GDPR: WHAT ECONOMIC IMPACT?

CONCEPT PAPER
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Introduction

Twenty years after the publication of Alessandro Acquisti's seminal paper "Information revelation and privacy in online social networks » (Fall 2005)[1], and nearly **seven years after the entry into force of GDPR** (28 May 2018), the academic debate on the economic effects of privacy regulations remains intense. In particular, the GDPR has given rise to numerous working papers and articles on its economic impact in the recent years. It seems relevant to take stock of this literature to set up the landscape of a regulatory **ex-post impact assessment** of this regulation, as recommended by multilateral bodies like OECD or the EU.

This is all the more relevant as this work can be put in perspective with the economic ex ante impact assessment of GDPR as it was proposed by the European Commission in 2012. As one of the objectives of GDPR is the free flow of data on the EU single market, the impact assessment at the time focused on the costs of non-harmonisation of rules across Europe and the reduction of the administrative burden of reporting obligations, with an attempt to estimate the costs of DPOs and DPIAs[2].

Some may question the appropriateness of a purely economic evaluation with regards to GDPR: are economic impact assessments **relevant at all for fundamental rights regulations? Our answer is yes**, for several reasons: first, because economic theory and modelling are useful for approximating how an informationally autonomous data subject can makes decisions, based on individual rationality and sufficient information. Second, because data subjects are citizens as well as consumers, and when we preserve their rights in the digital world, we also preserve and enhance individual welfare. Third, because firms also have rights, e.g. the freedom of entrepreneurship, which have to be balanced with the rights of data subjects in a regime based on democracy and the rule of law: this balance is necessarily assessed in economic terms. So, economic impact assessment is fundamental.

Yet, the difficulty of the exercise, as noted by numerous commentators, should not be overlooked but lead both researchers and policymakers to **a cautious approach**, as with ex ante impact assessments. It is probably difficult to reach precisely quantified conclusions but it is still possible to identify the amount of effects, their directions and their potential magnitude, insights that are useful for data protection authorities to consider in their regulatory practice.

Assessing the impact: methodological challenges

The impact assessments are mainly about **the empirical effects of the regulation**, based on a "reality check" with data. Against this background, Garrett Johnson explains in his survey in 2022 that GDPR economic impact assessments present "key challenges for empirical research".

The conditions under which such empirical results are valid are well-known: the public policy under review has to be mature (it has reached its full effect), it must be possible to **find an empirical counterfactual** to support a[3] rigorous, fact-based approach, and the assessment has to be conducted by **independent and impartial** bodies, whose conclusions are not biased by strategic economic policy considerations. This means, such work should ultimately be submitted to an academic and public debate, which is exactly what this event is about.

Empirical challenges

Most of the studies are based on **difference in difference comparisons**, with a treatment group and a control group. One has to ensure that the control group is not affected by GDPR, which is a challenge given the reality of the "Brussels effect" (cf. part 4). When the diff-and-diff comparison is a before/after comparison, the groups should follow parallel trends in time to ensure that the control group is a good counterfactual. Yet, the statistical relevance of diff-and-diff approaches is still a topic of discussion within the academy.

Particularly, it is often impossible to **delineate the effects** of the regulation itself and the effects of the behaviour of big private actors acting on its behalf. Yet, assimilating one to another can be misleading (see e.g. Jenssen, 2022[4], actually based on Google Play actions). Another issue is the so-called "enforcement gap": it is

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[1] https://dl.acm.org/doi/abs/10.1145/1102199.1102214
[2] https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SEC:2012:0072:FIN:EN:PDF
[3] https://www.nber.org/system/files/working_papers/w30705/w30705.pdf
[4] https://www.nber.org/system/files/working_papers/w30028/w30028.pdf

sometimes hard to know if the impacts are stable given the ex-post enforcement of the regulation (e.g. fines), which effects are gradual (Noyb, 2024)[5]. Some researchers have turned to field experiments in order to avoid identification issues[6].

