TILBURG UNIVERSITY

Understanding Society

EU Competition Law and Data Pooling

Data pooling and patent pooling from the EU Competition Law perspective

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List of abbreviations

CJEU – Court of Justice of the European Union

EU – European Union

FRAND – Fair, Reasonable and Non-Discriminatory

ICT – Information Communications Technology

IoT – Internet of Things

IPRs – Intellectual Property Rights

R&D – Research and Development

TFEU – Treaty on the Functioning of the European Union

TTBER – Technology Transfer Block Exemption Regulation

UK – United Kingdom

US – United States

I. Introduction

Daniel Keys Moran, who is a famous American science fiction writer and programmer, once said: "You can have data without information, but you cannot have information without data."[1] Nowadays, data, which is also named "new oil"[2] is a collection of facts/information (words, numbers, measurements, observations) that has been translated into a code or a form that computers can process by using different data analytics tools for increasing proactivity, mitigating risk and fraud, anticipating needs, optimizing and improving the customer experience, and thus is playing an essential role on the International and European Market. A new practice which has recently appeared on the EU Market is data pooling. Data pooling consists of a combination of similar or different types of data that are aggregated by companies, individuals and institutions to use, process, analyse this data for specific purposes (developing a product or a service, improving a business strategy, clinical research *etc*.). [3] This practice has gained much attention from the EU officials and market players due to the economic and innovative benefits that it can bring to the consumer and the market in general. In a report regarding the new challenges that EU Market will face in the Digital Era, data pooling is defined as a model of a data-sharing agreement between two or more undertakings based on their common interests and on an element of reciprocity (at least some member companies contribute to the data pool). [4]

This research aims to understand and analyse how data pooling should be controlled under EU Competition Law, and more specifically under Article 101 TFEU in a way that it will benefit the consumers and the EU Market in general. Also, a comparative analysis between patent pooling, R&D agreement, and data pooling will be shown because data pooling can use the legal experiences that other types of mentioned agreements have. Therefore, the first steps that were taken by the legislators to implement them (R&D and Patent pool), the competition

[1] Marr, B., 2015. *The Most Revealing Big Data Quotes*. [online] World Economic Forum. Available at: <https://www.weforum.org/agenda/2015/01/the-most-revealing-big-data-quotes/> [Accessed 3 July 2020].

[2] Chazan, G. (2019). *'Data is the new oil . . . who's going to own it?' | Financial Times*. [online] Ft.com. Available at:<https://www.ft.com/content/e548deac-856a-11e6-8897-2359a58ac7a5.> [Accessed 6 Dec. 2019].

[3] Michael Mattioli, *The Data Pooling Problem* (2017). Available at:< https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2671939> [Accessed 6 Dec. 2019]. Page 182

[4] Jacques Cremer, Yves-Alxandre de Montjoye and Heike Schweitzer, *Competition Policy Digital Era* (2019). Available at < https://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf >. Page 92

concerns that they caused, and the proper methods of solving and preventing these concerns are analysed and compared in order to see if they apply to data pools.

1.1 Problem statement

Until now, the data pooling agreement, in the EU competition law, is a comparatively new and under-researched topic in the area of data-sharing agreements. Processing a huge amount of data, pooling and sharing it between the companies is benefiting them by improving their services and products. So, in other words, data pooling is seen to be pro-competitive by helping companies to develop new or better products and services or train algorithms more qualitatively.[5]

While cooperation between undertakings to collect and pool shared data leads to technological development and competitive results, cooperation between competitors that pool competitively sensitive data may raise legality questions given that it has the potential to fall under the restricted practices established in Article 101(1) TFEU. It could result in collusion because this pooling of data would prevent third-parties access to data and create specific market entry barriers.[6] Besides, the informational content of the data can transform a data pooling agreement into an instrument of exchanging information such as prices and cost, which are commercially sensitive so that might result in a restriction by object under Article 101(1) TFEU. As well, data pools can discourage competitors from improving their businesses and their collection of data, having the potential resulting in a restriction in competition. Thus, an analysis of the latest case law, the new technological developments, and comprehensive research in this area is required for understanding and regulating data pooling.

1.2 Literature review

The data pooling problem has not been amply discussed in the legal literature. There is not any specific legal guidance and a lack of policy documents addressing this type of sharing of data; thus, there is a gap both in the literature, as well as at a policy level regarding this matter. This is because the law always follows the technology, thus with the development of Big Data analysis, IoT (Internet of Things) and Artificial Intelligence, data pool has appeared as a

[5] ibid. *Competition policy in the digital era.* (2019). Page 92

[6] Jacques Crémer, Yves-Alexandre De Montjoye and Heike Schweitzer, 'Competition Policy For the Digital Era' (2019) <http://ec.europa.eu/competition/publications/reports/kd0419345enn.pdf>.Page 93

consequence of them, and the competition authorities and the legislators do not have enough information on how this technology functions, what type of data can be pooled in and how it needs to be regulated. Also, there is a lack of case law and enforcement authorities' decisions regarding this topic. It is known that it is a type of information exchange which in turn is a horizontal agreement. Consequently, the Commission Guideline on the applicability of Article 101 TFEU to horizontal co-operation agreements will be analysed as a basis for competition analysis of data pool in this work. Therefore, in this thesis will be used, for answering the research question and its sub-questions, legal books, Commission's Guidelines, articles, and case law, relating to the European Union Competition Law, and the European Intellectual Property Law.

In 2019, under the Commission's initiative, and especially of the European Commissioner for Competition Margarethe Vestager, a report was created that describes and explores how competition policy must develop in a way that promotes innovation and does not harm the consumer in the digital age.[7] This report provides information about the future challenges that data-driven markets will face and inform us about the possible steps that EU competition needs to take into account when analysing or regulating the issues relating to platforms, digital environment, and the data (data access, data sharing and data pooling). It explains many legal and technical aspects of the data pool, shows the concerns and benefits that it brings to the market, consumer, and undertakings, and as well discusses possible directions that legislator needs to take in order to regulate it.

Data pools have many similarities with R&D agreements. For example, both are horizontal agreements, and the development/improvement of a product or a service stay at the basis for their creation. Thus, the part of Horizontal Guidelines that discusses the R&D agreement will be considered to see if the assessment of it applies to the data pool. As well, many legal/technical articles, books, and legal websites will be analysed on this topic to create clarity on how to regulate data pools properly.

Additionally, the EU Intellectual Property legal framework relating to patent pools will be considered in order to see the similarities and differences between these two types of pools. As data pooling is a new type of data sharing which needs to be assessed, and patent pools have been already regulated for several years. Hence, it has a longer 'legal history' that might be

[7] Jacques Crémer, Yves-Alexandre De Montjoye and Heike Schweitzer, *Competition policy for the digital era.* [2019] European Commisssion, Competition.

applied or showed as an example to improve data pooling. The competition analysis of technology pools from the Technology Transfer Guidelines will be evaluated. Thus, a detailed analysis of the literature, the case-law, the Guidelines, and the legislation related to the data pool matter will be outlined in this thesis.

1.3 Research question

The fundamental question of this research is the following: ***How should data pooling be regulated under EU Competition Law, and more specifically under Article 101 of the Treaty on the Functioning of the European Union?***

The Sub-questions:

1. *Given the current interpretation of Article 101 TFEU, how can it be applied in the context of the data pooling?*
2. *To what extent the enforcement of the EU competition law on R&D agreements can be equally applied to data pools?*
3. *What competition law lessons, taking into consideration their similarities and differences, can data pool learn from the patent pool to become a pro-competitive instrument for exchanging data?*

1.4 Methodology

In order to explore the research question of this thesis, doctrinal research was conducted, which adopted a qualitative approach. This type of approach is justified by the purpose of this thesis which is to enhance understanding of a new type of data sharing agreement namely data pooling and how it can be regulated under the current legal framework of the EU Competition Law. The primary source for the analysis will be the Commission Guidelines on Horizontal Agreements for the chapters two and three and for chapter four the Commission Guidelines on Technology Transfer agreements. Thus, the current EU Competition and EU Intellectual Property legal frameworks will be considered when doing the analysis. Data protection concerns related to this topic are not within the scope of the analysis that is conducted in this thesis.

Based on a literature review, the relevant legal literature has been gathered, including EU competition law books, primary sources, and scholarly articles. A systematic search was performed on the following databases: World Cat, Google Scholar, Hein Online *etc.* Here the

key search terms were ‘data pooling’ ‘EU competition law’, ‘data sharing’, ‘data’, ‘Big Data’, ‘Article 101 TFEU’ *etc*. Furthermore, an analysis of the case-law of the European Court of Justice related to information exchange will be discussed.

1.5 Outline of the chapters

In order to answer the research question and the three sub-questions, the thesis is structured in five chapters. There will be three substantive chapters corresponding to each sub-question, together with an introduction and a conclusion chapter.

To respond to the first sub-question, this thesis, in chapter two sets and analyses the current EU Competition legislation and especially Article 101 TFEU. This chapter analyses the functioning of Article 101 TFEU, and it goes through Article 101(1) and its main features such as the concept of concerted practice, restrictions by object and by effect. After that, it analyses the nature of the data that can be pooled and the economic conditions of the relevant Market. Finally, it evaluates if the exemptions from Article 101(3) can be applied to the data pool.

In chapter three, a comparison between data pooling and R&D agreements is discussed. R&D agreements and relevant markets, as well as the possible market definition of data pools, are analysed. After that, an evaluation of R&D agreements under Article 101(1) and 101(3) as a model to data pool is provided. Additionally, the possibility of the application of the De Minimis Notice Doctrine to the data pools is analysed.

Chapter four of this thesis describes the similarities and differences between the data pooling and patent pooling, and mainly it provides a competition assessment of patent pool in comparison with the one of the data pools. For instance, it elaborates on the importance of the transparency at the moment of the creation of the patent pool, the types of the technology that are pooled in the pool, the purpose of the independent expert in the running of the technology pools, the safe harbour conditions and the assessment of the individual limitations in the arrangement among the pool and its licensees. For that purposes, the EU Intellectual Property legal framework is consulted and especially the one relating the patent pools, which is the TT Guidelines.

The Conclusions, which is the last chapter of this thesis, describes the steps that are taken to answer the research question, the methods used in writing this thesis, the information and the findings that had been appeared by the time of researching and, most importantly, the possible steps that can be taken to prevent or solve problems related to the one looked at here.

II. Article 101 TFEU and data pooling

2.1 Introduction

Investigating data pooling or data sharing is a continuing concern within the area of competition law, due to its novelty and potential for innovation on new technologies that will benefit on the one side the consumers by creating new services and products, and on the other side undertakings by developing their economic and innovative activity. The primary purpose of this chapter is to answer the first sub-question of this thesis: *How can Article 101 TFEU be applied to data pools considering its current interpretation?*

First of all, this chapter will address the functioning of EU Competition Law, and especially of Article 101 TFEU. After that, it will evaluate the compatibility of the current legal framework, and in particular of Article 101 TFEU on the new data-sharing technology such as data pooling. It needs to be mentioned that there are two possible ways of analysing data pools either by (1) following a direction to establish to what extent data pooling *in itself* represent a restrictive agreement or (2) assessing data pooling as being an information exchange practice. Due to the limited scope of the current research, the analysis will focus only on how the exchange of information, which is the core of data pooling, has so far been dealt with under Article 101(1), and especially in a situation in which it restricts competition by object or by effect. Furthermore, an analysis of data pools in the light of Article 101(3), which contains some legal exceptions from the prohibitions that are listed in Article 101(1) will be provided. Finally, the conclusion will describe the most significant points that were discussed and analysed in the chapter at hand.

2.2 The functioning of EU Competition Law, and in particular Article 101 TFEU

Because of massive changes in economic activity and political philosophy that have taken place in recent decades in the European Union, Competition law has evolved at a remarkable pace. Therefore, it is one of the most important instruments that helps the EU to tackle market failures, promote consumers well-being, and incentivise innovation. As was stated in *T-Mobile case*, the main functions of Competition law are to safeguard not the immediate interests of

consumers or individual competitors, but to preserve the market structure and, thus, competition as such.[8]

The Treaty on the Functioning of European Union, in order to fulfil these functions, in Article 101(1) prohibits agreements, concerted practices, and the decision of associations of undertakings which might influence trade between the countries from the EU and have as their effect or object the prevention, restriction or distortion of competition inside of the Internal Market. Article 101(2) TFEU declares void the agreements that violates paragraph one of the same article.

