



Louvain School of Management and University of Cologne

Vertical Mergers: comparison of competition laws of Europe and the USA

Case study: Merger of CVS-Aetna

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Abstract

The following research studies the reasons behind the acceptance or not of a vertical merger in the U.S.A. and in Europe. The central question of this thesis is why a vertical merger would be blocked under one jurisdiction and not another. A comparison of European and American antitrust laws of vertical mergers is performed and applied to the case study of the merger of Aetna and CVS Health. These two companies are active in the healthcare industry in the U.S.A., but on different levels of the supply chain. The main goal of this analysis is to attempt to predict the outcome of the American investigation of the merger and to imagine the outcome of such a merger in Europe. To do so, an extensive literature review is conducted on the rationales, the pros and cons of vertical integration, the European laws regarding mergers and the American antitrust laws. The result of this study is that the merger should be blocked by the Department of Justice in the U.S.A. because of the horizontal effects of this merger, as well as substantial increases to the market's entry barriers following the deal. However, if this merger was attempted in Europe, it would probably be accepted by the European Commission mainly because of differences between the European and American healthcare markets' structures.

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Introduction

In today's fast changing world, companies aim at growing in two ways: internal and external growth. Internal growth is the development of new divisions in the company or the access of new markets with the company's own capabilities. External growth on the contrary is the growth of a company arising from a merger or acquisition. When choosing for external growth, companies may either merge or buy a competitor (horizontal merger) or a company on an adjacent stage of the supply chain, referred to as a vertical merger. The number of mergers reported to the Federal Trade Commission and the Department of Justice (both are responsible of antitrust) in the U.S.A. has significantly been increasing since 2013, from 1,326 cases, to 2,052 during the fiscal year of 2017. This represents an increase of more than 50% (Hart-Scott-Rodino annual report, 2017). The same increase has been observed in Europe; to a lower extent, from 277 mergers notified in 2013 to 380 in 2017 which is an increase of almost 40% (European competition statistics, 2018). Martynova and Renneboog (2008) have identified six waves of mergers until 2003, and it seems that we are currently in the seventh wave given the European and American statistics. Over the past years, several numbers of important vertical merger deals were observed, mainly: Amazon-Whole Food, Microsoft-LinkedIn, AT&T-Warner (pending) and CVS-Aetna.

Even though vertical deals can be very expensive and thus above the thresholds of regulators, they are not often investigated. Indeed, the post-Chicago approach, that both the European Commission and American regulators follow, states that vertical mergers usually are not a threat to competition (European commission guidelines on non-horizontal mergers 2008/C 265/07, 2008) (Hoffman, 2018). Nevertheless, some vertical mergers have recently been particularly scrutinized: the merger of AT&T-Warner and the merger of CVS-Aetna which is the focus of this thesis. Despite the fact that vertical mergers are often looked over (the last vertical deal sued by the Department of Justice was forty years ago, and it failed), competition issues may arise because of them. Those issues are mainly market foreclosure, horizontal effects, increases in entry barriers to new entrants, increases in market power and concentration and facilitating collusion. (European commission guidelines on non-horizontal mergers 2008/C 265/07, 2018; Jones, 2018). Besides that, vertical mergers are not always rational from a managerial point of view and can have detrimental

effects especially when efficiency gains and synergies are overvalued, and costs are undervalued. (Coase, 1937; Mahoney, 2005; Williamson ,1975)

The companies that are examined, CVS and Aetna, are both active on the healthcare market but on different levels of the supply chain. On one hand, CVS Health holds the largest pharmacy chain in the U.S.A and the second largest Pharmacy Benefit Manager (PBM), on the other hand Aetna is one of the largest American health insurer.

In this thesis, we will discuss the managerial and economic implications of vertical mergers, the regulations imposed on them both in Europe and in the U.S.A. Then, the market for healthcare in Europe and in the U.S.A will be examined, followed by an analysis of the case of the merger between Aetna and CVS under the American regulations, and lastly, we will discuss if the merger at hand would have been accepted in Europe.

The goals of this thesis are multiple: understanding the implications of vertical integration (legally and economically), understanding the different laws in Europe and the U.S.A., and comparing the American and European approach to vertical integration through the case of the merger between Aetna and CVS.

The structure of this work to achieve those goals is the following: the first part of this thesis is a review of literature of vertical integrations and antitrust laws in Europe and in the U.S.A. Then, we used publicly available information on the healthcare market in both regions and on the two companies merging to evaluate their competition risk and if the Department of Justice (DoJ) and the European Commission should block the deal.

There are some limitations to this work. First, this study relies on publicly available documents which limits the scope of research. This puts limits on the sources of this work and impact the analysis as the regulators may have more information at hand. Second, there are very few vertical integration cases reviewed by the regulators and they are almost always accepted. Indeed, vertical mergers are not a priority for the regulators as they are seen as unharmed and globally positive for the market and the consumers. Most of the work done on competition law focus on horizontal mergers. Third, this thesis was written whilst the merger was being reviewed, the information arose during the redaction of this work allowing little hindsight. Lastly, the dissimilarities between the markets make it difficult to derive general conclusions from this analysis.

Theoretical Part

I. Mergers and acquisitions

I.1. Definition

First of all, let's define the differences between mergers and acquisitions. An acquisition is an operation in which a company A buys the shares or the assets or the whole company B by mutual agreement or not. The acquired company's shareholders cease to be the owners of that firm. (Chen and Findlay 2003; Jagersma 2005 (as cited in Park, Yoon & Kim, 2013)). In this case, one company, the acquiring company, is usually bigger than the acquired company. A merger, however, is an operation of combination or consolidation of two firms (Gaughan 2010; Jagersma 2005 (as cited in Park, Yoon & Kim, 2013)). This means that either one company absorbs the other one or that a new company is created by the jointure of the previous ones. The shareholders of the combining firms often remain as joint owners of the combined entity. In this case, both companies usually have the same power and weight. Nowadays, both terms are used interchangeably or together under the term M&A (Gaughan, 2010).

Sometimes when a company takes over another one (acquisition), the management decides to refer to it as a merger and not an acquisition. This is done because acquisitions generally carry a more negative connotation than a merger. By calling it a merger, the management tries to reassure the employees, suppliers and other stakeholders.

Moreover, an acquisition can be a hostile takeover in which management does not agree with the acquisition. In such a situation, the acquiring company tries to convince the shareholders of the other company to sell their shares. In the case of a hostile takeover, the bid is publicly rejected by the target's management (Andrade, Mitchell, & Stafford, 2001). Indeed, the management fears losses of jobs and thus tries to make the shareholders reject the offer of the acquiring company (Schoenberg & Thornton, 2006).

A vertical integration is a fusion or an acquisition defined as follow: "Vertical mergers involve companies operating at different levels of the supply chain. For

example, when a manufacturer of a certain product (the 'upstream firm') merges with one of its distributors (the 'downstream firm'), this is called a vertical merger." (Guidelines on the assessment of non-horizontal mergers (2008/C 265/07), art 1(4), 2008)

In a managerial way, a vertical integration is when a company buys or merge with a client or a supplier. There are two types of vertical mergers: upstream and downstream. The upstream occurs when a company buys or merges with a company providing a previous step of the production and the downstream happens when a company buys or merges with a client.

1.2. Incentives for vertical mergers

Experts at Mc Kinsey have identified four reasons to vertically integrate. First, if the market is too risky and unreliable, this means if there is a risk that the suppliers or clients may stop their activity, stop trading with the company or would change their prices. Then, if the companies in an adjacent stage of the industry have more market power than the companies in the current stage. The market power is defined as followed "[it] refers to the ability of a firm (or a group of firms acting jointly) to raise price above the competitive level without losing so many sales so rapidly that the price increase is unprofitable" (Landes & Posner, 1981, pp 937). Third, thanks to the integration, new entry barriers would be created and thus would reduce the attractiveness of the market for new entrants or would allow price discrimination between customer segments. Lastly, if the market is young, a company might want to downstream integrate in order to develop the market or the market is declining, and companies are exiting the adjacent stages. (Stuckey & White, 1993)

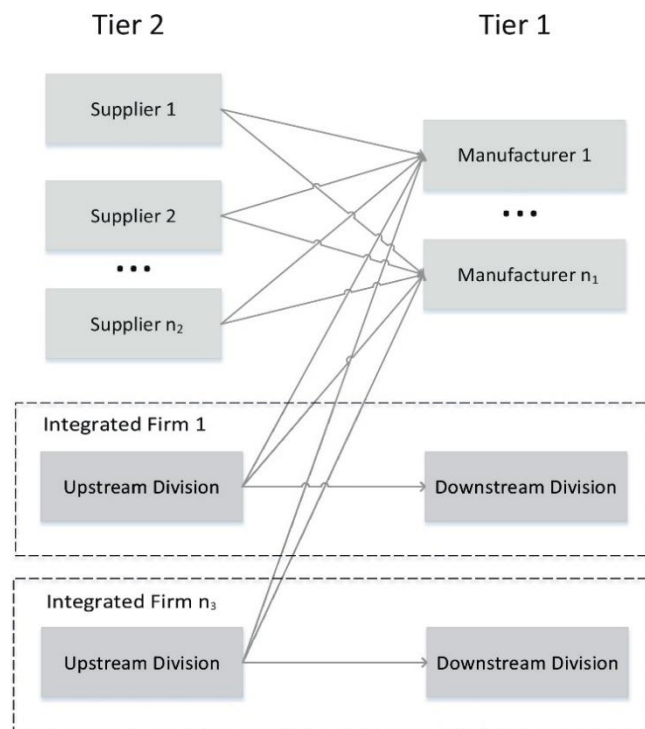
However, Mahoney (1992) identifies four, more global, driving forces for vertical mergers and acquisitions regarding the economic and strategic theories. The first one is the transaction cost considerations (it is more costly/risky to trade with an independent company than to acquire it). The second is strategic considerations, this one relates to the third point of Mc Kinsey's experts but also to the fact that by vertically integrating a firm can increase the competitor's cost by reducing the number of suppliers. Third, the output/input price advantages, the main idea behind this concept is that a vertically integrated firm can escape the monopoly pricing imposed by

upstream firms. In this kind of competition, the monopoly price is above the competitive level. The last driver for vertical integration is the uncertainties in cost or prices. This is a broader concern that the one cited by Mc Kinsey in the sense that the uncertainty does not only come from the fear of suppliers or customers leaving the market, but also to the quality, volume and technical variations. Mahoney cites the work of Coase (1937) who stated that if those uncertainties do not exist, the existence of the firm is not needed. But as those uncertainties are raising, the integrated firm is called into existence. On top of those, Williamson (1975) cites the economy of scope as a rationale for vertical integration. This is linked with the idea of technological interdependencies.

The advantages of financial vertical integration are multiple. They include (i) the profit (of course) as the profit of different stages of production is not separated into different companies; (ii) the coordination and control which affect the costs of the company that can better control the opportunistic behaviours within the firm as well as a better cooperation between divisions and less costly dispute settling as they can be tackled internally and not through litigation; (iii) audit and resources allocation as a firm has the right to audit its own divisions but not outside contractors and so can better allocate revenues to divisions; (iv) the motivation of employees can be increased thanks to a company-wide culture; (v) and lastly the communication can be enhanced between the divisions thanks to the coding system and the standardization of language across departments. (Mahoney, 1992)

Chen, Xu, & Zou (2017) released an article on the strategical incentives of vertical mergers in a two-tier industry composed of suppliers and manufacturer.

Figure 1: Market structure of a two-tier industry



It can be seen in this figure that they also considered integrated firms in the industry. Those are firms that have already merged between suppliers and manufacturers or that have grown internally.

In this paper, they proved that a vertical merger in this type of industry is always favourable for the consumers. Indeed, for them, the prices of the final goods always decrease after a vertical merger. This result goes against the findings of Salinger (1998), in which he suggests

that mergers can increase or decrease the prices of the final goods. They also state that a vertical merger is always good for the social welfare (supplier' + consumer' surplus) if integrated firms do not sell their intermediate products. They also showed that integrated firms should adopt market foreclosure strategy if there are less integrated firms in the market, but they should sell their intermediate products when competition is high between integrated firms. On top of that, they showed that suppliers should not choose to merge with manufacturers if competition between the manufacturers is fierce.

However, they found that the statement made by Corbett and Karmarkar (2001) that integrated firms always perform better when integrated and unintegrated coexist is incorrect if the integrated firm decides to sell intermediate products.

There are some limits to their work as they only consider an industry with two products: the intermediate and the final one. It is most likely in reality that to produce the final products, multiple inputs are necessary. If it weren't the case, it could be argued that no company would only produce the intermediate product. Indeed, in economics, one can even consider qualified workers as input. Moreover, they didn't consider the entering of new companies on the market. This would probably happen

because when merging and not selling intermediate goods, the competition amongst suppliers would lower. Lastly, as they acknowledge, they considered identical firms without capacity constraints. This is very utopic and theoretical. If I push their statement, then in this theoretical industry, companies would be competing perfectly and thus not creating any profits so how would they even have the money to acquire one and other?