The scope is key

Another challenge relates to **the ability to generalise findings** from the analysis. The bulk of impact studies are conducted by marketing researchers and focus on the digital economy or the ad tech sector, where the impacts of GDPR are especially pronounced due to the business models' reliance on personal data collection and processing (Miller et alii, 2022)[7]. The results found for the ad tech sector cannot be generalized to the whole economy (manufacturing, traditional services) or even to other digital services without causing an **overestimation of the compliance costs**. Therefore, it seems essential to combine different sectoral studies to estimate the actual impact on firms across the (EU) economy (CNIL, 2024)[8].

In the absence of a global study on all sectors, does taking into account a series of results on various sectors allow, if those results are converging, to shed light on the overall impact? One has to keep in mind that there can be compensation effects and structural effects across sectors to be considered in the first place.

A macroeconomic impact?

With the exception of some early attempts, which can be described as exploratory and have not been confirmed empirically (ECIPE, 2013)[9], the impact of the GDPR enactment on EU GDP and more generally its macroeconomics impact, using for example a Computable General Equilibrium model, seem at this stage **impossible to assess**. The challenges to overcome seem too important (granularity of the effects to be refined, transmission effects on prices and markets not studied, macro closure) which seems to explain that the effects on GDP and growth cannot be measured so far in a convincing manner.

Currently, the economic impact assessments are based on **microeconomic approaches** *à la* industrial organisation and their relevance must be acknowledged at that level. This does not exclude general methological questions like: how to conceptualize the cost of regulation (fixed cost, cost of the data production factor, other) in order not to overestimate it? which could pave the way for macro modelling in the future.

Questions for participants:

- *To what extent are current statistical methods suitable for GDPR economic assessment?*
- *What is the appropriate time frame to assess the economic impact of GDPR, given the importance of short-term effects on one hand and indications on gradualism of the implementation on the other?*
- *How to take better account of macroeconomic effects in order to improve policy recommendations?*

The impact on economic actors: for a complete welfare analysis

The question of effectiveness

In its last report on the implementation of GDPR, the European Commission (EC, 2024)[10] emphasized the enforcement efforts and called on to speed up the European Data Protection Board one-stop shop mechanism, pointing out to what other actors have called the "GDPR enforcement gap". This observation seems to be at odds with the often-heard criticism regarding high compliance costs: both cannot be true at the same time and for the same country.

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[5] https://noyb.eu/sites/default/files/2024-01/GDPR_a%20culture%20of%20non-compliance.pdf

[6] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3777417

[7] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4399388

[8] https://www.cnil.fr/en/economic-impact-gdpr-5-years

[9] https://www.uschamber.com/assets/archived/images/documents/files/020508_EconomicImportance_Final_Revised_lr.pdf

[10] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52024DC0357

Therefore, a prerequisite for a holistic view of GDPR economic impact assessments could be to capture **the level of "enforcement gap"** across sectors (Li et alii, 2024)[11] and actors and compare it to an "adequate enforcement" of GDPR based on data protection risks for individuals or firms. Such a work seems to remain to be done.

The impact on firms: costs and benefits

The main focus of GDPR economic impact assessments so far has been on compliance **costs for firms**, which are real but a paradoxical topic (from a policy point of view) to put at the forefront, given the objectives of the data protection regulations. One cannot deny that GDPR implementation came with substantial costs for firms, most of them incurred initially and one-shot, the rest being more recurrent. Have these costs been associated to potentially negative impacts on business operations, revenues and profits? This is a dimension which the economic impact assessments made by researchers have tried to capture as well.

One of the lessons of the economic literature is that these costs may **not have been as far-reaching** as the industry sometimes claims. The last general study by Frey and Presidente (2024)[12] shows that tech firms in the EU experienced a decline of only 2,1% in their profits, but not in their sales. Moreover, **the effects are ambivalent**: they are positive on the wages paid to the staff in charge and on patents on GDPR-related technology. This can illustrate how GDPR stimulates compliance investment that can offset the compliance costs (Porter, 1985). It complements previous results, according to which data collection and processing can be hampered on the extensive margin, but favoured on the intensive margin as better privacy protection fosters consumer engagement (Aridor et alii, 2020[13] in the case of an opt-in requirement). Finally, Lefrere et alii, 2025[14] do not find a negative impact of GDPR on content providers in the EU as opposed to the US[15]..

