

Will AI take your job?

What advancements in artificial intelligence mean for the labour market

- ◆ With rapid developments in artificial intelligence...
- ◆ ...more jobs may be threatened by technology...
- ◆ ...but many roles may benefit from big productivity gains

In a decade that already has seen a number of incredible scientific breakthroughs, from COVID-19 vaccines to fusion energy, it's important not to underestimate the potential speed of development within a number of core technologies that could have the potential to change the way we think about the economy.

One of those areas with rapid development in recent years has been artificial intelligence (AI), where the improvements, such as creating images and text in an entirely self-generated manner, have opened the door to a transformative impact on the economy.

As we argued in *Robots and Jobs*, 1 November 2021, the impact of automation on the labour market is likely to be substantial in the decade to come. Pandemic-related shocks to worker availability and wages, as well as developments in technology and social willingness to use automated processes (such as in restaurants and hotels) will likely mean more automation in the obvious way – robots replacing jobs.

But what about other technological developments? The rapid improvements in AI in recent years have opened up a huge array of possibilities. The recent release of OpenAI's Chat GPT is the most high-profile, and showcases how AI can speed up and improve the output in many roles, including journalism, research and, dare we say it, economics.

To showcase this power, the full report contains the output of a 'conversation' with Chat GPT on the outlook for automation in the labour market – so clients of HSBC Global Research can see for themselves how advanced this technology already is today. We did not edit a single word of the answers – and this 'conversation' was conducted over the space of a five-minute period.

We see AI developments as broadly positive. Yes, there will be challenges within some fields in discerning what content is AI generated and what is generated by humans. Some gaps in the AI knowledge or coding issues can lead to malfunctions or bias in outputs. Job roles could be lost within the knowledge economy.

But, the scope for productivity gains is huge. Researching, problem solving (such as finding coding solutions), marking exam results or homework and many more tasks will be faster and more efficient in future. Many other scientific breakthroughs in health or technology could be accelerated. This could open doors to more jobs being created, or to give people more time in which to enjoy leisure. It's more likely, in our view, that AI takes some (the boring bit) of your job, rather than all of it.

This could trigger some substantial productivity gains for many roles if used correctly, and although the outlook for AI and its impact is uncertain, this is just the beginning.

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AI and jobs

- ◆ Rapid advances in artificial intelligence in recent years...
- ◆ ...mean more roles could be sped up, which may lift productivity
- ◆ Whether this results in job losses remains to be seen

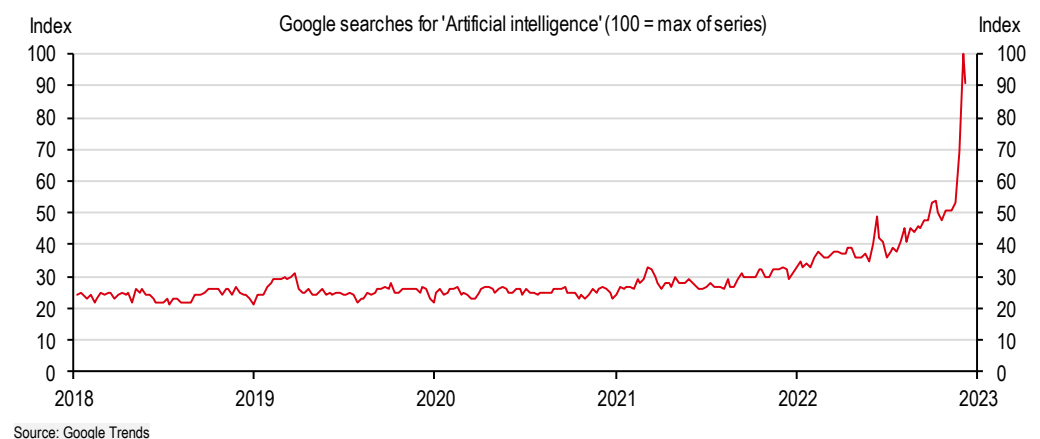
AI's moment in the sun

ChatGPT has lifted AI developments into the mainstream

Whilst technology continues to develop across a wide range of industries at incredibly fast rates, the 'technology du jour' since the latter part of 2022 is very much artificial intelligence (AI). The arrival of impressive breakthroughs, most notably OpenAI's ChatGPT chat bot, have garnered the world's attention as to the possible use cases for the technology in many more spheres. The chat bot was launched in November 2022 and uses AI to answer questions, generate content or solve problems.

