

The New AI Economy

A Survey of Recent Research

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Abstract

This essay surveys a sampling of recent research on the future economic impact of artificial intelligence. Scholarly opinion is divided between ‘minimal impact’, based in part on possible suboptimal use of AI, and maximal (‘explosive’) impact, based on the pervasive, innovation capabilities of agentic AI.

Introduction

Enormous resources are being poured into artificial intelligence R&D, as leading tech companies place huge bets on this remarkable technology, described as “The new AI economy”.¹ A recent 2025 global survey of global innovation investment by McKinsey of global innovation -- a 2x2 analysis plotting ‘interest’ (magnitude of investments) against ‘innovation’ – revealed two top leaders: AI and energy. AI dominated in both the resources invested in it and in the extent of creative innovation. Energy was a distant second.²

Yet, there is currently a serious mismatch between the enormous momentum that drives AI innovation at present, and the economic forecasts of its impact. Consider this finding, reported in Substack:

“Leading analysts at Goldman Sachs estimate that AI could automate approximately 25% of current work tasks, a shift projected to raise U.S. labor productivity by 1.5% annually over a decade and an estimated 6% increase in GDP growth over the next decade. Other estimates vary, with projected cumulative real US GDP growth by 2034 ranging from modest 1.1 to 1.6 percent (Acemoglu) to a high of 14.5% (PwC) estimate for North America, with other major institutions falling in between.”

Unpacking the Empirical Estimates

Let us unpack the Goldman Sachs estimate. Labor productivity provides about a third of GDP. So, higher labor productivity brings 0.5% (0.33 times 1.5%) higher GDP growth annually, or compounded, 6% over a decade. Daron Acemoglu, MIT Nobel laureate in Economics, a ranking expert, sees AI bringing only a modest blip to GDP growth for the US.³ He has documented this finding in a large series of NBER studies – as well as the ‘harm’ done by AI. PwC’s forecast is at the high end, but perhaps may be somewhat suspect; as one of the world’s largest consulting firms, it is ChatGPT’s biggest customer at present.

Artificial intelligence is not unlike other breakthrough technologies, such as nuclear energy. They are Jekyll and Hyde.

We have marked the 80th anniversary of the destruction of Hiroshima and Nagasaki with the atomic bomb. Yet nuclear energy has proven to be a clean and efficient source of energy for decades. Capraro et al.⁴ note that “generative artificial intelligence has the potential to both exacerbate and ameliorate existing socioeconomic inequalities”. At present, fake videos generated by AI have made it difficult to discern truth from falsehood.

Occupational Impact

A major part of the “AI Impact” literature has focused on a serious concern of workers: Which jobs now done by humans will be replaced with artificial intelligence? ^{7, 5, 6}. Microsoft’s study⁷ lists, for instance, 40 jobs replacing ‘safe careers’.

But the true impact of AI will not be in reshuffling the structure of occupations, but rather, in the creative innovation process. In what follows, the case is made for employing AI as a full collaborative partner in creative innovation.

Structured Creativity

It is widely believed that the standard, optimal approach to creative innovation is ‘brainstorming’ – an unstructured, rather chaotic session in which wild ideas are floated and collected. Evidence has shown that this unstructured approach – assumed to be effective, because any imposition of ‘structure’ is in effect ‘taming the creative tiger’ – is not effective or optimal.

Creative innovation requires structure. But – which structure?

Philosopher Margaret Boden⁸ wrote a book in 1995 about creativity in all walks of life – jazz, chess, novels, physics, music – and later updated her book to include recent developments in artificial intelligence. She makes the case for a structured approach to creativity, noting that creativity is a process that can be modeled and even simulated by computers.

Boden defines three types of creativity: Combining unfamiliar things in new ways, exploring existing things in new ways, and transformational creativity, creating something different

from anything that went before. Structured creativity can employ AI as a crucial collaborator.¹

Ruttenberg & Maital, in their 2014 book *Cracking the Creativity Code*, propose such a structure. They call it “Zoom in/Zoom out”. Zoom In: focus microscopically on the problem to be solved, on every possible detail. Zoom out: Gather global data on everything relevant to a possible solution. Then, using this data, zoom in – sort, organize, simplify, combine and apply. If a winning creative idea has not yet appeared – zoom out again. They note that using this structure, artificial intelligence is an ideal collaborator for the Zoom Out stage, but vitally requires human intuition for the Zoom In stage⁹.