Another lesson is that few researchers have strived to identify and measure the **benefits of GDPR compliance for firms**, and not only the costs. This a question identified for some time now (Cecere at alii, 2017)[16], but empirical evidence is difficult to gather on the benefit side of things. The few papers that identified benefits (e.g. Buckley et alii, 2023[17], Frailey, 2025, on the benefits for cybersecurity) [18] allow firms to consider GDPR compliance as an investment (CNIL, 2024). In this context, it is worth noting the recent paper of Cao et alii, 2024[19] on the operational benefits drawn from GDPR compliance by US financial entities. These advantages are certainly an avenue that researchers could explore further, both empirically and theoretically.

The impact on individuals: welfare effects

After having assessed the net effect of GDPR on firms (and on governmental entities), an indispensable step forward is to assess the effects of the regulation on the welfare of individuals. This effect is **likely to be positive**, given the difficulties to take privacy risks into account in market prices, the heterogeneity of individual preferences in that regard reducing consumer demand for privacy and the negative effects of lack of information on individual decision making, all this negatively affecting individual welfare in the absence of regulation.

Very few studies have attempted to capture this effect on the consumer side, one of them exhibiting interesting results: the enactment of GDPR has not lead to a complete data sharing behaviour from consumers but to a selective and more active approach, while stimulating consumer engagement (Godinho de Matos and Adjerid, 2021)[20].

The measure of welfare for individuals could be based on preferences revealed by them and their own valuation of data, which could prove challenging as the experience shows that some might resist to a market-based approach when providing data is at stake (Nielsen, 2021)[21]. But such valuation techniques exist and are even of widespread use in market studies and empirical research attempting to assess the declared willingness to pay

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[11] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4902053
[12] https://onlinelibrary.wiley.com/doi/10.1111/ecin.13213
[13] https://www.nber.org/papers/w26900
[14] https://weis2017.econinfosec.org/wp-content/uploads/sites/9/2020/06/weis20-final43.pdf
[15] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4239013
[16] https://www.researchgate.net/publication/316722435_The_Economics_of_Privacy
[17] https://discovery.ucl.ac.uk/id/eprint/10171462/
[18] https://andersonfrailey.github.io/files/supply_of_stolen_data.pdf
[19] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4778824
[20] https://pubsonline.informs.org/doi/10.1287/mnsc.2021.4054
[21] https://dl.acm.org/doi/10.1145/3461702.3462582

(or the willingness to accept) for personal data protection (e.g. PJM Economics, 2021, estimating the value of more control of UK consumers over their data to 1,1 billion £ a year[22]). Yet, more empirically robust method using field experiments to observe revealed preferences also exist (Schubert, 2021)[23]. Combining the net effect of firms and the welfare effects on the consumers would allow to measure the **consolidated welfare gain for the economy** and definitely assess the overall welfare impact of data protection regulations, but we are still a long way from being able to draw such conclusions.

Questions for participants:

- *How to empirically asses the enforcement gap? Should this assessment be risk-based? What is the most cost-effective way for a data protection authority to limit it?*
- *After a number of studies into the costs of regulation, how can we, to better understand its real effects, assess the impact of the regulation on consumers and the impact of compliance as an investment for firms?*
- *Is it possible to conclude on specific effects on SMEs as such, without detailed studies on economic benefits for firms and welfare impact for their clients?*

The policy impact: interplay with other policy objectives

On competition

From a conceptual point of view, the interplay between data protection and competition can be described as "cross-cutting, complex and ambivalent" (French Treasury, 2022)[24]. In the digital economy, both fields of law have been described as having partially common objectives and resulting in **more synergies than tensions** (ICO, CMA, 2021)[25]. In this context, the cooperation between authorities is not a zero-sum game but creates value for the predictability and relevance of regulation, taking also into account the risks generated.

One of the key results of the empirical literature on GDPR effects is the differential impact on economic actors according to their size: regulatory objectives seem **easier to reach for big players**, which have more means to devote to compliance requirements (Peukert et alii,, 2021)[26]. This reality should be taken into account by authorities in their cooperation, especially on digital markets where network effects play an important role and also when the actor is in a dominant position. A risk-based approach, taking proportionate account of the specific characteristics of major players when they are found in breach of privacy rules, could be implemented by data protection authorities (Autorité de la concurrence, CNIL, 2023)[27].