1.3. Drawbacks of vertical integration

However, there are also disadvantages to vertical financial ownership. The disadvantages include (i) bureaucratic costs; (ii) strategic costs; and (iii) production costs. The first is bureaucratic costs, they occur because the size of the organisation increases which often results in more hierarchical levels. This can lead to information distortion as it is transferred from the bottom to the top of the hierarchy. Moreover, as the company doesn't face the competition to create intermediates products, there are fewer incentives to lower the costs and to innovate on the processes. On top of that, by enlarging the perimeter of the company, it is faced with new challenges and new skills may be needed. The next costs are the strategic costs; they include the costs of buying new equipment that may lead to excess capacity and low profitability, the psychological difficulty to divest might be a cost, and lastly, the fact that the company becomes less flexible by growing and thus create higher exit barriers. The last costs identified by Mahoney are the production costs which can occur if a vertically integrated firm does not meet the minimum input quantities to create scale efficiency which leads to a disadvantage compared to independent firms that have this efficiency. Additionally, the cost of buying or merging with another company might drain the capitals and lastly, capacity imbalance can lead to higher production costs than costs of companies that uses market mechanisms. (Mahoney, 1992)

Given the work of experts at Mc Kinsey (Stuckey & White, 1993), vertical integration can be extremely risky because it is difficult to implement correctly and can be costly to fix when it is the wrong strategy. They suggest that vertically integrating is effective and interesting for companies if bilateral trading is not beneficial. For example, if two firms that are at adjacent phases of production and make transactions in an almost continuous stream, then the transactions and the risk of exploitation is high. It may then be more interesting to merge in order to avoid those costs and risks. See in

the next table the different risks they think must be taken into account when taking the decision to vertically integrate:

Figure 2: Risks to be considered when vertically integrating

Setup costs	Transaction costs	Transaction risks	Coordination effectiveness
Capital (e.g., equipment, acquisitions)	Information collection and processing	Possibility of unreasonable price changes	Run lengths, inventory levels
Systems development	Legal	Supply or outlet foreclosure	Capacity utilization
Training	Sales and purchasing	Insulation from market (e.g., from technical changes, new products)	Delivery performance
			Quality

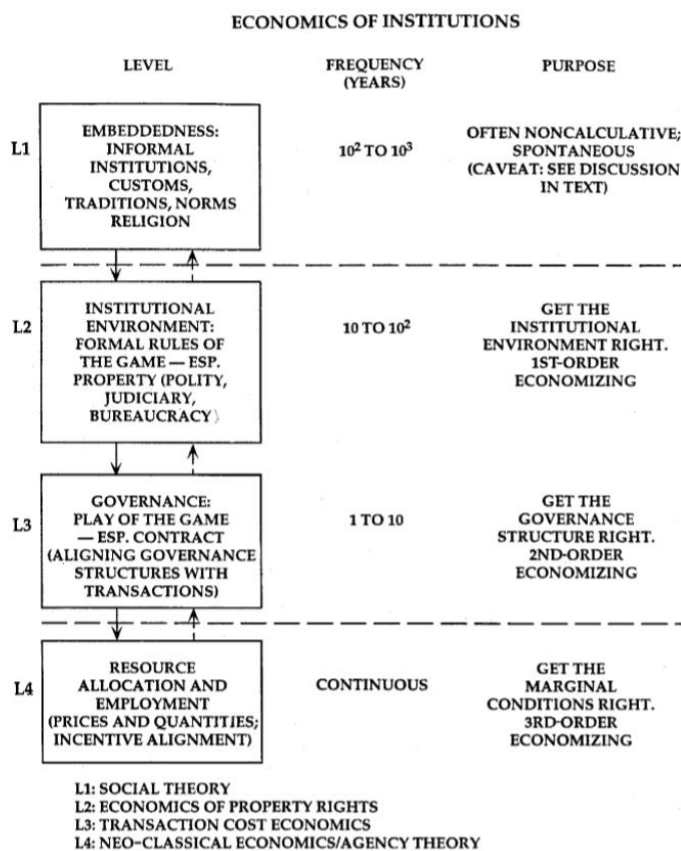
Source : Stuckey, & White, 1993

Vertical mergers can also impact the final and intermediate price of a sold good on a market. Indeed, Salinger (1988) proves in his paper that prices of intermediate and final goods can increase or decrease subsequently to a vertical merger. If the supplier involved in the vertical merger discontinues selling its product on the intermediate market or increases the prices, it creates market foreclosure. In this case, the downstream firms are less efficient on the market and it can result in higher final prices.

I.4. Transaction cost theory

The transaction cost theory is a key concept when studying any contracting issue. Given Williamson (1998), Coase's papers of 1960 and 1984 are the foundation of this theory. Williamson's goal is to link economics, laws and organization theories (Williamson 1996, 1005 cited by Baudry & Chassagnon, 2010). To explain the dependencies between those factors, Williamson has created a framework:

Figure 3: Framework of dependencies of institutions



Source: Williamson, 1998

The second level is the institutional environment of the firms i.e. the laws and other formal rules (those are specified in the following chapters). The third level is the governance which is mainly composed by contracts. This is the level on which transaction cost theories focuses. The rules imposed by the previous level are shift parameters for, as he called it, “the play of the game”. The last level is preoccupied with getting the output and price right when the market conditions are changing.

In this framework, solid arrows represent constraints that the upper level imposes on to the lower level. Dashed arrows from the lower level to the higher level represent the feedback.

He identified four levels: firstly, the social embeddedness level which is often regarded as given by economists. This includes religions, culture, customs, norms, etc. Changes in this level are very slow and difficult to obtain.

Even though transaction cost theory applies easier to the production of goods it can also be applied to services with similar motivations. During the nineteenth century, most of the vertical integration was focused on the team production of goods. It changed in the mid-twentieth century when the focus was on team service production rather than manufacturing. (Bucheli, Mahoney, & Vaaler, 2010)

The theory of Williamson is based on multiple authors mainly Coase as said before, Commons (1924,1934), Hayek (1945, 1948) and Simon (1957). The basic idea of this theory is that instead of using the market to get inputs through contracts, a firm can decide to produce them internally.

To assess whether it is beneficial or not to vertically integrate, multiple factors are to be analysed in the environment. Those factors can influence both long term and short term contracting.

Firstly, short term problems can arise from two concepts: opportunism and small-number. Opportunism is based on the general assumption that subjects are guided by self-interest with guile. (Williamson, 1983). Such selfish agents might not disclose all information to trading partners or making false promises. This behaviour is not very risky if a large number of firms compete on the market. But when a small number of firms are active on the market and that they have an opportunistic behaviour, short term recurring contracts can be very costly. Indeed, when many firms compete on the market, an opportunistic behaviour is not viable. (Mahoney, 2005)

Secondly, long term issue can arise because of bounded rationality and uncertainty. Bounded rationality is described by Simon (1957) (as cited by Mahoney, 2005) as the physiological limit of humans to compute all the information available in order to take a rational action. In other words, this means that we are not capable of solving complex problems rationally in the real world even if we try to. The more the future is uncertain, the harder it is to take a rational long-term decision. Hence, creating an internal organization is a response to the long-term uncertainty and bounded rationality as it is not otherwise possible to comprehend the whole decision tree of the exchange. When vertically integrating, there is no need to compute the whole decision

tree, the decisions can be made on the actual outcome rather than on every possible action. (Mahoney, 2005)

The transaction theory thus assumes that agents are opportunists and have bounded rationality and that the environment is uncertain or complex and that there is small number of firms.

Williamson (1975) found five advantages of internal organization compared to market contractual relations:

1. In complex or uncertain environment, vertical integration facilitates adaptive and sequential decision-making that does not causes issues regarding bounded rationality;
2. When a firm faces a relative small number of firms to close contracts, internal organization suffers less from opportunism;
3. Uncertainty is reduced by convergent goals and expectations in the internal organization;
4. Asymmetry of information between the two contracting firms is less likely to arise in a vertically integrated firm, and if it arises it is less likely to cause opportunism; and lastly
5. In internal organization, a more satisfying trading atmosphere can develop.

Williamson has also identified sources efficiency distortion in vertically integrated firms, those are (Mahoney, 2005):

1. The Internal Procurement Bias: occurs when a group is reluctant to compare internal production costs with external providers. This can lead to higher production costs for the company compared to the cost of buying from an external producer.
2. The Internal Expansion Bias: this bias results in preserving the size and roles of sub-systems of the company rather than giving up on them.
3. Programme Persistence Bias: occurs when there is no rational reason to continue to provide a service, but it is continued.

4. Imperfect Communication Bias: communication distortion can come from two mechanisms: either a deliberate attempt to distort information or an error when transmitting the information.

II. Competition law in Europe

II.1. Competition law in Europe

Given Sweet and Maxwell (2010) there are two main goals for the EC competition policy. The first goal pursued by the community competition policy is the market integration. This is supported by Article 2 of the EC Treaty in which is stated that the Community must ensure a harmonious development of economic activities by establishing a common market. This article has a great impact on the Commission's decisions regarding practices harming cross-border trade. The second goal of the EC competition policy is an economic goal and more precisely to ensure an effective competition. Below are the practices that lies at the heart of the effective competition goal.

The competition law is concerned by four practices. The first practice is the anti-competitive agreements. Those are agreements that aim at restricting the competition, they are unlawful except if they have some beneficial outcomes such as an economic efficiency increase. Such agreements are, for example, cartels to fix prices or quantities: horizontal agreements or agreements between undertakings at different level of the supply chain: vertical agreements. For example, this could be a supplier who imposes a minimal price of resale to its suppliers. The second practice is the abusive behaviour. It occurs when a company that has a large market power can for example, drive the price of its products under its costs' price to "kill" the competitors, to then raise the price once the competition is eliminated. Thirdly, the competition law is also concerned by the mergers. Indeed, some mergers can be harmful to the competition and thus to the consumers. For instance, in an oligopolistic market, if two main competitors were to merge, they would have such market power that they could raise the prices as they wish. An oligopolistic market is a market which is dominated by few firms that influence, but not control, it and in which the demand is high. So even by raising the prices, the products will still be sold. Lastly, the public restrictions on

competition are also of concern of the competition law. This occurs when a state, through legislative measures or subsidies, gives advantages to certain companies (Whish, & Bailey 2015).

The competition law in Europe is based on the articles 101 to 109 of the Treaty on the Functioning of the European Union (TFEU). Until the article 106, they are about the rules regarding the undertakings, after that they affect the Member's states aid. The two articles that are the most interesting for this thesis are the articles 101 and 102. The first is divided in three paragraphs: first, the agreements and concerted practices that have a harmful effect on competition, second, it is stated that such agreements are null and void, and third, regarding the horizontal and vertical agreements. The article 102 regards the abuse of the dominant position. (Bellis, 2014) Moreover, a European Regulation rules the concentration law (see below for further explanation).

II.2. Article 101 of TFEU

The article 101 of the treaty is made of 3 paragraphs. The first one is a list of prohibited practices on the ground that they are incompatible with the internal market. Those are practices that:

- (a) directly or indirectly fix purchase or selling prices or any other trading conditions;*
- (b) limit or control production, markets, technical development or investment;*
- (c) share markets or sources of supply;*
- (d) apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;*
- (e) make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts. (art. 101 TFEU, (1))*

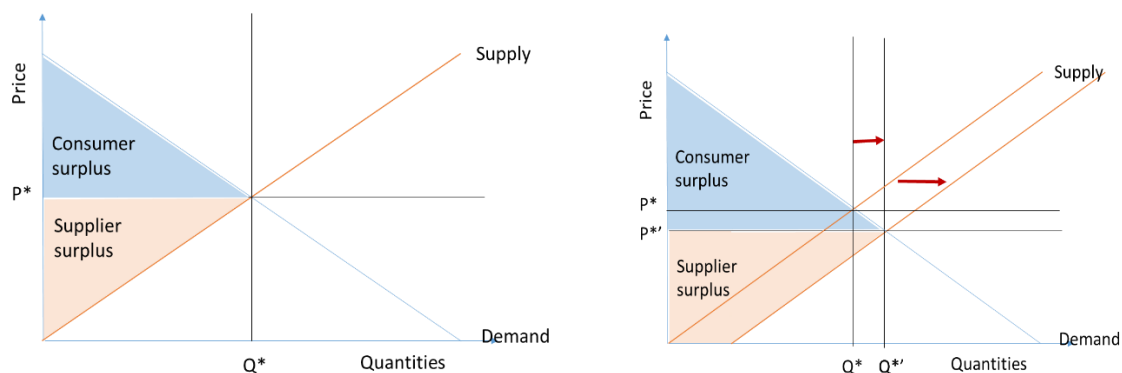
Or more generally, those are all the agreements between undertakings, decisions by associations of undertakings and concerted practices that are made to or that effect the prevention, restriction or distortion of competition in the internal market and can affect trade between Member States.

The second paragraph states that any of those previously cited agreements or decisions are automatically void.

The third and last paragraph identifies exceptions to the first paragraph, if the agreement, decision or concerted practice contributes to improve the production of goods or that promotes technical or economic progress. This means that practices which have a beneficial effect for the consumers by improving the efficiency of production or quality of goods or by reducing the costs are allowed only if a fair share of the benefits is allocated to the consumers. There is, however, a limitation as the practices cannot impose on the concerned undertakings non-indispensable restrictions to the achievement of these goals nor eliminate the competition.

The economic translation of this assumption is that the total surplus obtained by an improvement of efficiency, should be divided between both the consumers and the producers and not only captured by the lasts.

Figure 4: Consumer and supplier surplus variation because of efficiencies



Where p^* is the price at equilibrium, Q^* is the quantity exchanged at equilibrium, $p^{*'}$ is the new price and $Q^{*'}$ is the new quantity exchanged at equilibrium.

In this example, the price decreases thanks to the efficiency gain of the supplier. Indeed, in a perfect competition if two undertakings work together to create an efficiency gain, the cost of producing the goods can lower. In perfect competition the price for the consumers will lower. Or the quality increases, in this case the consumers will be willing to pay more for the product, thus the demand curve will switch to the left and the price will raise also conducting to a higher total surplus. Thanks to the last

paragraph of Art. 101, the surplus increase is then divided between both the suppliers and the consumers.

