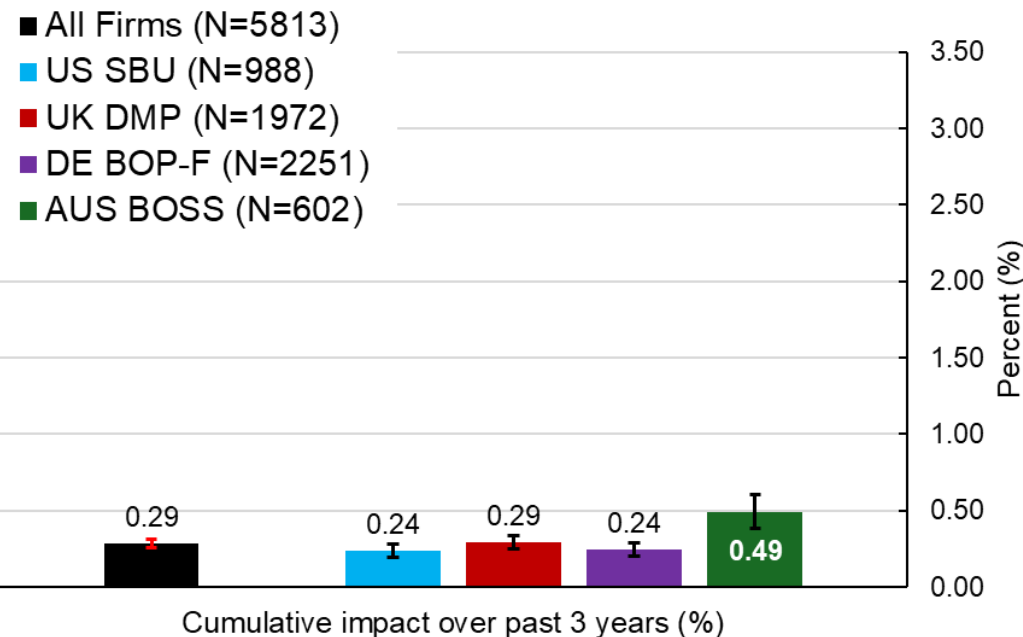
Notes: This figure is based on responses to the question: “How has the adoption of artificial intelligence technologies affected the number of employees in your business over the past three years? And how do you expect this to affect your number of employees over the next 3 years?” The data from the US Survey of Business Uncertainty was collected in November 2025. The data from the UK Decision Maker Panel was collected over November 2025 – January 2026. The data from the German Bundesbank Online Panel-Firms (BOP-F) was collected in January 2026. The data from the Australian Business Outlook Scenarios Survey was collected in December 2025. The data results from the SBU, DMP, and BOP-F are employment-weighted; the results from the BOSS are unweighted. To calculate the average impacts (Panel B), values are assigned to each of the options in Panel A: large negative/large positive impacts are treated as $\pm 7.5\%$; small negative/small positive impacts are treated as $\pm 2.5\%$. The impact for all firms is the average of the impacts for the four surveys, weighted by the respective number of responses. 90% confidence intervals are shown for these impacts.

Figure 10 Impact of AI on productivity over past 3 years

Panel A Distribution of responses



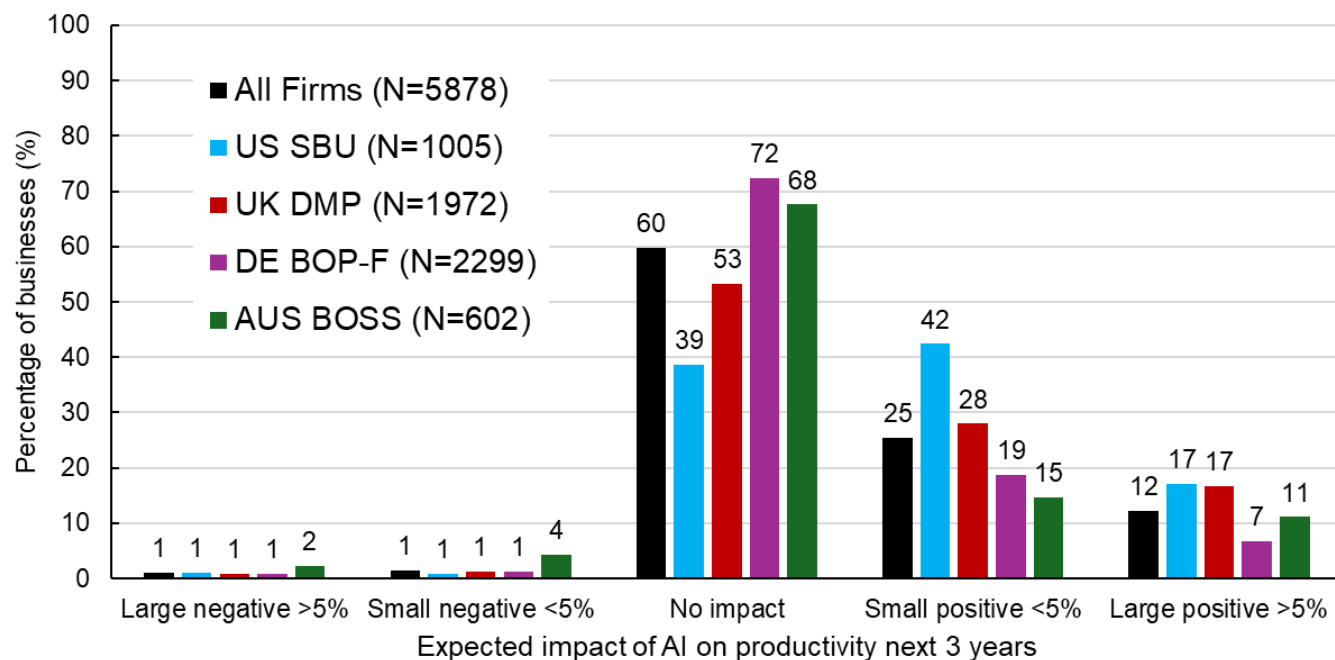
Panel B Average impacts



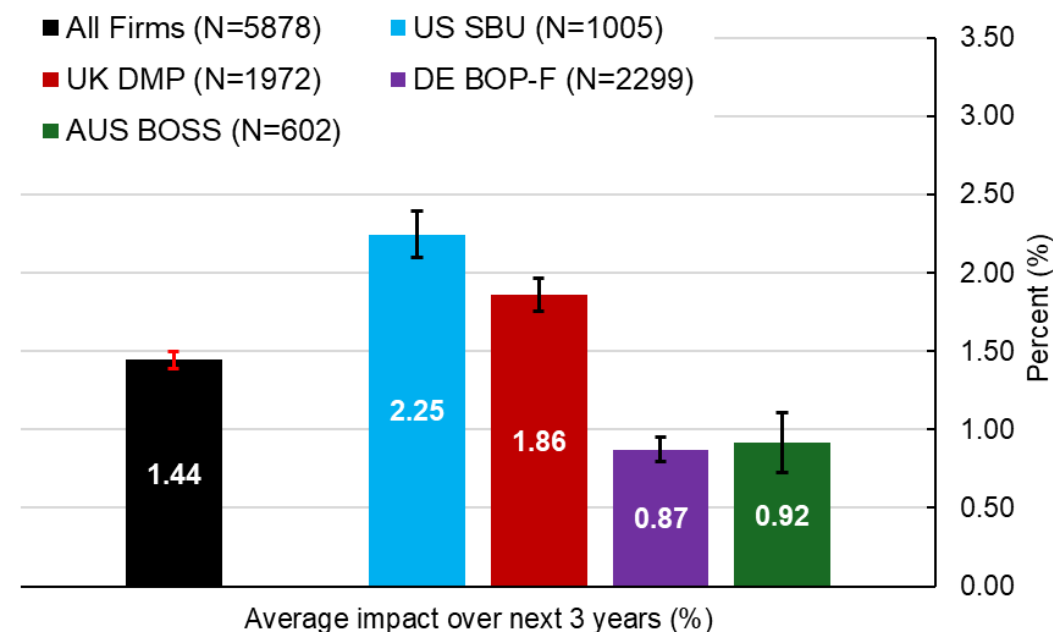
Notes: This figure is based on responses to the question: “How has the adoption of artificial intelligence technologies affected the volume of sales per employee in your business over the past three years?” The data from the US Survey of Business Uncertainty was collected in November 2025. The data from the UK Decision Maker Panel was collected over November 2025 – January 2026. The data from the German Bundesbank Online Panel-Firms (BOP-F) was collected in January 2026. The data from the Australian Business Outlook Scenarios Survey was collected in December 2025. The data results from the SBU, DMP, and BOP-F are employment-weighted; the results from the BOSS are unweighted. To calculate the average impacts (Panel B), values are assigned to each of the options in Panel A: large negative/large positive impacts are treated as $\pm 7.5\%$; small negative/small positive impacts are treated as $\pm 2.5\%$. The impact for all firms is the average of the impacts for the four surveys, weighted by the respective number of responses. 90% confidence intervals are shown for these impacts.

Figure 11 Expected impact of AI on productivity over next 3 years

Panel A Distribution of responses



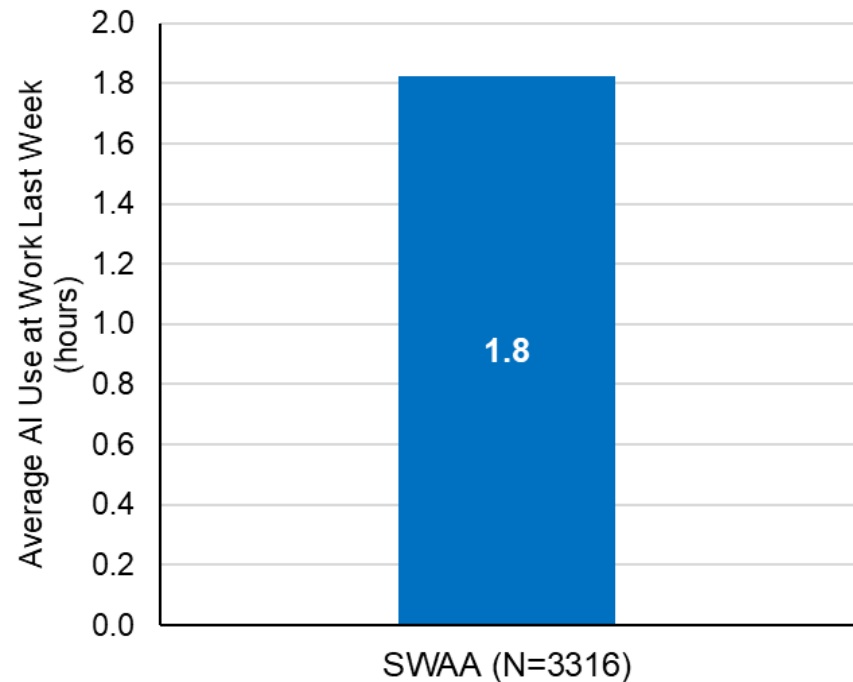
Panel B Average impacts



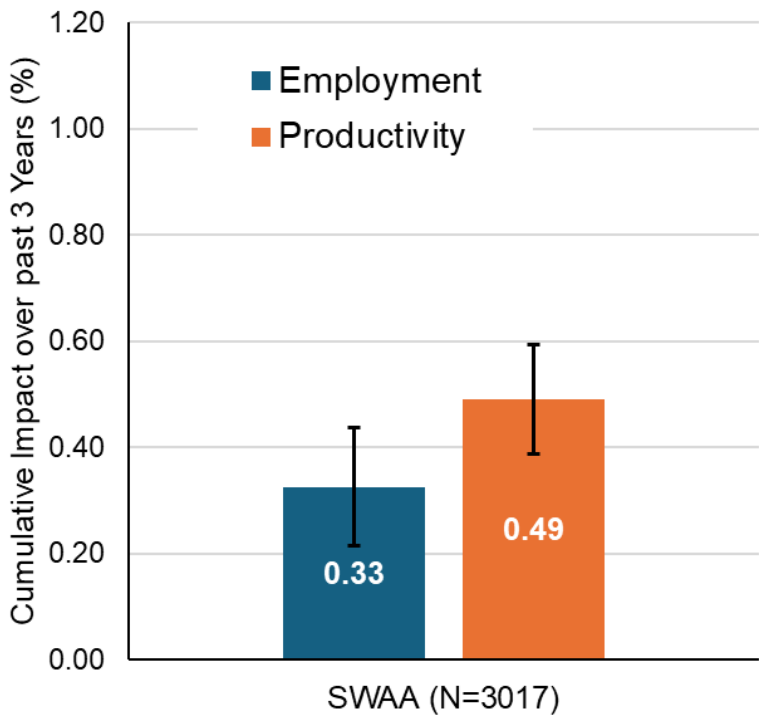
Notes: This figure is based on responses to the question: “How has the adoption of artificial intelligence technologies affected volume of sales per employee in your business over the past three years? And how do you expect this to affect your volume of sales per employee over the next 3 years?” The data from the US Survey of Business Uncertainty was collected in November 2025. The data from the UK Decision Maker Panel was collected over November 2025 – January 2026. The data from the German Bundesbank Online Panel-Firms (BOP-F) was collected in January 2026. The data from the Australian Business Outlook Scenarios Survey was collected in December 2025. The data results from the SBU, DMP, and BOP-F are employment-weighted; the results from the BOSS are unweighted. To calculate the average impacts (Panel B), values are assigned to each of the options in Panel A: large negative/large positive impacts are treated as $\pm 7.5\%$; small negative/small positive impacts are treated as $\pm 2.5\%$. The impact for all firms is the average of the impacts for the four surveys, weighted by the respective number of responses. 90% confidence intervals are shown for these impacts.