Conclusion

The Prussian general von Clausewitz spoke of the ‘fog of war’ – the murky uncertainty that pervades all battlefields. This is true of technology as well. We are still in the thick cloud of fog surrounding the informed, enlightened application of AI tools to how we think, work, learn and live. We are still in the early stages of Artificial General Intelligence (AGI), and in the creation of AI agents.

But the fog is lifting. For example, we are learning how to employ AI in education, to spur critical thinking rather than replace it.

In many ways, AI may be similar to the advent of electricity, energy that hugely enhanced the muscles of people and animals. AI is enhancing our brain power. The term ‘game changer’ is a huge understatement. When we look back in 2035, we will surely find those miniscule GDP impact forecasts amusingly wrong. There is a simple explanation for the economists’ serious underestimates. New technologies all take considerable time for government and industry to adopt and adapt them – emphasis on adapt. For example, how government uses AI is vastly different from the manner AI is used in private businesses – it has to be.

The Economist is predicting explosive growth from AI¹⁰. The reason: Electricity enhanced human energy. AI will enhanced (and has already enhanced) human innovation. Since two-thirds of per capita GDP growth is driven by creative innovation, the impact here is massive.

As the Economist explains, “Truly explosive growth requires AI to substitute for labor in the hardest task of all: making technology better.” It has already shown strong capability in this realm. A Brookings study¹¹ focuses on the incredible speed at which AI technology is

¹ See the review of Boden’s book by S. Turner:

Turner, S. R. (1995). Margaret Boden, the creative mind. *Artificial intelligence*, 79(1), 145-159.

developing and improving. A global survey of chief information officers¹² reveals how “AI has potential to revolutionize how work is done across industries and business functions”, with impact equal to “the PC, Internet or smartphone”. At the same time, and equally valid, The Economist explains why AI is so slow to spread [in industrial applications].¹³

Historically, general purpose technologies, e.g. electricity, take considerable periods of time for people to understand fully their implications and most impactful uses. Initially, after Faraday built electric motors in 1821, they replaced huge steam engines. It took many years until engineers figured out how to produce and employ small electric motors.¹⁴

A landmark study of creative genius by George Land showed that five-year-olds are 98% at genius level, while only 10% of 15-year-olds reach this level and 2% of adults with average age 31. Hi-tech innovation remains hosted by a very small sliver of humanity. Artificial intelligence has the potential to restore human creativity – at a time when innovative thinking is perhaps the only truly effective way for humanity to propel itself out of the current morass of war, climate change and political and social conflict. The catch is: General-technology AI needs to be used in an appropriate manner – as a springboard for creativity, not as a slave-like crutch for mundane mechanical tasks, as it is largely used at present.

In the 1980’s, MIT Professor Robert Solow wrote iconically that we see computers everywhere -- except in the productivity statistics.¹⁵

Fast forward to the 1990’s. Nobel Laureate Paul Krugman notes that in the 1990’s, there was a productivity explosion in the US, with productivity growing by over 3% yearly, largely due to the effective use of computers, in for instance enterprise systems. Today, we see computers clearly, visibly, in productivity statistics – everywhere.

Technology drives gains in economic wellbeing. It is the main driver. From time to time, new technology comes along that changes everything. But it is not instant. Human imagination is limited. As with electricity, it is taking time for us human beings to use our prefrontal cortexes to imagine the true, powerful uses of artificial intelligence.¹⁶

But it is happening, as we speak. AI can DO things. Fast, well, truly. As we put AI to work, as agents, collaborators, team-mates, our lives are changing for the better.

We must not underestimate the enormous potential impact of AI, equivalent, in the words of The Economist, to an ‘explosion’. As Thakur^{17, 18} notes, the AI industry may be betting huge resources on non-impactful uses of AI. The fundamental reason relates to the fact that those who pioneer radical new technologies may not possess the key social cultural and psychological insights to perceive their most impactful uses.