Mathematically:

$$CS = \frac{1}{2} \times Q^* \times (P_{\max} - P^*)$$

Or more generally:

$$CS = \int_{P^*}^{P_{\max}} D(P) d(p)$$

Where, Q^* is the exchanged quantity at equilibrium, $P(\max)$ is the maximal price that consumers are ready to pay for a good and P^* is the price at equilibrium. The calculation is the same for the supplier. The total surplus is the sum of both the supplier and the consumer's surplus. When the price decreases the equation becomes:

$$CS = \frac{1}{2} \times Q^* \times (P_{\max} - P^{*'}) > CS = \frac{1}{2} \times Q^* \times (P_{\max} - P^*)$$

The same happens for the supplier's surplus. Thus, the total surplus (or welfare) also increases.

II.3. Article 102 of TFEU

The focus of article 102 is the abuse of dominance. It is strictly forbidden for an undertaking to abuse from its dominant position as it might negatively affect the trade between Member States. Those practices include, but are not limited to, impose directly or indirectly prices, limit the production, outputs or technical progress thus harming the consumers, apply unequal conditions to commercial partners which might create a competing disadvantage to them and lastly, imposing supplementary obligations to other parties in a contract, which have no connection with the contract by commercial usage.

The main goal of those laws is to protect the consumers. But why is a perfect competition beneficial to the customers? Given Whish and Bailey, there are four main benefits of competition: lower prices, better products, wider choice and greater efficiency of undertakings than in a situation of monopoly. The Commission adds two:

better innovation, which can be linked to either better product or efficiency, and a better global market competition, for the Commission, all the above create better European companies that can then be more competitive on the global market. (European Commission, 2012)

II.4. Authorities

There are eleven authorities involved in European competition law:

First, the Commission. It plays a major role in the application of the European competition law. It has the power to prosecute and instruct the termination of any infraction to the law. The regulation (EC) n°1/2003 gives the Commission the power to investigate and thus to demand information to companies and audit on site. On top of that, it can impose fines and, in case of urgency, impose provisory measures to undertakings. Moreover, it is empowered with regulatory powers. (Bellis, 2014)

Second, the Council of the European Union. With the European Parliament, it constitutes the two competent authorities for adopting the legislative acts proposed by the European Commission. (Bellis, 2014)

Then, the European Parliament. It has co-legislative powers with the Council and every year it adopts a resolution on the annual report on the competition policy written by the Commission. It also reflects on the orientations of those policies by writing or asking questions to the Commission. (Bellis, 2014)

Fourth, advisory boards. Those include the advisory board for dominant position and the one for concentration. The first one makes the link between the Commission and the State Members' authorities. The second is composed by one or two members of the competent State Member's authorities. (Bellis, 2014)

Fifth, the General Court of the European Union. This court is responsible for appeals of the Council's decision. (Bellis, 2014)

Then, the Court of Justice which can sanction EU institutions in actions for damages, any individual can take action against any institution if harmed was caused. It also interprets the EU laws and make sure that they are applied the same way in every Member State. (European Union, 2017) (Bellis, 2014)

Then there are the European Economic and Social Committee (representing different economic circles), the national authorities of competition, the national jurisdictions, the action for damages, and lastly, the arbitration (private justice). (Bellis, 2014)

The coordination between the Commission and national authorities is ruled by the (EC) n°1/2003. In brief, if a deal might hurt the trade between Member States, then the national authorities must apply the European rules or the national law if they give the same output. The Commission may take over a case from the national authorities if it deemed necessary. The national authorities must send a written copy of the decision to the Commission if they rule on the article 101 or 102. (Bellis, 2014)

II.5. Regulation 1/2003: Procedure

There are several ways to start an investigation: the Commission can take the decision to start the investigation; a complaint by any individual can be filed; an individual can use the whistle-blower tool in order to denunciate a cartel; and lastly, an undertaking who is being part of a cartel can denunciate it in order to get some leniency from the Commission. (European Commission, 2017) (EUR-Lex, 2008a) (EUR-Lex, 2008b) (EUR-Lex, 2015)

The powers of the commission are multiple. First of all, the commission has the power to request information to the concerned undertaking and any individual or to competent authorities of state members (regulation 1/2003). The Commission may also investigate in each economic sector where she believes there could be restriction or distortion in the competition. Moreover, the Commission can inspect the enterprise buildings with the full collaboration of the undertaking. Lastly, the Commission can impose a fine of up to one per cent of last year's total revenue of the undertaking. (European Commission, 2017)

After that, the companies that are under a procedure of competition can access the file that concerns them, except files that are deemed confidential by the commission. This is the first phase of investigation. (European Commission, 2017)

At the end of this, the Commission can take the decision to close or to continue the in-depth investigation: the commission decides to formally initiate the procedure.

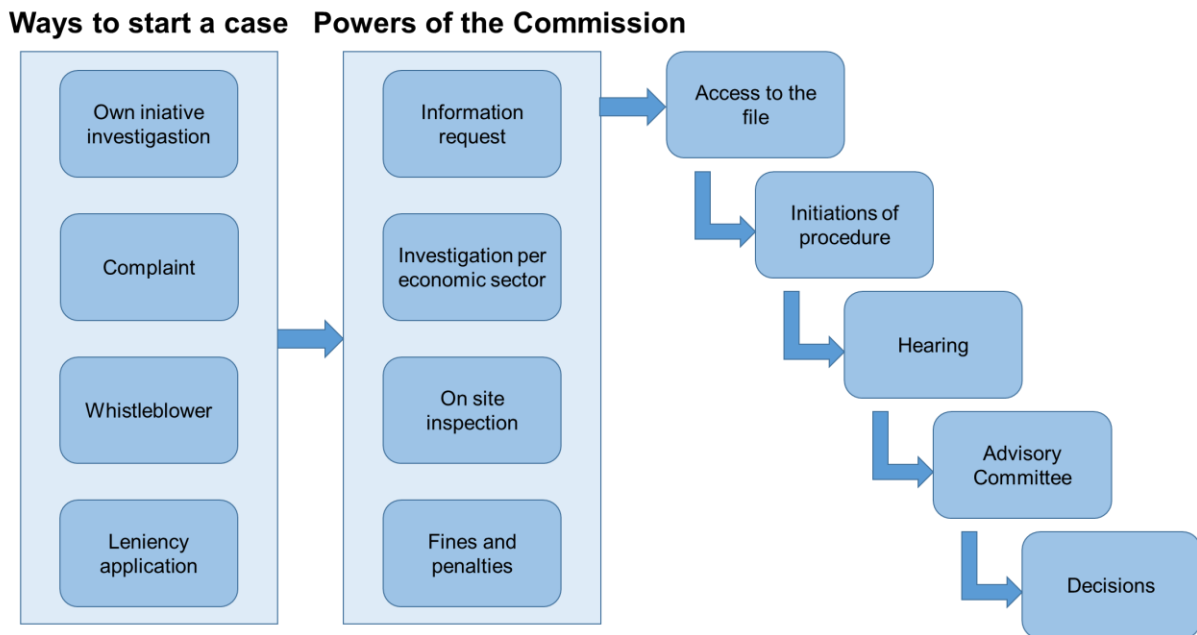
The most important effect of this is that now the competition authorities are no longer competent to rule on this case. After the opening of the procedure, the commission communicates the grievances raised against the undertakings. Those companies have, of course, the right to defend themselves through hearings. During the hearings, the undertakings have the right to explain their point of view to the Commission. The advisory committee is present, it is composed by employees of the national authorities of competition of the concerned state members. (EUR-Lex, 2015)

If the Commission still has grievance against the companies, it drafts a decision prohibiting the identified infringement (according to Article 7 of the Antitrust Regulation). The draft is then submitted to an Advisory Committee made out of representatives of the Members States' competition authorities. (European Commission, 2017)

At the end of the procedure, the Commission can also take a commitment decision. This decision doesn't have to rely on proofs of the infringement not impose fines, but it voices concerns of the Commission on the actions of the undertakings. Those can then come up with commitments regarding those concerns. If the Commission finds that those commitments are sufficient, it takes a decision to make them legally binding. The commitments are in place for a certain period of time, if during this lap of time, the undertakings break those commitments they may be fined. (European Commission, 2017) (Bellis, 2014)

Figure 5 is a representation of how a case may start, the powers of the commission and the procedure under this regulation.

Figure 5: Procedure under regulation 1/2003



II.6. Fines

Companies found guilty of anti-competitive practices and thus, who have infringed competition law may have to pay a fine. The Commission's goal is to punish and to dissuade. The fine express the seriousness and duration of the infringement. To calculate the amount of a fine, the Commission has a framework of guidelines that was updated in 2006: *Guidelines on the method of setting fines imposed pursuant to Article 23(2)(a) of Regulation No 1/2003 (2006/C 210/02)*. The whole method to evaluate the amounts of a fine is explained in this document. The most important point is that the fine may not exceed 10% of the worldwide revenue of the undertaking and that the basic starting point for the amounts is this formula:

*% of company's annual sale (max30%) x number of years and months of the
infringement*

- attenuating circumstances

+ aggravating circumstances

if cartel: + 15%-25% of one year's sale

(EUR-Lex, 2006)

III. Concentration law in Europe

III.1. Definitions

The concentration law is part of the competition law in Europe. A concentration is described in the Art 3 of the EC treaty over anti-competitive agreements and abuse of dominant position and previously in the EEC Regulation No. 4064/89. The regulation gives the Commission the power to review any concentration with a Community dimension. It is stated that:

A concentration shall be deemed to arise where a change of control on a lasting basis results from:

(a) the merger of two or more previously independent undertakings or parts of undertakings, or

(b) the acquisition, by one or more persons already controlling at least one undertaking, or by one or more undertakings, whether by purchase of securities or assets, by contract or by any other means, of direct or indirect control of the whole or parts of one or more other undertakings. (Art 3 (1) of the Council Regulation (EC) No 139/2004 of 20 January 2004)

Thus, a concentration may arise through two operations either a merger between independent firms or as a result of a change of control of an existing company (Cook & Kerse, 2009).

To better understand this definition, it is important to break it down and analyse every important expression or word. First, the definition of control is a crucial term in this definition and is also defined by the commission in the same article. Control is acquired by any means that confers the possibility to apply a decisive influence on strategic decisions of the company. (Council regulation No 139/2004 ART 3 (2), 2004)

In this definition, control is not determined by a subsidiary and parent link because it aims at regulating concentration. Therefore, concentration can be obtained

if two separate entities merge into one newly created firm. Moreover, the focus is in the strategic direction of the company and not the day-to-day activities. Indeed, the commission is interested by “decisive influence on an undertaking”.

Third, the notion of independent undertakings is defined: they must be commercial profit-making businesses operating on a market. However, a group of assets or a brand can fall into this legislation if a market turnover can be attributed to them. It is then difficult to estimate if a simple asset sale is sufficient to create a concentration (Cook & Kerse, 2009).

Lastly, a key characteristic of a concentration is the lasting structural change that it implies. This means that interim change of direction (for example to finance an acquisition) is not relevant for this regulation.

The concentrations regulation is not only a legal matter but has other stakes. Indeed, the level of concentration of a market can impact investment decision, marketing positioning, pricing strategy, new entrance barriers, etc. This is why the concentrations levels are important data for investors, marketers and managers in general.

III.2. Notification thresholds

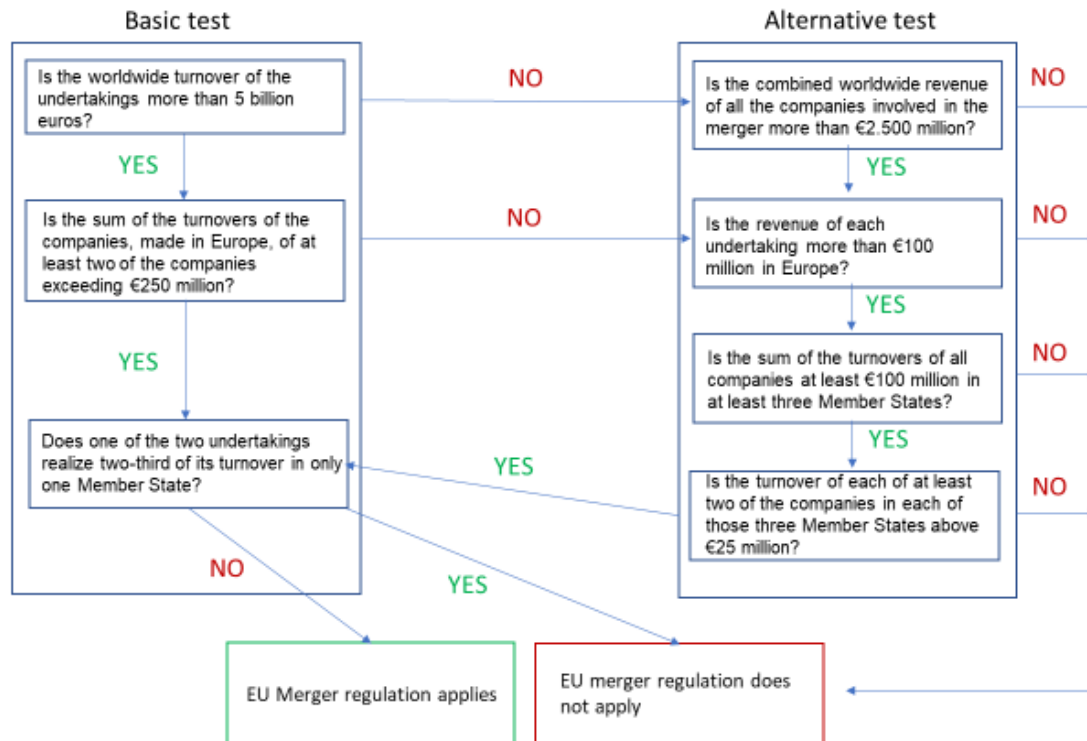
Concentrations must be presented prior to the merger to the European Commission. To know if a concentration falls under the Council Regulation (EC) No 139/2004, one must look at the first paragraph of this regulation. This paragraph determines the scope of the respective jurisdiction, the EC or the Member State (P. Verloop & V. Landes, 2003). It is stated that a concentration falls under this regulation if first, the worldwide turnover of the undertakings is more than 5 billion euros and if the sum of the turnovers of the companies, made in Europe, of at least two of the companies is exceeding €250 million except if one of the two undertakings realizes two-third of its turnover in only one Member State. (EC regulation 139/2004, art 1)

Even if a concentration operation does not meet the threshold of the previous paragraph, it can still be considered as a European dimension if the combined worldwide revenue of all the companies involved in the merger is more than €2.500 million, the revenue of each undertaking is more than €100 million in Europe, the sum

of the turnovers of all companies is at least €100 million in at least three Member States, and lastly, in each of those three Member States the turnover of each of at least two of the companies is above €25 million. (EC regulation 139/2004, art 1, §3)

The next flow chart makes it easier to visualize those requirements (Figure 6).

