

AI and Economic Growth

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Contents

- Introduction
- Can AI and robotics boost productivity?
- Dramatic Surge of Generative AI
- Productivity enhancing effects of AI use/adoption (micro-level evidence)
- Economic growth and AI use/adoption (cross-country evidence)
- How can we mitigate the disparities created by AI and achieve more inclusive growth through its advancement and use?
- References

Introduction

- New technologies such as AI are expected to promote innovation, increase productivity, and accelerate economic growth.
- How do digital technologies and AI drive economic growth, and what potential risks should we be aware of?
- How can we mitigate the disparities created by AI and achieve more inclusive growth through its advancement and use?

Can AI and Robotics Boost Productivity?

- Technologies such as AI, robotics, and ICT is anticipated to drive economic growth by boosting productivity and mitigating labor shortages caused by aging and declining populations (e.g., Acemoglu and Restrepo 2017) .
- Concerns:
 - **Benefits of new technologies are unevenly distributed** across industries, firms, and workers. Adoption of automation and ICT has widened **wage disparities**.
 - It may take time for the new technologies to translated into actual productivity gains (Brynjolfsson et al. 2018). **Complementary investments** (workforce training, organizational restructuring to the development of supportive infrastructure) are vital.
 - The productivity-enhancing effects of AI may not be very large at the macro level (Acemoglu 2025).

Dramatic Surge of Generative AI

- Recently, generative AI (Gen AI) has been increasingly adopted, likely to enhance worker productivity and spur firm growth and innovation (e.g., Brynjolfsson et al. 2025, Noy and Zhang 2023, Babina et al. 2024).
- Concerns:
 - Conventional AI and robots focused on replacing routine manual (low-skill) labor, acting as a buffer against labor shortages but reducing low-skill labor demand (e.g., Acemoglu and Restrepo 2022).
 - **Gen AI (general-purpose technology) enhances non-routine cognitive and knowledge-intensive activities** (e.g., professional services).
 - AI adoption may not be beneficial for less-educated and older workers and for emerging and developing economies where knowledge-intensive sectors are smaller.
 - **New technology, particularly Gen AI, may reinforce existing socio-economic disparities across countries, sectors, and workers.**

Productivity enhancing effects of AI use/adoption (micro-level evidence)

- Many micro-data based empirical studies find positive impacts of AI use on productivity, firm performance, and innovation, etc., but suggest “**Narrowing the gap within occupations**” and “**Widening the disparity between occupations and firms.**”
 - AI increases the productivity of low-skilled workers in the same occupation (e.g., Noy and Zhang 2023, Brynjolfsson et al. 2025, Kanazawa et al. 2026). → Skill levelling, skill compression
 - The gap between occupations with high and low AI exposure may widen (Rockall et al. 2025).
 - Firms adopting AI are larger, more productive, skill intensive, and more innovative (e.g., Czarnitzki et al. 2023, Babina et al. 2024, Aghion et al. 2025).
- The new technologies like AI can contribute to **growth of superstar firms** and lead to **industry concentration**.

Economic growth and AI use/adoption (cross-country evidence)

- The effects of AI use on economic growth differ across countries.
- Depending on economy/industry's **AI exposure** (share of occupations which use AI intensively), **AI complementarity**, **AI preparedness** (IMF, better infrastructure, technology, human capital, institutions), **Government AI readiness** (Oxford), **AI capabilities** (Stanford HAI), etc.
- High income economies tend to have higher AI exposures and AI preparedness (e.g., Cazzaniga et al. 2024).
- Economies with higher AI exposure and preparedness tend to show a higher GDP growth (Gambacorta et al. 2025).
- **Gen AI is likely to benefit advanced economies more** than emerging economies, thereby widening income disparities across countries. (e.g., Cerutti et al. 2025)

