REGULATORY TERRITORIALITY IN THE DIGITAL AGE: THE EU AI ACT AND THE BRUSSELS EFFECT[1]

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Abstract: Artificial intelligence (AI) is rapidly transforming everyday life, becoming increasingly ubiquitous.[2] While 72% of businesses worldwide have adopted AI for at least one business task, its regulation remains fragmented, potentially leaving consumers unprotected.[3] Unlike traditional industries, AI operates in a digital environment transcending territorial limitations, creating jurisdictional ambiguities and legal grey zones.[4] As legislatures worldwide debate the level of AI oversight, the European Union (EU) has positioned itself as a key player in the global regulation of AI, proactively developing legislation with extraterritorial reach, thereby shaping international standards. This so called Brussels Effect[5] describes the EU's capacity to influence global regulatory standards, effectively compelling multinational corporations to adhere to EU Regulations even when operating outside the European Union.[6] The EU's AI Act (Regulation (EU) 2024/1689) could become analogous in its potential global regulatory impact to the General Data Protection Regulation (GDPR – Regulation (EU) 2016/679) or the EU Directive on Product Liability (Council Directive 85/374/EEC), which shaped consumer protection worldwide. The EU Artificial Intelligence Act (EU AIA) aspires to establish a de facto international standard for the governance of AI.[7] This paper critically examines the emerging regulatory landscape for AI systems, focusing on the EU's AIA as the first comprehensive legal framework for artificial intelligence and its potential to establish a de facto international standard for AI governance. By analysing the interplay between de jure extraterritoriality and de facto regulatory convergence, the paper demonstrates how AI regulation operates at the intersection of state sovereignty, private corporate compliance, and international legal harmonization. Through case studies of corporate adaptation strategies and comparative analysis of regulatory approaches across jurisdictions, this paper advances the debate on whether the EU's regulatory model will lead to a convergence, divergence, or a hybrid system of AI governance.

Resumé: Navzdory fragmentované povaze mezinárodní regulace umělé inteligence (AI) se Evropská unie (EU) etablovala jako globální normotvůrce prostřednictvím legislativy s extrateritoriálními účinky. Tento článek analyzuje dopad Nařízení o AI (EU AI Act) v kon-

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[2] See for example CALVINO, F. et al. (2024), "A sectoral taxonomy of AI intensity", OECD Artificial Intelligence Papers, No. 30, OECD Publishing, Paris, https://doi.org/10.1787/1f6377b5-en.

[3] 'Nearly three out of four businesses have started using AI for at least one business function. In addition, half of survey respondents use AI for two or more of their business functions. This is a sharp uptick from 2023 when less than a third of respondents had reported using AI for at least two business functions.' Katherine Haan, https://www.forbes.com/advisor/business/ai-statistics/.

[4] Council of Europe, Feasibility study, p. 20, https://rm.coe.int/cahai-2020-23-final-eng-feasibility-study-/1680a0c6da.

[5] See https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence.

[6] BRADFORD, A. *The Brussels Effect: The Rise of a Regulatory Superpower*. Oxford University Press, 2020. This is a key text on the subject, providing a comprehensive analysis of the Brussels Effect and its implications for global governance. It explores how the EU's market power and regulatory approach contribute to its influence on global standards.

[7] See https://artificialintelligenceact.eu.

textu tzv. Bruselského efektu, tedy schopnosti EU prosazovat své standardy globálně bez potřeby formální mezinárodní smlouvy. Článek identifikuje klíčové mechanismy tohoto jevu, od velikosti trhu přes regulatorní kapacitu až po standardizační tlak vyvolaný neredukovatelností digitálních služeb. Využívá případové studie společností jako OpenAI, Meta a Apple, které volí mezi přizpůsobením, zdržováním nebo geoblokací služeb, aby minimalizovaly regulační zátěž. Komparativní analýza ukazuje, že zatímco EU prosazuje právy řízený přístup k regulaci AI, USA upřednostňují tržní flexibilitu a Čína státní kontrolu. Článek uzavírá, že vzniká hybridní model globální správy AI, v němž regulační svrchovanost států naráží na přeshraniční digitální realitu.

