International Journal of Advance and Applied Research
Peer Reviewed | International Open Access Journal
ISSN: 2347-7075 | Impact Factor – 8.141 | *Website:* https://ijaar.co.in/
Volume-13, Issue-3 | January – February 2026

Original Article

THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE GLOBAL ECONOMY: OPPORTUNITIES, CHALLENGES, AND FUTURE PROSPECTS

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Manuscript ID: IJAAR-130361
ISSN: 2347-7075
Impact Factor – 8.141

Volume - 13
Issue - 3
January – February 2026
Pp. 325 - 330

Submitted: 15 Jan.2026
Revised: 20 Jan. 2026
Accepted: 30 Jan. 2026
Published: 10 Feb. 2026

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Quick Response Code:

Website: https://ijaar.co.in/

DOI: 10.5281/zenodo.18538860

DOI Link: https://doi.org/10.5281/zenodo.18538860

Abstract:

In the global economy, artificial intelligence (AI) has become a paradigm-changing technology. It impacted growth, employment, and productivity across economies. Developments and projections from 2023 to 2026 shows this research paper offers a methodical analysis of AI's multifaceted effects on the global economy. Productivity gains, sectoral transformation, investment trends, ethical and geopolitical challenges, and future directions etc. key themes are arranged in the analysis. However, AI presents significant chances for efficiency and innovation, its financial advantages won't be get benefitted equally. Proactive, cooperative approaches are essential for prioritize workforce transition; ethical governance, and international cooperation are necessary to fully realise AI's potential. This research paper outlines emerging trends, conclusions, and recommendations to support inclusive and sustainable AI-driven economic development.

Keywords: Artificial Intelligence, Global Economy, Productivity Growth, Labor Market Displacement, Economic Policy, Future Trends, AI Ethics, GDP Impact

How to cite this article:

Dr. Namdeo Shamrao Adnaik. (2026). The Impact Of Artificial Intelligence On The Global Economy: Opportunities, Challenges, And Future Prospects. International Journal of Advance and Applied Research, 13(3), 325-330. https://doi.org/10.5281/zenodo.18538860

Introduction:

The rise of AI, particularly generative AI and large language models (LLMs), marks a pivotal moment in economic history. AI's capacity for reasoning, prediction, and creativity sets it apart from previous automation technologies and makes it a general-purpose technology (GPT) that has the potential to transform every aspect of the global economy. In 2024, private U.S. investment in AI hit all-time highs of 109.1 billion dollars, almost twelve times China's 9.3 billion dollars. This shows a great deal of faith in AI's ability to boost global GDP by

trillions. According to PwC estimates, AI could contribute up to 15.7 trillion dollar to the global economy by 2030 (with 6.6 trillion dollar from productivity gains and 9.1 trillion dollar from consumption-side effects), exceeding the combined current output of China and India. Concerns about job displacement, moral dilemmas, prejudice, privacy, and geopolitical unrest temper optimism. Advanced economies are projected to capture a larger share of benefits (potentially around 60% in some analyses), while emerging markets may lag, potentially widening global inequalities.

This study looks at how AI is incorporated into the economy, emphasizing how it can both stimulate growth and cause disruptions. With an emphasis on present and anticipated consequences through 2026 and beyond, it examines secondary data from economic forecasts, policy analyses, and reports by institutions such as the IMF, OECD, World Bank, PwC, McKinsey, Goldman Sachs, and academic sources.

Hypothesis:

In the present study, the key hypothesis is that AI will significantly boost global economic growth via productivity improvements and innovation, but without targeted interventions, it will exacerbate economic inequality and cause substantial job displacement. It is expected that because of AI GDP growth rates will be increased 1–3 percent annually in coming decades. But it seen that high-skilled workers and advanced economies will be benefitted largely, thereby widening global inequality. Evidence that AI-exposed industries frequently see higher revenue growth along with workforce shifts supports this.

Objectives:

The main objectives of this research paper are as follows:

1. To analyse the current and projected impact of AI on global economic indicators such as GDP, productivity, and employment.
2. To determine the main upcoming trends in the use of AI and their effects on the economy.
3. To assess the moral issues and disparities brought about by the integration of AI.
4. To provide recommendations for long-term, AI-driven economic growth.

