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Data value and data governance

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Abstract

Addressing the governance of emerging digital automation technologies and data requires a multidisciplinary perspective. *An economic perspective* is needed to understand, conceptually and empirically, how data value accrues along the data value chain. A *techno-legal perspective* is needed to attribute data rights to data subjects, based on how value accrues and the objectives of just data governance, and it often entails trade-offs. Governing the process of individual and commercial data sharing, either through mandatory rules or by creating incentives for sharing, is central to data governance and is important for research and policy agendas. Two examples from the EU regulatory framework, the Data Governance Act and the AI Act, attempt to devise principles that might address some of the challenges related to data governance, including AI.

Keywords: Data value; Data sharing; Data governance; Artificial Intelligence; Data Governance Act; AI Act

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Introduction

In this paper, I put forward the rationale for placing data governance at the centre of the EU and global *digital industrial policy* agenda, that is, the regulatory frameworks and more broadly the vision of policy that ensure a just digital transition.

The digital transition encompasses the emergence, adoption, and diffusion of digital automation technologies, including, but not limited to, artificial intelligence (AI), in economies and societies. Although the literature on the economic and societal effects of AI is burgeoning (see Goos & Savona [2024] for a review), there are a few topics that present conceptual and policy challenges, which arguably require cross-disciplinary efforts.

Digital automation technologies require both physical investments in digital infrastructures, such as data centres, cables and cloud storage, as well as intangible investments in databases and software. Most emerging digital technologies (see Savona, et al. [2022] for a taxonomy of emerging digital technologies) use a large amount of data, including, but not limited to, the personal data of consumers and workers.

This raises the problem of *asymmetries* between individual consumers and workers—as personal data subjects—and public and private actors (Big Tech, digital platforms, public administrations, and governments) that acquire and manage data for different purposes. It is not merely a matter of data extractivism, anti-trust regulations, or individual privacy protection (Goos & Savona, 2024); asymmetries also occur in terms of value accumulation, market power, and the emergence of geopolitical core–peripheries. Any digital industrial policy agenda that aims to reduce these asymmetries should be informed by a clear understanding of the role of data governance.

Economists of innovation know too well that the regulation, and more broadly, the governance of emerging technologies (Rotolo et al., 2015), does not develop at the same pace as the new firms entering these markets. Hence, digital automation technologies and AI might need regulations to prevent or minimize the potential side-effects of untested applications, personal data misuse, and copyright violations in text mining. However, the unprecedented pace of digitalization and the emergence of new digital applications make the identification of such effects, and the formulation of tools to prevent or mitigate them, fairly complex.

The first such effect is *economic,* which relates to the understanding of how value accrues for different data subjects along the data value chain—from data generation and data acquisition to storage and data analytics (Savona, 2019). Individual data has value only when it is aggregated and contributes to scalable information and knowledge accumulation. The use of big data has led to a concentration of value, particularly in private businesses, and, hence, there is a need to adapt and possibly *upgrade* competition and antitrust regulations to make them relevant to the specific functioning of digital markets. Furthermore, the concentration of data value requires a fair and inclusive redistribution of both the private and social value generated from (personal and business) data among firms, individual data subjects, and public actors.

The second effect is *techno-legal,* which concerns the attribution of rights to different actors along the data value chain (data subjects, data intermediaries, private businesses, and public actors); the need to regulate AI applications across diverse realms, with different levels of risk and harm; the challenges associated with designing regulations with aims that are often at odds with each other (e.g., attributing intellectual property rights in the case of AI-generated art; or privacy protection in increasingly complex

data-processing business models). In addition, attribution of rights is necessary to create incentives and facilitate data sharing when the intelligence and knowledge generated by data serve a public purpose.

The third effect is *geopolitical*. The recent political turbulence involving China, the US, and the EU has led to the emergence of a wave of *new protectionism* and tensions concerning several aspects of digitalization, from domestic chipmaking to the regulation of digital trade and cross-border data flows *with trust* (OECD, 2022). A non-exhaustive list of issues includes the strategic role of data centres and the geography of digital infrastructures (Papadakis & Savona, 2024), the EU's pursuit of open strategic autonomy, and "technological sovereignty" (Bria et al., 2025).[2]

I offer some grounding towards understanding the formation of data value by considering the data value chain. This allows us to identify some trade-offs and challenges for data governance that aim to foster a just digital transition, such as assessing *data ownership*; attributing data rights on the basis of how data value is formed; and supporting the creation of incentives for data sharing for public purposes while protecting the privacy of individual data subjects and firms' incentives to innovate.