IMF's AI Preparedness Index for APEC economies, 2023

Economy	AIPI	Digital Infrastructure	Innovation and Economic Integration	Human Capital and Labor Market Policies	Regulation and Ethics
Singapore	0.801	0.209	0.181	0.195	0.216
United States	0.771	0.188	0.182	0.183	0.218
New Zealand	0.754	0.194	0.159	0.181	0.220
Japan	0.733	0.177	0.182	0.171	0.203
Australia	0.727	0.182	0.162	0.171	0.212
Korea	0.727	0.181	0.183	0.164	0.199
Canada	0.713	0.172	0.161	0.175	0.206
Hong Kong, China	0.701	0.199	0.175	0.161	0.165
Advanced Economies average	0.699	0.176	0.164	0.163	0.188
China	0.635	0.190	0.147	0.150	0.148
Malaysia	0.632	0.150	0.140	0.169	0.174
Chile	0.586	0.148	0.124	0.144	0.169
Russian Federation	0.559	0.156	0.124	0.163	0.116
Thailand	0.536	0.141	0.124	0.137	0.134
Mexico	0.532	0.127	0.131	0.136	0.137
Indonesia	0.516	0.120	0.106	0.130	0.161
Philippines	0.498	0.102	0.121	0.152	0.124
Brunei Darussalam	0.495	0.119	0.109	0.146	0.122
Peru	0.491	0.112	0.124	0.124	0.132
Vietnam	0.482	0.141	0.111	0.121	0.109
Papua New Guinea	0.290	0.046	0.103	0.054	0.086
Chinese Taipei	ON	ON	0.129	0.195	0.183



Advanced economies

AI exposure by income and gender, percent



Source: Hennig and Khan (2025)



Micro- and macro-level empirical studies suggest...

- AI (Gen AI) impacts on wage inequality: mixed, ambiguous
- Likely widen the gap between large/high-performing firms and small/low-performing firms because large firms tend to be better prepared/suited for AI use (better equipped with complementary intangible assets and knowledge workers)
- Depriving small businesses of growth opportunities and increasing industrial concentration
- Similarly, it could deprive emerging market startups of growth opportunities and widen the gap between emerging and developed countries.

How can we mitigate the disparities created by AI and achieve more inclusive growth through its advancement and use?

- Address within-country disparities
 - **Human capital investment**: Promote high-level human resource exchanges and joint projects between companies and industries (supported by the national government and research and educational institutions)
 - More appropriate **competition policy**: a trade-off between improving efficiency through scale expansion and declining industrial dynamics due to excessive concentration.
- Address between-country disparities
 - **Cross-border competition policy**, emphasis on **international cooperation**.
 - The resurgence of industrial policy in advanced economies (Juhász et al. 2025) risks widening global inequality.