Key words: artificial intelligence, EU AI Act, Brussels Effect, extraterritoriality, regulatory sovereignty, legal fragmentation, technological convergence, global governance, generative AI

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1. Introduction

The AI Act is not an isolated development. Other jurisdictions have also explored AI regulation, for example, the US with its proposed algorithmic accountability legislation[8] and an AI Bill of Rights blueprint,[9] China with its emphasis on state oversight and ethical AI (Position Paper of the People's Republic of China on Strengthening Ethical Governance of Artificial Intelligence (AI), 17 November 2022), and Canada with its Algorithmic Impact Assessment Tool, established in 2020 to evaluate the societal risks of automated decision-making (Etziani et al., 2021).[10] Simply put, the EU has a rights-driven approach to regulating AI, the US a market-driven one and China a state-driven one, each resting on the particular cultural, economic and political background of their government (Bradford, 2023, p. 7). The EU AIA is the most far-reaching initiative to date.[11] The European Commission published its proposal in April 2021, setting the stage for extensive legislative debate. The European Parliament adopted its negotiating position in June 2023 and, following tripartite negotiations with member states and the Commission, the Regulation was finalized with a phased implementation beginning with certain provisions in February 2025, followed by provisions for general-purpose AI models in August 2025, extending to 2027 for specific high-risk AI systems.[12] This showcases the EU's proactive and nuanced approach to AI

[8] 117th CONGRESS, Bill S. 3572, the US Algorithmic Accountability Act of 2022 (US AAA).

[9] https://bidenwhitehouse.archives.gov/ostp/ai-bill-of-rights/.

[10] Algorithmic Impact Assessment tool, https://www.canada.ca/en/government/system/digital-government/digital-government-innovations/responsible-use-ai/algorithmic-impact-assessment.html.

[11] European Commission on AI Act: https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai.

[12] Ibid, Next Steps section.

regulation. The adoption of the EU AIA underscores the Union's ambition to establish a regulatory framework that mitigates AI-related risk while fostering trust and market growth. Indeed, the EU has a history of setting global regulatory trends. First came its innovative legislation on data privacy with GDPR, a Regulation that eventually crossed the Atlantic and morphed into state-level legislation in the US, perhaps most notably with the California Consumer Privacy Act (CCPA) and the California Privacy Rights Act (CPRA). Now, the EU is again at the forefront, taking on artificial intelligence with its AI Act.

This article advances legal scholarship in three major ways. First, it provides an analysis of the extraterritorial application of EU AIA, an aspect that remains underexplored compared to the vast amount of literature on comparative approaches to AI. Second, by examining the interplay between de jure extraterritoriality and de facto regulatory convergence, the paper demonstrates how AI regulation operates at the intersection of state sovereignty, private corporate compliance, and international legal harmonization. Third, it advances the debate on territoriality in AI through case studies of corporate adaptation strategies and geopolitical responses to the EU's AI Act, viewing the EU AIA as a bold legal instrument capable of compelling global corporate compliance.

2. The Brussels Effect in AI Regulation

The global impact of the EU's regulatory stance extends beyond its borders, reflecting the broader phenomenon of the Brussels Effect.[13] This article examines the Brussels Effect in the context of AI regulation, exploring its implications for regulatory territoriality and legal fragmentation in cyberspace. The Brussels Effect, as articulated by Bradford (2012), describes the EU's ability to shape global regulatory norms by setting high standards that multinational corporations and third countries voluntarily adopt. In Bradford's words: 'The Brussels effect refers to the EU's unilateral power to regulate global markets.'[14] While the European Union's regulatory authority is formally limited to its internal market, multinational corporations frequently standardize their global operations to comply with a single set of rules, aligning with stringent EU Regulations. This dynamic extends the EU's unilateral regulatory influence beyond its borders, constituting the *de facto* Brussels Effect. Subsequently, once export-oriented companies have adapted to the EU's stringent standards, they may advocate for their domestic governments to formally adopt these regulations. This strategic lobbying seeks to harmonize national frameworks and mitigate competitive disadvantages against domestically focused firms, thereby leading to the *de jure* Brussels Effect (Bradford, 2012, p. 6). Accordingly, the EU has inspired diverse global regulatory standards without a lengthy process of concluding an explicit multilateral agreement with third countries. This is significant, as those countries would normally be unlikely to consent to such standards during traditional negotiations that are otherwise archetypal of international law and its forums (Bernat, M., Spera F., 2024). Similar harmonizing up can also be observed within the EU, where its member states often impose a strict regulation, such as France and the Netherlands, banning BPAs in infant products, prompting subsequent EU-wide harmonization (Bradford, 2020, p. 10). This has also been the case with the use of AI. Article 15 of the 1995 EC Directive on data protection grants a qualified right not to

[13] See generally Bradford, A. 2020.
[14] Ibid. XIV.

be subjected to certain forms of fully automated decision making (Bygrave, L. A., 2000). In 2016, Article 15 was converted into Article 22 and possibly created a so called right to an explanation of algorithms (Edwards, L., Veale, M., 2018). France has adopted these explanation rights within their administrative law, including details about data sources and processing parameters. In 2020, Germany implemented a normative roadmap for AI,[15] while Spain was the first member state to establish an Agency for the Supervision of Artificial Intelligence.[16]

While businesses would often prefer laxer rules, upward harmonization remains preferable to discordant national standards, which inevitably increase costs and complexity (Bradford, 2020, p. 12). In a brochure published in October 2017, *Future of Europe: European Parliament Sets Out Its Vision*, the Parliament highlights its goal to "Export European Standards." The document refers to the Parliament's 2017 resolution on the impact on international trade, which details a variety of mechanisms by which the EU may export, monitor, and enforce the extension of European policies abroad.

