

What an LSE-CBI survey found about AI adoption in UK firms

*A survey conducted in May by LSE's Centre for Economic Performance and the Confederation of British Industry asked firms about the use of artificial intelligence and the green transition. The results shed new light on how firms are using AI in the UK and the technology's impacts on businesses. **Juliana Oliveira-Cunha, Bruno Serra-Lorenzo** and **Anna Valero** explain the results.*

This is part 1 of a two-part series. See part 2 [here](#).

The crises and changes of the 2020s have provided many challenges for UK firms, and these occurred against a background of [stagnant productivity](#) since the financial crisis. But crises can also force [productivity-enhancing change](#) in businesses. For example, our [previous surveys](#), conducted in collaboration with the Confederation of British Industry (CBI) in 2020 and 2021, found that firms innovated more as a result of COVID-19. Since our last survey, the UK and other economies experienced an energy crisis hitting businesses and consumers hard; and in response to the ongoing climate crisis and net zero targets, many businesses are accelerating sustainability programmes.

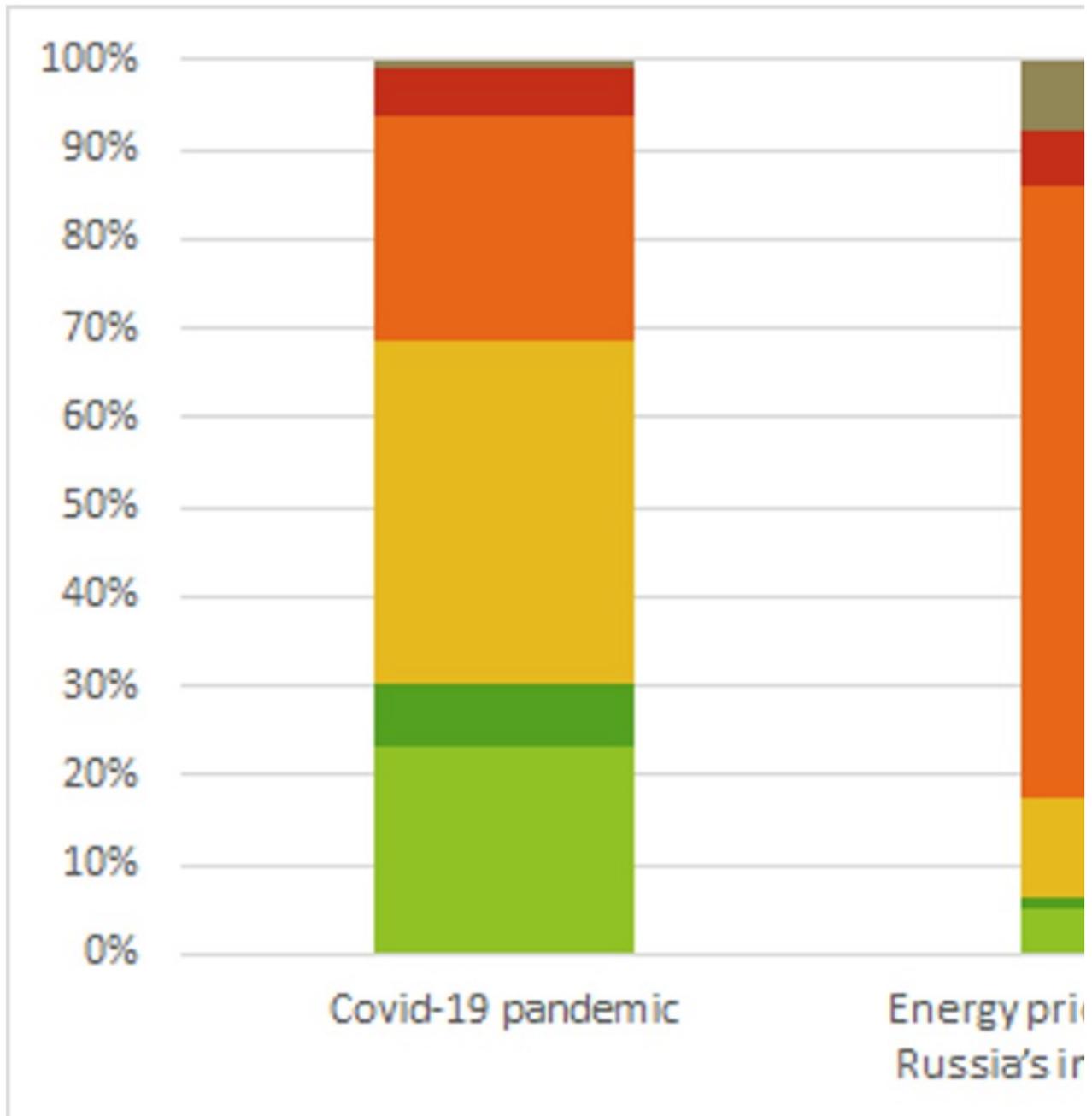
In May 2024, we conducted a new wave of our survey. We asked firms about the lasting impacts of digital technology adoption during the COVID pandemic. We also asked many more detailed questions, in particular on the use of artificial intelligence (AI) and actions taken due to the green transition. We achieved a sample of 400 firms spanning the size distribution, and many sectors and regions.