References

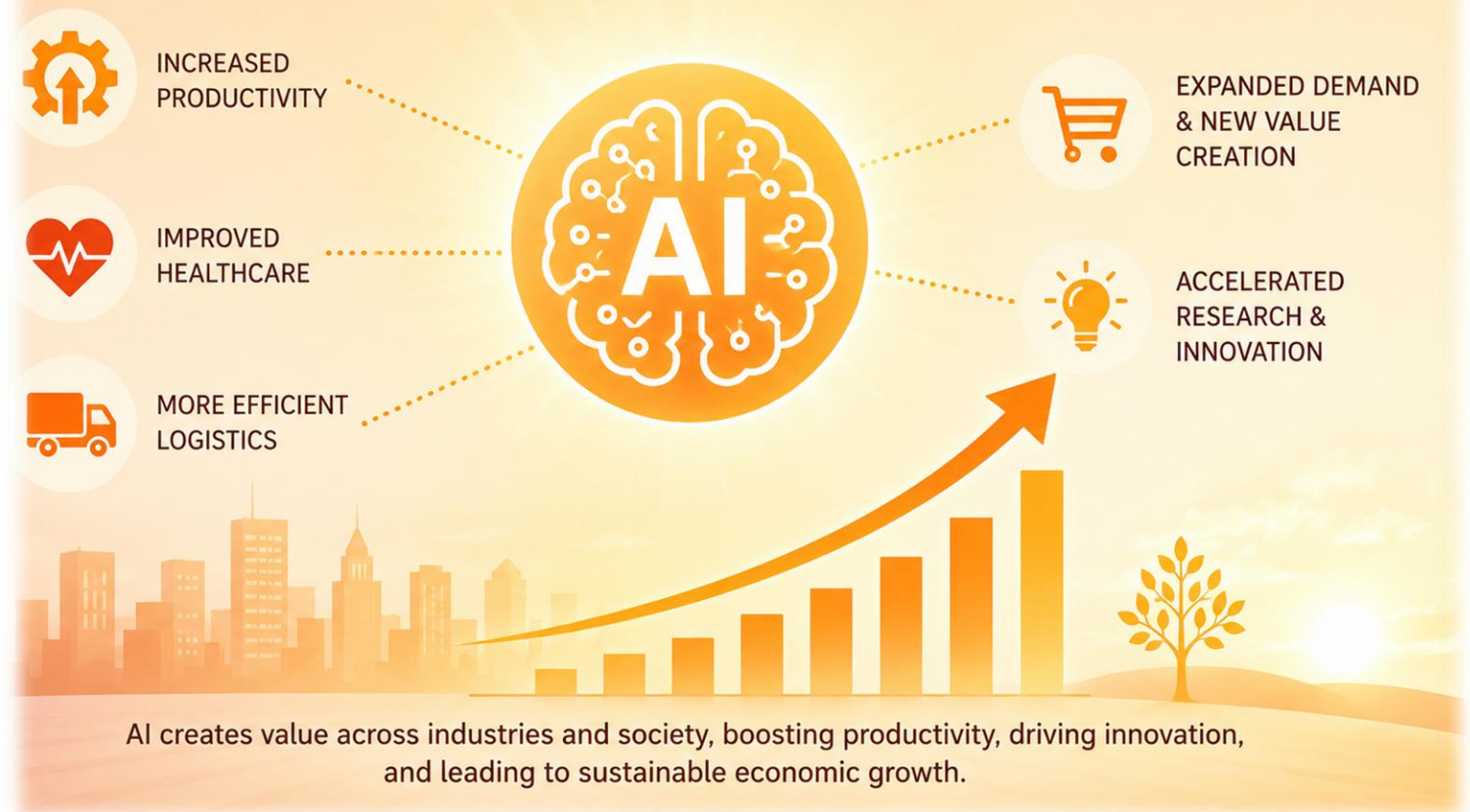
- Acemoglu, D. (2025) “The Simple Macroeconomics of AI,” *Economic Policy* 40(121): 13-58.
- Acemoglu, D., and P. Restrepo (2017) “Secular Stagnation? The Effects of Aging on Economic Growth in the Age of Automation,” *American Economic Review* 107(5): 174-179.
- Acemoglu, D., and P. Restrepo (2022) “Demographics and Automation,” *Review of Economic Studies* 89(1): 1-44.
- Aghion, P., S. Bunel, X. Jaravel, T. Mikaelson, A. Roulet, and J. Søgaaard (2025) “How Different Uses of AI Shape Labor Demand: Evidence from France,” *AEA Papers and Proceedings* 115: 62–67.
- Babina, T., A. Fedyk, A. He, J. Hodson (2024) “Artificial Intelligence, Firm Growth, and Product Innovation,” *Journal of Financial Economics* 151, 103745.
- Brynjolfsson, E., D. Li, L. Raymond (2025) “Generative AI at Work,” *The Quarterly Journal of Economics* 140 (2): 889–942.
- Brynjolfsson, E., D. Rock, and C. Syverson (2018) “Artificial Intelligence and the Modern Productivity Paradox: A Clash of Expectations and Statistics,” NBER Chapters, in: *The Economics of Artificial Intelligence: An Agenda*, pages 23-57, National Bureau of Economic Research, Inc.
- Cazzaniga, M., F. Jaumotte, L. Li, G. Melina, A. Panton, C. Pizzinelli, E. Rockall, and M. Tavares (2024) “Gen-AI: Artificial Intelligence and the Future of Work,” *IMF Staff Discussion Notes*, 2024/001.

References

- Cerutti, E. M., A. I. G. Pascual, Y. Kido, L. Li, G. Melina, M. M. Tavares, and P. Wingender (2025) “The Global Impact of AI: Mind the Gap,” IMF Working Paper 2025/076.
- Czarnitzki, D., G. P. Fernández, and C. Rammer (2023) “Artificial Intelligence and Firm-Level Productivity,” *Journal of Economic Behavior and Organization* 211: 188–205.
- Gambacorta, L., E. Kharroubi, A. Mehrotra, and T. Oliviero (2025) “Artificial Intelligence and Growth in Advanced and Emerging Economies: Short-run Impact,” BIS Working Papers No. 1321.
- Juhász, R., N. Lane, E. Oehlsen, and V. Pérez (2025) “Measuring Industrial Policy: A Text-Based Approach,” *NBER Working Paper* 33895.
- Kanazawa, K., D. Kawaguchi, H. Shigeoka, and Y. Watanabe (2026) “AI, Skill, and Productivity: The Case of Taxi Drivers,” *Management Science* 72(2): 1376-1388.
- Noy, S., and W. Zhang (2023) “Experimental Evidence on the Productivity Effects of Generative Artificial Intelligence,” *Science* 381: 187-192.
- Rockall, E.J., M. M. Tavares, and C. Pizzinelli (2025) “AI Adoption and Inequality,” IMF Working Papers 2026/068.

**Thank you for your
attention!**

WILL AI DRIVE ECONOMIC GROWTH?



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