However, the Brussels Effect is not a uniform or uncontested process. The proliferation of AI regulations worldwide reflects a fragmented legal landscape characterized by divergent approaches to AI governance (Calo, 2021). While the EU prioritizes risk-based regulation and fundamental rights, other jurisdictions, such as the United States and China, emphasize innovation and strategic competition (Allen & Kraak, 2022). This regulatory fragmentation poses challenges for international cooperation, potentially leading to compliance burdens, forum shopping, and conflicts of laws. Moreover, the AI Act's influence will depend on its enforcement mechanisms, corporate responses, and the willingness of other states to align their policies with EU standards (Bellanova et al., 2023).

The emergence of multiple regulatory frameworks in AI governance reflects broader tensions between harmonization and fragmentation in international law. While the Brussels Effect has demonstrated the EU's capacity to shape global norms, it remains uncertain whether this influence will lead to widespread regulatory convergence or further divergence. For instance, some jurisdictions may adopt EU standards to ensure market access, while others may resist external regulatory influence to preserve their domestic priorities (Crootof & Fischlin, 2022). This dynamic raises questions about legal sovereignty in the digital realm and the extent to which states should defer to external regulatory models in shaping their AI policies.

Furthermore, legal fragmentation in AI regulation exacerbates enforcement challenges. AIA's success will depend on robust enforcement by national authorities and corporate compliance strategies. Given the complexity of AI governance, enforcement may vary across jurisdictions, leading to inconsistencies in implementation. The role of international legal cooperation, particularly in resolving jurisdictional disputes and fostering interoperability between regulatory regimes, will be critical in mitigating the adverse effects of fragmentation (Ducuing, 2023).

For the Brussels Effect to be achieved, Bradford proposes five elements required for unilateral regulatory authority: market size, regulatory capacity, stringent standards,

[15] https://www.all-electronics.de/markt/din-dke-und-bmwi-veroeffentlichen-normungsroadmap-fuer-kuenstliche-intelligenz.html.

[16] GUERRINI, Federico. "European Countries Race To Set The AI Regulatory Pace". Forbes. Retrieved 9.4.2023.

inelastic targets, and non-divisibility (Bradford 2020, p. 25). The European single market is at the heart of the EU and is crucial for its aptitude to externalize regulatory power outside of Europe (Damro, Ch., 2012, p. 687). The EU is a key export market for many US technological companies. US tech giants like Amazon, Microsoft, and Google dominate the European cloud market, controlling over two-thirds.[17] With 406 million monthly active users in Europe, Facebook has more customers in the EU than in the United States.[18] The threats made by CEOs such as Elon Musk or Mark Zuckerberg to discontinue their platforms in the EU in order to pressure the legislatures have not materialized. According to experts, they are unlikely to act on these threats solely based on the EU AIA or the Digital Services Act.[19]

The EU further possesses the necessary regulatory capacity due to its authority to impose sanctions and cause substantial costs to noncomplying businesses if they are excluded from its market, thereby incentivizing compliance.[20] For instance, the EU's data protection Regulation GDPR gave data protection authorities in member states the power to fine Clearview AI €70.5 million for unlawfully collecting and processing personal data and OpenAI €15 million for failing to comply with transparency obligations regarding algorithm training.[21] The Brussels Effect further necessitates strict regulatory standards (Bradford, 2020, 37). A notable AI-related regulatory advancement in the EU followed the Cambridge Analytica scandal in 2018,[22] which highlighted the risks of AI-driven data processing and political manipulation. This scandal fuelled support for GDPR and set the stage for the EU AIA, which was even called GDPR for AI by Ursula von der Leyen in 2019.[23] However, due to the Commission's hiring system and the typical short term contracts offered to candidates, it is understaffed compared to the fast pace of tech hiring, after the

[17] Fortune, 'Europe Independence US Tech Trump Meta Apple Uber Mastercard' (16 April 2025) https://fortune.com/europe/2025/04/16/europe-independence-us-tech-trump-meta-apple-uber-mastercard/ accessed 5.3.2025.

[18] Even though the US & Canada are responsible for a large percentage of Facebook's revenue, it is the smallest region in terms of total users Business of Apps, 'Facebook Statistics' https://www.businessofapps.com/data/facebook-statistics/ accessed 5.3.2025.

