

# 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.

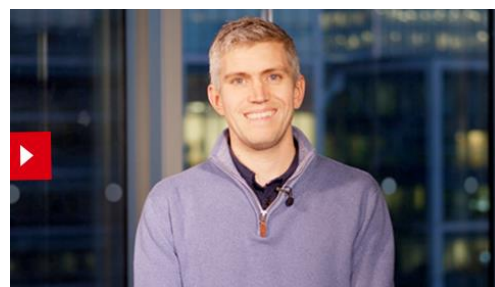
We see AI developments as broadly positive. Yes, there will be challenges within some fields in discerning what content is AI generated and what is generated by humans. Some gaps in the AI knowledge or coding issues can lead to malfunctions or bias in outputs. Job roles could be lost within the knowledge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

*This is a redacted Free to View version of a report with the same title published on 18-Jan-23. Please contact your HSBC representative or email [AskResearch@hsbc.com](mailto:AskResearch@hsbc.com) for more information.*

Free to View  
Economics - Global



**James Pomeroy**  
Economist  
HSBC Bank plc

### Disclosures & Disclaimer

This report must be read with the disclosures and the analyst certifications in the Disclosure appendix, and with the Disclaimer, which forms part of it.

Issuer of report: HSBC Bank plc

View HSBC Global Research at:  
<https://www.research.hsbc.com>

# 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

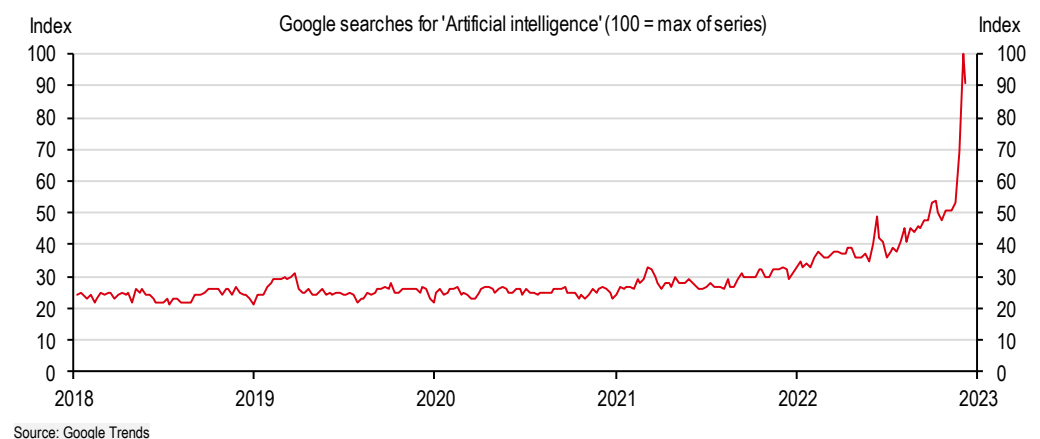
## AI's moment in the sun

**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](https://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](https://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.

*This is a redacted Free to View version of a report with the same title published on 18-Jan-2023.*

*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.*

*Please contact your HSBC representative or email [AskResearch@hsbc.com](mailto:AskResearch@hsbc.com) for more information.*

# Disclosure appendix

The following analyst(s), who is(are) primarily responsible for this document, certifies(y) that the opinion(s), views or forecasts expressed herein accurately reflect their personal view(s) and that no part of their compensation was, is or will be directly or indirectly related to the specific recommendation(s) or views contained in this research report: James Pomeroy

This document has been issued by the Research Department of HSBC.

HSBC and its affiliates will from time to time sell to and buy from customers the securities/instruments, both equity and debt (including derivatives) of companies covered in HSBC Research on a principal or agency basis or act as a market maker or liquidity provider in the securities/instruments mentioned in this report.

Analysts, economists, and strategists are paid in part by reference to the profitability of HSBC which includes investment banking, sales & trading, and principal trading revenues.

Whether, or in what time frame, an update of this analysis will be published is not determined in advance.

For disclosures in respect of any company mentioned in this report, please see the most recently published report on that company available at [www.hsbcnet.com/research](http://www.hsbcnet.com/research).