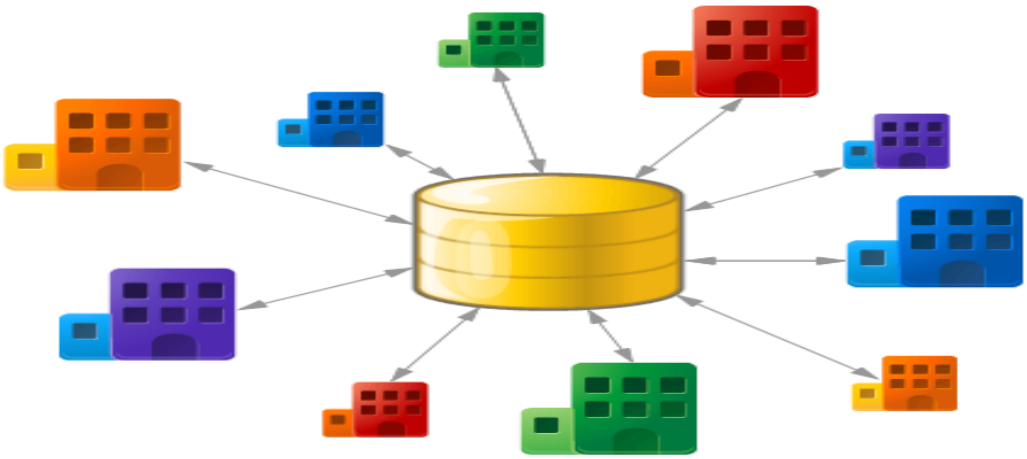
Article 101(3) TFEU states that Article 101(1) is inapplicable to collusion that meets all four criteria stipulated in this article. It allows an exception to the prohibition, and the conditions for that exception are very rigorous and hard to be in line with. For undertakings to benefit from the exception stipulated in Article 101(3) it is necessary to prove that they respects this article and they are not creating an anti-competitive situation on the Market. The conditions that have to be met and the concrete applications of Article 101(3) will be further discussed in section 2.4.[9]

2.3 Article 101(1) and data pooling

Data pools are a form of data sharing agreements that have the reciprocity element in it, and the data are often shared between two or more companies involved in this type of agreement.[10] Understanding data pooling is essential for a wide range of scientific, legal and industrial processes. Thus, one first needs to know the definition of data. Cambridge dictionary defines data as information, facts or statistics, gathered to be analysed and used to assist decision-making or information in an electronic form that a computer can store and use for multiple purposes.[11] Therefore, data is understood to have different styles and types that are shared or used with a specific purpose. As a result, data pool which is a mechanism that holds and transfer a large quantity of data can differ substantially based on the information being combined and the intentions of the founders to set it up.[12]

[8] Case C-8/08, T-Mobile Netherlands, para. 38
[9] *Infra p.17-18.*
[10] Crémer, De Montjoye and Schweitzer (n 6). Pag.92
[11] Definition of the 'data' from Cambridge dictionary (online) <https://dictionary.cambridge.org/dictionary/english/data> accessed on 13/02/2020
[12] Björn Lundqvist, 'Stockholm Faculty of Law Research Paper Series Data Collaboration, Pooling and Hoarding under Competition Law'. Pag. 7

Because of its vertical and horizontal characteristics, data pools are complex collaborations, and as a result, a technology agreement might be necessary to be applied to them to clarify the type of infrastructure that is going to be used at the creation of the pool, and name of the provider of infrastructure for the pool's activity.[13] In other words, technology agreements are understood as different types of ICT contracts which cover or specify the infrastructure that can be either installed around the datasets by the pooling parties or by a third party, a particular network pool supplier. To some extent, these pools in which individual entities are participating in the same market, are in a horizontal relationship. In fact, despite the challenges of defining the relevant markets in the digital economy, the concept of a competitor in terms of data pools would also involve prospective entrants to the participant companies' markets.[14]



Data pool (source: https://support.google.com/displayvideo/answer/6130826?hl=en)

Data pooling is a more developed type of information exchange, that needs special treatment because it brings to the table new challenges that need to be addressed in a more specific way. Until then, however, it is essential to check if the present legal framework of assessing information exchange applies to the data pooling. Under Article 101 TFEU, cases of information exchange may only be dealt with if they form part of an agreement, concerted practise or a decision by an association of undertaking.[15]

[13] ibid. Pag 9

[14] ibid. Pag 8

[15]Willem Boshoff, Stefan Frübing and Kai Hüschelrath, 'Information Exchange through Non-Binding Advance Price Announcements: An Antitrust Analysis' (2018) 45 European Journal of Law and Economics 439 <https://www.researchgate.net/publication/309335284_Information_exchange_through_non-binding_advance_price_announcements_an_antitrust_analysis>. Pag.446

Paragraph 57 of the *Guidelines on Horizontal Cooperation Agreements* states that the exchange of information is a standard feature for many competitive markets, and it might create different types of benefits for the consumer and for the Market in general. For example, it might improve the efficiency of the Market by finding a solution to the issues of information asymmetries (when one undertaking has more information than the other one). Another positive aspect of data exchange is that companies can boost their operational performance by measuring against each other's best practices.[16] Competitors are unable to operate in a statistical vacuum. The more knowledge they have about the market conditions, the value on sale, the amount of capability that exists in a sector and the investment plans of competitors, the better it is for them to make rational and successful decisions regarding their output and market strategies. [17]

The data pools and the exchange of information that happens inside of them can help suppliers to adapt their firms and perform better, improve trade strategies, increase internal productivity, improve effective resource allocation, promote innovation, understand market needs and dynamics and improve product positioning. Trade unions therefore regularly gather industry data on costs, efficiency, outputs and investment and distribute information to their members which can promote preparation business strategies for companies. From the perspective of users, this will improve efficiency, reduce search costs and allow them to make a better decision.[18]

However, the same *Guideline* shows, in Paragraph 58, that the information exchange can also contribute to limits on trade, in particular in cases where undertakings are likely to be aware of their rivals' business strategies. The competitive result of the exchange of information depends on the business characteristics in which it occurs (including consistency, competition, complexity, continuity, *etc*.). Moreover, it depends also on the type of data exchanged that may alter the relevant market setting into one that is subject to coordination. [19]

The sharing of data can also provide competitors with an opportunity to organise their actions, and to establish and maintain an ongoing coordination over time. Firstly, they may be used to strengthen or promote cartel activity. Secondly, even though it is not providing necessary

[16] *Guidelines on Horizontal Cooperation Agreements,* para. 57.

[17]Richard Whish &David Bailey, *Competition Law* (Ninth Edit, Oxford University Press 2018) <https://global.oup.com/academic/product/competition-law-9780198779063?cc=nl&lang=en&>. Pag. 552

[18] Alison Jones, Brenda Surfin, and Niamh Dunne *EU Competition Law: Text, Cases, Adn Materials* (Seventh Ed, Oxford University Press 2019). Pag.680

[19] Guidelines on Horizontal Cooperation Agreements, para. 58.

support to the horizontal cooperation agreement or a cartel, the 'stand-alone' exchange of data (which is not contingent on a cartel or another agreement between the parties) will encourage artificially enhanced market openness, promote the coordination of competitive actions of the companies and have adverse effects on competition.[20] In the least favourable scenario, an exchange of data may be a mechanism designed solely to coordinate actions between competitors. Furthermore, albeit not planned to do so, this can have an impact on collusion facilitation. For instance, data which is exchanged about the present, past or future actions of companies may provide a central focus to encourage the coordination of production or price rates on the Market by rivals and to encourage the identification of deviations from that.[21]Such coordinated actions can lead to by object or by effect restrictions on competition. The extent to which data pooling has such effects will be analysed in the following sub-sections.

2.3.1 By object restriction of data pooling

Data pools might not only contain raw material data for innovation, but may also contain information regarding prices and costs, which by its nature are commercially sensitive data, and it is perfectly known that the exchange of such type of information can promote cooperation. In *T-Mobile*,[22] the Court of Justice stated that a private exchange of information which the primary purpose is to contribute to the fixing of prices between commercial rivals falls within the category of by object restrictions. Paragraph 74 of the *Guidelines* indicated that the information exchange between rivals identifying the future expected price or quantities of individual companies is expected to restrict competition and is unlikely to meet the criteria of Article 101(3). The same *Guidelines* do not state this, but it is mentioned in *T-Mobile Netherlands case* that there is no need to have a direct impact on the prices that end-user pay.[23] For instance, it is not mandatory for Z and X, participants of a cartel, to have expressly decided that they will raise/lower their prices. The simple fact of supplying each other with details about possible pricing activities – or even of supplying such details to the other – is highly probable to be necessary for the cooperation of price agreement. Also, the fact that Z reveals its prices

[20] Ibid. para. 65.

[21] Alison Jones, Brenda Surfin, and Niamh Dunne *EU Competition Law: Text, Cases, Adn Materials* (Seventh Ed, Oxford University Press 2019). Pag.680

[22] Case C-8/08, T-Mobile Netherlands, para. 34-63

[23] Ibid. para 36-39

to X after revealing its prices to Z's customers does not indicate that Z and X are not parties to an illegal price-fixing arrangement.[24]

In *Bananas case*,[25] three importers of bananas were fined by the Commission for participating in a concerted practice regarding the evolution, fixing and development of prices via a series of exchanges of data. It identified that the routine of communication by the participants concerning price-setting considerations (such as the market situation, demand and supply trends likely to influence price rates for the coming weeks, and stock patterns and quotation price signals for the coming week) limited by object the competition. They were mainly intended to remove or reduce the uncertainty about the future pricing actions of the parties (the setting of quotation prices) and to increase the price they jointly or individually receive.[26]The Court of Justice confirmed the findings of the Commission that that behaviour, by its very nature, is to be considered detrimental to the proper functioning of competition, reaffirming that economic operators must decide their business policy individually. The behaviour (pre-pricing communications) is inconsistent with the norms of competition law when it eliminates or reduces the level of uncertainty as regards to the activity of the undertakings on the concerned Market.[27]

In two litigation proceedings, *EURIBOR* and *Yen LIBOR*,[28] some banks accepted that they had breached Article 101(1) by disclosing to each other of their benchmark interest rate measurement approaches. These issues would usually be considered secret information. In *Smart card chips,*[29] the Commission imposed penalty fee totalling €138 on four undertakings that were sending to each other or discussing between them pricing, negotiations of the contracts, information about clients, efficiencies and product potential and overall market future.

[24] Bailey (n 16). Pag. 554

[25] Case COMP/39.188, Bananas, 2008, aff'd Cases T-587/08, Fresh del Monte Produce v Commission EU: T:2013:129 and T-588/08 P, Dole Food and Dole Germany v Commission EU:T:2013:130 and Cases C-293 and 294/ 13P, Fresh Del Monte v Commission EU:C:2015:416 and Case C-286/13 P, Dole Food Co Inc v Commission EU:C:2015:184.

[26] Case C-286/13 P, Dole EU, para. 119-121

[27] Alison Jones, Brenda Surfin, and Niamh Dunne *EU Competition Law: Text, Cases, Adn Materials* (Seventh Ed, Oxford University Press 2019). Pag. 681.

[28] "Press Corner" (*European Commission - European Commission* December 4, 2013) <https://ec.europa.eu/commission/presscorner/detail/en/IP_13_1208> accessed March 28, 2020

[29] Cases T-762/14 etc. *Koninklijke Philips NV v Commission* EU : T :2016 :738.

The cases mentioned above serve as examples of cartels which shared sensitive information between each other and attempted to share the Market wherein they were active. Furthermore, if undertakings would create data pools where such information would be shared, as it was presented in *T-Mobile, Bananas and Euribor case,* and through that control the market, it would be detrimental for the consumer and the competition in general, as these data pools will give these cartels a competitive advantage, having increased potential to infringe Article 101 TFEU.