[19] ŠONKOVÁ, M. 'Brussels Effect Reloaded? The European Union's Digital Services Act and the Artificial Intelligence Act' (College of Europe, European Diplomatic Programme Research Paper 4/24) https://www.coleurope.eu/sites/default/files/research-paper/EDP_4_24%20Sonkova_0.pdf 17.

[20] See BACH, D. and NEWMAN, A. L. 'The European Regulatory State and Global Public Policy: Micro-Institutions, Macro-Influence' (2007) 14 *Journal of European Public Policy* 827, 831.

[21] See European Data Protection Board, 'Dutch Supervisory Authority Imposes a Fine on Clearview Because of Illegal Data Collection for Facial Recognition' (2024) https://www.edpb.europa.eu/news/national-news/2024/dutch-supervisory-authority-imposes-fine-clearview-because-illegal-data_en accessed 5.3.2025; European Data Protection Board, 'Hellenic DPA Fines Clearview AI 20 Million Euros' (2022) https://www.edpb.europa.eu/news/national-news/2022/hellenic-dpa-fines-clearview-ai-20-million-euros_lt accessed 5.3.2025; European Data Protection Board, 'The French SA Fines Clearview AI EUR 20 Million' (2022) https://www.edpb.europa.eu/news/national-news/2022/french-sa-fines-clearview-ai-eur-20-million_cs accessed 5.3.2025; Reuters, 'Italy Fines OpenAI over ChatGPT Privacy Rules Breach' (20 December 2024) https://www.reuters.com/technology/italy-fines-openai-15-million-euros-over-privacy-rules-breach-2024-12-20/ accessed 5.3.2025.

[22] New York Times, 'Cambridge Analytica Scandal Fallout' (4 April 2018) https://www.nytimes.com/2018/04/04/us/politics/cambridge-analytica-scandal-fallout.html accessed 5.3.2025.

[23] Directorate-General for Neighbourhood and Enlargement Negotiations, 'Speech by President-Elect von Der Leyen in the European Parliament Plenary on the Occasion of the Presentation of Her College of Commissioners and Their Programme' (European Neighbourhood Policy and Enlargement Negotiations, 27 November 2019).

Digital Services Act came into force in 2023.[24] This could hinder regulatory capacity and enforcement.

As for the criterion of stringent standards, the EU AIA aims to be the most stringent piece of legislation on AI to date, even if it does not regulate all factettes. AI as such is changing so rapidly that stringent regulation is only possible to some degree and subject to adaptability.

AIA's comprehensive regulatory framework imposes substantive compliance obligations on providers whose systems fall within the designated risk categories, creating conditions of relative inelasticity for market participants seeking to maintain operations within EU jurisdiction. This inelasticity, however, is neither absolute nor uniform across the diverse ecosystem of AI developers and deployers. Rather, it exists along a continuum determined by multiple variables including market capitalization, dependency on European revenue streams, technological architecture, and strategic positioning within global markets. For entities with substantial European market exposure offering consumer-facing AI applications, the inelasticity threshold may indeed prove sufficiently rigid to incentivize comprehensive compliance (Bradford, 2020, p. 54). However, this analysis must be tempered by recognition of several countervailing factors that may introduce elasticity into the regulatory relationship. As Goldsmith and Wu (2006) have observed in analogous digital regulatory contexts, the success largely depends on the incentive, which for businesses would be the costs.[25] The compliance costs associated with the AI Act's documentation requirements, conformity assessment procedures, and post-market monitoring obligations may necessitate strategic recalibration of service provision models. Economic modelling suggests several potential responses: implementation of differential pricing strategies to offset compliance expenditures in EU markets, functional differentiation of services with reduced capabilities in EU jurisdictions, jurisdictional segmentation of service offerings, or, in extreme cases, market withdrawal from EU territories.[26]

The inelasticity calculation is further complicated by the heterogeneous risk classification structure embedded within the AI Act. While high-risk applications face stringent compliance obligations, creating strong inelasticity conditions, systems classified within general-purpose or limited-risk categories encounter substantively different regulatory burdens. This gradation of compliance requirements introduces variability in the elasticity threshold across different segments of the AI ecosystem, potentially limiting the Act's capacity to generate uniform extraterritorial effects.[27] The existence of competing regulatory frameworks introduces additional elasticity considerations. Where compliance with EU requirements would necessitate adaptations incompatible with other jurisdictional obligations, the inelasticity premise fundamental to the Brussels Effect becomes significantly attenuated. This consideration is particularly salient for AI systems integrated with national security architecture or those subject to data localization requirements in non-European jurisdictions.

