

THE USE OF ARTIFICIAL INTELLIGENCE IN THE BUSINESS WORLD

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Abstract

A multidimensional approach is required to effectively integrate artificial intelligence (AI) into the economy, combining investment in human capital, tailored regulatory policies, and support for innovation. Through well-designed policies, AI can become a powerful source of economic growth and social welfare. This research paper aims to present how it is being used in the economic field, the impact it has on economic growth, and the challenges and opportunities that come with it.

Keywords: artificial intelligence, economy, finance, commerce, business

JEL Classification: J24, O12, O33, Q55

1. Introduction

Over the past decade, technological transformations have evolved from Industry 4.0 to Industry 5.0, progressing from basic automation to robotization and artificial intelligence. Improvements in computing technologies, microprocessors, and storage capabilities have led to the development of more advanced machine learning algorithms and complex prediction and automation systems. These innovations have directly influenced production processes, business strategies, and economic practices.

Artificial intelligence (AI) is defined as a set of technologies and methods that enable machines to behave like humans, especially with regard to learning, reasoning, planning, and natural language processing (Agrawal, Gans, & Goldfarb, 2018). In economics, these technologies are applied in various domains, such as data analysis for financial decision-making, the automation of industrial processes, supply chain optimization, demand prediction, risk assessment, service customization, and even policymakers' decision-making.

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2. Artificial Intelligence in economics

The vast field of artificial intelligence comprises a set of technologies, such as machine learning, natural language processing (NLP), computer science, and expert systems. In economics, these technologies are integrated into automated decision-making frameworks that assist with:

- **Analyzing and Processing Economic Data:** Artificial intelligence facilitates the management of substantial quantities of economic and financial data, facilitating the extraction of patterns and forecasts, and providing a foundation for strategic decision-making (Agrawal et al., 2018).

- **Making supply chains more effective:** By examining current demand in real time, it provides methods to decrease expenses and enhance productivity (Simons et al., 2024).

- **Automation of repetitive procedures:** within the financial industry, AI carries out verifications and confirmations, decreasing mistakes and the time it takes to process (Brynjolfsson & Mitchell, 2017).

- **In the fields of retail and marketing,** AI algorithms are being used to personalize products and services. This means that the offers made to consumers are tailored to their behavior, which increases satisfaction and revenue (Cockburn et al., 2023).

Numerous analyses underscore the immediate connection between AI implementation and financial expansion. A theoretical model was proposed by Aghion, Jones, and Jones (2017) that posits the stimulation of growth through increased labor productivity and technological capital, driven by artificial intelligence. Specifically, it speeds up the process of creating new products and services and decreases the cost of production, which results in long-term economic growth (Gonzales, 2023; Simons et al., 2024). Moreover, research using European panel data shows that incorporating AI into traditional industries leads to economic growth, though this varies greatly depending on a country's development level and digital infrastructure (Kalai et al, 2024).

Studies based on real-world evidence demonstrate that artificial intelligence plays a substantial role in boosting productivity and fostering innovation within the economy. Gonzales' (2023) longitudinal analysis within the European Union revealed a significant correlation between GDP per capita growth and AI adoption rates. Specifically, countries with high rate of adoption exhibited growth rates up to 15% higher than those with low adoption.

Furthermore, innovation is stimulated by AI, with research and development costs being reduced and the market launch of new products being accelerated. AI use in company processes clearly gives those companies a competitive advantage, as shown by Simons et al. (2024). This advantage allows companies to respond quickly to changes in the market.

The innovation process is heavily influenced by artificial intelligence, which is instrumental in the development of new products and services, as well

as the optimization of existing processes (Cockburn, Henderson & Stern, 2023). Research and development are stimulated by AI through its ability to analyze enormous amounts of data, thus generating innovative ideas that would otherwise have been difficult to discover (Brynjolfsson et al., 2018).

One clear example is the pharmaceutical industry. In this industry, AI helps to discover new drugs more quickly and cheaply by running simulations and analyzing genetic data (Cockburn et al., 2023). They're also using AI to spot new trends in what people are buying so they can give more personalized recommendations, which makes companies more competitive. It was highlighted by Brynjolfsson et al. (2018) that in particular, an innovative ecosystem is promoted by AI, with new technologies and markets being stimulated by the generation of harmonies between companies, academic institutions, and governments.