2.3.2 By effect restriction of data pooling

There is not a restriction by object in the situation in which data pooling agreement and information exchange which does not endorse an anti-competitive arrangement in *'itself',* and which does not involve future quantities or prices, however, there might be one by effect. Thus a comprehensive market analysis is required.[30] For an exchange of information to have limiting effects on competition within the scope of Article 101(1) TFEU, it will undoubtedly have a significant negative consequence on one or more of the competition criteria such as quality of the products, innovation, product range, production or price.[31] Interdependent conduct can be encouraged by the sharing of data and, in particular, by creating an environment or conditions for it, such as reduced complexity, enhanced transparency, asymmetry compensation, or buffering instability.[32]

The key challenge with the exchange of information or pooling of data between competitors not affiliated to a cartel is that the effects of this pooling might be contradictory. For example, they can create significant efficiencies, as well they can have anti-competitive impacts. Accordingly, a case by case review of these agreements and their legal and economic background must be carried out by the Courts and the competition authorities to differentiate between the arrangements which produce overall pro-competitive effects and those which have anti-competitive results. [33]

A case-by-case evaluation means that any situation needs a thorough investigation of all the economic facts and circumstances to decide if the behaviour in question provides the consumer

[30] Bailey (n 16). Pag. 555
[31] Case C-286/13 P, Dole EU, para. 75
[32] Alison Jones, Brenda Surfin, and Niamh Dunne *EU Competition Law: Text, Cases, Adn Materials* (Seventh Ed, Oxford University Press 2019). Pag. 683
[33] Ioannis Lianos, Paolo Siciliani, and Valentine Korah, *Competition Law: Analysis, Cases, and Materials* (First Edit, Oxford University Press 2019). Pag. 741

with a net profit or a net loss. This type of evaluation usually takes plenty of resources and time. So, it brings two negative consequences for firms, competition authorities, and costumers, respectively.[34] However, a case by case analysis remains the preferred course of actions for data pools assessment, due to the complexity and novelty of data pools.

The *Asnef-Equifax case*[35] certainly is one of the most critical judicial cases that covers data pools topic. A preliminary ruling reference to the Court of Justice of the European Union by the Supreme Court of Spain. The case concerned a registry run by Asnef-Equifax, a consortium of financial organisations that shared solvency and credit details on their clients to determine the risks involved in credit or lending. The CJEU was asked to decide whether such a pool violated Article 101(1) TFEU if its purpose was to limit competition in the financial and credit institutions market and whether such an arrangement could be approved under Article 101(3) TFEU by a national competition authority.[36]

In the *Asnef* judgement, the Court came up to three conditions for not limiting competition and not violating Article 101(1) such as[37] (a) there should not be a high market concentration; (b) registers should not reveal a market position or a competitor's business strategy, it is vital that the lenders' identity is not disclosed, directly or indirectly; (c) registers should be open in a non-discriminatory way, legally and efficiently to all operators involved in the relevant field. Where market actors exchange information about individual customers, the three criteria mentioned above may also be used to determine data pooling agreements.[38] The second condition can create some problem to data pools because it is not clear what type of data will be included in the data pool and whether these data will disclose competitors' identity and strategy on the market. As for the nature of the pooled data this is discussed in the following sections of this thesis.

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[34] Matthew Bennett and Philip Collins, 'The Law and Economics of Information Sharing: The Good, the Bad and the Ugly' (2010) 6 European Competition Journal 311 <https://www.biicl.org/files/5151_infosharingpaper.pdf>.

[35] *Asnef-Equifax and Administración del Estado v Asociación de Usuarios de Servicios Bancarios (Ausbanc)* (2006) Case C-238 11145.

[36] Inge Graef, Tomas Tombal, and Alexandre Streel, 'Limits and Enablers of Data Sharing: An Analitical Framework for EU Competition, Data Protection and Consumer Law' [2019] TILEC , Tilburg University 35 <https://ssrn.com/abstract=3494212>.

[37] Case C-238/05 *Asnef-Equifax*, par. 58-61.

[38] Inge Graef, Tomas Tombal, and Alexandre Streel, 'Limits and Enablers of Data Sharing: An Analitical Framework for EU Competition, Data Protection and Consumer Law' [2019] TILEC , Tilburg University 35 <https://ssrn.com/abstract=3494212>.

Paragraph 54 of the *Asnef* judgment explicitly indicates that the compliance of the information-sharing scheme with Community competition laws, such as the register, cannot be evaluated in the abstract. It relies on the economic environment of the relevant markets, and the essential characteristics of the program in question, such as its function and conditions of access to and participation in it, and also the type of data exchanged, its volume and recurrence.

2.3.2.1 Nature and the economic conditions of the relevant Market

In oligopolistic markets, the tendency for companies to comply with their competitors 'actions is especially strong. Increased awareness of market conditions aimed at information agreements enhances the relations between undertakings by enabling them to respond more effectively to each other's actions, thus reducing competition intensity.[39] Therefore, the exchange of information and especially data pooling is more likely to be troublesome on oligopolistic markets favourable to interdependent organised behaviour, in particular markets dominated by a few players who manufacture similar goods that are sufficiently stable, open, concentrated and symmetric. Companies can achieve a mutual agreement on cooperation terms in certain types of markets and effectively track and punish deviations.[40]

In UK *Agricultural Tractor Registration Exchange*,[41] eight UK agricultural tractor manufacturers and importers established an information-exchange arrangement which defined the retail sales volume and market shares of each manufacturer separately. The Commission condemned the data exchange scheme, putting significant focus on the fact that the UK tractor industry was oligopolistic. In essence, it took into account, in particular, that four firms on the UK market had a total market share of approximately 80 per cent and that concentrations were higher in certain geographical regions. Furthermore, it mentioned that the Market was stagnant or declining and that there was substantial brand loyalty; that barriers to entry were significant,

[39] Alison Jones, Brenda Surfin, and Niamh Dunne *EU Competition Law: Text, Cases, Adn Materials* (Seventh Ed, Oxford University Press. Pag. 685.

[40] European Commission, 'Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-Operation Agreements' (2011) <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52011XC0114%2804%29>. Para. 77.

[41] COMP/31.370 and 31/466 [1992] OJ L68/19, *Case T-34/92, Fiatagri and Ford New Holland v Commission* EU:T:1994:258 and *Case T-35/92, John Deere Ltd v Commission* EU:T:1994:259; *Case C-7/95 P, John Deere Ltd v Commission* EU:C:1998:256.

especially given the need for broad distribution and service networks; and that substantial imports were and were not present.

In *Asnef case*, the question arose whether agreements between financial institutions in Spain for the sharing of information on lenders 'creditworthiness were competitively restrictive. The Court stated that arrangements of the form under review should not have the limitation of competition as their object. It emphasised instead that the arrangements needed to be viewed in the context in which they took place. The Court noted in particular that the Market in question was a decentralised one: that is, it was not oligopolistic, which would have been a consideration favourable to orderly conduct.[42]

2.3.2.2 Characteristics of the information that is exchanged

It is essential to determine the type of information shared and the quality of the data, in the context of the event, in evaluating the possible effect on data pooling or data sharing on the competition. Statistical information allowing undertakings to determine the level of production and demand on the Market or the costs of their rivals can be of value and not troublesome in itself. Furthermore, it should not be unacceptable to share technological or other information which does not limit the right of the parties to evaluate their business behaviour independently[43]. The Commission's Guidelines clarify that the sharing of strategic data between competitors is more likely to hinder Article 101(1), and emphasise that price and quantity information is the most decisive, accompanied by cost and demand information. It also clarifies that the strategic utility of data often depends on their consumer reach, distribution, age and exchange frequency.

The nature of the data, in particular, where they are consolidated or personalised, and their age, is essential. Exchanges are more likely to promote a shared market understanding and deterrence mechanisms by allowing coordinating firms to define deviators or competitors when the data exchanged are individualised and relevant to current or potential behaviour.[44] Björn Lundqvist, in his paper,[45] states that the *John Deere case* can also be differentiated concerning data pools containing information about customers. Collecting personal data from potential

[42] Bailey (n 16). Pag.556
[43] Alison Jones, Brenda Surfin, and Niamh Dunne *EU Competition Law: Text, Cases, And Materials* (Seventh Ed, Oxford University Press. Pag. 683
[44] Ibid.
[45] Lundqvist (n 11).

buyers, mapping their actions to nudge individual consumers to make similar transactions for each customer at a price set individually, does not mean that the data pool shares pricing information amongst competitors. The pool can contain 'only' the raw data on the general and purchasing habits of individual consumers to make the appropriate algorithmic estimation, which does not explicitly mean an exchange of real prices.

The Guideline points out that the sharing of genuinely public information is unlikely to infringe Article 101(1); data is genuinely public if both rivals and consumers have the same cost of accessing it[46]. Where the information shared is in the public domain but is not freely open to competitors and consumers, the Commission finds that Article 101(1) may apply just as it does to any other arrangement. Another aspect is whether or not the sharing of information is exchanged with consumers: the Commission states in the Guidelines that the more data is shared with consumers, the less likely it is to present problems.

The sharing of aggregated industry-wide data (which does not disclose the output of individual rivals) except where it concerns production or quality, is less likely to allow companies to coordinate their actions or to detect deviations from a coordinated strategy. Furthermore, if the information shared is historical and not present one, it is unlikely to promote future consumer behaviour coordination.[47] Moreover, specific considerations, such as communication frequency, whether the data shared is in the public domain, and whether the exchange of information is private or public, may also be relevant to the evaluation.[48] The sharing of data in the public domain could minimise the risk of a collusive outcome on the market to the degree that non-coordinating firms, consumers and future rivals will be able to mitigate possible restrictive effects on competition.[49]

All the above mentioned market description and the above outlined types of data that can be pooled plays an essential role in the analysis of the pro and anti-competitiveness of data pooling, because it establishes the legal and technical boundaries that the founders of data pools need to take into consideration when creating it so that it would not lead to a violation under Article 101(1). Whenever a data pool represents a way for undertakings to exchange commercial sensitive data with the potential to generate restriction by object or by effect to

[46] *Guidelines on Horizontal Cooperation Agreements.* Para.92
[47] Alison Jones, Brenda Surfin, and Niamh Dunne *EU Competition Law: Text, Cases, Adn Materials* (Seventh Ed, Oxford University Press. Pag. 684
[48] Ibid, pag. 684
[49] *Guidelines on Horizontal Cooperation Agreements.* Para.94

competition, and if the pool does not fall under the exception provided for in paragraph 3 Article 101 TFEU, an infringement of Article 101(1) might be established. If data pool shares public data, aggregated, anonymised, and historical data then there is an increase chance to not facilitate a coordination between undertakings and thus not to be captured under the provisions of Article 101(1) TFEU.

