LUISS

Department of Business and Management

Master in Corporate Finance

Course of M&A and Investment Banking

Is Consolidation Necessary to Survive in the Automotive Industry?

A Study of the FCA-PSA Merger

SUPERVISOR

Prof. Luigi De Vecchi

CO-SUPERVISOR

Prof. Leone Pattofatto

CANDIDATE

Alessandro Magaldi

704421

Academic Year 2019/2020

Table of Contents

List of Tables and Figures

Introduction

At the beginning of 2021, the merger between Fiat Chrysler Automobiles (also referred to as FCA) and Groupe PSA (also referred to as PSA) was finalized, leading to the creation of Stellantis. Even though the new group's combined sales volume amounts to over 8.7 million vehicles (2019 data), this makes Stellantis just the fourth group in the world by sales, after Volkswagen (10.8 million), Toyota (10.5 million), and the Renault-Nissan-Mitsubishi Alliance (10.3 million).

For the last 30 years, Fiat, and later FCA, have been looking for a partner to merge with. There have been many negotiations, most of which failed, until the announcement, in December 2019, of the intention to merge with PSA, which led to the actual creation of Stellantis.

If we look at the top 10 automotive manufacturers by number of vehicles sold, the majority of them are large groups, and even the ones that are not, are involved in at least one joint venture or alliance with one of their competitors.

The aim of this thesis, through a review of the existing literature and the study of the FCA-PSA merger, is to assess to what extent consolidation in order to survive in the automotive industry is a necessity, as recent trends in the automotive industry seem to suggest.

The thesis is divided into six chapters, followed by a synthesis and my concluding remarks. In the first chapter, I introduce Mergers and Acquisitions (henceforth M&As) and briefly explain their history and their inner workings, in order to provide a theoretical background to the FCA-PSA merger and an overview of the terminology that will be used in the subsequent chapters. In the second chapter, I describe the automotive industry in its modern state and briefly explain the market context and its evolution, focusing on the industry consolidation trends and the reasons that motivate them. In the third chapter, I introduce the two companies object of the case study and elaborate on their history, focusing mainly on the M&As that led to the groups that we know today, again focusing on the motives behind them. The fourth chapter is about the merger itself, detailing its structure and timeline and mentioning the effects the COVID-19 effects had on the transaction. In the fifth chapter, I review the reasons behind the merger and explain the advantages that both companies gain from it, detailing the expected synergies and how Stellantis is positioned in the market. In the

sixth, and final, chapter I present my valuation of the two companies, first taken independently, then merged, both with and without the expected synergies implemented, in order to create an easy comparison. The valuation is made using the DCF method, and in this chapter, I also explain all the assumptions I made to create the forecasts on which the valuation is based.

1. Mergers and Acquisitions – The Theoretical Framework

As is common knowledge, the main objective of a business is profit maximization, which can be achieved through growth. Growth can be *organic* (or internal), realized through investments in technology, products, people, or *inorganic* (or external). The main advantage of inorganic growth over organic growth is that while the latter is usually linear, the former can be exponential (Kumar & Sharma, 2019).

The subject of inorganic growth and corporate restructuring, with all its methods and implications, is incredibly interesting and has generated a quite vast literature. Inorganic growth has become increasingly common since the end of the XIX Century, developing in subsequent waves. It can be achieved through corporate restructurings, strategic alliances and other contractual relationships. Corporate restructuring consists in a change in the business structure of a firm and can take multiple forms, the most important of which are mergers and acquisitions (M&As). In this thesis I will focus mainly on M&As, with some mentions of the other forms.

1.1. Terminology

Across the existing literature, and in the business world in general, terminology related to mergers and acquisitions is often used interchangeably and with blurred definitions. Hereafter I will make a brief distinction between acquisition, merger and consolidation.

An *acquisition* occurs when a company (*acquirer* or *bidder*) acquires a controlling stake in the stock of another company (*target*), which continues to exist as a subsidiary under the control of the acquirer.

In a *merger*, on the other hand, a company (target) merges into another one (acquirer or bidder) and ceases to exist as an entity. All the assets (and liabilities) of the target company are passed to the acquirer and the stockholders of the target become stockholders of the acquirer.

Both mergers and acquisitions are also referred to as *takeovers*, because, regardless of being friendly or hostile, one company takes control over another (Berk & De Marzo, 2020).

The concept of *consolidation* is slightly different from the one of merger, and the term merger is often used also referring to consolidations. In this case all the original entities cease to exist, and a new company is formed. The assets and liabilities of the dissolved companies flow into the new one, which usually has a new name, and the stockholders of the dissolved companies become proprietors of the new one. Usually, a consolidation happens when the companies that want to merge are of similar size (Gaughan, 2018).

Notwithstanding this distinction, in this thesis I will often refer to consolidations using the term merger, as is common practice in the field. In fact, FCA and PSA in their combination agreement and press releases refer to the transaction as a merger, even though it is effectively a consolidation. Moreover, the terms merger and acquisition can be used interchangeably when explaining the various types, and the inner workings, of the transactions (e.g. the explanation for horizontal mergers also applies to acquisitions).

1.2. Merger waves

As I previously stated, since its start at the end of the XIX Century, M&A activity in the capitalist world has developed in waves. Although there are some differences relative to the exact timing, most authors agree on the fact that six waves can be identified. However, there is some disagreement about the last wave, in the XXI Century. Some (Kumar & Sharma, 2019) argue that we are still in the sixth wave; others (Gaughan, 2018) assert that the sixth wave ended in 2007 and we have entered a seventh wave.

Hereafter I present a brief recap of the six historical merger waves, with the time-periods based on the work of Kumar and Sharma (2019):

1. 1895-1904 wave, characterized by *horizontal* mergers.
2. 1916-1929 wave, characterized by *vertical* mergers.
3. 1965-1969 wave, characterized by diversified *conglomerate* mergers.
4. 1981-1989 wave, characterized by *concentric* mergers and *hostile takeovers*.
5. 1990-2000 wave, characterized by *cross-border* mergers.
6. 2003-ongoing wave, characterized by the emergence of *private equity* and *leveraged buyouts*.

Even though the first wave started in 1895, it is worth mentioning that the first, rudimental, takeover battle had already occurred in 1868, with the attempt by four different parties to acquire the Erie Railroad in the United States. This battle was very different from what we are used to today and included unlawful stock-watering campaigns, bribery of government officials and armed guards with cannons (Gaughan, 2018).

The first wave of M&As started in 1895, after the depression of 1883, and was characterized mainly by horizontal mergers (which, as I will later explain, occur within the same industry), leading to consolidations. The vast number of said consolidations led to a monopolization of the market structure in many sectors, especially in the mining, manufacturing and transportation industries. In fact, by the end of 1909, the 100 largest industrial corporations in the US controlled almost 18% of the country's industrial assets and the total number of firms in specific industries declined dramatically (Gaughan, 2018). Railroads were a key target in this monopolization and J. P. Morgan consolidated more than 200 of them in what has become known as 'Morganization'. This wave ended in 1904, mainly because of the stock market crash (Kumar & Sharma, 2019).

The second wave started in 1916 and, while consolidations continued, this wave was mainly characterized by vertical mergers, which brought about a more oligopolistic industrial structure. In what concerns the automotive industry, General Motors' founder William Durant acquired many of the company's suppliers during this wave, while reincorporating the company (which had been founded in 1908 in Flint, Michigan) in Detroit, as General Motors Corporation. The second wave ended with the great crash of 1929 (Kumar & Sharma, 2019).

The third wave started a while later, in 1965, and is known as a conglomerate merger phase. In fact, according to the Federal Trade Commission, 80% of the mergers that happened in the decade starting in 1965 were conglomerate mergers (Sprunk & Villavivicencio, 1980). This wave was characterized by a particularly high level of merger activity and diversification was the key trend. Many small and medium businesses started acquiring companies that were not in their main line of business, sometimes even becoming multinational. The third wave started to wane in the late '60s (Kumar & Sharma, 2019).

