Review

Economic Analysis of the New Regulation of the European Parliament and Council on Artificial Intelligence

Ljube David[1,‡], Mišič Jančar Jakob[1,‡], Jeran Marko[2,*]

1. University of Ljubljana, Faculty of Law, Ljubljana, Slovenia
2. "Jožef Stefan" Institute, Department of Inorganic Chemistry and Technology, Ljubljana, Slovenia

‡ These authors contributed equally to this work

* Correspondence: Jeran Marko, marko.jeran@ijs.si

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Abstract:

This paper presents a comprehensive economic analysis of the new regulation on Artificial Intelligence (AI) proposed by the European Parliament and Council. The regulation aims to establish a harmonized framework for the development and deployment of AI across member states, ensuring safety, transparency, and ethical standards. We evaluate the potential economic impacts of this regulation, focusing on innovation, market competitiveness, and compliance costs for businesses. Additionally, the paper explores the concept of the "Brussels Effect," a phenomenon where European Union regulations influence global standards beyond the EU's borders. By exploring how this new AI regulation might shape international norms and practices, we assess its implications for global trade and the international AI landscape. We examine the ways in which the regulation could set benchmarks for AI governance worldwide, potentially affecting non-EU companies and markets. Through this dual examination, the paper provides insights into the economic opportunities and challenges posed by the EU's proactive regulatory approach to AI.

Keywords: The artificial intelligence act, The Brussels effect, Impact assessment, Global influence, Costs of new AI regulation

1. Introduction

In this paper, the new Regulation of the European Parliament and of the Council laying down harmonised rules on Artificial Intelligence (AI) will be presented (the Artificial Intelligence Act) (Regulation of the European Parliament and of the Council laying down harmonised rules on Artificial Intelligence: *Law 1*), which represents an important step towards the legalization of this relatively new technology. The purpose of the regulation is to improve the functioning of the internal market by establishing a unified legal framework for the development, marketing, and use of artificial intelligence in accordance with the values of the Union. The decision-makers behind the Act emphasize that their goal is to establish a comprehensive legal framework for managing artificial intelligence. This framework aims to promote innovation, protect fundamental rights, and provide legal certainty for both developers and users. With the adoption of this regulation, significant changes will occur in the development and use of AI within the EU. This will impact numerous sectors and use cases, marking the first truly comprehensive legislation in the field of artificial intelligence.

2. Economic impacts of artificial intelligence regulation

The development of modern advanced artificial intelligence technologies necessitates the establishment of a comprehensive regulatory framework to manage their deployment and integration across multiple sectors. This regulation is crucial as it addresses several impacts that arise from the integration of AI. This chapter explores these challenges and provides insights into the effects of regulatory measures needed in various sectors.

2.1. Impact on productivity and innovation and cost implication on businesses

AI regulatory frameworks should balance innovation with proper risk management. Research indicates that very well-calibrated regulations help offer a "safe space" for innovation that can boost productivity in all sectors (Comunale et al., 2024). High-quality regulations can lower uncertainty about standards and expectations, promoting investment in AI technologies that will lead to the much-desired productivity gains critical for economic growth and competitiveness on the international level (Comunale et al., 2024). While the potential for augmented productivity and innovation through AI is relatively high, the compliance-related costs at the outset are high for firms. The turn-around cost of acquiring new technologies, training, and compliance mechanisms that come with implementing regulations on AI is usually quite huge and a heavy burden for small- and medium-sized enterprises. However, these costs may be mitigated over time as standardized practices may lead to economies of scale and lower the price of compliance-related technologies and services (Comunale et al., 2024).

2.2. Labor market transformations

There are enormous labor market consequences, as well. Regulation involving ethics and safety considerations will determine which AI technologies can be developed and scaled in deployment and, by extension, which are developed and deployed at all: the cascading effects on the creation and displacement of jobs would be huge. For example, regulations to control any form of automation could be safeguards for jobs but could also slow the pace of productivity growth. Conversely, policies supporting AI adoption within safe and controlled environments can accelerate the displacement of routine jobs and potentially create new high-skilled positions in the governance, development, and monitoring of AI (Comunale et al., 2024).