2.4 Assessment under article 101(3)

Due to its beneficial effects, data pooling agreement may meet the requirements of Article 101(3). A legal exemption is provided by Article 101(3) to the prohibition laid down in Article 101(1) via specifying that it can be declared inapplicable in relation to concerted practices, arrangements and decisions of association of undertakings, or the 'categories' of arrangements, concerted practices or decisions which fulfil all four conditions. The four condition are the following: (a) there should be an improvement of a good or a service, (b) there should be a fair share of the resulting benefits to consumers, (c) there should not be imposed on the undertaking concerned any restrictions which are not indispensable to meet these goals, and (d) there should not be a elimination of competition.[50] The applicability of Article 101(3) to information exchange is explained in its *Guideline*[51] in paragraphs 95 to 104, and they need to be interpreted in parallel with 2004 Commission *Guideline*[52] on Article 101(3). In paragraph 95, the Commission explains that benchmarking, whereby companies compare their output against 'best practice' in their industry, can allow them to boost their performance. For some instances, data can be shared to ensure optimal resource distribution, thus reducing any differences between supply and demand. Through disseminating technical know-how, data arrangements will help to improve the number of companies which can compete on the Market. The sharing of consumer data in markets characterised by asymmetric customer data may lead to efficiencies, an example of which would be the exchange of information between financial institutions about their clients 'solvency and default history.[53]

Consumers too will benefit from an increase in public data: the more they know about the available goods and their costs, the more they can make optimal choices. Moreover, perfect competition depends on excellent business knowledge from consumers: business openness is

[50] Bailey (n 16).Pag. 157
[51] European Commission, 'Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-Operation Agreements' (n 41).
[52] European Commission, 'Guidelines on the application of Article 81(3) of the Treaty (2004/C 101/08)
[53] Bailey (n 16). Pag. 558

generally to be promoted. Most frequently the reason that a market does not perform well for customers is that the data available to them is too scarce or misleading; in some markets, too much data may even be available for customers to handle. The Commission mentions that customers are unlikely to profit from sharing future pricing intentions which exchange past and current information. Therefore, the parties must demonstrate that the subject-matter, classification, age, confidentiality, duration and scope of their information exchange holds the lowest risk of promoting collaboration, which is indispensable for creating performance.[54]

In *Asnef-Equifax*,[55] the Court of Justice also acknowledged the need for the referring Court to evaluate Article 101(3) to settle this dispute. For instance, it could be necessary for the Court to decide whether measurable economic benefits, such as helping to avoid over-indebtedness for credit consumers and contributing to the higher overall availability of credit, might be such as to outweigh the drawbacks of any established limitation on competition. The CJ reiterated that it was not essential for all customers to profit from the scheme when deciding on Article 101(3). Instead, it was not unimaginable that specific loan borrowers would face higher interest rates on rejected loans.[56] The conditions themselves were not sufficient to prevent customers being given a reasonable share of the gain from being fulfilled, because it is the advantageous nature of the effects on all consumers in the related markets that must be taken into account, not the results on each participant of that consumer category.[57] Moreover, exchanges in this situation could contribute to the highest overall availability of credit, even for borrowers whose interest rates could be unsustainable if the lenders lacked sufficient information on their scheme.[58]

2.5 Conclusion

This chapter discussed the ways in which data pooling is regulated under the EU competition law and especially under Article 101 TFEU. The fundamentals and the working of the article 101 were provided. After that, this chapter meticulously analysed the information exchange,

[54] ibid.
[55] *Asnef-Equifax and Administración del Estado v Asociación de Usuarios de Servicios Bancarios (Ausbanc)* (n 35).
[56] Alison Jones, Brenda Surfin, and Niamh Dunne *EU Competition Law: Text, Cases, Adn Materials* (Seventh Ed, Oxford University Press. Pag. 687
[57] *Asnef-Equifax and Administración del Estado v Asociación de Usuarios de Servicios Bancarios (Ausbanc)* (n 35). Para. 70
[58] Alison Jones, Brenda Surfin, and Niamh Dunne *EU Competition Law: Text, Cases, Adn Materials* (Seventh Ed, Oxford University Press. Pag. 688

which is the essential element of data pools, under all components of Article 101, such as prohibitions (101(1)), restriction by object and by effect, taking into account, the sort of information exchanged and the characteristics of the prevailing Market. As well, it was discussed the situation in which Article 101(3) (the exceptions to prohibitions stated in 101(1)) can be applied. Therefore, to address the related research question for this chapter, the study undertaken herein informs us that the competition analysis of data pooling or information exchange should be done on a case-by-case basis.

The *Asnef-Equifax* case serves as an essential example for data pooling because it shows the proper way on how information exchange should function to not restrict competition and to promote innovation. In light of the Court findings in the *Asnef case* for the application of Article 101, data pooling has the potential to be a pro-competitive mechanism given that it fulfil certain criteria.[59] According to this case, three main conditions need to be taken into consideration by the undertakings which want to create data pools that are in accordance with Article 101 TFEU provisions:

- the Market should not become highly concentrated,
- the mechanism must not require borrowers to be known, and
- the conditions of access and use by financial institutions should not be discriminatory, in law or fact.

All the above-mentioned case law and jurisprudence are not sufficient to understand better the regulation of data pooling, because they do not address all the competition concerns that data pooling might cause. Therefore, there is a need to assess how Article 101 TFEU is being enforced in similar context such as R&D agreements and patent pooling. The next chapter investigates the similarities and differences between data pools and research and development agreements (R&D).

[59] Nuno Calaim Lourenço, 'Information Exchanges between Competitors from a Competition Law Perspective – the Problem of Premature Exchanges of Sensitive Information in the Context of Merger Control (Gun Jumping)' (2018) 4 UNIO – EU Law Journal 78 <https://www.researchgate.net/publication/326947617_Information_exchanges_between_competitors_from_a_competition_law_perspective_-_the_problem_of_premature_exchanges_of_sensitive_information_in_the_context_of_merger_control_Gun_Jumping>.

III. R&D agreements as examples for data pooling.

3.1 Introduction

The previous chapter showed us the possible ways on how data pools can be regulated by Article 101 TFEU. Still, due to its novelty and massive efficiency for the Market, many grey zones need to be addressed. For example, one of it might be that data pool by effect restrict competition by limiting competition on quality, price or innovation in the situation in which this substantially aligns cost or product characteristics of the competitors.[60] Therefore, this chapter analyses the relationship between data pooling and the R&D agreements, because these types of transactions are more established one then data pools. Their legal history is longer in time, and thus they can give many insights on what steps data pools needs to take not to make the same legal mistakes as they did.

Overall, this chapter will analyse the definition, the characteristics and the legislation that covers R&D agreements. Also, it will provide an evaluation of the competition analysis of R&D in comparison form the one of data pooling. Therefore, this chapter aims to answer the second sub-question of the leading research question of this thesis: *To what extent the enforcement of the EU competition law on R&D agreements can be equally applied to data pools?*

3.2 R&D agreement and related markets

Research and Development (R&D) arrangements may be an essential part of a marketing plan for a company, allowing it to launch new goods or services. This is especially so in tech-driven or science-based markets where companies need to produce new products and services to be competitive. Certain businesses may do all of their R&D work on their own, others may choose to partner with other organizations, whether outsourcing some of their operations, working together to enhance existing technology, or designing and selling new processes or goods through close collaboration with one another. Therefore, R&D can take many forms and vary in scope.[61]

[60] Crémer, De Montjoye and Schweitzer (n 6).
[61] European Commission, 'Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-Operation Agreements' (n 41). Para. 111

Market definition is a practical tool which helps to determine the competitive constraints on companies. It offers a mechanism through which to determine a crucial issue as to whether a business or several businesses have market power. Furthermore, both the geographic dimension of the market and the product needs to be evaluated. [62] An appropriate definition of the market includes the presence of supply and demand for the product or service according to existing competition law requirements.[63] An issue that needs to be discussed is whether market definition from R&D is possible to be applied to the data pools.

To evaluate the effects of the agreement, it is necessary to define the relevant markets to determine those technologies, goods or R&D efforts which will act as the main competitive limitations for the parties. The same situation is with data pools because to assess a data pool accurately, it is essential to know the market in which it functions. In some instances, innovation leads to the development of a new product which is merely a minor improvement of the established one; at the other end of the range, a completely new product which creates a new market may be developed.[64] It is especially difficult to measure market shares where the arrangement seeks to produce a product which will generate entirely new demand, and this problem is addressed within the block exemption. To remain under the R&D block exemption, the market share must not exceed 25 per cent.[65] A block exemption is a Regulation provided by the Commission or the Council in accordance to Article 101(3) TFEU establishing the circumstances under which specific types of arrangements (in this case R&D) are excluded from the prohibition of restrictive arrangements listed in Article 101(1) TFEU. The agreement is legally binding and enforceable when it meets the requirements set out in the block exemption regulation.[66]

Therefore, the previous paragraph showed that innovation is falling among two extremes, namely: existing products and technology market and competition in innovation. The first one analyses the situation in which the relevant market is formed by the products and their substitutes, in the case in which an arrangement includes enhancements to the existing

[62] European Commission, 'Commission Notice on the Definition of Relevant Market for the Purposes of Community Competition Law' [2013] The Economics of Antitrust and Regulation in Telecommunications 5 <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A31997Y1209%2801%29>. Para. 2

[63] Inge Graef, 'Market Definition and Market Power in Data: The Case of Online Platforms', *SSRN Electronic Journal*, vol 4 (2015) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2657732>.

[64] European Commission, 'Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-Operation Agreements' (n 41). para 112

[65] ibid. para 124

[66] Commission, E., 2020. *Block Exemption (Regulation) - Concurrences*. [online] Concurrences.com. Available at: <https://www.concurrences.com/en/glossary/block-exemption-regulation> [Accessed 4 July 2020].

products.[67] Where R&D aims to change current products dramatically, or even to build a new one to substitute them, the existing and potentially new products do not relate to the same market. However, in this circumstance, there is a possibility that collaboration on the new market may lead to alignment on the old one.[68] Nevertheless, the market for existing products will be affected if the pooling of R&D activities or, in our case, data is likely to result in the co-ordination of the actions of the parties as suppliers of existing products, for example through the sharing of competitively sensitive market data for current products.

Furthermore, in the situation in which R&D relates to an essential component of a final product the market for the component may be appropriate to the competition evaluation, however, the established market for the end product could also be pertinent if the component is a crucial feature in the end product economically or technically and if concerning the products the parties have market power. Regarding the existing technology markets, they contain licensed intellectual property and its close substitutes, that is, other technologies that could be used as substitutes by customers. It is applied the same methodology to define the technology markets as the one from the products market's definition. Many other technologies to which consumers may turn in reaction to a small but non-transitory increase in relative prices must be established, beginning with the technology marketed by the participants. By trying to divide the licensing profits made by the parties by the total licensing revenue of all licensors, market shares can be estimated once those technologies are established.[69] In the market for current technologies, the position of the participants is an appropriate performance metric where R&D cooperation involves significant improvements to the existing technologies or new technology that is likely to replace existing technology. The same situation is in data pooling; the parties' position on the market can play an essential role in analysing the pro-competitiveness or anti-competitiveness of a data pool in a specific market.

The second extreme, which is competition in innovation, states that where R&D is carried out by the parties in relation to innovation and the creation of entirely new products, the position is more complicated. In such cases, it may not be satisfactory to look just at current products or technology markets.[70] The Commission proposes to tackle this problem in two scenarios,

[67] European Commission, 'Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-Operation Agreements' (n 41). para 113
[68] Ibid. Para 114
[69] European Commission, 'Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-Operation Agreements' (n 41). para 117
[70] ibid. para 119

based on the type of innovative mechanism in the sector concerned. The first scenario notes that it might be possible to distinguish competing R&D 'poles,' in which case it is crucial to determine that, if two competing undertakings entered into an R&D agreement, 'a reasonable number of remaining R&D poles will exist'. The remaining poles have to be 'credible': the credibility of the R&D pole must be assessed by the scope, size and nature, of other R&D efforts, their access to human and financial resources, their know-how, patents and other specialized assets, and their ability to utilize the outcomes.[71] The second scenario in which R&D poles cannot be defined, the Commission will confine its evaluation to the relevant product or technology markets.[72]

It is possible to apply the same strategy that R&D uses for the market definition to data pools, because in both cases the main output is to develop a new technology/product or to improve the existing one, and the 'credibility' criteria mentioned above for the assessing R&D agreements can be applied to the data pool. In the case of R&D, 'efforts' could be considered as data from the data pools. Companies which decide to pool data have to identify the market or a monitoring industry, and perhaps the technology to be used for the compilation and preservation of data, and, possibly, how it will not be used in the future.[73] Moreover, in case if the market for data pool cannot be defined, then the Commission will limit its assessment to the current technology/product markets which are related to the data pool in question.

