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Geo-blocking and price discrimination by online marketplaces in the EU

Master Thesis

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Abstract: In the digital markets, thanks to a wider availability of data, firms are able to charge different prices according to customers' location and their guessed reservation prices. Geographic price discrimination is facilitated by geo-blocking, which prevents users in one country from accessing or buying on marketplaces in other countries. Geo-blocking creates barriers to the cross-border access to online contents and it is a source of concern for the European Union, as it hinders the goal of a Digital Single Market. This thesis aims at providing empirical evidence of geographic price discrimination due to geo-blocking and contributes to the ongoing debate on the issue with an extensive analysis of the phenomenon.

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Introduction

From its establishment, the main goal of the European Union has been the creation of a common market, where goods, services, people and capital could freely circulate. The rise of the digital economy has sparked a heated political debate on the urgency of creating a European Digital Single Market aimed at eliminating the existing barriers and boosting the development of new digital opportunities.

The Internet provides a wider access to information on consumers' preferences, browsing habits, purchasing history and geographical location. The availability of data allows online platforms to discriminate customers according to their willingness to pay. In particular, online price discrimination based on customers' location (well-established in offline markets and facilitated by geographical distance, which reduces the possibility of cross-border arbitrage) is becoming a source of concerns for EU policy maker, as it may be a threat for the Digital Single Market. Price discrimination based on location is attested in 75% of the complaints concerning cross-border sales collected by the European Consumer Centres Network.

The so-called "death of distance" (Cairncross, 1997) in the digital markets has given rise to the feeling that everything is just a click away. In order to carry on with geographic discrimination, companies have built artificial barriers, precluding access to sites of other Member States. Such territorial restrictions are known as geo-blocking and contribute to the fragmentation of the common market, which is still shaped by national borders. In addition, the large cultural, linguistic and historical diversity among States make the pursuit of a Digital Single Market an undoubtedly challenging objective.

This thesis aims at investigating to which extent technological restraints such as geo-blocking, which might lead to price discrimination, affect competition and the pursuit of a Digital Single Market (DSM). The decision of analysing this issue originates from an internship experience at the European Commission in the DSM Task Force of the Directorate General for Competition that handles the e-commerce sector inquiry.

The contribution of the research is twofold. On one hand, we will provide for the first time a methodology to classify the means by which geo-blocking techniques are used by economic subjects at each point of users' experience on platforms. Such extensive analytical framework starts from the assumption that, in order to identify the reasons behind restrictions and effectively address the issue of geographic price discrimination, policy makers should shade the light on the

“gears” of geo-blocking. We apply the theorized analytical framework to digital music online platforms, such as iTunes, Amazon and Google Play Store.

On the other hand, the thesis aims at detecting the existence of geographic price discrimination due to geo-blocking restrictions by using a cloud software developed *ad hoc* to allow regulators (and consumers) to dig up discriminatory practices. We ran a two months experiment collecting data with the help of the web scraping technique on the three aforementioned platforms; at the same time, we implemented a control system to ensure that the IP address – which we used as a proxy of location – was the only available information about the user. As objects of the empirical test, we chose audio-visual contents (specifically music) instead of physical goods, as they do not involve logistics costs and/or national-based standards that could influence the price. We simulated the purchasing experience in five EU countries – France, Italy, Germany, Netherlands and the United Kingdom.

We found evidence of price differences across Member States in one out of three online marketplaces, uncovering interesting mechanisms by which firms obstacle cross-border access to digital content. In particular, geo-blocking based on the control of the payment system (*i.e.* credit card’s billing address) seems to be one of the highest barriers to overcome.

The thesis is structured as follows. In Chapter 1, we provide an economic literature review on price discrimination, describing its main features and typologies. We particularly focus on third degree price discrimination in digital markets and geographic price discrimination. In Chapter 2, we drive the attention on the EU legal framework of price discrimination, primarily by giving a general overview on the principle of non-discrimination in the EU, secondarily digging up the two main provisions on geographic price discrimination, namely Article 101 and Article 102 of the Treaty on the Functioning of the European Union (TFEU). In the same Chapter, we provide the reader with two case studies on geographic price discrimination, the first one related to offline markets (United Brands Company case), and the second one related to online markets (iTunes case). Chapter 3 is devoted to the issue of geo-blocking in the EU Single Market. First, we outline the features of cross-border online trade in the EU, and then we provide an extensive analytical framework on geo-blocking. We tackle the issue from an economic and legal point of view, emphasizing its role as a result of vertical restraints and as a means to prevent arbitrage. Finally, Chapter 4 concerns the empirical analysis, starting from the categorization of the digital content platforms according to geo-blocking mechanisms, to the methodology, the collection of data and the main findings.

1. Definition of price discrimination

Firms look for profit maximization, charging different prices according to clients' reservation price.¹ Train tickets have various prices in line with the passengers' willingness to pay, although the "cost per seat" does not change much; cinemas apply discounts to students or senior citizens; buying a copy of a textbook for private use may cost much more than buying a large batch of it.

The above outlined scenarios are typical examples of price discrimination, a strategy theorized for the first time by Pigou (1920).

The existing literature does not provide a unique economic definition of price discrimination, as it may appear conceptually blurred and it can easily become a "*thorny issue*" (Motta, 2004). However, broadly speaking, it occurs when the same good is sold at different conditions (*e.g.*.. prices) to different consumers (Varian, 1989). Nevertheless, following Phlips' (1983) analysis about the interpretation of the term "discrimination", Varian points out that this definition is unsatisfactory. In fact, discrepancy in prices is usually due to transportation costs and, in addition, a firm's behaviour could be considered discriminatory even under uniform delivered pricing. For instance, a vertically integrated producer that provides transportation serves as an example of the latter objection: insofar as he applies the same price to all the customers, regardless the area of delivery, he carries out a discrimination, making short-distance clients pay as much as long-distance ones. In brief, all the attempts to give an extended definition, fail on some counts. Suffice here to quote the main objections raised by economists. Among others, Tirole argues that it occurs indeed, "*when two units of the same physical good are sold at different prices, either to the same consumer or to different consumers*" (2003, p. 133). He also notices that even selling differentiated products (for instance, classes in trains represent diverse quality of service) to different consumers could be considered as a discriminatory business practice.

Modern economic theory on price discrimination agrees on one point: differences in prices must reflect differences in the cost of serving consumers. This approach can be ascribed to Stigler's definition (1987): a firm discriminates when two similar products are sold at prices that are in different ratios to their marginal costs. Stole (2001) suggests that marginal costs should include all the relevant shadow and opportunity costs.

Nonetheless, for our purposes we will rely on the simplest definition, recognizing that, apart from criticisms, non-linear pricing strategies are all attempts to capture consumer surplus. In a nutshell,

¹ *i.e.* consumer's maximum willingness to pay for a certain product.

in order to maximize their profit, firms sell the same product² at distinct prices to extract all the surplus³, charging a higher price to individuals with a high reservation price and a lower price to those with a low reservation price.

1.1. Conditions for price discrimination

Traditionally, in order to price discriminate, three conditions must be fulfilled:

- i.* consumers with distinct levels of demand
- ii.* no arbitrage
- iii.* firms with market power

Firstly, a firm should know how to distinguish purchasers with a high willingness to pay from those with a low one. Then, as a second requirement, a firm must be able to prevent consumers from reselling goods among each other, namely there must be no chance of arbitrage (Motta, 2004). In other words, the absence of a secondary market is a prerequisite for producers to price discriminate.

Tirole (2003) points out that according to this definition we could distinguish two types of arbitrage. The first relates to the transferability of the good. Indeed, with low transaction costs, selling the same goods to two consumers at different prices means that the low-price consumer will buy the good and resell it to the high-price one. Commodities, for which transaction costs are usually low, are less likely to be sold at different prices, while travel tickets have higher transaction costs and are more affected by price discrimination.

The second type of arbitrage is associated with the transferability of demand between the different packages or bundles offered to the consumers, who choose between different options offered. For example, this happens when a consumer faces the choice between classes on a train. Firms target the package of goods to offer according to consumers' tastes. The producer has to make sure that the consumer he has targeted will choose exactly that bundle. The traveller of the first class will not have any incentives in choosing a second-class ticket, because the money he saves will not balance the decrease in quality. The effect of the two types of arbitrage on discrimination are opposite. The former tends to discourage discrimination, whereas the latter fosters it.

Companies usually set up several strategies to restrict arbitrage among consumers. These include:

² Our empirical analysis has been built under the assumption of product homogeneity and constant marginal costs.

³ "Consumer surplus is the area below the Marshallian demand curve and above market price. It shows what an individual would pay for the right to make voluntary transactions at this price. Changes in consumer surplus can be used to measure the welfare effects of price changes" (Snyder and Nicholson 2012, p.173).

- i. *Warranties/Contracts.* Producers nullify warranties on their products in countries where they do not operate. For instance, professors receive free textbooks that come with contractual prohibitions on resale.
- ii. *High transportation costs.* If a firm is willing to expand in markets faraway, it could decide to bear part of the transportation costs (as in freight absorption pricing). By doing so, high transportation costs will discourage consumers from buying in low-price places and reselling in high-price places, as it would erode the profits.
- iii. *Legal restrictions.* Legislative initiatives could prohibit the resale to third parties, through lobbying activities carried out by firms, which bear down on governments.
- iv. *Personalized products.* Some goods (like prescription eyeglasses or tailored clothes) are practically unsellable to other customers. Several business practices include different product standards that prevent cross-country sharing (the DVD market is a typical case, as American DVDs cannot be played into European DVD players).
- v. *Thin markets.* When there are few players in a market and a scarce demand, as in the rare collectibles case, arbitrage is quite burdensome. Niche platforms like Etsy or Handmade by Amazon⁴ are gradually demolishing those barriers where just few buyers and sellers interact.

The third condition identified by the literature is the existence of market power⁵. According to Varian (1989, p. 599), “*price discrimination arises naturally in the theory of monopoly and oligopoly. Whenever a good is sold at a price in excess of its marginal cost, there is an incentive to engage in price discrimination. For to say that price is in excess of marginal cost is to say that there is someone who is willing to pay more than the cost of production for an extra unit of the good. Lowering the price to all consumers may well be unprofitable, but lowering the price to the marginal consumer alone will likely be profitable.*” Thus, part of the traditional economic theory observes that firms without market power will not sell any product by charging a price higher than the marginal cost. Nevertheless, the latter condition is slightly ambiguous and some authors exclude it from the set of elements leading to price discrimination. For instance, Motta (2004) states that firms in the real world differ from perfect competition models, as they are more likely to have all market power and incentive to discriminate.

⁴ Tabuchi, H. (2015, October 8). Amazon Challenges Etsy with Strictly Handmade Marketplace. *The New York Times*. Available at: <http://nyti.ms/1jPBbFj>

⁵ i.e. the ability to price above marginal cost.

1.2. Types of price discrimination

There are several ways to classify price discrimination.

Scherer (1970) identifies three forms of price discrimination:

- i. Personal discrimination, based on the personal features of the consumer.
- ii. Group discrimination, based on the market segment features of the consumer.
- iii. Product discrimination, based on the features of the product.

In a recent classification, McAfee argues that the traditional nomenclature is improper (2008, p. 468-469). Indeed, “*first and third degree price discrimination are each examples of where different groups of consumers are charged different prices for the same good, while second degree price discrimination refers to instances where consumers in a market are presented with the same set of price and quantity options and “self-select” into different groups*”. Thus, the author proposes a new categorization, labelling first and third degree discrimination “direct price discrimination” and second degree “indirect”. The former is based either on the actual identity of the consumer⁶ or (more commonly) on consumer features⁷. Indeed, customers are frequently segmented by:

- i. Geography/nationality: for example, it is commonly known that drugs prices vary among countries. For instance, there is evidence of geographic discriminatory behaviours in the AIDS drugs. One would expect that prices in rich countries are higher than in poor countries, because they should be associated with the national income. Instead, results prove that price levels are higher in less developed countries than in wealthy ones (McAfee, 2008). Authorities try to regulate this phenomenon discouraging cross-country discrimination⁸. In fact, as we will argue in Chapter 2, EU original case law is quite adverse to those firms in dominant position who prevent parallel imports of their products (Armstrong, 2008).
- ii. Age: for instance, students or senior citizens get discounts.
- iii. Employer: some insurance companies offer policies to the employees of particular employers, like the army, the government etc.
- iv. Purchasing history: airline companies apply discounts to frequent flyers.

⁶ First-degree or perfect price discrimination.

⁷ Third-degree price discrimination.

⁸ See Case C-53/03, *Syfait v. GlaxoSmithKline*, (2005) E.C.R. I-4609.

GSK, a pharmaceutical firm, sold its products at a low price in Greece. To prevent parallel re-sale to higher-price countries it refused sell its products to Greek wholesalers, who complained this behaviour to be in breach of the then Article 82 of EC Treaty.

Despite the attempts to give an exhaustive categorization, modern economic theory (*e.g.*.. Varian, 1989; Tirole, 2003) still relies on Pigou's nomenclature, which is also the most suitable for our purposes. He distinguishes between first, second and third degree price discrimination. We will use his terminology assessing features and welfare⁹ effects of the three categories. Besides the *per se* definition of price discrimination, what is interesting for the purpose of this research are the effects of price discrimination on welfare. Indeed, from a competition policy perspective, authorities must analyse the consequences of discriminatory behaviours in order to assess if they should be regulated, prohibited or enhanced.

1.2.1. *First-degree price discrimination*

First-degree price discrimination (also known as “perfect price discrimination”) occurs when a producer knows exactly how much consumers are willing to pay (*i.e.* their reservation price) and is able to capture the whole surplus, charging a tailored price equal to the reservation price. Nevertheless, many economists agree that first-degree discrimination is unlikely to happen in practice, because most of the markets cope with asymmetric information about individual preferences (consumers themselves do not know how much they are willing to pay).

Assuming that a monopolist faces a demand curve representing the willingness to pay of consumers with different reservation prices. Under perfect price discrimination, the producer is able to charge for each consumer the exact amount he wants to pay, capturing the entire consumer surplus, gaining a profit that corresponds to the total welfare (since welfare is the sum of profits and surplus). In this way, perfect price discrimination leads to the highest level of welfare. According to Motta (2004), in this case price discrimination should not be deemed as a negative practice because it maximizes total welfare. Nevertheless, from a consumer welfare perspective, first-degree price discrimination is not at all an advantageous practice. However, since the above-mentioned behaviour is unrealistic, we will now focus on the effects of the other two types of price discrimination.

1.2.2. *Second-degree price discrimination*

Second-degree price discrimination happens when a firm sets a price per unit that varies with the number of units the customer buys. Assuming that producers cannot distinguish consumers' tastes, they will offer personalized packages or bundles, letting customers choose among them. Nevertheless, this scenario does not prevent from personal arbitrage, *i.e.* when a consumer buys a

⁹ Social welfare is the sum of consumer's surplus and producer's profit.

bundle not directed to him. Second-degree discrimination includes “self-selection” constraints and could be achieved through volume discounts whereby the price of a unit varies according to the quantity purchased by the buyer; it covers also the adoption of a two-part tariff, by which consumers pay a flat fee (not influenced by the quantity purchased) plus a variable fee, which depends on the quantity purchased.

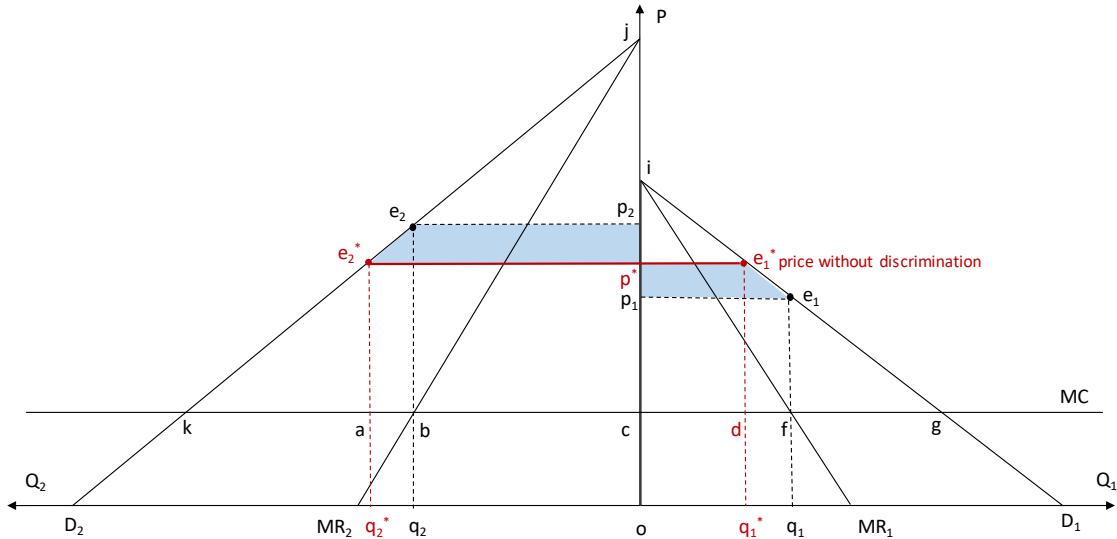
We will refer to second-degree price discrimination as “quantity discounts” (following Motta’s approach). Indeed, it takes place when a firm distinguishes consumers offering them packages of products, applying discounts to large amounts of purchased goods or imposing two-part tariffs. In the latter case, consumers pay a fixed fee that does not take into account the quantity bought, and a variable part based on usage. An example is the pricing structure of telephone services composed by a flat tariff and then additional charges based on usage. Moreover, we can find examples of second type of price discrimination in the travel sector: airline companies are accustomed to divide seats in expensive and cheap ones, even though the cost of “one seat” is the same. In this way, consumers can self-select their tickets according to how much they want to pay.