Figure 6: Is the merger of European dimension?



Source: Slaughter & May, p7 (2018)

If a concentration operation does not fall under this EC regulation, it is of the responsibilities of the Member State in which the undertakings are active (Vallindas, 2017).

The forbidden operations are determined by the same EC regulation in Article 2. It was previously dealt with in the CEE n°4064/89 in which a test of dominance was used to determine whether they would create or reinforce a dominant position that would hurt the competition on the market. Nowadays, the terms include operations that would significantly hurt an effective competition without creating or reinforcing a dominant position. The goal of this new regulation was to answer the fears of the

economists and jurists about the fact that undertakings could escape the regulation on an oligopolistic market where no company is in a dominant position. (Vallindas, 2017)

It is important for this work to outline that the only concentration that escaped the past regulation of the CEE n°4064/89 is the vertical concentration of E.ON/MOL (decision given the 21 December 2005). (Vallindas, 2017)

The Commission can give three different decisions: first, authorising the operation, second, the Commission can authorise it under certain condition (called remedies) and lastly, it can forbid it.

III.3. Procedure

III.3.1. Notification: mandatory or optional, sanctions and time-limits

If the operation corresponds to the definition of article 3 (1)(a) and (b), then it must be notified to the European Commission by the undertakings that take part in this operation. Otherwise, it is to be notified by the person or undertaking that take the control of whole or parts of one or more undertakings. (P. Verloop & V. Landes, 2003). In any case, the operation must be notified before it is realized and after the agreement has been concluded. The document is the form CO which specifies the different information that undertakings must notify to the Commission if they intend to create a concentration operation. Which contains amongst many obligations: a succinct description of the concentration, the information of the organizations, the characteristics of their ventures, etc.

III.3.2. The two phases of the procedure

The first phase lasts 25 working days beginning from the notification date, the Commission must give a decision. Except if one the member state has placed a referral request. In this case, the Commission has 35 days to give its decision. The Commission can give three decisions: (i) the concentration does not fall under the EC regulation 139/2004, (ii) the concentration does not raise any serious doubts on its compatibility with the common market and is compatible with the common European market with or without conditions, or lastly (iii) the concentration raises serious doubts regarding its compatibility with the common market. In this last case, the second phase is initiated. (Bellis, 2017)

During this first phase, the Commission transfers a copy of the notification and the other important documents to State Members in a maximum of three days. The most important facts are investigated by the Commission as the Merger Regulation gives it the power to further investigate on the concentrations. If the pieces of information that the Commission demands are not handed in in the given deadline, the Commission can impose a fine of up to 1% of undertaking's total revenues. The Commission can also audit the company, for example it can ask to investigate into the offices or look at the company's books. (Bellis, 2017)

The second phase begins if during the first phase, the Commission gave the third decisions (serious doubts about the compatibility). At the end of this second phase, the Commission may again choose between 3 decisions: (i) the concentration is compatible with the common market without any condition, (ii) the concentration is compatible with the common market under conditions, and lastly (iii) the concentration is forbidden. This decision must be given after a delay of 90 working days beginning at the opening of the procedure. If the implicated undertakings ask for it, a delay of up to 20 days can be added. This happens if the case is particularly complex. The Commission has the same powers than in the first phase. (Bellis, 2017)

III.3.2. Test of concentration

The first task of the Commission to determine whether a concentration is compatible with the common market is to properly identify the market of the undertakings. Indeed, the market size is important to evaluate the market shares of the undertakings.

Firstly, the Commission evaluates if the operation is compatible with the common market. The first test that is used is the dominance test. However, this test is not the only one anymore. Indeed since 2004, the Commission agreed that a concentration was approved if the "concentration which would not significantly impede effective competition in the common market or in a substantial part of it, in particular as a result of the creation or strengthening of a dominant position" (EC N°139/2004). In other words, if a concentration does not create or reinforce a dominant position but significantly harm the effective competition, the concentration does fall under the power of the Commission.

More specifically to vertical mergers, the Commission issued a Notice in 2007 (Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings 2008/C 265/07). In this document, vertical mergers and acquisitions are differentiated from conglomerate mergers. The Commission recognize that vertical M&A are less likely to lessen the competition on a market and that they can create gains of efficiencies. Moreover, the merger will only harm the competition if the undertakings own a large market share on at least one of the concerned markets or create or reinforce a dominant position.

The EC also differentiate between coordinated and non-coordinated effects. The later arise when non-horizontal mergers give rise to foreclosure. Foreclosure is defined as any instance where the access to supplies or market to a competitor is hindered or eliminated as result of the merger. This generates a lowering of incentive for a firm to enter the market or to compete. Thereby, the merged companies may raise the prices to generate more profit. Coordinated effects describe situations where competing companies are now more likely to coordinated (creating cartels for example) or that their coordination is made easier by the merger. (2008/C 265/07).

Usually, vertical mergers will not be extensively examined by the Commission except in four cases that are cited in the guidelines : (i) a company for which it is very possible that it will expand in the near future (for instance thanks to a new technology), (ii) there are directors or shareholders active in multiple companies on the market, (iii) one of the merging entities is a company that is very likely to disrupt coordinated conduct on the market, (iv) there are proofs of coordination among firms of the market. (2008/C 265/07)

IV. Competition law in the U.S.A.

The antitrust law in the U.S.A. is composed of both federal and state government laws. The aim of those laws is not the market efficiency but to protect the competition to benefit the consumers. (Kirkwood, J. B., & Lande, R. H. ,2008)

There are three pillars to the antitrust policies in the U.S.A.: The Sherman Antitrust Act of 1890, the Clayton Act of 1914 and the Federal Trade Commission Act of 1914.

IV.1. The Sherman Antitrust Act

The Sherman Act was ratified by Congress in 1890. Even though this act is quite old, it remains very powerful. Indeed, just between 2016 and 2017, this act gave rise to more than \$3.049 Billion in criminal fines only for the fines equal or above \$10 million. (Department of Justice, 2018)

In the first section of this Act, it is stated that every operation (contract, conspiracy or combination through trusts or otherwise) that hurt the trade between Member States or with another country is illegal. Any person or undertaking, that would engage in such operation is declared to be guilty of felony and can be fined and/or imprisoned, given the court's choice.

The second section condemns monopolies. As in the first section, any person who is guilty of creating a monopoly is also guilty of felony and may also be condemned to pay a fine and/or to imprisonment. The same goes for operations taken in the District of Columbia or between it and another state or nation as stated in the third section.

The fourth section gives power to the district courts for this act. Moreover, it is the responsibility of the Attorney General to prevent or stop such operations. When the court is made aware of an operation which hurts trade, it shall proceed as soon as possible, to the hearing and determination of the case. During this process, the court is entitled to prohibit or temporarily restrain such operation. The rest of the act states that the court can call anyone in regard to the investigation, even if this person is not currently in the court's district, also any property owned by the presumed monopolist can be seized by the court if it is being transported to another district or state.

None the less, such operation will not fall under this jurisdiction if it does have a direct, substantial and reasonable foreseeable effect either on trade with or without foreign nations or on export trade or commerce with another nation, or a person who is trading in the U.S.A., and a claim arises from those effects under this act. This act includes undertakings and associations that exist or is authorised by any country including foreign countries. (Sherman Act, 1890)

In summary, the first section of the act prohibits cartels, vertical agreements, joint ventures and many mergers if those practices are made by two persons or

undertakings competing. The second section prohibits monopolies. As stated earlier, violating the Sherman Act can lead to paying a fine or even being imprisoned. Even though most of the cases are civil actions, the Sherman Act is also a criminal law. This induces that persons violating it can be prosecuted by the Department of Justice. This usually happens when the case regards intentional and clear violation of the Act. In this case, the fine imposed has a maximum amount of \$100 million for a corporation and \$1 million for an individual and a maximum time of ten years of imprisonment. Under federal law, the fine can go up to twice the prejudice of the victim or twice the amount gained by those illegal practices if either one of those is higher than \$100 million. (Sherman Act, 1890)

In his paper, Meese (2010) explains why the section two of the Act does not prohibit all monopolies. Indeed, the court usually asks the plaintiffs to prove two elements: (i) the first one is the fact that the accused person is in possession of a monopolistic position in a properly defined, relevant market, and that, (ii) this position was acquired or maintained through exclusionary conducts. So, this means that if the undertaking became a monopolist because of its capabilities and superiority to its competitors, it cannot be pursued under this act.

It is also worth mentioning that the main focus of the Sherman act is the consumer welfare even though it is not clearly stated in the Act itself, it is how it has been interpreted generally by the Supreme Court¹. This act was created by the Congress to generalize state and common laws. (Dameron, 2016).

IV.2. The Clayton Act

The Clayton Act was signed into law in 1914 and was created in reaction to large corporations practicing discriminatory pricing (i.e. Imposing different prices to different types of buyers), exclusive dealings and anti-competitive mergers. This act is made of 27 sections and is way more precise and complete than the Sherman Act.

¹ See *Kirtsaeng v. John Wiley & Sons, Inc.*, 133 S. Ct. 1351, 1363 (2013); *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 906 (2007); *Brooke Grp. Ltd. v. Brown Williamson Tobacco Corp.*, 509 U.S. 209, 221 (1993); *Nat'l Collegiate Athletic Ass'n v. Bd. of Regents of Univ. of Okla.*, 468 U.S. 85, 107 (1984)

The most interesting sections are noted here after. The second section declares unlawful price discrimination between buyers if this discrimination may substantially decrease the competition or tend to create a monopoly. This section also empowers the Federal Trade Commission to investigate and judge the case. Another important section is the third one. In this section it is declared unlawful to forbid a purchaser or lessee to deal with a competitor once again if it lessens the competition or creates a monopoly. The fourth section declares that every person who is injured by anything forbidden by this antitrust law may sue an undertaking for any amount and will recover three times the amount of the damages that he suffered as well as the cost of this suit. (Clayton Act, 1914)

The Clayton Act also examines how to calculate the amount of damages. This can be done either by statistical or sampling methods, the computation of illegal overcharges or by any other reasonable system that the court permits.

The seventh section of the act specifically refers to mergers and acquisitions. It is declared that no person can acquire directly or indirectly, parts of the whole stock or capital share or assets of another person if it lessens the competition in the United States or tends to create a monopoly. This doesn't apply to speculation in the sense that the goal of speculators is not to exercise their rights to vote in the company but to resell the shares, assets or stock to make a profit. This section should also not refrain companies to create subsidiaries of their lawful activities. (Clayton Act, 1914)

Procedures for mergers and acquisitions

1. Premerger notification and waiting period

(a) Filing

Not all merging companies are required to notify the FTC, it depends on thresholds adjusted every year by the FTC. All the threshold below are the amount adjusted for 2018 and are retrieved from the FTC website (Federal Trade Commission, 2018). It is required to notify the FTC if (i) the buyer or the seller of the voting securities is engaged in commerce activities and (ii)

- a. the acquiring person would hold a total amount of voting securities and assets of more than \$337.6 million or

b. between \$84.4 million and \$337.6 million and any voting securities or assets of a person engaged in manufacturing which has annual net sales or total assets of \$16,900,000 or more are being acquired by any person which has total assets or annual net sales of \$168,800,000 or more; any voting securities or assets of a person not engaged in manufacturing which has total assets of \$16,900,000 (as so adjusted and published) or more are being acquired by any person which has total assets or annual net sales of \$168,800,000 or more; or any voting securities or assets of a person with annual net sales or total assets of \$168,800,000 or more are being acquired by any person with total assets or annual net sales of \$16,900,000 or more.

(b) Waiting period, publication, voting securities

The waiting is of 30 days (or 15 days if it is a tender offer) beginning on the day the notification is completed. During this period, the FTC and the Assistant Attorney General may terminate the period earlier if they don't intend to take an action against the merger.

(c) Exempt transactions

There is a list of twelve transactions that are not concerned by this procedure. It is not useful to cite all of them but only the most important ones. For example, acquisitions in the ordinary course of business, acquisition of titles that does not confer any voting rights, acquisitions for investments purpose only, etc.

(d) Commission rules

The Commission and the Assistant Attorney General are the ones who should require the notification form undertakings and that should specify what documents must be presented. On top of that, they can exempt persons or operations from the filing requirements or prescribe other rules that can be appropriate or needed for this section.