Figure 12 Impacts of AI and weekly AI use by employees

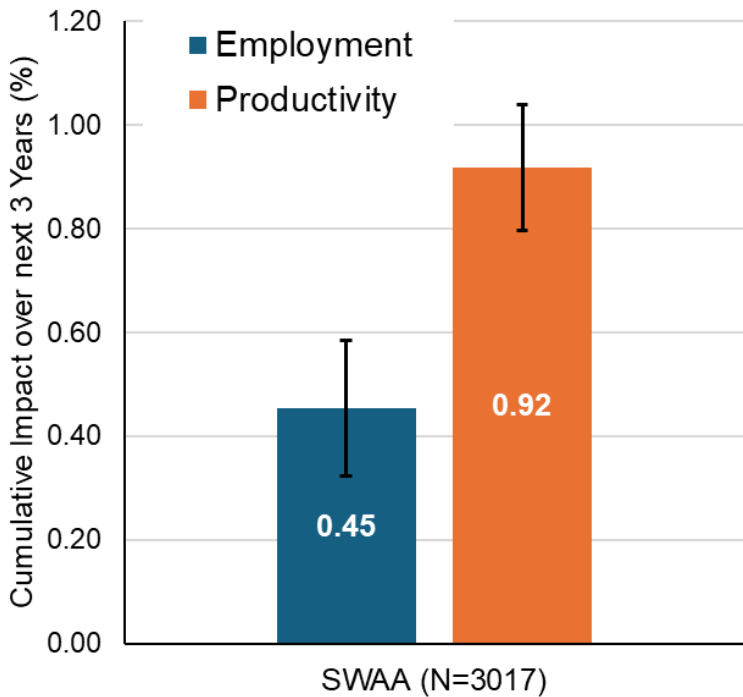
Panel A AI Use at work



Panel B Past 3 Years



Panel C Next 3 Years



Responses to the questions: You indicated that you sometimes use Generative AI for your job. Did you use Generative AI for your job LAST WEEK? Please think back to the days LAST WEEK on which you used Generative AI for your job. On average, how much time did you spend actively using Generative AI for your job How has the adoption of Artificial Intelligence technologies affected the NUMBER OF EMPLOYEES who work for your employer: over the past three years? over the next three years? How has the adoption of Artificial Intelligence technologies affected your employer's SALES PER WORKER (PRODUCTIVITY): over the past three years? over the next three years?

Notes: The sample includes respondents to the December 2025 SWAA wave who worked for pay during the week prior to the survey and pass our attention-check questions. In Panel A, we impute zero AI use for respondents who did not use it last week, or do not use it for their job. In Panels B and C, we restrict attention to wage and salary employees, (excluding self-employed workers and contractors). We reweight the raw responses to match the 2024 US population in cells defined by the cross product of age, sex, education and earnings.

Table 1 Characteristics of firms using AI technologies (UK Firms)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Dependent Variable:	Any AI Technology Currently Used (scaled by 100)												
Labor productivity (logs)	6.31*** (1.23)											3.16* (1.82)	3.04* (1.83)
Employment (logs)		3.22*** (0.51)										4.99*** (0.59)	4.88*** (0.60)
Average Wage per Employee (logs)			12.72*** (1.77)									6.43** (2.75)	6.87** (2.77)
Firm Age				-0.11* (0.06)								0.15** (0.08)	0.15* (0.08)
Average Age of Directors					-0.53*** (0.12)							-0.60*** (0.16)	-0.61*** (0.16)
Average productivity growth (2025)						0.22** (0.11)						0.24** (0.11)	
Expected productivity growth (2025)							0.38* (0.21)					0.15 (0.20)	
Average real sales growth (2025)								0.10 (0.09)					0.12 (0.09)
Expected real sales growth (2025)									0.21 (0.18)				-0.18 (0.19)
Average employment growth (2025)										-0.06 (0.10)			-0.17 (0.11)
Expected employment growth (2025)											0.22 (0.18)		0.06 (0.18)
Mean of Dependent Variable	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.7	63.7
SIC2 industry and time fixed effects	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes

Notes: The dependent variable is an indicator for whether the firm currently uses an AI technology, scaled by 100 for interpretability. The data from the UK Decision Maker Panel was collected over February-April 2025 and November 2025 – January 2026, with the latest firm observation used in the regressions (N=2,793). A constant has also been estimated, but not reported in the table. Where data are missing for a particular variable a dummy variable is included to account for that (results not reported). Standard errors are clustered at the firm level, stars indicate *** p<0.01, ** p<0.05, * p<0.1.

Table 2 Determinants of expected AI employment impacts (UK Firms)

Dependent Variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Expected AI Employment Impact over next 3 Years (%)												
Labor productivity (logs)	-0.10 (0.07)											-0.08 (0.12)	-0.11 (0.12)
Employment (logs)		-0.18*** (0.03)										-0.20*** (0.04)	-0.20*** (0.04)
Average Wage per Employee (logs)			-0.19* (0.10)									-0.05 (0.18)	-0.10 (0.17)
Firm Age				-0.00 (0.00)								-0.01 (0.00)	-0.01 (0.00)
Average Age of Directors					0.01 (0.01)							0.02* (0.01)	0.02** (0.01)
Average productivity growth (2025)						-0.01 (0.01)						-0.01 (0.01)	
Expected productivity growth (2025)							-0.02* (0.01)					-0.02 (0.01)	
Average real sales growth (2025)								0.01 (0.01)					0.00 (0.01)
Expected real sales growth (2025)									0.01 (0.01)				-0.00 (0.01)
Average employment growth (2025)										0.03*** (0.01)			0.02*** (0.01)
Expected employment growth (2025)											0.05*** (0.01)		0.05*** (0.01)
Mean of Dependent Variable	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9	-0.9
SIC2 industry and time fixed effects	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes

Notes: The data from the UK Decision Maker Panel was collected over February-April 2025 and November 2025 – January 2026, with the latest firm observation used in the regressions. A constant has also been estimated, but not reported in the table (N=2,793). Where data are missing for a particular variable a dummy variable is included to account for that (results not reported). Standard errors are clustered at the firm level, stars indicate *** p<0.01, ** p<0.05, * p<0.1.

Table 3 Determinants of expected AI productivity impacts (UK Firms)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Dependent Variable:	Expected AI Productivity Impact over next 3 Years (%)												
Labor productivity (logs)	0.01 (0.06)											-0.17 (0.10)	-0.18* (0.10)
Employment (logs)		0.06* (0.03)										0.15*** (0.04)	0.14*** (0.04)
Average Wage per Employee (logs)			0.29*** (0.10)									0.36** (0.16)	0.38** (0.16)
Firm Age				-0.01*** (0.00)								-0.00 (0.00)	-0.00 (0.00)
Average Age of Directors					-0.04*** (0.01)							-0.02*** (0.01)	-0.02** (0.01)
Average productivity growth (2025)						0.01 (0.01)						0.01 (0.01)	
Expected productivity growth (2025)							0.01 (0.01)					0.00 (0.01)	
Average real sales growth (2025)								0.01* (0.00)					0.00 (0.01)
Expected real sales growth (2025)									0.04*** (0.01)				0.02 (0.01)
Average employment growth (2025)										0.00 (0.01)			-0.00 (0.01)
Expected employment growth (2025)											0.03*** (0.01)		0.02* (0.01)
Mean of Dependent Variable	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
SIC2 industry and time fixed effects	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes

Notes: The data from the UK Decision Maker Panel was collected over February-April 2025 and November 2025 – January 2026, with the latest firm observation used in the regressions (N=2,793). A constant has also been estimated, but not reported in the table. Where data are missing for a particular variable a dummy variable is included to account for that (results not reported). Standard errors are clustered at the firm level, stars indicate *** p<0.01, ** p<0.05, * p<0.1.

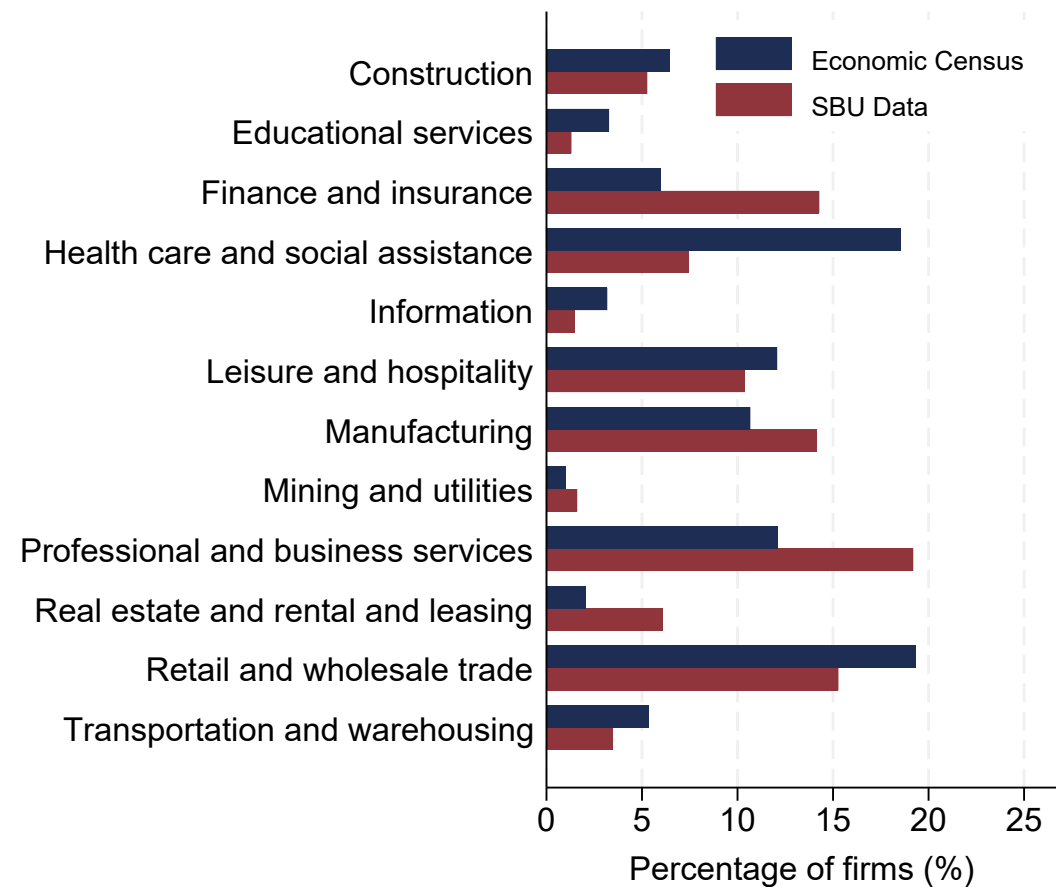
Table 4 Summary of realised and expected AI impacts

	Firms					Employees
	All	US (SBU)	UK (DMP)	Germany (BOP-F)	Australia (BOSS)	US (SWAA)
<i>Cumulative impact over past 3 years (%)</i>						
Sales/Employee	0.29	0.24	0.29	0.24	0.49	0.49
Employment	0.00	-0.09	-0.14	0.07	0.32	0.33
Output (implied)	0.28	0.15	0.15	0.32	0.82	0.82
<i>Expected cumulative impact over next 3 years (%)</i>						
Sales/Employee	1.44	2.25	1.86	0.87	0.92	0.92
Employment	-0.68	-1.19	-1.36	-0.06	0.05	0.45
Output (implied)	0.76	1.06	0.50	0.81	0.96	1.37

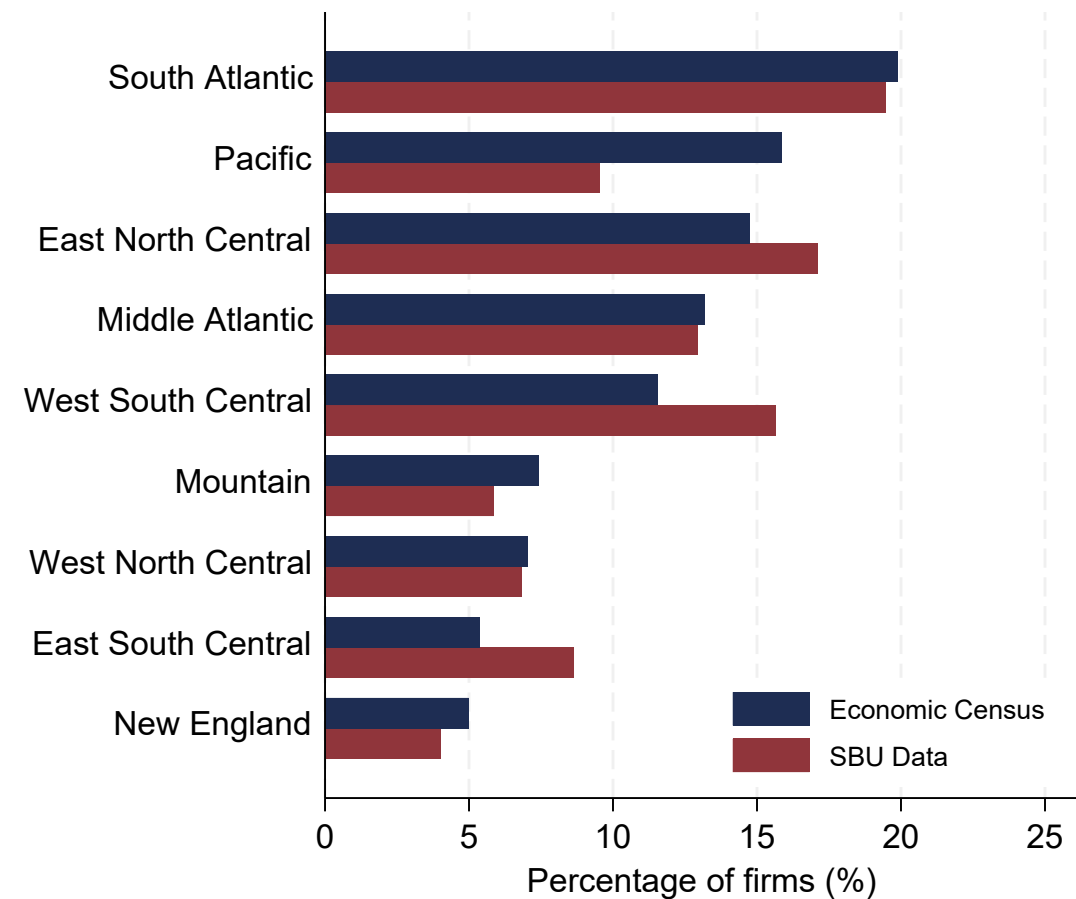
Notes: This table summarises the realised and expected AI impacts on sales per employee and employment from Figures 8-11. The implied impacts on output are calculated as the sum of the sales/employee and employment impacts.