[24] SCOTT, M. 'The EU's Online Content Rulebook Isn't Ready for Primetime' (Politico, 14 February 2024) https://www.politico.eu/article/european-union-digital-services-act-dsa-thierry-breton accessed 26.4.2024.

[25] GOLDSMITH, J. and WU, T. '*Who Controls the Internet? Illusions of a Borderless World*' (Oxford University Press 2006) 183.

[26] ALMADA, M. and RADU, A. 'The Brussels Side-Effect: How the AI Act Can Reduce the Global Reach of EU Policy' (2024) 25(4) *German Law Journal* 646, 655.

[27] European Commission, 'Artificial Intelligence – Questions and Answers' (DG COMM, 12 December 2023) https://ec.europa.eu/commission/presscorner/detail/en/QANDA_21_1683 accessed 1.5.2025.

Non-divisibility occurs where the technical or economic burden of maintaining multiple compliance versions exceeds the burden of universal adoption of the most stringent standard. Within AI systems, this calculation depends substantially on architectural considerations and development methodologies. For AI architectures with deeply integrated functional components, early forking of development pathways to accommodate different regulatory requirements may impose excessive costs.[28] This is particularly evident in large language models and foundation models, where training processes represent substantial resource investments that cannot be easily replicated for jurisdictionally differentiated versions. In such contexts, the non-divisibility condition may be satisfied, prompting the adoption of EU standards across global operations. AI systems explicitly prohibited under the EU AIA, such as certain forms of biometric categorization systems or social scoring mechanisms, will, by definition, continue to operate only in permissive jurisdictions while being excluded from EU markets.[29]

3. The EU's Risk-Based Approach to AI Regulation

Within the EU AIA the level of regulation for AI systems entering the market depends on the risk they pose.[30] The AI Act establishes four risk tiers: *Unacceptable Risk* of systems enabling harmful manipulation, deception, and emotion recognition in workplaces or schools, or remote biometric identification for law enforcement in public spaces. These uses of AI tools are banned;[31] *High Risk* of systems for security in critical infrastructure, education, or employment, which require pre-market restrictions, such as robust risk mitigation and cybersecurity measures;[32] *Transparency Risk* of generative AI systems like ChatGPT, with lighter restrictions such as labelling AI-generated content, prohibiting illegal content, and barring summaries of copyrighted data;[33] Finally *minimal or no risk* systems like video games that face no restrictions.[34]

Post-market access obligations further include reporting malfunctions and risks, while the European Artificial Intelligence Office oversees compliance. In the US, the National Artificial Intelligence Initiative Act of 2020 outlined development strategies and established an oversight office. While binding rules on AI are yet to be put in place,[35] we can already observe regulatory developments similar to the EU AIA at the US federal level. Federal regulatory efforts thus far focus on setting AI development goals and partial AI bills

[28] ALMADA, M. and RADU, A. 'The Brussels Side-Effect: How the AI Act Can Reduce the Global Reach of EU Policy' (2024) 25(4) *German Law Journal* 646, 656.

[29] SIEGMANN, C. and ANDERLJUNG, M. 'The Brussels Effect and Artificial Intelligence: How EU Regulation Will Impact the Global AI Market' (Centre for the Governance of AI, August 2022) https://cdn.governance.ai/Brussels_Effect_GovAI.pdf accessed 1.5.2025.

[30] European Commission, 'Regulatory Framework for AI' https://digital-strategy.ec.europa.eu/cs/policies/regulatory-framework-ai accessed 1.5.2025.

[31] https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence.

[32] https://digital-strategy.ec.europa.eu/cs/policies/regulatory-framework-ai.

[33] Ibid.

[34] https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence.

[35] https://www.whitecase.com/insight-our-thinking/ai-watch-global-regulatory-tracker-united-states.

targeting industries, rather than comprehensive regulation of AI as such.[36] An example is the Federal Aviation Administration Reauthorization Act, which requires reviews of AI-generated translations in aviation.[37] Notably, Utah is the first US state with detailed AI consumer protection rights.[38] The legislation targets generative AI, requiring licensed professionals such as accountants or architects to sufficiently disclose AI use in client interactions. The Colorado Artificial Intelligence Act is the closest piece of US legislation to the EU AIA. It broadly identifies areas of low to high-risk AI use. Low-risk systems are those that do not replace human judgment or have limited purposes, while high-risk systems make consequential decisions in admission to education or workplace.[39] Developers and deployers must perform risk assessments and inform users of such decisions, effective 1 February 2026.