We then zoom in on specific cases from the EU digital regulatory framework—the Data Governance Act (DGA) and the recent EU AI Act. Both the DGA and the AI Act are examples of data governance that can be used as benchmarks to address *missing data markets*, create incentives for data sharing, and provide standard principles to anticipate and mitigate the potential side-effects of unregulated technologies.

Data value and data rights

Data value: Measurement and beyond

From an accounting perspective, data is considered the output of a production process, which is subsequently used in business operations "repeatedly or continuously" (United Nations Statistics Division, 2024, p. 9). According to this definition, data is the raw material, though often it is a by-product, software is the process, and information is the final output. According to the System of National Accounts, data is an asset, and the measurement of its (business) value should be in line with similar methods used to measure capital asset value, such as cost-based evaluations, as established in the literature on intangible assets (Corrado et al., 2025). However, things may not be so straightforward in practice, and measuring data as an asset raises several challenges (Goodridge et al., 2022). In this context, it is interesting to delve into the cost-based approach to measuring data.

According to the cost-based approach, an asset is valued based on its original acquisition cost through purchase or development. This also encompasses costs such as labour or investments in data storage products. A comprehensive example of this methodology, applied to the supply value chain, is provided by Corrado et al. (2025), who developed estimates of data capital at the industry level coherent with both national accounts and widely used concepts in the intangible capital literature. They first identified *workers engaged in data-driven activities* by analysing detailed occupational classifications and wage statistics. Subsequently, time-use factors for relevant occupations were estimated, considering the proportion of time spent creating data assets. Next, the sum-of-costs approach, using employment and wage share data from labour force surveys and estimates of investments in data assets, was applied. According to the United Nations Statistics Division (2024, p.10), "occupations should be considered as data-producing if the occupation involves tasks which explicitly contribute to adding value to the

[2] I will illustrate this point as a relevant topic for future research on data governance in the Conclusion section.

production of data and the worker undertakes these tasks in a proactive and calculated manner." Therefore, data is unique in that its value, at least in accounting terms, accrues from the data generated by workers as a byproduct of their activities or consumers' transactions.

The contributions on measurements of intangible assets advance our understanding of the productive role of data from the accounting perspective, yet they lack an underpinning theoretical framework, thereby overlooking distributional mechanisms that attribute value formation along the data value chain. Data is not a standard production factor. No previous technological paradigm has relied so heavily on a production input so closely tied to personal information, missing or incomplete markets, strong network effects, and the concentration of value arising from data analytics. Treating data simply as another input within a marginalist framework risk obscuring these features, and with them the distributional and governance challenges they raise.

I argue that we should embed the issue of data value within a more general theoretical framework—one that goes beyond standard marginalist interpretations of value and explicitly engages with questions of value creation, the challenges surrounding the attribution of ownership and control rights, appropriation, and distribution mechanisms.

This requires revisiting concerns that are central to classical political economy and the Marxian tradition: questions of surplus, rent, and the role of property relations in shaping who captures value. These issues are, I would argue, increasingly central to understanding data-driven economies, where value often derives not only from productivity gains, but from control over access, infrastructures, and key conditions of production.

For instance, when data is modelled as a production factor in a neoclassical marginalist approach, profits from investments in data appears as a legitimate factor's remuneration. However, in Marxian terms, data-driven super-profits become rents once the attribution of exclusive property and control over data (and digital infrastructures) become a barrier to entry, allow surplus value to be appropriated through exclusion and become rent.[3] Also, (surplus) value is created as a byproduct of workers' activities, which is compensated for with a salary, or as a byproduct of consumers' digital transactions, which are largely cost-free for the provider. In addition, the economic nature of data changes along the value chain.