(e) Additional information, waiting period extensions

Both the Commission and the Assistant Attorney General can ask for more information before the end of the waiting period. They also may extend the waiting period of a maximum of 30 days.

Those were the most important points of this section describing the procedure for a merger or an acquisition.

On top of mergers and acquisitions concerns, the Clayton Act also prohibits directors of corporations to be directors of two competing companies which are engaged in commerce and that could hurt the competition. The condition for that is that each undertaking has a sum of capital, surplus and undivided profits of more than \$16.9 million.

It was primarily intended that the cases of mergers would be presented to the Commission or the Assistant Attorney because of the dissatisfaction with how the Sherman Act was administered by the means of lawsuits brought by the Department of Justice in Federal courts. Therefore, the power to deal with mergers was transferred to administrative instances. It was suggested that the Commission would be the main instance responsible for cases. Indeed, it is believed that an independent agency with intensive knowledge and judgement would be better prepared to deal with sometimes very complex cases. (Elman, 1964)

IV.3. The Federal Trade Commission Act

The Federal Trade Commission (FTC) is an independent federal agency. It develops policy and researches tools regarding competition. Its two goals are the protection of consumers and promoting competition in the U.S.A. The Agency was created on September 26, 1914, when the president signed the Federal Trade Commission Act. The headquarters of the Commission are located in Washington DC. (Federal Trade Commission, what we do)

The Commission is a tribunal created by the FTC Act. It is led by five Commissioners of which maximum three belong to the same political party. They are chosen for a duration of seven years by the President with the acceptance of the Senate. (Sherman Act, Section 1, 1914)

The initial goal of the Commission was not to create a complex code, but it is based on the Sherman Act. The FTC has both investigative and Law enforcement authority. It also has the power to enforce the Clayton Act. (Hoevenkamp, 2010) However, it does only have the power to enforce the Sherman Act, which is the most important antitrust policy, thanks to the Supreme Court which stated that every action violating the Sherman Act automatically violates the FTC Act. (Federal Trade Commission, The Antitrust Laws)

The FTC Act has a very broad spectrum of acts it is responsible of. Indeed, it declares unlawful every “unfair” method or act of competition which could affect the commerce (i.e. trade between the State Members and foreign countries). The Commission has to issue a complaint against undertakings or persons who are believed to acting unfair and influence competition if it is in the advantage of the public. If after an investigation, the Commission can prove that there have been unfair practises created by the undertaking or person, it can demand to cease or desist from using such practices. If the defendant wants to, he can get a review of the case by the Court of appeals of the United States. This decision is final unless the defendant wants to take it to the Supreme Court. (Federal Trade Commission, The Antitrust Laws)

IV.4. Hart–Scott–Rodino Antitrust Improvements Act

The Hart-Scott-Rodino Antitrust Improvements Act (HSR act) is a set of amendments to the previous antitrust acts that was signed into law in 1976. It aims is thus also to regulate mergers and acquisitions of a certain size in the U.S. It specifies the 30 days waiting period that starts after the parties to a transaction submit the completed documents required and pay the filing fee. As before, the government may extend the duration of the waiting period. For this whole part, the reference is: The Hart-Scott-Rodino Antitrust Improvements Act of 1976 (law: 15 U.S.C. § 18a).

Under this act, three premerger tests must be run in order to determine if a premerger filing is necessary. Those tests are:

1. The commerce test: this is a trivial test that states that any party of the merger must be engaged in commerce or be involved in any activity that affects commerce.

2. The size-of-person test: as a result of the merger, the acquiring company would hold a total amount of the voting securities and assets of the acquired company either:
 - a. More than \$337,6 million (as adjusted as of 2018); or
 - b. More than \$84,4 million and
 - i. Any voting securities or assets of a person engaged in manufacturing or not which has annual net sales or total assets of \$16.9 million (as adjusted) or more are being acquired by any person which has total assets or annual net sales of \$168,8 million (as adjusted) or more;
 - ii. Any voting securities or assets of a person engaged in manufacturing or not which has annual net sales or total assets of \$168,8 \$16.9 million (as adjusted) or more are being acquired by any person which has total assets or annual net sales of \$16.9 million (as adjusted) or more.
3. The size-of-transaction test: companies must file the premerger documents if the acquired assets or voting securities sum up to more than \$15 million, or if 15% of voting securities (or more) are acquired and that the acquiring undertakings take control of another undertaking with annual net sales or total assets of \$25 million or more as a result.

There is a fee to pay to the FTC for filing a HSR Form and it depends on the transaction size. This is not especially relevant in the context of this master thesis and thus will not be stated.

Practical part: case study

I. Overview of companies: Aetna and CVS

I.1. Overview of the pharmaceutical sector in Europe and in the U.S.A.

The pharmaceutical sectors in the U.S.A. and in Europe are quite different so we will look at their specificities.

I.1.1. Pharmaceutical industry in Europe from manufacturer to retailer

The European Commission conducted an inquiry about the pharmaceutical sector and made a communication about it in 2008. One of the aims of this inquiry was to define the sector to support the regulators regarding the articles 81 and 82 of the EC Treaty. This sector was worth €138 billion when looking at factory outputs and €214 billion at retail prices in 2007.

First, let's look at the main originator companies in the EU regarding their turnover in prescriptions medicines as of 2017:

Figure 7: Largest European companies by turnover in prescription medicine (2007)

Company	Rank	Turnover EU (€ thousand)	Turnover USA (€ thousand)	Turnover global (€ thousand)	Share EU/global
Sanofi-Aventis	1	11,064,138	9,474,424	28,051,716	39%
Glaxo-Smith-Kline	2	8,189,486	13,513,760	28,032,381	29%
Pfizer*	3	8,004,675	15,589,595	32,433,183	25%
Hoffmann LaRoche	4	6,981,780	9,009,986	22,391,735	31%
Astra-Zeneca	5	6,260,463	8,400,802	19,819,190	31%
Novartis	6	5,463,289	6,473,219	17,530,229	31%
Wyeth*	7	3,332,506	6,159,070	11,590,479	29%
Johnson & Johnson	8	3,309,067	11,385,274	18,027,103	18%
Eli Lilly	9	3,201,487	7,016,469	12,869,539	25%
Abbott	10	2,845,826	5,695,479	10,878,652	26%
Total		58,652,717	92,718,078	201,696,207	29%

Source: Pharmaceutical Sector Inquiry

* On 26 January 2009 Pfizer and Wyeth⁴³ announced the conclusion of a merger agreement creating the largest pharmaceutical company in the world. The Swiss-based company Hoffmann LaRoche has also announced the takeover of the complete American biotech company Genentech.⁴⁴ These transactions will slightly modify the above ranking.

Source: European Commission, 2009

What we can see from this table is that for top companies, the largest share of their revenue is made outside of Europe. Moreover, for most of these companies, a higher revenue is made in the U.S.A. compared to Europe. On average, only 30% of their revenues come from Europe. This can be explained by the differences between the pricing methods in those two areas.

The sector is very regulated and is driven by R&D. There are two types of companies when looking at the supply side. First, the originator companies which are usually the ones patenting drugs. They have high development costs due to the long R&D processes and drive innovation into the sector. Then there are the manufacturers of generic products. Those companies produce lower costs medicines based on expired patents of originator companies. Those last companies help the governments to keep their public health budgets contained. (Pharmaceutical Sector Inquiry Final Report, EC, 2009)

In this sector, the demand is quite different than other manufacturing sectors. Indeed, the final consumer (the patient) is not the one choosing which product to buy, it's the doctors who choose which medicines to prescribe. On top of that, as the medications are often reimbursed by Member States' national health insurance schemes, neither the prescriber nor the patient is price sensitive. Moreover, this sector is also different from others because the pricing is not only determined by supply and demand, but negotiations between regulators and suppliers.

Given this enquiry, the sector is in the process of concentrating. Indeed, originators companies are acquiring generic companies, other originator companies and biomedical firms.

The retailers in the EU are typically SME's or standalone pharmacies. This sector is also very regulated and some Member States (Italy, Germany, France and Spain) prohibit vertical and horizontal mergers of pharmacies with non-pharmacists. (Pharmaceutical Sector Inquiry Final Report, EC, 2009)

The sector of health insurers in Europe is divided between non-profit organisations such as mutual and for-profit companies (private insurers). On average, the market is very concentrated with more than 50% of the market in most countries in the hands of the three main competitors (Sagan & Thomson, 2016). The market size

for health insurance was €124 billion in premiums paid in 2016. (Insurance Europe, 2016)

I.1.2. Pharmaceutical industry in the U.S.A. from manufacturer to retailer

The pharmaceutical industry and healthcare industry are very different in the U.S.A. in comparison with the European system. Indeed, it is well known that American healthcare services are more expensive than healthcare in Europe. This is due to a lower coverage of healthcare by the government. In 2010, President Obama enacted the Affordable Care Act (ACA). This plan ensures that more Americans can benefit from state health coverage compared to the previous legislation. Indeed, given the OECD report on health of 2017, Americans spend \$9,892 on healthcare compared to \$4,000 for the average OECD members. Still given this study, the expense per person in the U.S.A. is 80% higher than in Germany (OECD, 2017). Next to that, the amount paid per capita for drugs in the U.S.A. is \$1100 on average (Langreth, 2018)

As described more in depth in the next two sections, health care benefits companies play an important role in the coverage of expenses. Those can be self-paid or paid by the employers. In both cases those companies work as insurer in case of health issues. Their coverage varies depending on the subscription paid for/by the patient.

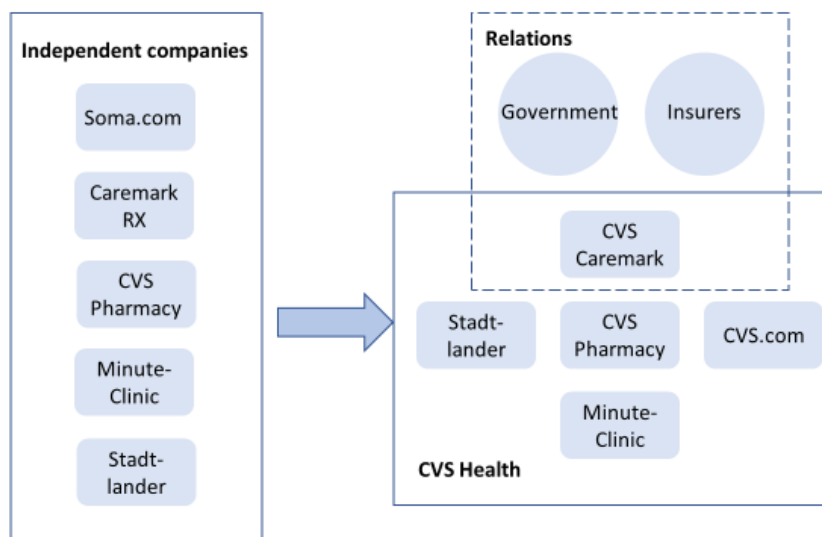
I.2. CVS Health (Consumer Value Store)

CVS Health is a corporation of retail pharmacy and health care company originated from the U.S.A. The company was founded in 1964. Back then, its business was the retail of health and beauty products. Later, the company started incorporating pharmacy department in its stores. A major move for CVS was to create a pharmacy benefit management company (CVS Caremark). A pharmacy benefit management company in the U.S.A. is a third party responsible for managing the relations between pharmacies, drug manufacturers, private insurers and government programs. Its aim is to maintain or reduce the pharmacy expenditures and at the same time trying to improve health care outcomes. (American Pharmacists Association, 2015) The business model of those companies is to negotiate with drug manufacturers to get lower prices for drugs and then to purchase drugs on an aggregate level. The rebate

negotiated with drugs manufacturer is then passed on partially to their clients, the insurers.