Figure A1 SBU vs. US industrial and regional distribution

Panel A: By Industry



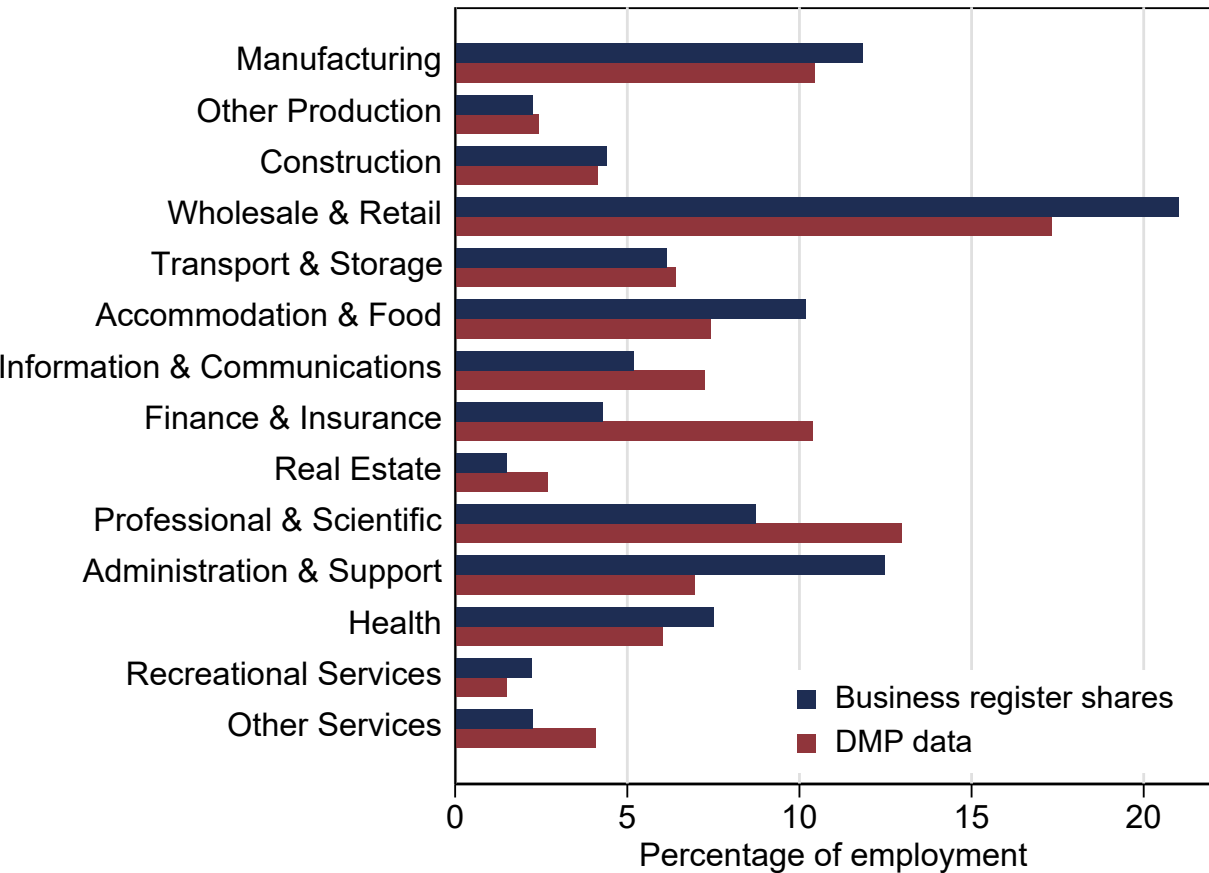
Panel B: By Region



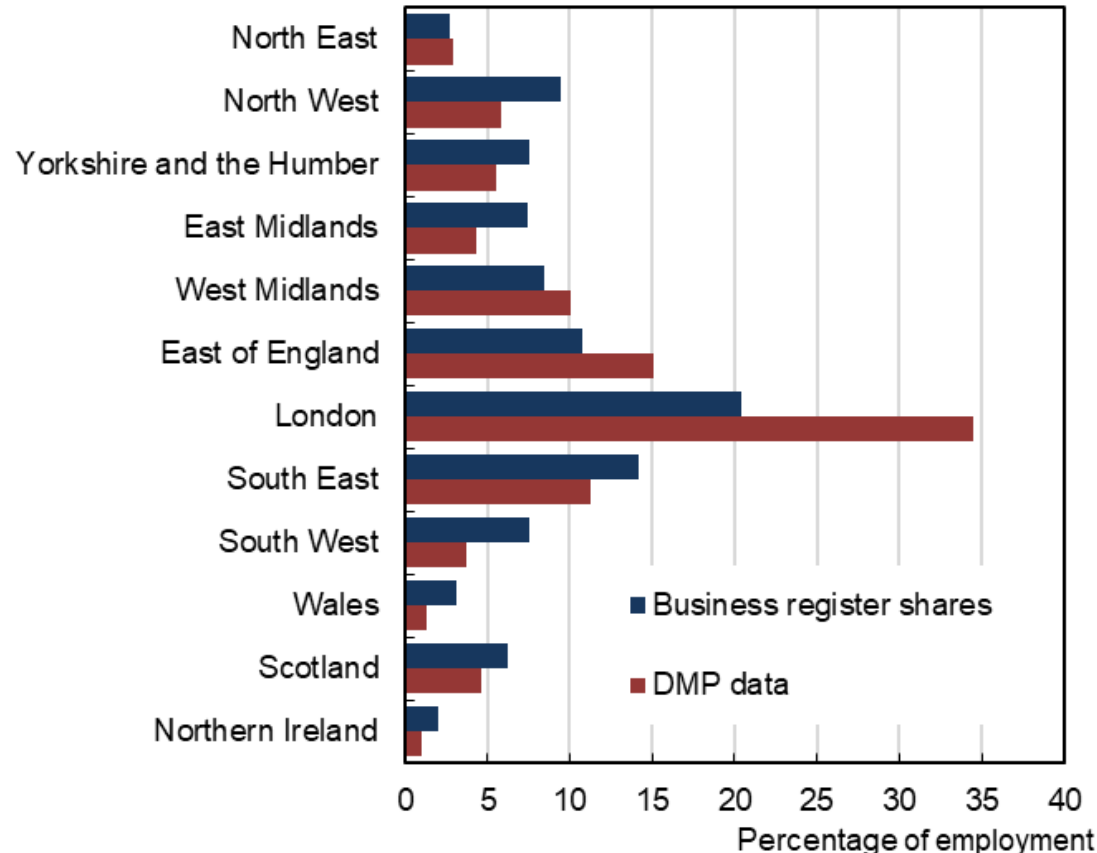
Notes: This figure compares the percentage of firms by industry (Panel A) and region (Panel B) in the US Survey of Business Uncertainty against the 2022 Economic Census. The shares are employment-weighted. Panel A is based on 6835 firms in the SBU. Panel B is based on 6995 firms in the SBU.

Figure A2 DMP vs. UK industrial and regional distribution

Panel A: By Industry

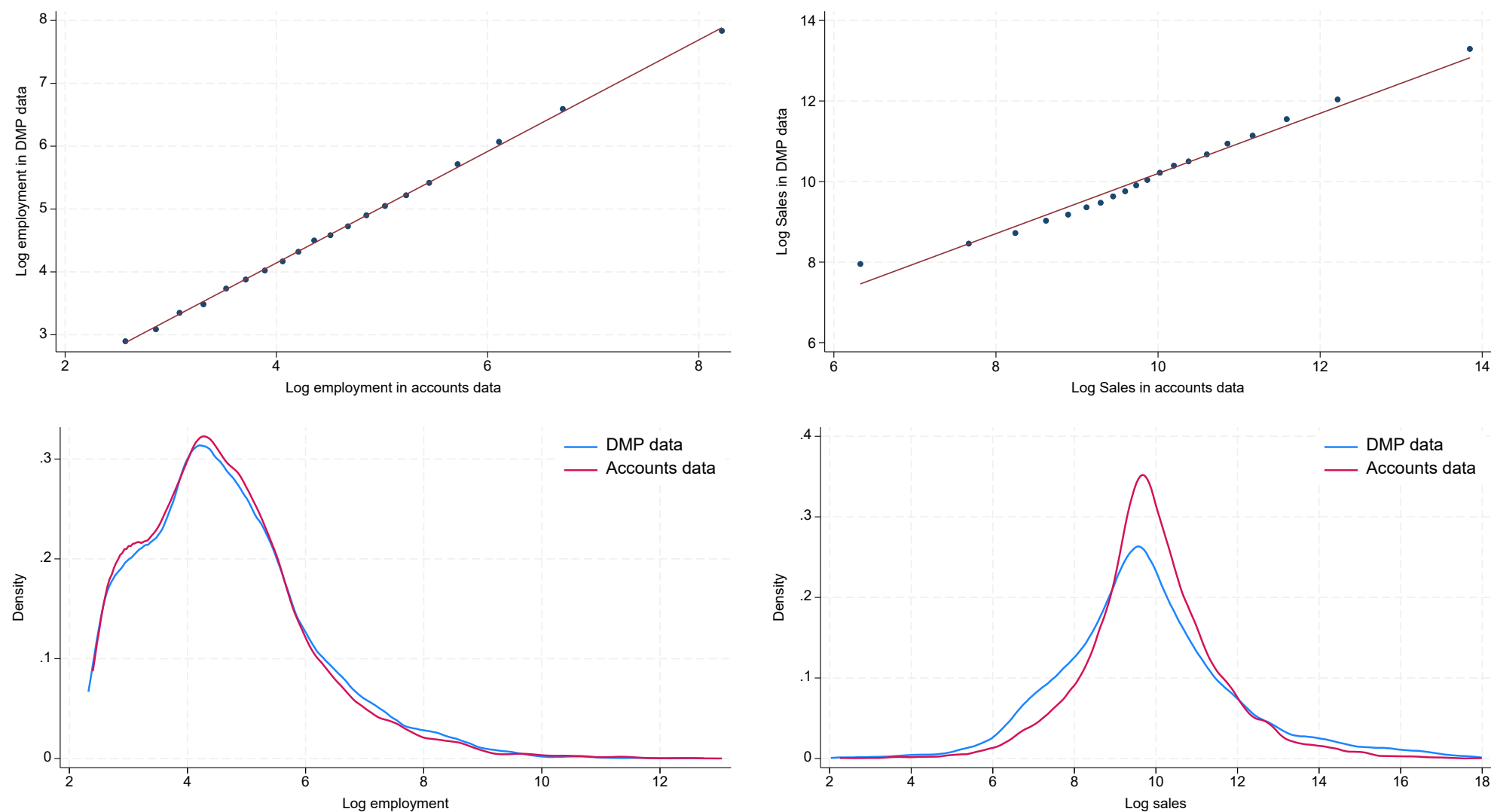


Panel B: By Region



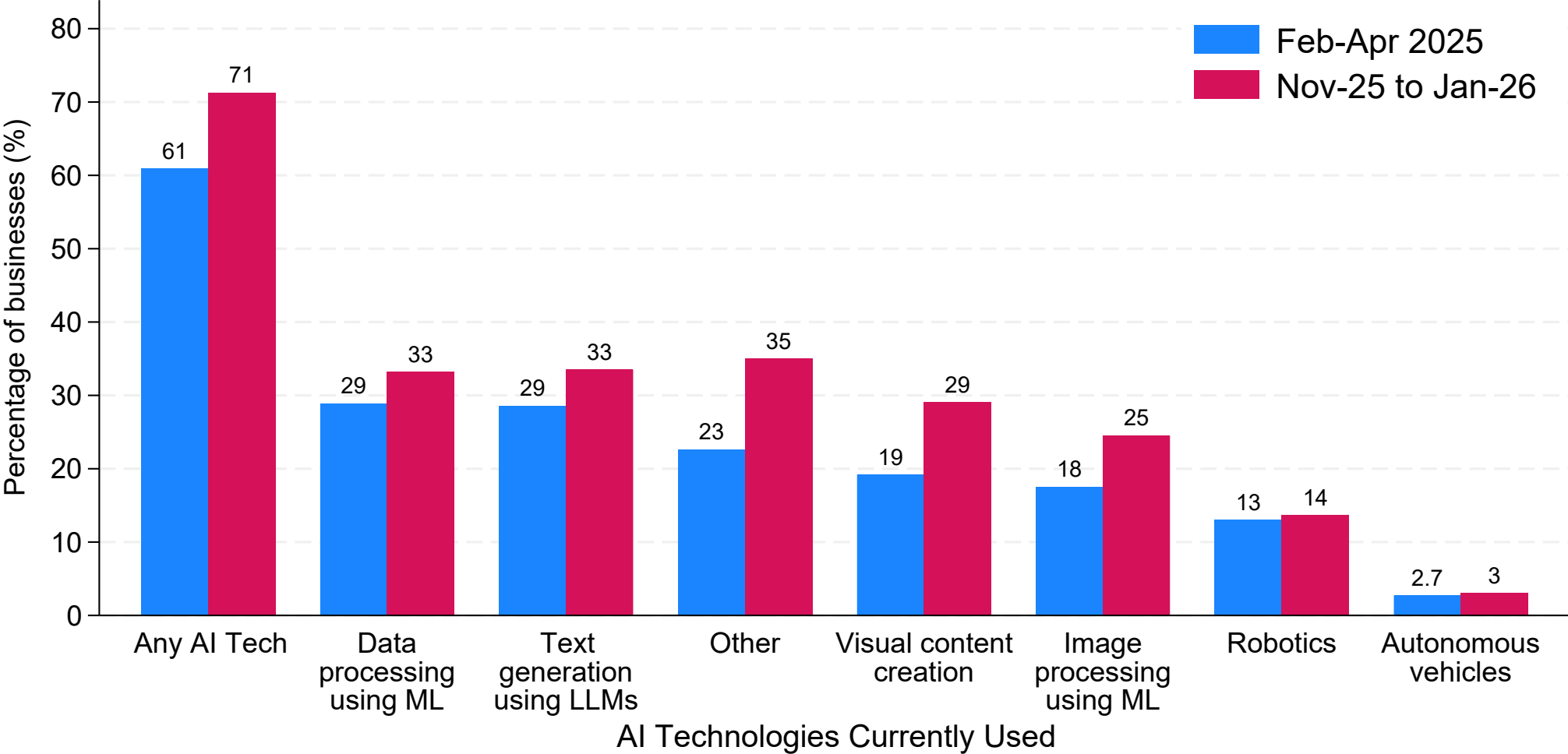
Notes: Other production includes agriculture; forestry & fishing; mining & quarrying; electricity, gas & air conditioning supply; water supply; and sewerage, waste management & remediation activities. Data are averages from 2017 to 2025.