This blog post (the first in a series of two) sets out some of our initial results on digital adoption – and in particular AI – shedding new light on how firms are using AI in the UK, their motivations for doing so, and current as well as expected impacts. We report simple unweighted aggregates here, and our future research will explore difference across firms and the drivers of adoption.

Digital adoption through crises

As in our previous survey waves, we found that around two-thirds of firms had adopted new digital technologies since the pandemic, and 70 per cent of these adopters said that this was prompted or accelerated by the pandemic. In fact, nearly a quarter of adopters considered that the pandemic had prompted a continued process of adoption – much higher than the share that considered this to be a one-off change (see Figure 1). In contrast, and as expected, given the different nature of the shock, the energy crisis in general had no influence on digital adoption though it is interesting that a larger share of firms said that this crisis prompted or accelerated digital adoption (17 per cent) than the share that said it delayed adoption (6 per cent).

Figure 1. Impacts of shocks on digital adoption



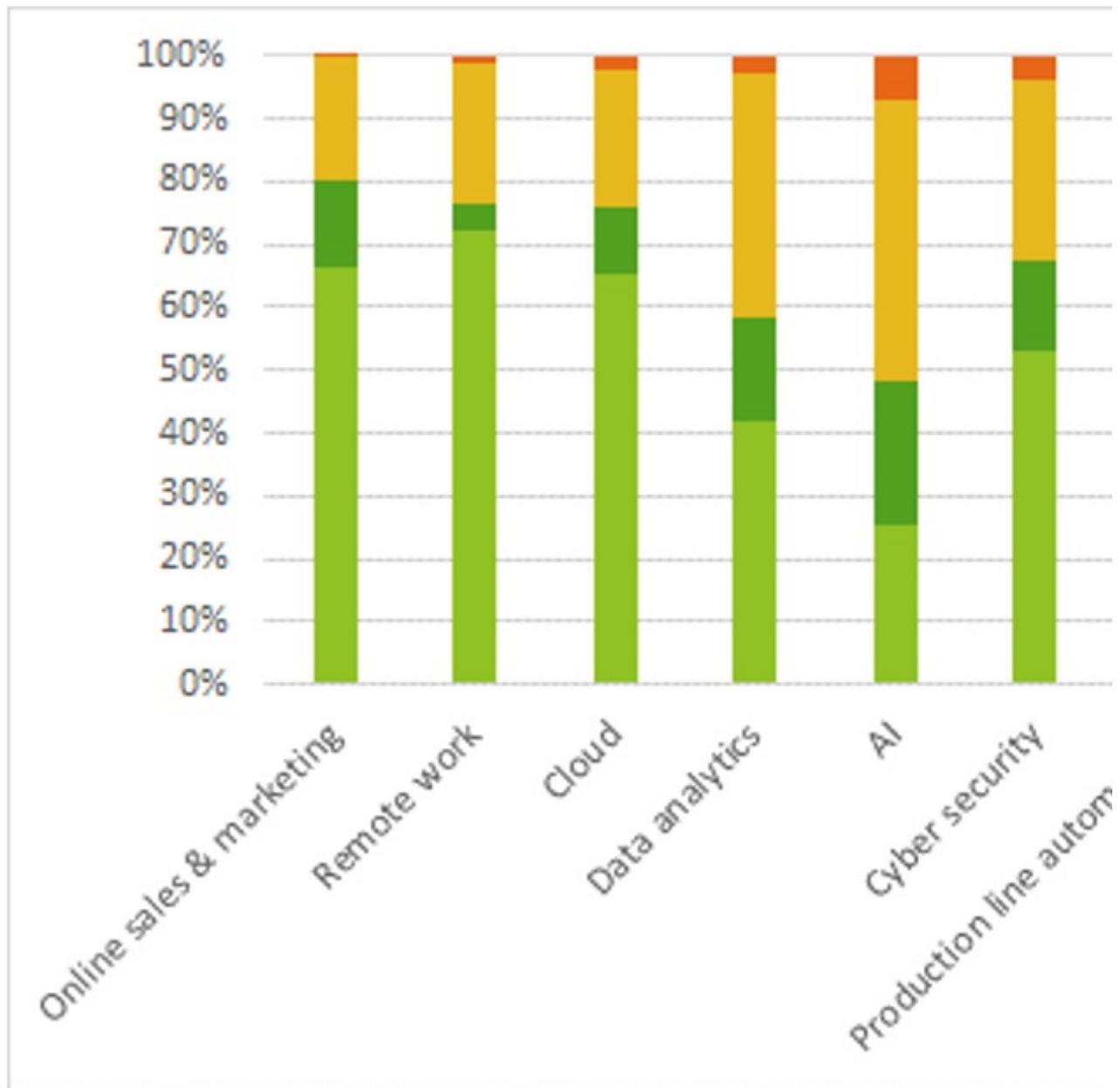
Notes: Unweighted aggregates, based on sample of adopters that answered this question (269 and 264 for each shock respectively).

Types of digital technologies

We found that the most commonly adopted digital technologies in the 2020s related to

online sales and marketing, remote work, cloud computing, and cyber security, where 65-70 per cent of firms had made investments (see figure 2). AI is less widespread, with only a quarter of firms in our sample stating that they have invested in AI technologies during the 2020s, and another 23 per cent saying that they have not yet invested, but plan to do so. These figures seem broadly consistent with [DCMS analysis](#), although since our survey was more up to date, AI adoption is unsurprisingly a little higher.