Hostile takeovers were the main characteristic of the fourth wave, which began in 1981, in the course of the economic expansion that followed the recession of the mid-1970s. The fourth wave is therefore also known as a 'takeover wave', as hostile takeovers started to become a widely accepted tool for expanding a company. New techniques were developed during this takeover wave, initially aggressive, then defensive. In fact, during the second half of the decade the number of completed transactions started to decrease as a consequence of the development of various defensive techniques, among which the 'poison pill' (Kumar & Sharma, 2019). During this wave, the figure of the 'corporate raider' made its appearance. Corporate raiders did not necessarily acquire companies that were strategic to their business; on the contrary, their acquisitions had the objective of re-selling the acquired company at a higher price, making a profit. The work of corporate raiders was facilitated by the emergence of leveraged buyouts (LBOs) as a form of financing and the role of investment bankers became crucial (Gaughan, 2018).

The passage from the fourth to the fifth wave is not marked by a period of decreased M&A activity, but rather by the move back to strategic acquisitions. Mega-mergers also started to increase in number while LBOs decreased in favor of equity transactions, partly because of the bad track record of the highly leveraged deals, which had often resulted in bankruptcies (Gaughan, 2018). The fifth wave also saw an increase in mergers partially or totally outside the USA. The fifth wave witnessed the largest transaction in the history of M&As: the hostile takeover of Mannesmann AG by Vodafone AirTouch, which had a value of $180 billion (Kumar & Sharma, 2019).

The last, and present, wave of M&As is characterized by the return of LBOs and by the emergence of private equity firms. Both these characteristics must be partially ascribed to the low interest rates of this period, which made leveraged acquisitions (the preferred method of private equity firms) less expensive (Gaughan, 2018; Kumar & Sharma, 2019).

1.3. Types of mergers and acquisitions

There is a high variety of M&A types, and a single transaction usually fits into more than one of these (e.g., Olivetti's takeover of Telecom Italia was at the same time a conglomerate merger, a domestic merger, a hostile takeover and a leveraged buyout).

Starting from the *objective* of the merger (or acquisition), a first distinction can be made based on the market where the companies operate, which can lead to a *horizontal merger*, a *vertical* merger, a co-generic merger or a conglomerate merger (Kumar & Sharma, 2019).

A *horizontal merger* is a combination of companies which operate in a similar industry, usually competitors or potential competitors. These mergers increase the industry concentration for the companies involved (i.e., they increase their market share) and can create synergies. The merger between FCA and PSA is a horizontal merger.

A *vertical merger*, on the other hand, is a merger in which a company combines with its supplier (upstream) or client (downstream) companies to decrease the costs associated with, respectively, the supply and distribution chain. In the former case it is called *backward integration* while in the latter it is called *forward integration*.

A *co-generic merger* is similar to a horizontal merger, with the difference that the companies involved operate in different product lines even though they operate in the same market. In this case there is no increase in the industry concentration but increases in the profitability of both companies are expected. The merger between FCA and PSA is somewhat co-generic, considering that their respective markets only partially overlap (as will be seen in the following chapters of this thesis).

Finally, a conglomerate merger is a merger between companies operating in industries that are not related to one another. This type of merger, which saw an increase in numbers during the third wave, is no longer common and some questions have been raised about its actual profitability.

Moving on to another type of classification, this time based on a *geographical* perspective, there are *domestic mergers* and *cross-border* mergers. As the names suggest, a domestic merger is the combination of companies that are headquartered in the same nation. Conversely, cross-border mergers are mergers between companies that are from different countries. Cross-border mergers can be further divided in *inbound mergers* and *outbound mergers*, depending on the point of view of the target company or the acquirer, respectively.

Excluding consolidations, takeovers can be *friendly* or *hostile*. This classification depends on the stance of the target company's board of directors. In a friendly takeover the acquirer has the consent of the board of the target to acquire control of their company. Conversely, in a hostile takeover the acquirer does not have the consent of the target's board to complete the acquisition and therefore approaches directly the shareholders of the company.

While, in a merger, it is usually a smaller company or a subsidiary that merges with a larger, or parent, entity, in a *reverse merger* the opposite happens. A reverse merger with a small public company can be used (although regulations are becoming stricter on this matter) by a large private firm to become public, avoiding the traditional lengthy and expensive process of listing.

A *leveraged buyout (LBO)* is the acquisition of a company using mainly borrowed funds. The funds can be borrowed from banks or from investors and usually the assets of the target company are used as collateral.

Finally, there is the *management buyout (MBO)*, in which the acquirer is not a company but the management of the target itself. Similar to the MBO is the *management buy-in (MBI)*, in which the management of another company acquires the target and takes the place of the pre-existing management team.

1.4. Corporate contractions

As previously stated, the main forms of corporate restructuring are M&As, which have as their main objective corporate expansion. But there are also other forms. Some of these go in the opposite direction, downsizing the firm for the most disparate reasons, in what are called corporate contractions (Gaughan, 2018).

A *divestiture* is the sale of a portion of a firm to a third party. The transaction can be paid in cash, securities or a combination of the two. The objective of a divestiture can be the removal of a low-performing branch, an increase in focus on the core business of the company, a change in the leverage structure of the firm, etc.

Similar to the divestiture is the *equity carve-out*. In this case a new legal entity is created from the divested branch and the new investors buy shares of this NewCo. Control of the new company may or may not be transferred to the new investors, depending on the share of the business that is being given out and the divested company usually has a new management.

In a *spin-off,* as with the equity carve-out, a new legal entity is created, but in this case the shares of the new company are distributed to the existing stockholders of the parent company on a pro-rata basis (i.e. the distribution of the new shares depends on the percentage of ownership of the parent company). Another similarity is that the new company usually has a different management, while the main difference between a spin-off and the two aforementioned methods of corporate contraction is that with the spin-off there is no liquidity injection in the parent company. An example of a spin-off in the automotive industry is the 2014 Ferrari spin-off from FCA.

A *split-off* (or *exchange offer*) is similar to a spin-off but, upon the creation of the new company, the existing shareholders of the parent company are given the option to hold on to the shares of the existing company or to exchange them for the ones of the newly created entity. This way the number of outstanding shares of the existing company is reduced, thereby modifying the EPS values.

A *split-up* can be considered a series of spin-offs that lead to the disappearance of the parent company, in which place there are two or more new entities. The shareholder base of the new companies may reflect the one of the original company, if the distribution of the shares is made on a pro-rata basis, or can be completely different if the method follows the procedures of the exchange offer.

It is worth mentioning that an *asset sale* is also considered a form of corporate contraction (Kumar & Sharma, 2019). In an asset sale the firm sells all or a part of its assets, which are paid in cash or other equivalent means.

1.5. Other forms of corporate restructuring

Besides M&As and corporate contractions, there are other forms of corporate restructuring.

Joint ventures are contractual agreements between two or more companies to pursue specific objectives. The particularity of this type of contractual agreement lies in the fact that while the two firms continue to be separate entities, for the purposes of the specific objective of the venture they are considered as one. For this reason, the contract has to specify details that concern the timeframe, the management and the profit/loss sharing arrangements.

A *franchising* is a type of contract in which a company allows another entity to use its name and brand. Depending on the type of contract, the franchiser can have a vast number of limitations and regulations on how it can operate under the name of the franchisee.

Finally, a *strategic alliance* is similar to a joint venture, with the difference that there is no binding contract between the companies invested in it. The most notable example of a strategic alliance in the automotive world is the Renault-Nissan-Mitsubishi Alliance. Together, the three brands are the third automotive producer for number of vehicles sold worldwide (Toljagic, 2019), and while sharing technologies, distribution networks and parts, the three companies maintain their independence and are not contractually bound to one-another.

1.6. Value creation

Why do mergers and acquisitions happen? As previously stated, the main objective of a business is profit maximization in order to increase shareholder wealth. This objective can be achieved through growth, and M&As are aimed at generating inorganic growth. Inorganic growth can be more uncertain than organic growth but has the potential to be exponential rather than linear (Kumar & Sharma, 2019). Inorganic growth, in the case of M&A transactions, can be achieved thanks to *synergies* and *expansion*, and can be pursued jointly with organic growth, in order to maximize it, or disjointly, in order to jump-start it in the case of a deceleration (or stopping) caused by the current corporate structure of the firm, management errors, or industry related factors (Gaughan, 2018).

In what follows I examine the different forms of value creation, starting with synergies and continuing with expansion.