The effects on welfare of quantity discounts are positive as well, as producers will exploit the flat tariff to extract surplus from the consumers with lower demand, but they will use a lower marginal price than the one they would set if they were obliged to use only a variable fee. The lower marginal price reduces allocative inefficiencies, increasing welfare (the flat fee compensates the loss due to the lower marginal price). This type of price discrimination is allowed in both the US and European jurisdictions.

1.2.3. Third-degree price discrimination

Third degree price discrimination takes place when a firm charges different prices to different groups of customers depending on their elasticity of demand. Consumers with high elasticity of demand will be charged higher prices than those with low elasticity of demand (*i.e.* Ramsey pricing). The analysis of welfare is critical when it has to deal with the last type of price discrimination, which is quite relevant to the extent of competition law. We will give a first overview of the basic economic analysis and then we will focus on the welfare effects of geographic price discrimination, which is the subject of this thesis.

Figure 1 - Third-degree price discrimination in two separate markets.



The very basic economic theory about third-degree price discrimination is the monopolistic theory with market segmentation. The first assumption is that marginal costs are constant. Suppose that the monopolist knows the market demand curve¹⁰ for different groups and that he is able to prevent arbitrage. He will set the same price within each group differentiating the prices between markets. His profits are

$$\pi = (p_1 - c)q_1 + (p_2 - c)q_2$$

where p_1 and p_2 are the prices in the two markets. The price in each market depends only on the quantity that the monopolist supplies to that market. The profit maximizing quantity for each market is that quantity where

$$MR_1(q_1) = c = MR_2(q_2),$$

being MR_1 and MR_2 respectively marginal revenue in market 1 and marginal revenue in market 2. Since in each market the monopolist faces the same marginal cost, according to profit maximization rule marginal revenues have to match. Marginal revenue is given by

$$MR_1(q_1) = p_1 + \frac{dq_1}{dp_1}q_1$$

or

¹⁰ For the sake of simplicity, we assume that market demand has a linear function.

$$MR_1(q_1) = p_1(1 - 1/\varepsilon_1)^{11}$$

Combining marginal revenue equations, we have:

$$p_1(1 - 1/\varepsilon_1) = p_2(1 - 1/\varepsilon_2) = c$$

Thus, the condition for profit maximization under third-degree price discrimination involves price elasticity. In fact, if demand in market 1 is more elastic than demand in market 2 ($\varepsilon_1 > \varepsilon_2$), according to profit maximization $p_2 > p_1$, namely prices in market 2 should be higher than in market 1 because consumers are less price-sensitive. We compare now this scenario with a uniform pricing strategy, where we assume to face the same constant marginal cost and an aggregate demand resulting from the horizontal sum of national demands. From the graph above, we can presume that consumers in the market with the lower elasticity are worse off, since the price has increased. Indeed, consumer surplus in the left side market has diminished from $e_2^* \hat{f} p^*$ to $e_2 \hat{f} p_2$. Instead, consumers in market 2 are better off, since the price in this market has decreased and surplus has increased from $p^* \hat{i} e_i^*$ to $p_1 \hat{i} e_i$. Consequently, the former market faces an extra deadweight loss¹² (from $k \hat{e}_2^* a$ to $k \hat{e}_2 b$), whereas the latter copes with a smaller deadweight loss (it slumps from $e_1^* \hat{g} d$ to $e_i \hat{g} f$). Broadly speaking, the overall result is ambiguous, as we cannot attest *ex ante* whether the changes have an offsetting effect on total allocative losses. If $q_1 + q_2 < q^*$ (where q^* is the monopolist's quantity under uniform pricing), then the total surplus must have decreased. If $q_1 + q_2 = q^*$, the total output has decreased as well, because the output is no longer efficiently distributed among consumers. The reservation price of the individual who purchases the last unit in market 1 is less than his counterpart in market 2. Therefore, in order to make up for this allocative inefficiency and augment total surplus, a multiple-price strategy will be preferred to a single-price one only in situations where the total output is increased¹³.

The analysis of welfare is worth an in-depth examination to contextualize our previous technical analysis. In order to have a better understanding on how price discrimination affects welfare, we will briefly mention the main contributions on the topic.

So far, for the sake of simplicity we have assumed that third-degree price discrimination takes place in a context where the market demand function is linear. Under such hypothesis, as just

¹¹ $\varepsilon_1 = -\frac{p_1}{q_1} \frac{dq_1}{dp_1}$ is the price elasticity of demand for product 1.

¹² “A loss of mutually beneficial transactions. Losses in consumer and producer surplus that are not transferred to another economic agent” (Snyder & Nicholson, 2012, p. 740).

¹³ The technical treatment just mentioned is an adaptation from Church & Ware (2000) and Snyder & Nicholson (2012). For a deeper analysis of the welfare effects of third degree discrimination see Varian (1985).

demonstrated, total effect is ambiguous. Several authors have theorized possible implications on welfare depending on the type of demand function. Robinson (1933) was the first to raise this question, which has been further investigated by several authors, among others Schmalensee (1981) and Varian (1985).¹⁴ Robinson named “weak” those markets where elasticity is high (*i.e.* the optimal discriminatory price is lower than the optimal single price), while “strong” the low-elasticity markets where the optimal discriminatory price exceeds the optimal single price (Robinson, 1933; Aguirre, 2008). She drew relevant conclusions saying that third-degree price discrimination increases output when all the strong markets have concave demands and the weak markets have convex demands and *vice versa* (Robinson in: Cowan and Vickers 2007, Aguirre 2008, Cowan 2008).

In summary, within total welfare we have identified two effects. First, a multiple-price policy affects the distribution of output: high-elasticity individuals pay less, whereas low-elasticity individuals pay more. Hence, both welfare and consumer surplus drop, but profits increase. Furthermore, the net result on welfare is negative as the decrease of consumer surplus is larger than the increase of profits and the gains from trade are attenuated. As a result, the first consequence of third-degree discrimination is the redistribution of output from the low-elasticity group toward the high-elasticity group. On the other hand, price discrimination alters total quantity: if quantity increases by a certain amount, the effect of total welfare is positive.

1.3. Third-degree price discrimination in digital markets

Information technologies have led to an incredible opportunity for demand and supply to engage in new fascinating transactions, shortening gaps such as geographical distance. “*The world at your fingertips*” is not just a tempting advertising caption. The Internet has actually provided users new tools to find what they are looking for (products, services, entertainment, and even social relations).

From a demand point of view, online economy represents an empowerment tool, because it helps reducing consumers search costs, geographical distance and many others transaction costs. It also guarantees access to new products/formats and facilitates communication among clients. Furthermore, tools like feedback systems and price-comparison platforms are contributing to controlling companies’ infringements, enhancing transparency and openness.

On the other hand, supply-side equally benefits from digital markets. Online retailers use consumers’ browsing history as a database to build their strategies. They are even able to take advantage of their interaction with buyers and learn from it (Oh & Lucas, 2006). Thus, they find

¹⁴They showed that total output with discrimination exceeding the no-discrimination level is a necessary condition for welfare to rise (Cowan, 2008).

out preferences exploiting user's location, age, social interactions. In this perspective, we can also assert that the perceived benefits for producers are at the same time harmful for consumers. Indeed, at the same time, individuals are turning into vulnerable subjects. The World Wide Web is one of the most evident settings where customer heterogeneity can be directly observed. Thanks to a massive usage of big data¹⁵, companies are able to segment individuals according to their purchasing and browsing habits, customizing their supply, meeting current needs and foreseeing new ones. We are quickly moving from a third-degree price discrimination system, where customers' characteristics are studied to elicit the entire surplus, to a perfect discrimination framework where businesses are able to estimate a buyer's willingness to pay. An example of this behaviour is dynamic pricing, a common business practice in the e-commerce where consumers are part of actual "pricing experiments". In mainstream electronic commerce, such dynamic pricing, when discovered, has caused consumer backlash and negative publicity (Hinz, Hann, & Spann, 2011).

One of the best-known cases is about Amazon.com. In September 2000, the platform abused some clients by discriminating former buyers from the new ones. After deleting cookies on his laptop, one customer noticed that the price of a DVD had dropped from \$26.24 to \$22.74. It meant that the website recognized him as a regular shopper and charged him an extra price presuming his reservation price to be higher than a first-time shopper's (Ramasastri, 2005). The company said it was an accident due to a random test on prices and offered to refund the damaged party¹⁶.

Over time, Amazon has been involved in other price-related issues. Price comparison platforms¹⁷ are more and more popular on the web. They offer a service collecting prices in different marketplaces¹⁸, allowing consumers to get the best offer and, in the meantime, to save time. In 2000, a bargaining hunters internet forum discovered that in some cases the "Diamond Rio MP3 player" was offered at a lower price (\$51) compared to the list price (\$233) (Volverton, 2000). Again, Amazon's spokespersons said it was a random price test, but it caused lack of trust in the firm, as customers did not appreciate to be discriminated.

¹⁵ e.g. the strategic use of vast amount of data extracted from users' personal habits, location, social interactions, groups of interest. See also Marr, B. (2015, September 8). 4 Ways Big Data Will Change Every Business. *Forbes*.

Available at: <http://www.forbes.com/sites/bernardmarr/2015/09/08/4-ways-big-data-will-change-every-business/#2715e4857a0baffac3e79000>

¹⁶ See Amazon pricing flap: Web retailer apologizes for price test, refunds money to customers. (2000, September 28). CNN.

Available at: <http://cnnfn.cnn.com/2000/09/28/technology/amazon/>

¹⁷ A price comparison platform is a website/app which provides a service of comparing products of different sellers but which does not offer the possibility to purchase the products directly through the website/app.

¹⁸ A marketplace is a website/app where independent sellers sell products and advertise.

Some authors (Baye & Morgan, 2002; Ellison & Ellison, 2004) argue that in many cases firms practice hidden pricing strategies, making it harder for buyers to track them down. In fact, online retailers tend to engage in strategies with restricted transparency (Bakos, 1997; Soh, Markus, & Goh, 2006).

However, as analysts predicted over fifteen years ago, dynamic pricing is now the settled practice for most online retailers, especially for small businesses. Indeed digital market is the place where even local enterprises have market power and therefore can charge various prices. A publication by Oxera Consulting (2015) contributes to the debate listing the key characteristics of online markets, highlighting threats and opportunities.

- i. *Transparency*: online markets are more transparent than offline markets. Indeed, thanks to price comparison platforms and search engines, users are able to get information on the latest prices/offerings in real time. In this way, consumers cope with lower search costs and sellers face more competition.
- ii. *Use of personal data*: as stressed above, a smart use of data is a fundamental competitive advantage for online businesses compared to their offline counterparts. In the offline market, indeed the chance to customize the offering is much lower and expensive. In addition, depending on the type of market, the use of personal information can be a harm or a benefit.
- iii. *Geographic location*: with electronic commerce, physical presence is becoming less and less relevant, as consumers can shop around from their desk. From a business perspective, this is an opportunity to enter new markets more easily. Moreover, user's geographic location allows online retailers to calculate differentials in consumers' purchasing power and apply different prices in different countries.
- iv. *Marginal costs*: among the reasons why digital markets enhance price discrimination there is the "cost argument". Most of the online companies have high fixed costs – due to the cost of developing a platform – but low marginal costs. For instance, digital contents like movies, music, e-books, have zero marginal costs, as creating an additional copy of the product is costless. In these terms price discrimination helps firms to recover high fixed costs reaching more clients.
- v. *New business models*: needless to say, the Internet has triggered innovative solutions to fit the shape of the firm with customers' needs. A brand-new form of business model is a discriminatory practice known as "freemium". Its main purpose is the provision of its content to a wide variety of clients. They can subscribe for free the basic version of the product, and at a later stage they can buy the premium version, which includes additional features. This is the business model used by music streaming providers (such as Spotify) and job platforms

(LinkedIn). In general, there is a trade-off between the potential benefits (in terms of better products at lower prices) from the rise of online platforms and the fears of negative business practices.

- vi. *Customer poaching*: price discrimination can enhance customer poaching, as firms could use information to charge lower prices to competitors' clients in order to poach them. Dimension in this case is a crucial factor: big companies usually have access to data more easily than small ones.

In conclusion, the consensus among economists is that in industries such as the high technology one, the overall effect of price discrimination on competition is positive as the so-called new economy has high fixed costs and low marginal costs.

1.4. *Geographic price discrimination*

Discriminatory behaviours among countries or geographical areas are under a status of *per se* prohibition in EU law (Motta, 2004). Indeed, since one of the “conceptual pillars” of the European Union (EU)¹⁹ is the Single Market, it is quite intuitive to assume that every obstacle to the free flow of goods and services is unlawful and therefore must be prohibited. Nevertheless, from an economic point of view, the story is not as simple as it seems to be. In fact, as showed above, firms do use price discrimination as a means to maximize their profit, but also, by doing so, they make poorer customers pay less and richer people pay more. Now, if we think about countries, the nitty-gritty should be the same, namely, low income countries face a lower price than high income ones.

We assume, for instance, that a firm sells for €10 the product x in Member State Y and for €15 the same product in Member State Z; the intensity of demand is higher in Z than in Y. The next hypothesis is that the firm in question is able to prevent arbitrage or that arbitrage is not possible (due to transaction costs). Prohibiting price discrimination would produce ambiguous effects, as the imposition of a uniform price would make consumers of Member State Z better off and those of Member State Y worse off. If we aggregate gains and losses, we could infer an overall welfare increase, assuming that the firm keeps serving both markets. However, such scenario might not happen in practice. If consumer demand in Z is indeed larger than consumer demand in Y, the firm may simply decide to stop serving Y in order to focus on Z. Such a scenario would lead to welfare losses, as consumers of Member State Y would no longer be served. Thus, an overall prohibition of price discrimination across Member States would not be justified as it might lead to

¹⁹ For our purposes, hereinafter we will use the acronym EU to indicate either the European Union or the previous European Community and the European Economic Community.

welfare losses. Finally, a different issue is whether measures seeking to prevent resale in high price Member States of products or services bought in low price Member States should be banned. As we will see in the next Chapter, such measures have been subject to a *per se* prohibition by the European Court of Justice (ECJ) because they would affect market integration.

2. Price discrimination in the EU legal framework

In this chapter, we will consider price discrimination from a legal perspective, primarily by giving a general outlook of non-discrimination as a goal of the EU. We will then go into detail by analysing the two main provisions related to price discrimination, Articles 101[1](d) and 102(c) of the Treaty on the Functioning of the European Union (TFEU).

2.1. Non-discrimination as a milestone of the Single Market

The concept of non-discrimination lies behind the establishment of the single market in Europe. It permeates the Treaties shaping the current European framework since its very beginning both as a premise of market integration and as a symbol of equal treatment of citizens from different Member States. Current legislation prohibits any unjustified discrimination based on nationality²⁰. According to the European Court of Justice (ECJ)²¹ “*the prohibition of discrimination [...] is merely a specific enunciation of the general principle of equality which is one of the fundamental principles of Community Law [and] requires that similar situations shall not be treated differently unless discrimination is objectively justified*”.

The first attempt to define the “equal treatment” for similar situations dates back to 1956, when the ECJ²² referred to the then Article 60(1) of the Treaty establishing the European Coal and Steel Community (ECSC). That article deemed as discriminatory the application of “dissimilar conditions to comparable transactions”, which is consistent with the definition of price discrimination identified in chapter 1. In fact, such provision clearly pertained to discriminatory pricing behaviours: the article reads “*discriminatory practices involving, within the common market, the application by a seller of dissimilar conditions to comparable transactions, especially on grounds of the nationality of the buyer*”. The original aim of the rule was to ensure that all the economic agents had equal access to coal and steel. Later, Articles 101 and 102 of the TFEU (whose purpose is to safeguard competition in the single market as originally designed in the Treaty of Rome) have absorbed the rationale of the old Article 60 ECSC; therefore, today we might consider non-discrimination one of the universal pillars at the heart of the EU. Indeed, it is strictly related to the “four freedoms” of the Single Market (free movement of goods, capital, services and people).

²⁰ See for instance Article 18 TFEU: “*Within the scope of application of the Treaties, and without prejudice to any special provisions contained therein, any discrimination on grounds of nationality shall be prohibited.*

The European Parliament and the Council, acting in accordance with the ordinary legislative procedure, may adopt rules designed to prohibit such discrimination”.

²¹ See Joined Cases 117/76 and 16/77, *Rusckdeschel*, (1977) E.C.R. 1753, para.7.

²² See Joined Cases 7 and 8/54, *Groupement des Industries Sidérurgiques Luxembourgeoises v. High Authority*, (1954-1956) E.C.R. 53 at 94.

The founding fathers wished to build a full-functioning common market, capable to lead to an efficient allocation of resources through an effective competition. At the time it was established, just six Member States (with an almost homogeneous economic system) composed the EU. They used to share the same vision of Europe as a marketplace where demand and supply could freely match, with the ambitious project of a single currency contributing to the reduction of transaction costs between economic actors and citizens. As a result, in this hypothetical scenario, prices should have levelled out thereby citizens would have had the same purchasing possibilities across Member States.

The drafting phase of the Single Market was thus inspired by an ideological vision rather than a mere economic justification, since the aforementioned framework was built under the assumption of price homogeneity in every market. With the enlargement of the EU, the original and orthodox ideological approach gave way to the pragmatic issue of handling an increasing number of heterogeneous Member States, whose citizens had different purchasing power and reservation prices. The variety in the economic structures made economically unjustified the principle of non-discrimination in terms of prices. The large diversity among States made the pursuit of a Single Market an undoubtedly challenging objective.