A similar risk-based approach can be observed in Canada. The Artificial Intelligence and Data Act (AIDA) has been debated since 2022, though adoption of the law is unlikely before the October 2025 elections. AIDA links stricter rules with higher AI risk, focusing on high-impact systems assessed by such criteria as health risk, human rights impact, and scope of usage. Requirements placed on AI entering the market include human oversight, transparency, fairness, safety, accountability, and system robustness.[40] This shows an overall western tendency to risk-based approaches to AI where the EU AIA is likely to have a further Brussels Effect, as described above, due to local laws being inspired by the EU's system in its regulatory approach. In contrast, China regulates AI with a strict state-driven approach.[41] The 2022 Position Paper on Strengthening Ethical Governance of Artificial Intelligence emphasizes state oversight for national interests, and the 2023 Interim Measures for the Management of Generative Artificial Intelligence Services mandate registration, legal content compliance, and censorship for publicly available AI systems.[42] This differs from the EU's rights-based approach, towards which US federal legislation is also tending to lean.

This comparative analysis reveals an emerging western tendency toward risk-based approaches to AI regulation, where the EU AI Act serves as a potential model for other jurisdictions. While the specific implementation varies, the underlying principle of linking regulatory stringency to risk level appears to be gaining traction internationally, suggesting a potential avenue for the Brussels Effect to manifest in global AI governance.

4. Case Studies: The Global Impact of the EU AI Act

The EU AI Act's influence extends beyond European borders, affecting corporate strategies, product rollouts, and feature development worldwide. This section presents case studies illustrating how major technology companies are responding to the EU's regulatory framework, demonstrating the early manifestations of the Brussels Effect in AI governance. Even in its initial implementation phases, the EU AI Act is already shaping the

36 https://www.softwareimprovementgroup.com/us-ai-legislation-overview/.
37 Ibid.
38 https://www.mayerbrown.com/en/insights/publications/2024/05/utah-enacts-ai-focused-consumer-protection-bill.
39 https://leg.colorado.gov/bills/sb24-205.
40 https://ised-isde.canada.ca/site/innovation-better-canada/en/artificial-intelligence-and-data-act-aida-companion-document#s6.
41 https://www.mfa.gov.cn/eng/zy/wjzc/202405/t20240531_11367525.html.
42 https://www.chinalawtranslate.com/en/generative-ai-interim/.

behaviour of AI companies, reflecting its extraterritorial reach. On one hand, the EU AIA comes with stringent rules on training data sets, such as in Article 67, initially drafted to demand entirely error-free datasets. This was later deemed impossible, and the wording was tempered to the best possible extent of least error.[43] A European Commission study found that the development costs of high-risk AI systems could increase by up to 17%.[44] Evidently, compliance with the EU AI Act imposes significant financial and operational burdens. Some companies might determine that the cost of compliance outweighs the benefits of accessing the EU market.[45] Avoiding compliance may be possible if companies can run non-compliant models in non-EU markets without duplicating effort, but creating and training two separate models might be more costly than complying with EU Regulations.[46] Hence, companies with little revenue exposure to the EU might choose to geoblock EU users or exit the market rather than comply.[47] Complying with EU regulation could also introduce inconsistencies or conflict with other countries' laws (e.g., US).[48]

Three distinct adaptation strategies have emerged: geofencing, delayed rollouts, and feature modifications.

Meta's large language model Llama 3.2, an AI tool for editing videos, text, and graphics, was not made available in the EU due to regulatory concerns. This geofencing strategy represents a form of regulatory avoidance, where companies restrict access to certain products or features in highly regulated jurisdictions. Notably, users in the EU can still access the model through virtual private networks (VPNs), highlighting the practical challenges of enforcing territorial restrictions in the digital realm.[49] OpenAI initially delayed the Advanced Voice Mode for ChatGPT in the EU in August 2024 due to AI Act compliance issues.[50] However, unlike Meta's approach of complete geofencing, OpenAI chose to modify its product to meet EU regulatory requirements. The company subsequently launched the feature in the EU on 22 October 2024. Apple postponed the rollout of Apple Intelligence in the EU to February 2025, six months after its US debut, to meet the risk assessment requirements of the EU AI Act.[51]

These cases illustrate how the EU AI Act's influence pushes companies to adopt different strategies to navigate the regulatory landscape. The economic and operational costs associated with these adaptations may ultimately incentivize companies to develop AI systems that comply with EU standards from the outset, potentially leading to a de facto Brussels Effect where EU Regulations shape global product development practices.

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43 La Présidence Française du Conseil de l'Union européenne, "Proposition de Règlement Du Parlement Européen et Du Conseil établissant Des Règles Harmonisées Concernant L'intelligence Artificielle (legislation Sur L'intelligence Artificielle) et Modifiant Certains Actes Législatifs del'Union-Texte de Compromis de La Présidence-Articles 16-29".