1.6.1. Synergies

The term *synergy*, which comes from sciences more related to physics than to economics, is defined by the Cambridge Dictionary (2020a) as 'the combined power of a group of things when they are working together that is greater than the total power achieved by each working separately'. When applied to mergers and acquisitions, the objective is to have a resulting entity that has lower costs and/or higher earnings than the simple sum of the two companies object of the transaction. Synergy can be *operating* or *financial*, the former increasing revenues or lowering the costs on the operating side of the business, the latter decreasing the cost of capital. It is worth noting that, according to some studies, 70% of mergers fail to achieve the expected operating synergies (Christofferson et al., 2004). Hereafter are listed the possible synergies that come from M&As.

Economies of scale are synergies which are achieved thanks to size. They are defined by Chandler (1990, p. 17) as 'those that result when the increased size of a single operating unit producing or distributing a single product reduces the unit cost of production or distribution'. This definition applies mostly to the operating economies of scale, which reduce the marginal cost of production when there is an increase in the yield thanks to upturns in efficiency and the spread of fixed costs over a higher level of output. Economies of scale can be also considered on the financial side if there is a reduction of financial leverage after an M&A transaction (Kumar & Sharma, 2019). Moreover, a bigger firm is usually perceived as less risky than a smaller one. Both the reduction in financial leverage and the lower perceived risk can reduce the cost of debt for the resulting firm. However, economies of scale might become *diseconomies of scale* if the increased size creates difficulties in the coordination of production, reducing the profitability of the resulting entity.

Economies of scope (or *economies of joint production or distribution*) are operating synergies that can work thanks to the combination of the complementary skills of the entities involved in the transaction or thanks to the unification of business divisions that would otherwise become redundant after the merger (e.g., using the same division to manufacture a broader set of products or services). Economies of scale and scope can overlap, e.g., if two companies operating in the same market sector and producing similar goods unify the production line (scope) and reduce the marginal cost of production (scale) (Chandler, 1990; Gaughan, 2017).

Market power is a form of synergy directly connected to the size of the resulting entity: the bigger the size, the strongest the market power. Increases in market power can tend towards monopolies and/or monopsonies, the former achieving a higher degree of control over the price of the goods sold (pricing power), the latter providing a higher degree of control over the cost of inputs (purchasing power), with lower purchasing costs. Market power is also inversely correlated to the amount of competition the company has. Market power, on the financial side, can also help achieving a lower cost of capital thanks to, among other things, the image of security that a bigger company offers when compared to smaller ones. It is worth mentioning that, if the combined entity's market power gains are particularly noticeable, the transaction may not be approved by regulators (Gaughan, 2018).

The combination of *functional strengths* is a revenue enhancing operating synergy which has to do with the particular strengths of the merging companies. To make an example, as will be shown in the FCA-PSA consolidation case, one of the companies might have a larger distribution network extending to different continents (FCA), while the other might have a more advanced R&D activity in a particular department (PSA with the EV platforms). By itself, each company lags behind in the other's specific department and would need a great investment of resources and time to reach the same level, without the certainty of reaching it. The merger, thus, insures a quicker access to the existing resources, networks and expertise of the other business.

Vertical integration, as mentioned earlier, is achieved through the acquisition of companies which are part of the supply chain (*backward integration*) or distribution chain (*forward* integration) of the bidder. This strategy can generate still different types of advantages, akin to synergies, such as the acquisition of a dependable supply source, control over specialized inputs or the timing of supply and reductions of costs related to negotiation, inventory or transactions. Overall, the bidders aim to increase the efficiency of operations.

A not perfect *correlation of the cash flows* of the two firms can lead to a financial synergy which lowers the cost of capital. Similarly to financial economies of scale, this occurs because the volatility of the cash flows is reduced, lowering the perceived risk of the firm as a whole from the capital providers (Gaughan, 2018).

1.6.2. Expansion

Moving on from synergies, the other main form of growth that can be achieved thanks to mergers and acquisitions is *expansion*. Expansion can occur in various forms, the main being sector diversification, geographical diversification and time to market.

Product diversification was the main objective of firms that engaged in M&A transactions during the third wave (1965-69), i.e., the conglomerate era. Through diversification, a company gains access to market sectors in which it previously did not operate, effectively becoming a conglomerate. The process of *deconglomerization* that happened during the '70s and '80s brings to light the possibility that the value of this type of expansion was overestimated (Gaughan, 2018). Among the possible advantages of diversification is the possibility of entering a more profitable market sector than the one the company is currently engaged in, which can happen either because a new industry develops, which represents a 'blue ocean', or because the sector where the company operates is becoming obsolete or the market is becoming saturated.

A company might also see the necessity for *geographical diversification*. Using internal growth for this type of expansion, especially during international expansion waves, the firm might face a series of challenges, such as language barriers, customs issues, different legal frameworks and so on, which render the operation slower and riskier. Therefore, the acquisition of a company, preferably in the same market segment, which operates in the target area and which already has the necessary resources, personnel, knowledge and networks can be considered a faster and lower-risk method.

Time to market is another instance where an expansion though M&A transactions can be considered instead of internal growth. In a given market there can be a firm that has developed a new product or process or has had some kind of breakthrough that has given it a time advantage over its competitors. Other companies can evaluate acquiring this company, instead of developing a competing product, in order to gain this time advantage. Sometimes this is the only possible choice as this advantage might be backed by a patent which would make it very difficult to internally generate a competitive counterpart.

1.7. Value neutral and value reducing theories

Not all reasons behind M&As lead to value creation. There are theories that state that the motives behind a merger or an acquisition can be *value neutral*, meaning that the transaction may have little or no effect on the growth of the firms, or even *value reducing*, meaning that it lowers the profitability of the involved companies.

The main value neutral theory is the *Hubris Hypothesis of Corporate Takeovers* (Roll, 1986). In this hypothesis, the primary reason behind an acquisition is not necessarily the growth of the company, but rather personal motives on the part of managers. The pride of the managers of the acquiring firm might influence their decisions regarding the firm to acquire and/or lead to an overpayment (overvaluation) for the target, which reduces or voids the advantages given by the acquisition itself.

An important value reducing theory is the one of *managerial entrenchment*. This theory is based on the acknowledgment of an agency problem in the corporate world, whereby the management of a company does not necessarily have the interests of shareholders as its main objective. In this case, the management would invest in transactions (also called *agency-driven mergers*) which have as main objective a reduction in the possibility of their replacement, at the cost of paying an excessive premium for the target.

1.8. Other motives for M&A

Some M&A transactions are caused by reasons other than the ones hitherto discussed. If the management of a company thinks that the management of another company is not doing the best possible job, it can decide to acquire said company in order to improve it. This is the *improved management* argument and mainly happens with larger companies targeting smaller, growing ones. *Activist investors (shareholders)* do this in a more systematic way, having teams of analysts looking for undermanaged companies, in order to acquire a stake in the company, bring change and then resell their stake at a higher price when the value of the company has increased due to better management.

Tax benefits may arise when one of the companies involved in the transaction has tax credits or operating losses than can be carried forward to offset the earnings of the other company. The combined company inherits these tax benefits, which may increase profitability in the short term.

There are several other motives behind M&As. Here I only reviewed the main one. For further reading see Gaughan (2018) and Kumar & Sharma (2019).

1.9. Mega-Mergers

Although there is a generalized consensus in the literature that M&As, on average, destroy value in the long run, especially in the case of larger transactions, recent studies have found that if the two counterparts of the deal, in particular the buy side, have gained a high degree of experience through previous mergers, the mega-deals increase do value for the shareholders. Moreover, in the case of failed mega-mergers, i.e., where the acquiring company records a decline in performance, experienced acquirers proved to recover faster, with an average recovery period of three years.

For completed mega-deals, the difference that can be seen between experienced and non-experienced outcomes is mainly due to the complexity of the operation. With larger-sized transactions, the integration of the companies and the implementation of the synergies becomes a more intricate operation, and previously acquired experience plays a fundamental role (Hu et. al., 2020).

1.10. Defensive tactics

As previously stated, a takeover can be friendly or hostile. In the case of a friendly takeover, there is no need for defensive tactics, as all parties involved are in favor of the deal. However, there can be cases in which the board of directors of the target company is against the acquisition. In this case there is a vast number of possible tactics that can be used to stop the hostile acquisition. We will not go into too much detail on hostile acquisitions per se, since the case study object of this thesis is a consolidation, which is friendly by definition, but it is interesting to briefly mention the main defensive tactics that the target company can deploy.