Furthermore, the milestone of non-discrimination would suggest that people/buyers in the same situation should be treated in the same way and vice versa. Conversely, it would be unrealistic to expect that firms might adopt the same behaviour with all their costumers, as many variables come into play, namely markets' specificities and competitive squeeze. Waelbroeck (1995) has brilliantly pointed out that there is an "apparent contradiction" between the EU law principle of "equal treatment" and the basic freedom to contract for businesses. The author argues that the enforcement of the former must be ensured by the States for the citizens, not by private subjects such as companies. As a result, firms should be free to discriminate according to their own business strategy.

In the following section, we will depict the current legal framework on price discrimination. We will focus on Articles 101 and 102 of the TFEU, which condemn discriminatory practices with different means and ends.

2.2. Price Discrimination according to Article 101 TFEU

According to Article 101[1]: “*The following shall be prohibited as incompatible with the internal market: all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the internal market, and in particular those which: [...]*

(d) apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage; [...]”

In cases where price discrimination is a tool employed by businesses to partition the common market (for instance through distributional agreements), Article 101 TFEU comes to the aid of the institutions. Indeed, although it does not apply exactly to price discrimination conducts carried out unilaterally by a firm, Article 101 TFEU is relevant to the extent of the legal analysis on the topic.

Article 101 TFEU is aimed at condemning a discriminatory practice that is the outcome of an agreement²³ between two or more independent undertakings and not the result of a unilateral conduct. Competition law deals with two types of agreements that have quite different effects. Horizontal agreements are stipulated among competitors that might make a deal in order to price discriminate. Nevertheless, as the deal on price discrimination comes after an arrangement on price setting, for horizontal agreements clause (a) – that is about price fixing – prevails over clause (d). On the other hand, vertical agreements are stipulated by undertakings at different levels of the value chain and are often aimed at preventing arbitrage through territorial exclusivity measures. Waelbroeck (1995) points out that such rule could indeed be applied to a vertical agreement where a supplier offers better prices to one particular client than to other clients (as we will observe at a later stage, this is a formula of abusive discrimination known as *Most Favoured Nation Clause* (MFN) or *Most Favoured Customer Clause* (MFC)).²⁴

In the past, Article 101[1](d) was used by the Commission mostly in order to sanction those companies which were acting to hinder arbitrage (that is one of the conditions of price discrimination) rather than sanctioning price discrimination as an unlawful practice itself (Papandropoulos, 2007). Courts’ recourse to Article 101 is pivotal since it contributes to the fight

²³ For our purposes, hereinafter we will use the broad term “agreement” to indicate also “decisions by associations of undertakings” and “concerted practices”.

²⁴ MFN clauses, also known as MFC clauses, are contractual terms where undertakings agree that the seller will sell its products to the counterparty at better conditions than third parties do.

against behaviours harming trade between Member States, including discriminatory pricing. Moreover, it helps to sharpen the Commission's position about geographic price discrimination in a chase for market integration, whose safeguard has always played a decisive role in the application of competition law. As stated in the Commission Decision in the *Vitamins Case*²⁵ “*Article [101(1)] of the Treaty is aimed at agreements which might harm the attainment of a single market between the Member States, whether by partitioning national markets or by affecting the structure of competition within the common market*”. Furthermore, as emphasized in the *Glaxo Wellcome Case*²⁶, “*it is well established that [...] Article [101(1)], while dealing with different types of restrictions on parallel trade²⁷, [...] seek[s] to achieve the same goal, i.e. market integration*”.

2.3. Price Discrimination according to Article 102 TFEU

“*Any abuse by one or more undertakings of a dominant position within the internal market or in a substantial part of it shall be prohibited as incompatible with the internal market in so far as it may affect trade between Member States. Such abuse may, in particular, consist in:*

“*[...] (c) applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage[...]*”.

Article 102 TFEU is the main legal landmark on abusive discrimination, in general, and price discrimination, in particular.²⁸ EU case law has been condemning discriminatory practices since the foundation of the EU. However, we do not catch the explicit wording “price discrimination” in the Treaties, conversely, we might identify a very broad definition in clause (c): it is defined as an “abuse” by one firm in a “dominant position” that applies “dissimilar conditions” to “equivalent transactions” placing “other trading parties” at a “competitive disadvantage”. In order to deeply investigate the above-mentioned definition, we will examine in depth its relevant elements.

²⁵ See Case COMP/E-1/37.512, *Vitamins*, O.J. (2003) L 6/1.

²⁶ See Case IV/36.957/F3, *Glaxo Wellcome*, O.J. (2001) L 302/01.

²⁷ “*Parallel imports are products imported into one Member State from another and placed on the market in the destination Member State, outside the manufacturer's or its licensed distributor's formal channels. Parallel imports tend to occur when price levels for similar products between two Member States are significantly different, either as a result of national regulations or of manufacturers' policy. That creates an incentive for traders to buy products in the Member State where they are priced lower and sell them in the Member State where they are priced higher, at a price which allows the trader to make a profit*”. See European Commission Press Release, *Commission Communication on parallel imports of proprietary medicinal products frequently asked questions*. (Jan. 19 2004).

Available at: http://europa.eu/rapid/press-release_MEMO-04-7_en.htm?locale=en

²⁸ See O'Donoghue, R. & Padilla, J., *the Law and Economics of Article 102 TFEU*, Second Edition, Oxford and Portland, Oregon, 2013.

2.3.1. *Abusive behaviour*

Two separate categories of abusive behaviours might be ascribed to Article 102 TFEU:

- i. “Exploitative abuses” are conducts that harm customers. Excessive pricing, unfair conditions and market segmentation are included in such category.
- ii. “Exclusionary abuses” are behaviours that harm competitors, thereby hampering competition to the detriment of consumers. Under this category we classify, for instance, exclusive dealing (exclusive purchase/supply, rebates), tying/bundling, refusal to supply and predation. In the long run, by excluding rivals from the market, such abuses turn into exploitative ones.

Price discrimination might have either exploitative or exclusionary effects. The distinction between discrimination against competitors and against customers is fundamental. In particular, the former category involves a “primary line injury”, the latter generates a “secondary-line injury”.

- Primary line injury. According to Jones and Sufrin (2011, p. 388), “primary line injury prejudices the supplier’s competitors. Price discrimination can cause primary line injury by having exclusionary (foreclosure) effects on competitors”. In fact, as pointed by O’Donoghue & Padilla (2013), the critical issue is not whether the behaviour carried out by the firm is discriminatory, but whether it has caused the foreclosure of its rivals.
- Secondary line injury. Instead, in case of secondary line injury, the effect of the discriminatory practice is on the downstream market, *i.e.* on clients or third parties *per se* (Jones & Sufrin, 2011), which are placed at a competitive disadvantage. Such kind of injury is the one that falls under Article 102(c) TFEU and the most relevant to our purposes.

In addition to this, the same abusive discrimination can affect both rivals and customers, thus rising simultaneously primary and secondary line injury, as showed in Virgin v. British Airways case.²⁹

²⁹ See Case T-219/99, *British Airways v. Commission*, (2003) E.C.R. II-5917 and Case C-95/04 P, *British Airways v. Commission*, (2007) E.C.R. I-2331.

2.3.2. Dominant Position

According to the interpretation of the aforementioned provision given by the ECJ³⁰, price discrimination might be deemed as a form of abuse of dominant position.³¹ Consequently, in order to demonstrate that price discrimination is illegal, it must be proved that the firm holds some degree of market power.

In the previously mentioned United Brands Case, the ECJ has laid down a specific interpretation of dominance under Article 102 TFEU: “*The dominant position thus referred to by Article [102] relates to a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of its consumers*”.³² Whish and Bailey (2012) argue that paragraph 65 of United Brands Case is fundamental since it links the legal definition of “dominant position” and the economic concept of “market power”. In that sense, dominance is deemed as “substantial” market power. A further judgment by the Court in the Hoffmann-La Roche case³³ enriched such definition, as it stated that dominant position does not preclude some competition, but enables the firm, which benefits from it, to have an appreciable influence on the conditions of competition occurring in the market. Thence, such interpretation has become the settled case law (Jones & Sufrin, 2011).

The assessment of dominance entails two steps. The first is the determination of the relevant market.

1) First stage: defining the relevant market

In the *Notice on the definition of the Relevant Market for the purposes of [EU] Competition Law*³⁴, the Commission clarifies the reason why defining the relevant market is important. It represents “*a tool to identify and define the boundaries of competition between firms. It serves to establish the framework within which competition policy is applied by the Commission. The main purpose of market definition is to identify in a systematic way the competitive constraints that the undertakings involved face*”. The process of defining a relevant market should involve both its product and the territorial dimension, in

³⁰ See Case 27/76, *United Brands v. Commission*, (1978) E.C.R. 207.

³¹ Thus, dominance is not prohibited *per se*, but only its abuse constitutes a source of concern under EU competition law.

³² See *supra* note 27 at para.65.

³³ See Case 85/76, *Hoffmann-La Roche & Co AG v. Commission*, (1979) E.C.R. 461, paras 38-9.

³⁴ See *Notice on the definition of the Relevant Market for the purposes of [EU] Competition Law*, OJ, (1997) C372/5.

order to identify the potential presence of any rivals able to restrain an undertaking's abuse. As a method to assess the existence of a relevant market, in its Notice, the Commission embraces the "SSNIP test".³⁵ Jones and Sufrin (2011) argue that markets are extremely hard to define. Furthermore, the choice of the factors³⁶ to consider when defining a market should be consistent with the choice of factors to consider when outlining a firm's position in that market. They also claim that the Commission often employs too narrow criteria or *indexes* to define a market. In the Notice, the Commission highlights the importance of the geographic dimension of a market: geographic market is that area "*in which the conditions of competition are sufficiently homogeneous*".³⁷

2) Second stage: assessing market power

In the paragraph 12 of the *Guidance on Article 102 Enforcement priorities*,³⁸ the Commission lists three elements that have to be examined to determine undertakings' market power:

- Current market share, i.e. the market position of the dominant firm and its actual competitors;
- Barriers to entry/expansion, i.e. constraints imposed by the credible threat of future entry or expansion by potential competitors;
- Countervailing buyer power, i.e. constraints imposed by the bargaining strength of the firm's customers.

Market shares are a helpful preliminary indicator of the relevance of an undertaking on the market compared to its competitors. There is no fixed formula to calculate the weight of the firm in a given economic context although the likelihood of dominance increases when the firm enjoys a high market share for a long time. Usually, values smaller than 40% are not considered elements of dominance. Obviously, the significance of market shares differs from market to market, even if the case law³⁹ shows that high percentages are often sufficient in order to presume dominance. Furthermore, a market where a firm enjoys a 40% share when

³⁵ The "SSNIP test" or "hypothetical monopolist" supposes the introduction of a Small but Significant Non-transitory Increase in Price by an undertaking and evaluates whether it would induce a significant number of consumers to switch to a substitute product or to a different location of purchase.

³⁶ For instance, when a product has multiple uses, it is difficult to settle whether a relevant market exists for the product as a whole or whether multiple separate markets should be established.

³⁷ See Case 27/76, *United Brands v. Commission*, (1978) E.C.R. 207, para. 8.

³⁸ See *Guidance on the Commission's enforcement priorities in applying Article [102 TFEU] to abusive exclusionary conduct by dominant undertakings*, OJ (2009) C 45/7.

³⁹ See Case 85/76, *Hoffmann-La Roche & Co AG v. Commission*, (1979) E.C.R. 461, para. 41.

there are many competitors differs from a concentrated market where there are few players. Among the EU competition cases, the lowest threshold where a firm has been deemed as “dominant” is 39.7%.⁴⁰ The Commission has been accused of relying too heavily on market shares, thus finding the existence of dominance where in reality the market power is low and of not taking into account the existence of potential barriers.

Indeed, market shares themselves do not determine dominance. In fact, besides the actual competitors, also the presence of potential competitors capable to enter the market may affect the definition of market power. Regarding alleged barriers to entry, an undertaking is deterred from increasing prices if the likelihood of firms entering the market is high. Paragraph 17 of the above-mentioned Commission’s Guidance provides cases of barriers that could impede/facilitate entry/expansion:

- Legal barriers (e.g. tariffs, quotas);
- Economic advantages enjoyed by the undertaking (e.g. economies of scale or scope, special access to natural resources);
- Costs and network effects faced by customers in changing supplier;
- Conduct of the dominant undertaking (e.g. when the dominant firm has made huge investments preventing newcomers from entering).

Finally, customers’ bargaining strength is relevant in so far as even a firm with high market share may not be able to act freely in case of countervailing buyer power.

Following the above-mentioned interpretation of dominance under Article 102 TFEU, we can deduce that firms that do not hold dominant position can charge their customers different prices.⁴¹ However, the Commission has been criticized because of its approach to the concept of dominance that, coupled with a very broad interpretation of the idea of abuse, clearly indicates

⁴⁰ See Case T-219/99, *British Airways v. Commission*, (2003) E.C.R. II-5917.

⁴¹In so far as its premise is market power, Article 102(c) differs from its “American twin”, i.e. the Robinson-Patman Act that prohibits discriminatory pricing regardless any judgement on the subject’s positioning in the market. The fact that the articles of the EU provision names precisely enterprises in dominant position, has led to the conclusion that “single sellers” with lower market share could engage in charging different prices. Conversely, the Robinson-Patman Act, which was enacted as an amendment to Section 2 of the Clayton Act’s measures against discriminatory practices. It states that “shall be unlawful for any person engaged in commerce, in the course of such commerce, either directly or indirectly, to discriminate in price between different purchasers of commodities of like grade and quality [...]”. It is evident that the American lawmaker condemns any price discrimination, regardless firm’s dominance in the market even though, in the US law, the rule of reason employed by the judge to interpret antitrust rules softens the strictness of the text. See Robinson-Patman Act, 15 U.S.C. §§ 13(a), (1936).

an interventionist role in the market played by competition authorities through the enforcement of Article 102 (Jones & Sufrin, 2011).

2.3.3. Equivalent Transactions

Clause (d) of Article 101 TFEU and clause (c) of Article 102 TFEU include the same elements. In particular, they refer to “equivalent transactions”: in which sense should we consider two transactions as equivalent? A decision by the High Authority of the ECSC on then Article 60 is helpful as it expands the interpretation of the locution (O’Donoghue & Padilla, 2013). The Authority remarks that “*transactions are comparable if they are concluded with competing purchasers, involve the same or similar products and their other relevant commercial features do not essentially differ*”.⁴²

Therefore, in order to get a full understanding of the meaning of the provision, several factors should be analysed, such as the cost of supply and the nature of the product (Whish & Bailey, 2012). First and foremost, we could say that differences in the cost of the sale could render such two transactions non-equivalent. However, case law shows that identical supply costs do not entail equivalence of transactions (Van Bael & Bellis, 2009). Another argument could be that the moment in which the transaction is completed (*i.e.* when the good is sold) is as much critical as the “cost argument”, because it implies that two transactions purchased in different moments are non-equivalent. Lastly, things get more complicated when differences in the situation of the buyer come into play: should we include them in the assessment of the non-equivalence of two transactions? Unfortunately, the Commission does not provide any further clarification on the interpretation of the provision. Furthermore, whereas Article 102 TFEU refers to a different treatment of similar transactions, the ECJ has extended the notion of abuse in the opposite situation where similar conditions apply to dissimilar transactions.⁴³

2.3.4. Dissimilar Conditions

According to the ECJ case-law, “dissimilar conditions” should include also “different prices” (Geradin & Petit, 2005). Therefore, “price” discrimination can be a good proxy of “dissimilar conditions” (Gerard, 2005). Indeed, *ceteris paribus*, price is the key variable that consumers usually take into account for their transactions. This element will be extensively treated in the following section on United Brands Case. O’Donoghue and Padilla (2013) point out that EU law considers

⁴² See Decision 30-53 of the High Authority, OJ (1953) L 6/111.

⁴³ See Case 13-63, *Italian Republic v Commission*, (1963) E.C.R.165.

as discriminatory both a similar treatment of different situations and a diverse treatment of similar situations, as the substance of discrimination lies into the different rate of return produced by the two transactions, regardless their similarity. They also highlight that the rule does not encompass the necessity for the dominant undertaking to be aware that it is applying diverse conditions. Such omission leads to several concerns, since a firm in dominant position should be know in advance whether its conduct is likely to be illegal (O'Donoghue & Padilla, 2013).

2.3.5. *Competitive Disadvantage*

The element of the provision that raised objections and doubts is the gist of the rule, *i.e.* the potential effects of price discrimination on competition. Indeed, Article 102 (c) TFEU requires that the discriminatory behaviour should place the “trading parties” at a “competitive disadvantage”. The formers are generally customers, whichever their nature. They could be either final consumers (so that price discrimination would affect consumers’ welfare) or intermediate undertakings (price discrimination would influence their profitability). As to the latter (*i.e.* “competitive advantage”), it is not clear what it stood for in the lawmaker’s vision. Broadly speaking, it could mean that, in order to constitute an abuse, the application of dissimilar conditions should “harm competition”. The rule might thus imply that customers should compete against each other in a certain relevant market: the Commission and the EU courts argue that competition between customers should occur in cases where “*the same level of trade in the same relevant product and geographic market*” is attested (O'Donoghue & Padilla, 2013).