References

- ¹ Substack. Special Competitive Studies Project. 2025. "AI and the New Economy"
<https://scsp222.substack.com/p/ai-and-the-new-economy>.
- ² McKinsey. 2025. "Top Trends in Tech" <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-top-trends-in-tech>
- ³ Acemoglu, D., & Restrepo, P. (2018). Artificial intelligence, automation, and work. In *The economics of artificial intelligence: An agenda* (pp. 197-236). University of Chicago Press.
Acemoglu, D., & Restrepo, P. (2018). Artificial intelligence, automation, and work. In *The economics of artificial intelligence: An agenda* (pp. 197-236). University of Chicago Press.
Acemoglu, D., Autor, D., Hazell, J., & Restrepo, P. (2022). Artificial intelligence and jobs: Evidence from online vacancies. *Journal of Labor Economics*, 40(S1), S293-S340.
Acemoglu, D., & Restrepo, P. (2020). The wrong kind of AI? Artificial intelligence and the future of labour demand. *Cambridge Journal of Regions, Economy and Society*, 13(1), 25-35.
Acemoglu, D., & Johnson, S. (2024). Learning from Ricardo and Thompson: Machinery and labor in the early industrial revolution and in the age of artificial intelligence. *Annual Review of Economics*, 16(1), 597-621.
Acemoglu, D. (2025). The simple macroeconomics of AI. *Economic Policy*, 40(121), 13-58.
Acemoglu, D. (2021). Harms of AI (No. w29247). National Bureau of Economic Research.
Acemoglu, D. (2025). Nobel Lecture: Institutions, Technology, and Prosperity. *American Economic Review*, 115(6), 1709-1748.
- ⁴ Capraro, V., Lentsch, A., Acemoglu, D., Akgun, S., Akhmedova, A., Bilancini, E., ... & Viale, R. (2024). The impact of generative artificial intelligence on socioeconomic inequalities and policy making. *PNAS nexus*, 3(6), pgae 191.
- ⁵ Kiran Tomlinson et al. "Working with AI: Measuring the Occupational Implications of Generative AI". Microsoft Research: Microsoft, July 22, 2025.
- ⁶ K. Tomlinson et al. (2025). "Working with AI: Measuring the occupational implications of generative AI." Microsoft Research.
- ⁷ Microsoft. "40 Jobs will replace 40 safe careers". <https://medium.com/write-a-catalyst/microsoft-study-40-jobs-ai-will-replace-vs-40-safe-careers-ecc2fa19bfd7>
- ⁸ Boden, M. A. (2004). *The creative mind: Myths and mechanisms*. Routledge.
- ⁹ Ruttenberg, Arie and Shlomo Maital. (2025). "How to Expect Unexpected Ideas with I and AI". S. Neaman Institute, August.

¹⁰ The Economist. "What if AI made the world's economic growth explode?"
<https://www.economist.com/briefing/2025/07/24/what-if-ai-made-the-worlds-economic-growth-explode>
July 24, 2025.

¹¹ Brookings Institution. 2021. "The future of artificial intelligence and its impact on the economy".
<https://www.brookings.edu/events/the-future-of-artificial-intelligence-and-its-impact-on-the-economy/>

¹² MIT Technology Review. 2023. "The great acceleration: CIO perspectives on generative AI."
<https://www.technologyreview.com/2023/07/18/1076423/the-great-acceleration-cio-perspectives-on-generative-ai/>

¹³ The Economist. 2025. "Why is AI so slow to spread? Economics can explain".
<https://www.economist.com/finance-and-economics/2025/07/17/why-is-ai-so-slow-to-spread-economics-can-explain>

¹⁴ David, Paul A. "The Dynamo and the Computer: An Historical Perspective on the Modern Productivity Paradox." *American Economic Review*, vol. 80, no. 2, 1990, pp. 355-361

¹⁵ "You can see the computer age everywhere but in the productivity statistics."
The source is Robert Solow, "We'd better watch out", *New York Times Book Review*, July 12 1987, page 36

¹⁶ Krugman, P. "How we should think about AI". Substack, March 22, 2025.

¹⁷ Thakur, Rohn Kumar. "The AI industry is making a multi-billion dollar mistakes" www.medium.com, August 8/2025.

¹⁸ Thakur, Rohit Kumar. "The AI Industry is Making a Multi Billion Dollar Mistake". [Medium.com](https://www.medium.com), August 2025.



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