2.3. *Global market dynamics and long-term economic growth*

In the long term, effects on economic growth due to the regulation of AI will be dependent on the balance reached in facilitating innovation and mitigating risks. Proper regulation may underpin sustained economic growth as it develops a conducive environment where safe and ethical development of artificial intelligence technologies can flourish (Gunst et al., 2021). It can ensure more trustworthy and integrated AI across the economy, allowing efficiency gains through a new capacity that lies beyond which the increase of growth is

driven by higher efficiency in new capabilities for different parts of GDP (Comunale et al., 2024).

In a word, the economic effects of AI regulation are profound and multifaceted. Compliance would carry an immediate cost, which over the longer term would be dwarfed by the benefits of establishing an enabling regulatory environment that is appropriate, safe, and fosters innovation. As AI technologies continue to advance, it would prove essential for countries to continually assess their economic impacts and risks alongside the evolving of the required regulation frameworks (Comunale et al., 2024).

3. The artificial intelligence act as part of the EU digital strategy

The European Parliament and Commission have adopted the AI Act as part of the EU Digital Strategy, in line with the European Commission's political priority to make Europe fit for the digital age. The AI regulation is a key step in preparing EU member states for the challenges posed by the rapid advancement of this technology. The Act is ambitiously designed to create a legislative framework on which further regulations of AI systems will be based, both at the member state level and in other EU regulatory bodies. The EU aims to lay the foundations for a truly comprehensive legal environment that will enable the further development of AI systems, striving to become a leading global player in this field (Mišič Jančar et al., 2024).

An important question regarding artificial intelligence, which must be addressed when attempting to regulate the field, is how to classify the various models of programs that fall under the term "artificial intelligence". There is no consensus on what AI encompasses, and it is evident that AI can be used in so many different ways and sectors that a uniform regulation without distinction cannot achieve the desired results (MacCarthy, 2023) Regulating this field is thus challenging, which is why the preparation for the adoption of a concrete regulation took several years and involved many different stakeholders (European Commission, 2024).

Therefore, the EU, in its impact assessment, examined various policy options with different levels of regulatory intervention, from the least intrusive to the most stringent regulation. Based on its methodology, the Commission assessed each regulatory intensity option concerning economic and social impacts. The most appropriate option was chosen based on risk identification. They opted for a horizontal legislative instrument based on a proportionate risk-based approach with additional codes of conduct for AI systems that do not pose significant risks. The AI Act thus creates a risk-based approach and introduces regulatory burdens only when an AI system is likely to pose a high risk to fundamental rights and safety. For AI that does not pose a significant risk according to the criteria set in the Regulation, only very limited obligations are prescribed (Mišič Jančar et al., 2024).

The framework established by the regulation precisely defines the spectrum from minimal to unacceptable risk and assigns different categories to AI based on the level of threat they may pose.

4. Cooperation with International stakeholders

In 2020, the European Commission published a *White Paper on Artificial Intelligence* (White Paper on Artificial Intelligence – A European approach to excellence and trust: *Law 2*) and initiated a consultation aimed at gathering opinions and views from the interested public on how AI regulation should proceed. Most participants agreed on the need for action due to legislative gaps in the field of artificial intelligence. However, they cautioned the Commission to avoid duplication, over-regulation, and conflicting obligations. A clear and precise definition of artificial intelligence and key terms was highlighted as crucial. It is important to emphasize that in regulating any industry, there are several issues that need to be approached carefully. Regulatory rules that are too lenient will not have the desired effect, while overly strict regulation will curb and reduce progress in developing innovative technological solutions, thereby limiting market competitiveness (Heller, 2023). The EU understands that increasing costs for businesses and end-users also creates obstacles for further and faster development. This is especially critical in AI regulation, as the EU does not want to fall behind other countries in AI development and instead aims

to create the best possible conditions to enhance competitiveness and the European industrial base in the field of artificial intelligence (Mišič Jančar et al., 2024).