On innovation

On this topic, which is currently quite debated, the conclusions of economic impact assessments **are not univocal**. On one hand, it is true that GDPR, like any regulation, sets the landscape on which innovations are deployed. It is not a negative impact if the regulation ends up reducing forms of innovation harmful to individuals or toxic for society, because they trigger risks for fundamental rights or negative external effects (e.g. the uses cases forbidden by the AI Act).

On the other hand, GDPR could have, according to recent research, a **reorienting role for innovation**, constraining use cases based on the exploitation of data and favouring privacy-enhancing technologies and

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[22] https://media.product.which.co.uk/prod/files/file/gm-4496fa21-caa0-48a8-964a-4751f89c4cdd-6152f736cceae-value-of-the-choice-requirement-remedy-report-1.pdf

[23] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4242880

[24] https://www.tresor.economie.gouv.fr/Articles/2022/07/07/privacy-protection-and-competition-in-the-digital-world

[25] https://assets.publishing.service.gov.uk/media/60a3c893d3bf7f288aaa5c9b/Joint_CMA_ICO_Public_statement_-_final_V2_180521.pdf

[26] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3560392

[27] https://www.cnil.fr/sites/cnil/files/2023-12/competition_and_personal_data_a_common_ambition_joint_declaration_by_the_cnil_and_the_adlc.pdf

compliance investments, while the net effect on innovation could be statistically insignificant (e.g. for the effect on AI patents: Frey, Presidente, Andres, 2024)[28]. The impact differs as well with the size of the firm, with a more positive impact on incumbents and B2B actors (Blind, Niebel et alii, 2022, 2024)[29], [30]. In what looks like a form of validation of **a weak "Porter hypothesis" for data protection**, the development of a privacy tech sector is a reality, including in the United States (Martin, Ebbers, 2022)[31].

Overall, the effect might depend on the individual preferences of the consumers (Lefouili et alii, 2023)[32] and the literature on regulation in general finds that it is, albeit constraining, not incompatible with radical innovation (Aghion et alii, 2023)[33].

On trust

In economics, trust is often described as a condition necessary for economic transactions, which does not stem from market interactions in a spontaneous manner, but requires the establishment of an institutional framework and of a confidence third-party to enforce rules (Arrow, 1974)[34]. The case for data protection is quite obvious in that regard, given the **various market failures** governing the collection and processing of data and the protection of privacy (Acquisti, 2012)[35].

The literature shows that compliance costs come with improved data security and increased consumer trust (e.g. Cecere et alii, 2015[36], in the Dutch e-commerce industry : Langseth et alii, 2023)[37]. The impact of trust is likely to **foster as well the use of innovative digital services** (see part 4). As with legal certainty, regulatory trust is a likely remedy to the incompleteness of contracts *à la* Grossman and Hart. But its role is hard to assess from an empirical point of view, as its absence usually leads to the disappearing of the market observed.

Questions for participants:

- *Should data protection authorities strive to rebalance the differential effects of GDPR compliance between big actors and smaller actors, by implementing an "asymmetric" regulatory approach, or can this be captured by the risk-based approach alone?*
- *If policy makers and the academy agree that the policy objective to pursue is a user-centric innovation, with net benefits for individuals, how can this approach be factored in in the economic impact assessments?*
- *What could be the right empirical strategy to estimate the GDPR effects on trust?*

GDPR or the international data flows with trust

The reality of the "Brussels effect"

As pointed out after its enactment, GDPR exemplifies the EU ability to shape regulatory standards globally. One remembers the formula created by Anu Bradford, in her 2020 book "The Brussels Effect: How the European Union Rules the World", to describe the global effects of GDPR: de jure (because of the adequacy decisions) and de facto (because of the territorial scope of GDPR). For this reason, it is not difficult to understand that GDPR does not create a competitive disadvantage for EU actors but rather **levels the playing field** between them