Individual data is considered a public good (Ostrom, 2010). However, more accurately, individual data is a *club good*, excludable—albeit, in accounting terms, not appropriable (Glazer, 1993)—but not rivalrous (Jones & Tonetti, 2020; Savona, 2019, Schwartz, 2017), as individuals or businesses may prevent the use of their personal or copyright-protected information. The non-excludable nature of data arises from the fact that once data is shared, the data subject cannot control further use (Cheneval, 2021); once it is shared, data can be reused at virtually zero marginal cost. Regarding its non-rivalrous nature, the use of data by an entity does not deplete the data stock, which may be used by third parties without constraints (Posner, 2014), unless property rights are attributed to a firm-owned database.[4]

A legally owned database is a *private good*—excludable and rivalrous. This is what is usually included in the intangible assets of firms and is a source of comparative advantage (Corrado et al., 2025). Data analytics yield valuable information that eventually becomes collective knowledge whose economic nature is inherently a *public good* (Foray & Steinmueller, 2003; Nelson & Nelson, 2002).

[3] A Marxian framework incorporating value formation in the digital sphere is currently under development with Siavash Mohades. It is important to delve into this topic, but that is beyond the scope of this brief paper. See Fuchs (2020) for a review.
[4] EU Directive 96/9/EC of March 11, 1996, recognizes the legal ownership of databases by firms, with *database property rights* being defined as a legal category.

The changing economic nature of data along the value chain is not merely a semantic issue. It raises challenges that are relevant for data governance, as they impinge on different, and ones that are potentially at odds, data rights, which are to be attributed to different actors along the data value chain, and the potential for value redistribution and maximization of the social value of data, which are central to the objective of data governance.

Data ownership, other rights, and data governance

The economic nature of data is determined by law and ownership rights, not just the characteristics of excludability and rivalry. Briefly, ownership entails two rights: passive and active (Janecek, 2018). The passive right provides protection of the owned good against other subjects' rights. The active right provides the owner active control over the object, amounting to self-determination (Purtova, 2015). Similarly, Banterle (2018) mentions the right to exclude others from use (passive protection) and the right to use the owned good (data control), which resonate with consumer characteristics identified in economic theory.

As for personal data, there are two approaches to consider ownership: top-down and bottom-up (Janeček, 2018). The top-down approach presumes a central regulatory authority that attributes ownership, also known as *de jure* ownership. In contrast, the bottom-up approach, known as *de facto* ownership, precedes de jure ownership and exists outside of the legal system.

Such a distinction is relevant for personal data, as data protection has been incorporated within the General Data Protection Regulation (GDPR)—a cornerstone of the EU regulatory framework—as a fundamental right that is guaranteed under Article 8(1) of the EU Charter of Fundamental Rights.[5] This article allows for the protection of the data subject from any harm caused by the use of their personal data (Zech, 2016) and guarantees rights, such as the right to access, erasure, and portability of personal data[6] (Determann, 2018).

Data protection (not just privacy-related) laws grant data subjects the right to exclude others from acquiring or using their personal information. As such, these rights are similar to the exclusion rights conferred by property laws (Purtova, 2015; Samuelson, 2000, p. 1130).

However, it is controversial whether data protection laws allow for the exercise of (active) property rights, as they were created primarily for the purpose of protection and, hence, do not grant full active control (or rights of use) or permit the commercialization of data (Specht & Zerbst, 2018). Data protection laws are not generally referred to as property laws (Schwartz, 2004; Zech, 2016). Moreover, since privacy is a fundamental right, it is inalienable and cannot be traded (Lynskey, 2015). In the EU regulatory framework, the concept of privacy is directly linked with human dignity and cannot be a matter of relative rights, which can be sold or transacted in different ways (Zander et al., 2019). Determann (2018) argues that the GDPR falls short of giving data subjects full active rights over their personal data. To the best of our knowledge, this has not been examined in the literature; personal data can be owned *de facto* and justify the contribution of the data subject to the accumulation of value at the last stage of the data value chain.

[5] "Everyone has the right to the protection of personal data concerning him or her" (Article 8(1), EU Charter of Fundamental Rights, 2007).
[6] Directive 95/46/EC (General Data Protection Regulation).