Furthermore, despite the *per se* significance of the wording, case law has had different interpretations on its relevance as an essential requirement. For instance, *Corsica Ferries Case*⁴⁴ lacks of any analysis about the potential competitive disadvantages (Van Bael & Bellis, 2009). In *Irish Sugar*⁴⁵, instead, such element is definitively taken for granted. Finally, in *British Airways v. Commission*, the Court argued that there should be evidence that discrimination “*tends to distort that competitive relationship, in other words to hinder the competitive position of some of the business partners of that undertaking in relation to others*”⁴⁶. Hence, according to case law it is sufficient to demonstrate that the undertaking “tends” to place its trading parties at a competitive disadvantage, without providing any actual proof.

⁴⁴ See Case C-18/93, *Corsica Ferries*, (1994) E.C.R. I-1783.

⁴⁵ See Case T-228/97, *Irish Sugar v. Commission*, (1999) E.C.R. II-2969 5 (1999) CMLR 1300.

⁴⁶ See Case C-95/04 P, *British Airways v. Commission*, (2007) E.C.R. I-2331, para. 144.

Besides, a further argument has been raised about the need for the parties (either favoured or disfavoured) to compete each other. Waelbroeck (1995), for instance, stresses the idea that customers not competing each other, but treated differently, are irrelevant from a competition law perspective, consequently also under Article 102 (c) TFEU. Joliet (1970) stated that imposing price differences upon some clients is relevant by law only if there is a competitive disadvantage. Geradin and Petit (2005) argue that the purpose of the provision is clearly the prevention of “secondary line injury”⁴⁷, i.e. that discriminatory behaviour affecting the competitiveness of downstream customers.

O'Donoghue and Padilla (2013) extrapolate from the case law several well-established circumstances where price discrimination is detrimental under Article 102(c) TFEU:

- a. Discrimination by a vertically integrated dominant undertaking;
- b. “Pure” secondary-line discrimination, where the dominant undertaking treats in a different way non-associated downstream consumers;
- c. Most favoured customer clause;
- d. Discriminatory supply in times of shortage;
- e. Discrimination aimed at partitioning national markets;
- f. Discrimination based on nationality or residence.

In the next section, we will examine in depth the categories e. and f., interchangeably referring to them as “geographic price discrimination”.

2.4. *Geographic Price Discrimination: case studies*

The Commission condemns pricing practices undertaken by dominant firms that harm the Single Market. Charging different prices in different Member States might undermine the goal of market integration, going beyond competition law disputes. According to Furse (2004, p. 320) the main goal accomplished in “*creating the single market has resulted in greater focus being placed upon price discrimination than would likely be the case in purely national jurisdictions*”. The safeguard of market integration and hence the prohibition of any discrimination based on nationality is a sensitive theme that lies at the heart of the EU.

⁴⁷ Rather than the punishment of those behaviours that have exclusionary effects on competitors (primary line injury). Nevertheless, scholars emphasize how over time both the Commission and the EU Courts have misinterpreted Article 102(c), applying it in cases where price discrimination was directed to harm undertaking's competitors instead of downstream consumers (Geradin & Petit, 2005 etc.). These cases should have been treated under Article 102(b), whose rationale is the safeguard of dominant firm's competitors.

Moreover, the application of different prices to homogenous products is not *per se* prohibited. Practices aimed at segmenting the European common market have been often carried out for the purposes of preventing arbitrage (low-price buyers reselling to high-price buyers) and parallel trade. According to Siragusa (2008), authorities should be concerned by geographic price discrimination only in so far as the dominant undertaking is involved in practices aimed at reducing arbitrage. Those types of anticompetitive habits have been traditionally solved under Article 101 TFEU and the rules on vertical agreements⁴⁸. The single event that a firm in dominant position differentiates its trading parties (located in different Member States), applying dissimilar conditions to equivalent transactions, does not constitute an abuse under Article 102(c), if it does not pose a threat to competition. Scholars support the resolution of these cases under the free movement rules of the TFEU⁴⁹ and encourage the assumption of “*harm to competition as a consequence of price discrimination*” only in cases where State-related entities apply dissimilar conditions to trading parties from diverse Member States (Gerard, 2005).

Over time, the Commission and the EU Courts have had to deal with many cases of price discrimination based on nationality, whose effects were more protectionist than anticompetitive. Article 102(c) TFEU has been enforced against practices that involved market segmentation effects. Despite the convenience of using Article 102(c) from an enforcement perspective, such provision is not the suitable legal basis to handle these cases because, as stated in ECJ judgment on United Brands, “*the responsibility for establishing the single [...] market does not lie with [private parties]*”.⁵⁰ Indeed, ECJ’s case law has demonstrated that only State-owned subjects (not private firms) have been condemned for protectionist price discrimination (Gerard, 2005). In the transport sector, most of the abuses judged under Article 102(c) fall into the “bucket” of price discrimination. For instance, the case *Corsica Ferries*⁵¹ involved the *Corpo dei Piloti del Porto di Genova* that facilitated Italian flag ships rather than those of other nationalities. Despite the resolution under Article 102(c), these cases did not have any competition effects but they might be considered protectionists by reducing the cost of domestic operators against the port’s profitability.

Part of the literature about the legal concept of price discrimination deals with discriminatory practices resulting in a partitioning of the common market. We will now examine two of the best-known cases, one pertaining the offline market and Article 102 (United Brands) and one regarding

⁴⁸ See Commission Regulation (EU) No 330/2010 of 20 April 2010 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of vertical agreements and concerted practices.

⁴⁹ See Articles 26 and 28-37 of the TFEU.

⁵⁰ See Case 27/76, *United Brands v. Commission*, (1978) E.C.R. 207, para. 227.

⁵¹ See Case C-18/93, *Corsica Ferries*, (1994) E.C.R. I-1783.

the online market and Article 101 (iTunes).

2.4.1. *United Brands Company Case*

The United Brands Company (hereinafter “UBC”) was established in 1970 by the merger of United Fruit Company and American Seal-Kap Corporation. It operated in the EU through United Brands Continental BV. In 1974, the company held 35% of the global exports of bananas, sold under the well-known brand “*Chiquita*”. The case arose when the Commission found that the company was charging different prices to its wholesalers across EU Member States. The charges of price discrimination focused on the system the company used to calculate the prices. UBC was setting different prices according to the retail market where bananas were supposed to be sold (market of destination). Commission accused UBC of abuse of dominant position. In fact, UBC used to refuse to sell its products to an old client for a period of two years, prohibit its distributors from reselling its green bananas⁵² and sell its bananas at unreasonable high prices in the Netherlands, Germany, Belgium, Denmark and Luxembourg. The ECJ listed several characteristics that made the company a dominant player in the market. At the time of the judgment, the firm enjoyed 45% market share in the relevant geographic market⁵³, had a wide variety of sources of supply, had homogeneous quality of products, had efficient transport/logistic and sale/advertisement structure and had technical expertise and product differentiation.

Moreover, barriers to entry prevented newcomers from approaching the market. The Court stated also that discrimination itself was a proof of dominant position. Commission’s Legal Advisor, John Temple Lang, pointed out that this argument was the most decisive in the anticipation of future decisions, because in this way the Court was acknowledging that behaviour itself could be evidence of dominant position.⁵⁴ ECJ’s judgment was in fact based on the ascertainment that price discrimination had been a regular and successful practice for many years, therefore it was proof of dominant position.

The United Brands case is the first example in the history of the EU in which a EU institution has given a clear interpretation of price discrimination in the Common Market. It is considered a cornerstone of EU case law for many reasons. First and foremost, it was the first time the Court

⁵² This condition has been known as the “green banana clause”.

⁵³ See Case 27/76, *United Brands v. Commission*, (1978) E.C.R. 207, para. 2:

“The Commission has taken the Federal Republic of Germany , Denmark , Ireland , the Netherlands and the BLEU as the geographic market and it is in respect of this market that it is necessary to consider whether UBC has the power to hinder effective competition”.

⁵⁴ See address by John Temple Lang, Fordham Corporate Law Institute (Nov. 14 1978).

deemed a firm holding “only” 45% of the market share as dominant in a market. Previously, the concept of dominance was applied only to companies with a market share larger than 70%.

Moreover, from the judgment ahead, companies operating in the Single Market have had to comply with a new standard of “dominance” set by the ECJ, adapting their strategies to the (new) provisions against discrimination.

The decision is also innovative in terms of more inclusive definitions of “abuse” and “competitive injury”. The former entails that price differentials justified by differences in costs should not be considered as unlawful. The latter is important to the extent that price discrimination has to produce market partitioning along national borders in order to conclude that it constitutes harm to competition. With the prohibition of such business practice, the lawmaker wanted to protect trade between member states.

Nevertheless, in its decision, ECJ aimed at banning UBC’s price discrimination only after the verification of the absence of cost differentials in the provision of the service. Bananas were unshipped in two harbours (Rotterdam and Bremerhaven) with roughly similar unshipping costs; transportation costs were up to the wholesalers. Thus, differences in prices were not due to the cost of doing business.

In its defence strategy, United Brands claimed to have fixed prices according to national markets’ consumption of bananas. In the legal framework, companies in dominant position are entitled to take “what the market can bear”, as it falls under demand-supply interaction. However, the Court refused to consider profit maximization as a justification for discriminatory pricing. Fitzpatrick (1979, p. 345) argued that *“this rejection contrasted sharply with the court willingness to hear cost and risk justifications”*. In addition, in the aforementioned judgment the Court stated that UBC’s behaviour *may* have placed some clients at a competitive disadvantage, while Article 102(c) establishes that this requirement is compulsory, *i.e.* clients *must* be at a competitive advantage to deem price discrimination as abusive.

An element mentioned in Article 102(c) seems to be missing in the decision. The Court did not investigate the effects of price discrimination on cross-border trade. It seems to have taken for granted that UBC’s abuse could have negative implications of imports and exports between European countries. Besides, it assumed competitive injury at the buyer level, meaning that there is competitive disadvantage only if the buyers charged lower prices were able to threaten those charged higher prices, thus becoming their competitors and stealing their customers. The Court was manifestly willing to demonstrate that, without United Brands impositions, customers could

compete, i.e. competitive disadvantage constituted a foreclosure from a market.

To conclude, the ultimate goal of the judgment does not lie as much in the economic justification of competitive injury, but rather in the Court's willingness to safeguard the free movement of goods in the Internal Market.⁵⁵ According to Fitzpatrick (1979), this decision would rather support the idea that in the EU, national borders should not constitute in any way barriers to trade.

2.4.2. *The iTunes Case*

In the case law about geographic discrimination, the iTunes case is definitely as relevant as controversial.

In 2004 “Which?”, a consumer protection association, reported to the European Commission an alleged infringement by iTunes, Apple’s music platform, in the United Kingdom (UK). Apparently, iTunes was charging higher prices to UK citizens to download music compared to other Member States. A track downloaded in the UK costed £0.79 (€1.05), whereas in the rest of Europe €0.99, thus resulting in a price differential of around 10%. On March 2007, the Commission sent a Statement of Objection to the firm and the major record companies (BMG - Sony), EMI Music Ltd, Universal and Warner Music Group). In the document, the Commission claimed that the platform was setting access restrictions on its customers, preventing them from downloading music from country-specific versions of the iTunes Store. The company was indeed forcing clients to buy only in their country of residence, checking their credit card details⁵⁶. If the billing address had been issued in the UK, the system would have automatically recognized that customer as a UK citizen, forcing him to buy from the UK store. This involved that Member States had different baskets of music available and individuals were charged different prices. The Commission supposed that such discrimination was the result of agreements between iTunes and the majors directed to territorial restriction of sales, which was in breach of Article 101. In his analysis on the case, Siragusa (2008, p. 102) argues that “this case breaks new ground in attempting to transpose to on-line distribution legal principles on cross-border trade that were developed for

⁵⁵ See Articles 26 and 28-37 of the Treaty on the Functioning of the European Union (TFEU).

⁵⁶ This is an on-going practice, as shown on the updated version of iTunes website. When a customer wants to change his iTunes Store country, he needs to update his “billing address” to one in the new country. For instance, only German credit cards can make purchases on iTunes Germany.

See: <https://support.apple.com/en-us/HT201389>

physical distribution”.

We might identify some critical points in the case at hand that are helpful for our analysis. First, in the Commission’s view, contracts between iTunes and the majors included terms about territorial restrictions, which resulted in (i) isolation of national markets and (ii) constraints in the catalogue of content accessible by consumers in the downstream market. These terms allegedly obliged iTunes to sell music on a country basis and by doing so, the platform used to control user’s credit card billing address. Contracts also included clauses imposing the clusters of customers allowed to buy each song, which was sold only in country-specific online stores.

As for the effects of this practice on the user’s experience, Siragusa (2008) mentions four main effects. Firstly, if iTunes does not have a local store in a specific country, then customers of that country cannot buy a digital item anywhere. Secondly, even if iTunes has a local store in a country, customers in that country are only able to buy music available in their country. For example, a UK customer interested in Italian regional music cannot purchase it if it is not available on the UK iTunes store. Thirdly, even when a customer is allowed to download that track (*i.e.* available on his local iTunes Store) he will be likely to have to pay a different price according to the agreements stipulated by Apple and the majors. Lastly, as iTunes checks which local online store a consumer belongs to through his credit card address, if he owns a credit card from another country but lives in a distinct Member State, he will not be allowed to download on that iTunes Store.

Furthermore, contracts entailed that majors, acting as suppliers, charged different royalties to the same company (Apple) imposing a discrimination per-country without any cost reason. In a press release, Apple itself provided the following justification: “*Apple currently must pay some record labels more to distribute their music in the UK than it pays them to distribute the same music elsewhere in Europe*”.⁵⁷ Such conclusions involve that these contractual terms prevented cross-border active and passive sales, leading to a partitioning of national markets, affecting competition hence violating Article 101(1).

However, it would appear that other arguments persuaded the Commission not to dig deeper, as the case has been closed with commitments without any fine neither to the US corporation nor to the major record labels. Allegedly, in the Commission’s view, if such restrictions are aimed at

⁵⁷ See Apple Press Release, *Apple to Standardize iTunes Music Process Throughout Europe*. (Jan. 9 2008).

Available at: <https://www.apple.com/pr/library/2008/01/09Apple-to-Standardize-iTunes-Music-Prices-Throughout-Europe.html>

the safeguard of national intellectual property rights, they are not in breach of any competition rule, as far as they are settled to guarantee a fair remuneration for downloaded music. In this case, on one hand, copyright law prevails over competition law. Nevertheless, if majors hold rights across all Member States, it is not conceivable to conclude that the pretext of a “fair remuneration” of royalties authorizes them to charge different prices according to the geographic features of the markets. On the other hand, the Commission’s approach would suggest that the distribution of online content should be treated in the same way as the sale of physical goods and not as the distribution of intellectual property.

The investigation has demonstrated the absence of any agreements on prices between record labels and Apple, which is the only entity in charge of pricing decisions. Indeed, after a discussion between the then Commissioner for Competition Neelie Kroes and the CEO of Apple, the company agreed to uniform its prices. The Commission welcomed Apple’s commitment and the Commissioner expressed satisfaction for a solution that “allow[s] consumers to benefit from a truly Single Market for music downloads”.⁵⁸ In its press release, the US corporation stated “*Apple will reconsider its continuing relationship in the UK with any record label that does not lower its wholesale prices in the UK to the pan-European level within six months*”.⁵⁹

Such resolution raises some doubts on the effectiveness of the Commission’s decision to build the case under Article 101 instead of Article 102. Since the investigation did not demonstrate the existence of any agreement between the parties, it is even more controversial the fact that the authority did not dig deeper on an alleged abuse of dominant position by Apple. It must be stressed that at the time of the case iTunes was likely the main player on the online music distribution market, enjoying a market share of 64% (Farrand, 2014). Anyway, the main criticism relates to the ability of the majors to “charge territorially differentiated royalties for on-line licensing of nationally defined intellectual property rights and their ability to exploit such rights selectively within the EEA” (Siragusa, 2008, p. 104).

iTunes case is fundamental to understand the general EU strategy on the online music market, that aims at the establishment of a single system of licenses for music rights, with the recognition of the right holder’s freedom to fairly remunerate national copyrights.

⁵⁸ See European Commission Press Release, *Antitrust: European Commission welcomes Apple’s announcement to equalise prices for music downloads from iTunes in Europe*, (Jan. 9 2008).

Available at: http://europa.eu/rapid/press-release_IP-08-22_en.htm

⁵⁹ See Apple Press Release, *supra* note 49.

2.4.3. The “technological banana clause”

Taking for granted that neither the detention nor the exercise of intellectual property rights are *per se* an abuse of dominant position⁶⁰ under Article 102 TFEU, the ECJ case law distinguishes between holding intellectual property rights and the abusive exercise of them. We must highlight that intellectual property rights are by nature enclosed within national territories and therefore might represent a harm to cross-border trade and so a threat to the Single Market. Nevertheless, in several decisions⁶¹, the Commission pointed out that the exhaustion doctrine⁶² contributes to alleviate territorial exclusivity. Indeed, as stressed by the ECJ “*the purpose of the exhaustion of rights’ rule is to prevent owners of [intellectual property rights] from being allowed to partition national markets and thus facilitate the maintenance of price differences which may exist between Member States*”.⁶³ In addition, the case law wishes for the balance between one of the four fundamental freedoms (free movement of goods) and the safeguard of the licit use of intellectual property rights. As a consequence, “[t]he Community system of competition does not allow an improper use of rights under national copyright laws which frustrates Community competition law”.⁶⁴ The exercise of intellectual property rights is incompatible with Article 101 and 102 when it is used as a means of artificial partitioning of the markets along national borders.