44 RENDA, A. et al., "Study to Support an Impact Assessment of Regulatory Requirements for Artificial Intelligence in Europe Final Report (D5)" (Luxembourg: European Commission, April 2021), Chapter 4.

45 EU AI Act – Brussels Effect (Wilson), p. 7.

46 Brussels Effect and AI (Siegmann & Anderljung), https://cdn.governance.ai/Brussels_Effect_GovAI.pdf, p. 45.

47 Ibid. Page 41.

48 Ibid. Page 47.

49 https://ai.meta.com/blog/llama-3-2-connect-2024-vision-edge-mobile-devices/.

50 https://marchoaglaw.com/blog/why-openais-advanced-voice-is-not-available-in-the-eu?utm.

51 https://9to5mac.com/2025/02/24/apple-intelligence-is-now-fully-supported-in-the-eu-with-ios-18-4/.

4.1 Regulatory Convergence in Global AI Governance

While some critics argue that the EU's stringent regulatory approach could overburden AI startups and make the region less accessible to investors, several jurisdictions that have followed the EU's lead present an alternative narrative. Rather than viewing comprehensive regulation as an impediment to innovation, these countries frame AI regulation as an enhancement of legal certainty and investment potential. South Korea's AI Basic Act, set to take effect in January 2026, focuses on transparent and safe AI, mandating measures to ensure reliability, requiring watermarks on AI-generated content, and authorizing corrective orders for violations.[52] Notably, Yoo Sang, Minister of Science and ICT of South Korea, emphasized that,

> through the enactment of the AI Basic Act amid fierce global competition surrounding artificial intelligence, we have established an important milestone that will enable our country to genuinely leap into being an AI G3 powerhouse by alleviating uncertainties for corporations and promoting large-scale investments from the public and private sectors.[53]

This framing positions AI regulation as a catalyst for investment rather than a deterrent. Brazil has followed suit with its Bill No. 2,338/2023, inspired largely by the risk-based framework of the EU AI Act.[54] Brazil seeks to promote innovation through copyright exceptions and regulatory sandboxes, illustrating the country's intention to attract investment and innovation by presenting itself as a jurisdiction with clear, predictable AI regulations.[55] Even the Vatican has enacted comprehensive AI regulation to lead by example on the global stage.[56] While the Vatican's guidelines apply only to its jurisdiction, they signal its moral authority and influence in the global AI ethics conversation. This builds on initiatives such as the Rome Call for AI Ethics, showing the Vatican's intent to shape AI governance beyond its borders.

4.2 Regulatory Fragmentation

The emergence of the EU AI Act raises fundamental questions about the future trajectory of global AI governance: Will it lead to regulatory convergence through the Brussels Effect, or will it contribute to further fragmentation in an already complex legal landscape? This section examines the forces driving both convergence and fragmentation in AI regulation.

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52 EUN-JIN, Kim. 'AI Basic Act Passes National Assembly, Aiming for Enhanced AI Reliability and Regulation' (Business Korea, 27 December 2024) <https://www.businesskorea.co.kr/news/articleView.html?idxno=232661>accessed 10.1.2025.

53 https://biz.chosun.com/en/en-it/2024/12/26/66W2Z3RX6FE7FMPXMR73T26SKY/.

54 Brazil AI Act' (Artificial Intelligence Act, 10 December 2024) <https://artificialintelligenceact.com/brazil-ai-act/> accessed 24.4.2025.

55 Brazilian-American Chamber of Commerce, 'Regulatory Framework for Artificial Intelligence Passes in Brazil's Senate' (2 January 2025) <https://brazilcham.com/regulatory-framework-for-artificial-intelligence-passes-in-brazils-senate/> accessed 24.4.2025. The term *Sandbox* is understood in line with the following resource: *What is a sandbox?* (26 February 2021), proofpoint. https://www.proofpoint.com/us/threat-reference /sandbox.

56 N. DCCII – Decreto della Pontificia Commissione per lo Stato della Città del Vaticano recante "Linee Guida in materia di intelligenza artificiale" (16 December 2024) <https://www.vaticanstate.va/images/N.%20DCCII.pdf> accessed 11.4.2025.