Arguably, *de facto* ownership, rather than *de jure* ownership, may be compatible with the fundamental right to protection under the GDPR, and, at the same time, may allow individual data subjects to contribute to forms of collective ownership, such as data commons.

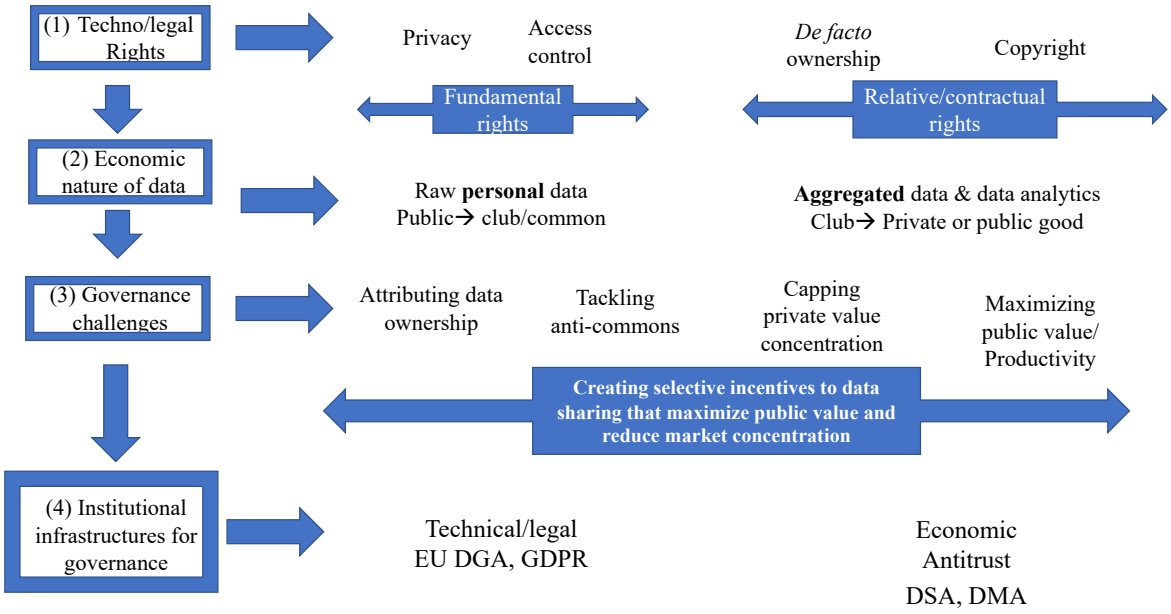
Some scholars have hinted at the presence of a "tragedy of the anti-commons" in relation to personal data (Duch-brown et al., 2017; Fairfield, 2005), when data subjects are attributed individual property rights. The tragedy of the commons refers to the risk of overuse and depletion of commonly owned resources because of the selfish behaviour of individuals. However, the tragedy of the anti-commons refers to the underuse of common resources because of the fragmentation of property rights (Fairfield, 2005); a multitude of individual ownership rights hinders productive use of the resource, leading to the underuse of resources (Bertacchini et al., 2009; Buchanan and Yoon, 2000). In the case of data intelligence, the uncoordinated exercise of exclusion rights leads to the underutilization of data (Duch-Brown et al., 2017).

Yakowitz (2011) referred to this problem as the "tragedy of data commons". According to Yakowitz (2011), if privacy is considered to be a common resource protected by law, individuals should be empowered to exercise their individual right of exclusion because they are sensitive to the loss of privacy (Yakowitz, 2011). However, depending on the number of individuals exercising exclusion rights, this may lead to an underuse of collective information, which is a common good worth contributing to.

To overcome the anti-commons (underuse of resources and uncoordinated exercise of exclusion rights), one can utilise bargaining for bundling of data, thereby unifying fragmented exclusion rights into a usable bundle. That is, it requires moving away from too many individuals, each exercising exclusion rights, toward a sole decisionmaker controlling a bundle of rights of exclusion. The sole rightsholder must, in principle, be able to negotiate the common resource, such as privacy, or, indeed, a public purpose, such as collective knowledge to be used for public purposes such as health or basic research (Heller, 1998, p. 641). It is interesting that some of these conceptualizations, which date back to the first half of the 2000s, underpin the rationale of some European regulations, such as the DGA, which aims to facilitate and govern personal data sharing.