Figure A3 Firm responses vs. company accounts data (UK firms)



Notes: Sales values from the DMP survey are annualised average quarterly sales reported by businesses across the year. DMP employment data are averages across the year. DMP data are plotted against annual company accounts data from Bureau Van Dijk for the corresponding financial year. The dots on the top charts each represent 5% of observations, grouped by log employment/sales from accounts data. Charts are based on annual data between 2017 and 2024.

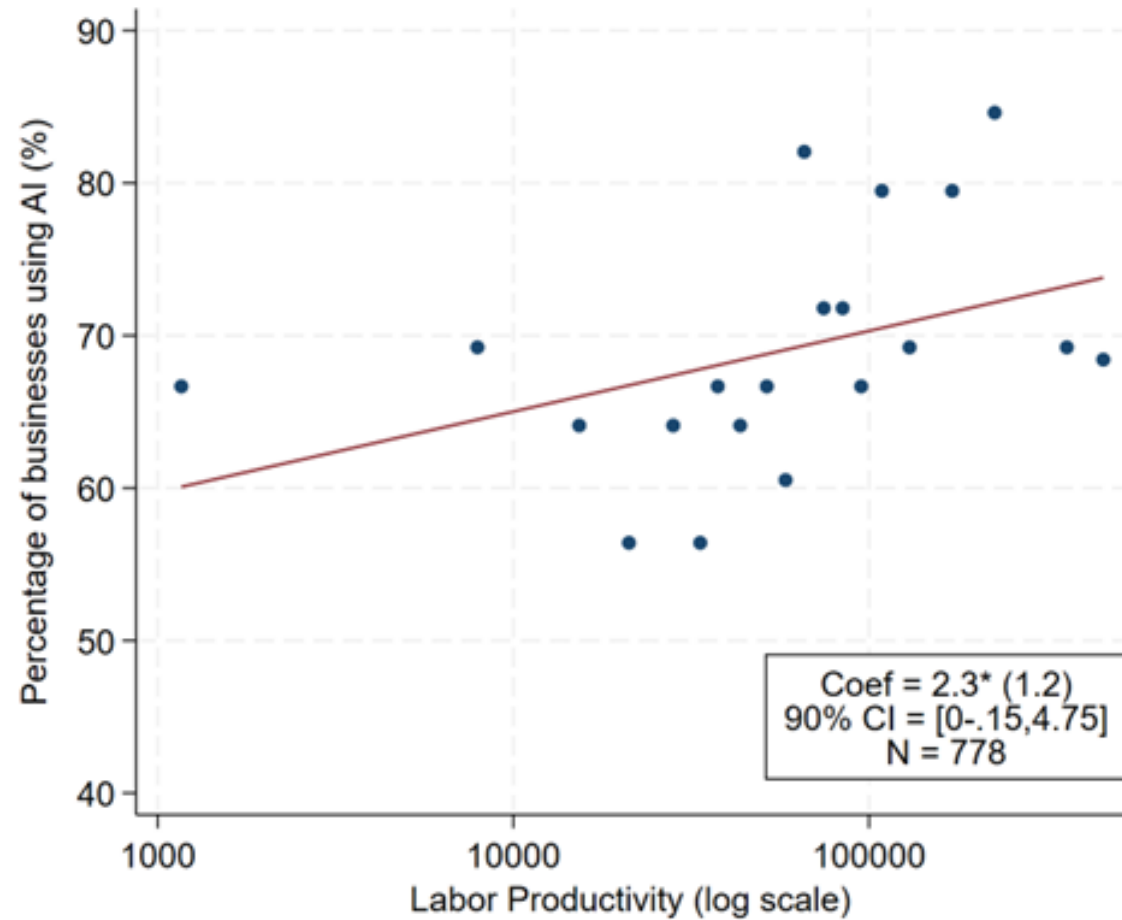
Figure A4 Change in current use of AI technologies by businesses (UK Firms)



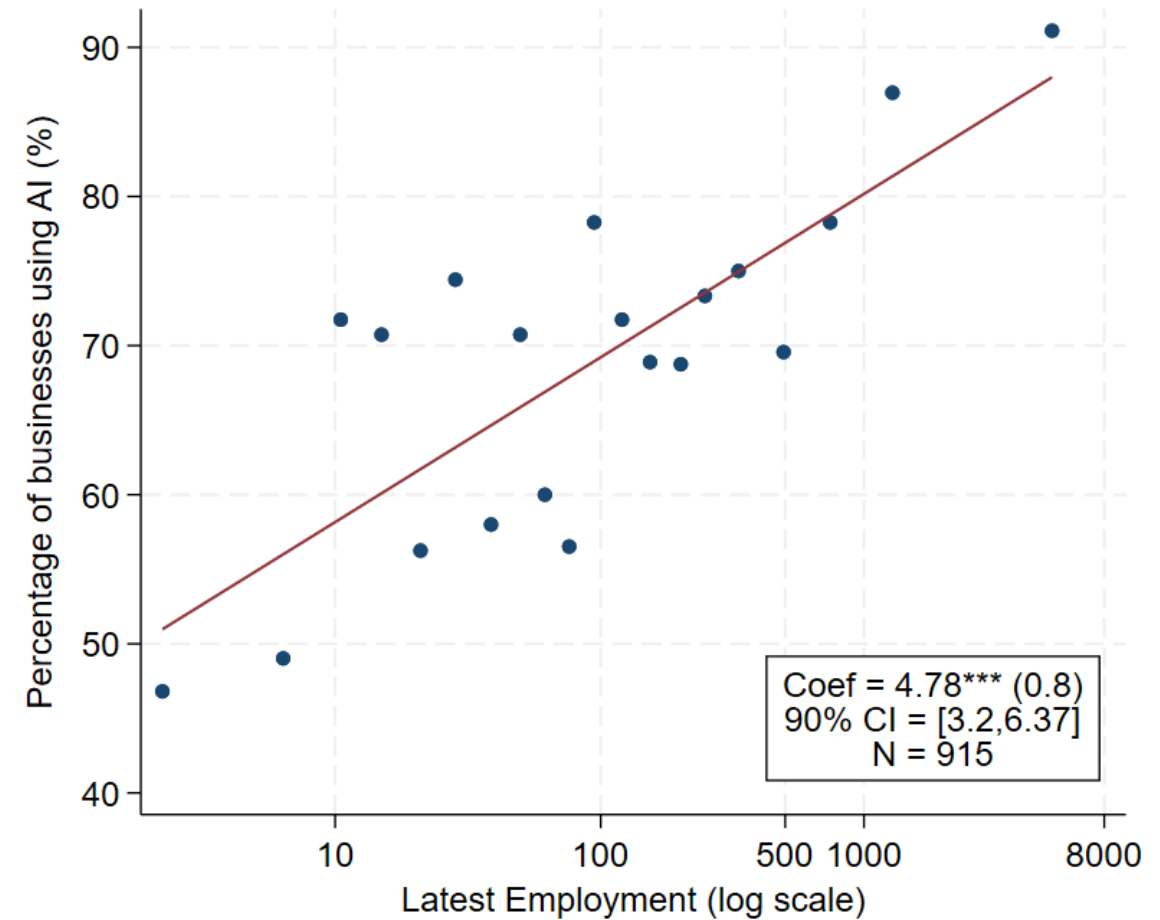
Notes: This figure is based on responses to the question: “Which of the following artificial intelligence technologies, if any, does your business currently use?” The results are based on responses from the UK Decision Maker Panel, collected over February-April 2025 and November 2025 – January 2026. The results are employment-weighted.

Figure A5 Characteristics of firms using AI technologies (US Firms)