Figure 2. Investment in specific technologies



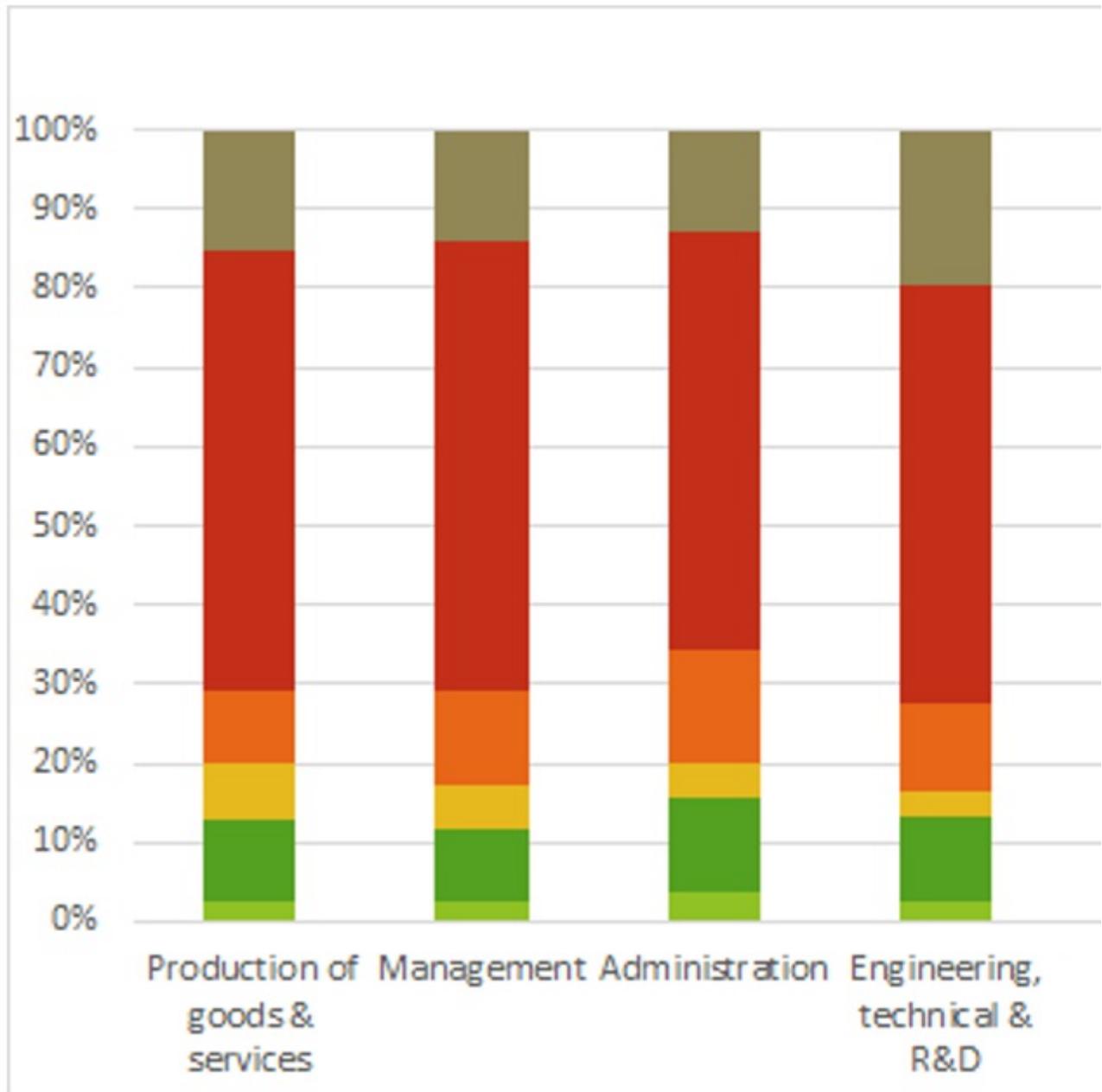
Notes: Unweighted aggregates. Based on sample of 396 firms that answered this question (excluding the small number of blanks that apply for some sub-technologies). “AR, VR” = Augmented and Virtual Reality; IoT = “Internet of Things” and DLT = Distributed Ledger Technologies (including blockchain). Note that in the survey questions we set out a broad view of AI technologies, including chatbots, analysing documents using machine learning, and generative AI.

How are firms using AI?

Recent years have seen rapid advances in AI with the proliferation of generative AI models such as Chat GPT. But there is still [widespread debate](#) on the likely economic effects of AI. Some argue that it will unleash a new era of productivity growth, others claim it will primarily displace workers and increase inequality and still others are sceptical, arguing the overall productivity and labour market effects will be a long-time coming.

To begin to shed light on these issues in our survey, first we sought to understand the extent to which AI use is embedded in different business functions, going beyond the “extensive margin” (that is, whether or not firms are using AI) which tends to be the focus in many standard business surveys. Figure 3 shows that AI penetration appears highest in IT and marketing and sales functions, where nearly 30 per cent of businesses are using or trialling AI, and 18 per cent have plans to use it. Around 20 per cent of firms said they were using or trialling AI in core business functions such as production, management and administration and engineering activities. So far, AI appears less widespread in transport, logistics and facilities maintenance.