Figure 1 presents the intricate relationships between data value, data rights, and data governance through techno-legal and economic perspectives to understand how data value accrues and the challenges in attributing ownership and other rights to personal data, which in turn translate into different governance challenges. For instance, recognising a *de facto* ownership to individual data subjects might help tackle the anti-commons issue and create selective incentives to data sharing. This would allow us to square the circle between limiting market value concentration and the scaling up of data analytics when the objective is to contribute to public knowledge (e.g. to tackle specific societal challenges such as public health). Also, the framework stylised in Figure 1 helps us understand the extent to which the most recent European regulatory framework has tackled such challenges. Next, we focus on the DGA, which aims to create incentives for and regulate data sharing.

Figure 1 – Data ownership, value, and governance



Source: Author's elaboration

Data sharing: The EU Data Governance Act

Depending on the actors involved, and the purpose served by the information and collective knowledge, data gives rise to the challenge of reconciling objectives that are often at odds with one another. For instance, it is important to create incentives to "maximise data sharing" for public interest purposes, such as health, mobility, and research. However, data as an asset of firms that benefit from inherent network economies requires "capping private value concentration" from an antitrust perspective. Facilitating data sharing and preventing value concentration may be at odds with "protecting individual privacy and other rights" (Goos & Savona, 2024; Savona, 2020, 2021). The European Commission has been trying to resolve this policy conundrum in the context of the articulated regulatory framework and has set a worldwide benchmark (European Commission, 2020; 2022; 2023).

One interesting example of such EU regulations is the DGA, which explicitly aims to foster the "availability of data for use by *increasing trust in data intermediaries* and *by strengthening data sharing mechanisms* across the EU." (European Commission, 2022). The DGA focuses on the "creation of data markets" by legitimising data intermediaries (i.e., data trusts, cooperatives, stewards, and unions) (Goos and Savona, 2024). Furthermore, it aims to "make public sector data available for re-use (..) on altruistic ground[s]."

Data intermediaries are supposed to act in the interests of individual data subjects and facilitate data sharing (Delacroix & Lawrence, 2019; Savona, 2021; Goos & Savona, 2024;). Moreover, as mentioned in the previous section, they may address the conundrum of the tragedy of data commons or the tragedy of anti-commons in relation to personal data by creating an institutional actor that acts on behalf and in the interest of several data subjects, individual rights holders.

However, to achieve a sufficient scale of aggregate information that serves public purposes such as public health and research, data intermediaries would need large-scale digital infrastructure to manage large amounts of data, which may generate the same problems as those created by Big Tech, such as market

concentration, data leaks, cybersecurity breaches, or the concentration of data centres and cloud services (Papadakis & Savona, 2024).

In addition, trustees operating on a fiduciary basis on behalf of a group of individual data subjects should demonstrate a commitment to pro-social and altruistic behaviour, supported by appropriate incentives. This is not a trivial matter.

Based on what has been discussed so far, the following questions need to be answered (Savona, 2021, Goos and Savona, 2024, p. 8):

- "What is the minimum scale required for data intermediaries managing individual data for altruistic purposes to be effective? Altruism and public interest, such as research, public health, and some public services, need large-scale data sharing infrastructure (at least a minimum benchmark) to be effective. However, what is the maximum scale that can be allowed for data intermediary services to avoid the risks of value concentration, data leaks, and cybersecurity risks, which we all know too well from our experience with Big Tech?

- How can we ensure that the incentives of data intermediaries or trustees operating on a fiduciary basis on behalf of a group of individuals are compatible with altruistic purposes? They need to be capped in scale, limited to specific purposes, and monitored by an independent governing body that includes representatives from all the relevant data subject constituencies (or sector-level data) rather than a mix of small bottom-up data intermediaries in a fragmented market."