Panel A Labor Productivity



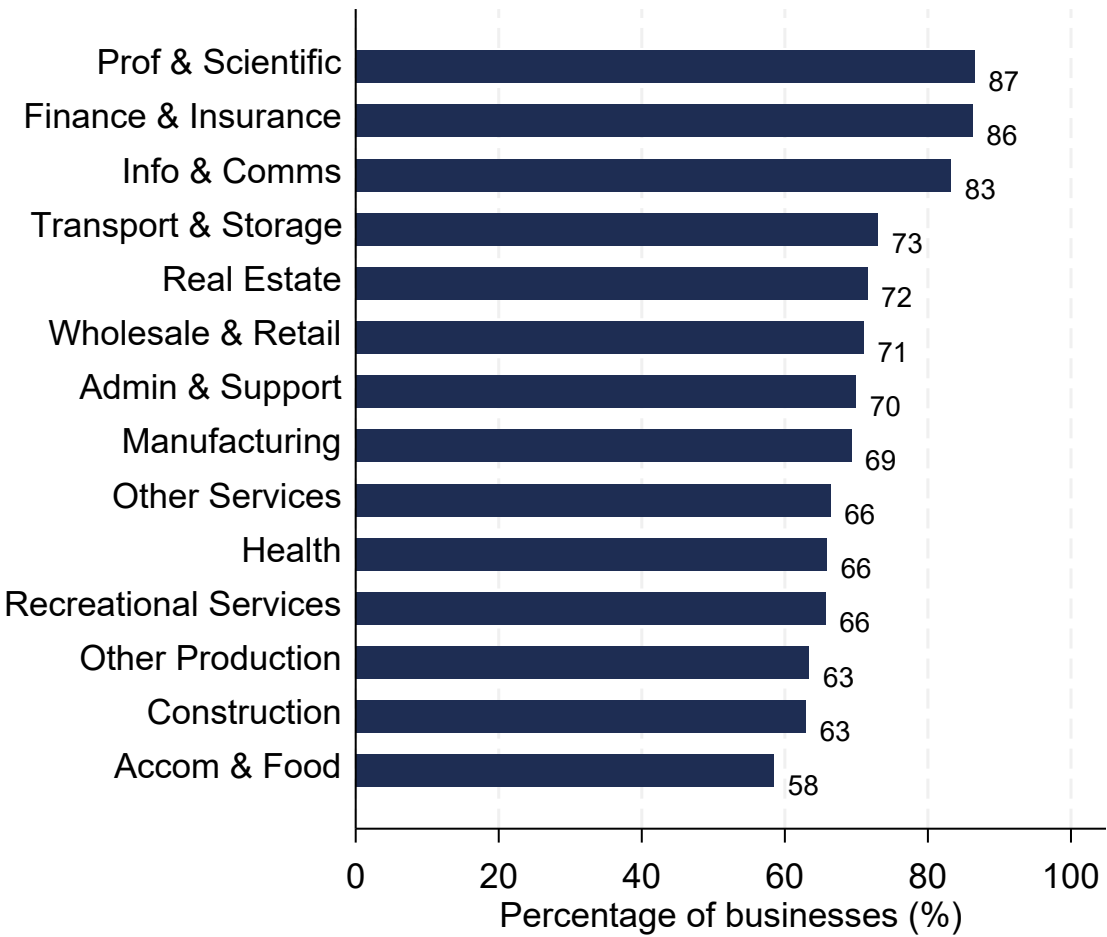
Panel B Firm employment



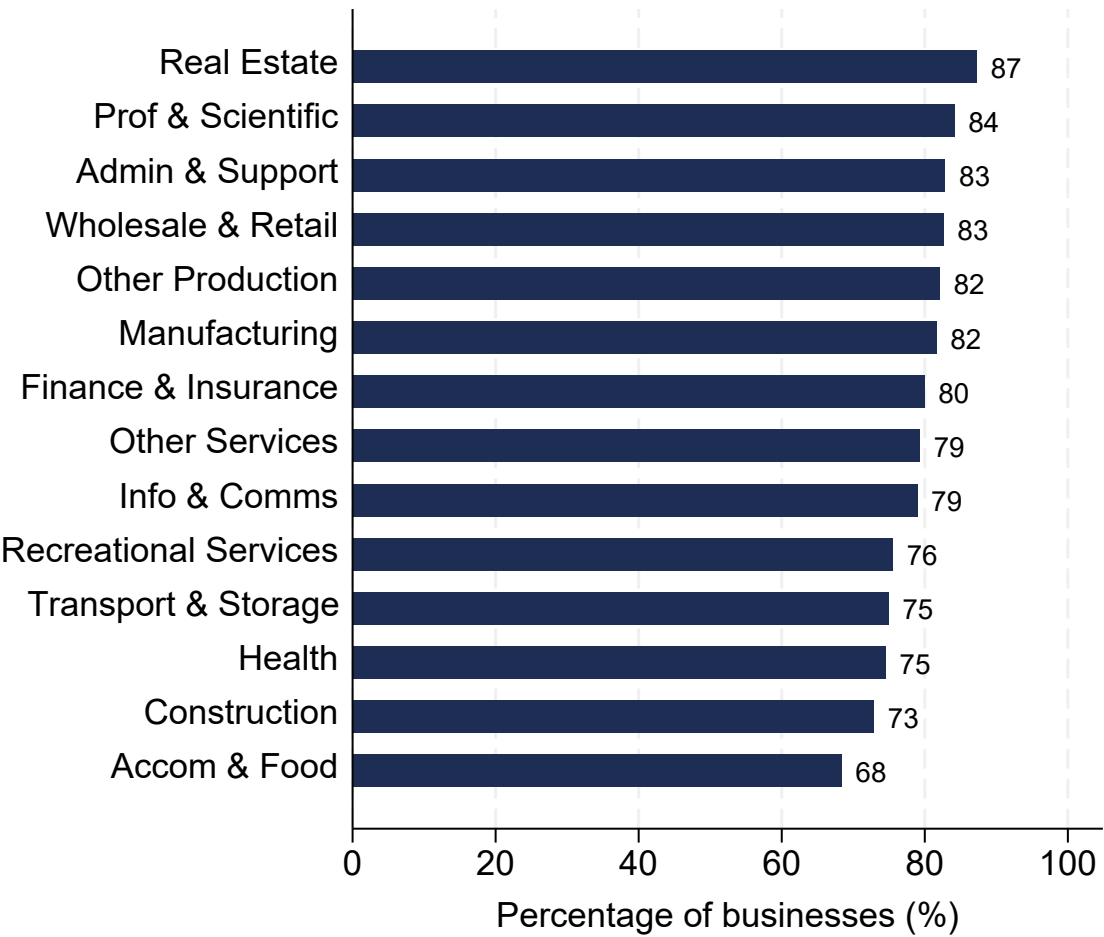
Notes: This figure shows binned scatter plots. The vertical axis is the percentage of businesses currently using any AI technology. The data are from the US Survey of Business Uncertainty, collected in November 2025. Labor productivity is defined as sales revenue per employee, and deflated using 2016 gross output deflators.

Figure A6 Current and expected AI adoption by industry (UK firms)

Panel A Current AI Adoption

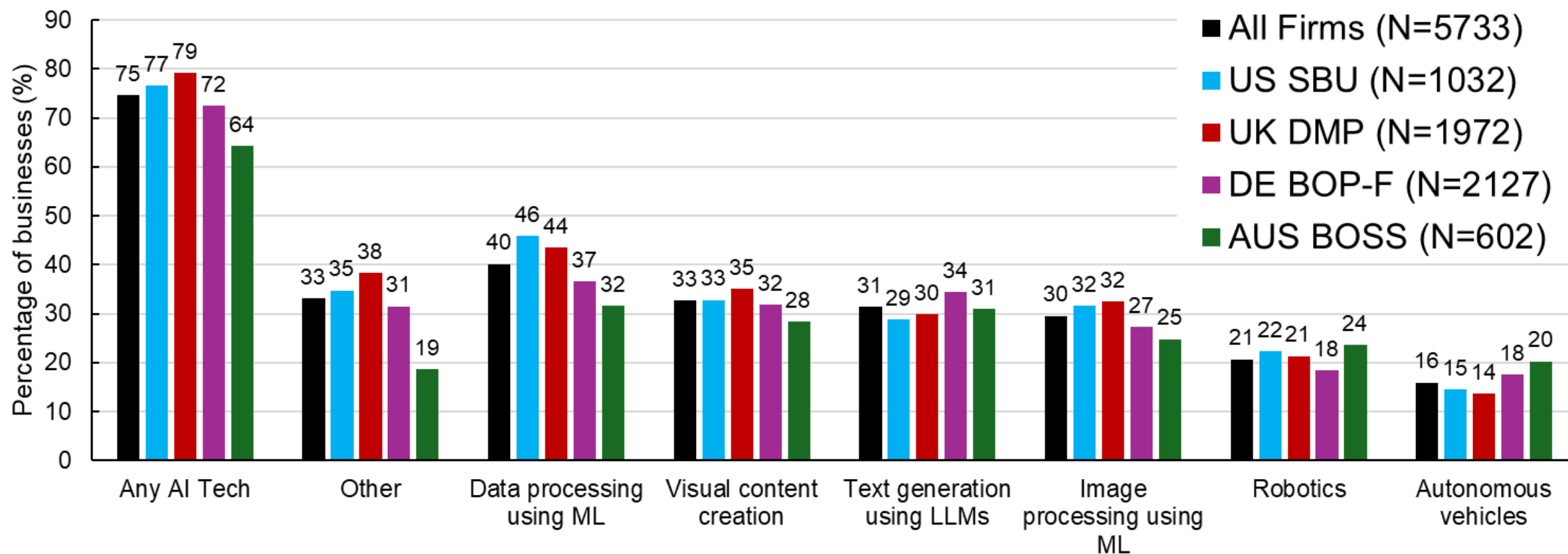


Panel B Expected Adoption Next 3



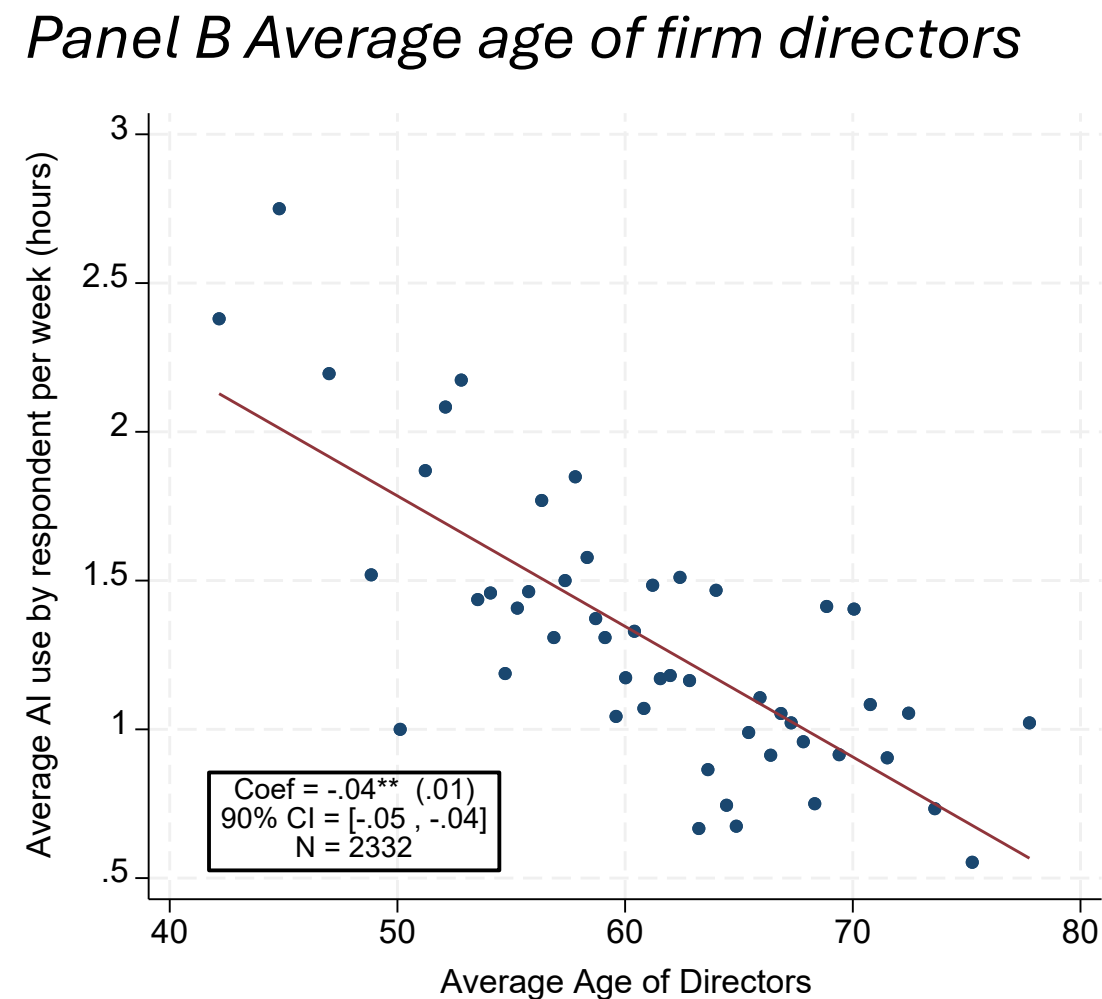
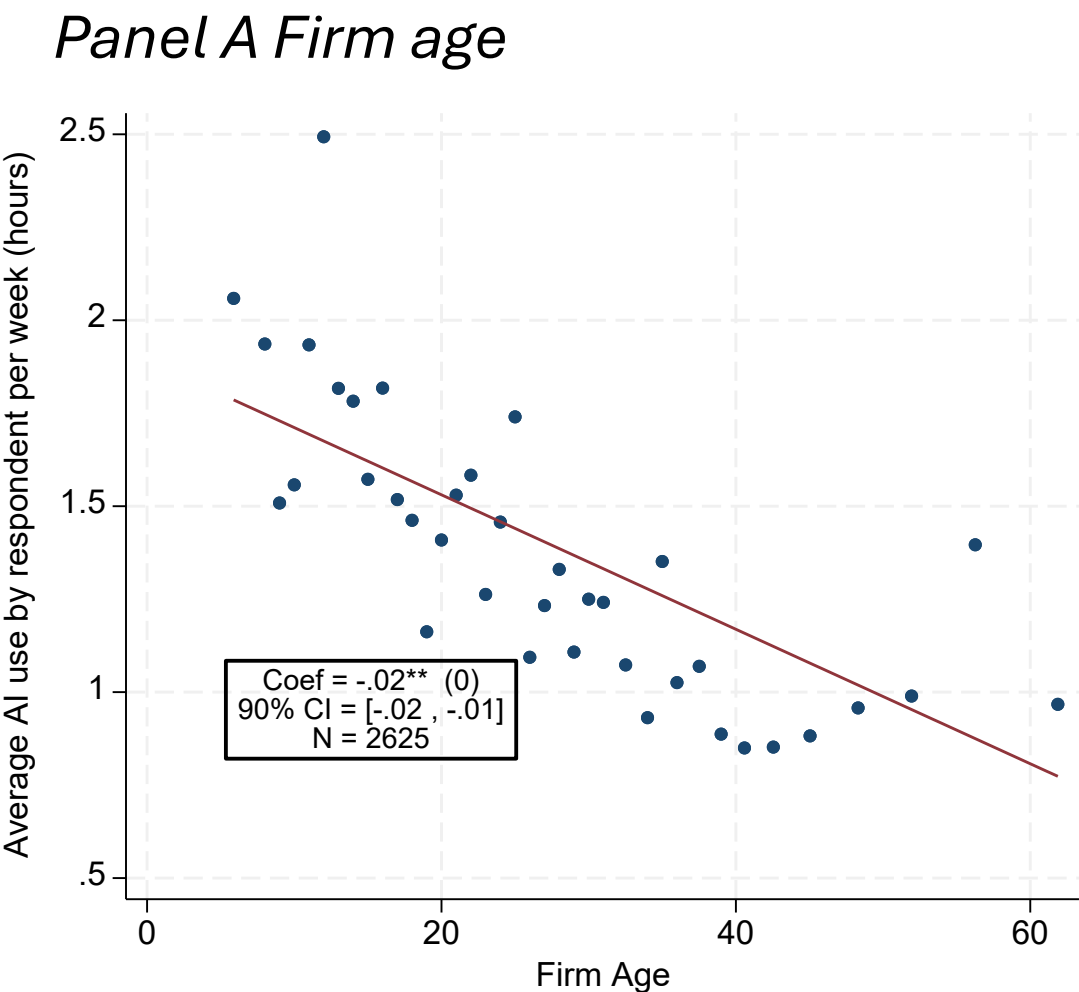
Notes: This figure is based on responses to the question: “Which of the following artificial intelligence technologies, if any, does your business currently use? And which do you intend to make use of over the next three years?” The results are based on responses from the UK Decision Maker Panel, collected over November 2025 – January 2026. The results are employment-weighted.

