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TRADEOFFS IN ARTIFICIAL INTELLIGENCE:
PROPOSALS FOR THE EUROPEAN UNION

INTRODUCTION

The EU can be considered as one of the leading countries in AI regulation. AI is a decisive factor in increasing competitiveness in economic markets both for the private and public sector - which can make use of AI for national security and societal challenges (Daffner 2022). That is why all over the world, some countries are trying to follow the EU lead (which paved the way with its proposal for AI Act in 2021) in establishing a legal frameworks for AI. Thus, a brief comparison with the two leading and rival powers in this context - the US and China, will be provided, together with a short analysis in the investments by both the private and public sectors. Furthermore, the paper will analyse some trade-offs regarding the right level of regulation in relation to the development of AI, together with some concrete proposals on our side in this context.

REGULATORY APPROACHES

AI regulation in the EU

The European Union can be considered a forerunner in terms of digital legislation.

LEGISLATION	DATE	STATUS
GDPR (General Data Protection Regulation)	**May 2018**	**Entered into force**
Data Act	**February 2022**	**Adopted by the EU Commission**
Data Governance Act	**June 2022**	**Entered into force** (applicable From **September 2023)**
Digital Services Act	**November 2022**	**Entered into force (**applicable from **February 2024)**
Digital Markets Act	**November 2022**	**Entered into force (**applicable from **May 2023)**
AI Act	**April 2021**	**Adopted by the Council in 2022**

The **General Data Protection Regulation** 2016/679, approved in 2016, and entered into force in 2018 as a Regulation, is aimed at strengthening data protection and at guaranteeing the free movement of data in the European Union. It creates a uniform legal framework for the protection of personal data, establishing the principles that data controllers must follow to protect their data subjects, like *data minimization*, the limitation in the processing of sensitive data, and the obligation to obtain consent by the users about the use of their personal data (Coccoli, 2017).

The **European Data Governance Act** entered into force in June 2022 and will be applicable from September 2023. It is a key legislative piece in terms of European strategy for data, aimed at making a great quantity of data available and simplify data sharing across different sectors in the EU in order to use the potential of data

to bring advantages to EU businesses and citizens (European Commission, n.d. a.). It creates the processes and structures to facilitate data (European Commission, n.d.b.).

The **Data Act** was adopted by the European Commission in February 2022, and complements the Data Governance Act by clarifying who can create value from data and under which conditions. It implies several measures to ensure fairness in the access and use of data, like increasing legal certainty for both companies and consumers who generate data, prevent the abuse of contractual imbalances that interfere with fair data sharing, tools for the public sector bodies to access and use data owned by the private sector which are necessary for public interest scopes (European Commission, n.d.b).

Another important legislative instrument is the **Digital Services Package,** including:

- **the Digital Markets Act (DMA)**: it aims at establishing a level playing field to allow gatekeeper platforms and technology start-ups to foster innovation, competitiveness, and growth. It entered into force in November 2022 (European Commission, 2023).
- **the Digital Services Act (DSA)**: aims at ensuring the safety of users online and to protect their fundamental rights. The DSA mainly regulates platforms – social networks, content-sharing platforms, app stores, online marketplaces, etc - and online intermediaries. It entered into force in November 2022, and is directly applicable across EU Member States (ibid.)

The **AI Act** is the first proposed law worldwide concerning Artificial Intelligence. It has the potential to become a global standard, determining the extent to which artificial intelligence could have a positive impact on our daily lives (The Artificial Intelligence Act, n.d.). The AI Act follows a risk-based approach, in order to allow legal intervention only in the concrete situations where there is a cause for concern. It distinguishes between four levels of risk: unacceptable risk, high risk, limited risk, and minimal risk. An AI system is considered to be high-risk depending on the purpose and function of the system, together with the specific purpose and modalities for which that system is used (European Commission, 2021). Furthermore, for an AI system to be considered as high-risk, it must pose a significant risk to harm fundamental rights, or people's health and safety (Bertuzzi, 2023).

AI Regulation in World Powers: China and the United States

China is one of the countries that has given more contribution to both AI research and AI application in the economy, finance, retail, and high-tech. In March 2022, China released a draft of a regulatory framework to use algorithms in online recommendation systems that was implemented much faster than in other countries. (Daffner 2022). The draft appears in line with the governmental aim of creating a governance model for new technologies, through the setting of requirements for AI services, the underlining of generative AI issues, and the encouragement of adopting "securing and trustworthy software, tools, computing and data resources" to develop generative AI technologies (Luo et al 2023). The Chinese approach to AI development can be considered as "uncharacteristic", since the country's decisionmakers normally tend to use a techno-nationalist approach by targeting the main national firms to fulfil production (Ding 2023). On the one hand, it is expected that China will keep regulating AI. However, the EU and China take two different approaches to AI: the Chinese approach is based on a set of rules for algorithm recommendation, while the EU applies more burdens to companies and attempts at grouping all AI systems into one regulation, therefore it is not possible to know at the moment which of these two approaches will be preferred by states on a global scale. In this context, Europe has the chance to "become a role model in regulating AI and set a global regulatory framework in the future" if it will manage to balance out the promotion of innovation and growth and an ethical AI development (Daffner 2022).