Even though AI can help make people more productive, it does not always make them more productive right away. This is similar to what was seen during the computer revolution (Dai, 2025). This problem is because it is hard to use AI in the economy. It will take time to see the effects of AI in the economy.

The productivity paradox in the context of AI is manifested in the gap between large investments in technology and relatively slow growth in productivity measured at the macroeconomic level (Dai, 2025). So, there are a few reasons why this is happening. For one, it's taken a while to get AI technologies hooked up to the economy. Plus, businesses are having to change the way they do things and even change their whole culture. And some places or industries just don't have the right infrastructure. However, recent research indicates that the impact of AI on productivity will become much more visible in the medium and long term.

The implications of AI on the labor market are many, and they are just beginning to be understood. From one perspective, artificial intelligence-driven automation has the potential to do away with specific occupations, especially those that are monotonous and predictable, especially within the industrial and agricultural sectors (Algül, 2024; Acemoglu & Restrepo, 2018). On the other hand, the existence of new job opportunities in emerging fields such as data analysis, software development, and AI systems management is a result of AI (Brynjolfsson & Mitchell, 2017).

The impact of AI on employment is a complex issue, with Drydakís (2025) noting that while it can lead to job losses in some sectors, it also creates new opportunities in others. Effective public policies are essential for navigating this transition and ensuring a balanced impact on the economy. To illustrate, continuing education and professional development have become imperative to adapt the workforce to novel requirements (Sun, 2025). A critical issue is the changing structure of employment, which is affecting workers in a variety of ways. Repetitive activities, such as manufacturing, data processing, or

low-complexity services, are primarily affected by AI-driven automation (Acemoglu & Restrepo, 2018).

However, it is equally important to acknowledge that AI has the potential to generate new employment opportunities in both technical and creative domains. For example, there has been exponential growth in demand for data science specialists, software engineers, and AI ethics experts in recent years (Brynjolfsson & Mitchell, 2017). Also, roles involving complex human interaction or creativity have been found to be less affected (Drydak, 2025). Also, it is becoming more important to have policies for retraining and continuing education. Flexible education models and public-private partnerships to support employees in the adaptation process are proposed by Sun (2025).

3. Electronic commerce and artificial intelligence

Amazon is a pioneer in using artificial intelligence to radically transform e-commerce, and the company's innovative approach has significantly impacted the industry. The platform's use of a wide range of AI technologies allows for the personalization of the user experience, the optimization of logistics chains, and the improvement of services. One of the most well-known and useful examples is its system that makes personalized recommendations. Machine learning algorithms analyze users' purchase history. These algorithms also analyze users' browsing behavior. They look at reviews, too. And they consider individual preferences. The result is personalized product suggestions. This technology uses information about what people like and the latest trends to help them find what they're looking for (Gonzales, 2023).

So, according to this study by Cockburn et al. from 2023, recommendation systems can actually personalize the shopping experience. And that, in turn, can increase conversion rates by up to 35% and raise the average shopping cart value. Amazon's customers are retained and its market share is increased by this personalization. Supply and distribution chains are streamlined using AI, in addition to personalization. The best way to manage warehouse rotations and delivery routes is figured out by algorithms through the looking at real-time info on inventory, demand, and transportation conditions (Simons et al., 2024). This change has made it so that Amazon can sell things online for less money and get them to people faster than other companies. Amazon uses AI to process customer reviews and feedback. This means that Amazon's computers automatically find the important information in reviews and feedback. They do this to improve services and identify problematic products (Brynjolfsson et al., 2018).

On top of that, chatbot systems that use natural language processing can provide ongoing customer assistance, quickly answering questions and fixing problems without needing a person to help. Amazon is a leader in online shopping. It is growing a lot of money fast. This is because it uses AI in its business. Research indicates that the implementation of AI has contributed to the

company's enhanced operational efficiency. It has also led to cost reduction. The company has reached over 20% savings. This has been very important in reaching a market value of more than \$1 trillion (Gonzales, 2023). The resolutions arrived at by artificial intelligence systems have the potential to exert a considerable influence on the economy.

