

AI Monthly: Economic stakes, surprising side effects and who's leading the race

In our new monthly update on the world of AI, we bring you the economic highlights from the AI Index 2024 Annual Report, one academic's sobering view of the possible productivity gains, and an exploration of how a small island in the Caribbean is unexpectedly capitalising on the AI boom



Our reading list this month

- Our economic highlights from the AI Index 2024 Annual Report
- News from the academic world: Macroeconomic effects appear nontrivial but modest.

Daron Acemoglu on the macroeconomics of AI

- Unexpected macroeconomic side effects of the AI boom for Anguilla

1 Economic highlights from the AI Index 2024 Annual Report

If you want to know which country is leading the way, the number of AI patents, how much is being invested, what current AI models cost and more, then you need to look at the seventh “The AI Index 2024 Annual Report” from the Stanford Institute for Human-Centered Artificial Intelligence (HAI). The AI Index Report 2024 consists of nine chapters, diving into AI statistics on research and development, technical performance, responsible AI, economics, science and medicine, education, policy and governance, diversity, and public opinion. If you do not want to read the whole report or want to ask AI for a summary, check out the top 10 takeaways from the report [here](#).

And here are our Economy Chapter Highlights:

- The United States still, by far, leads the way in private investment. In 2023, private investment in the US amounted to USD 67.2 billion (+41.9 % compared to 2022), followed by China at USD 7.8 billion (-42.1%) and the UK at USD 3.8 billion (-13.5 %).
- In terms of the aggregated sum between 2013 and 2023, private investment in AI by the US amounts to USD 335 billion, compared to USD 104 billion invested by China and USD 22 billion by the UK.

To put these numbers into perspective, we have calculated the investment by GDP ratio. In terms of GDP/AI investment, calculated as the sum of private investment in AI between 2013 and 2023 as a percentage of 2023 real GDP, Israel leads the way with 3.2%, followed by the US at 1.7% and Singapore at 1.7%. China’s investment into AI measured as a percentage of 2023 GDP comes in at 0.6%, with the UK’s at 0.7%

The US's 2023 total venture capital investment as a percentage of GDP stood at 0.2%, while private AI investment in 2023 stood at 0.3%.

- When looking at generative AI investment alone, the United States also leads the way with investments amounting to USD 22.5 billion in 2023, followed by only USD 0.7 billion in China.
- While in 2022, global private AI investment focused on “NLP and customer support”, “medical and healthcare” and “data management and processing”, the investment focus shifted to “AI infrastructure/research/governance” last year with a total investment sum of USD 18 billion that year, mostly driven by the US.
- Investments in facial recognition are led by China at USD 130 million followed by the US at USD 90 million. Regarding semiconductor investment, China is not far behind the US with investments of USD 630 million and USD 790 million, respectively.
- The number of granted AI patents increased by 62.7% from 2021 to 2022, although the number of patents not granted has also increased significantly. In 2022, 67.4% of all filed AI patents were not granted.
- Most granted AI patents are from China (61.1%), followed by the United States (20.9%) in 2022.

2 From the academic world: Acemoglu on the 'modest' macroeconomic impact

Artificial Intelligence is discussed not only as a potential source of radically transforming labour

markets but also as something that could bring about major productivity gains. And not just for specific companies or sectors but for the economy as a whole. According to some, the technology is so revolutionary that it could lead to a positive productivity shock, capable of creating stronger economic growth. So, is this just a sci-fi movie plotline, or could it be an economic reality? Just what sort of productivity gains can we expect from AI at the macroeconomic level?

In a [recent research paper](#), Daron Acemoglu, a renowned economics professor at MIT, is not convinced that AI will lead to a major boom in productivity. Macroeconomic effects will be modest, possibly resulting in a maximum increase in total factor productivity (TFP) of just 0.66% and an increase in GDP by around 0.9% to 1.2% over 10 years, or some 0.06% increase in TFP growth annually. These calculations are based on the assumption that 20% of US labour tasks are exposed to AI, with 23% of those tasks exposed being able to be profitably performed by AI. For the rest, costs currently exceed the benefits. The average total cost savings would be 14.4%.

Acemoglu's expectations are, however, at the lower end, resulting only in a very minor TFP increase of 0.53% in the next 10 years and an increase in GDP of 0.90%. This is because the current success of tasks being done by AI is based on easy-to-learn tasks. The real challenge for major productivity gains, however, is hard-to-learn tasks, where productivity gains are more difficult to achieve due to the difficulty of properly training AI models. GDP effects are estimated to be larger than TFP because of greater investment due to automation and task complementarities. If there is a large investment boom thanks to AI, GDP effects could increase to 1.4% - 1.6% in total over 10 years. Also, AI-generated new tasks and products might not only have positive effects but could reduce welfare by -0.72%.

Acemoglu does not find substantial negative wage effects for any educational group, but a reduction in inequality is also unlikely. Small real earnings reductions might be experienced by women with low education levels. It is important to note, however, that the paper focuses on a wide range of AI-related technologies and not on possible gains due to generative AI only. The author assesses that the widespread use of generative AI, in terms of providing better information to workers and boosting their expertise, might lead to much bigger productivity gains and larger wage and inequality consequences but we are not quite there yet.

3 Unexpected side effects of the AI boom for Anguilla

And lastly, the AI boom could have surprising macroeconomic side effects as [Flavien Moreau from the IMF](#) points out. Anguilla, a small island located in the Caribbean, generated just over 20% of the government's total revenue, resulting in approximately USD 32 million for 2023, by selling ".ai" domains. In the years before, revenue was hovering around 5%. For a two-year domain registration, Anguilla charges USD 140, while expired .ai domains are auctioned, with one domain being sold for USD 13,000 in 2023.

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