Defensive tactics can be *preemptive* or *reactive*, depending on when they are executed. The former are set in place before the hostile bid and are generally in the form of a plan to be implemented in the occurrence of a hostile attempt; the latter are activated after the takeover has started.

Among the preemptive tactics, we find the 'Poison Pills' and the Anti-Takeover Charter Amendments (also called 'Shark Repellants'). Poison Pills are securities issued by the target that make it less valuable in the case of a hostile takeover, for example by diluting the bidder's shares. Triggers for these securities can vary, but classic examples are the acquisition of a certain percentage of the company by any individual entity or a tender offer for more than a specific amount of the target's stock. A variation of the Poison Pills is the '*Poison Puts'*, which is similar in concept but apply to bonds rather than securities. The Shark Repellants are charter provisions that increase the difficulty for the hostile bidder to change the management of the target, such as staggered boards, supermajority provisions, dual class capitalizations, fair price provisions (Gaughan, 2018).

Among the most common forms of reactive defenses, we find litigation, corporate restructuring, 'Greenmail', 'White Knights' and 'White Squires' and the 'Pac-Man Defense'. *Litigation* takes place in almost every hostile takeover and is self-explanatory. Corporate restructuring can happen through a change in the capital structure (leverage) of the target firm, a divestiture of valuable assets ('*Crown-Jewel Defense'*), or the acquisition of undesirable assets, in order to make the firm less appealing to the bidder. *Greenmail* consists in the repurchase at a premium of the shares already acquired by the bidder and can also take the form of a *Standstill Agreement*, in which the bidder accepts to stop buying additional shares of the target in exchange of a fee. A *White Knight* is a friendly bidder sought by the target as an alternative to the hostile one, while a *White Squire* is a friendly entity which would acquire the desirable assets of the target (also a form of corporate restructuring). The *Pac-Man Defense* is a counteroffer from the target to acquire the hostile bidder. This last one is a rarely used defense, but a notable example in the automotive industry is the acquisition of Porsche by Volkswagen, which started as a hostile takeover attempted by Porsche on Volkswagen (Nachemson-Ekwall, 2017; Rauwald, 2008).

1.11. Procedure

1.11.1. The main steps

Although M&As follow roughly the same procedure as every other commercial transaction, given the size of the operation, they are more complex. The friendly M&A process can be articulated into five main steps:

1. Identification of the target
2. Target evaluation
3. Negotiations
4. Due diligence
5. Closing
6. Shareholders and regulatory approval

These are the steps from the buy-side, which is the one that in most cases initiates the transaction. There are, however, also instances of seller-initiated transactions, in which case the first step becomes hiring an investment bank, who will contact one or more possible interested buyers. In either case, large deals have to be eventually approved by regulators (Gaughan, 2018).

The first step does not simply consist in the identification of the target, but also in the formulation of an M&A strategy. This strategy includes choosing the size of the target, its market position, its product line, its geographical localization and the possible tax benefits of the transaction. The strategy helps the bidder to tailor the list of possible targets to its needs and to better understand which company would best suit its own corporate policy, which can be either based on sheer growth or on the creation of a portfolio of subsidiaries.

The subsequent step is the evaluation of the target(s). There are different possible evaluation methods, and more often than not a combination of them is used. The valuation techniques that will be explained in the next paragraph of this chapter are:

- The comparable company analysis (Comps or Multiple analysis)
- The comparable acquisitions valuation (Compaq)

- The assets-based valuation
- The discounted cash flow method (DCF)
- The flow to equity (FTE) method

If these methods are combined, different weights are assigned to the results of each, with the DCF method usually having the highest weight, in order to create an average valuation. The valuation of the target usually starts before making the first contact and, therefore, it is initially based solely on data that is publicly available.

After the target identification and the initial valuation, the bidder reaches out to the target, either directly or through an investment bank. It is at this point that whether the target is interested in the deal or not becomes clear. In the latter case, the management of the acquiring company has to decide between dropping the transaction or continue with a hostile takeover. If the target decides to go along with the deal, a confidentiality agreement (or non-disclosure agreement) is signed by both parties and further financial and operational information is exchanged (with more data than publicly available information), in order to better evaluate the deal. This information can lead to a revision of the initial valuation of the target. If the valuation of the deal based on the confidential information received meets the expectation of the bidder, the latter will send a letter of intent (or letter of interest) to the target, which states the broad terms of the deal.

If the target agrees to the terms in the letter of intent, the due diligence process begins. According to the Cambridge Dictionary (2020b), due diligence is 'the detailed examination of a company and its financial records, done before becoming involved in a business arrangement with it, such as buying it or selling its shares to investors' or, in other words, the reasonable care the entities involved in the transaction should apply when checking all the details of said transaction. The due diligence can be considered a risk management device and, even though it is mostly concentrated in the moment after the signing of the letter of intent, it should be applied to the whole life cycle of the deal. Due diligence covers the following areas: operational, financial, legal and organizational.

After both the target and the bidder have concluded their respective due diligence and valuations for the deal, the last phase begins, i.e. that of negotiation between the parties for

the closing of the deal. The valuation of the bidder often differs from the one by the target, as the variables and assumptions on which they rely are not always objective. In fact, the bidder will generally focus on the critical issues of the target, trying to lower the price of the transaction, whereas the target will try to boost its own strengths in order to maximize the profit for its shareholders. Apart from the value of the transaction, many other terms have to be defined, such as the payment method, the swap ratio (if it is a stock deal), whether the whole amount has to be paid immediately or in different instalments, the possible changes in management, etc. After all these issues are ironed out, if the two entities agree on all the terms, the merger agreement is signed.

After the merger agreement is signed, both companies call for an extraordinary Shareholder General Meeting, in which the transaction details are provided, and the deal is put to a vote.

In addition to the above steps, especially for large deals which might create a concentration in the market that could result in anti-competitive behaviors, regulatory approval has to be obtained before the merger can take place.

1.11.2. Valuation of a target

The valuation of the target company and of the possible synergies which would arise from the transaction is fundamental to correctly estimate the price and, therefore, to avoid a reduction of the value of the bidder. As I previously mentioned, there are several methods to evaluate a potential target and they can be divided into *relative* and *intrinsic* valuation methods.

Before diving into the different types of valuation, it is worth mentioning that, in order to achieve value creation for the bidder's shareholders, the transaction must have a positive net value. The Net Acquisition Value (NAV) is calculated using this simple formula:

$$NAV = V_{BT} - (V_B + V_T) - P - E$$

Where V_{BT} is the combined value of the two firms, V_B is the value of the bidder, V_T is the value of the target, P is the premium paid for the target and E represents the expenses of the acquisition process. The premium paid for the target, together with the expenses, must never

exceed difference between the value of the two firms combined and the sum of their independent values, otherwise the NAV becomes negative and value is destroyed rather than created. Therefore, it is fundamental to correctly estimate the value of the target and of the synergies before proceeding with the transaction.

Relative valuation is based on the *law of one price*. The law of one price broadly states that if two entities (securities, firms, projects, etc.) have the same expected future cash flows and the same risk, they should have the same price (Berk & DeMarzo, 2020). Obviously, if that were not the case, investors would buy the one with the lower price and sell the one with the highest, thus rebalancing the prices. This concept also applies to whole firms and leads to the comparable companies analysis (*Comps*) and to the comparable acquisitions, or transactions, analysis (*Compaq*), which are quite similar. The law of one price does not perfectly apply to these methodologies, as there are no two identical companies, but by selecting competitors that are similar in size, risk, market segment and earnings, an estimation of the value of the target becomes possible.

To evaluate similar companies, valuation multiples have to be used, which are divided into price multiples and enterprise value multiples. Price multiples are the easiest to use, as they are based on publicly available data, and the most common are the following (Kumar & Sharma, 2019):

- Price/Earnings (PE ratio)
- Price/Sales
- Price/Book Value (PB ratio)
- Price/Cash Flows
- PE/Growth (PEG ratio)

While the price multiples are used to evaluate the equity value of a firm, enterprise value multiples are used to estimate the value of the whole firm and they are thus useful to compare firms with different levels of leverage. The most common enterprise value (EV) multiple is EV/EBITDA, even though EV/EBIT is also used. EV is a sum of the market value of equity and the market value of debt, net of cash and cash equivalents (Berk & DeMarzo, 2020).