Comparing iTunes case and United Brands case, we might draw similar conclusions. Assuming that iTunes has a dominant position, we could argue that a dominant undertaking might charge different prices in different Member States but it is not allowed to keep price differences by artificially partitioning the market. Scholars tend to agree that such cases have to be analysed through a case-by-case approach (Gérardin & Petit, 2005). Market segmentation, according to clause (c) of Article 102 of the Treaty, is harmful only when it places consumers at a competitive disadvantage on the basis of their location/nationality. In particular, in the iTunes case, geographic price discrimination was feasible thanks to “facilitating practices” such as the use of credit cards details. In fact, the billing address can be deemed as a “technological green banana clause” (Siragusa, 2008, p. 117) to the extent that it eliminates any possibility of arbitrage.

⁶⁰ See Cases C-241/91 P and C-24291 P, *Case Magill*, (1995) E.C.R. I-743.

⁶¹ See Case 78/70, *Case Deutsche Grammophon*, (1971) E.C.R. 487.

⁶² “The owner of an intellectual property right cannot invoke his right to prevent the import of products which have been sold in another EEA Member State, directly or, with his prior consent, thorough an affiliated company or a licensee” (Siragusa, 2008, p. 111-112). See *Case Deutsche Grammophon* *supra* note 53.

⁶³ See Case C-337/95, *Case Parfums Christian Dior* (1997) E.C.R.I-6013.

⁶⁴ See Cases IV/30.979 and 31.349, *Case Decca Navigator System*, (1988) O.J. L 43/27.

Among the legal arguments provided by the Commission in the decision to close the procedures against iTunes, there is the absence of any agreement on price fixing with the major labels. Therefore, we might infer that price discrimination was merely a unilateral choice made by Apple. Majors themselves stated that they did not ask iTunes to sell content per country through distinct online stores. They only required iTunes to control credit cards in order to monitor where a certain download was made and guarantee that content was not sold outside the territory for which licenses were granted. If so, geographic price discrimination would not be justified by any cost differentials and would just be related to company's forecasts about consumers' reservation price and the wholesale price set by the majors.

Finally, assuming the existence of a widespread rule about non-discrimination, how shall we calculate appropriate remedies? Is forcing companies (daily engaged in price negotiations with trade parties) to charge uniform prices thereby price competition is compromised fair?

In order to answer this question, we could raise two types of arguments. First, from an economic perspective, although the purpose of both Article 101 and Article 102 TFEU is the safeguard of competition, it has been demonstrated that banning price competition may have detrimental effects on competitive processes. Imposing uniform pricing could facilitate collusion between competitors and enhance cartels to fix the price (Posner, 2001). Furthermore, it might reduce competition discouraging dominant player's competitors from attacking it and could have an effect on the level of prices, as if a supplier cannot discriminate, then buyers cannot negotiate for a better price because he will be less inclined to discounts (Gerard, 2005).

Lastly, switching to the original ideology behind the establishment of the Single Market, we could raise objections to alleged fairness infringements realized by price discriminating. Gerard (2005, p. 125) argues that "competition is not about fairness or equality [...]. Prohibiting the application of different prices to similar transactions with trading parties in the absence of a demonstrated harm to the competitive process entails, indeed, a risk that pro-competitive effects be duly constrained".

3. Geo-blocking in the Single Market

In this section, we will investigate the technological barriers faced by users from different points of view. First, we analyse geo-blocking in the context of the EU Digital Single Market, highlighting its role in the shortage of EU cross-border access to digital content. Then, we provide a methodological framework on the various aspects of geo-blocking. Finally, we describe the topic from a legal and policy perspective.

3.1. Free movement of goods and services in the digital economy

European national borders still shape the geographic dimension of those markets for which linguistic, historical and cultural factors are relevant. Nevertheless, from its very beginning, the main goal of the EU has been the creation of a Single Market, where goods, services, people and capital could freely circulate without any barriers. The achievement of such goal faces obstacles in both the traditional offline markets and in the fast-growing online markets as demonstrated by research studies. Although the overall EU level of online purchases is steadily growing with a rate of 3% per year and 53% of individuals that purchased online in 2015,⁶⁵ the EU still faces a large fragmentation in online purchases across Member States (ranging from the 87% of British buyers to the 18% of Romanian buyers). In addition, cross-border online shopping is still quite low.⁶⁶ About 88% of shoppers said they made online purchases from websites of their own country in the previous year, whereas only 30% declared to have bought from sellers located in a different Member State. Among the reasons for shopping abroad, respondents mentioned price competitiveness and a wider offer of products⁶⁷.

However, factors such as linguistic barriers, cultural biases and regional proximity strongly affect consumers' choices, as demonstrated by several studies (Gomez, Martens, & Turlea, 2014; Hortaçsu, F., & Douglas, 2009). Such fragmentation in the Single Market is even more common in case of cultural digital goods, such as music, movies and e-books.

3.2. The relevance of digital content market

The Internet influence in EU citizens' life is growing faster and faster. About 70% of the population living in the EU surfs the Web every day (90% of them through their personal computer, 73%

⁶⁵ This result overtakes the Digital Agenda target of half of the population to shop online by 2015. Data Eurostat, "E-commerce statistics for individuals", (Dec. 2015).

Available at: http://ec.europa.eu/eurostat/statistics-explained/index.php/E-commerce_statistics_for_individuals

⁶⁶ See *supra* note 66.

⁶⁷ See Ecommerce Europe, "European B2C E-commerce Report 2015", (Jun. 2015).

through mobile devices).⁶⁸ The size of online digital content markets is increasing exponentially across the Union. The digital content sector accounts for one third of the total e-commerce revenues, proving to be its biggest division. Music and audio-visual content – such as movies and TV series – are the most widespread kind of downloaded/played content by EU users (about 60%) and figures tend to increase among young respondents, while lower percentages concern e-books.

However, several restraints still threaten the effective fulfilment of a full-functioning digital economy. An interesting result from a recent Eurobarometer report⁶⁹ suggests that music and audio-visuals, although more popular, are more likely to be downloaded for free than e-books, which could allude to the fact that for those particular contents users resort to illegal markets. For our purposes, we will omit any references to the weight of illegal markets. Our analysis will not take into account the contribution of grey economy and will focus on the “endogenous” barriers that can explain some of the criticisms belonging to the digital economy.

3.3. Cross-border access to digital contents

The Internal Market still does not allow uniform access to digital content from all the Member States. In 2014, 30% of European citizens accessed audio-visual content and music via subscriptions or individual transactions online, but only one third of them were able to find the content they wanted. The percentage of citizens accessing online contents from one country to another is increasing, but it is still small. So far, 8% of the EU population has accessed to cross-border digital content websites (these figures double if attributed to young respondents) and more than half of them (57%) say they have encountered obstacles when trying to access digital content meant for users in other countries. About a quarter of EU citizens say that they had limited access to the content, whereas 16% of them are redirected to their country’s version. In addition, when users cannot find the digital content they are looking for in their home country, they bypass such barriers through systems such as VPNs (around 22%). The use of such methods is more popular among young respondents.

Anyway, the shortage of cross-border access to online content is due to several factors. First, movies, music and other types of digital goods are not available in all the EU Member States. Around 53% of individuals mention “non-availability in their home country” among the reasons why they look for content outside their territory. Other causes are the pursuit of a wider choice, higher quality of service and lower prices for the same type of good. We could consider the second

⁶⁸ Flash Eurobarometer 411, “*Cross-border access to online content*”, August 2015.

⁶⁹ See *supra* note 69.

cause of scarcity as a “lack of interest”. From the above-mentioned Eurobarometer survey, it might be inferred that currently few Europeans are not curious about content available abroad both because they have sufficient choice in their country and because linguistic barriers across Member States still count as a crucial point.

Although audio-visual contents are appealing, many obstacles prevent their cross-border circulation, imposing restrictions and discriminating according to nationality or the country of residence. Such practices seem to be against the principles of the Single Market and contribute to EU backwardness in the digital economy field. Indeed, they boost geographic fragmentation and have long-run effects on the population’s social/cultural cohesion. Resulting in higher prices and limited variety of content, these measures weaken confidence in the common market.

3.4. Definition of geo-blocking

According to the European Commission⁷⁰, “geo-blocking refers to practices used for commercial reasons, when online sellers either deny consumers access to a website based on their location, or re-route them to a local store with different prices”. Therefore, through geo-blocking, companies ban the access to their webpage if consumers are from other Member States or send them to the local version of the site. Consumers are thus segmented on the basis of their location, which can be identified through several means (such as the IP address, the address of the credit card or the country of residence). As a consequence, these measures prevent individuals from having access to pricing information and obtain the best offer across the Union. Besides, geo-blocking can affect the portability of contents. Often users face problems when abroad, because they are not able to use services bought in their country of residence. For instance, pay-tv subscriptions are particularly involved in such issues.

Price discrimination based on location is attested in 75% of the complaints concerning cross-border sales collected by the European Consumer Centres Network (ECC-Net).⁷¹ The following cases fall under the definition of geo-blocking given by the EC⁷²:

- i. Denied/restricted access to the website
- ii. Rerouting to another service provider (e.g. national version of the website)
- iii. Denied delivery of the service/product
- iv. Restricted delivery of the service/product based on user’s location/nationality
- v. Refusal of payment based on user’s location/nationality

⁷⁰ See <https://ec.europa.eu/digital-agenda/en/glossary/#geoblocking>

⁷¹ See http://europa.eu/rapid/press-release_IP-13-1191_en.htm

⁷² See <https://ec.europa.eu/digital-agenda/en/geo-blocking-digital-single-market>

- vi. Different purchasing conditions based on user's location/nationality applied to equivalent services/products (i.e. geo-filtering).

As for digital content, Borghi, Maggiolino *et al.* (2012) provide a categorization of the technological restrictions used by online distributors. For each type of technical restriction (namely software, hardware and digital rights-related systems), the authors correlate the pre-chosen copyright regime with the possibility to upload.

In the next paragraphs, we propose a categorization of geo-localized restrictions based on a personal analysis of the tools through which firms engage in geo-blocking. Due to the peculiarities of the categories, when it is needed, we treat separately physical goods (clothing items, consumer electronics, etc.) and digital content (movies, music, TV series, etc.).

3.5. Types of geo-blocking

Firms engaged in building barriers based on location can generally affect user's experience enforcing three types of measures:

1. Blocking measures. Firms obstacle users' access to content across borders preventing them from entering their websites. In certain cases, especially for digital goods, they deny either the new subscription or the sign-up of their content.
2. Rerouting measures. A very spread practice used by platforms is the automatic redirection to their national websites. Rerouting can occur at a first stage, when customers try to access to the page, at the moment of choosing the delivery address or even after typing payment information. According to the 2015 DSM survey,⁷³ the majority of respondents (59%) were redirected when entering the delivery address, while 34% of them experienced it directly when accessing the foreign version of the site. Lastly, only 7% were rerouted after entering payment details.
3. Restrictive measures. In most of the cases, the access to the online platform is allowed, but retailers restrict the possibility to complete the purchase or impose different conditions on the basis of nationality, country of residence and so on.

⁷³See Report Gfk, *Provision of two online consumer surveys as support and evidence base to a Commission study: Identifying the main cross-border obstacles to the Digital Single Market and where they matter most*. (Sept. 2015). Brussels. Available at: http://ec.europa.eu/consumers/consumer_evidence/market_studies/obstacles_dsm/docs/21.09_dsm_final_report.pdf

3.6. Technical means of geo-blocking

Technology is the main tool used by online platforms to erect barriers based on location. They might rely on third providers specialized in implementing such systems or otherwise they might choose to put in place restrictions in-house. We might distinguish three categories of technical tools usually employed to geographically discriminate users.

1) IP address-based

- (i) Use of the IP address⁷⁴ to get information about user's location.
- (ii) Ban on blacklisted IP addresses⁷⁵ to prevent access to content through VPN⁷⁶ or smart DNS⁷⁷ that can camouflage the user's location.
- (iii) Request for a specific DNS server to access the content/website.

2) Payment system-based

- (i) Use of the credit card billing address to tackle user's location.
- (ii) Request to customers to fill in specific forms with credit card information that do not exist in their home country payment method – for instance, at the moment of payment, foreign customers might be required to type additional compulsory information such as “county of bank account” that are absent in his/her card details.
- (iii) Use of country-specific payment methods.

3) Personal information-based

- (i) Request for customer's country of residence at the moment of subscription/sign-up/payment/delivery.
- (ii) Use of customer's nationality.
- (iii) Use of the language chosen by the customer to infer his/her location.

⁷⁴ The IP (Internet Protocol) address is a unique numerical code that identifies each computer. It enables many of the basic internet functions, communicating information about device's location.

⁷⁵ Blacklisted IP addresses are lists of IP addresses that companies deem as harmful or spam.

⁷⁶ A VPN (Virtual Private Network) uses a public network, the Internet, to connect to a private network and transport data. It encrypts personal data and allows consumers to browse anonymously.

⁷⁷ A smart DNS (Domain Name System) directs clients to a proxy server, hiding computer's IP address thus allowing access to websites that restrict content availability according to user's location.

(iv) Use of the phone number information to detect user's location.

3.7. Levels of geo-blocking

Firms apply one or more of the measures described in the previous section to detect customers' location at different stages of the purchasing experience. For the sake of simplicity, we identify four usual stages which users get through when browsing an e-commerce or streaming platform. At each point, users might incur several obstacles (as shown in Table 1).

Table 1- Levels of geo-blocking

	1) Access	2) Choice	3) Purchase	4) After-sale
Goods	Access denied	Different interface	Refusal to accept payment	Refusal to provide customer service
	Re-routing	Different prices	Refusal to delivery	Refusal to provide additional services (fidelity cards, discounts)
Digital Content	Access denied		Refusal to accept payment	
	Re-routing	Different interface	Refusal to play content	Ban on playing content previously downloaded
	Restriction on take out a subscription ⁷⁸	Different catalogues	Refusal to stream content	
	Restriction on sign-up for an account ⁷⁹	Different prices	Refusal to download content	

- 1) Access: at a very first stage, users attempting to access the platform either could be prevented from entering or could be re-directed to the national version of the website. In the specific case of digital content, access may be allowed, but restrictive measures could

⁷⁸ Services based on subscription are services where users pay a periodical fee in order to access online content. Subscription can include the possibility to play/stream the content only online or both online and offline. For instance, Spotify offers a “basic” subscription where music can be streamed only with an internet connection and a “premium” version where tracks are stored on the app and content can be played also offline. In terms of price discrimination, such pricing strategy is known as “freemium” (see page 17).

⁷⁹ Services requiring to sign-up for an account can be transactional or advertising funded. The former applies to those services where customers fill in a format with their basic personal data such as name, e-mail and password and then buy and stream online each item they want (commonly known as pay per view system or PPV) or they pay and download each content which is then saved on the device (download to own). The latter are basically the traditional commercial broadcaster that offer online services and are mainly financed by advertisement.

impede either the subscription or the registration to the service. In this phase, the IP address-based measures are likely to be the technical tools used by firms.

- 2) Choice: once enabled the access to a foreign platform, at the moment of searching the desired product/content, users come upon differences in the interface of the website, a diverse catalogue of available items, and different prices. As for the interface, customers can face difference in the language, in the layout specifically designed for that country, in the advertising banners. Differences in the catalogue of content affect more the digital media market. For instance, movies and TV series are subjected to territorial exclusivities, so it is rare to find the same collection in many countries. Among the reasons that make platforms adopt a different catalogue in certain territories we might list the excessive cost of purchasing that content in that specific Member State, the non-availability of the content in that Member State, the non-availability of the dubbed/subtitled version of the content or an insufficient demand. Finally, difference in prices might be explained by differences in the tax regime of the Member States, in the competitive environment of that territory or in the demand (in terms of purchasing power or customers' preferences). It could also be due to the business's strategy to enter a new market or to agreement stipulated with suppliers. Finally, if an online retailer decides to sell through a third marketplace, it might be forced by such platform to sell at different prices. The technical means used at this stage are both IP address-based and personal information-based. In fact, when activating a subscription or signing-up for an account, users might be required to provide personal data such as their telephone number or nationality. Besides, the choice of platform language might change interface/catalogue/prices.
- 3) Purchase: most of the barriers based on location are erected at the moment of the purchase. As for goods, platforms obstacle the payment not accepting the type of credit card, denying the delivery of the good to certain addresses or even denying the provision of additional services provided to "local" customers such as discounts. Purchasing restrictions on digital content refer to the impossibility to pay, the refusal to stream/play a movie/song online or even to download them. In this phase, every category of technical means is likely to be used, above all the payment-based measures. Credit card billing address is very popular, but also customer's address is a critical variable.

- 4) After-sale: even the last stage of users' experience on online platforms can be affected by geo-localisation. Often online retailers, on the basis of the customer's country of residence, deny any post sale service, such as maintenance, client service, compensation or repair.

The after-sale restrictions on digital content deserve a detailed study and will be properly treated thereafter. Suffice here to remind those situations where a citizen purchases an audio-visual product in a country and then

- i. is not able to play such previously downloaded content in another territory,
- ii. the content is not available in another territory or
- iii. the subscriber is not able to access the content in another territory.

All these barriers on cross-borders availability of digital content strictly concern the political debate and could be ascribed to the existence of territorial restrictions in the audio-visual market.

Hypothesizing the plausible reasons behind the cross-borders non-availability of content, we could state that it could be due to cost-related causes. In fact, in order to make available in another Member State a certain content, firms have to comply with national consumers' protection laws and different taxation systems. They should bear the cost of adapting the content to other languages. Furthermore, these decisions imply also an adjustment in the business model or that there could be an insufficient demand for that product. Finally, we must stress the fact that in some cases cross-borders availability might entail big infrastructure costs in terms of broadband. The removal of territorial restrictions could have an influence on the price paid by the firms for content and thus on the price charged to final customers, on the broadness of the catalogue of content and, obviously, on the type of measures applied to geo-block.