Figure 3. Use of AI by business function



Notes: Unweighted aggregates. Based on sample of 381 firms that responded to this question (excluding the small number of blanks that apply for some business functions).

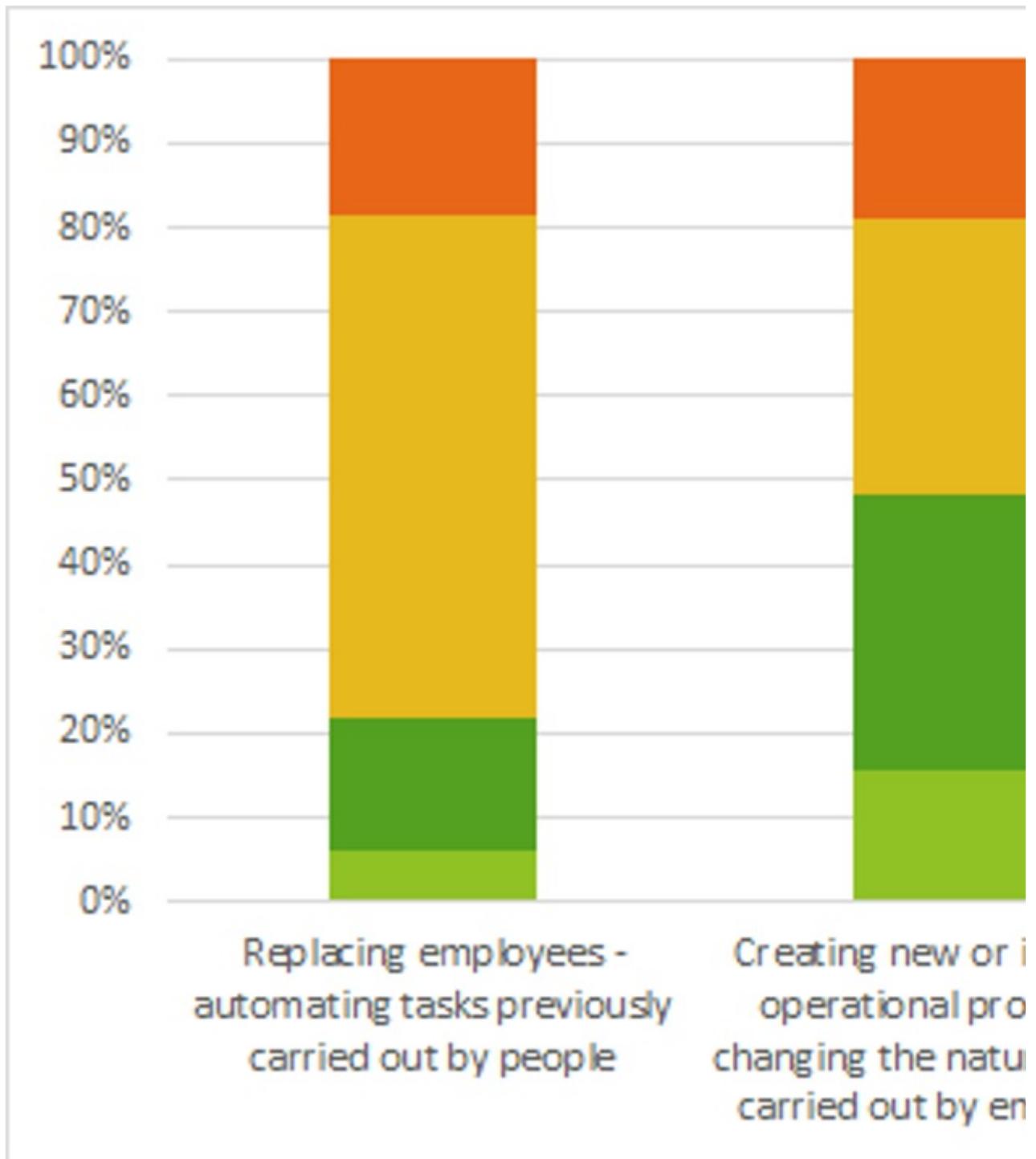
Why firms are using AI

A widespread concern in the [debates](#) about AI is that it will lead to massive layoffs as firms replace workers with cheaper AI tools. Others argue that AI will make workers more

productive by reducing the amount of time spent on procedural tasks, freeing them to focus on more conceptual tasks and therefore augmenting labour.