These multiples are then compared to the benchmark multiples in order to evaluate the company. The benchmark multiples are usually the average (or median) multiples of a chosen peer group, of the industry as a whole, of an Index or of the historical multiples of the evaluated company. After estimating the value of the company using the multiple analysis, the takeover premium must then be estimated and added.

The Compaq analysis is similar to the Comps analysis, with the main difference being that the multiples of the target are not compared to a benchmark but instead to the average valuation ratios of past M&A transactions. In this case the takeover premium is already included in the resulting valuation (Kumar & Sharma, 2019).

Although relative valuation is easier to apply than intrinsic valuation, it has some strong limitations. The multiples analysis does not take in consideration differences between firms, such as (but not limited to) the existence of different levels of technological advancement and different patent portfolios, which might be important for the valuation. Moreover, relative valuation does not take into account the possibility that the valuation of an entire industry is skewed. An example of this is the 1990s internet bubble, when all the companies in the industry were overvalued (Berk & DeMarzo, 2020).

Intrinsic valuation, on the other hand, as the name suggests, evaluates the intrinsic value of a company using its own financial information. While it is more difficult to implement compared to relative valuation, its results are more accurate and take into consideration all the specificities of the company. The main methods of intrinsic valuation are:

- Asset-based valuation
- Flow to Equity (FTE) method
- Discounted Cash Flow (DFC) method

The asset-based valuation is by far the easiest intrinsic method for evaluating a company but is mainly used for companies that are going to be liquidated, as it does not take in consideration the earning prospects of a business. It is also used to easily calculate the minimum value of the deal. The asset-based valuation uses the Net Asset Value (NAV) of a company, which is the market value of assets net of the outstanding liabilities. However, the NAV also has some limits, as it does not take into consideration intangible assets, which are

difficult to evaluate, and does not use the book value of assets, which is based on historical costs (Kumar & Sharma, 2019).

The FTE method is more complex than the asset-based valuation and is used to calculate the equity value of a company. It focuses mainly on the expected cash flows that the shareholders of the firm will receive, net of the payments to and from the debt holders, based on forecasted data. These cash flows are called Free Cash Flows to Equity (FCFE) and the formula to calculate them is as follows:

$$FCFE = Net\ income + Depreciation - CapEx - \Delta NWC + Net\ borrowing$$

In this formula, the $net\ borrowing$ is the change in the debt level of a firm (positive when new debt is issued and negative when debt is repaid) and $CapEx$ is the capital expenditure. After calculating the future cash flows, they have to be discounted at the cost of equity (which will be explained in more detail next, in the context of the DCF method) (Berk & DeMarzo, 2020).

The DCF method is by far the most used and the most complex to implement. It is widely discussed in most corporate finance textbooks and it is the method I will use in this thesis to evaluate the FCA-PSA merger. The DCF method uses the Free Cash Flows to the Firm (FCFF), obtained from the forecasted financial statements, to calculate the enterprise value (EV) of the firm, which is the value a bidder is most interested in. The formula to calculate the FCFF is as follows:

$$FCFF = NOPAT + Depreciation - CapEX - \Delta NWC$$

To calculate the $NOPAT$ (Net Operating Profit After Taxes) the following formula is applied:

$$NOPAT = EBIT * (1 - tax\ rate)$$

It is interesting to note that it is possible to calculate the FCFE from the FCFF (and vice-versa), since:

$$FCFE = FCFF - Net\ interest\ expense * (1 - tax\ rate) + Net\ borrowing$$

As it is impossible to forecast the free cash flows for more than a few years into the future, a terminal value has to be calculated based on the last expected FCFF, the expected growth rate (g), and the Weighted Average Cost of Capital (WACC):

$$Terminal\ Value = FCFF_{last} * (1 + g)/(WACC - g)$$

The expected FCFF and the terminal value should then be discounted at the WACC in order to obtain the Enterprise Value of the firm.

The formula for the WACC is:

$$WACC = r_e * \frac{E}{E + D} + r_d * \frac{D}{E + D} * (1 - tax\ rate)$$

Where r_e is the cost of equity, r_d is the cost of debt, E is the market value of equity and D is the market value of debt.

Finally, the formula to calculate the cost of equity is:

$$r_e = r_f + \beta * ERP$$

Where rf is the risk-free rate, β (beta) is the sensitivity of the company with respect to the market, or, in other words, how the returns on the stock of the company are affected by changes in the return of the market (Hawawini & Viallet, 2015), and ERP is the country specific Equity Risk Premium or, in other words, the excess return of the market over the risk-free rate.

***

In this chapter I have provided the theoretical background that contributes to frame the rest of my thesis, with particular attention to the main concepts underlying the strategy of inorganic growth, i.e., synergies and expansion, which are the main drivers of the FCA-PSA merger, object of the case study. I also explain the different valuation techniques, focusing on the DCF method, which is the one I will use to evaluate the companies.

2. The Automotive Industry

If one looks at the top 10 automakers by volume in 2019 (Toljagic, 2019), it clearly appears that more than half of them are very large automotive groups, with Volkswagen (which has a vast portfolio of brands) leading with 10.8 million vehicles produced in that year (see Table 2.1). Of the four makers that are not part of large groups (Toyota, Ford, Honda and Suzuki), only Toyota is in the upper half of the leaderboard. I consider Toyota as a standalone brand, even though Lexus and Daihatsu are its subsidiaries, because the former is Toyota's own luxury brand and the latter only accounts for 7% of the holding's total 2019 sales (Thomson Reuters, 2021), which would not change the manufacturer's position by much.

Table 2.1. Top 10 automotive manufacturers by volume of sales (in million units), 2019

Rank	Sales	Name	Type	Brands
1	10.8	Volkswagen	Group	Audi, Bentley, Bugatti, Lamborghini, MAN, Porsche, Scania, Seat, Skoda, Volkswagen, VW Commercial Vehicles
2	10.5	Toyota	Standalone	Daihatsu, Lexus, Toyota
3	10.3	Renault-Nissan-Mitsubishi	Alliance	Alpine, Dacia, Datsun, Infiniti, Lada, Mitsubishi, Nissan, Renault, Renault Samsung, Venucia
4	8.7	GM	Group	Buick, Cadillac, Chevrolet, Corvette, GMC, Holden
5	7.5	Hyundai	Group	Genesis, Hyundai, KIA
6	5.7	Ford	Standalone	Ford, Lincoln
7	5.2	Honda	Standalone	Acura, Honda
8	4.8	FCA	Group	Abarth, Alfa Romeo, Chrysler, Dodge, Fiat, Fiat Professional, Jeep, Lancia, Maserati, RAM
9	4.1	PSA	Group	Citroen, DS, Peugeot, Opel, Vauxhall
10	3.2	Suzuki	Standalone	Suzuki

Note. Based on data from Toljagic, 2019

Considering the above figures, the consolidation of FCA and PSA should make the resulting entity, Stellantis, the fourth automaker by vehicles produced, with a grand total of 8.9 million (numbers may vary slightly, depending on the source).

It should be noted that all four standalone manufacturers – Toyota, Ford, Honda and Suzuki – are not truly standalone companies, as they are or have recently been, in at least one joint venture, alliance or partnership with another of the top ten, and that the three based in Japan have never engaged in any meaningful M&A transactions.

In what concerns Ford, the company is currently engaging in an alliance with Volkswagen. This alliance, first announced in Q1 2019, is expected to benefit both brands with cost-saving synergies in production and R&D that, according to the companies, should be in the billions of dollars. With this alliance, the two companies will share heavy and medium-sized platforms developed by both brands, as well as VW's MEB platform for electric vehicles. Moreover, starting in 2021 and continuing over several years, the two companies plan to share the production of 8 million commercial vehicles (Wayland, 2020).