Will the growth of data intermediaries benefit data sharing, as argued by Delacroix and Lawrence (2019), or will a regulated public actor, monitored by an independent guarantor and representatives from all the different constituencies and stakeholders in societies, help achieve the objective of just data governance? Governing individual and B2B data sharing, either through mandatory rules or the creation and maintenance of incentives for sharing that do not lower consumers and citizens' protection, are not easy tasks. The literature on the creation and implementation of regulatory frameworks with different degrees of centralization is still in its infancy, let alone assessments of their effectiveness.

Arguably, data sharing is one of the realms where citizen science (Beck et al, 2024; Evans, 2016) can be particularly valuable. Participatory methods such as *citizen juries* help inform the public and involve it in understanding the main trade-offs involved in policy decisions.

For example, Gravey et al. (2023) (see also Savona et al., 2025) conducted citizens' juries, where they asked a group of citizens to deliberate and vote on a potential trade policy intervention regarding medical data sharing (see also the controversial views in Cheneval, 2021). The participants argued that lowering trade barriers to cross-border data flows and facilitating medical data sharing may lead to an improvement in digital health services, advances in medical treatments in areas requiring the collection and analysis of high volumes of data, such as rare diseases, and facilitate innovations in health, for example, by pharmaceutical companies. However, the participants were also aware that such a decision might lead to sharing health data with countries with limited privacy and data protection standards, which can lead to privacy abuse, jeopardize people who are vulnerable (e.g., those with chronic health conditions and refugees), allow commercial profiling of consumers more generally, and the commercialization of the National Health Service. The results showed that the public significantly relies on information given by *independent experts*, who are considered the most trustworthy among all stakeholders, including the government, non-governmental organizations, and the private sector, but they also valued their personal health information and were not willing to share it unless it involved high returns in terms of social value.

Data sharing and the regulation of cross-borders data flows are relevant challenges within the realm of data governance.

Beyond data governance: The EU Artificial Intelligence Act

I argue that it is necessary to broaden the conceptualization, design, and implementation of data governance in a context where the use and the development of AI is growing at an unprecedented rate. Recent developments in generative and agentic AI highlight the need to address these unprecedented questions. Never before have entrepreneurs and innovators, the owners of *too-big-to-fail* platforms, demanded regulatory intervention from governments to "slow down" the development of generative AI,[7] the core of their business and the source of their competitive advantage. Never before have they explicitly asked a public body to identify and regulate undesirable effects, such as fake news and cybersecurity issues. Never before has a machine or an algorithm allegedly violated intellectual property rights, including copyright.

The European regulatory framework for emerging digital technologies has created what is called the "Brussels effect": it set a benchmark for other countries that eventually adopt the same rules. For instance, when the GDPR became law, US tech giants had to comply, and several governments chose to align themselves with the main principles of the GDPR to protect citizens' privacy and digital rights broadly.

Will the EU AI Act have the same Brussels' effect? Will it also raise the bar for data governance? Will it lead to what Bacchus et al. (2024) auspicate as "governance interoperability", that is, a general convergence of all regulatory frameworks that lower digital trade barriers and protect individual data subjects?[8]

The AI Act includes not only a systematization of high-risk cases, such as predictive policing, social scoring, and algorithmic management in workplaces, but also it attempts to regulate foundational models, such as large language models (LLMs), an issue which has sparked much debate in the case of generative AI.

There seemed to be hints that the US might have been moving closer to the EU's regulatory framework. One of the issues at stake is the issue of copyright infringement when digital texts are copied from the web and used to train LLMs and generative AI. It is well known that the debate has remained in the public eye because the *New York Times* and eight other American newspapers owned by Alden Global Capital, including the *Chicago Tribune* and *New York Daily News*, have sued OpenAI and Microsoft. In the case of the *New York Times*, crucially, the complaint goes beyond copyright infringement and lays down a case for regulating AI more broadly, borrowing the principles of risk aversion and rights preservation enshrined in the EU AI Act. It raises concerns about misinformation, the protection of human creativity, the social value of professional and truthful journalism, as well as democracy itself. A highly reputed US company is suing a formerly non-profit and now for-profit billion-dollar US company.[9]

[7] See "Pause giant AI experiments: An open letter" (March 2023). https://futureoflife.org/open-letter/pause-giant-ai-experiments/

[8] Since the GDPR came into existence, the development of AI applications, market concentration, and the lobbying of US Big Tech calls for a more comprehensive governance of data and AI that goes beyond individual privacy protection. As mentioned above, governance interoperability (Bacchus et al., 2024) can be fostered by reducing the widening gap between digital growth, intellectual rights protection, and tax regulations.