Research Methodology:

For the present study secondary data has been used and it's collected from economic reports by the IMF, OECD, World Bank, PwC, McKinsey, Accenture, Goldman Sachs, academic journal articles, and government publications, mainly from the U.S. and Europe. For the study the data sources has been covering 2023 to 2026 to capture recent AI developments. The data is categorized into themes such as GDP gains, labor market impacts, socio-geopolitical issues, investment trends, and future prospects. The review compiles statistics on AI's contributions to GDP, investments, job creation, and displacement. Limitations include possible biases in the sources, the fast pace of AI changes, and the fact that it relies only on secondary sources without collecting any primary data.

Data analysis and Interpretations:

AI and its impact on global economy have been assessed as follows;

1Productivity and GDP Growth: Artificial intelligence enhances efficiency through automation of repetitive jobs and enhancement of worker abilities. Various reputed institutions have predicted the impact of AI on global economies. The Penn Wharton Budget Model projects AI will raise

productivity and GDP levels by 1.5% by 2035, nearly 3% by 2055, and 3.7% by 2075, with the strongest annual growth boost (peaking around 0.2 percentage points) in the early 2030s. According to the Goldman Sachs, worldwide economic output might rise by an estimated 7%, amounting to approximately 70 billion dollar globally, while also boosting overall productivity gains significantly due to AI. The McKinsey study lists 63 applications for generative artificial intelligence in various sectors, projected to generate an estimated 2 billion dollar annually. Many industries exposed to artificial intelligence frequently experience greater earnings increases for each worker and more rapid salary hikes compared to others.

2.Employment and Job Dynamics: Artificial intelligence concurrently eliminates and generates employment opportunities. The report forecasts that advancements in technology will lead to an estimated loss of approximately 92 million jobs globally during this period but also predicts the creation of around 170 million positions, resulting in a total job count increase of roughly 78 million individuals between now and 2030. A significant portion, approximately forty percent globally, is exposed to automation through artificial intelligence technologies; this proportion tends to be more prevalent among developed nations. Artificial intelligence enhances skilled professions while replacing repetitive mental duties; certain jobs could face declines of up to about three percent over time in affected areas. Studies show increased revenues coupled with decreases in openings for basic software positions and support jobs.

3.Inequality and Ethical Considerations: Artificial intelligence has the potential to exacerbate global inequality, as advanced economies are more likely to capture a uneven share of its benefits. Ethical concerns include algorithmic and process bias, data privacy violations, and limited transparency in AI systems. International organizations such as UNESCO emphasize the importance of responsible AI governance to promote trust, accountability, and inclusivity. The adoption of ethical AI frameworks could facilitate inclusive economic growth in developing regions like Africa, South Asian and South American Countries. Case studies from the Brookings Institution indicate productivity gains in manufacturing while underscoring the necessity of policy interventions to ensure the equitable distribution of these gains.

AI and Its Opportunities: Growth and Innovation:

Productivity: The New Engine of Economic Growth:

AI's main promise is a sustained productivity successful through:

1. **Task Automation:** Extending beyond physical tasks to cognitive processes (e.g., data analysis, chatbots, code generation with tools like GitHub Copilot). McKinsey estimates up to 70% of enterprise activities might be partly automated, potentially adding 0.5 to 3.4% to annual productivity growth.
2. **Enhanced Decision-Making:** Predictive analytics optimize deliver chains, marketing, R and D (e.g., pharmaceuticals), and agriculture, lowering waste and accelerating innovation.
3. **Innovation Acceleration:** Generative AI aids medical discovery e.g., Alpha Fold for protein folding, design, and content material creation.

Sectoral Transformation and New Market Creation:

AI acts as a transformative layer across industries:

1. **Healthcare:** Diagnostics, drug discovery, and personalized medicinal drug; market projected to exceed 187 billion dollar by 2030.

2. **Production and Logistics:** Predictive protection, self-sufficient structures, and clever inventory for 'lights-out' factories and efficient deliver chains.
3. **Finance:** Algorithmic trading, fraud detection, and risk assessment for greater efficiency.

New markets emerge in AI version improvement, specialized hardware (GPUs/TPUs), information services, and ethics consulting.