Several factors suggest that the EU AI Act could catalyse regulatory convergence in global AI governance. The EU's significant market size and regulatory capacity incentivize multinational corporations to adopt EU standards globally rather than maintaining differentiated compliance frameworks for different jurisdictions. Technical standards and certification procedures developed to comply with the EU AI Act may become de facto global standards through international standards organizations and industry practices. This technical harmonization creates practical pathways for regulatory convergence even in the absence of formal legal alignment. Contrary to concerns about regulatory burden, clear and consistent rules can enhance market confidence and reduce uncertainty for investors, developers, and users of AI systems. Despite these convergence pressures, significant forces could lead to continued or even increased regulatory fragmentation. Fundamental differences in regulatory approaches, the EU's rights-based model, the US's market-driven approach, and China's state-driven framework, reflect deeper philosophical divergences about the relationship between technology, society, and governance. These differences may persist despite functional convergence in specific regulatory mechanisms. As AI technologies become increasingly central to economic competitiveness and national security, jurisdictions may pursue regulatory strategies that align with their strategic interests rather than international harmonization. This trend toward "digital sovereignty" could lead to deliberately divergent regulatory frameworks. Even with superficially similar regulatory frameworks, significant differences may emerge in implementation, interpretation, and enforcement practices across jurisdictions. These practical divergences can create de facto fragmentation despite de jure convergence. Companies may resist convergence through innovative compliance strategies, jurisdictional arbitrage, or technological design that circumvents regulatory frameworks. These adaptive responses could perpetuate regulatory fragmentation despite harmonization efforts.

4.3 Implications for Global AI Governance

The tension between convergence and fragmentation in AI regulation reflects broader debates about the governance of transnational digital technologies. The EU AI Act's extraterritorial ambitions challenge traditional conceptions of regulatory territoriality, raising questions about the appropriate scale, scope, and mechanisms for AI governance in a globalized digital economy.

While the Brussels Effect suggests that the EU's regulatory approach could become a de facto global standard through market mechanisms, the persistence of divergent regulatory philosophies and strategic interests suggests that complete harmonization remains unlikely. Instead, a more complex landscape may emerge, characterized by a partial convergence in specific regulatory domains alongside continued divergence in others.

This dynamic regulatory landscape presents both challenges and opportunities for global AI governance. While fragmentation may increase compliance burdens and create regulatory arbitrage opportunities, it can also foster regulatory innovation and adaptation to diverse societal values and contexts. The key challenge for policymakers, corporations, and civil society will be navigating this complex terrain to ensure that AI technologies develop in ways that are safe, beneficial, and aligned with human values across diverse jurisdictions.

The world wide web and the tools accessible on it are by design global. Therefore, their regulation also needs to happen within multilateral fora.[57]

5. Conclusion

This paper has examined the EU AI Act through the lens of the Brussels Effect, analysing its potential to shape global AI governance beyond European borders. The analysis reveals a complex interplay between regulatory convergence and fragmentation, with the EU's risk-based framework simultaneously inspiring similar approaches worldwide while encountering resistance from divergent regulatory philosophies and strategic interests.

The EU AI Act represents a bold assertion of regulatory authority in the digital realm, challenging traditional notions of territoriality and jurisdiction. By imposing stringent obligations on AI systems accessible to European users regardless of their place of development or deployment, the Act exemplifies how regulatory power can transcend physical borders in the digital age. This extraterritorial reach raises critical questions about sovereignty, legal interoperability, and the balance between national and supranational governance structures.

The case studies presented demonstrate how the EU AI Act is already influencing corporate behaviour globally, with major technology companies adapting their product development, rollout strategies, and feature sets to comply with European standards. These adaptations illustrate the early manifestations of the Brussels Effect in AI governance, suggesting that the EU's regulatory approach could indeed shape global standards through market mechanisms and corporate compliance strategies. However, the persistence of divergent regulatory approaches in major jurisdictions like the United States and China indicates that complete regulatory convergence remains unlikely. Instead, a more complex regulatory landscape is emerging, characterized by partial alignment in specific domains alongside continued divergence in others. This hybrid system reflects the tension between the economic logic of regulatory standardization and the political reality of divergent values, interests, and governance traditions.

The EU's leadership in AI regulation signals not necessarily a new era of global harmonization but rather a critical juncture in the evolution of digital governance. As AI technologies continue to transform societies worldwide, the contest between regulatory convergence and fragmentation will shape not only the development and deployment of these technologies but also broader questions about the governance of cyberspace and the future of regulatory territoriality in an increasingly digitalized world. Understanding these dynamics is crucial for shaping an equitable and effective global AI governance regime. As jurisdictions around the world develop their own approaches to AI regulation, the EU's experience offers valuable lessons about the potential and limitations of regulatory power in the digital age. The EU AI Act, whether through direct influence or as a counterpoint to alternative models, will undoubtedly play a central role in the ongoing evolution of global AI governance.

[57] ŠONKOVÁ, M. 'Brussels Effect Reloaded? The European Union's Digital Services Act and the Artificial Intelligence Act' (College of Europe, European Diplomatic Programme Research Paper 4/24) https://www.coleurope.eu/sites/default/files/research-paper/EDP_4_24%20Sonkova_0.pdf 27.