Figure A7 Expected use of AI technologies over next 3 years



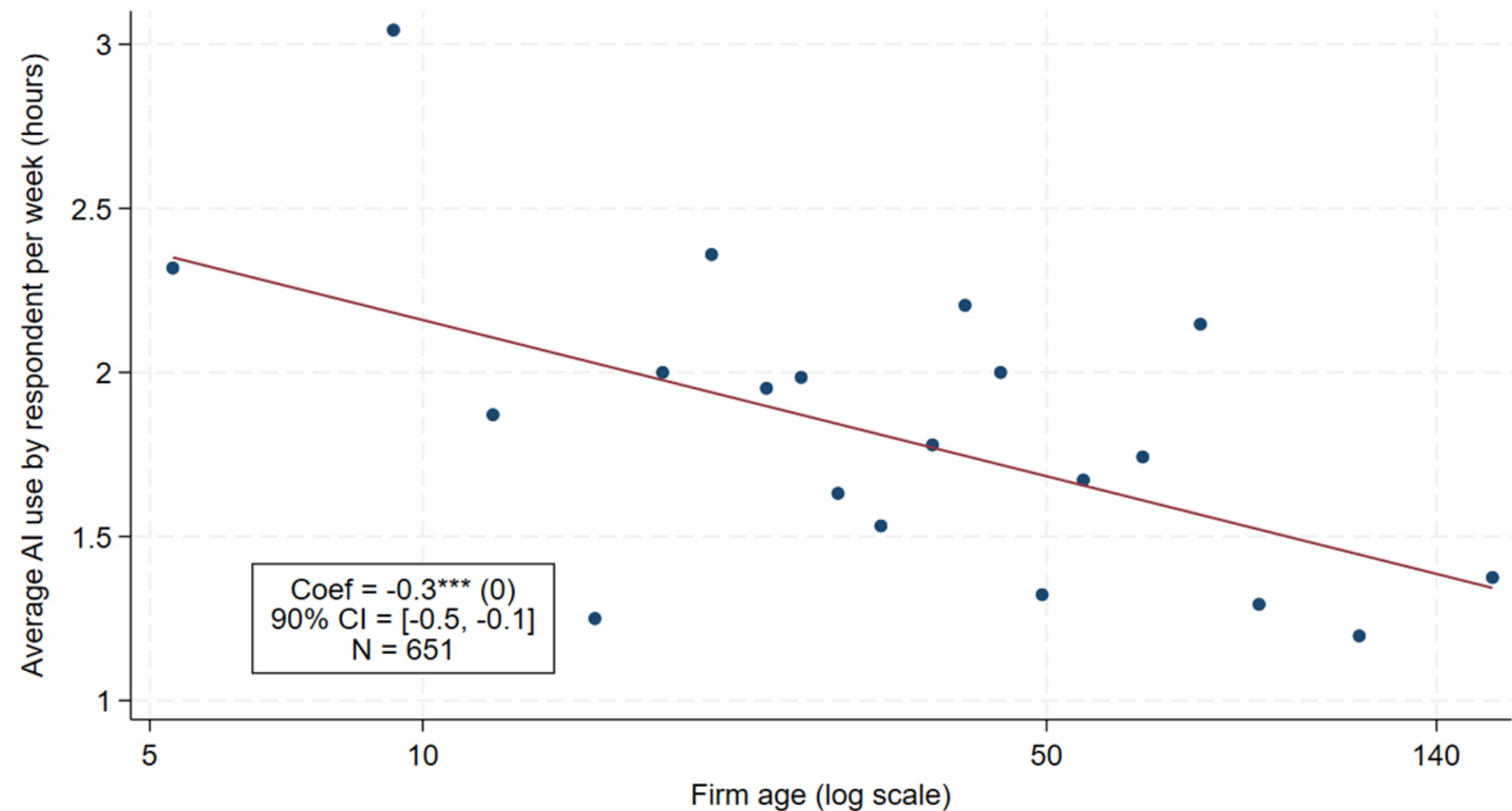
Notes: This figure is based on responses to the question: “Which of the following artificial intelligence technologies, if any, does your business currently use? And which do you intend to make use of over the next three years?” Firms could select more than one option. The data from the US Survey of Business Uncertainty was collected in November 2025. The data from the UK Decision Maker Panel was collected over November 2025 – January 2026. The data from the German Bundesbank Online Panel – Firms (BOP-F) were collected in January 2026. The data from the Australian Business Outlook Scenarios Survey was collected in December 2025. The data results from the SBU, DMP, and BOP-F are employment-weighted; the results from the BOSS are unweighted. The results for all firms is the average of the four surveys, weighted by the respective number of responses.

Figure A8.a Frequency of AI use by survey respondent: Heterogeneity by firm characteristics (UK Firms)



Notes: The binned scatter plots are based on responses from the UK Decision Maker Panel, collected over February-March 2025 and November 2025 – January 2026.

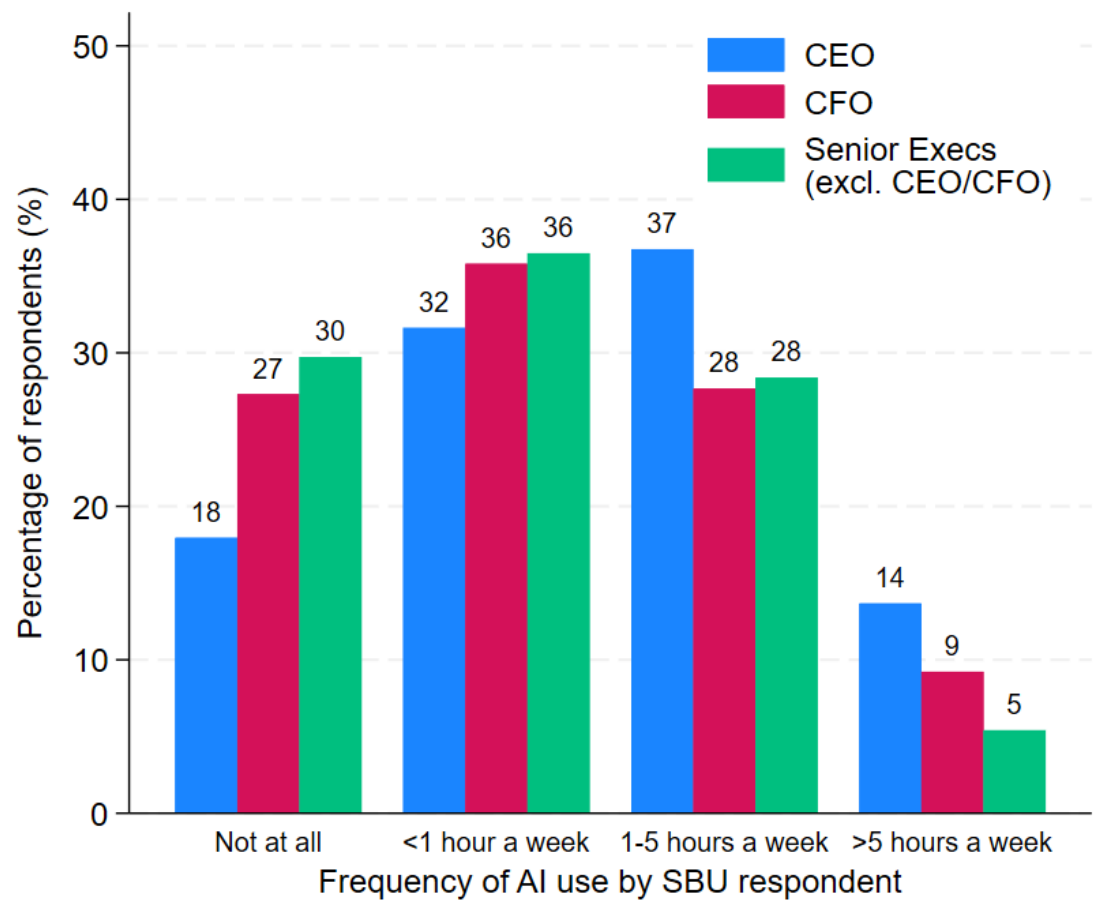
Figure A8.b Frequency of AI use by survey respondent: Heterogeneity by firm age (US Firms)



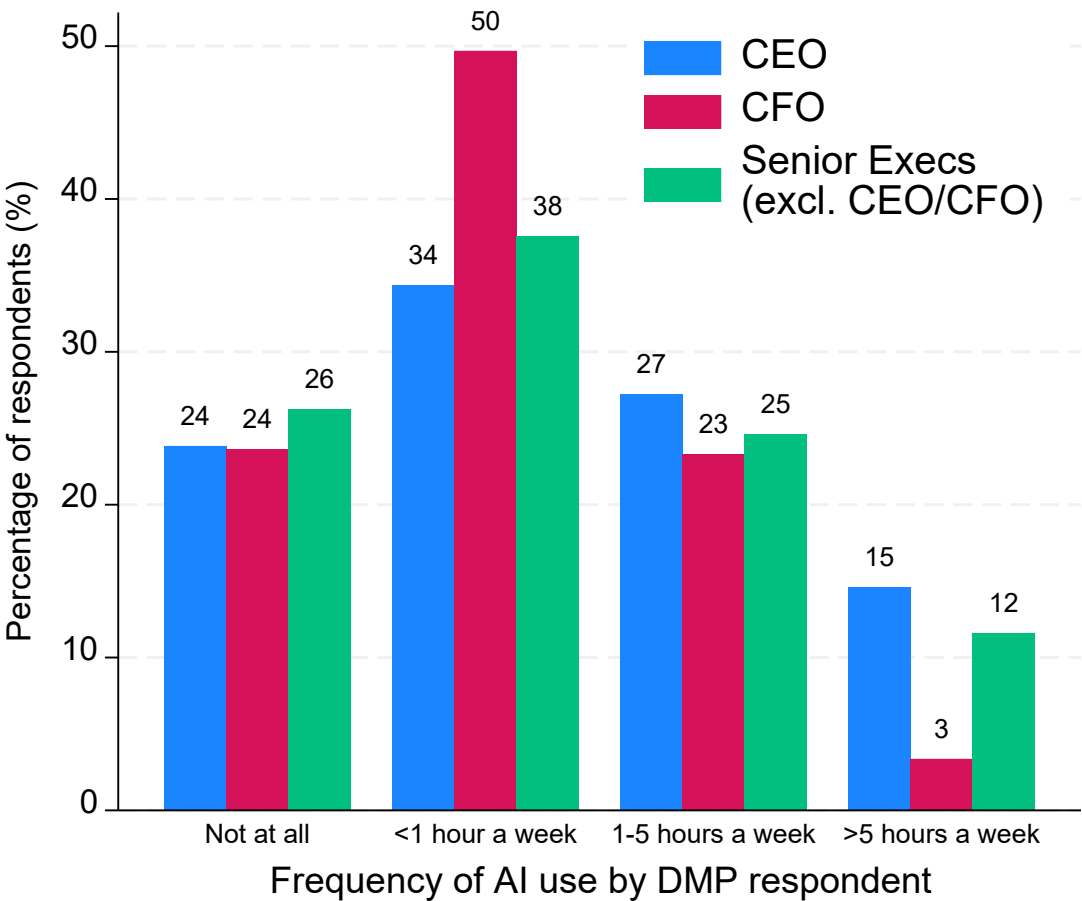
Notes: This figure presents a binned scatter plot of average weekly AI use by the survey respondent again firm age. It is based on responses to the question: “On average, how frequently do you personally use artificial intelligence technologies in a typical working week?” The data from the US Survey of Business Uncertainty was collected in November 2025.

Figure A9 Frequency of AI use by survey respondent: Heterogeneity by respondent position

Panel A US Firms (SBU)

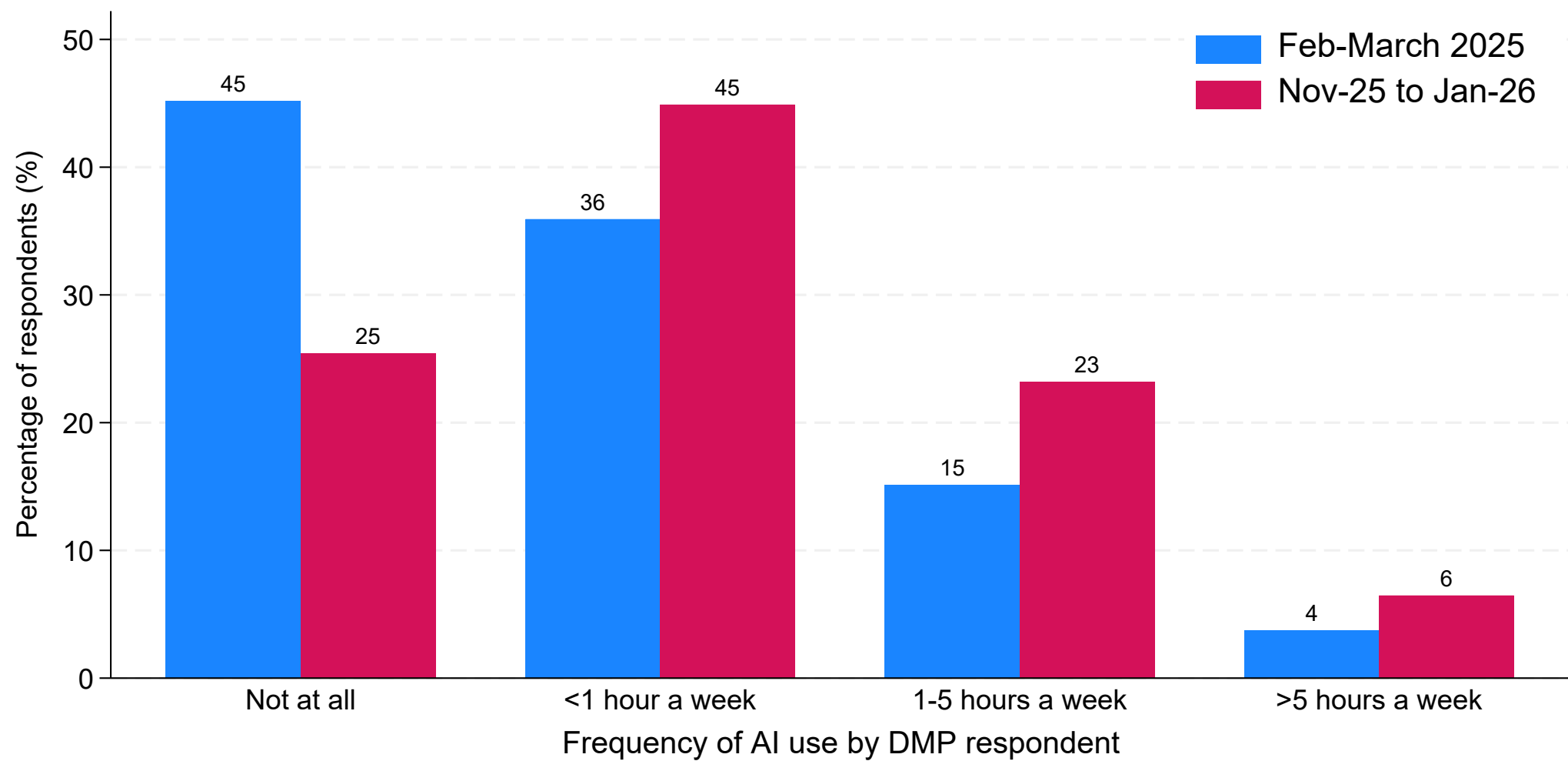


Panel B UK Firms (DMP)



Notes: This figure is based on responses to the question: “On average, how frequently do you personally use artificial intelligence technologies in a typical working week?” The data from the US Survey of Business Uncertainty was collected in November 2025. The data from the UK Decision Maker Panel was collected over November 2025 – January 2026. The data are employment-weighted.