Investment and the AI-Economy Ecosystem:

Corporate AI investment reached 252.3 billion dollar in 2024 (with strong private and M and A growth), inclusive of heavy flows into generative AI. Governments are investing strategically e.g., U.S. CHIPS and Science Act; EU commitments. This fuels innovation however increases bubble concerns. The U.S. leads private funding (109.1 billion dollar in 2024), a long way ahead of China (9.3 billion dollar).

Challenges: Disruption, Inequality, and Risk:

1.Labor Market Displacement and Polarization: The OECD estimates about 27 to 28% of jobs in member countries face high automation risk. Unlike prior automation, AI affects white-collar roles (administrative, analytical, some creative). This polarizes the labor market: demand flows for high-skill problem-solving AI-related roles, while middle-skill routine cognitive jobs face highest displacement. Low-skill manual jobs e.g., care work, trades may be more resilient short-term. A major reskilling imperative exists; the WEF highlights growing demand for analytical thinking, AI literacy, and systems thinking, with declining need for clerical skills.

2.Ethical and Societal Concerns: AI can perpetuate biases in hiring, lending, and policing. Benefits (capital returns, high-skill wages) may concentrate among asset owners and tech elites, worsening inequality and geographic divides 'AI hubs'. High barriers (data, compute) risk market concentration and reduced competition.

3.Geopolitical and Security Dimensions: U.S.-China competition drives innovation but fragments standards, enables weaponization (autonomous systems, cyber), and imposes export controls (e.g., semiconductors). Divergent regulations (EU AI Act, U.S. sectoral, China's state-led) complicate global compliance and ethical norms.

Future Prospects and Policy Imperatives:

AI's impact depends on policy choices.

1.The Evolving Nature of Work: Work will shift toward tasks, with AI as a collaborator. Hybrid roles e.g., prompt engineers, AI-augmented professionals and lifelong learning will become essential.

2.Essential Policy Frameworks: A comprehensive, multi-pronged approach includes:

- **Education and Reskilling:** Emphasize STEM, critical thinking, and socio-emotional skills; co-fund accessible programs and learning accounts.
- **Adaptive Social Safety Nets:** Wage insurance, enhanced unemployment benefits; long-term exploration of universal basic income (UBI) or alternatives.
- **Ethical and Robust AI Governance:** Promote inclusive 'small AI' for developing economies; strengthen cooperation via the Global Partnership on AI (GPAI) for global standards.

iv) Competition and Innovation Policy: Antitrust enforcement, open-source AI, and public data infrastructure to broaden access.

- **AI Factories and Infrastructure:** Scalable 'AI factories' will emerge, though bubble risks persist. Investment may grow substantially (potentially toward significant shares of GDP in leading economies).
- **Sectoral Integration** AI could unlock trillions in productivity e.g., notable gains in U.S.

marketing, finance, remote work. Global AI-related jobs are expected to grow, supporting millions of new roles.

- **The Long-Term Horizon:** Artificial General Intelligence (AGI) remains speculative but could develop economies (solving climate/disease challenges) while posing existential risks, necessitating proactive safety research and governance.

Findings:

Key findings include:

1. It is assessed as per the various projections that AI could add 15.7 trillion dollar (PwC) to global GDP by 2030, with productivity gains of 1.4 to 1.5 percent. And generative AI alone offers 2.6 to 4.4 trillion dollar yearly value (McKinsey), and broader estimates reach 7% GDP uplift (Goldman Sachs).
2. The study examined that there should be Job displacement due to AI, According to OECD high risk job will affected nearly 27 to 28 percent but net creation is positive. WEF projects net above 78 million jobs by 2030.
3. It is observed that ethical challenges viz. bias, privacy, transparency persist, requiring robust governance.
4. Advanced economies lead adoption, risking greater global divergence without intervention.
5. Future growth hinges on policies supporting diffusion, reskilling, and equitable access.

Conclusions:

Artificial intelligence is graceful to be a defining economic force of the 21st century, acting as a powerful element for productivity, innovation, and growth while creating new industries and expanding human capabilities. However, it also risks disruptive job transitions, rising inequality, ethical difficulties, and geopolitical tensions.

Without deliberate policy intervention, the benefits of Al will not be there, which is likely to increase distributional consequences. Policymakers, businesses, and civil society must actively shape this transformation through investment in human capital, fair and intelligent regulations, and international cooperation. With these measures, the AI revolution can foster shared prosperity, enhanced human dignity, and sustainable development rather than deepened inequality and conflict.

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