5. The Brussels Effect

The rules of the European Union do not only impact within its borders but also have a significant influence beyond them. The concept known as "Brussels Effect" describes this process, where EU rules effectively extend beyond the Union's borders, often through market mechanisms (Bradford, 2020). This effect can manifest in two ways: the *de facto* Brussels Effect and the *de jure* Brussels Effect.

The *de facto* Brussels Effect occurs when companies voluntarily comply with EU regulations in non-EU countries, even if the local laws do not require it. Conversely, the *de jure* Brussels Effect arises when foreign jurisdictions adopt rules that are directly or indirectly influenced by EU legislation (Siegmann and Anderljung, 2022). This dynamic demonstrates the EU's expanding influence and the adoption of its standards and practices on a global scale.

The Brussels Effect results in the EU shaping and influencing the legislation of other countries that engage economically with the EU, as well as changing the practices and operating conditions of companies, especially large corporations, that operate in the EU market. Similar to the first-mover advantage in the market, there is also a comparable regulatory first-mover advantage. This term refers to the benefits gained by an entity that takes early action in forming regulatory policies or frameworks in a particular field. When a country or region becomes a pioneer in regulation, it gains an advantage in setting future rules and standards (Siegmann & Anderljung, 2022).

A notable example of this influence is the General Data Protection Regulation (GDPR), adopted in 2016. It prompted major technology companies to adjust their business practices to align with EU standards to continue operating in the EU market (Gunst et al., 2021).

If the AI Act aims to replicate the impact of the GDPR, the key factor is the EU's market power. This element is fulfilled due to the extensive and relatively affluent population and the single EU market, attracting AI providers who do not want to lose millions of users and will thus need to comply with the AI Act (Almada and Radu, 2024). Moreover, artificial intelligence is a new technology with little established regulatory practice, giving the EU an advantage in regulation and encouraging other countries to follow the EU's lead (Almada and Radu, 2024). However, market factors alone are not sufficient to predict the Brussels Effect at the level of the GDPR. It is also noted that the demand for AI programs is relatively inelastic; if it were elastic, regulation could shrink the EU AI market, and multi-nationals might be more willing to leave the single market due to increased costs. Since the AI market is generally inelastic, there is a predisposition for the Brussels Effect (Siegmann and Anderljung, 2022).

It can be concluded that both the *de facto* and *de jure* Brussels Effects are possible and likely due to the specific nature of the AI and EU markets and the relative lack of regulation in this field by other major markets. While the Brussels Effect may not be as pronounced as with the GDPR, it is still too early to draw definitive conclusions with certainty.

6. Costs of new regulation for individual companies

The EU's impact assessment of the AI Act (Impact Assessment Accompanying the Proposal for a Regulation of the European Parliament and of the Council Artificial Intelligence Act: *Law 3*) estimates that compliance with the regulatory requirements will cost approximately €6,000 to €7,000 for supplying an average high-risk AI system. AI users would also incur annual costs for the time spent ensuring human oversight, estimated at around €5,000 to €8,000 per year. Verification costs could add an additional €3,000 to €7,500 for suppliers of high-risk AI. Companies or public authorities developing or using any AI applications not classified as high-risk would have minimal information obligations but may choose to join others in adopting a code of conduct that follows the regulation, which could result in higher costs.

At the same time, there have been calls highlighting that the cost of AI regulation will not only be reflected in direct expenses but also in the price the economy will pay in terms of

lost opportunities. A study by the Center for Data Innovation indicated that the adoption of the AI regulation could cost the European economy €31 billion (Mueller, 2021). The study further suggests that the regulation is likely to trigger a "chilling effect" on AI investments in Europe, particularly in systems classified as high-risk. They also believe that the AI Act will lead to high opportunity costs for the European economy, causing the European AI market to develop much more slowly than it potentially could (Mueller, 2021).

However, the study is not without criticism. Several responses argue that the study cited incorrect and unfounded information about the expected costs of implementing AI regulation. The Centre for European Policy Studies, which also conducted an analysis on which the Center for Data Innovation based its figures, highlighted the incorrect referencing of their research in the study and stated that their numbers were used misleadingly and inaccurately, leading to the study's conclusions (Laurer, 2021).