When asked about the reasons for adopting AI, around 20 per cent stated that replacing tasks previously carried out by people was a consideration (to “some” or to a “great” extent). But twice as many as this said that creating new or improved processes, or products and services were key considerations (figure 4). This suggests that for our sample of firms, we can take a more positive view of AI when it comes to workers.

Figure 4. Considerations affecting decisions to adopt AI

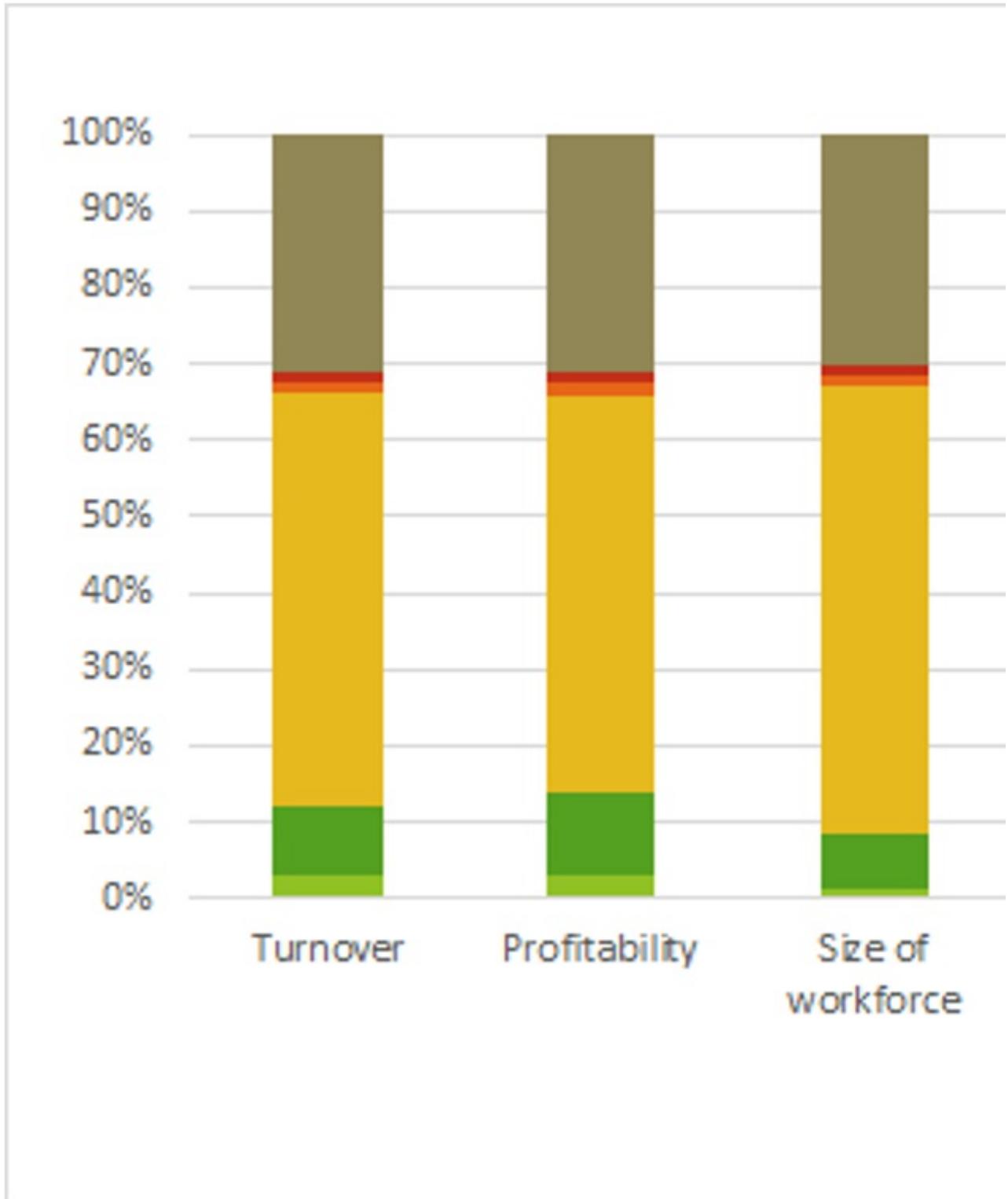


Notes: Unweighted aggregates. Based on sample of 374 firms that responded to this question (excluding the small number of blanks across answers).

Reported impacts on businesses

We asked businesses what they consider to be the impacts of AI on turnover, profitability, workforce size, training and overall business resilience. Across all of these areas, figure 5 shows that the largest share of businesses say that there has been no impact yet. Interestingly, a higher share of firms report *positive* impacts across these areas, including workforce size (9 per cent) and training (14 per cent), compared to those reporting *negative* impacts on these outcomes (3 per cent and 4 per cent respectively).

Figure 5. Impacts so far of AI on different aspects of firm performance



Notes: Unweighted aggregates. Based on sample of 378 firms that responded to this

question (excluding the small number of blanks for some categories).

Given that AI use is still at a relatively early stage across the economy, we also asked about expected impacts. A more positive impact across all areas seems to be anticipated over the coming years. Over 40 per cent of firms expect a positive impact on turnover, profits, training and resilience (figure 6). As discussed above, improved profitability could come at the expense of fewer workers. About 22 per cent of all firms expected a positive impact on employment. Although this is lower than for profitability, turnover, resilience and training, there were still more firms expecting a positive jobs effect than a negative effects. There were 13 per cent of “jobs pessimists”, nine percentage points fewer than the job optimists. Note that most firms were either unsure or expected zero impact of AI on jobs.

Figure 6. Expected impacts of AI (next 5-10 years) on different aspects of firm performance



Notes: Unweighted aggregates. Based on sample of 381 firms that responded to this question (excluding the small number of blanks for some categories).

Overall, these results indicate that businesses expect the impacts of AI across all areas to be more positive in the future, and to apply to different areas of business performance.