3.8. Geo-blocking and non-discrimination

As stressed in section 3.4, geo-blocking is a tool used by firms to discriminate consumers, therefore it could be a threat to EU citizens and to the goal of market integration. We will look at its role in the Digital Single Market, analysing its harms and benefits.

Geo-blocking is interesting from a competition perspective because it is linked to the two main objectives that competition policy is entitled to achieve. The first one is the enhancement of economic efficiency to the safeguard of competitive markets. The second one is the pursuit of the single market as a condition to establish a competitive and functioning industry (Motta, 2004). The attitude of the Commission has been usually harsh toward firms that were hampering trade among Member States erecting artificial barriers, thus keeping relevant markets fragmented from a geographic point of view.

Nevertheless, in some circumstances, the rationale of single market tends to be in conflict with competition policy in terms of “maintenance” of competitive markets, as it may harm innovation of EU companies compared to non-EU companies. We will investigate the potential causes behind the deep concern of the Commission about geo-blocking and geographic price discrimination, by trying to examine the implications of territorial restrictions through case studies.

3.9. Geo-blocking as a means to prevent arbitrage

As described in Chapter 1,⁸⁰ for third degree price discrimination to be effective, firms must be able to prevent arbitrage, *i.e.* low value consumers reselling to high-value consumers. In traditional markets (offline markets) the condition of prevention of arbitrage is implemented in several ways, such as legal constraints, personalized products, thin markets and warranties. Online markets, as previously mentioned, are not so different since some of those barriers still persist and new ones arise. In fact, we could add to the aforementioned strategies a new one, which could generally be named “technological barriers” and include geo-blocking measures. In that sense, geo-blocking, by preventing consumers in one country from accessing or purchasing from websites in other countries, is a tool used by firms to limit arbitrage across countries⁸¹, engage in price discrimination and thus maximizing profits.

As for the effects of geo-blocking on welfare, considering that it constitutes a tool for price discrimination, we could state that, leading to different prices in different member states it has unclear effects on consumer welfare *a priori*. It may enhance consumer welfare in the sense that it allows firms both to supply additional customers and to make customers based in low income countries pay less and customers based in high-income countries more. Furthermore, boosting profits, it could enhance both innovation and variety of the offer. Prohibiting restrictions which foster price discrimination (such as geo-blocking), may lead to a price convergence but not necessarily to lower prices on average. Besides, under uniform prices firms may decide to abandon the low value market, as people could not afford products that are more expensive.

⁸⁰ See Chapter 1, paragraph 1.

⁸¹ This is a well-known practice used in the offline markets, where firms try to obstacle parallel imports (*i.e.* the practice of arbitrage between countries). See for instance Cases 56 and 58/64, *Establissemens Consten SA and Grundig-Verkaufs-Gmbh v. Commission*, (1966) E.C.R. 299. Grundig, a manufacturer of electronic consumer products, wished to enter French market. It made an agreement with Consten, giving it the territorial exclusivity to distribute its products. The ECJ held it was an unlawful agreement, since it prevented parallel imports restoring national divisions in trade within the Internal Market.

3.10. Geo-blocking as a result of vertical restraints

In the Commission's view⁸², the restrictions affecting online market result from contractual agreements between digital content owners and distributors⁸³, which fall within the scope of Article 101 TFEU. From a competition law perspective, such arrangements are known as vertical restraints.⁸⁴ In particular, as stressed in Chapter 2,⁸⁵ arrangements affecting trade among Member States that restrict competition are generally prohibited, except the ones whose economic benefits outweigh their anticompetitive consequences as provided for in Article 101(3).

The Commission's view on vertical restraints is guided by two provisions: Regulation No. 330/2010, commonly referred to as the Vertical Restraints Block Exemption Regulation (VRBER),⁸⁶ and the Commission's Guidelines on Vertical Restraints⁸⁷. The conditions under which a vertical agreement might enjoy the VRBER safe harbour according to Article 101(3) TFEU are that (i) the two parties do not hold a market share higher than 30%⁸⁸ (ii) and that no "hard-core" restrictions⁸⁹ must be included in the clauses of the agreement.

Among the "blacklisted" or "hard-core" restrictions, what is relevant to our purposes and to online markets are those described at clauses (b) and (c) of Article 4 of the VRBER, *i.e.*

- (i) restrictions on the territory and customer groups and
- (ii) restrictions on active or passive sales to end users by members of a selective distribution system.

⁸² See European Commission Fact Sheet, *Antitrust: Commission launches e-commerce sector inquiry*, (May 6 2015): "[T]here are [...] indications that undertakings active in e-commerce may restrict cross-border online trade within the EU by deliberately creating private – and in particular contractual – barriers".

Available at: http://europa.eu/rapid/press-release_IP-15-4921_en.htm

⁸³ We will use the words "distributor", "retailer" and "platform" as synonyms to refer to economic entities in charge of selling digital content to final consumers. Conversely, we will indifferently name "supplier", "content owner", "manufacturer" or "producer"

⁸⁴ In the wordings of the Block Exemption Regulation, vertical restraint is defined as "*a restriction of competition in a vertical agreement falling within the scope of Article 101(1) of the Treaty*". See Commission Regulation (EU) No. 330/2010 of 20 April 2010 on the application of Article 101 (3) of the Treaty on the Functioning of the European Union to categories of vertical agreements and concerted practices, (2010) OJ L102/1.

⁸⁵ See Chapter 2, paragraph 2.

⁸⁶ See Commission Regulation (EU) No. 330/2010 of 20 April 2010 on the application of Article 101 (3) of the Treaty on the Functioning of the European Union to categories of vertical agreements and concerted practices. (2010) OJ L102/1.

⁸⁷ See Commission Notice, *Guidelines on Vertical Restraints*, (2010) OJ C 130/1.

⁸⁸ See *supra* note 88, art. 3.

⁸⁹ See *supra* note 88, art. 4.

In fact, the concerns of the Commission about the potential competitive harms of geo-blocking originate from the fact that such barriers could be due to vertical restraints that prevent the passive sales.⁹⁰

In order to have a clear understanding of the Commission's approach to territorial restrictions in online markets, we must take into account the main legal basis. Besides the aforementioned clauses (b) and (c) of the VRBER, paragraph 52 of the Guidelines is fundamental because to some extent it refers to geo-blocking. It specifies "*in general, where a distributor uses a website to sell products that is considered a form of passive selling, since it is a reasonable way to allow customers to reach the distributor*".⁹¹ Therefore, if a customer browses on a website and this culminates in a sale, this is deemed as passive sale, since it is a way to allow users to reach the distributor. According to this interpretation, the mere fact of owning a website involves passive selling.

We find a hint on geo-blocking when the Commission lists examples of hard-core restrictions on passive sales, alluding to:

- (i) agreements that oblige the exclusive retailer to prevent users from other exclusive territories to access its website or to redirect them to other exclusive websites;
- (ii) agreements that oblige the distributor to verify through the payment system (e.g. credit card details) where the customer is located, thence to cancel the transactions that are not within the exclusive territory of the distributor.

We will now touch upon the relevant case law on the contractual restrictions on the online commerce, focusing on the issue of passive sales in the audio-visual sector, which certainly contributes to the debate on geo-blocking and might be a blueprint for the entire online distribution.

⁹⁰ The Commission in the *Guidelines on Vertical Restraints* gives the definition of passive sales:

"Passive sales mean responding to unsolicited requests from individual customers including delivery of goods or services to such customers. General advertising or promotion that reaches customers in other distributors' (exclusive) territories or customer groups but which is a reasonable way to reach customers outside those territories or customer groups, for instance to reach customers in one's own territory, are considered passive selling. General advertising or promotion is considered a reasonable way to reach such customers if it would be attractive for the buyer to undertake these investments also if they would not reach customers in other distributors' (exclusive) territories or customer groups". See *supra* note 88, par.51.

⁹¹ See *supra* note 88, par.52

3.10.1. From Murphy Judgment to the Pay TV case

The milestone of EU cases on cross-borders trade for digital content is the Murphy Judgment.⁹² In the case, contractual restrictions were inflicted on TV broadcasters that signed agreements with the Football Association Premier League (FAPL) about the broadcasting of live football matches in the UK for three years. Broadcasters obtained the exclusive right to broadcast under the condition of precluding subscribers the possibility to watch live matches outside the licensed territory (UK). In this way, broadcasters were enjoying *de facto* an absolute territorial protection. In detail, the contractual clauses envisaged encrypting the access to content from other member states and denying selling decoders if they were supposed to be used in other Member States, so customers were not able to watch the Premier League broadcasted to “foreign” broadcasters. In particular, some pubs in the UK started to import decoder cards from other Member States where subscriptions were cheaper.⁹³ The Judgment by the ECJ held that, by partitioning national markets, such restraints were unjustified. Indeed, such segmentation could “frustrate the Treaty’s objective of achieving the integration of those markets through the establishment of a single market”.⁹⁴ Hence, these contracts’ object was in breach of Article 101(1) TFEU.

ECJ Judgment did not result in the abolition of territorial licensing of audio-visual content but those contractual terms, which involved absolute territorial licensing. Therefore, FAPL was not forced to grant the broadcasting right to many broadcasters in the same territory (the ECJ did not want to eliminate territorial exclusivity), but could not perpetrate the limitation of cross-border trade of decoder cards from other Member States in order to block passive sales.

The Murphy Judgment has laid the foundations to a new logic towards cross-border online distribution. Such approach has been adopted in a recent on-going case on cross-border access to Pay TV content, involving Sky UK (the distributor) and the six majors US film studios (content owners).⁹⁵ Content owners usually license movies to a single distributor (Sky UK) in each country (territorial exclusivity). The Commission claims that these parties have stipulated bilateral agreements whose terms do not enable Sky UK to authorize the access to its contents from other

⁹² See Joined Cases C-403/08 and C-429/08, *Football Association Premier League Ltd and Others v. QC Leisure and Others and Karen Murphy v. Media Protection Services Ltd*, ECLI:EU:C:2011:631.

⁹³ In particular, the owner of a pub in Portsmouth, Ms Karen Murphy, imported a Greek satellite decoder card to show football matches.

⁹⁴ *Ibidem*, 139.

⁹⁵ See European Commission Press Release, *Antitrust: Commission sends Statement of Objections on cross-border provision of Pay-TV services available in UK and Ireland*, (Jul. 23 2015).

Available at: http://europa.eu/rapid/press-release_IP-15-5432_en.htm

Member States. In particular, the Commission's investigation of 2014⁹⁶ found out that contracts included clauses that required Sky to geo-filter access from other countries of the EU, thus preventing passive sales. The logic of the vertical restraints seems to be the same as the Murphy case. On one hand, the Commission accepts that content owners license the content on an exclusive territorial base – preventing *de facto* active sales – on the other, it conceives contractual terms aimed at preventing passive sales as a violation by object of Article 101(1) TFEU, as they grant absolute territorial exclusivity to distributors leading to a partition of the single market and hampering competition. Such a strong position (*i.e.* considering geo-blocking prohibited *per se*) raises some concerns in terms of plausible implications on other disciplines, which could require a case-by-case assessment.

As for the audio-visual market, the first relevant implication would affect the regulatory framework of copyright. Indeed, the elimination of geographical restriction, hence the possibility to sell to consumers located in different Member States, would entail a harmonization of copyright regimes, which are currently defined on a national basis.

A second consideration pertains the overall economic benefits of territoriality. A study published in 2014 by Charles River Associates for DG MARKT⁹⁷, demonstrates that territoriality might have positive effects on welfare and argues that the potential anti-competitive effects of geo-blocking might be counterbalanced by its benefits in terms of local supply to more countries, investment in innovative content and minimisation of transaction costs. Indeed, applying the economic thinking of paragraph 3.9 on geo-blocking as a means to prevent arbitrage in the audio-visual market, we observe that conclusions do not differ that much. Assuming the inexistence of clauses imposing ban on cross-border purchases, an individual in the high-income country (for instance Germany) signs up to a subscription in a low-income country (for instance Portugal), paying €30 instead of €50. Territorial exclusivity contributes to such price difference. Enhancing cross-border trade of audio-visual content would have the effect of encouraging content owners to engage in practices that keep profits stable. They might make prices converge, for example by increasing wholesale license prices in Portugal or they might erect alternative barriers by selling in Portugal only the Portuguese dubbed version of contents (*i.e.* preventing thus German customers to watch movies personalized for Portuguese market). They might even decide to revoke the distribution of content

⁹⁶ See European Commission Press Release, *Antitrust: Commission investigates restrictions affecting cross border provision of pay TV services*, (Jan. 13 2014).

Available at: http://europa.eu/rapid/press-release_IP-14-15_en.htm

⁹⁷ See Langus, G.; Neven, D.; Poukens, S. (2014). *Economic Analysis of the Territoriality of the Making Available Right in the EU*. Charles River Associates, Brussels.

in non-profitable markets. This outline suggests that the prohibition of cross-border price discrimination due to geo-blocking might eventually harm consumers. In particular, customers in low-income countries might be injured: they bear the risk of being excluded, because serving their market is no longer profitable and such risk increases when considering that countries have different tastes and a popular content in Germany might be a niche content in Portugal and *vice versa*.

In order to provide a practical evidence of the consequences of the prohibition of territorial restrictions, we could look at the backlashes of Murphy Judgment to evaluate which actions (in place of the prohibition of passive sales) the Football Association Premier League (FAPL) took after the Court's decision. On one hand, when granting licenses in the EU countries, the FAPL permitted the broadcast of football matches only with a commentary in the language of that Member State. Furthermore, licenses in the rest of EU were granted with a new clause that forced foreign distributors not to broadcast more than one live match on Saturday at 3pm, in compliance with a UK law that forbade broadcasting matches during the afternoon.⁹⁸

The aforementioned “unintended” consequences of the Murphy Judgment play up the importance of thinking back on the EU law concerning online markets.

3.11. The relevance of geo-blocking in the EU political agenda

On May 2015, the Commission adopted its strategy⁹⁹ to enhance the integration of EU digital market. One of the 10 key priorities of Juncker Commission is the establishment of a Digital Single Market (DSM), which “aims to open up digital opportunities for people and business and enhance Europe's position as a world leader in the digital economy”.¹⁰⁰ The DSM embraces the four fundamental freedoms at the foundation of the EU; it could ensure to all the citizens the same opportunities under fair competition, data protection and non-discrimination.¹⁰¹

The first pillar of the DSM (“Better access for consumers and businesses to online goods and services across Europe”) aims at removing the obstacles to cross-border online activities. In particular, the Commission has established to act through legislative initiatives by mid-2016 to eliminate unjustified geo-blocking measures that obstruct the development of the DSM. The

⁹⁸See Van Rompu B., *Premier League fans in Europe worse off after Murphy judgment*, Kluwer Competition Law Blog (May 6 2014). Available at: <http://kluwercompetitionlawblog.com/2014/05/06/premier-league-fans-in-europe-worse-off-after-murphy-judgment/>

⁹⁹ Digital Single Market Strategy, hereinafter DSMS.

¹⁰⁰See <https://ec.europa.eu/digital-agenda/en/digital-single-market>

¹⁰¹ According to the Commission, the economic return of the pursuit of a DSM could be €415 billion per year. *Ibidem*.

European Council in June 2015 addressed the urgent need to abolish geographic barriers and discriminatory behaviours based on users' location.¹⁰²

From September to December 2015, the Commission has undertaken a public consultation on geo-blocking, whose preliminary results¹⁰³ show that more than 80% of respondents have faced geo-blocking and agree that a legislative initiative for unjustified geo-blocking should be implemented.

3.11.1. The e-commerce sector inquiry

Part of the DSM strategy aims at understanding market dynamics and identifying potential competition concerns in relation to cross-border e-commerce. On May 6th 2015, the DG Competition launched a sector inquiry on e-commerce¹⁰⁴ with the purpose of investigating the dimension of barriers on the access to goods and services online. The sector inquiry¹⁰⁵ aims at reducing information asymmetries and having an understanding of the dynamics that are occurring in the EU e-commerce. Indeed, as previously outlined, e-commerce is growing, but cross-border trade level is low. In order to identify the existence of contractual restraints and geo-blocking practices, DG Competition has sent questionnaires to companies selling online in all Member States. Margrethe Vestager, the Commissioner in charge of Competition, has confirmed that geo-blocking is a crucial point of the sector inquiry and has announced the publication of an issues paper specifically on the topic of geo-blocking in March 2016.¹⁰⁶ Potentially, the results of the investigation might lead to a change of the main provisions related to online markets such as the VRBER and the Guidelines on Vertical restraints¹⁰⁷. Nevertheless, for the first results of the overall sector inquiry we have to wait until mid-2016, when a preliminary report will be published.

3.11.2. Possible legislative proposals

¹⁰² See European Council Meeting of 25/26 June 2015. *Conclusions*.

¹⁰³See Digital Agenda for Europe, *First brief results of the public consultation on Geo-blocking and other geographically based restrictions when shopping and accessing information in the EU*, (Jan. 27 2016).

Available at: <https://ec.europa.eu/digital-agenda/en/news/first-brief-results-public-consultation-geo-blocking-and-other-geographically-based>

¹⁰⁴ See European Commission Press Release, *Antitrust: Commission launches e-commerce sector inquiry*. (May 6 2015). Available at: http://europa.eu/rapid/press-release_IP-15-4921_en.htm

¹⁰⁵ Sector Inquiries are regulated by Article 17 of the Regulation 1/2003. See Council Regulation (EC) No. 1/2003 of 16 December 2002 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty, (2003) O.J.L 1.