7. Conclusion

The European Union's AI regulation represents a pioneering step towards creating a safe, ethical, and innovation-friendly digital environment. Rooted in the broader EU Digital Strategy, the regulation lays a solid foundation for managing AI technologies, ensuring alignment with the Union's fundamental values. By introducing a risk-based regulatory framework, the regulation skilfully balances the delicate equilibrium between promoting technological innovation and protecting fundamental rights and public safety, aiming for the development of ethical AI.

As discerned from this paper, there is a strong likelihood that the adoption of the AI regulation will have both *de facto* and *de jure* effects. EU regulation is likely to influence other countries that decide to regulate this field, as well as international economic actors who wish to remain in the EU single market. It is still too early to assert with certainty how the regulation will impact other actors.

With the new regulation imposing additional costs for AI development and classification, policymakers emphasize their intention to carefully balance these costs with the benefits accrued in other areas.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Almada M, Radu A. The Brussels side-effect: How the AI act can reduce the global reach of EU policy. Ger Law J. 2024; 1-18. DOI: https://doi.org/10.1017/glj.2023.108
2. Bradford A, The Brussels effect: How the European Union rules the World. Oxford Academic, New York. 2020. DOI: https://doi.org/10.1093/oso/9780190088583.001.0001
3. Comunale M, Manera A. The economic impacts and the regulation of AI: A review of the academic literature and policy actions. IMF working papers, March 22, 2024. WP/24/65. Available from: https://www.imf.org/en/Publications/WP/Issues/2024/03/22/The-Economic-Impacts-and-the-Regulation-of-AI-A-Review-of-the-Academic-Literature-and-546645
4. European Commision, May 28, 2024. "European approach to artificial intelligence". Available from: https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence
5. Gunst S, De Ville F. The Brussels Effect: How the GDPR Conquered Silicon Valley. Eur Foreign Aff Rev. 2021; 26: 437-458. DOI: https://doi.org/10.54648/eerr2021036
6. Heller I, Trullion. Will regulating AI hinder innovation? May 17, 2023. Available from: https://trullion.com/blog/ai-regulation/
7. Laurer M, Renda A, Yeung T. Clarifying the costs for the EU's AI Act. CEPS, September 24, 2021. Access on line: 01.06.2024 Available from: https://www.ceps.eu/clarifying-the-costs-for-the-eus-ai-act/
8. MacCarthy M. How To regulate Artificial Intelligence. Forbes Digital. Access 11.09.2023. Available from: https://www.forbes.com/sites/washingtonbytes/2023/09/11/how-to-regulate-artificial-intelligence/?sh=13664b1356e6
9. Mišič Jančar J, Lobnik V, Ljube D, Jeran M. I Act: *Ex ante* problems of *ex ante* regulation. Zenodo. 2024; 1-7. DOI: https://doi.org/10.5281/zenodo.10875497

10. Mueller B, How much will the Artificial Intelligence Act cost Europe?. Center for data innovation, Washington D.C. and Brussels. 2021. Available from: https://www2.datainnovation.org/2021-aia-costs.pdf
11. Siegmann C, Anderljung M. The Brussels effect and Artificial Intelligence. APSA Preprints. 2022: 1-97. DOI: https://doi.org/10.33774/apsa-2022-vxtsl

Legal references

12. ***Law 1***: Regulation of the European Parliament and of the Council laying down harmonised rules on Artificial Intelligence (Artificial Intelligence Act) and amending certain union legislative acts. COM (2021) 206 final 2021/0106 (COD). Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52021PC0206
13. ***Law 2***: White Paper on Artificial Intelligence – A European approach to excellence and trust. COM (2020) 65 final. Available from: https://commission.europa.eu/publications/white-paper-artificial-intelligence-european-approach-excellence-and-trust_en
14. ***Law 3***: Impact Assessment Accompanying the Proposal for a Regulation of the European Parliament and of the Council Artificial Intelligence Act. SWD (2021) 84 final. Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52021SC0084