Toyota has a number of joint ventures, mainly for the production of vehicles outside its main market, Japan. The oldest is the one with General Motors, born in 1984 (just after a failed attempt with Ford in 1981), for the creation of a factory in the US West Coast (Toyota, 2012), that allowed the company to penetrate the US market. Toyota also has a joint venture and a series of production agreements with PSA, which started with the creation of the TPCA shared factory in the Czech Republic in 2005 (Groupe PSA, 2018a). This agreement will not break after the FCA-PSA merger. In fact, as a result of negotiations with the European Commission antitrust branch, the cooperation agreement will be extended (EC, 2020).

Honda also has a joint venture, since 2017, with GM, for the development of next-gen hydrogen fuel cell technology, christened Hydrotech, with the creation of a company called Fuel Cell System Manufacturing. This joint venture is the natural evolution of a collaboration initiated in 2013, in this same area of development (Automoto, 2017).

Finally, Suzuki has closed in 2015 a troubled partnership with Volkswagen (Fuhrmans, 2011), initiated in 2009, whereby the Japanese company acquired Diesel engines from its German counterpart (Automoto, 2015). Suzuki also recently entered a partnership with Toyota for the development of electric vehicles and autonomous driving systems (Caparello, 2019).

But how, and especially why, did we get to this level of conglomeration? This chapter briefly analyzes the history of the automotive sector, focusing on the progressive concentration that has occurred in this industry over time and on the reasons behind it.

2.1. Early concentration and the search for scale economies

During the first half of the Twentieth Century, the trend of the automotive industry was towards concentration, with the number of firms steadily decreasing as a result of subsequent waves of mergers and acquisition, as well as of closures of the most inefficient companies. In fact, in the 1960s, three firms produced half of the world total output. These firms were Ford, GM and Chrysler, asserting the dominance of the US producers over the rest of the world (Gomes et al., 2010).

After the Second World War, however, the Japanese started to observe the Western automakers and began developing their own domestic production. In the 1950s, the Japanese had been importers of technology from both Europe and the US and had been analyzing these countries' markets to better understand consumers' preferences. After the oil crisis of the mid 1970s, Western consumers wanted a cheaper and less petrol-thirsty automobile. Nippon based manufacturers thus entered the US market in the 1980s, with the aforementioned joint venture between General Motors and Toyota, which was used to circumvent the protectionist measures the USA had in place. The Japanese manufacturers produced smaller, less expensive, more reliable and more efficient cars compared to their American counterparts. This caught many by surprise, with Carl Hann, CEO of Volkswagen at that time, reportedly saying 'For 20 years the Japanese learned from us, now we are learning from them' (Sobel, 1984, p. 124). By the early 2000s, Japanese manufacturers were producing 4 million cars per year in the US, which was more than GM and a quarter of the total US car output (Sobel, 1984).

Despite the entry of the new Japanese producers in the automobile market, the concentration in the industry continued also in the second half of the XX Century, with the number of independent car manufacturers decreasing from 52 to just 12 (Gomes et al., 2010).

2.2. Over-capacity and the need to decrease fixed costs: the search for economies of scope

Up until the 1970s, the demand coming from a growing wage-earning middle class was for standardized products, which allowed for significant economies of scale (mass production for mass consumption). Achieving economies of scale was thus the main objective for automakers and manufacturers would keep the production line of a single model running for more than a decade. To make an example, the Ford Rouge plant could spread the investment for the line of a single vehicle up to 15 years, without expensive design changes. The impossibility of achieving profitability through sufficient economies of scale forced some automakers, such as Packard and Studebaker, to leave the market altogether (Gomes et al. 2010; Ward, 1995).

However, since the 1970s, the annual growth rate for the worldwide auto industry has remained stable at just 2%, mainly fueled by the growth of the demand in newly developing countries such as China, Korea and India. At the same time, productivity in the industrialized countries, where the market was becoming saturated, increased by 3% per year, generating over-capacity. Overproduction was further aggravated, since the oil crisis of the mid-1970s, by a shrinking of the middle-class and its economic stability in both Europe and the US (Gomes et al., 2010).

As some studies suggest, slow growth in an old industry favors concentration, as does fast growth in new industries (Penrose, 1959). The former was the case with the decrease in demand for new cars observed in the last quarter of the XX Century in developed countries. Together with the over-capacity issues, this pushed the automobile manufacturers to merge and form alliances and joint ventures in order to increase their share of the markets they already operated in and to expand into new markets, whilst reducing the costs for research and development of new technologies (Donnelly et al., 2002).

Moreover, since the 1980s, the heightened competition in the existing markets, pushed producers to diversify their products (e.g., introducing SUVs, MPVs, etc.) and to increase the speed of product change. Among other things – notably the shift to the Just-in-Time organization of production, as opposed to Just-in-Case – this required the manufacturers to

increase their spending on innovation and to create differentiated product lines, with a higher degree of flexibility, as the life cycle of the products had drastically shortened (Gomes et al., 2010).

The need for a wider range of models produced at lower volumes shifted the attention of automakers from economies of scale towards economies if scope. Moreover, new processes were developed in order to maximize efficiency through increases in flexibility, reductions in inventories, and the shortening of the order-delivery time horizons, moving the industry from mass production to 'lean production' (Womack et al., 1990).

Over-capacity also involved disposing of the cars produced in excess, in order to be able to create new production lines. When the market has absorbed the maximum number of units of a specific model, the only ways to dispose of the excess vehicles is the use of extensive incentives to both dealers and customers to buy them, as well as the sale to less lucrative market segments, such as fleet sales with heavy price discounts (Gomes et al., 2010).

2.3. A change in mobility preferences

In the last decade, a big shift in mobility preferences has emerged, especially in the more urbanized areas, with the rise of app-based car-sharing services, such as DriveNow and Enjoy. Car-sharing is defined as the 'the organized, joint use of vehicles by a larger number of people. In contrast to traditional forms of daily or weekly rentals, the vehicles are billed by the hour or minute and can be returned at any time' (Kopp, 2020, p. 2). The reasons for this shift are many, from the parking space issues in big cities (according to some researchers, private cars are parked, on average, for 97% of the time, and are used only for the remaining 3%), to the ownership costs of a car (Kopp, 2020).

Some automotive manufacturers entered directly into this market. The Daimler Group started the Car2go service in 2009, giving the possibility to users in the larger metropolitan areas of North America and Europe to rent a Smart car by the minute, with the possibility to leave it free of charge in any parking space (Daimler, 2008). Similar initiatives were made by other brands, such as the DriveNow joint venture between BMW and the car rental company Sixt, and the Enjoy partnership between FCA and Eni (FCA, 2017).

Younger generations are constantly less interested in owning a car, so the car-sharing services are especially aimed at them, but it is still unclear if this trend will continue to grow or if it will remain a niche market. Nonetheless, automotive manufacturers are starting to enter into this segment, as this might disrupt the automotive industry as we currently know it (Kopp, 2020).

***

In this chapter I have briefly recapped the shift from the pursuit of economies of scale to the pursuit of economies of scope in the automotive industry, which was driven by a change in the market demand. Until the 1970s, the automotive market had grown steadily, fueled by an increase in the wealth of the middle-class, which was content with a standardized car. The steady increase in volumes, paired with the long life-cycles of the products offered, made economies of scale a prime objective for automakers. After the 1970s, the growth of the market slowed to around 2% YoY, while the increase in competition altered the type of demand. Consumers now wanted a more diversified supply of products, which had to be constantly kept up to date. A constant innovation meant a more frequent upgrade of the product lines, reducing the possibility of exploiting economies of scale, while increasing the need for R&D. Therefore, automakers, started pursuing economies of scope rather than of scale. In the last decade, a new shift in the consumer behavior has appeared, with the younger generation less interested in owning a car, but rather preferring, where available, to use a car-sharing service.

3. History of the Two Companies

Fiat Chrysler Automobiles (FCA) and Groupe PSA (PSA) are two multinational groups which manufacture automobiles as their core activities. Both companies own a large portfolio of automotive brands, respectively 10 and 5, and brands connected to the automotive world, respectively 3 and 1. In this chapter, the history of the two companies will be briefly reviewed, focusing mainly on the mergers and acquisitions that led to their current structures which have then consolidated into the company known as Stellantis.