Since then, CVS has acquired a plethora of stores and other companies (both vertical and horizontal acquisitions) from them we can highlight the acquisition of another chain of pharmacy Stadtlander, which propelled CVS at the first place of the larger pharmacy chains in the U.S.A., and the acquisition of MinuteClinic which has been the first walk-in clinic in the country in 2000 and is now the largest one. With this later, CVS acquired forward in the sense that it now holds a chain of clinics in which drugs are prescribed. Thanks to this acquisition, CVS owns another level of the pharma industry. Another important acquisition was the acquisition of Soma.com, the first online pharmacy at the time (1999) after the merger its name was changed into CVS.com. On top of that, in 2007, CVS merged with a pharmacy benefit management, Caremark Rx. (CVSHealth. 2018)

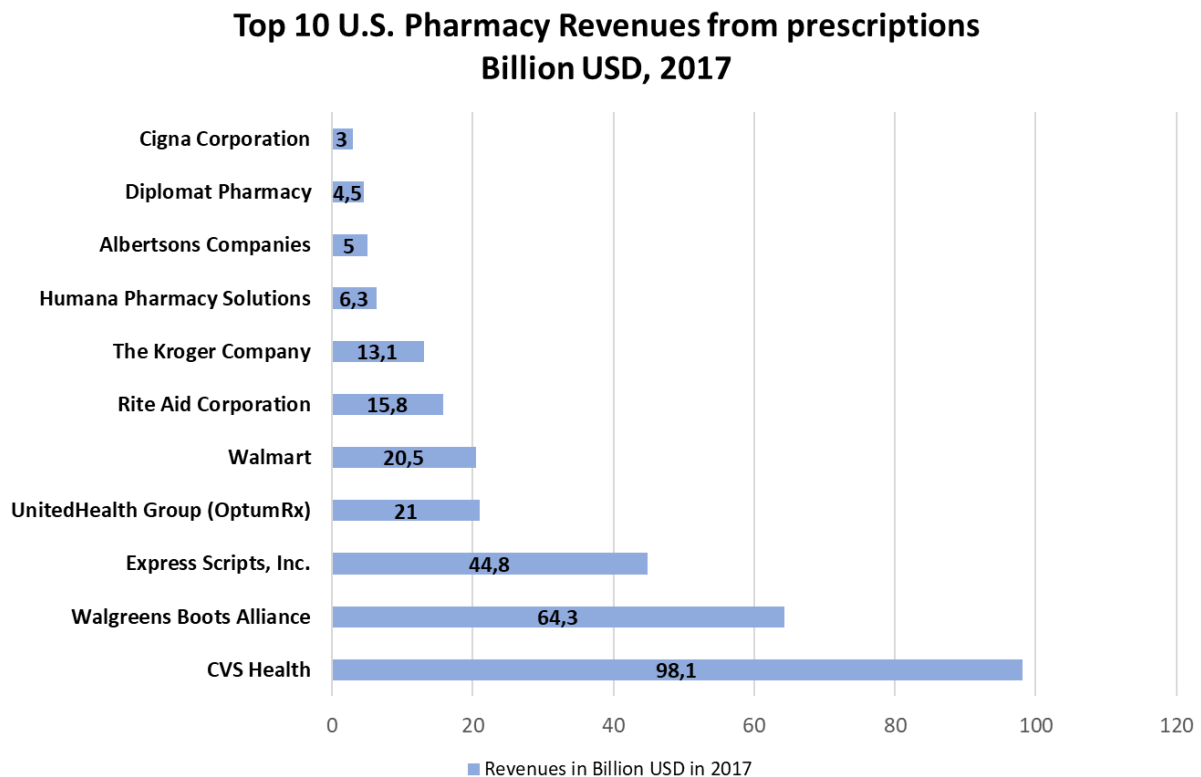
Figure 8: illustration of some mergers of CVS and of its relations with the government and private insurers through CVS Caremark



Nowadays, CVS health has more than 9.800 retail locations in the U.S.A., the District of Columbia, Puerto Rico and Brazil and more than 1.100 MinuteClinic locations. The company employs 246.000 employees and serves five million customers every day. Through its pharmacy benefit management, it holds more than 94 million plan members. (CVSHealth. 2018)

CVS is the leading pharmacy company in the U.S.A. The top three podium of pharmacy companies in the U.S.A. is occupied by CVS, Walgreens Boots Alliance and Express Script.

Figure 9: Leading U.S.A. pharmacy based on prescription revenue in \$ billion

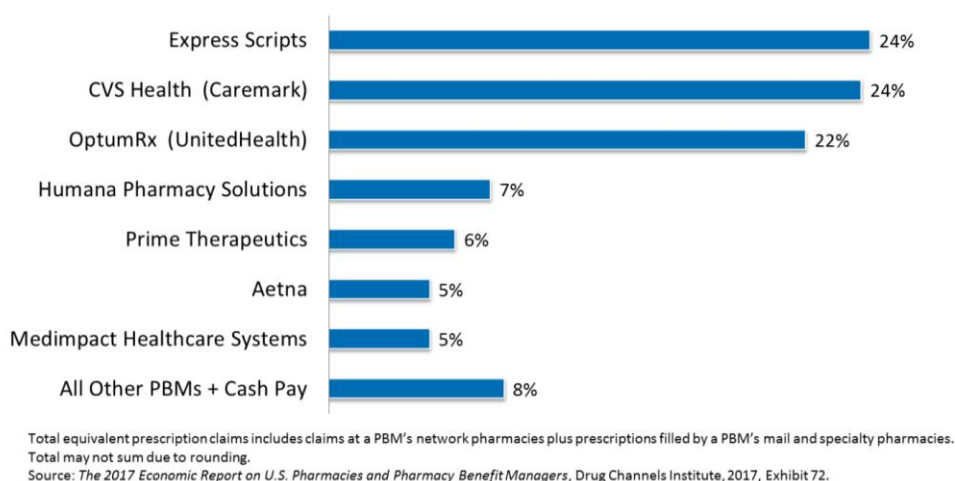


Source: Fein, A. J. (2018).

It can be seen on this graph that the industry is very concentrated and that the three main competitors together hold more than 70% of the market. CVS itself has 35% of market share.

CVS Caremark, the PBM acquired by CVS Health is now one of the three largest PBM in the U.S.A.. Together with Express Scripts and OptumRx, CVS Caremark holds approximately 70% of the market share. This makes the PBM market extremely concentrated and allows for market power for those three companies. The market shares on the PBM market can be found in the next figure, it can be seen that the fourth competitor (Humana) is well behind the top three of this industry. (Balto, 2015)

Figure 10: PBM Market share, by total equivalent prescription claims managed, 2016



Source: Drug channels, 2017

Since 1996, the company's shares have been exchanged on the New York Stock Exchange. Nowadays, the price for a share is at approximately 66 USD. On the next graph is displayed the variation of price of the stock as well as the pharmaceuticals sector average. Multiple events can be highlighted: around the date of the announcement of the merger between Aetna and CVS in beginning of December 2017, its stock fell drastically (-30%), moreover, a smaller decrease of value was reported when the news of Aetna shareholders approving the merger was released in March. A fall in shares price on the market is not unusual in merger. Indeed, given Ruback, R. et al. (1983) this kind of price decrease has been noted with significance in multiple cases.

Another important event for the company was the press release (June 2018) of Amazon stating that it would acquire a small online pharmacy, PillPack. This acquisition will put Amazon in direct competition with CVS regarding the sales of drugs and pharmacy benefit management. This can be seen on the second illustration presenting the actual value of the stock over the past year.

Figure 11: stock variation of CVS against pharmaceutical sector



<https://www.hl.co.uk/shares/shares-search-results/c/cvs-group-plc-ordinary-0.2p>

Figure 12: CVS' stock price fluctuation over the past year:



Source : <https://finance.yahoo.com/quote/CVS/profile?p=CVS> retrieved the 26/07/18

I.3. Aetna

Aetna is an U.S.A. based private health care insurer founded in 1853. The company sells different types of health care plans to different public targets (students, companies, etc.). The company is registered as a health care benefits company, which is a sort of company that offers health care coverage. The health care items that are covered by those companies compose the insurance plan for the clients. Their insurances comprise dental care, medical, pharmaceutical coverage.

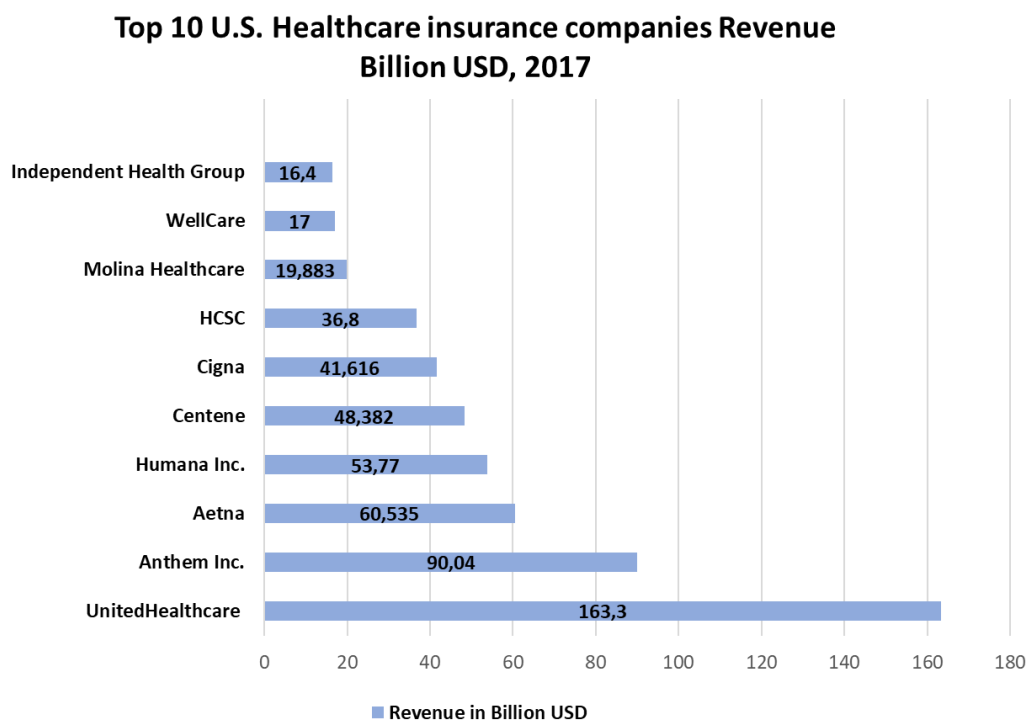
The firm has grown thanks to a lot of acquisitions, mainly horizontal ones. The largest of the past years has been the acquisition of Coventry Health Care, another health care insurer, for \$7.3 Billion.

Aetna holds four subsidiaries, all active in the U.S., those are:

- **ActiveHealth Management, Inc.** is a provider of health management solutions. Its services are multiple: from providing analytics and insights to wellness programmes to try and improve the quality of care whilst lowering its costs. The company is thus a digital solution for its clients. (Bloomberg, 2018a)
- **Aetna Student Health Agency Inc.** is focused on providing affordable health care plans for students in the U.S.A.
- **Medicity, Inc.** allows hospitals and doctors to share information in a secure way. (Bloomberg, 2018b)
- **Meritain Health, Inc.** offers health benefits administration service. Its clients are various they include hospitals, manufacturers and schools. It helps its clients manage their employees' healthcare plans. (Bloomberg, 2018c)

During the nineties, Aetna was providing pension funds, automobile insurances, group life insurances and health care benefits. At that time, the company settled many acquisition deals with other health care insurers. It is in the beginning of this century that the company started focusing on its core business by divesting other activities. In 2017, Aetna acquisition of Humana (another health insurer) was blocked by regulators because it would have lessened the choice of medical coverage for seniors. Currently, at least 23 million people rely on Aetna medical insurance.

Figure 13: Leading health insurance companies in the United States in 2017, ranked by revenues in USD Billion



Sources : see in footnote ²

As can be seen on this graph, Aetna is the third biggest health insurer of the U.S. This sector is also highly concentrated as the three leaders of the market have a market share of approximately 60%. Aetna itself has a market share of 12%.

² Business Wire (2018), Market Watch. (2018), Health Care Service Corporation. (2018), Merger Proposal (2018), Wellcare (2018), Molina Healthcare (2018), Centene (2018), Keiser Permanente. (2018).

Figure 14: Stock variation of Aetna over one year



Source : Yahoo Finance, 01/08/2018

It is interesting to note that the trend of Aetna's Stock is quite different from the one of CVS. Indeed, when the merger was announced, the value of the stock didn't fall, on the contrary, it kept on rising. This is usual in case of an offer supported by the target firm's management (Ruback, R. et al., 1983). However, from February and for two months, the stock fell heavily. This is due to a badly impacting event: Aetna was under investigation by California's insurance commissioner due to revelations of a former medical director. The later admitted that he had never looked at patients' records before according care coverage. This is extremely alarming for a health insurance company to not review clients' medical history before granting coverage. Its stock has recovered since then.

II. Merger

II.1. Type of merger

On the 9th of February 2018, the boards of CVS Health and of Aetna sent a merger proposal to all Aetna's shareholders and CVS' stockholders. This document describes how the merger should take place if it is accepted by the FTC. The goal of this document is to inform both companies share and stockholders before their vote in favour or against the merger proposal. Most of the information of this next sections comes from this document (which will not be put in the annexes due to its length of 400 pages). (Merger Proposal, 2018)

In November 2017, CVS Health created a new wholly owned subsidiary, Merger Sub Corp., solely for the purpose of conducting the merger. The subsidiary is not active except for activities related to the merger.

The merger should occur as follows: Aetna will merge with Merger Sub and Aetna will be the company surviving the merger and become a wholly owned subsidiary of CVS Health. After this merger, the common shares of Aetna will no longer be traded on public markets.

If the merger takes place, the shareholders of Aetna will receive for every common share \$145 in cash and a portion (0.8378) of a CVS Health's common share. CVS does not want to issue fractional shares, so the fractions of shares will be paid in cash given the market price of a CVS Health share at the time of the merger.

Given Sjostrom (2008), this is an unconventional way of merging companies, but it happened more and more frequently this past 20 years. This practice is called a reverse triangular merger and the Aetna-CVS merger is a typical example for this kind of merger. They are supposed to be less costly than "regular" mergers in which companies just merge directly or one company acquires the other.

As said in the theoretical part, companies prefer to refer of acquisitions as merger for PR reasons. This is the case in this acquisition. Indeed, Aetna and CVS will not have the same weight of decisions but more importantly it is CVS that will pay to acquire Aetna and a new company will not be created from this acquisition. Once the acquisition is completed, Aetna will be a subsidiary of CVS. In a managerial point of view, this is thus an acquisition but on a legal point of view is a merger.

II.2. Reasons for the merger

II.2.1. Reasons in favour of the merger for Aetna

Given the merger proposal, reasons in favour of the merger for Aetna's board are multiple. Those reasons are to be taken carefully as the board will get advantages for the merger as there is a premium for the purchase of the share and other measures in favour of the board that I will not investigate in this thesis but can be found on page 209 of this proposal (those are mainly pecuniary advantages).

First, Aetna believes that by "merging" with CVS it will gain consumer engagement thanks to the large presence of CVS. Indeed, it should improve Aetna understanding of its clients and improve its relationship with them through its presence in CVS stores.

Secondly, Aetna believes that the costs of healthcare will be reduced thanks to CVS' in-store-clinics that are less costly than other forms of clinics or hospitals. Moreover, the quality of the care should be increased thanks to a better access to care for clients.