¹⁰⁶ See Speech by Commissioner Margrethe Vestager, *Competition in a big data world*. (Jan. 17 2016). Available at: http://ec.europa.eu/commission/2014-2019/vestager/announcements/competition-big-data-world_en

¹⁰⁷ See Speech by Commissioner Margrethe Vestager, *Competition policy for the Digital Single Market: Focus on e-commerce*. (Mar. 26 2015). Available at: http://europa.eu/rapid/press-release_SPEECH-15-4704_en.htm

The DSMS' initiatives on regulating geo-blocking might affect also other policies, *inter alia* consumers' protection and copyright. As to consumer protection, according to the Commission, the relevant EU legislation that might change¹⁰⁸ in virtue of DSM includes the e-Commerce Directive (ECD)¹⁰⁹ and the Services Directive (SD)¹¹⁰. The ECD enunciates the country of origin principle for Internet sales. Online retailers are enabled to sell cross-border without asking permission to the Member State where the buyer is coming from. Nevertheless, the limit of the e-Commerce Directive is that it obstacles only barriers created by Member States and not by economic subjects.

The SD at Article 20(2) reads that Member States have to guarantee the non-discrimination of their customers by nationality or country of residence. Nevertheless, discrimination is allowed if retailers provide "objective criteria" (e.g. copyright constraints or high delivery costs). The limit of such provision is that it currently entails the use of arbitrary justifications of discrimination by firms, since there is no shared interpretation of what "objective criteria" might mean. So far, the enforcement of the SD has had limited success, meaning that at EU level (and not on Member State level) action is required to progress in the achievements in the Single Market objectives.

Finally, implications of tackling geo-blocking on Copyright are awaited in the forthcoming reform,¹¹¹ which should lead to a more uniform copyright system in all the Member States, easing the grant of cross-border licenses for digital content and the portability of subscriptions.

¹⁰⁸ See *supra* note.

¹⁰⁹ See Directive 2000/31/EC on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Directive on electronic commerce), (2000) O.J. L 178.

¹¹⁰ See Directive 2006/123/EC on services in the internal market, (2006) O.J. L 376.

¹¹¹ See European Commission, *Proposal for a regulation of the European Parliament and of the Council on ensuring the cross-border portability of online content services in the internal market*. (Dec. 9 2015).

4. Empirical Analysis

The decision of analysing geo-blocking and geographic price discrimination originates from an internship experience in the DSM Task Force of DG Competition in Brussels, where we took part in the e-commerce sector inquiry launched by the Commission. In Chapter 3, we have outlined that initiatives such as sector inquiries are conceived to get acquaintance of the dynamics occurring in the concerned markets, including the existence of barriers (such as geo-blocking) that lead to price discrimination.

The analysis aims at gaining a better understanding of the mechanisms through which geo-blocking by online platforms leads to price discrimination. The purpose is twofold.

On one hand, we provide for the first time a methodology to classify the means by which geo-blocking techniques are used by economic subjects at each point of users' experience on platforms. Such extensive analytical framework starts from the assumption that, in order to address effectively the issue of geographic price discrimination and identify the reasons behind restrictions, policy makers should shade the light on the “gears” of geo-blocking.

On the other hand, the study aims at testing the existence of price discrimination based on the geographic location by using a cloud software developed *ad hoc* to allow regulators (and consumers) to dig up discriminatory practices. In addition, the experiment helps to identify the components of the collected prices, contributing to assess whether these differentials should be attributed to firm's objective of profit maximization (as explained in Chapter 1) or to exogenous variables.

4.1. Evidence of geo-blocking on online platforms

In Chapter 3,¹¹² a classification of the existing geo-blocking measures built by e-commerce websites has been provided. In this section, we will apply the theorized analytical framework to the digital content online platforms, in order to facilitate the understanding of geographic restrictions.

In particular, we review the three digital music platforms of our empirical test on geographic price discrimination and several players in the audio-visual market. We searched through Hola's¹¹³ catalogue the most popular blocked websites visited by users. In the table below (Table 2) for each point of the purchasing experience, we make a list of the types of obstacles that platforms set up to circumscribe certain territories.

¹¹² See Chapter 3, paragraphs 3.4. – 3.7.

¹¹³ Hola is the VPN we used in our empirical research.

Table 2 - Levels of geo-blocking

Barriers	
Access	Denied
	 
	Re-routing
	
	Restriction on subscription/ sign-up
	
Choice	Different interface
	 
	Different catalogue
	 
	Different prices
	
Purchase	Refusal to accept payment
	
	Refusal to play/stream/download content
	 
After-sale	Ban on playing content previously downloaded
	

At a first stage, access to platforms could be denied, such as in the case of the radio streaming Pandora and the TV streaming Hulu, active only in the United States, that show a message to foreign customers warning that the service is not available in their country. It is likely that such websites identify the IP address of the device, as by VPN the access is allowed.

Amazon is the most significant case of re-routing. Its business model (*i.e.* its operation) envisages redirecting customers on the national versions of the website. Unlike its rivals, it has different domains¹¹⁴ in the EU: for instance, problems may occur when a German user tries to download music in the French Amazon's store. He/she will be redirected to *Amazon.de*. As outlined in the following sections, this is a convenient strategy to prevent customers from accessing to prices charged in others countries.

Netflix, the streaming subscription-based platform, impedes the subscription if its services are not available in a specific territory. The streaming platform is interesting in terms of the technical measures it uses to prevent the access to content. Recently, the platform switched from checking the IP address of the devices to banning blacklisted IP addresses used by VPN.¹¹⁵

The catalogue of contents differs substantially from country to country in almost all the platforms, both because of the territoriality of agreements in the audio-visual sector, and because of the influence of the local repertoires.

Finally, the most effective technical measures applied by platforms are the payment system-based restrictions. In particular, during our experiments, we found evidence of such barriers on Amazon and iTunes. The former requests the customer to fill in specific credit card information and admit only banks settled in that country. The latter uses the credit card billing address to identify user's location. Finally, Google Play Store does not require any specific payment method, but at the point of purchase it redirects the payment to the country-based page.

As regards to geo-blocking measures hiding different prices, we have carried out an experiment that uncovers these practices.

4.2. Experimental setting

Price discrimination practices in the e-commerce is particularly challenging to investigate: on the one side companies are not so keen to reveal internal information, on the other side keeping track of their behaviours is demanding, because online markets are more volatile by nature.

¹¹⁴ Amazon.com, Amazon.co.uk, Amazon.it, Amazon.fr, Amazon.de and Amazon.es.

See: <http://www.amazon.co.uk/gp/gateway-eu>

¹¹⁵ See <https://media.netflix.com/en/company-blog/evolving-proxy-detection-as-a-global-service>

4.2.1. Methodology and Data

Most of the recent empirical researches on price discrimination in e-commerce are conducted through “web scraping”, an Information Technology technique of data extraction from the web. Through instruments such as cloud software or web browser automation tools (*e.g.* Selenium), this system simulates the human experience on the Internet. For instance, Hannak *et al.* (2014) investigate the personalization of prices online through a webkit named PhantomJS, which executes Java Script coding to customize webpages and manage cookies.¹¹⁶ Other authors (Vissers, Nikiforakis, Bielova, & Joosen, 2014), instead, set databases automatizing search querying for flights tickets. These mechanisms allow the collection of multiple products in multiple sites and grant anonymous browsing. In addition, cutting-edge research in this field engages real users and instructs them to search for products and prices on several e-commerce sites: a study published by the above-mentioned Hannak recruited a set of 100 real consumers on Amazon Mechanical Turk,¹¹⁷ asking them to look for hotels and car rentals.

In our analysis, we employed the web scraping technique by using an open source software that consents the automatization of the collection process; we directly double-checked prices to avoid false positives. But first and foremost, we had to remove as many biases as possible.

In fact, differences in prices may be due to plenty of factors, some of which depend on personal browsing history. To avoid this bias, the experiment has been carried out in a controlled and clean system, without cookies and browsing in a stealth way. We also configured the browser to block third parties cookies. Our measurement framework consists in three steps (search, collection, monitoring) and is made of four components: the aforementioned browser and an online VPN, and a cloud software (PriciusTM) coupled with its browser’s plug in. The first two tools are fundamental, so we have used them to double check the data collection’s process. They serve as a control for all the sources of noise – such as inconsistencies due to complex platforms’ algorithms that prevent our plug in from selecting price/products – that may occur during the experiment.

¹¹⁶ Cookies are information that websites store on clients’ devices in order to record their preferences for future access.

¹¹⁷ Amazon Mechanical Turk is a crowdsourcing platform where individuals offer their “human intelligence” to engage in practical activities that currently computers are not able to perform efficiently.

4.2.2. *Analysed products*

The choice of the object of the empirical analysis has been driven by the will of eliminating as many biases as possible. We decided to focus on digital content rather than goods: audio-visual contents do not entail any logistic costs that might have affected prices.

Among the several types of digital content (films, TV series, news, sport and music), we opted for music content. The underlying hypothesis is that, compared to movies, which are more likely to be sold in their dubbed version, music is less affected by language differences. Since music industry is strongly influenced by local repertoires, we selected a neutral sample of six albums, two “international hits”, two “rock stars” and two “evergreen” in order to have a fair coverage of the genres and to nullify the effects of demand tastes on price levels (our assumption is the homogeneity of demand).

Overall, the experiment lasted for two months. First, we had to configure our tools launching random collections and controls to check for possible inconsistencies and sources of noise. Once attested the reliability of the system, we have collected data on a daily basis for 32 days – from mid-January to mid-February 2016. We collected the prices set by three players of the EU market, *i.e.* iTunes Store, Amazon and Google Play Store.¹¹⁸ We chose three platforms with the same business model, *i.e.* pay-per-song, omitting the streaming players such as Spotify that are based on subscriptions. Thanks to the automatization provided by the software, we run the experiment at the same time of the day thereby we could exclude any differentials due to the timing.

As our purpose is the assessment of the presence of barriers and the impact of a customer’s location on the prices, we measured price levels for five Member States, namely UK, Germany, France, the Netherlands and Italy, that are five of the largest markets for digital music in Europe.¹¹⁹ The software sets up five proxy servers in these five countries and the VPN masks the IP addresses pretending to be located elsewhere. With such “sterilised” configuration, the IP address is the only feature that distinguishes the browser. Our hypothesis is that the IP address is sufficient to infer the geographical location and thus price discrimination.

¹¹⁸ With a global market share of 63%, iTunes is the biggest player in the downloaded music market, followed by Amazon and Google Play. See (Gomez & Martens, Language, Copyright and Geographic Segmentation in the EU Digital Single Market for Music and Film, 2015).

¹¹⁹ See IFPI. Digital Music Report, (2014).

4.2.3. *The use of PriciusTM*

The setting of the experiment was decided to be based on the use of a cloud software (PriciusTM) developed by a UK-based start-up, LSTech. Compared to the tools employed in the aforementioned researches, PriciusTM represents an integrated solution that encompasses many of their functionalities, with two extra advantages: firstly, it does not require any specific programming competences, and then, unlike the other methods, it is specifically set up to detect price discrimination.

We got in touch with LSTech team during the internship experience at the Commission. Its mission is to build applications that empower decision makers, giving them direct access to insights from Big Data by removing “the man in the middle” (e.g. data analysts, IT engineers, middle managers and employees) that typically introduces delays, misinterpretations and bias. The developers noticed that, although Big Data technologies are about to become mature and abundant, there are not a lot of Big Data applications making value for the public and private organizations.

PriciusTM was conceived as a way to respond to concerns about discrimination in the e-commerce raised by the Europe Consumer Centres Network (ECC-Net), the EU network of consumers' protection organizations. It has been built to help regulators in coping with customers' complaints and enables non-IT experts to collect and analyse pricing information from e-commerce sites. The platform may be employed by institutions for regulatory compliance monitoring (to detect websites engaging in unjustified price discrimination, price fixing or market exclusion practices), but also by firms themselves to control competitors' pricing strategies. The use of PriciusTM for academic purposes is experimental.

4.3. *The experiment*

The field research has started through a series of introductory talks with the LSTech team. They provided us with the basic knowledge to use the software through a first guided trial where they illustrated the main features of the platform. During the experiment, we have enjoyed their continuous support, contributing to the improvement of the software by pointing out possible bugs. The test consists of two phases. The first one involves collecting and monitoring price information through the Google Chrome PriciusTM add-on, while the second one aims at managing the initially created dataset in a comprehensive way. The preliminary technical step that enables the

functioning of the platform is the installation of an add-on¹²⁰ on the Google Chrome browser (see Figure 2). Briefly, it allows starting a monitoring “batch job” (see Figure 3).

Figure 2 - *Pricius™ Google Chrome add-on*

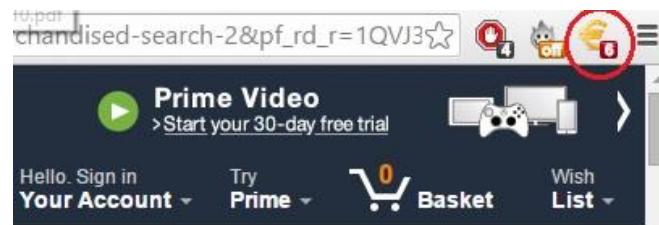
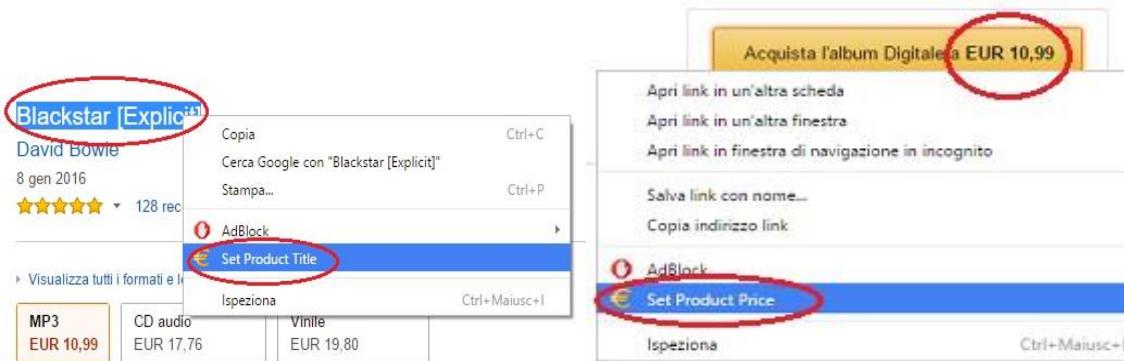


Figure 3 - Starting a monitoring batch job



We have browsed across multiple websites, selecting products and prices (see Figure 4) and placing them in the monitoring basket.

Figure 4 - Setting up the title and the price of the product to monitor



¹²⁰ Add-on or plug-in is an additional component of a software that allows the customization of a browser.

It enables to specify the monitoring duration and frequency (as showed in Figure 5) of data collection and then it starts accumulating detailed price analytics on a cloud-based store.

Figure 5 - Setting up the start date and the finish date of the batch job



The collecting and monitoring phase lasted for about one month. Every day the software provided measurements on prices. At this stage, we periodically run random tests through the VPN, in order to double-check the reliability of data. Overall, in 32 days and five countries, we collected 6720 observations from six products on seven platforms¹²¹.

4.4. Empirical results

The experiment provided us some interesting results for our purposes. A first outlook of the figures is shown in tables 2, 3 and 4: they summarize the average prices measured on the three platforms per country and per product.¹²²

¹²¹ Including Amazon's national websites.

¹²² For the sake of simplicity, we use the name of the artist in place of the name of the album.

Table 2 - Average prices on Amazon [€]

Amazon

	DE	FR	IT	NL	UK	Mean
Adele	9.99	9.99	10.09	10.01	10.45	10.11
Coldplay	9.09	10.99	10.99	8.64	13.07	10.56
David Bowie	8.09	10.99	10.99	9.10	10.45	9.92
Debussy	7.39	7.99	8.09	6.37	7.18	7.40
Rolling Stones	18.29	23.69	25.09	17.29	22.22	21.32
The Blues Brothers	9.79	11.99	11.99	8.64	4.57	9.40
Mean	10.44	12.61	12.87	10.01	11.32	11.45

Table 3 - Average prices on Google Play Store [€]

Google Play Store

	DE	FR	IT	NL	UK	Mean
Adele	9.99	9.99	9.99	9.74	13.07	10.56
Coldplay	7.79	8.49	8.49	9.99	13.07	9.56
David Bowie	7.99	6.27	7.99	7.99	10.45	8.14
Debussy	9.49	9.49	9.49	9.12	12.41	10.00
Rolling Stones	16.99	16.99	16.99	16.99	18.95	17.38
The Blues Brothers	8.71	8.71	8.71	7.96	11.39	9.10
Mean	10.16	9.99	10.28	10.30	13.22	10.79

Table 4- Average prices on iTunes [€]

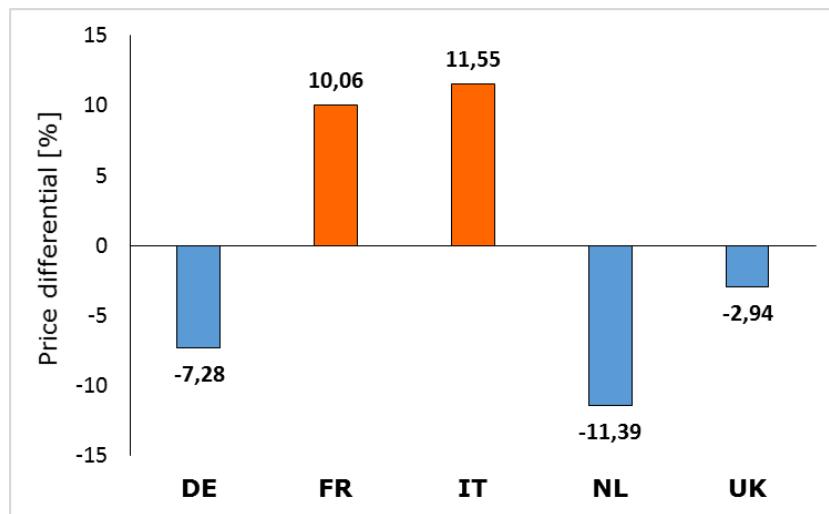
iTunes

	DE	FR	IT	NL	UK	Mean
Adele	11.99	11.99	11.99	11.99	13.07	12.21
Coldplay	10.99	10.99	10.99	10.99	13.07	11.41
David Bowie	9.99	9.99	9.99	9.99	11.76	10.34
Debussy	8.99	8.99	8.99	8.99	10.45	9.28
Rolling Stones	19.99	19.99	19.99	19.99	26.15	21.22
The Blues Brothers	11.99	11.99	11.99	11.99	11.76	11.94
Mean	12.32	12.32	12.32	12.32	14.38	12.73

An immediate result is that, on average, iTunes, which is the market leader, charges higher prices for such products (€12.73 compared to €10.79 charged by Google Play Store and €11.45 by Amazon).