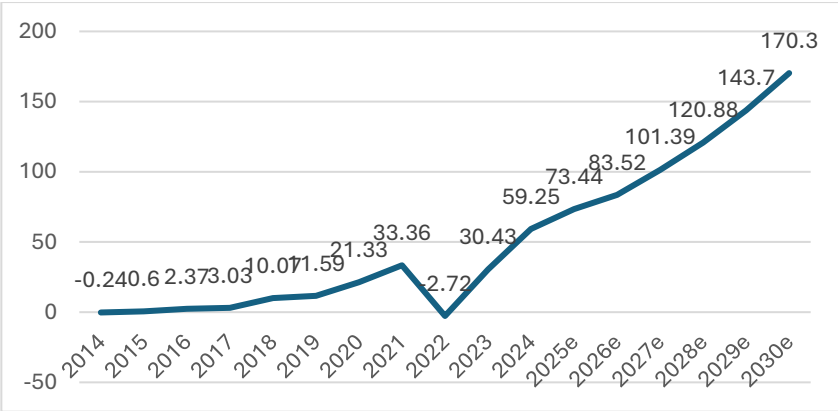


Figure 1. The profit value of Amazon from 2014 to 2030

Source: <https://eulerpool.com/ro/actiune/Amazon.com-Ac%C8%9Biune-US0231351067/Profit>

Figure 1 shows how much money Amazon made in the last 10 years (2014-2024) and what they plan to make in 2030. After artificial intelligence technologies were introduced to the public, profits increased quickly. An analogous phenomenon is evident in the progression of turnover (see Figure 2).

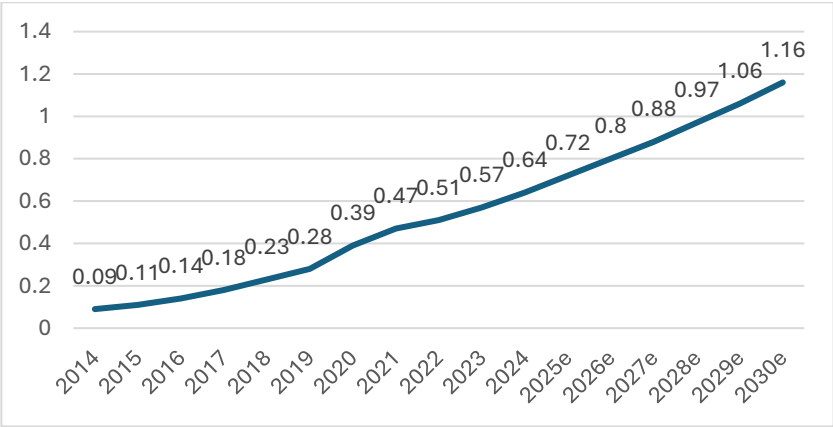


Figure 2. The evolution of Amazon's turnover, measured in billion US dollars, is shown between 2014 and 2030

Source: <https://eulerpool.com/ro/actiune/Amazon.com-Ac%C8%9Biune-US0231351067/V%C3%A2nz%C4%83ri>

4. The role of IA in the financial sector

The financial sector is one of the most advanced areas in the adoption of artificial intelligence technologies, with many financial institutions and companies using these technologies to manage risk, make investment decisions, and perform other financial tasks. Banks and other financial companies use AI to do difficult tasks automatically, watch out for problems, find fraud, and make customer services better. One good example is JPMorgan Chase, a big bank.

The implementation of the COiN (Contract Intelligence) system by JPMorgan Chase is an algorithm based on machine learning and natural language processing that allows for the quick and efficient analysis of legal documents and financial contracts. As stated in a 2018 investigation by Brynjolfsson et al., COiN is capable of handling massive amounts of documents in mere moments, which formerly demanded hundreds of hours of labor by experts. Time and operational costs are reduced, and human error is minimized by this automation, which is essential in the financial sector where accuracy is crucial.