Next to that, the integrated medical and pharmacy solution should improve medication adherence thanks to the sharing of data from Aetna.

Moreover, both companies believe that the care for seniors will be improved through the Medicare Act. Indeed, when working together, the firms can lower the cost for elderly care under the Medicare.

The fifth perceived advantage by Aetna is the fact that it will be able to offer more innovative plan designs thanks to CVS's care delivery system. This should lower for the clients but also easier to find the right the plan for everyone.

Thanks to Aetna digital assets, it hopes to allow clients to directly take appointments, manage their medications and access their personal data on their mobile devices.

Aetna hopes to drive down costs by \$2.4 billion per year during the five-first years of the merger. This would be due to the increased operating efficiency. Those kinds of estimations are to be taken with a grain of a salt as it is well known that they can be very far away from reality. On top of that, more often than not, the costs linked to the merger outnumber the synergies.

As said at the beginning of this section, the board and managers have incentives for this merger, CVS has promised that the management of Aetna will remain at the head of this subsidiary as a separate entity.

Lastly, Aetna believes that it will be easier to serve Medicaid patient through the CVS in-store-clinics.

II.2.2. Reasons in favour of the merger for CVS Health

As for Aetna, the board of CVS has also strategic reasons to merge. The first reason of the board is to create a leading health care platform with a yet unseen suite of services. They also want to link those services with a high connectivity.

They aim to improve the quality of care thanks to the integration of Aetna's data and analysis. As well as decreasing the cost for clients through the low costs of CVS delivery settings and Aetna's health care management expertise.

The board members foresee synergies of \$750 million and strong and diversified cashflows across the future years.

On top of that, we can add that CVS Health will gain a large market share in the insurance sector and will thus gain market power. The merger will allow CVS to capture profits from a new market and leaves room for innovation and growth thanks to the cooperation of both companies.

II.2.3. Common reasons in favour of the merger

If we analyse this merger in terms of transaction costs, we should look first at short term issues. As seen previously, short term problems occur because of opportunistic agents and a small number of competing firms, opportunism is only risky if there is a small number of firms. In the case of Aetna and CVS, there is no problem of restricted number of firms competing. Hence, given this point, there is no incentive to merge.

Let's now look at long-term concerns caused by bounded rationality and uncertainty in the market. In this case, we can find evidence of incentives to merge. On the one hand, like for everyone, the managers of both companies are subject to bounded rationality. In addition, one can argue that this market is particularly difficult because of the uniqueness of the offers both companies offer to their clients. Indeed, everyone of their clients have special needs and thus need specific services and products. On the other hand, the uncertainty on the healthcare market is a matter of

facts. As matter of fact, the current President of the United States has made many attempts to change the Affordable Care Act, and one of his campaign promises was to replace the Obamacare by something else. This has not happened yet, but it is clearly a source of uncertainty for both companies. Furthermore, as the two companies negotiate frequently on prices, it would be less costly to directly exchange rather than to make use of new contracts. This way, instead of having to take decisions on potential outcomes, both companies can act sequentially. Lastly, uncertainty is also decreased thanks to the alignment of goals and expectations inside the organization especially in terms of drug pricing and bargaining. This should lead to a more satisfying trading atmosphere.

Additionally, asymmetry of information between the two firms should not appear in an integrated firm, thanks to that, CVS should benefit from Aetna analysis and Aetna should benefit from CVS data in the stores and clinics.

II.3. Risks identified regarding the merger

II.3.1. Risks identified by Aetna

To start off, of course financial issues are the biggest for the board as they own a large part of the shares of Aetna.

A first financial risk is that the rate of exchange between the shares and stocks of both companies is considered as fixed (see above for the exchange rates). In the case of a considerable decrease in value of CVS' stock this could be detrimental to Aetna shareholders. As the time between the redaction of the proposal and the actual merger can be long, the risk increases.

Moreover, if the merger is blocked by the regulators, this could result in a significant loss for both Aetna and CVS. Indeed, given Sjostrom (2008), an interrupted merger is detrimental for both companies' stock exchange. On top of that, given the contract, CVS is not compelled to comply with every regulatory condition to the merger. Hence, the merger could be terminated because of regulatory requirements or remedies if CVS finds that it could have negative material effect on the company.

On top of that, if the merger is terminated due to certain reasons, Aetna will have to pay a fee of \$2.1 billion to CVS.

Then, there is also the fact that the merger consideration will be taxable to Aetna's shareholders.

There is also the risk and uncertainties due to CVS Health's business and operations and in the regulatory environment, including the health care regulatory environment.

The fact that Aetna's operations are restricted under the terms of the merger agreement may prevent it from taking strategic decisions on opportunities. This could be detrimental especially if the merger is not completed.

There are also general risks to every merger, those include: the fact that the merger could take more time than expected which could to various detrimental effects for Aetna such as employee attrition (especially risky for key employees), loss of business partners because of the uncertainty, etc., the fact that the expected returns and synergies might have been over valued or arise latter than anticipated, the fact that the costs of merging both companies could be superior to what is anticipated, the loss of customers due to the uncertainty or negative expectations from the merger.

II.3.2. Risks identified by CVS

Most of the risks identified for Aetna also applies for CVS. But on top of those risks CVS has already incurred significant costs due to the merger and will continue to sustain costs due to the merger even if it cannot be completed. Moreover, there is a risk of diverting from the core business of CVS as the managers (and the resources of CVS) might not be as focused as before on the core matters and loose opportunities because of that. As seen in the description of CVS, the share price has already sunk due to the announcement of the merger and could possibly continue to decrease.

An important issue when merging is the dilution of the acquiring company due to the issuing of new shares exchange to the stockholders of the target company. A dilution of shares decreases the decision power of previous shareholders and can induce changes in the managerial strategy of the firm.

We can also think of the recent scandal involving Aetna which could undermine the reputation of CVS. This event could also decrease the market value of CVS and making it loose investors, clients, suppliers or any other business partner.

II.3.3. Risk identified for both companies

As presented in a previous section there are drawbacks to vertical integration and especially room for efficiency loss. The first efficiency distortion that could affect the

merging firms is the internal procurement bias. In this case, Aetna might be better off when trading with another pharmacy retailer regarding pricing than it would be with CVS. The other way around is also true as CVS and Aetna have diverging goals: CVS wants to make the higher profit as possible by selling expensive drugs, while in order for Aetna to make the most profit, it should lower the retail prices of drugs.

The internal expansion bias, however, should not affect the newly created company as both business units are of crucial importance, neither should be divested once integrated.

The programme persistency bias occurs when a service is still provided even though it is not profitable anymore. This could happen if a plan provided by Aetna is not profitable enough anymore, for example a plan for seniors, but it is continued to be sold.

Bureaucratic costs are also a reason of efficiency distortion, especially because of the size of the company. In fact, Aetna will become a new subsidiary of CVS. The management of Aetna will thus be accountable to the management of CVS. In this context, the company becomes more hierarchical and as seen before this can lead to communication distortion, deliberate due to the dissatisfaction of employees with the merger or simply due to errors. Actually, employee dissatisfaction can lead to attrition and can be very detrimental and costly to replace for the company especially regarding key or very experimented members. In this acquisition, everything has been made to retain the high-level managers (who are the most expensive) and thus to limit this risk. Additionally, employees should feel safer by seeing that their managers are staying within the company and should also not be too affected by this acquisition. But of course, some employees will probably be laid off like in almost every acquisition as some positions do not need to be occupied twice.

IV. Department of Justice's decision

IV.1. Thresholds check

As explained in the theoretical part, to be reviewed, the merger must reach some threshold. This is the starting point for every merger in the U.S.A. Hence, the first task of our analysis should be to verify that those criterions are met.

Under the HSR Act, three premerger tests must be conducted to determine if the filling is necessary. The first test is trivial and consists to make sure both companies involved in the merger are involved in commerce activities. This is obviously for both CVS and Aetna which both sell products and services to clients.

The second test is the size-of-person test in which we must look at the amount of voting securities of the acquired company obtained by the acquiring company. As Aetna will become a subsidiary of CVS its stock will no longer be publicly traded. CVS will thus buy back every share of Aetna through the merger of Aetna with Merge Sub. The actual market capitalization of Aetna is approximately \$61.69B depending on the stock price of the day. But this is not the number we are interested in. We must look at the number of basic outstanding shares multiplied by the price offered by CVS on the merger. The number of outstanding shares is 335 million and the price offered is \$145, the result is thus \$48,575 billion. It is thus above the first threshold of \$337,6 million imposed by the SHR Act.

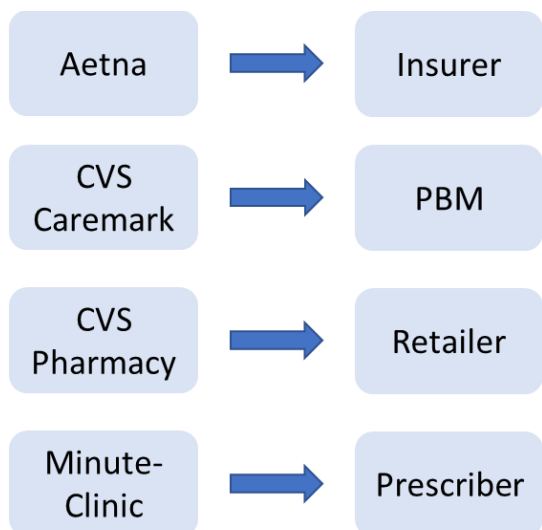
The last test to be calculated to know whether this merger should be investigated is the size-of-transaction test states that if the assets or voting securities acquired sum up to more than \$15 million or if the acquired company has total assets or annual net sales of more than \$25 million. As said the acquired voting securities amount for \$48,575 billion and the total annual net sales of Aetna for 2017 is \$45,682 million. The condition is thus met.

This shows that the merger should be investigated by the FTC or by the DoJ.

IV.2. Reasons against the merger

With the acquisition of Aetna by CVS a large part of the healthcare chain will be controlled by one company:

Figure 15: Structure of the CVS-Aetna market position after the merger



On top of controlling four levels of the healthcare supply chain, the markets of three of those levels are highly concentrated and CVS would be one of the three larger companies operating on those levels.

As commonly known and shown in multiple studies such as the one from Pal & Scrimatore (2016), a high concentration in a market increases the chances of the appearance of a cartel. This is especially the case when the vertically integrated firms compete on concentrated markets as it is the case here. Hence, the healthcare markets on

which CVS would compete are already risky in terms of antitrust. If CVS Caremark would discontinue proposing its service to other insurers than Aetna or would decrease the reimbursement rate for drugs for other companies this create market foreclosure and thus harm the final client. In this case this would probably result in higher prices for clients and thus is contrary to the goals of antitrust in the U.S.A.. This remark was raised during the public hearing on the proposed merger in front of the California Department of Insurance and the only statement of both CVS and Aetna representative was that they rely on the very competitive market to regulate the prices offered at the PBM level.

Additionally, CVS could even refuse to sell prescription drugs to patient who are not covered by Aetna, or Aetna could refuse the right to its clients to be reimbursed in other retail pharmacies than CVS (consumer foreclosure).

Besides, this merger creates entry barriers. In fact, it will become more difficult for new firms to enter the market as they will need to compete on multiple levels, mostly PBM and health insurance, in order to have a chance to survive. However, we know that competition and the entry of new competitors usually drives down costs and bring in innovation, which is profitable for the customers.

Another potential negative effect of this merger is the opposite goals of Aetna (insurer) and CVS Caremark (PBM). Indeed, the goal of CVS Caremark is to lower the price of drugs through bargaining with drugs manufacturers and then to sell those drugs with a premium in percentage on the drug price. However, the goal of Aetna is

to get the lowest price for drugs (which has been negotiated by the PBM), so the goal is that CVS Caremark imposes the lowest premium possible. This not beneficial for Caremark, so the company has incentives to bargain less with drugs manufacturers, resulting in higher prices for customers. Both companies hope that the fact that they will create efficiency thanks to the merger will balance this effect. But overall there is still a misalignment of objectives in this merger.

Furthermore, there is also a divergence in the statements of both Aetna and CVS when they claim that Aetna will not force its client to get treated in MinuteClinics (held by CVS) instead of going to other primary care physicians but they claim that MinuteClinics are the most efficient clinics and the best way to get primary care for patient at a lower cost. Why wouldn't Aetna ask its clients to go exclusively to MinuteClinics if it is less expensive and thus there less to reimburse? The way both managements see it, the major part of savings opportunities from this merger is an increased adherence of patients to their treatment, made possible through the easy access to a pharmacist or a physician in MinuteClinics and thus lowering the health expenses because of a better followed treatment especially for chronic diseases (California Department of Insurance, 2018). However, what is the link between the adherence of patients to their treatment and the merger? How will Aetna's merger with CVS ensure that patients will better follow their treatment? The view of Aetna on this is that they will put in place a system directly linking pharmacies to doctor, helping the dialog between those two actors of the healthcare system. However, this still doesn't explain why the merger is needed as CVS could possibly implement this system by its own, it's just that they have no incentive to do so as for today, the amount spent at their pharmacies by the clients is not a problem, it's the margin of the pharmacies (considering that a lack of adherence means more expenses for the patients).

One could then question why merging at all? In fact, if Aetna will continue serving other pharmacies, CVS Caremark will continue serving other insurers at the same prices, what is even the point of the merger? Apparently, it would be to reduce the costs for clients and to innovate on the market. This seems like a very small advantage for CVS especially for a \$68 billion merger. On a liberal market, profit companies rarely make such expenses just for the clients' costs reduction, they need to make profit and from what has been presented one can doubt that there will be added value from the merger for CVS (if everything that they stated is true) so far.