Over the past decades, **U.S.** industrial policy has largely focused on expanding the dominance of U.S. firms globally, implementing a narrow "national champions" approach that would disincentivize regulation of Big Tech. However, the United States has also recognized that the concentration of unlimited monopoly power can create downstream political and governance problems, particularly when it begins to rival the power of the state. The answer to the growing power of foreign monopolies and cartels would be the promotion of competition and innovation by small and large firms, nationally and globally (Kak & Myers West 2023). The United States therefore are taking the first steps toward establishing rules for artificial intelligence tools. The

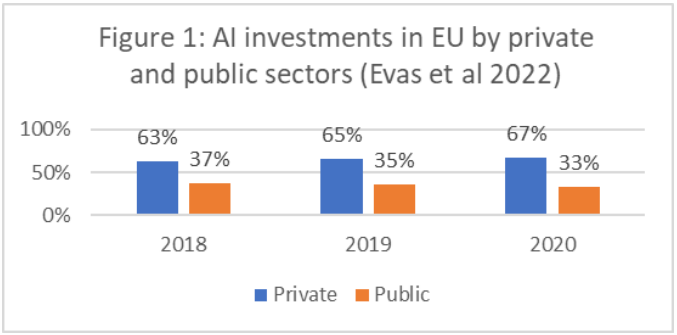
U.S. Department of Commerce has announced that it is soliciting public comments on how to create accountability measures for AI, seeking help on how to advise U.S. policymakers on their approach to the technology. The Biden administration has previously introduced "guidance" on the development of artificial intelligence systems in the form of a "bill of rights" that includes five principles that companies should consider for their products: Safe and effective systems; Protections against algorithmic discrimination; Data privacy; Notice and explanation; and Humane alternatives, consideration, and fallback. The National Institute of Standards and Technology has also published an AI Risk Management Framework, a voluntary framework that companies can use to try to limit the risk of harm to the public. In addition, federal agencies are looking at ways in which existing regulations can be applied to AI, and in 2021, U.S. lawmakers filed more than 100 AI-related bills, a huge difference from the early days of social media or even the Internet, when not much attention was paid. That said, the federal government has historically been slow to respond to rapidly evolving technologies with national regulations, especially compared to European countries (Bhuiyan 2023).

INNOVATIONS AND INVESTMENTS

In order to have an insight on the possible future developments in the AI sector in the EU, it is important to understand the current state of investments. In particular, in this part, we propose an assessment of the investments that are made in the public and private sectors and across the EU Member States.

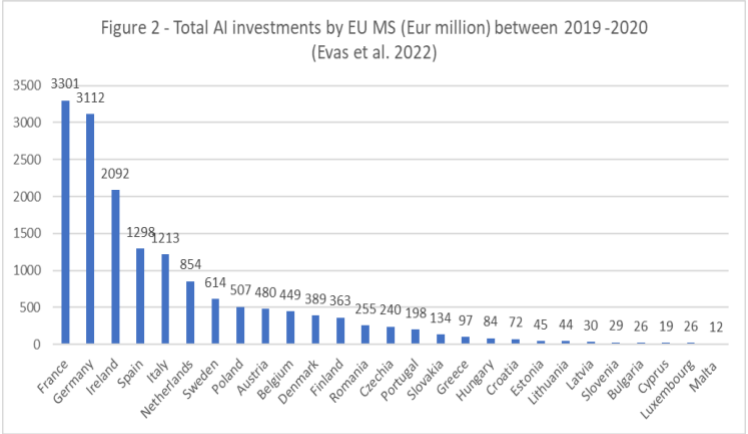
First, it is important to analyze the difference in investments in the private and public sector.

In the EU, investments come from the private sector for 67% (€10.7 Billion) and from the public for 33% (€5.2 Billion). The two levels grew differently, since in the private sector investments grew of 32% and in the public sector by 21%. In terms of growth, the private sector is still leading, with an increase of 32% between 2019 and 2020 against a 21% increase in the public sector for the same period. It is thus interesting to notice that the positive growth trend of AI investments in EU is for a big part due to private investments, whose relevance increased in the period analysed. Figure 1 shows that in the years 2018, 2019 and 2020, the investments from the private sector account for the biggest share, thus being the major source of investments in AI in EU (Evas et al. 2022).



On a global scale, investment in AI has increased significantly over the past decade, but in 2022 for the first time, private investment in AI declined on an annual basis. Global private investment in AI was $91.9 billion in 2022, down 26.7 % from 2021(Maslej et al. 2023).

Another type of comparison can be made in the context of geographical variations in AI investments in the EU. The AI Watch Report (2022) provides a picture over the years 2019 and 2020. Figure 2 represents the total AI investments at the country level in European member states in millions of Euros between 2019 and 2020. In 2019 and 2020, the EU investments in AI were mostly made by the two largest European economies, France and Germany, which spent over 3 billion euro on AI each (accounting for more than 40% of the total AI investments of the EU). Ireland comes third in ranking with a 2-billion-euro expenditure, while Spain and Italy are the only remaining EU countries which spent more than 1 Billion euro per year (Evas et al. 2022).