Advanced AI algorithms are used by JPMorgan to detect anomalies and prevent financial fraud. Transactions are analyzed in real time by these systems, and suspicious behavior is identified based on historical data patterns (Aghion et al., 2017). The bank can make more informed decisions about lending and investments thanks to the use of AI, which is also used to assess credit risk and model economic scenarios (Korinek, 2024).

The integration of AI has transformed the manner in which financial institution personnel carry out their responsibilities, liberating them from monotonous duties and enabling them to prioritize strategic concerns and client interactions. Increased productivity and job satisfaction are the result of this change, according to Brynjolfsson & Mitchell (2017). Moreover, the reduction in the time required for document processing and risk analysis has engendered increased operational efficiency and a greater ability to respond quickly to market changes.

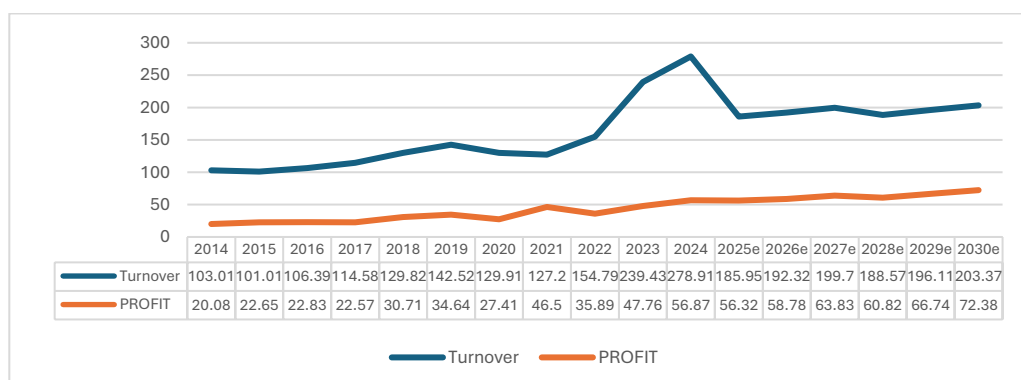


Figure 3. JPMorgan's financial performance measured by turnover and profit.
Source: <https://eulerpool.com/ro/actiune/JPMorgan-Chase-Ac%C8%9Biune-US46625H1005/Profit>

The evolution of JPMorgan's turnover and profit over the last 10 years is shown in Figure 3, as well as a forecast of these two indicators until 2030. It can be seen that the adoption of artificial intelligence will have a beneficial effect on profit, which is something that should be taken into consideration.

5. The economic challenges, risks, and opportunities of using AI

Numerous challenges have been raised by the widespread adoption of AI. These include risks related to data security, social inequalities resulting from unequal access to technology, and the potential for disruptive effects on the labor market (Aghion et al., 2017). Moreover, the presence of certain countries or corporations that exercise exclusive dominion over the dissemination of sophisticated technologies has the potential to exacerbate preexisting economic disparities (Korinek, 2024).

AI can cause money problems. It can also cause problems with what is right and wrong, how things are seen, and keeping information private. Discrimination can result from automated decision-making if the algorithms are not properly calibrated (Aghion et al., 2017). Moreover, the consolidation of technology in the hands of a small number of large corporations has the potential to amplify global economic disparities (Korinek, 2024). It is important to carefully control and watch AI technologies to prevent bad effects and make sure there is a balance between new ideas and responsibility towards society.

While the implementation of artificial intelligence (AI) has the potential to yield considerable economic and social benefits, it also introduces a range of significant challenges and risks that necessitate meticulous management to ensure that the advantages outweigh the disadvantages. The process of replacing human workers with machines to perform repetitive and standardized tasks can result in job losses in some industries, especially in manufacturing, administrative services, and transportation (Acemoglu & Restrepo, 2018).

Conversely, AI has been shown to generate employment opportunities in technology and associated fields. However, this shift may lead to imbalances, particularly for individuals with limited skills or those whose abilities become outdated quickly (Bessen, 2018).