In the situation in which data pool because of its significant market power provides a substantial advantage to its members, the pool should be accessible/open in a non-discriminatory manner, in fact, and law, to all members of the relevant market. If specific access to information were not ensured, a few of these companies will be placed at a disadvantage as they would have very little data for risk management purposes, that would not also enhance the market entry of new companies. Furthermore, where the relevant market is not highly concentrated, where the platform does not permit the identification of borrowers and where the conditions of access and use by companies are not discriminatory, a data pool is not, in principle, responsible for limiting competition within the meaning of Article 101(1) TFEU.[74] Because of the multifunctional use of data, it may often be more difficult to determine market power in a data pool based on market shares, depending on the type of the pool, as the data may be applicable

[71] ibid. para 120
[72] ibid. para 122
[73] Lundqvist (n 11).
[74] *Asnef-Equifax and Administración del Estado v Asociación de Usuarios de Servicios Bancarios (Ausbanc)* (n 35). Para 60-61.

in many different markets. The accessibility regimes can need to vary in those cases, depending on the form of usage.[75] The appointed by the Commission experts stated in their report that the obligation to allow access have to be roughly equal to the market power of the pool, for instance, a group of smaller companies pooling their information to achieve a competitive edge must not be required to give to a much bigger player their pooled data.[76] Simultaneously, given the large share of the market, a sharing agreement or pool may benefit from an exemption if, among other factors, it is accessible to all, data is licensed in the pool on a non-exclusive basis and data is licensed to all potential licensees under FRAND conditions.[77]

3.3 Evaluation of R&D agreements under Article 101(1) TFEU

Paragraph 127 from *Guidelines*[78] states three primary competition concerns regarding R&D agreements:

- It can delay or diminish innovation.
- Limiting competition or promoting cooperation among market parties outside the reach of the agreement.
- A foreclosure issue may emerge only in the sense of collaboration involving at least one participant with a substantial degree of market power (which does not automatically equate to dominance) for core technology and the sole utilization of the outcome.

The concerns mentioned above have some similarities with the one that data pools have, especially in the situation with pooling of inferred data (below is described more in detail) in the pool. Because, in the situation in which inferred data is one of the primary types of data that are pooled, and by pooling this type of data there might appear some incentives to engage in independent data processing and competition in the area of data analytics might be weakened. Thus, there are high chances that this data pool can discourage the differentiation and improvement of competitors' data collection.[79] Paragraph 35 from the Horizontal Guideline states that a horizontal cooperation agreement may result in the disclosure of strategic information (in this situation Inferred data) thereby enhancing the likelihood of collaboration between the parties within or outside the cooperation area. Therefore, the limits on coordination

[75] Crémer, De Montjoye and Schweitzer (n 6).
[76] ibid. Page 97
[77] ibid.
[78] European Commission, 'Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-Operation Agreements' (n 41). para 127
[79] Crémer, De Montjoye and Schweitzer (n 6).

that are created for R&D agreement might serve as guidance for the data pools agreements. These limits are deliberated more in detail in the following paragraphs of this chapter.

Moreover, the individual-level data can be pooled in the data pool. The World Economic Forum gives its opinion and characterisation on the individual-level data and the way of acquiring it from a machine or a person, for example from three different channels, such as: volunteered, observed, and inferred.[80]

Volunteered data is the data intentionally provided by the user of a platform/product. For example, in the situation in which someone establishes a social network account or introduces on-line purchase credit card details. A schedule, photo/video, name, evaluation of a product (review), or blog post will also meet the criteria as volunteer data. Equally, more organized data-directly created by a person, for instance, a film ranking, or connecting a track or message, may also fall under the category of voluntary data.[81]

Observed data are the information that was created automatically by recording the activity of an individual or machine. They are composed of persons' activity which is traced by their mobile device; portable navigation information tapes the roads taken by a car and its driver's behaviour patterns; each click on a web page can be registered on to the website and third-party software monitors how its visitors act. For example, a user may wish to purchase a product but cannot afford it. Likewise, customers tend to overlook their probability of purchasing impulses. Accurate predictions could only be created by analysing an individual's behaviour over a statistically relevant period.[82]

Inferred data have as the foundation an evaluation of observed or volunteered information.[83] For example, credit scores may be determined based on a variety of factors pertinent to the financial history of a person. As well this type of data can be called as ‘metadata’ those are data identifying other data or, in other words, data involving data.[84]

[80] World Economic Forum, *Personal Data : The Emergence of a New Asset Class An Initiative of the World Economic Forum* (2011) <http://www3.weforum.org/docs/WEF_ITTC_PersonalDataNewAsset_Report_2011.pdf>. Accessed on 22 May 2020

[81] Crémer, De Montjoye and Schweitzer (n 6).

[82] Graef (n 64).

[83] World Economic Forum (n 81).

[84] Graef (n 64).

One of the concerns mentioned above that is found in both data pools, and R&D agreements are the one related to foreclosure. Paragraph 70 from the Horizontal Guideline states that an exclusive information exchange (data pooling) may result in anti-competitive foreclosure on the same market where the exchange takes place. Such a situation might happen if the sharing of commercially sensitive information puts non-affiliated competitors at a significant competitive disadvantage compared to those connected to the data pool. This form of foreclosure is only feasible if the data involved is very competitively sensitive and covers a large part of the market in question.[85]

Furthermore, data pooling could also lead to anti-competitive foreclosure of third parties in a related market. For example, by acquiring sufficient market power via a data pool, the entities sharing data in an upstream market, such as vertically integrated businesses, may be able to increase downstream market prices for a critical component. They could thus raise the costs of their rivals downstream, which could lead to anticompetitive foreclosure in the downstream market.[86]

3.3.1 Restriction by object

Article 101(1) TFEU may be violated by R&D agreements, by object, in the situation in which they do not really involve joint R&D but act as a mechanism for participation in a hidden cartel. Nonetheless, an R&D agreement which includes shared exploration of potential future outcomes is not inherently competitive restrictive.[87] In data pooling, on the other hand, the sharing of data on individualized client expectations about future potential price or quantity activities (anticipated revenue, market shares, territories and revenue to different consumer groups) is especially likely to result in a collusive outcome. Notifying one another of this intention can enable competitors to achieve an ordinary higher price level without the risk of losing market share or causing a price war during the adjustment period. Besides that, exchanges of information on future plans are far less likely to be made for pro-competitive purposes than shares of actual data. [88]

[85] European Commission, 'Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-Operation Agreements' (n 41). Para 70
[86] ibid. para 71
[87] ibid. para 128
[88] ibid. para. 73

3.3.2 Restriction by effect

As well it might restrict competition by effect through limiting competition in new product market and innovation or on goods and technology markets.[89] Paragraph 133 of the *Guidelines*[90] indicates that the R&D Agreement is likely to violate Article 101(1) only if the participants have market influence in the established markets or if competition on innovation is substantially reduced. Furthermore, there is no absolute threshold over which it can be concluded that an R&D agreement generates or retains market power and is therefore likely to have restrictive effects on competition as described in Article 101(1). Though, the R&D Block Exemption Regulation covers R&D arrangements among rivals provided that their collective market share does not surpass 25 per cent and that the other requirements for the implementation of the R&D Block Exemption Regulation are met. Moreover, in a situation in which parties have a market share of more than 25 per cent, it does not automatically imply that Article 101(1) is violated. Still, it goes on to state that a breach is more probable as the market position of the parties increases.[91]

In the situation in which the primary purpose of R&D is improving existing technologies or goods, the future consequences for those existing technologies and goods related to the relevant market. Nevertheless, impacts on costs, production, product quality and variety, or innovation on established markets are only possible if the parties have a good position together, entry is challenging, and few other innovation activities are detectable. Therefore, where R&D involves only a relatively small input of an end product, the impact on competition in such end products are very minimal.[92] Regarding the data pool, it must be mentioned that there is the same situation as the one mentioned before, and especially that data pool will not affect competition on the market where it functions with the condition that it does not have a significant market share and does not modify the market or impose its rules to other market players.

Very rarely do pure R&D agreements generate restrictive effects on competition within the scope of Article 101(1). It seems to be particularly true for R&D aimed at a small improvement of existing products or technologies. If in such a situation, the R&D collaboration involves joint production only by licensing to third parties, it is unlikely to have restrictive consequences

[89] ibid. para. 127
[90] ibid. para. 133
[91] ibid. para. 135
[92] ibid. para. 136

such as foreclosure issues. Nevertheless, if joint development and promotion of the marginally enhanced goods or innovations are included, it is vital to analyse more carefully the impact of the cooperation on the competition. When strong competitors are present in such a situation, restrictive effects on competition in the form of higher prices or decreased production in markets are more likely to occur.[93] The same can be said about data pools. If the parties of data pools share just a specific type of data (the safe one from the competition and data protection perspective), for example, data that is anonymised or aggregated and non-binding actuarial data, without any price insights in it and accessible to non-participants and new-entrants on FRAND conditions, and not strategic or sensitive data, then the chances that this pool will be anti-competitive is shallow, or almost zero.

When R&D develops an entirely new product (or technology) that produces its own new market, the impact of prices and production on existing markets are very doubtful. The focus of a competition study needs to concentrate on potential innovation constraints about, for example, the quality and variety of possible future goods or innovations or the pace of innovation. Such restrictive effects that occur when two or more of the few companies involved in the production of such a new product begin to cooperate at a point where each of them is relatively close to the product launch. Usually, such results are the direct product of the agreement between the parties. Even a simple R&D arrangement can limit innovation.

Nevertheless, R&D collaboration on entirely new products is unlikely to generate restrictive effects on competition in general, except if there is only a small amount of viable alternative R&D poles. The whole concept does not substantially alter if it involves joint exploitation of the results. In such circumstances, the concern of joint exploitation can only result in restrictive effects on competition in which the foreclosure from key technologies plays an important role. However, those issues would not arise where licenses are granted by the parties which permit third parties to compete effectively.[94]

Both the current market and the effect on innovation may be necessary for evaluation in terms of the joint party's position, concentration ratios, number of players or innovators and conditions of entry of the parties. In certain situations, restrictive effects on competition may occur in the form of increased prices or decreased production, product quality, product variety or innovation in existing markets and in the form of a negative impact on innovation by slowing

[93] ibid. para. 137
[94] ibid. para. 138

down the growth. For example, if major competitors collaborate on a current technology market to create a new technology that may one day replace existing products such coordination can delay the development of the new technology if the participants have market power on the current market and also a strong R&D role. An identical impact will happen when the dominant player in a developed market collaborates with a much smaller or even potential competitor who is just about to appear with a new product or technology that could threaten the position of the incumbent.[95] In the same way, data pool may discourage market players from distinguishing and developing their own data set. For example, in the situation in which data is an essential contribution to the products of the parties, and this specific group of the parties from this market do not want to provide access to the data that they hold to the other market players.

The R&D Block Exemption Regulation clarifies the concerns mentioned above for R&D agreements, and it might serve as an example for the data pools because the competition concerns are similar. To be protected by the block exemption, an R&D arrangement must meet the requirements laid down in Article 3. Generally, this includes complete access for all parties to the end product of R&D, including any intellectual property rights and know-how. There are two exceptions to this, one of which relates to the status of universities, academic bodies and commercial, educational agencies not involved in the exploitation field. Secondly, joint exploitation may only include results which are covered by IPRs or which constitute know-how and are necessary for the development of contract goods or the implementation of contract technologies.[96]

The accessibility of the R&D block exemption relies on whether any of the involved undertakings are actual or potential creators of products which can be upgraded or substituted by the contract products. Where they are not (and do not have any hardcore restrictions), the participants may gain from the block exemption regardless of market share. Even so, where they are actual or realistic potential competitors, they can only profit from the block exemption if, at the time the agreement was concluded, the combined market share of the involved undertakings did not exceed 25% of the relevant market for products which could be enhanced or substituted by contract products. When this threshold is not reached, the parties may depend on the block exemption for the full period of the joint R&D process.