3.1. FCA

3.1.1. A brief timeline of FCA's evolution

The history of FCA (Fiat Chrysler Automobiles) dates back to 1899, with the founding of Società Anonima Fabbrica Italiana di Automobili Torino – F.I.A.T, in Italy, by a group of entrepreneurs, among which Giovanni Agnelli (the grandfather of 'the' Gianni Agnelli). After just four years, in 1903, the company was listed on the Italian Stock Exchange, with Giovanni Agnelli as Managing Director, and by the end of its first decade of operations it produced seven different car models, manufactured vehicles for the transport of both goods and people, and engaged also in the production marine and aircraft engines.

During the First World War, Fiat participated to the war effort by producing both trucks and aircraft engines. In that time frame, it also began the construction of the Lingotto Factory, which would be the largest in Europe, and entered the steel sector with a series of acquisitions, which will be later consolidated in the company now known as Teksid (Teksid, 2015). In 1917, the company also established *FIAT Materiale Ferroviario* (later FIAT Ferroviaria) as a subsidiary, starting to operate in the railway sector as well.

In 1922, Fiat built its first civil aviation aircraft and established the Grandi Motori (Big Engines) division which then specialized in marine engines (in 1966 this division will be separated with a spin-off from the company). The year after, in 1923, the Lingotto Factory was opened and became the symbol of Fiat. The factory, based on the concept of modern industrial production, introduced the first assembly line, which profoundly transformed the working

methods for the company. In 1927, Giovanni Agnelli created a holding called IFI (Istituto Finanziario Industriale) which controlled all the companies of the group. IFI, after a long history of mergers and acquisitions, is now called Exor, and is the main investor of FCA, with around 23% of the company stock (Portaleimpresa24, 2021). In 1929, Fiat Impresit, a company specialized in civil engineering and the construction of different kinds of infrastructure, was founded.

During the '30s, the company expanded abroad, not only in Europe but also in the USSR and some other countries under Soviet influence. The company also built and opened the Mirafiori plant (in 1939), which introduced the most advanced working methods in Italy at the time.

During the Second World War the second, and last, conversion to military purposes occurred. The company reduced the production of cars and increased its manufacture of trucks, airplanes and marine engines, while starting to build also armored vehicles.

In 1955, Fiat started to cooperate with Ferrari, financing the company for five years in order to counter the power that Mercedes was acquiring in the major automotive championships of the time (Canestrini, 1969). It also acquired shares in Autobianchi, which will be fully incorporated in 1968.

After decades of mostly organic growth, during the 1960s the Group shifted to inorganic growth and carried out a series of acquisitions. More importantly, ten years after the death of Giovanni Agnelli, the company went back under the control of the Agnelli family, with Gianni Agnelli appointed as Chairman in 1966. In 1967, the company purchased a majority stake in Magneti Marelli, an Italian company specialized in the development and production of automotive components. The acquisition of Magneti Marelli is a perfect example of vertical integration strategy, as it was a key supplier of parts for Fiat. In 1969 the company acquired Lancia and a 50% stake in Ferrari. The latter, even though it had already been helped financially by Fiat in the 1950s, had experienced a crisis in the previous decade and had almost been bought by Ford. Ferrari, however, while being part of the Fiat group, kept its autonomy.

In 1971 the Abarth brand entered the Group, increasing the number of sports-related brands in the portfolio, with Lancia winning the Word Rally Constructors' Championship in 1972,

1974, 1975 and 1976, and Fiat winning it in 1977 and 1978. Ferrari also took the Group to the top of the Formula 1 World Championship, winning it in 1975, 1977 and 1979. In 1976 the R&D department (Centro Ricerche Fiat) was established, which would become the main innovation hub for all the companies in the Fiat Group.

There is some history of collaboration between Fiat and Peugeot. The first collaboration occurred in 1978 through a 50/50 joint venture called Sevel (Società Europea Veicoli Leggeri). The objective of this joint venture was the production of light commercial vehicles, through the opening of two new shared factories: Sevel Nord, in France, and Sevel Sud, in Italy. This collaboration later extended to South America, specifically Argentina. In fact, in 1980, Fiat Concord and SAFRAR (the local branches of, respectively, Fiat and Peugeot) merged into another company also called Sevel (Sociedad Europea de Vehiculos para Latinoamerica), which started selling, and later producing, vehicles in Latin America. This company remained a joint venture until 1998, when it was fully acquired by Peugeot (Autoweb, 2020).

During the Seventies, Fiat Engineering, Fiat Movimento Terra and Iveco were established and a transition of the company towards an industrial holding began. In 1979, the four companies Fiat, Lancia, Ferrari and Autobianchi were brought together under Fiat Auto.

In 1986, the sport car brand Alfa Romeo entered the Group, while in 1988 the Elasis company was established. Elasis was a state-of-the-art research center in the South of Italy. In 1993 the Group acquired Maserati.

3.1.2. Looking for a partner

In the last three decades, Fiat (and later FCA) has been looking for a large partner to merge with. There were several negotiations, most of which failed, and some smart management moves by both Gianni Agnelli and Sergio Marchionne.

At the end of the 1980s, negotiations were started with Ford Europe for a share exchange. In an interview with the automotive journal Quattroruote, Vittorio Ghidella, who was an engineer and a manager in Fiat at that time, stated that the reasons for the negotiations were obvious: the Italian company was specialized in compact, mass market cars, but the international demand for medium and larger cars was increasing and Fiat lacked the know-

how in this sector. On the other hand, Ford was specialized in the production of medium-sized cars, but had little, if any, knowledge on how to make compact cars. Negotiations lasted months, but in the end, nothing came out of them, as the management of both companies did not want to see its power reduced (Schwartz, 2020).

At the end of the 1990s, Gianni Agnelli entered into negotiations with Daimler, which offered to acquire Fiat for 10 thousand billion of Italian Liras, while Giovanni Fresco, at the time president of Fiat, had valued the company for 12. Even though this transaction would have given the opportunity to Mr. Agnelli to own a significant stake in Mercedes, he did not want to be remembered in history as the man who sold Fiat, so the acquisition never happened (Bricco, 2021)

Almost immediately, Agnelli started looking overseas and, as Chrysler was owned by Daimler and negotiations with Ford had failed the previous decade, GM was the only opportunity. Using the failed negotiations with Daimler as a bluff, Fresco entered in negotiation with the American company which resulted in an acquisition of 20% of Fiat by GM, for $2.4B, with a put option for the remaining 80%. This way, as Agnelli stated in an interview, he could retain his ownership of the company for the following years, and probably forever (La Repubblica, 2000).

From 2000 to 2005, the company formed an industrial alliance with General Motors. In 2003, after almost 50 years as the Chairman of the company, Gianni Agnelli died, and his place was taken by his brother Umberto Agnelli. The following year Umberto also died, and the helm of the company was taken by Luca Cordero di Montezemolo. That same year, John Elkann was appointed Vice Chairman and Sergio Marchionne was appointed CEO. In 2007, the brand Fiat Professional was launched, which collected all the light commercial vehicles previously produced under the Fiat brand. This division operated in conjunction with Sevel Europe (Fiat, 2007).

As previously mentioned, the death of Giovanni Agnelli and of his brother Umberto, shook things up in the management of the company, leading to the proclamation of Sergio Marchionne as CEO. However, even after his death, the legacy of Giovanni Agnelli and his transaction with GM lived on, as Marchionne, in 2005, used the put option as leverage to

separate from the American company: if the option was exercised, the American company would go bankrupt. Fiat's CEO managed to negotiate a deal in which the Italian company, which was in a bad financial position, not only separated from General Motors, but also received a much needed $2B payment (Bricco, 2021).

The year 2009 unofficially marks the beginning of FCA, with the Fiat Group and the Chrysler Group announcing a global strategic alliance. Fiat acquired a 20% stake in Chrysler and Sergio Marchionne was appointed as CEO. The year after, Jon Elkann was appointed Chairman of Fiat. The corporate restructuring continued in 2011, with an increase of the stake in Chrysler up to 53.5% (58.5% in 2012) and the spin-off of a series of controlled companies, including Iveco, into the newly founded Fiat Industrial (then merged into CNH Industrial). In 2014, the company finally increased its ownership of the Chrysler Group to 100%, with the two companies merging into Fiat Chrysler Automobiles (FCA), which was listed on both the New York and Milan stock exchanges. The integration of the two groups was thus complete and official (a brief timeline of Chrysler is presented at the end of this section).