The growth and usage of AI might highlight economic differences between rich and poor nations, as well as between big businesses, which can spend a lot of money on technology, and small businesses with scarce resources (Korinek & Stiglitz, 2018). This means that AI could make economic problems worse. It could make it so that a few people have a lot of money and power. It could also make it so that not many people can use the benefits of AI.

AI depends on collecting and studying a lot of data. This raises concerns about the safety and privacy of personal and business information. Security problems can cause big problems for businesses. These problems can lead to money lost and people not wanting to buy things (Goodman & Flaxman, 2017).

A big impact on the economy can be had by decisions made by AI systems, and it's hard to figure out who's responsible for any errors or damages. This makes it hard to create rules and public policies. We need to create ethical and legal frameworks that work well (Cath et al., 2018).

The excessive reliance of companies on artificial intelligence solutions is not uncommon, and this phenomenon can curtail their agility and adaptability when confronted with unanticipated circumstances. Also, AI technology helps to make the market stronger. This makes it so that a few big companies control important parts of the economy. This makes it hard for other companies to compete.

The optimization of the advantages of AI in the economy is dependent on a concerted strategy among governments, academia, and the private sector. Investment in education, digital frameworks, and investigation is vital, and strategies to encourage it must be formulated (Simons et al., 2024). Furthermore, governments are obliged to execute strategies to safeguard at-risk workers and encourage labor force adaptability (Sun, 2025).

To completely take advantage of the possibilities of AI, governments need to adopt a forward-thinking approach, including: investing in education and training focused on new digital abilities; supporting research and development in AI through financial resources and collaborations; establishing clear guidelines on ethics and data protection to prevent misuse; and encouraging equal access to digital technologies to decrease economic disparities (Simons et al., 2024). The creation of international collaboration platforms for the exchange of best practices and the development of standards in the field of AI has also been proposed by Sun (2025).

A significant opportunity for economic growth and innovation is represented by the widespread adoption of artificial intelligence (AI), but careful coordination of public policies is required to ensure a fair and sustainable transition. The development of an adaptable and skilled workforce is essential for coping with the changes brought about by automation and AI. Guidelines ought to back the following:

- Overhauling schooling structures to incorporate computer technology and artificial intelligence abilities (Bessen, 2019).

- Re-training and ongoing learning courses, notably for employees in industries susceptible to mechanization (Acemoglu & Restrepo, 2018). Structural unemployment is reduced and long-term productivity is increased by these measures.

AI brings up a lot of ethical and legal concerns, as well as issues related to data protection. Governments need to make rules to make sure that algorithms are clear and easy to understand. They also need to make laws to protect people's personal information and stop bad things from happening because of technology. And they need to check and see how AI is affecting the job market and the

economy. To keep up with the rapid pace of technological advances, this framework must be flexible.

To ensure that AI benefits are not concentrated in the hands of a few large companies, the following measures must be taken:

- Research and development in the field of AI must be funded, including through public-private partnerships (Korinek & Stiglitz, 2018).

- SMEs must be supported in adopting AI technologies through grants, consulting, and digital infrastructure.

- Interoperability and open standards must be promoted to stimulate competition and innovation. Strong technology is needed to use AI on a large scale. This includes internet access and safe ways to store information digitally. Investments in infrastructure facilitate the effective accumulation and management of the data necessary to operate AI algorithms.

It is very important that the use of AI be done in a way that is right and fair. This includes: allowing governments, companies, and regular people to be part of the decisions that are made; checking how AI affects people and the economy and changing rules if needed; encouraging fairness and inclusion in how people can use AI and the good things that come from it.

6. Conclusion

The role of artificial intelligence as a fundamental driver of contemporary economic transformation is significant. This change will be difficult, especially for the labor market. But there are many possible benefits, including economic growth, productivity, and innovation. It is very important to have good rules for using AI in the economy. These rules should be based on good research and people from different areas working together.

As people increasingly integrate AI into the economy, it is becoming clear that it will fundamentally shape the way societies produce, consume, and distribute goods and services. The complex impact of AI requires a balanced approach, combining technological innovation with social responsibility and well-designed public policies. So, adopting and developing AI in the economy isn't just a tech issue, it's a multidimensional challenge that needs everyone to work together.

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