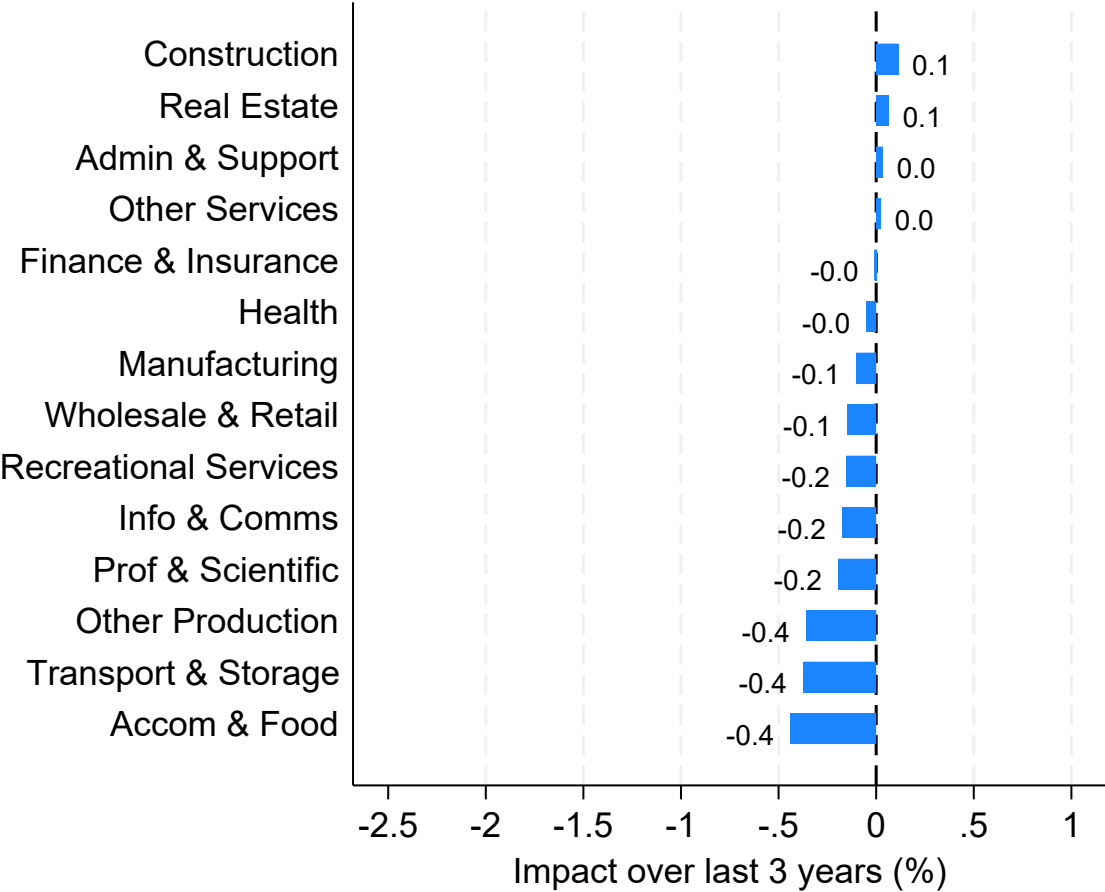
Figure A10 Frequency of AI use by survey respondent: Feb-March 2025 vs. Nov-25 to Jan-26 (UK Firms)



Notes: This figure is based on responses to the question: “On average, how frequently do you personally use artificial intelligence technologies in a typical working week?” The results are based on responses from the UK Decision Maker Panel, collected over February-March 2025 and November 2025 – January 2026.

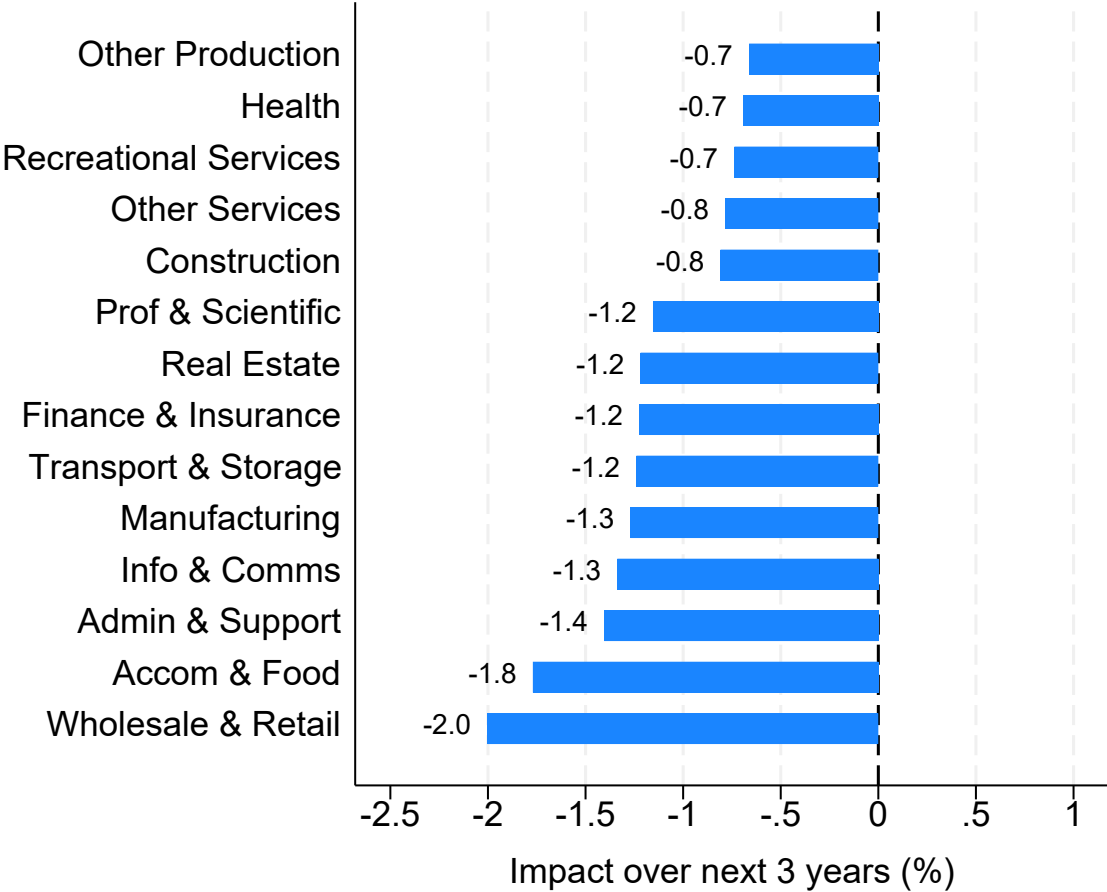
Figure A11 Realised and expected impacts of AI on employment by industry (UK Firms)

Panel A Past 3 Years



Source: Decision Maker Panel

Panel B Next 3 Years

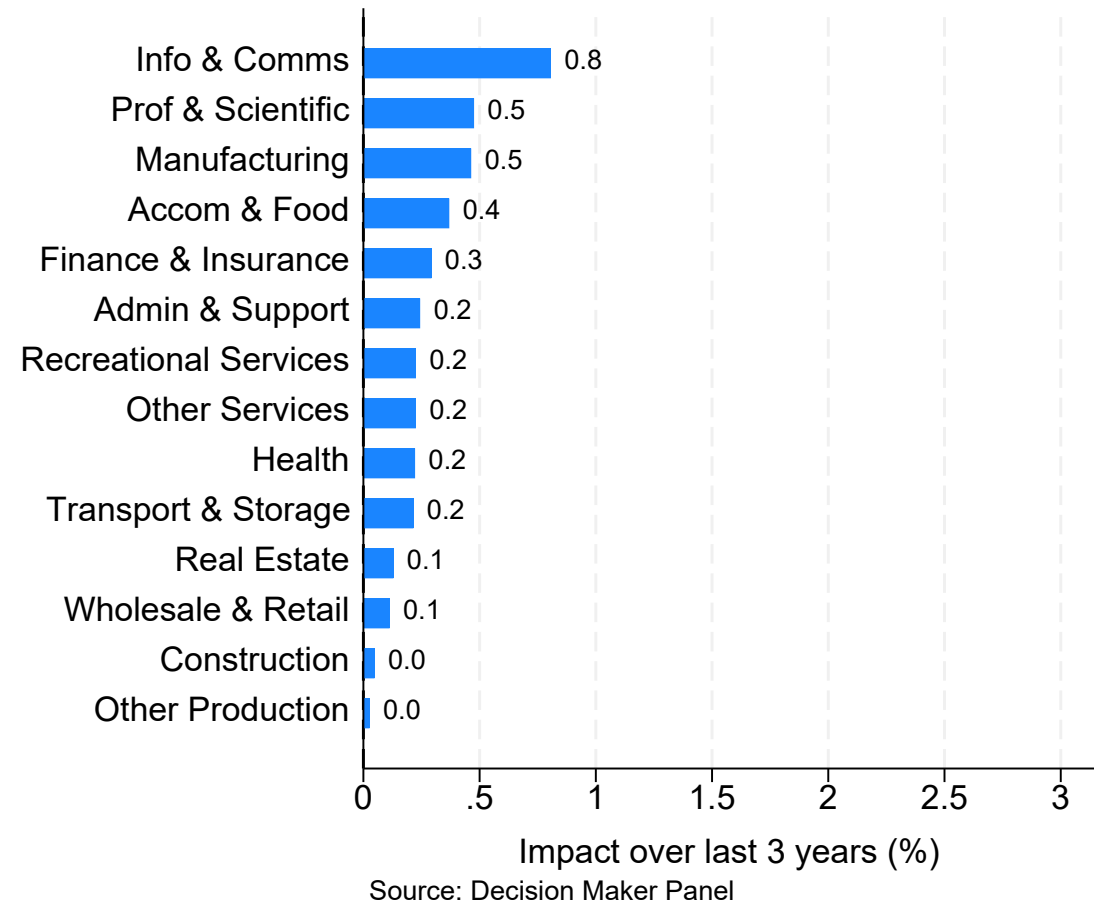


Source: Decision Maker Panel

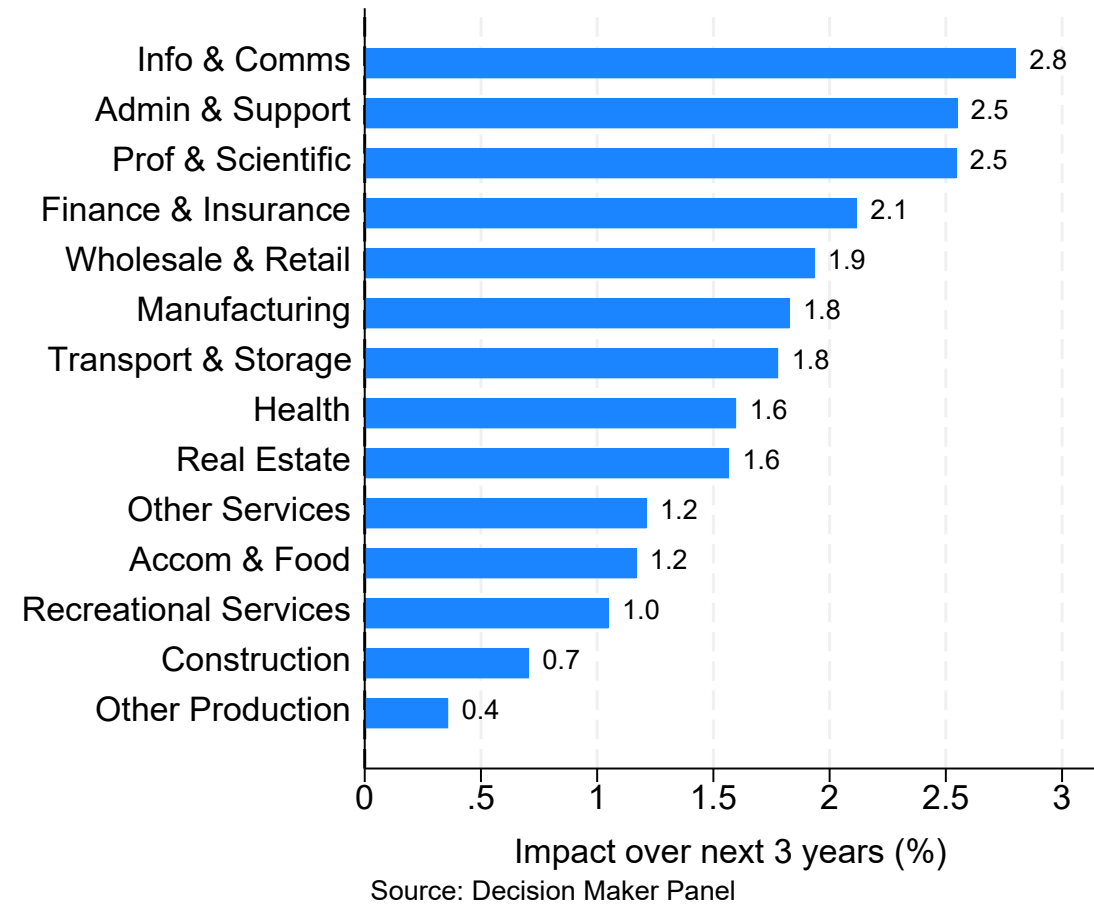
Notes: The results are based on responses from the UK Decision Maker Panel, collected over November 2025 – January 2026. The results are employment-weighted.