We found meaningful evidence of price discrimination on Amazon (See Figure 6). We calculated the deviation of the mean for each product's price using the average price across countries as reference. The figures show that, on average, Italian and French users pay respectively 10% and about 12% more than other users (in the graph below, the "zero" is represented by the mean of the prices for each product across countries). On the other side, buying from the Netherlands ensures savings of almost 12%. Later on, we examine in depth the likely reasons behind such differentials.

Figure 6 - Country-based price differentials on Amazon in percentage

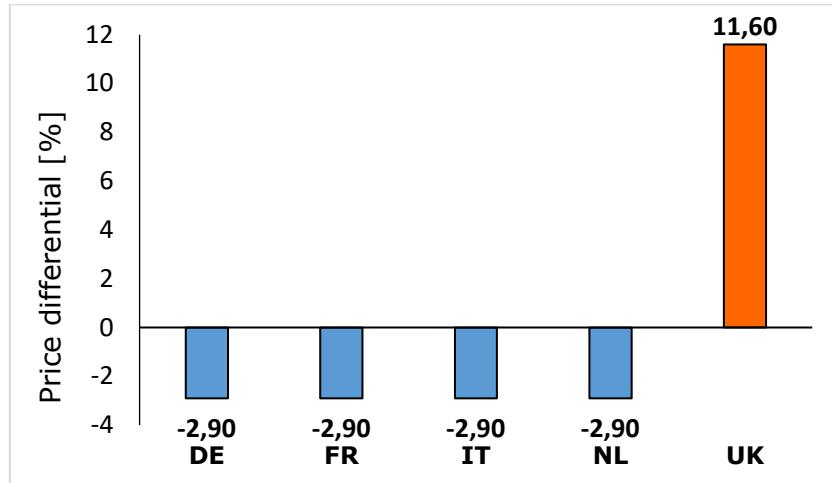


As for iTunes, results report that the average price of products is higher only in the UK (See Figure 7). Obviously, we cannot exclude that such differential (+11,60%) might be caused by the effect of the currency. We have converted the prices from GBP to Euro using the average exchange rate from January 12th to February 12th.¹²³ In order to avoid further bias due to the volatility of the currency in a short period we converted the UK prices again, employing the previous biannual average exchange rate. As reported in the Appendix, since the biannual exchange rate is lower, the gap between prices is even larger, so UK customers are charged 16.7% more. As described in Chapter 2, since the details of the closing procedures of the iTunes case are unknown, we are not able to assert whether the commitments included terms about the adjustment of prices according to the different currency. However, iTunes keeps charging the same price in all the EU Member States' stores except in the UK, where the music download is more expensive. Nevertheless, due

¹²³ Source European Central Bank (ECB). See the Appendix for the related calculations.

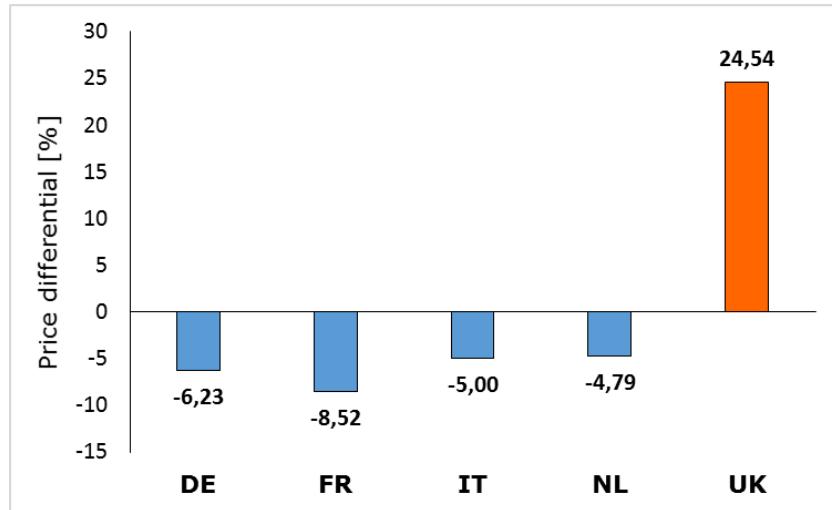
to the bias of the currency we cannot infer that such differentials are evidence of price discrimination.

Figure 7 - Country-based price differentials on iTunes in percentage



The third analysed website, Google Play Store, is the only platform that shows time varying prices during one month of monitoring. It could be regarded as the “newcomer” because, compared to its rivals, it entered the market only in 2012. Our results show that, on average, albums in the UK are almost 25% more expensive than the rest of analysed countries (Figure 8). Again, it might be ascribed to the currency bias.

Figure 8- Country-based price differentials on Google Play Store in percentage



In order to investigate whether other variables impact on the products prices, we scrutinized whether different tax regimes (see Appendix) could cause price differences. The three graphs below show that, by removing the Value Added Tax (VAT) from the average price per country, net prices are not equalized. Thus, we exclude tax differences among the reasons behind divergent prices.

Figure 9 - Impact of different tax regimes on prices (Amazon)

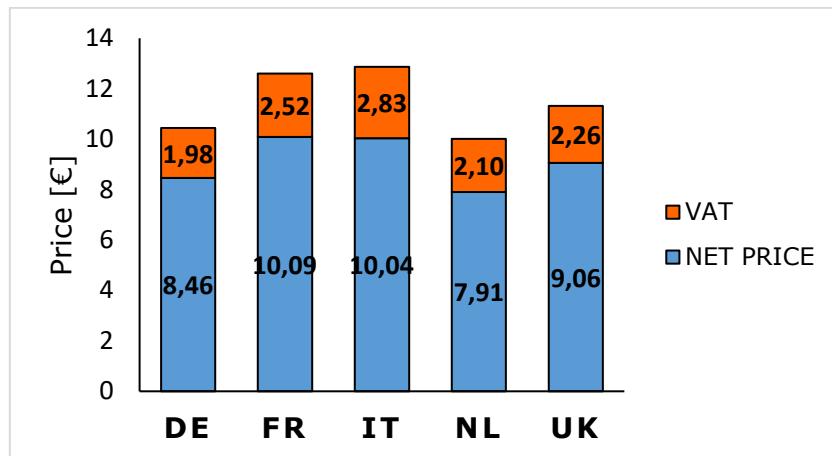


Figure 10 - Impact of different tax regimes on prices (Google Play Store)

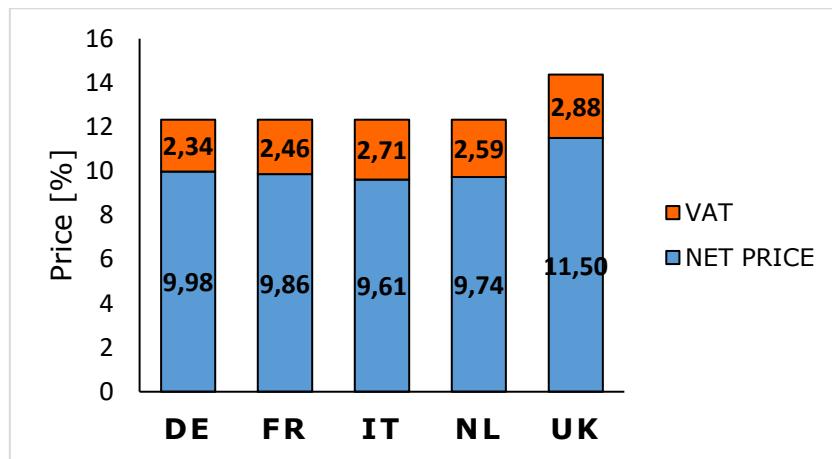
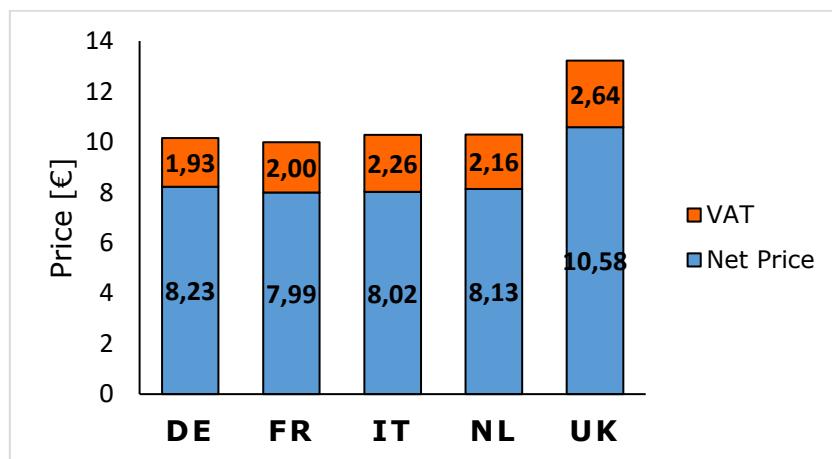
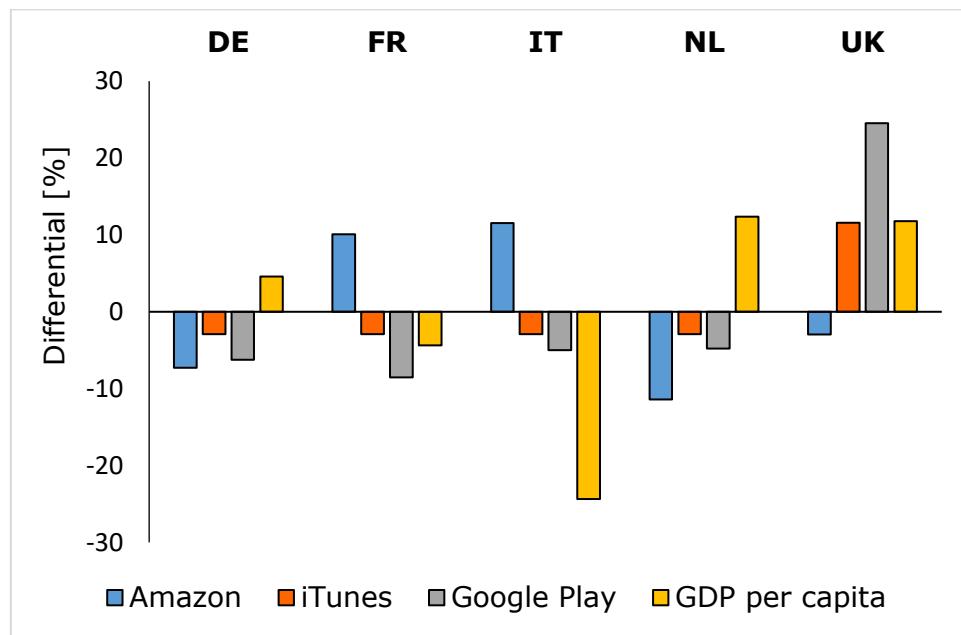


Figure 11- Impact of different tax regimes on prices (iTunes)



The last empirical evidence we wanted to look for is the correlation between Gross Domestic Product per capita at current prices¹²⁴ and the country-based price differentials. As reported in the Appendix, we calculated the average GDP per capita across countries and then the differentials from the mean value. The graph below (Figure 12) illustrates our results (in the graph, the mean value, €39,459 = 0). We find significance of a negative correlation between GDP per capita and charged prices on Amazon. For instance, on average, users that try to download from Italy and France face higher prices (+11,55% and +10,06%) although the GDP per capita are the lowest (-24,36% and -4,39%).

Figure 12 - Comparing differentials in GDP per capita and price



Examining the reasons behind such divergence, the hypothesis was that a likely explanation could be related to the fact that such countries have different access to the Internet. Considering the broadband penetration in the examined countries, we found out that the percentage of households that in 2015 had access to Internet in Italy is the lowest across our countries (broadband penetration of 75%¹²⁵), followed by France (83%, aligned with the EU average). Countries with GDP differentials above the average have wider access to the web. As the proportion of Italians having access to the Internet is lower, we might infer that such category has a higher reservation price, hence a higher willingness to pay. Therefore, in order to obtain a more accurate result, we should adjust the GDP per capita including only those individuals who have access to the broadband.

¹²⁴ Source IMF (2015).

¹²⁵ Source Eurostat (2015).

We have tested the mechanisms by which the aforementioned three platforms use geo-blocking, and we found out that, according to the location, Amazon charges different prices to its customers. Once detected such price differentials across Member States, using the VPN we created an account in a country with a lower price and we attempted to complete a purchase. Nevertheless, at the moment of payment, we found a further barrier, as the system required us to provide the details of a credit card issued in Germany.

5. ***Conclusions***

The aim of the experiment was to discover proofs of geographic price discrimination behind mechanisms of geo-blocking that identify the Member State where the query is issued and constrains the user's freedom to access websites usually other than his/her own national versions.

The methodology used in our analysis ensures that the only information about the user that online retailers could get is the IP address, which we use as a proxy of location. We chose digital music in order to exclude alleged dissimilarity in costs due to exogenous factors. Under such setting, we uncovered evidence of significant price differences in one out of the three platforms we examined: Amazon. Then, we excluded differences in tax regimes from the reasons behind these discrepancies. This result is consistent with other empirical researches on price discrimination in the e-commerce (*inter al.* Mikians, Gyarmati, Erramilli, & Laoutaris, 2012) that found evidence of geographic price discrimination for e-books on Amazon, which was not correlated to tax regimes or income.

Notwithstanding the price discrimination uncovered in our analysis, we cannot explain if it is the outcome of an explicit strategy undertaken by the online platforms, or if it is due to exogenous variables. In particular, since for the above-mentioned reasons we have chosen to focus our analysis on digital music, we must stress that differences in prices might be attributed to the territoriality of copyright in the EU. Price discrepancies might be the result of national-based arrangements between right-holders and content distributors. Given the non-availability of data about copyright arrangements, we cannot demonstrate that record labels charge higher royalties in certain countries. However, the increasing market power of those platforms might counterweight the contractual strength of right-holders, and increase the degree of endogeneity of variables such as royalties.

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Appendix

Currency exchange rates.

Google Play	EUR/GBP	DE	FR	IT	NL	UK
12/01/16 -	0.764485	-6.22986	-8.52445	-5.00468	-4.78504	24.54403
12/02/16						
12 /08/15-	0.731949	-7.25389	-9.52345	-6.04341	-5.82888	28.64962
12/02/16						
	Differential	-1.02403	-0.999	-1.03873	-1.04384	4.105592
iTunes						
	EUR/GBP	DE	FR	IT	NL	UK
12/01/16 -	0.764485	-2.89955	-2.89955	-2.89955	-2.89955	11.5982
12/02/16						
12 /08/15-	0.731949	-4.18513	-4.18513	-4.18513	-4.18513	16.74051
12/02/16						
	Differential	-1.28558	-1.28558	-1.28558	-1.28558	5.142317

GDP per capita and tax regimes

		Differential	VAT
Gross domestic product per capita, current prices			
France	37728	-4.4	20%
Germany	41267	4.6	19%
Italy	29847	-24.4	22%
Netherlands	44333	12.4	21%
United Kingdom	44118	11.8	20%
Mean	394588		

Acknowledgements

“Puoi arrivare da qualsiasi parte,

nello spazio e nel tempo,

dovunque tu desideri.”

Eccoci. Se mi trovo qui, ora, a sbrogliare il gomitolo di pensieri che mi si affollano in testa, vuol dire che è proprio tempo di dare volto nome e voce a chi mi ha accompagnato in questa avventura durata cinque anni e a cui va un sonoro “grazie”.

Non che sia un’impresa semplice, codificare la gratitudine. È cosa nota che con le parole bisticcio spesso, mentre coi “silenzi eloquenti” ci vado a braccetto. Oggi però uno strappo alla regola è dovuto e sentito, quindi diamo il via alle danze!

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Sono stati anni intensi in cui sono inciampata in mille volti, e Milano ne è stata la cornice perfetta. Perdonate se dovessi dimenticare qualcuno ma, conoscendomi, dovreste sapere che mancano solo due ore alla consegna della tesi e io mi trovo ancora qui a rovistare in quella (scarsa) memoria che mi ritrovo. Dicevo, sono stati anni intensi che molti di voi hanno contribuito a rendere esageratamente belli, quasi irreali. Non posso non ricordare Marco, i suoi taralli e tutta la banda Clapi. Sono stati gli anni dei primi articoli di blog su Spotnext, e delle agitate riunioni di B.lab, di Roma, Taipei e correlate (dis)avventure, di Bruxelles. Sono stati anni in cui ho imparato a mettermi in discussione ogni giorno.

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