To sum this situation up, CVS and Aetna have divergent business models which create a conflict for the realization of profit by those two companies. On one hand Aetna (who is dependent of PBMs and pharmacies' prices) wants to reimburse the less possible to its clients and thus it wants that the drugs cost the lowest possible. On the other hand, PBMs negotiate the prices for drugs with manufacturers and then sells them with a premium to pharmacies which then sell the drugs with a premium to patients. So, pharmacies and PBMs have incentives to have high premiums whereas Aetna's goal is that those premiums are the lowest possible.

On top of preventing new entrants on the PBM market, this merger potentially prevents Aetna of launching its own PBM services. Indeed, Aetna already has some kind of activity that PBMs usually provides, even though it is not a PBM. Because of this merger, Aetna will never expend itself into the PBM market and thus will not become a new competitor on it. But on this point, the 'Non-Horizontal Merger Guidelines of 1984' states in section 4.11 that a non-horizontal merger of a firm that is already active in a market (here CVS Caremark) with a potential new entrant on this market (here Aetna, offering some kind of PBM services) can have negative effects on competition. There can be two potential effects: either harm to perceived potential competition (suppressing the threat of a possible new entrant) or harm to actual potential competition (actually suppressing a new entrant). (Jones, Decision letter, 2018).

Next to that, the merger will have horizontal anticompetitive impacts on the Medicare part D market. Indeed, even though this merger is mainly a vertical merger, both companies are active on the Medicare part D market which is the drug coverage market of the government. On the national level, Aetna has a market of 9% and CVS of 24% on this market. This merger will thus further concentrate the market which should increase prices (Jones, 2018).

As prescribed by the Horizontal Merger Guidelines (U.S. Department of Justice and the Federal Trade Commission, 2010) , the Herfindahl-Hirschman Index (HHI) for these two companies must be computed before the merger as standalone companies and post-merger as one entity.

The formula for the HHI is the following:

$$H = \sum_{i=1}^N s_i^2$$

With N = number of firms on the market, s_i = market share of the firm i in the market. The market share can be expressed as decimal numbers of percentage or as whole number. In the latter case, the HHI has a maximum value of 10.000. A high HHI denotes a high concentration, whereas a low HHI denotes a highly competitive industry. Given the work provided by Richard Scheffler (2018), when taking into account organizations that have more than 1% of market share in prescription drug plan in the U.S.A., the Herfindahl index of the industry before the merger can be computed thanks to this table:

Figure 16: Market share of PBM companies in 2017

Parent Organization	Enrollment	Market Share
CVS Health Corporation	6,029,689	24.1%
UnitedHealth Group, Inc.	5,311,049	21.3%
Humana Inc.	4,876,657	19.5%
Express Scripts Holding Company	2,440,926	9.8%
Aetna Inc.	2,130,380	8.5%
WellCare Health Plans, Inc.	1,063,742	4.3%
CIGNA	765,870	3.1%
Rite Aid Corporation	513,664	2.1%
Health Care Service Corporation	349,325	1.4%
BCBS MN, MT, NE, ND, WY, Wellmark IA and SD	277,860	1.1%
Anthem Inc.	274,094	1.1%
TOTAL*	24,033,256	96.3%

Source: Author's analysis of April 2018 enrollment data published by CMS (<https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/MCRAdvPartDENrolData/Monthly-Enrollment-by-Contract-Plan-State-County.html>)

Notes: PDP=stand-alone prescription drug plan. *Only includes parent organizations with greater than 1 percent market share.

Source: Scheffler, 2018.

The HHI is then 1619,93 before the merger and 2029,63 after the merger (easy calculation based on the formula of HHI above). The merger thus represents a more than 400 increase of the HHI. Given the Horizontal Merger Guidelines, a merger that produces a HHI between 1500 and 2500 with an increase in HHI of more than 200, represents a moderate risk for competition on the market. This means that they should be scrutinized more deeply. (U.S. Department of Justice and the Federal Trade Commission, 2010).

A last reason against this merger is the fact that both management teams of Aetna and CVS could not estimate the amount or percentage of the supposed

efficiencies will be transferred to customers. This means that they don't know if the customer will actually have monetary benefits of this merger which is a requirement. The Guidelines, however, impose that the claims of efficiency gains must be tangible and proven or they will not be taken into account. Moreover, it must be proven that those efficiencies could not be realized without the merger, for example by contracting. As CVS has stated that it will not change its pricing to other insurers, the efficiencies could possibly be obtained through re-contracting with Aetna under better terms. (California Department of Insurance, 2018)

IV.3. Reasons in favour of the merger

The reasons in favour of the merger were stated in the section II.2. of this thesis. To summarize they are mainly: synergies of \$750 million, costs decreasing by \$2.4 billion per year during the five-first years of the merger, bringing innovation in the healthcare chain, getting a better adherence to care, and lastly, the creation of an integrated system directly linking pharmacists and physicians.

IV.4. Final decision

The Department of Justice will take decisions on vertical mergers given either one of two theories: the elimination of specific potential entrants and the competitive problems from vertical mergers.

The first, elimination of a specific potential entrant, was already covered in section IV.2. It has been proven that the merger of CVS and Aetna will harm the perceived potential competition and the actual potential competition.

The second theory on which the Department can give a judgement is the competitive problems linked to vertical mergers and acquisitions. Two problems are identified by the department: first the barriers to entry from vertical mergers and second, the facilitating of collusion through the merger.

There are three conditions for the Department to block the merger: the need to enter both market to compete, the increased difficulty to do so, and the structure and performance of the primary market. The first condition is that if the two industries are mainly integrated, that the primary market (PBM) will not be able to service insurers anymore. As seen in section I.3., OptimumRX (one the main competitors of CVS Caremark on the PBM market) is owned by UnitedHealth the first health insurer in the U.S.A.. On top of that, there is the possible merger of Cigan and Express Scripts, that would further integrate both industries. In this context, it is possible that entering the

market of PBM for would be very difficult if the new entrant does not enter the two markets. The second condition is linked with the first one, indeed it is noted that if it is easy to enter the second market (insurance) is easy when entering the primary market (PBM) then, there is no objections to the merger. But this is not case because the insurance market is also concentrated and requires high levels of experience and capital. For the third condition to be completed, the HHI of the primary market (here the PBM market) must be over 1800 or if slightly underneath, there should be indication that collusion is particularly likely in this market. As seen in the section I.2., the concentration on the PBM market is quite high. Indeed, the HHI on this market is between 1771 and 1835. The level for the HII is thus met. The conclusion of this is that there would be barriers to entry deriving from this merger in this context.

The last problem that can arise from vertical integration is the easing of collusion. This point was already touched on in the section IV.2. in which it was specified that vertical mergers on concentrated market is increasing the risk of collusion between players. We have already shown that the HHI in both markets are quite high, but not enough to trigger a reaction from the Department of Justice who demands a HHI of more than 1800 in the upstream market (insurers) which is not the case here.

Based on this analysis, one can defend that this merger should be blocked and we believe that the DoJ should block it, as do the California insurance Commissioner, Dave Jones, the American Antitrust Institute (Moss, 2018) and the American Medical Association (Allen, 2018) amongst other.

V. What would the European commission decide?

V.1. Hypothesis

Now that we have established that the merger should be blocked by the DoJ in the United States, let's look at what would happen if this merger was proposed in Europe. For this we have to imagine two companies similar to CVS and Aetna but in Europe. In Europe there are pharmacy benefits management companies, thus this parameter, that was essential in the U.S.A analysis, will not be taken into account for the European analysis. We will thus focus on pharmacies (retailer) and health insurer. As in The U.S.A., the governments usually pay partially for drugs to a larger extent than in the U.S.A. The consumers are thus not very prices sensitive on this market. On top that reimbursement, patient can take additional health insurance either non-profit insurers such as mutual or for-profit insurers. The market for voluntary health insurance in Europe is quite concentrated: in most countries, the three largest private health insurers have an agglomerate market share of over 50% (Sagan & Thomson, 2016). However, as stated in section I.1.1 of the practical part, the retail market for drugs is little concentrated, as most of the pharmacies are either standalone pharmacy or SME.

As Aetna detains 12% of market in the U.S.A., our insurance company will have the same size in Europe and will thus have a net revenue of €14.88 billion ($0.12 \times €126$ billion). The company is part of the three main insurance companies that detain more than 50% of the market shares in the European market.

If we apply the same logic to the determination of the size of the drug retail company, it will have a market share of 35% giving a net revenue of €74.9 billion ($0.35 \times €214$ billion). It is important to note that this is a very extreme hypothesis for the analysis. Indeed, this kind of drug retailer does not exist in Europe. If we had to use a company with a comparable market share as to the market shares of real retailer in Europe we could not apply any European legislation as the threshold would be reached. It is thus important to keep in mind that this analysis is purely hypothetical.

The analysis will thus be very different as there are no horizontal overlap from this merger and the retail market does not have the same structure as in the U.S.A. Our hypothesis is that the companies are active on more than three countries in Europe, but only in Europe. Moreover, neither of the companies achieve more than two-third of their results in one Member State.

Every other aspect of the deal is kept unchanged: the way of acquiring the insurance company through a subsidiary of the retailer, reasons for the deal (efficiency, driving innovation, synergies) etc.

V.2. Thresholds check

There are two main thresholds to assess whether the merger is of European dimension. First, the combined turnover of both companies combined must yield to more than €5,000 billion. Given our hypothesis in section V.1. the first threshold is met. The second threshold that must be met is the fact that the turnover of the companies separately must be over €250 million, which is also the case.

Now that we have asses that the merger is of European dimension thanks to our hypothesis, we must look at the tests that are used by the European Commission to assess mergers and particularly, vertical mergers.

V.3. Reasoning of the European Commission

Since 2004, the Commission applies a new test to the mergers, the SIEC test. This test is similar to the test in the U.S.A., it checks whether the merger “significantly impede effective competition, in the internal market or in a substantial part of it, in particular as a result of the creation or strengthening of a dominant position” (EC regulation 139/2004, article 2(2) and (3)). In practice thus, the dominance in the market is not a single condition to block a merger. The legal term of dominance is in practice associated to the market power concept in economics. (Slaughter & May, 2018)

Specifically for vertical mergers, the European Commission has identified issues that may arise due to a vertical merger. The first issue is the market foreclosure (for instance as a supplier, limiting the inputs for manufacturers). Another issue is the increasing risk of collusion on the market.

To look into those issues and derive a first diagnostic of the merger, the Commission follows a pattern. First, it will look at the ability of the firms to create foreclosure (either input or customer), then it will evaluate the incentive to foreclose access to the market, lastly, it will evaluate the impact on effective competition. (2008/C 265/07)

As the relation between pharmacies and insurer are so distant (one can argue that the merger would be a conglomerate merger and not a vertical one). There is no evident risk of market foreclosure. Indeed, the connexion between pharmacies and insurer is not direct. The insurers such as mutual will directly impact the price of drugs

for the patient. The patient will only pay a part of the drug's price to the pharmacist who will then be reimbursed by the insurer (directly or indirectly like in Belgium). The insurer does not provide any inputs to the pharmacist and vice-versa, but the final price for the consumer will depend on both. However, the transaction costs between the two companies should be reduced as the reimbursement from one entity to another could be done directly. This would make the whole process easier and thus less costly.

The same issue as found in the American market is that the insurer could require its adherents to purchase from the specific pharmacy. This would not be problematic as the insurer has other competitors to which the patients could turn to easily. Moreover, the pharmacy market is so diversified that consumers would always be able to use another one, as well as other insurers.

As it is stated in the European Guidelines for non-horizontal mergers (2008/C 265/07), the Commission is not concerned by the effects of the mergers on competitors but rather on the effects on the consumers (intermediate and final). In such a merger, neither the intermediate nor the final consumer should be badly impacted thanks to the market structure.

In conclusion, we don't believe that such a merger would be blocked by the Commission or even go into the Phase II investigation. This is due to two main factors: first that the markets are not too concentrated, and that the Commission usually does not intervene for vertical mergers except if a negative effect on the consumers is likely, which is not the case here.

Conclusion

In this study, we reviewed the competition laws of Europe and the U.S.A. We can see that they both aim at preserving competition on the markets and at protecting consumers. The thresholds in the two jurisdictions are different to evaluate if the merger will be reviewed by the regulators, either the European Commission if the merger has a European dimension, or by the DoJ or the FTC in the U.S.A. But, they are both based on the market shares and thus the determination of the market. The vertical mergers are rarely reviewed in either of those jurisdictions and are almost never blocked as, for the two regulators, they are not supposed to harm competition or the consumers. On the contrary, they are supposed to be mainly beneficial. This is derived from the trade-off between the efficiency gains, cost decreases and the risk of collusion and market foreclosure. Efficiencies of the merger were called into question in this analysis as they are often overvalued according to the literature.

However, through this analysis, we have found out that the merger of Aetna and CVS could be detrimental to both the market and the consumers in the U.S.A. We have also determined that this would not be the case in Europe and thus would not be restricted by the European Commission if such a merger were to occur in Europe. This difference comes essentially from the structure of the healthcare insurance and pharmacies market. Indeed, as the market of pharmacies is not concentrated at all, a vertical merger would not impede the competition nor raise costs or limit choices for consumers.

As some important vertical mergers are currently ongoing, this subject is important to evaluate their impact on the competition. Further research could analyse past vertical mergers and evaluate their impact ex-post and verify the assumptions of regulators in Europe and U.S.A.. Moreover, the tools used for the assessment of the merger could be questioned. For instance the HHI, which is broadly used by the Commission, might not be accurate to deal with vertical deals that do not directly impact the market shares of the firms.

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