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[28] https://cepr.org/voxeu/columns/redirecting-ai-privacy-regulation-and-future-artificial-intelligence
[29] https://papers-ssrn-com.translate.goog/sol3/papers.cfm?abstract_id=4257740&_x_tr_sl=en&_x_tr_tl=fr&_x_tr_hl=fr&_x_tr_pto=sc
[30] https://www.econstor.eu/bitstream/10419/265420/1/1819824276.pdf
[31] https://www.researchgate.net/publication/372037214_Correction_to_When_Regulatory_Power_and_Industrial_Ambitions_Collide_The_Brussels_Effect_Lead_Markets_and_the_GDPR
[32] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4506331
[33] https://www.nber.org/papers/w28381
[34] https://www.econbiz.de/Record/the-limits-of-organization-arrow-kenneth-joseph/10000051186
[35] https://scholar.law.colorado.edu/cgi/viewcontent.cgi?article=1259&context=ctlj
[36] https://www.sciencedirect.com/science/article/abs/pii/S0040162515000943
[37] https://www.sciencedirect.com/science/article/pii/S1877050923003599

and the companies based in third countries. The figures are impressive: according to the IAPP, in 2025, 144 countries have enacted data protection legislations, as opposed to 120 in 2017[38].

Researchers have found the trace of this effect in the data. According to Ferracane et alii, 2025, in their paper for the CEPR, adequacy decisions granted by the European Commission increase bilateral digital trade between the EU and these countries as well as digital trade between GDPR adequate countries themselves, signalling the presence of a "club effect"[39].

A positive impact on digital services trade globally?

In any case, GDPR is not a non-tariff barrier (NTB): it is covered by General Agreement on Trade in Services (GATS) exemptions and allowed by World Trade Organization (WTO) rules. Moreover, we know that the trade-restrictive impacts relate to data localisation measures, but **GDPR doesn't have such requirement** as opposed to other legal regimes, in emerging countries for example, who have a "data autarchy" model.

On the contrary, the positive data protection effects provided by GDPR could be beneficial to trade, especially in digital services. For Ferracane and van der Marel, 2021, "the conditional (GDPR) transfer model is positively associated with digital trade[40]. This result is interpreted by the authors as an effect of trust (see part 3). In a more recent paper, Ferracane and van der Marel (2024)[41] show that conditional data transfer models reduce trade in digital services as opposed to a totally free data flow approach, but this effect is more than offset by the presence of a comprehensive data protection law, an interesting result for a transatlantic comparison.

Finally, according to a novel study of the OECD and WTO 2025[42] : **the optimal regime** for the effects on GDP is **an open regime with safeguards**, allowing trust benefits of data safeguards. This is the case in the EU. Again, the absence of regulation of trade data flows is associated with negative economic outcomes, because of the lack of trust.

Questions for participants :

- *Has the territorial scope of GDPR managed to level the economic playing field globally for EU companies?*
- *How can we separate, when it comes to the question of barriers to trade, the impact of data protection rules and the impact of localisation requirements, which the GDPR does not contain?*
- *Can one say, based on current research, that the EU GDPR embodies quite well a "free data flow with trust" approach?*

Final remarks

The first takeaway is a point of caution: because of the focus on firms and on costs, we have results for part of the field but not for the whole picture. We don't have a macroeconomic approach. In this context, there is certainly a need to balance economic costs and economic benefits in regulatory impact assessments, including ex ante.

The second takeaway is for the academy: it would be interesting to integrate more the economics of privacy and the GDPR impact assessments. Economics of privacy can serve for a welfare analysis, and conversely, the empirical results for GDPR assessment can foster theoretical research. Any progress on the quantification of value of data and welfare effects would help in this agenda.

The third takeaway is for the debate: it is important to be mindful of the economic policy underpinnings of the discussion. The intellectual debate can help in this regard. Ultimately data protection regulation is a political issue which is enlightened with, but not dictated by, economic impact assessments.

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[38] https://iapp.org/news/a/data-protection-and-privacy-laws-now-in-effect-in-144-countries
[39] https://cepr.org/publications/dp19882
[40] https://ideas.repec.org/a/spr/weltar/v157y2021i4d10.1007_s10290-021-00417-2.html
[41] https://openknowledge.worldbank.org/entities/publication/b1859c91-428d-5c7c-936d-6bcafc9f11e0
[42] https://www.wto.org/english/res_e/booksp_e/data_regulation_e.pdf