## Additional disclosures

- 1 This report is dated as at 18 January 2023.
- 2 All market data included in this report are dated as at close 16 January 2023, unless a different date and/or a specific time of day is indicated in the report.
- 3 HSBC has procedures in place to identify and manage any potential conflicts of interest that arise in connection with its Research business. HSBC's analysts and its other staff who are involved in the preparation and dissemination of Research operate and have a management reporting line independent of HSBC's Investment Banking business. Information Barrier procedures are in place between the Investment Banking, Principal Trading, and Research businesses to ensure that any confidential and/or price sensitive information is handled in an appropriate manner.
- 4 You are not permitted to use, for reference, any data in this document for the purpose of (i) determining the interest payable, or other sums due, under loan agreements or under other financial contracts or instruments, (ii) determining the price at which a financial instrument may be bought or sold or traded or redeemed, or the value of a financial instrument, and/or (iii) measuring the performance of a financial instrument or of an investment fund.

# Disclaimer

Issuer of report  
HSBC Bank plc

This document has been issued by HSBC Bank plc, which has based this document on information obtained from sources it believes to be reliable but which it has not independently verified. Neither HSBC Bank plc nor any member of its group companies ("HSBC") make any guarantee, representation or warranty nor accept any responsibility or liability as to the accuracy or completeness of this document and is not responsible for errors of transmission of factual or analytical data, nor is HSBC liable for damages arising out of any person's reliance on this information. The information and opinions contained within the report are based upon publicly available information at the time of publication, represent the present judgment of HSBC and are subject to change without notice.

This document is not and should not be construed as an offer to sell or solicitation of an offer to purchase or subscribe for any investment or other investment products mentioned in it and/or to participate in any trading strategy. It does not constitute a prospectus or other offering document. Information in this document is general and should not be construed as personal advice, given it has been prepared without taking account of the objectives, financial situation or needs of any particular investor. Accordingly, investors should, before acting on it, consider the appropriateness of the information, having regard to their objectives, financial situation and needs. If necessary, seek professional investment and tax advice.

The decision and responsibility on whether or not to purchase, subscribe or sell (as applicable) must be taken by the investor. In no event will any member of the HSBC group be liable to the recipient for any direct or indirect or any other damages of any kind arising from or in connection with reliance on any information and materials herein.

Past performance is not necessarily a guide to future performance. The value of any investment or income may go down as well as up and you may not get back the full amount invested. Where an investment is denominated in a currency other than the local currency of the recipient of the research report, changes in the exchange rates may have an adverse effect on the value, price or income of that investment. In case of investments for which there is no recognised market it may be difficult for investors to sell their investments or to obtain reliable information about its value or the extent of the risk to which it is exposed. Some of the statements contained in this document may be considered forward looking statements which provide current expectations or forecasts of future events. Such forward looking statements are not guarantees of future performance or events and involve risks and uncertainties. Actual results may differ materially from those described in such forward-looking statements as a result of various factors.

This document is for information purposes only and may not be redistributed or passed on, directly or indirectly, to any other person, in whole or in part, for any purpose. The distribution of this document in other jurisdictions may be restricted by law, and persons into whose possession this document comes should inform themselves about, and observe, any such restrictions. By accepting this report, you agree to be bound by the foregoing instructions. If this report is received by a customer of an affiliate of HSBC, its provision to the recipient is subject to the terms of business in place between the recipient and such affiliate. The document is intended to be distributed in its entirety. Unless governing law permits otherwise, you must contact a HSBC Group member in your home jurisdiction if you wish to use HSBC Group services in effecting a transaction in any investment mentioned in this document.

Certain investment products mentioned in this document may not be eligible for sale in some states or countries, and they may not be suitable for all types of investors. Investors should consult with their HSBC representative regarding the suitability of the investment products mentioned in this document.

HSBC and/or its officers, directors and employees may have positions in any securities in companies mentioned in this document. HSBC may act as market maker or may have assumed an underwriting commitment in the securities of companies discussed in this document (or in related investments), may sell or buy securities and may also perform or seek to perform investment banking or underwriting services for or relating to those companies and may also be represented on the supervisory board or any other committee of those companies.

From time to time research analysts conduct site visits of covered issuers. HSBC policies prohibit research analysts from accepting payment or reimbursement for travel expenses from the issuer for such visits.

HSBC Bank plc is registered in England No 14259, is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority and is a member of the London Stock Exchange. (070905)

© Copyright 2023, HSBC Bank plc, ALL RIGHTS RESERVED. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, on any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of insert issuing entity name. MCI (P) 017/01/2023, MCI (P) 027/10/2022

[1206778]