ETHICAL IMPLICATIONS AND TRADE-OFFS: INNOVATIONS VS PRIVACY

Although the platform ecosystem is dominated by the American Big Five Tech Companies, and the European Union has progressively become dependent on them as gatekeepers of all online economic activities and social traffic, the EU has striven to create and implement its own governance strategy as regards the digital sector, because it has often disagreed with the tech companies as regards public values, especially privacy (Van Dijck, 2020). The GDPR introduces two possibilities for the management of personal data in the form of anonymization – in which personally identifiable data are removed from the data set, and pseudonymization - in which personal data are processed so that they can no longer be attributed to a specific person, thus personal information is stored securely so to ensure that the data is not attributed to an identifiable individual (Andrew & Baker, 2019). Although these techniques sensibly reduce privacy risk and protect users from the collection of their personal data, they can paradoxically facilitate and "justify" the exchange of behavioral data, and can also inadvertently strengthen big tech giants' power, running counter the regulations' initial goals of creating a more competitive environment and reduce the dominant power of the big tech companies (ibid.).

Since AI is based upon the use and gathering of users' data, they can be subjected to privacy breaches due to the collection of their data without their consent (Agrawal, et. Al 2019). The main trade-off in this context regards the right level of innovation versus privacy protection, since privacy policies have a direct impact on AI innovation: in case of too restrictive privacy regulations, firms do not have enough data to innovate, whereas weak and insufficient privacy regulations will not protect users' privacy, thus making them exposed to privacy breaches and hesitant to use AI (ibid.), thus innovation cannot happen to the detriment of personal privacy.

Therefore, **our proposal** would be the creation of a web-registered avatar containing the basic personal data of each European citizen. This avatar is linked to the browser and contains all the settings and preferences regarding privacy and data tracking of the user, so that every access to websites through the browser will have to follow the same settings. However, the identity of the user is concealed to third parts through the use of a code that cannot be connected to the main personal data, so that in this way the firm has the ability to only collect behavioural data (if the users agree to it). This tool would be beneficial to European innovation because it will allow them to collect enough data to keep on with innovation, but at the same time ensuring the protection of the basic rights of the users. The data gathered through the avatar will be exclusively available to tech firms on European soil for two years, therefore imposing to foreign tech companies to open data-processing hubs in Europe if they want to use these data within the first two years. Moreover, this tool will be at the advantage of European firms, since they will be the first to have these data available for use before the foreign firms, therefore fostering innovation for them.

Research & Development: THE RISE OF THE PUBLIC

The ecosystem of the Big Tech Platforms does not guarantee a place for the public participation and interests, rather leaning toward the commercial advantages and gains for the private sector (Van Dijck, 2020).

However, for the public use and application of AI, it is pivotal for governments to provide funding at the public level but keeping the private sector as a close partner. In this way, the private sector will supply their technological expertise, whereas the different public sectors under the purview of the government – such as the military, academia, and public research – will provide their funds and joint competences to further innovation.

Our proposal would be the creation of a European Agency for Artificial Intelligence, which gathers the governmental experts in the field from the member states, and whose aim is to coordinate and promote the application and realization of a program for the application of AI in different public sectors. The Agency will provide funds, and will work as a hub connecting public experts to work to specific projects on the field.

Moreover, the Agency will establish a mandatory framework for the application of AI in the public sector that will serve as a basis for the development of AI in all member states. The framework will consist, for instance,

in the creation of specific AI-focused public research centers and the promotion of university courses in the field of AI to foster national talents. This model has already been established in Korea in 2018, with the aim of fostering the cooperation between the private sector – leading in the technological field – and the public sector, providing research and infrastructural instruments (Peng, 2018).

HUMAN CENTRIC APPROACH TO AI

A further problem as regards generative AI is the use of biased data sets: in fact, the data used as a basis for the creation of AI systems generally reflect western hegemonic viewpoints that discriminate against already marginalized communities, together with other biases related to stereotypical images and ideas linked to race, gender, ethnicity, or disability (Bender, 2021). Moreover, one of the main criticisms related to the European AI Act consists in the lack of an enforcement system that would guarantee the proper application of the Regulation, since it is, at least for now, based upon self-assessment (Artificial Intelligence Act, n.d).

An input to the implementation of the regulation can be found in the feedback from the public – where citizens might report eventual errors and incorrect data provided by the generative AI, so that the designated authorities could intervene in the correction. Thus, **we propose** to include in the legislation the creation of an Ethical Monitoring Division in each firm that wants to work with European users. The technicians in charge of the management of the datasets will be under the purview of the Ethical Monitoring Division and will be in direct contact with the users that will report any kind of biased or incorrect information in the datasets.

CONCLUSION

This brief work was an attempt at bringing a general overview as regards regulations and investments in the field of AI in the EU.
Three topics - privacy concerns, the public participation in investments, and a human-centred approach to AI – have been highlighted as being relevant in our perspective as possible fields of further improvement in EU legislation to advance the leading role of the European Union in the global battle for digital innovation.
We hope our proposals could receive some feedback and be a hint for discussion during the Problem Solving Session.

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