ChatGPT is not connected to the internet, but instead uses 175bn inputs of data to generate the most likely next word in a sentence, having been trained using supervised and reinforcement learning techniques, where human trainers help to improve the output. This allows it to provide rich answers quickly, but means that its knowledge is not always up to date and may rely on sources that are subsequently deemed to be wrong after they were included as an input.

1. Interest in AI ramped up in late 2022



It's not just ChatGPT where we're seeing breakthroughs. OpenAI's DALL-E generates images based on a wide range of text prompts, while the company Veritone attempted to use commentator Alan Smith's voice to create AI-generated commentary for FIFA World Cup games, with mixed success.

However, it's clear that the technology is rapidly improving across a number of spheres – be it text, audio or images and beyond – so, even at this early stage, it is worth considering the various channels through which AI could impact the economy, but most clearly the labour market.

ChatGPT is just scratching the surface of what AI could do within the economy

Game-changing chat

The release of ChatGPT is a clear sign of how important a role AI could play in many jobs going forwards. For any readers that haven't used it – it's worth spending some time on chat.openai.com to see some of the capabilities of the technology. It can help find coding solutions, dig up historical research papers, generate scripts or prose and even show recipe options for dinner. Whilst many of the initial use cases of the technology are more fun in nature, with some genuinely useful benefits for many knowledge workers, the potential is huge – prompting former US Treasury Secretary Larry Summers to say on Bloomberg (9 December) that:



ChatGPT is a development on par with the printing press, electricity and even the wheel and fire

Larry Summers, former US Treasury Secretary, Bloomberg, 9 December 2022

Of course, Mr Summers may be slightly overblowing the possible impact of AI, but it's clear that this technology is similar in some ways to the wheel or electricity, in being a platform on which further developments could occur.

How could this sort of technology be used? In the full note, we let ChatGPT answer that in more detail, but the applications for journalism, researching and many other simple, but time consuming, tasks (e.g essay writing) are clear.

Also, strikingly, the interaction below is only scratching the surface. The part of ChatGPT that lifts it beyond being just a more advanced web search tool is the ability to create things. The bot is capable of creating original content, such as scripts for plays or podcasts, writing stories with some given characters and traits and finding coding solutions for problems. ChatGPT by itself is not going to transform the world like the wheel, but it showcases how practical these technological advances can be.

How will AI affect the labour market?

Note: The full note contains a segment that has been lifted from a discussion with ChatGPT at chat.openai.com. No edits have been made by HSBC. Below, we highlight excerpts for five of its most interesting answers. The full answers can be found in the full report.

HSBC: How will AI affect the labour market?

ChatGPT: Artificial intelligence (AI) has the potential to significantly impact the labor market by automating certain tasks and processes, which could lead to job displacement in some industries. However, it is important to note that AI can also create new job opportunities, particularly in fields related to AI development and deployment.

HSBC: Which jobs are most vulnerable to AI?

ChatGPT: It is difficult to accurately predict which specific jobs will be most vulnerable to automation in the future, as the adoption of AI technologies is likely to vary across different industries and regions. However, some studies have identified certain types of jobs that may be more vulnerable to automation due to the nature of the work and the relative ease with which the tasks can be automated.

HSBC: Which economies may be best prepared for more jobs being lost to AI?

ChatGPT: It is difficult to predict which economies will be best prepared for job displacement due to automation, as the impact of AI on the labor market is likely to vary across different countries and regions. However, there are some factors that may influence an economy's ability to adapt to the impact of automation, such as the availability of education and training programs, the strength of the social safety net, and the flexibility of the labor market.

HSBC: How could teachers, for example, be affected by AI?

ChatGPT: It is unlikely that AI will replace teachers entirely, as teaching involves a high degree of human interaction and creativity, which are difficult to replicate with current AI technologies. However, AI may be able to assist teachers in certain tasks, such as grading assignments, providing personalized feedback to students, or creating lesson plans.

HSBC: What are the best use cases for artificial intelligence?

ChatGPT: Artificial intelligence (AI) has the potential to be applied in a wide range of fields and can be used to solve a variety of problems. Some examples of common use cases for AI include:

1. Image and speech recognition
2. Natural language processing
3. Predictive analytics
4. Decision making
5. Robotics
6. Healthcare

These are just a few examples of the many potential use cases for AI. As the technology continues to evolve and improve, the range of applications for AI is likely to expand even further.

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The full report contains a further look at what the likely impact of AI is on the labour market. From looking at the upsides to the potential challenges and hurdles the technology is likely to face and whether this is ultimately a force for good... or not.

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