[95] ibid. para. 139

[96] Alison Jones, Brenda Surfin (n 17). page 716

When the data pool only concerns knowledge for the gradual gain of product creation or innovation and does not mask a framework for market sharing, then it would make sense to make use of the concepts and doctrines underlying the R&D partnership competition study.[97] If the concepts of R&D partnerships were to be used for data pools, data pools would also be treated gently under EU competition law, particularly under Articles 101, although the risk of anti-competitive exclusionary impact could still actually happen. It is, therefore, necessary for massive data pools to be open to a given industry or sector, to fall outside Article 101. As was shown before in Article 3(2) from R&D Block exemption Regulation, that one of the main conditions for exemption is that the R&D agreement has to be open to all parties of it. Companies agreeing to pool data should identify the sector or Market to be controlled, and perhaps the technologies to be used to capture and store data, as well as, probably, how they will not be using the data in years ahead.[98] To establish interoperability, the pool process needs to be an open venture in which businesses cooperate and work on technologies while still competing and performing unilateral and often collaborative research and development.[99]

The social advantage of more significant R&D investments or data pools is to reduce the time that needs to generate innovations and to bring the finished good or service to the Market. Both of these technologies/agreements increase the probability that changes will arrive quicker.[100]

R&D agreements and data pools can benefit from the safe harbour provided by *De Minimis Notice* when the parties of these agreements have a low combined market share and there are not hardcore restriction of competition. Where one of only two parties has only minor market share and lacks considerable resources, even a high combined market share cannot usually be seen as demonstrating a likely restrictive effect on market competition. [101] The data sharing which takes place under an R&D agreement, if it does not surpass what is required to enforce the agreement, it may benefit from the 25% safe harbour laid down in the R&D Block Exemption Regulation and from the 10-15% safe harbour laid down in the *De Minimis Notice*.[102] Moreover, Paragraph 13 of the Commission Notice stipulates that in case of

[97] Lundqvist (n 11).
[98] ibid.
[99] Josef Drexl, *'Anti-competitive Stumbling Stones on the Way to a Cleaner World: Protecting Competition in Innovation without a Market'* (2012) 8 Journal of Competition Law & Economics 534.
[100] Jorge Lemus and Emil Temnyalov, 'Patent Privateering, Litigation, and R&D Incentives' (2017) 48 RAND Journal of Economics 1004 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2308136>.
[101] European Commission, 'Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-Operation Agreements' (n 41). Para. 44
[102] ibid. para. 88

restriction by object of competition such as arrangements that fix prices, allocate customers or markets, and restrict output or sales, the safe harbour conditions provided by the De Minimis Notice do not apply.[103]

3.4 Evaluation of R&D agreements under Article 101(3) TFEU

Both R&D agreements and data pools produce significant efficiencies to the customers and the Market. R&D provides productivity benefits through the integration of complementary skills and assets, resulting in the production and distribution of enhanced or existing goods and technologies more quickly than would otherwise be the situation.[104] Data pools provide almost the same effects (is described more amply in Chapter 2 of the Thesis). Access to shared data can enable businesses to create better products/services than they would produce based on their 'own' data alone. Also, to the degree that data is the 'raw material' for quality competition and innovation, improving data access would often promote, rather than hamper competition.[105]

Paragraph 142 from *the Guideline*, notes that the hard-core limitations referred to in Article 5 of Regulation 1217, which prohibit the application of the block exemption, are unlikely to be considered indispensable in the individual evaluation of an agreement under Article 101(3). Although several R&D deals will result in productivity gains through changes in manufacturing or distribution or economic or technological development, the Commission will take a closer look at whether a reasonable share of the profits is passed on to consumers.[106]

Efficiency benefits achieved by indispensable limitations should be passed on to consumers to the degree that surpasses the restrictive impact of the R&D agreements or data pools on the competition.[107] For instance, the implementation of new and better products on the marked commodity due to data pooling and the use of data analytics on it may exceed any price increases or other restrictive competitive effects. Another situation might be that two

[103] European Commission, 'Commission Notice on agreements of minor importance which do not appreciably restrict competition under Article 101(1) TFEU (De Minimis Notice). (2014/C 291/01). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ%3AJOC_2014_291_R_0001> Para. 13

[104] European Commission, 'Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-Operation Agreements' (n 41). para. 142

[105] Crémer, De Montjoye and Schweitzer (n 6).

[106] Alison Jones, Niamh Dunne, and Brenda Surfin, *EU Competition Law: Text, Cases, Adn Materials* (Seventh Ed, Oxford University Press 2019). Page 719

[107] European Commission, 'Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-Operation Agreements' (n 41). Para. 143

companies that pool their data on various patients or pathologies may well boost the efficiency of their inventions without creating coordination issues.[108]

The conditions of Article 101(3) cannot be met if the parties of a data pool or an R&D agreement are given the possibility of removing the competition in respect of a significant part of the goods (or technologies) in consideration.[109]

The time element also is essential to consider when analysing R&D agreements. Notwithstanding Article 101(3) fails to apply if the conditions have been met once but are no longer met, the Commission must take into consideration the need for the participants to recover sunk investments.[110] The Commission acknowledges that specific R&D arrangements are permanent occurrences in that the circumstance *ex-ante* cannot be retrieved after the agreement has been enforced. The evaluation is made based on the evidence at the time of its implementation.[111]

3.5 Conclusion

The main goal of this chapter was to analyse the R&D agreements framework in order to see if this framework is compatible with one of the data pools and if it can serve as an example to the data pool one. An analysis was done on market definition, legal characteristics, and competition analysis of R&D agreement in comparison with data pools. Restriction by object and by effect from Article 101(1) and the four conditions for exemption of the Article 101(3) was analysed from the R&D and data pools perspective. Regarding the market definition for data pool, was found that there can be applied the same strategy from the R&D, for example by evaluating the market share of the pool and the impact of it on the market. As well if data pool like R&D aims at creating or favouring the creation of entirely new demand, then only an evaluation of the competition in innovation is possible. Thus, these arrangements can be treated as the one between non-competitors and needs to be exempted due to their benefits on the competition. However, when these agreements limit innovation by effect in the market, then they should not be permissive to use. In case if data pools offer a significant market power to its members and especially if it takes more than the 25 per cent of the market, then the pool

[108] Crémer, De Montjoye and Schweitzer (n 6).
[109] European Commission, 'Guidelines on the Applicability of Article 101 of the Treaty on the Functioning of the European Union to Horizontal Co-Operation Agreements' (n 41). Para. 144
[110] ibid. Para 145.
[111] Alison Jones, Niamh Dunne, and Brenda Surfin, *EU Competition Law: Text, Cases, Adn Materials* (Seventh Ed, Oxford University Press 2019). Page 719

needs to be open to all market members on a non-discriminatory basis. Furthermore, the De Minimis Notice can be applied to data pools and R&D agreements. Moreover, the foreclosure concerns and limits on coordination in data pooling can be solved or prevented, by looking at the ‘safe-harbour’ conditions from the R&D Block Exemption Regulation. The next chapter of this thesis aims to uncover the similarities and differences between data pools and patent pools.

IV. Patent pooling and data pooling: similarities and differences

4.1 Introduction

After the competition law framework from R&D agreements as an example to the data pool one was analysed in the previous chapter, this chapter will analyse a similar framework of patent pooling which is from the Intellectual Property area. This chapter aims to identify and evaluate the similarities and differences between data pools and patent pools. This cooperation has an important value for this thesis because both pools have almost the similar infrastructure, both bring a lot of pro-competitive effects to the Market and thus to consumers. Also, the primary purpose of either of these agreements is to promote innovation through collaboration. Furthermore, the competition concerns seem similar at both of these agreements, but due to its longer legal and industrial history, patent pools found many solutions to deal with them. Therefore the main analysis in this chapter will be focused on the steps that the legislators implemented in patent pools to predict, stop, and prevent it from transforming from a pro-competitive tool of innovation in an anti-competitive one, and from seeing if these steps apply to the data pools. So, this chapter will answer the last thesis' sub-question: *What competition law lessons, taking into consideration their similarities and differences, can data pool learn from the patent pool to become a pro-competitive instrument for exchanging data?*

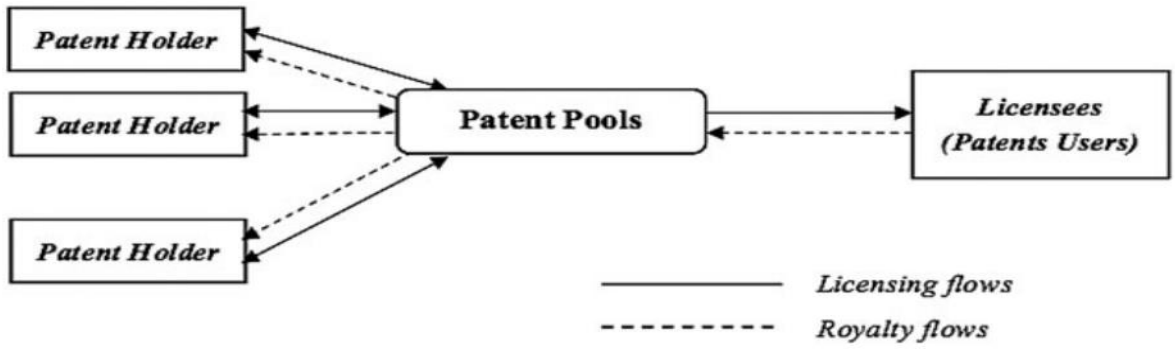
4.2 Differences and similarities between patent pools and data pools

Data pooling is a process in which the centralized manager gathers data from multiple data holders, examines the data and then offers helpful feedback back to the stakeholders and can license the data to third parties. This process is very similar to the one that the patent pool has, where the holder of the patent for an extended period have pooled connected innovations to promote the creation of new technologies and their growth.[112] Such style of partnership has benefited patent rightsholders as well as licensees by significantly lowering transaction costs, which are perceived to be a significant obstacle to patent licensing in environments where ownership of relevant patents is widely distributed.

Patent pools can be described as an arrangement between two or more proprietors of patents to license one or more of their patents to one another or third parties. They are often connected

[112] Michael Mattioli, 'The Data Pooling Problem' [2017] Berkeley Technology Law Journal 58 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2671939>.

with sophisticated innovations which require complementary patents to provide effective technical solutions.[113] Several patent holders consolidate patent rights in a patent pool, and pooled patents are supplied to member and non-member licensees. Usually, the pool distributes a portion of the licensing fees that it receives for each participant following the value of each patent.[114] It makes it possible for companies to use each other's patents, which they had previously been refused, without the threat of patent infringement. Patent pooling prevents this dangerous activity by creating a community-wide single license authorizing all the patents now belonging to the specific company to operate.[115] The prospect of a separate license, with all these benefits, is the main advantage in the development of a patent pool and is a significant driving factor for businesses when considering the combination.[116]



Patent pool[117]

Contributing data to a pool will involve substantial initial costs. Furthermore, it is expensive to permanently register, coordinate, and store large quantities of data. It is much more costly to guarantee that the data is reliable, that it is published in a form compliant with specific regulations and laws, that its sources and history are appropriately reported and published,

[113] World Intellectual Property Organisation, 'Patent Pools and Antitrust- A Comparative Analysis' 1 <https://www.wipo.int/export/sites/www/ip-competition/en/studies/patent_pools_report.pdf>.
[114] ibid.
[115] Devdatta Malshe, *Patent Pools, Competition Law and Biotechnology* (Routledge Research in Intellectual Property 2018) <https://books.google.nl/books?id=Mb5aDwAAQBAJ&pg=PT1&lpg=PT1&dq=Patent+Pools,+Competition+Law+and+Biotechnology&source=bl&ots=QDA5y9y052&sig=ACfU3U1e0MTvCGbjVtLA2hweP8wUOPRJWA&hl=ro&sa=X&ved=2ahUKEwjUnfmNha7qAhUCCuwKHWecBm4Q6AEwCHoECA8QAQ>.
[116] ibid.
[117] Jamal Eddine Azzam, 'An Organizational Perspective on Patenting and Partnering: Unpacking Capacities to Manage Participation in Patent Pools' (2019) 16 European Management Review 699 <https://onlinelibrary-wiley-com.tilburguniversity.idm.oclc.org/doi/full/10.1111/emre.12188>.

etc.[118] Similarly, patent holders also face initial costs in the shape of expenditures for testing and patent enforcement. Nevertheless, from an ex-ante viewpoint, the merit of creating a patentable invention usually does not depend on future inclusion in a pool of patents; rather, it depends on the intrinsic value of the invention itself. Conversely, certain data types will only be valuable when pooled. Consequently, if at the time the data is created a functioning pool does not already occur, there might be insufficient reasons for the data holder concerned to preserve the data and optimize it for pooling.[119]