Figure A12 Realised and expected impacts of AI on productivity by industry (UK Firms)

Panel A Past 3 Years



Panel B Next 3 Years



Notes: The results are based on responses from the UK Decision Maker Panel, collected over November 2025 – January 2026. The results are employment-weighted.

Table A1 Number of AI technologies currently used (UK Firms)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Dependent Variable:	Number of AI Technologies Currently Used												
Labor productivity (logs)	0.23*** (0.04)											0.14** (0.06)	0.14** (0.06)
Employment (logs)		0.10*** (0.02)										0.18*** (0.02)	0.17*** (0.02)
Average Wage per Employee (logs)			0.44*** (0.06)									0.17** (0.09)	0.19** (0.09)
Firm Age				-0.01*** (0.00)								0.00 (0.00)	0.00 (0.00)
Average Age of Directors					-0.02*** (0.00)							-0.02*** (0.00)	-0.02*** (0.00)
Average productivity growth (2025)						0.01 (0.00)						0.01* (0.00)	
Expected productivity growth (2025)							0.02*** (0.01)					0.01* (0.01)	
Average real sales growth (2025)								0.00 (0.00)					0.00 (0.00)
Expected real sales growth (2025)									0.01 (0.01)				-0.00 (0.01)
Average employment growth (2025)										-0.00 (0.00)			-0.01*** (0.00)
Expected employment growth (2025)											0.00 (0.01)		-0.00 (0.01)
Mean of Dependent Variable	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
SIC2 industry and time fixed effects	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes

Notes: The dependent variable is the number of AI technologies currently being by firms. The data from the UK Decision Maker Panel was collected over February-April 2025 and November 2025 – January 2026, with the latest firm observation used in the regressions (N=2,793). A constant has also been estimated, but not reported in the table. Where data are missing for a particular variable a dummy variable is included to account for that (results not reported). Standard errors are clustered at the firm level, stars indicate *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A2 Determinants of frequency of AI use by survey respondent (UK Firms)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Dependent Variable:	Average Weekly AI Use (hours)												
Labor productivity (logs)	0.07 (0.05)											-0.02 (0.08)	-0.01 (0.08)
Employment (logs)		-0.10*** (0.02)										0.01 (0.03)	0.01 (0.03)
Average Wage per Employee (logs)			0.22*** (0.07)									0.18 (0.12)	0.19 (0.12)
Firm Age				-0.02*** (0.00)								0.00 (0.00)	0.00 (0.00)
Average Age of Directors					-0.04*** (0.01)							-0.03*** (0.01)	-0.03*** (0.01)
Average productivity growth (2025)						0.00 (0.00)						0.00 (0.00)	
Expected productivity growth (2025)							0.02** (0.01)					0.02* (0.01)	
Average real sales growth (2025)								-0.00 (0.00)					-0.00 (0.00)
Expected real sales growth (2025)									0.02** (0.01)				0.01 (0.01)
Average employment growth (2025)										-0.01 (0.00)			-0.01 (0.00)
Expected employment growth (2025)											0.01 (0.01)		-0.01 (0.01)
Mean of Dependent Variable	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
SIC2 industry and time fixed effects	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes

Notes: The data from the UK Decision Maker Panel was collected over February-March 2025 and November 2025 – January 2026, with the latest firm observation used in the regressions (N=2,642). A constant has also been estimated, but not reported in the table. Where data are missing for a particular variable a dummy variable is included to account for that (results not reported). Standard errors are clustered at the firm level, stars indicate *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Figure B1 Screenshots of AI survey questions in SBU



On average, how frequently do you **personally use** A.I. technologies in a typical working week?

- *Note: Among other things, A.I. technologies could include text generation using large language models (e.g. Microsoft Copilot), data or image processing using machine learning, and visual content creation.*

☐ More than 5 hours a week

☐ 1 to 5 hours a week

☐ Up to 1 hour a week

☐ Not at all



Which of the following artificial intelligence (A.I.) technologies, if any, does your firm **currently use**?

And which do you expect to make use of over the **next three years**?

- *Select all that apply*

	Currently using	Expect to use in the next 3 years
Autonomous vehicles	☐	☐
Robotics	☐	☐
Visual content creation	☐	☐
Image processing using machine learning	☐	☐
Data processing using machine learning	☐	☐
Text generation using Large Language Models	☐	☐
Other A.I. technology	☐	☐
We are not using/do not expect to use any A.I. technologies	☐	☐

Figure B1 Screenshots of AI survey questions in SBU (continued)



How has the adoption of A.I. technologies affected the volume of SALES PER EMPLOYEE of your business over the **past three years**?

And how do you expect this to affect your volume of SALES PER EMPLOYEE over the **next three years**?

	Past 3 years	Next 3 years
A large negative influence, subtracting 5% or more	☐	☐
A minor negative influence, subtracting less than 5%	☐	☐
No material impact	☐	☐
A minor positive influence, adding less than 5%	☐	☐
A large positive influence, adding 5% or more	☐	☐



How has the adoption of A.I. technologies affected the NUMBER OF EMPLOYEES of your business over the **past three years**?

And how do you expect this to affect your NUMBER OF EMPLOYEES over the **next three years**?

	Past 3 years	Next 3 years
A large negative influence, subtracting 5% or more	☐	☐
A minor negative influence, subtracting less than 5%	☐	☐
No material impact	☐	☐
A minor positive influence, adding less than 5%	☐	☐
A large positive influence, adding 5% or more	☐	☐

Figure B2 Screenshots of AI survey questions in DMP

Decision Maker Panel



BANK OF ENGLAND

Which of the following artificial intelligence technologies, if any, does your business currently use? And which do you expect to make use of over the next three years?

Please select all that apply.

	Currently using	Expect to use in next 3 years
Autonomous vehicles	☐	☐
Data processing using machine learning	☐	☐
Image processing using machine learning	☐	☐
Robotics	☐	☐
Text generation using Large Language Models	☐	☐
Visual content creation	☐	☐
Other AI technology	☐	☐
Don't know	☐	☐
Not using/Do not expect to use any artificial intelligence technologies	☐	☐

Decision Maker Panel



BANK OF ENGLAND

On average, how frequently do you personally use artificial intelligence technologies in a typical working week?

Note: Amongst other things, AI technologies could include text generation using large language models (eg Microsoft Copilot), data or image processing using machine learning and visual content creation.

Not at all

Up to 1 hour a week

1 to 5 hours a week

More than 5 hours a week

Figure B2 Screenshots of AI survey questions in DMP (continued)

Decision Maker Panel



BANK OF ENGLAND

How has the adoption of artificial intelligence technologies affected the volume of SALES PER EMPLOYEE in your business over the past three years? And how do you expect this to affect your volume of SALES PER EMPLOYEE over the next three years?

Past 3 years

Next 3 years

A large positive influence, adding 5% or more

☐☐

A minor positive influence, adding less than 5%

☐☐

No material impact

☐☐

A minor negative influence, subtracting less than 5%

☐☐

A large negative influence, subtracting 5% or more

☐☐

Decision Maker Panel



BANK OF ENGLAND

How has the adoption of artificial intelligence technologies affected the NUMBER OF EMPLOYEES in your business over the past three years? And how do you expect this to affect your NUMBER OF EMPLOYEES over the next three years?

Past 3 years

Next 3 years

A large positive influence, adding 5% or more

☐☐

A minor positive influence, adding less than 5%

☐☐

No material impact

☐☐

A minor negative influence, subtracting less than 5%

☐☐

A large negative influence, subtracting 5% or more

☐☐

Figure B3 Screenshots of AI survey questions in BOP-F

forsa.

Welche der folgenden KI-Technologien werden **derzeit** in Ihrem Unternehmen genutzt? Und welche erwarten Sie in den **nächsten drei Jahren** zu nutzen?

Hinweis: Bitte wählen Sie alle zutreffenden Antworten aus.

	derzeit:	in den nächsten drei Jahren:
Textgenerierung mit großen Sprachmodellen (eng. Large Language Models)	☐	☐
autonome Fahrzeuge	☐	☐
Erstellung visueller Inhalte	☐	☐
Robotik	☐	☐
Datenverarbeitung mittels maschinellem Lernen	☐	☐
Bildverarbeitung mittels maschinellem Lernen	☐	☐
andere KI-Technologien	☐	☐
Wir nutzen derzeit keine / erwarten keine Nutzung von KI-Technologien.	☐	☐

Zurück

Weiter

Figure B3 Screenshots of AI survey questions in BOP-F (continued)

forsa.

Wie häufig nutzen Sie selbst künstliche Intelligenz (KI) ⓘ in einer typischen Arbeitswoche im Durchschnitt?

- ☐ gar nicht
- ☐ bis zu 1 Stunde pro Woche
- ☐ 1 bis 5 Stunden pro Woche
- ☐ mehr als 5 Stunden pro Woche

Zurück

Weiter

Figure B3 Screenshots of AI survey questions in BOP-F (continued)

forsa.

Wie hat die Einführung von KI-Technologien die Anzahl der Beschäftigten in Ihrem Unternehmen in den **letzten drei Jahren** beeinflusst?
Und was erwarten Sie, wie wird die Anzahl der Beschäftigten in Ihrem Unternehmen in den **nächsten drei Jahren** dadurch beeinflusst?

	in den letzten drei Jahren:	in den nächsten drei Jahren:
großer positiver Einfluss, Anstieg um 5 % oder mehr	☐	☐
positiver Einfluss, Anstieg um bis zu 5 %	☐	☐
keine wesentliche Auswirkung	☐	☐
negativer Einfluss, Rückgang um bis zu 5 %	☐	☐
großer negativer Einfluss, Rückgang um 5 % oder mehr	☐	☐

Weiter

Figure B3 Screenshots of AI survey questions in BOP-F (continued)

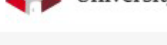
forsa.

Wie hat die Einführung von KI-Technologien den Umsatz pro Beschäftigten in Ihrem Unternehmen in den **letzten drei Jahren** beeinflusst?
Und was erwarten Sie, wie wird der Umsatz pro Beschäftigten in Ihrem Unternehmen in den **nächsten drei Jahren** dadurch beeinflusst?

	in den letzten drei Jahren:	in den nächsten drei Jahren:
großer positiver Einfluss, Anstieg um 5 % oder mehr	☐	☐
positiver Einfluss, Anstieg um bis zu 5 %	☐	☐
keine wesentliche Auswirkung	☐	☐
negativer Einfluss, Rückgang um bis zu 5 %	☐	☐
großer negativer Einfluss, Rückgang um 5 % oder mehr	☐	☐

Weiter

Figure B4 Screenshots of AI survey questions in BOSS



○○○○○○○○○○○○○○○○○○○○○○○○○○○○○○○

Which of the following artificial intelligence (A.I.) technologies, if any, does your business currently use?

And which do you expect to make use of over the next three years?

Please select all that apply for each column

	Currently using	Expect to use in next 3 years
Visual content creation	☐	☐
Data processing using machine learning	☐	☐
Text generation using Large Language Models	☐	☐
Image processing using machine learning	☐	☐
Robotics	☐	☐
Autonomous vehicles	☐	☐
Other A.I. technology	☐	☐
We are not using/do not expect to use any A.I. technologies	☐	☐

[|Email](#) |[|Privacy](#)

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Figure B4 Screenshots of AI survey questions in BOSS (continued)

**MACQUARIE**
University

On average, how frequently do you **personally use** artificial intelligence technologies in a **typical working week**?

Note: Amongst other things, AI technologies could include text generation using large language models (eg Microsoft Copilot or ChatGPT), data or image processing using machine learning and visual content creation.

Not at all

Up to 1 hour a week

1 to 5 hours a week

More than 5 hours a week

Figure B4 Screenshots of AI survey questions in BOSS (continued)

[illegible]

Figure B4 Screenshots of AI survey questions in BOSS (continued)

[illegible]

Figure B5 Screenshots of AI survey questions in SWAA

We will now ask about YOUR experiences with Generative AI.

Generative AI is a type of artificial intelligence that creates text, images, audio, or video in response to prompts. Some examples of Generative AI include ***ChatGPT***, ***Gemini***, and ***Midjourney***

Had you heard about Generative AI before this survey?

☐ No

☐ Yes

Continue

Do you use Generative AI for your job?

☐ No

☐ Yes

Continue

Figure B5 Screenshots of AI survey questions in SWAA (continued)

You indicated that you sometimes use Generative AI for your job.

Did you use Generative AI for your job LAST WEEK?

☐ No, I did not use Generative AI for my job last week

☐ Yes, one workday last week

☐ Yes, more than one workday last week

☐ Yes, every workday last week

Continue

Please think back to the days LAST WEEK on which you used Generative AI for your job.

On average, how much time did you spend actively using Generative AI for your job?

☐ Less than 15 minutes per day

☐ Between 15 minutes and 1 hour per day

☐ Between 1 and 4 hours per day

☐ More than 4 hours per day

Continue

Figure B5 Screenshots of AI survey questions in SWAA (continued)

How has the adoption of Artificial Intelligence technologies affected your employer's SALES PER WORKER (PRODUCTIVITY):

- over the past three years?
- over the next three years?

	Past 3 years	Next 3 years
A large positive influence, adding 5% or more	☐	☐
A minor positive influence, adding less than 5%	☐	☐
No material impact	☐	☐
A minor negative influence, subtracting less than 5%	☐	☐
A large negative influence, subtracting 5% or more	☐	☐

Continue

How has the adoption of Artificial Intelligence technologies affected the NUMBER OF EMPLOYEES who work for your employer:

- over the past three years?
- over the next three years?

	Past 3 years	Next 3 years
A large positive influence, adding 5% or more	☐	☐
A minor positive influence, adding less than 5%	☐	☐
No material impact	☐	☐
A minor negative influence, subtracting less than 5%	☐	☐
A large negative influence, subtracting 5% or more	☐	☐

Continue

Figure B6 Executives are Recruited by Phone and Then Moved to an Online Panel



Random sampling from population of firms with 10+ employees (median ≈ 100)