[9] The current geopolitical context in the Trump era has put an abrupt stop to meaningful debates in the realm of AI developments, shifting it predominantly in the context of security. For reasons of space, we do not delve onto the most recent

Conclusion and directions for future research

In this paper, I offer some reflections from economic and techno-legal perspectives on the main challenges in data governance. The mechanisms through which value accrues along the data value chain depends on the specific economic nature of data as an input for emerging digital technologies; the actors involved in the process; and the difficulties in attributing ownership and other rights to individual data subjects, workers, or consumers (see also Fuchs, 2020, pp. 1–24). These challenges lead to trade-offs in the design of a data governance framework that aims to mitigate asymmetries digital transition. If the digital transition is primarily based on AI, which is ubiquitous now, then data governance should become the central element of AI governance.

One of the challenges in AI and data governance is reconciling the conflicting objectives of creating (and maintaining) incentives to maximize data sharing for public interest purposes, such as health and research; limiting the concentration of private value arising from (involuntary or voluntary) data collection and analytics, such as the training of LLMs; and protecting privacy and other individual rights, such as copyright, in a context where human creativity (still) has social value.

This calls for thinking out of the box, relying on a multidisciplinary understanding of (i) the theory of digital surplus value and data value concentration, the (economic) detrimental effects of a badly or non-regulated technology; (ii) carefully designed legal frameworks that prevent or internalise these externalities; and (iii) a forward-looking view of how the geopolitics of technology evolves and the striking asymmetries in the lobbying powers of the different actors involved.

Regarding the last aspect, future research on data governance should examine the concentration of digital infrastructures, and data centres in particular, which comprise the physical, infrastructural side of data governance.

Building on the findings of Papadakis and Savona (2024), which demonstrate the uneven global distribution of digital infrastructures such as data centres and cloud storage, future research should further investigate the drivers and implications of such global asymmetries.

Scholars should also explore the extent to which the uneven concentration of digital infrastructure reflects broader asymmetries in digital trade.

Future research should examine the role of institutional and regulatory environments in shaping location decisions of digital infrastructure. Comparative analyses of digital regulatory regimes, from EU digital regulations and adequacy decisions (Bacchus et al., 2024; Ferracane et al., 2023) to divergent intellectual property frameworks (Santacreu, 2023), may shed some light on whether a lax regime attracts infrastructure through mechanisms such as regulatory arbitrage and intellectual property revenue shifting (Accoto et al., 2023; Alstadsæter et al., 2015; Haufler & Schindler, 2023).

Regulatory arbitrage and the core–periphery digital trade structure should be further examined to test the "data-haven hypothesis" proposed by Papadakis and Savona (2024), which posits that digital infrastructure may be offshored to jurisdictions with less stringent data, intellectual property, and tax

developments, which shall be considered in the future research agenda.

regulations, similar to the well-established "pollution-haven hypothesis" in environmental economics (Savona & Ciarli, 2019).

Further empirical work is needed to assess the "data-haven hypothesis" from the perspective of digital infrastructures to establish whether the concentration of data centres and i-cloud services in specific countries mirrors a new form of digital core–periphery dynamics, in which advanced economies offshore their digital infrastructure to peripheral economies, thereby extending established global value chain hierarchies into the digital realm (Lehdonvirta et al., 2023).

Another promising area of research is the political economy of data governance. As the global debate on the interoperability of digital governance regimes (Bacchus et al., 2024) evolves, scholars should critically evaluate the capacity of national governments to regulate and negotiate with transnational cloud and data service providers. This calls for a broader conceptualization of interoperability that extends beyond data protection to include intellectual property, tax regimes, and sovereign rights over digital infrastructures (Bria et al, 2025).

In summary, data governance is a complex realm, underpinned by political, economic, and regulatory dimensions. It is essential to embrace such complexity to inform academic debates and policy efforts toward more equitable and sustainable forms of digital globalization.

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