The framework for setting up a data pool is comparable to a patent pool one, and the soft law policy from the Technology Transfer Guidelines might serve as a source for substantial practical information. Technology pools also contain only patents and are royalty collection tools where the technology has already been established in the standard settlement arrangements. From the other side, data pools are rather tools for collecting data for potential purposes, and therefore may be loaded with non-personal technical data. In this situation, data is seen as non-rivalrous and non-exclusive.[120]

Concerning their structure, technology pools may take the shape of simple agreements among a restricted number of parties or of complex organizational agreements in which the management of the licensing of pooled technologies is assigned to a third party. In both situations, the pool can permit licensees to function on the Market on a one license basis.[121]In particular situation technology pool may be connected to an industry standard. These standards are occasionally set by law in others they happen to be a standard of the matter of fact. To comply with the standard, it would be appropriate to have access to intellectual property rights, and those rights could be handled via a technology pool.[122]

As well as data pools, technology pools may have both anti-competitive and pro-competitive concerns. One beneficial aspect of technology pool is shown in paragraph 245 of the TT Guidelines that companies seeking access to the technology in the pool would benefit from a 'one-stop-shop,' interacting only with the pool, rather than trying to negotiate separately with a variety of different holders, which could result in cost savings. Data pools also have such a

[118] Mattioli (n 113).
[119] ibid.
[120] Lundqvist (n 11).
[121] European Commission, 'Guidelines on the Application of Article 101 of the Treaty on the Functioning of the European Union to Technology Transfer Agreements' (2014) <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0328(01)&from=EN>. Para. 244
[122] ibid. Para 245

mechanism; where third parties can go to the data pool to get all the data, they need instead of approaching each party for their own, more limited dataset. Another pro-competitive aspect of the patent pool is that it diminishes costs of transactions and via establishing a limit on cumulative royalties to avoid double marginalisation.[123]

Regarding the anti-competitive concerns, there are two situations in which patent pool restrict competition. Firstly, the pooling of technology entails joint sales: if pooled technologies replace one another, this leads to a price-fixing cartel. Secondly, technology pools can limit innovation by excluding alternative technologies from market access, particularly by promoting industry standards or by establishing industry standards.[124] Data pools as well, can create situations in which they exclude from the market by demoralizing other competitor (outside the pool) to compete via not giving access to the pool. For example, in May 2019, the Commission opened an investigation regarding a data pool of *Insurance Ireland,* that is an organisation that brings together firms that activates in the Irish insurance sector. Insurance Ireland is making this database accessible to its members to help insurance claimants detect potentially fraudulent behaviour. In this case, the Commission is not concerned as such about the data sharing, and it acknowledges that this type of sharing of data has many pro-competitive aspects. Alternatively, the Commission wishes to determine whether entrants to the Irish insurance industry were unlawfully prohibited from accessing the database and if this may have had the effect of putting these firms at a disadvantage compared to those firms with access.[125]

The Commission can draw some inspiration from the analysis that is already done for the patent pools. It can consider the adoption of specific data pooling standards and the possibility of imposing the requirement for the data pool to be managed by the third party. In this sense a similar one-stop-shop mechanism could be considered also for data pools in order to increase their pro-competitive effect.

4.3 Assessment of patent pool in comparison with the one of the data pools

The manner a technology pool is developed, structured and managed will minimize the likelihood that there will be a limitation of competition by effect or by object and provide

[123] ibid. Para 245

[124] ibid. Para 246

[125] European Commission, 'Antitrust : Commission Opens Investigation into Possible Anti-Competitive' (2019) <https://ec.europa.eu/ireland/news/antitrust-commission-opens-investigation-into-Insurance-ireland-data-pooling-system_en> accessed 18 June 2020.

guarantees that the system is pro-competitive. When evaluating potential competitive hazards and efficiencies, the Commission may take into consideration, among others, the openness of the pool development process, the scope and quality of pooled technologies, including that independent experts are engaged in the development and function of the pool and whether the guaranties of safe sharing of sensitive data and dispute resolution mechanism are in place.[126]

4.3.1 Openness of the creation of the technology pool

The transparency/openness of the creation of the pool, either technology pool or data pool, plays a vital role in the way in which market, where this pool starts an activity, will be pro-competitive or anti-competitive. Once engagement in a standard and pool development process is accessible to all market participants, it is much more probable that technique for integration in the pool is identified based on price/quality factors than if a small group of technology owners establish the pool.[127] Therefore, when assessing data pool/technology pool, either the information of its execution or the objective of them will be appropriate, and attributable consideration must be given to designing a strategy which, technically or legally prevents and protects against the anti-competitive use of data.[128]

4.3.2 Nature and the types of pooled technologies

To better understand the correlation between the patent pool and data pool, and for possible impact on competition, it is essential to see the categories of technologies or patents that are pooled in the patent pool. Regarding the nature of the pooled technologies or patents, they can be classified as *substitutes* and *complementary*, but the one regarding the standard-setting environment are *essential* on *non-essential.*[129]

- *Substitutive patents* are those patents that are non-blocking by their nature, and they undertake alternative technologies. The inventions protected by substitutive patents can be used in tandem without violating the other patent; thus, they possibly compete with one another.[130] In other words, substitutes are those patents that cover processes or products that compete with each other in a specific market. Inferred data can have the similar nature as substantive patents

[126] European Commission, 'Guidelines on the Application of Article 101 of the Treaty on the Functioning of the European Union to Technology Transfer Agreements' (n 122). Para 248
[127] ibid. para 249
[128] Crémer, De Montjoye and Schweitzer (n 6).
[129] World Intellectual Property Organisation (n 114).
[130] ibid.

because the inferred data is created by analysing and inferring data from the volunteered and/or observed data; thus, it is unique by its nature as the substantive patents are. Therefore, the inclusion of more inferred data in a data pool might bring anti-competitive effects to the market.

- *Complementary patents* are those patents which cover inventions that are useless in the absence of a license to a separate patented product, and they come in when various inventors patent different components of a broader invention separately.[131] From the data perspective, complementary patents are similar by nature with volunteered or observed data because these types of patents/data are obtained or used for a specific purpose, and they complement each other, so the use of one makes use of the other more precious.

When determining the impact of patent pools on competition, it is essential to distinguish between these types of patents. Substitute patents conflict with each other and should therefore not be combined in a pool from a competitive point of view, because this will lead to the reduction of competition among these substitute technologies. This problem usually does not extend to complementary patents since there is no decrease in real or future competition.[132] Thus, the pooling of complementary patents does not infringe competition rules. Commonly, complements are used around each other, which means that having joined them can generate social benefits.[133] For instance, once a company owns a patent on a suitable electric engine for a bicycle, other holds a patent on a specific bicycle frame from aluminium, and other has patents on an orthopaedic bicycle saddle, pooling would allow the three companies to manufacture a healthy lifestyle bicycle that has all the enhancements mentioned above. The same situation can be noticed in the data pool, for example, if three companies pool their data (volunteered/observed data) about different patients or diseases may limit coordination and increase the qualities of the innovation that can be created by using this type of data.

Royalties are probably higher than they would otherwise be where technologies that are pooled are substitutes. This is because the licensees do not benefit from the competition between the technologies concerned. On the other hand, if the pool has complimentary technology in, then the technology pool decrease costs of transactions and can result in reduced overall royalties as the participants are willing to fix typical royalty for the bundle as compared to each party

[131] Steven C Carlson, 'Patent Pools and the Antitrust Dilemma' (1999) 1 16 Yale J. on Reg. 359 1 <https://digitalcommons.law.yale.edu/yjreg/vol16/iss2/6/>.
[132] World Intellectual Property Organisation (n 114).
[133] Herbert Hovenkamp, 'Intellectual Property and Competition', *Research handbook on the economics of IP law volume 1* (1st edn, 2019) <https://www.e-elgar.com/shop/gbp/research-handbook-on-the-economics-of-intellectual-property-law-9781848445369.html>. Page 250

setting the royalty for their technology without considering that a higher royalty for one technology would typically reduce the demand for complementary technology.[134]

Inter-technology competition can be limited by the presence of substitute technology in the pool, as it can result in a mutual bundling which can contribute to price-fixing among market rivals. Thus, the incorporation of a substantial amount of substitute technologies in the pool infringe Article 101(1) TFEU, and there are small chances that the exemption from Article 101(3) will be applied in this situation.[135]

- *Essential patents* in the sense of standardization are those needed to comply with a technical standard, and by nature, they also are complementary due to their standard-essential feature. Since essential patents are often complementary, patent pools consisting of essential patents are far less conducive to competitive problems. In contrast, patent pools consisting of non-essential patents are more competitively risky.[136]

As *essential* can be called the technology that manufactures a specific product or performs a specific process to which the technology that is pooled apply, or manufacture or performs such activities in conformity with a standard that involves the technology that is pooled. Thus, technology is essential because there are no suitable alternatives for that engineering inside or outside the pool and the technology in question forms a critical part of the technology package to produce the product or perform the process to which the pool relates. Moreover, technology is essential if it forms a required part of the pooling technologies needed to reach the pool-supported standard.[137]

- *Non-essential patents* are those if there are replaces to the covered technology.[138]

All in all, the pooling of essential and complementary patents are beneficial for competition, and that results that pooling data (volunteered or observed) which the main purpose is to upgrade a product, or a process is beneficial to competition as well. Nevertheless, pooling inferred data (which is comparable by its nature with substantive/non-essential patents) might

[134] European Commission, 'Guidelines on the Application of Article 101 of the Treaty on the Functioning of the European Union to Technology Transfer Agreements' (n 122). Para. 253
[135] ibid. Para. 255
[136] World Intellectual Property Organisation (n 114).
[137] European Commission, 'Guidelines on the Application of Article 101 of the Treaty on the Functioning of the European Union to Technology Transfer Agreements' (n 122). Para. 252
[138] World Intellectual Property Organisation (n 114).

not be beneficial to competition because it is a prediction created by inferring information from the observed and volunteered data. Thus, if companies will pool this type of data in a pool, it can create anticompetitive concerns such as limiting of coordination or future anti-competitive foreclosure.

4.3.3 The purpose of independent experts in the technology pools activity

The magnitude to which independent experts are involved in creating and operating the pool is another relevant factor in evaluating the competitive risks as well as the efficiencies of the technology pools. For example, assessing whether or not such technology is essential to a pool-supported standard is mostly a complicated situation requiring particular knowledge. The participation of independent experts in the evaluation process can go a long way in providing that dedication to incorporating only essential technologies is put into practice. In the situation in which an independent expert conducts the selection of technologies to be included in the pool, this may also lead to further competition among accessible technological solutions.[139]

The function of an independent expert in data pools can play the role of a data controller/processor (independent organization) who will manage the data pool and will make sure that the pool is pro-competitive and compliant with competition law framework. It will have the following duties: take care about the data that are pooled by the pool members, will check if all necessary measures are taken to offer a high level of protection to data (in case if the pool includes personal and non-personal data, trade secrets, know-how), will ensure that data which is pooled is in accordance with data protection and competition law legislation, *etc*. Furthermore, the expert or other authorised body will play a crucial role because they will ensure that the safeguards are in place, and all members of the pool know their duties regarding the functioning of it.[140]

Regarding the selection process and the functions of that independent experts will be carried out by the Commission in its assessment. Independence of the experts plays an essential role in this process because if the experts are linked to or otherwise dependent on the licensors, less weight will be given to the expert 's participation. Experts would be expected to have the technical knowledge required to carry out the multiple tasks they have been appointed to.