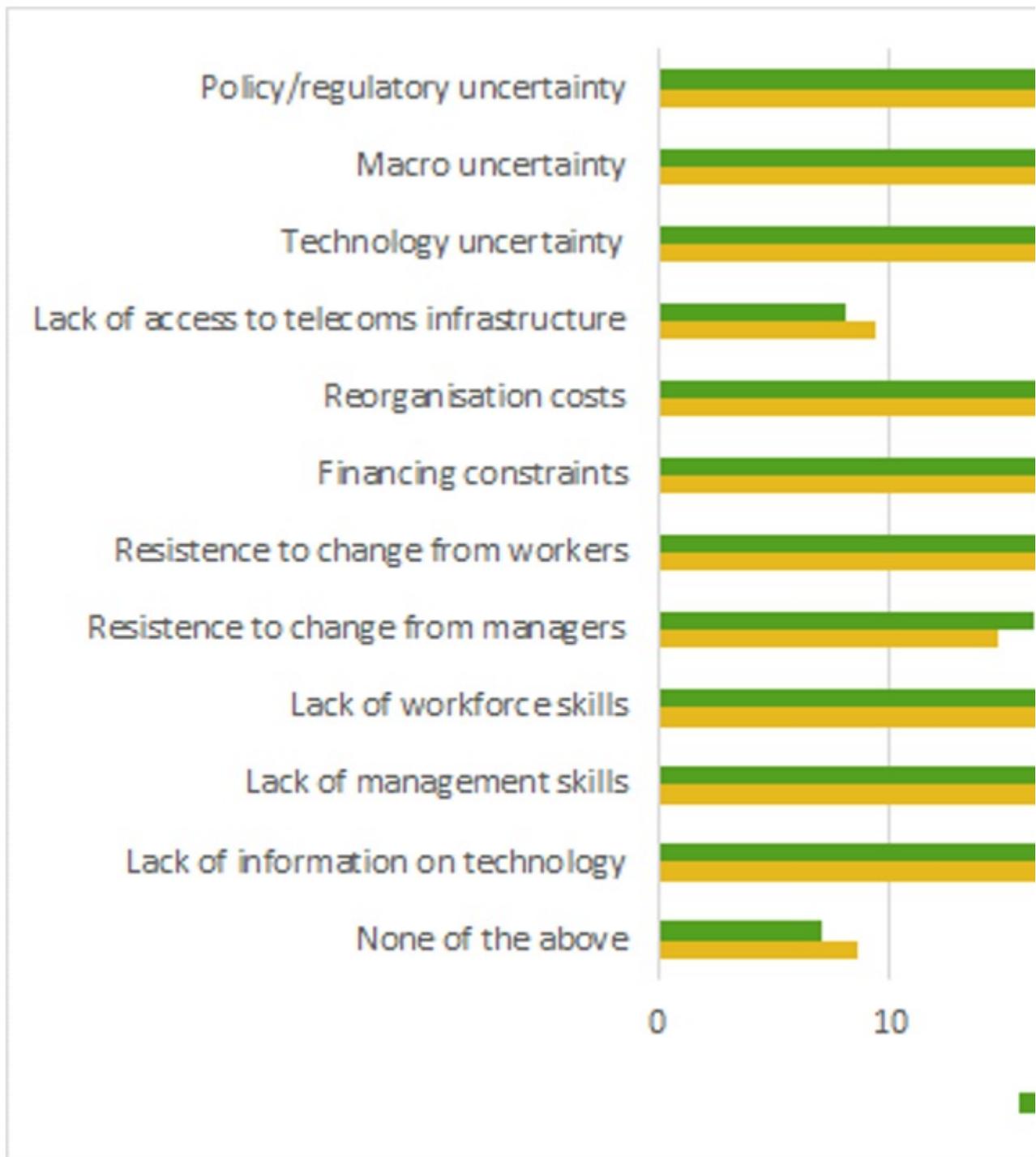
There will perhaps be some labour-replacing activity in some firms, but positive effects in others. Taking the results on profits, workforce size and training together, the overall picture seems consistent with a relatively high share of businesses expecting labour productivity to improve due to AI.

What are the barriers?

A key question for researchers and policymakers is why firms do not adopt technologies and practices that are expected to improve productivity. As in our previous surveys, we asked firms what they consider to be barriers to adoption, both for digital technologies in general, and AI technologies in particular. The results are in Figure 7.

For digital technologies, financing constraints come out top, with 55 per cent of firms citing this as a barrier. Next comes a lack of information, skills constraints and policy/technological uncertainty. These constraints seem to matter for AI too, but for AI a lack of information seems to be a bigger issue, and financing constraints much less so, perhaps reflecting the launch of easily accessed AI-enabled applications in recent years.

Figure 7. Barriers to adoption: AI technologies versus all digital



Notes: Unweighted aggregates. Based on sample of 394 firms that responded to the digital barriers question and 381 firms that responded to the AI question.

Looking forward

Overall, the results appear to reflect a positive view on how AI is being used, and expectations for the future. The barriers to adoption of digital and AI are consistent with previous surveys, but it is also clear that information constraints are more of an issue of AI where technology is developing rapidly, and its applications area not yet fully understood.

Our forthcoming discussion paper will analyse the survey results in depth, studying the differences by firm type, as well as complementarities between AI, other digital technologies, and broader changes in firms for the net-zero transition.

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- See Part 2 of this series [here](#).
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