[139] European Commission, 'Guidelines on the Application of Article 101 of the Treaty on the Functioning of the European Union to Technology Transfer Agreements' (n 122). Para. 256
[140] ibid. Para. 259

Moreover, parties of the pool need to agree from the start of running the pool upon a dispute resolution mechanism in case of possible future legal or technical issues.[141]

4.3.4 Safe harbour conditions

The seven safe harbour principles/conditions that are used in technology pools might be applied to data pooling as well. Thus, if these conditions are respected at the time of establishing, running, plus licensing and whatever the market position of the parties concerned, then the technology pools fall outside of Article 101(1) TFEU. The conditions are the following[142]:

- *The pooled technologies are non-exclusively allowed into the pool*
- *Participation in the pooling process is available (open) to all interested proprietors of technology rights*
- *Enough protections (safeguards) are implemented to guarantee that only relevant technologies (which are therefore also inherently complementary) are pooled*
- *The technology applicants to the pool and the licensees are free to question the legitimacy and fundamental nature of the pooled technologies*
- *Appropriate protections are introduced to ensure that the sharing of sensitive information is limited to what is required to establish and operate a pool*
- *The pooled technologies are licensed under FRAND (Fair, Reasonable, and Non-Discriminatory) conditions to all potential licensees*
- *The technology contributing parties to the pool and the licensee shall remain free to produce competitive goods and technologies.*

4.4 Evaluation of the individual restrictions in agreements between the pool and its licensees

Where safe harbour conditions do not apply, the individual evaluation will be required. The Commission should be driven by the following fundamental principles when reviewing the technology transfer agreements between the pool and its licensees[143]:

- *The bigger the pool's market position, the higher the chance of anti-competitive impacts*

[141] ibid. Para. 257-258
[142] ibid. Para. 261
[143] ibid. Para. 267

- *The higher the pool's market position, the more likely it would infringe Article 101 by deciding not to license all prospective licensees or to license them on discriminatory terms.* To avoid such risks, and as suggested by the EU Commission in its 2020 strategy for data[144], EU data pools could be created in a centralized infrastructure where the access and the scope of such access can be controlled.
- *Pools should not unduly foreclose technologies from third parties or restrict the development of alternative pools*
- *None of the strict limitations set out in Article 4 of the TTBER should be included in the technology transfer agreements.*

Where a technology pool compliant with Article 101 TFEU is established, provision inherent in the institution of a pool or standard, such as provisions relating to royalties, shall also fall outside Article 101.[145] Furthermore, if the pool has a dominant position, stricter review of the licensing provision would be expected and the Guidelines state, for instance, that royalties and other licensing conditions must be non-discriminatory and non-excessive, and that licenses ought to be non-exclusive. Such specifications are essential to ensure that the pool is open and does not result in foreclosure and other anti-competitive results on downstream markets.[146] The Guidelines also aim to guarantee that new technology is not foreclosed, for instance by specifying that limitations must not be integrated on parties creating competing standards or goods, or on giving and obtaining licenses outside the pool.[147] They also include that: granting back obligations should be non-exclusive and restricted to necessary or significant innovations and pools must not be able to protect invalid patents by non-challenge and termination provisions between the third parties and pool.[148] Almost all of the provision mentioned above that apply to technology pools regarding the prevention of anti-competitive foreclosure might be easily applied to the data pool because they function in the same manner as the technology pool. So, it has to be open to new members who want to be part of the pool and share their data in order to get access to a more substantial amount of data which in turn will help them to innovate and be competitive on the market.

[144] European Commission, 'A European Strategy for Data' (2020) COM(2020) Brussels, 19.02.2020 1 <https://ec.europa.eu/info/sites/info/files/communication-european-strategy-data-19feb2020_en.pdf>.
[145] ibid. Para. 268
[146] ibid. Para. 269
[147] ibid. Para. 270
[148] ibid. Para. 271-272

The European Commission has big plans regarding data pools. In its European Strategy for data, it proposes the creation of European data pools. These pools can be arranged in a distributed or a centralised manner, which means that data are not relocated to a central location for being analysed along with other data assets; instead, the tools for the analysis come to the data. It enables keeping the data secure and maintaining control of who accesses what data for what objectives. The data contributing organizations would receive a return in the form of better access to other participants' data, data pool analysis results, services such as predictive system maintenance, or license fees.[149]

4.5 Conclusion

This chapter humbly aimed to make clear if the assessment applied to patent pools/technology pools might be used to the data pool as well, and if yes, then what data pool can learn from it to bring more innovation into the market and at the same time does not violate Competition rules. Regarding the differences and similarities between the data pool and patent, the pool was found that the process of accumulating the data/patens are similar. Both are arrangements between two or more parties which agreed to pool their data/patents to benefit innovation by gathering vast amounts of data/patents that can be used for developing a product or a service. One difference between these processes is that in data pools in comparison with a patent pool do not exist royalties but instead parties benefits from it by having access to it and possibility to use the data that is stored in the pool for their purposes. As well, both have almost similar concerns and have more pro-competitive that anti-competitive effects. Besides that, patent pools have 'one-stop-shop' mechanism which works effortlessly (an individual or a company come to the patent pool and ask the licence from the poon and not from the every right holders separately), in data pool is a bit different, the person or the company who want to use the data from the pool have to become a member of the pool (in the situation if data pool is of a closed type or private) and have to get the permission from every pool member.

Additionally, it was found that the structure for competition analysis that is provided in TT Guidelines is compatible with the data pool analysis. A high level of transparency should be when creating the pool. Another important aspect is what type of technology can be pooled: substitutes/complimentary or essential/non/essential. It was found that complementary and essential technology has similar pro-competitive effects as if pooling volunteered or observed

[149] European Commission, 'A European Strategy for Data' (2020) COM(2020) Brussels, 19.02.2020 1 <https://ec.europa.eu/info/sites/info/files/communication-european-strategy-data-19feb2020_en.pdf>.

data. Another important aspect is the role that independent expert has in patent pool activity because the data pool might need the same an expert (person/entity) who will have the same functions as the independent expert has in the patent pool. The independent expert in the data pool could be a private organisation constituted based on EU Commission Recommendations. Furthermore, the safeguards provided to technology pools might serve as examples to improve data pools and to make it more pro-competitive.

V. Conclusions

As money are the blood of today's economy, data is the lifeblood of the digital economy.[150] Thus, it is evident that companies who want to progress and be more innovative oriented needs to have enough data for data analysis, because by having this tool they can learn by the mistakes that they did in the past, they can understand how to be more efficient now, and they can predict the outcomes that their company will face in the future. Moreover, not every company has the privilege of enough data for developing their product or services, that why some of them come to the conclusion of building data pools so that these pools can be used as a data bank for each of its members.

Data pooling can bring many benefits for the consumers, undertakings, and the market in general. By the benefits that it brings are the following: incentivising innovation, bringing new products and services to the market, lowering the costs of the products and services and improving their qualities, etc. However, like many other horizontal collaborations between undertakings, it can create competition concerns such as: data pools can be transformed in an instrument for the exchange of strategic information about prices and costs, if it aligns competitors product features or costs it can be a limitation of competition by effect, and it can create future foreclosure concerns by having a significant market power and not giving access to the data pool to other undertakings interested in it.

The main goal of the current thesis was to bring to the attention the new method of sharing of data between undertakings such as data pooling and precisely how it can be regulated under Article 101 TFEU. Because it is a new type of data sharing, there are not any particular hard law (Decision, Directive or Regulation) or soft law (Commission Guidelines) that can bring light on how to deal with this topic legally. Also, there are not many scholars who discuss it, for instance, Björn Lundqvist [151], Inge Graef, Thomas Tombal & Alexandre de Streel[152] and there is a Report[153] about the competitive challenges that the EU market will face in the future regarding the data and the online platforms. The Report, the Lundqvist, and the Graef's research papers evaluated the importance of the data pools for the innovation; also they

[150] Ramakrishnan S, "Data Is the Lifeblood of the Digital Economy" (*CIOReview*2018) <https://digital-experience.cioreview.com/cxoinsight/data-is-the-lifeblood-of-the-digital-economy-nid-14044-cid-172.html> accessed June 25, 2020

[151] Lundqvist (n 11).

[152] Inge Graef (n 36).

[153] Crémer, De Montjoye and Schweitzer (n 6).

mentioned that there is a need of an ample analysis of this topic and the competition concerns that it delivers. This thesis aimed to dig more deeply into this topic and to bring to the table some new idea on how to deal with this type of sharing the data.

First, this thesis illustrated the possible way of application of Article 101(1) TFEU to data pooling. The functioning of this Article was discussed in combination with the competition analytical framework of information exchange because data pooling is a new type of information exchange. The *Bananas*, the *EURIBOR and Yen LIBOR*, and the *Smart card chips cases* were analysed in order to show how data pool can be restrictive by object if it will exchange the strategic economic data between the members of the pool. Restrictions by object are easier to identify compared to restriction by effect because the latter requires a more comprehensive analysis of the market where data pool functions. It was found that in the situation in which data pool is created by competitors from the same market, a case by case analysis is required for analysing if the pool restricts competition by effect. After that, the *Asnef-Equifax case* was evaluated. It indicated that for data pool not to be restrictive by effect need to respect the three condition, namely: (1) data pool should not reveal the business strategy of competitors or a market position, (2) it should be open in a non-discriminatory manner, and (3) the market where it functions should not be highly concentrated. Furthermore, it was found that the economic conditions and the nature of the relevant Market and types of data that is exchanged also plays an essential role in assessing the competitiveness of data pools.

Second, the third Chapter evaluated the compatibility of the R&D agreements framework to the data pool one. It was found that how the market definition is determined for R&D, how competition analysis is done might apply to the data pool. In analysing pro/anti-competitiveness of a data pool in a particular market when there is a development of an existing product or technology, the position of the parties of a data pool on that market might play a significant role. Hence, data pooling can lead to the creation of an entirely new product and as a consequence of an entirely new market, especially in situations where there is competition on innovation. In this context data pool might follow the same steps as in R&D in order not to create future foreclosure, for instance, the parties of the pool have to grant licences to third parties to compete effectively. Moreover, the pool needs to be open on a non-discriminatory basis to all members of the market if it provides to its parties a market power that takes more than 25 per cent of a market where it activates. Also, the hard-core limitation and the safe-harbour conditions from R&D Block Exemption Regulation can serve as an inspiration for

solving the data pools anti-competitive concerns, which are foreclosure and limits on coordination. Also, when together combined parties of the data pool have a low market share, then the *De Minimis Notice'* safe-harbour conditions can be applied.

The fourth chapter analysed the legal experience that data pool can take from the patent pool to come to be pro-competitive and not to create competition concerns. It was found that there are many similarities and differences between them; for instance, they both function in the same manner, and the framework of setting them is similar. Also, there is a one-stop-mechanism at patent pool and at data pool. However, a difference is that patent pool has a royalty collection mechanism in place, but at data pool does not have such a mechanism. They both have the potential for creating foreclosure concerns. Additionally, some steps from the competition assessment that is outlined in TT Guidelines for technology pool can be implemented within the data pool competition analysis. For example, the creation of a data pool should be done in the same transparent way as it is done for the technology pool. Also, the nature of the type of technology needs to be analysed because it plays a significant role in how data pool will be. Hence, if in technology pools will be pooled complementary and essential patents, and in data pools will be pooled volunteered and observed data then these types of pools will be pro-competitive. Besides, if in the data pool will be pooled inferred data and in technology pools just substantial and non-exclusive then they will be anti-competitive. Furthermore, if data pools would have an independent expert to deal with as the technology pool have, and if it will respect the safeguards that are established in TTBER, then there are high chances to prevent competition concerns.

The fundamental research question of this thesis was: *How should data pooling be regulated under EU Competition Law, and more specifically under Article 101 of the Treaty on the Functioning of the European Union?* For answering this question, one needs a comprehensive answer which will imply the all findings mentioned above, namely: the data pool needs to be analysed on a case by case basis, the three conditions from the *Asnef-Equifax case*, the market where it functions and the data that it hold, data should not be strategic, the safeguards for R&D and technology pools, the De Minimis Notice, and the need for an independent expert, all of these criteria needs to be analysed and respected in order for data pool to be in line with Article 101 TFEU.

Due to its enormous beneficial effects on the market and the innovation, data pools need to be analysed more in deep. Hence, there is a necessity for more economical, technical, and legal

research in this field. Also, more legal guidance from the Commission is required, for example, the amendment of the Guideline on the horizontal cooperation agreement, and especially at the section with information exchange or the creation of new section which will be dedicated entirely to data pools, Commission's guidance letters or even the creation of a Block Exemption Regulation for data pools.

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