Even after the merger with Chrysler, the company, now FCA, was not in a good situation. Liquidity was low, and the company was lagging behind its competitors, if not at a total standstill, in what concerned the development of electric vehicles, which required huge amounts of investments. Therefore, in 2015, Marchionne pursued the idea of merging with General Motors, a company that was more financially solid and was more technologically developed than FCA. As the management of GM was not interested in a merger, the possibility of a hostile LBO was evaluated, and the Italian CEO had already found financing sources for a grand total of $60B. The plan, however, did not go through and the search for the right partner continued (Bricco, 2021). The corporate restructuring of FCA went on, with the listing of Ferrari on the New York Stock Exchange in 2015 (anticipating its spin-off from the Group, which was completed in 2016) and the sale of Magneti Marelli in 2018 (completed in 2019). In 2019, Sergio Marchionne unexpectedly died, and Mike Manley was appointed CEO of the Group.

In 2019, FCA and Renault started negotiating a possible merger deal. Things were complicated, as the French company already was in an alliance with, and owned a 43.4% stake in, the Japanese company Nissan. After a long period of negotiations, the deal crashed,

leaving the Italo-American company in the same situation as before (McLain & Kostov, 2019; Kostov et al., 2019).

In December 2019, FCA and Groupe PSA announced a 50/50 combination agreement, with FCA bringing into the deal 10 automotive brands:

- Abarth
- Alfa Romeo
- Chrysler
- Dodge
- Fiat
- Fiat Professional
- Jeep
- Lancia
- Maserati
- RAM

3.1.3. Chrysler

Chrysler was founded in 1925 in Detroit, USA, by Walter Chrysler. Just three years later, the company acquired Dodge from the homonym brothers. In 1937, Chrysler created the brand Mopar (a combination of the words 'Motor' and 'Parts') as a manufacturer of spare parts for its models. In 1987, the company bought the historic Jeep brand (Iacocca, 2014; Mopar, 2020).

In 1988 the company was acquired by Daimler-Benz, becoming part of the group Daimler Chrysler. Its volatile financial results caused Daimler to sell the company in 2007 to the Cerberus Capital Management investment Fund. The 2008 recession caused a deep slump in the sales of the company, which had to seek help from the US Government, obtaining a financial lifeline. In 2009 the company reached a merger agreement with Fiat which, after a few years, led to the formation of Fiat Chrysler Automobiles (Maynard, 2009). In 2010, the brand RAM, which had been the name of Dodge's pick-up truck for more than 30 years, was launched.

3.2. PSA

The history of Peugeot dates back to the 18th century, when Jean-Pierre Peugeot started a series of businesses, which included textile and mills. In the early 1800s, the sons of Jean-Pierre, which had notable engineering skills, transformed one of the mills into a steel foundry and started to produce a wide range of steel products. The lion symbol, which, with a series of evolutions, the company has used since, appeared almost half a century later, in 1847.

In 1882, the company started manufacturing bicycles, with the Grand Bi penny-farthing being its first product capable of transporting people, but it was only in 1889 that the history of Peugeot enters the automotive era, with the production of a steam-powered three-wheeler. The year after, the first petrol car was created, equipped with an engine produced by Daimler. For nearly four decades, the company continued to produce vehicles at a small scale, with the collaboration of other companies.

It was at the end of the 1920s that Peugeot produced its first mass produced vehicle, the 201. With this car it also introduced the numbering system that it still uses nowadays to identify models.

After the Second World War, in 1953, the company created its first scooter, becoming the first company in the world to have created motorized two-wheel vehicles.

In 1966 the company became a joint stock company, under the name PSA (Peugeot Société Anonyme). Three years later, in 1969, a joint venture for the creation of an engine production plant was signed with Renault, with the name of Française de Mécanique.

The 1970s are the decade in which PSA became the group we know today. In 1974, Peugeot acquired a 38.2% stake in Citroen, another French automaker. The stake increased to almost 90% over the next two years, leading to the creation of the group called PSA Peugeot Citroen, which held 100% of the two companies. Two years later, in 1978, PSA Peugeot Citroen acquired Chrysler Europe and started the Sevel joint venture with Fiat (see previous section). In 1979, a company which would offers a wide range of financing and services to the Group's customers, called CREDIPAR, was founded.

During the following decade, the restructuring and expansion of PSA Peugeot Citroen continued. In 1980 a merger of the networks of Peugeot and Talbot (a car brand of the Chrysler group) occurred, followed in 1987 by the merger between the bicycle and tools divisions of Peugeot into ECIA, which was to become a European equipment supplier.

In 1992, the Group founded a Joint Venture with the Chinese company Dongfeng Motors for the assembly of the Citroen ZX in China. In 1998, the Group also acquired the remaining stakes of the joint venture with Fiat called Sevel Argentina. And in the same year, PSA Peugeot's subsidiary ECIA merged with the leading European vehicle seat maker Bertrand Faure SA, leading to the creation of the company Faurecia, in which PSA Peugeot held a 50% stake (Fahri, 1997).

Peugeot was one of the first companies in the car industry to start making environmentally conscious changes, with the introduction, in 1999, of the Diesel Particulate Filter (FAP), which is now standard in almost every diesel vehicle in the world. In the same year, it started its Carbon Sink operation in Brazil, in order to start offsetting its carbon footprint by planting trees in the Amazon.

With the start of the New Millennium, the company continued its international expansion, with the inauguration, in 2001, of the Porto Real factory in Brazil. The following year, the collaboration with Dongfeng Motors expanded, with the creation of the DPCA joint venture for the production of more models of Peugeot and Citroen in Mainland China. In 2005, the Group, together with Toyota, inaugurated the Kolin production site in the Czech Republic and, the following year, PSA Peugeot opened the Trnava factory in Slovakia. In 2008, after reaching an agreement with Mitsubishi Motors Corp., the construction of the shared Kaluga plant in Russia began. To end this decade, in 2009, Citroen created its first DS model, DS standing for Different Spirit, which is the insignia of a new line of premium vehicles.

In 2010, the collaboration with China continued, with the signing of a new joint venture with the Chinese Changan Automobile Group, for the creation of a new plant in Shenzhen set to open in 2013. The year 2010 was also when the company presented the Peugeot iOn, its first fully electric concept car. Another joint venture was signed the following year with BMW, with an investment of $100M for hybrid technologies. In 2012, PSA Peugeot Citroen and General

Motors created a Strategic Global Alliance. Two years later, in 2014, Carlos Tavares was appointed Chairman of the Board of PSA Peugeot Citroen. Moreover, the company acquired the totality of Française de Mécanique, the factory born in 1969 from the joint venture with Renault. In 2015, the DS series was launched as a standalone brand, instead of being a line of Citroen, as had already happened in 2012 in China.

In 2016, the company changed its name from PSA Peugeot Citroen to its current name: Groupe PSA. The group then launched the Free2Move service, with the ambition of 'becoming the preferred worldwide mobility service provider by 2030' (Groupe PSA, 2017). Free2move is aimed at providing multiple mobility solutions, that go from leasing to car-sharing, for different categories of customers, both business and private, with the ownership of the cars remaining of Groupe PSA. In 2017, the company acquired Opel and Vauxhall from General Motors, reaching a total of 6 different brands (including Free2Move) in its portfolio.

In December 2019, FCA and Groupe PSA announced a 50/50 combination agreement with Groupe PSA, bringing into the deal 5 automotive Brands:

- Citroen
- DS
- Peugeot
- Opel
- Vauxhall

***

In conclusion, this review of the history of the two companies, and especially their past M&As, highlights some differences between them. PSA, when compared to FCA, has had fewer transactions and, consequently, has less brands in its portfolio and is less geographically extended. On the other hand, FCA has a long history of mergers and acquisitions and a 'stable' of ten brands. Moreover, Fiat, and later FCA, has looked for a partner for the last 30 years, with many failed negotiations (the last of which in 2019 with Renault, just before the announcement of the deal with PSA). Among the reasons behind this decades long search, there is the fact that FCA has progressively lagged behind its competitors in what concerns R&D, especially in recent years, with regard to EV technology.

4. The Merger into Stellantis

In October 2019, FCA and Groupe PSA announced they would merge within 15 months. While some of the details of the transaction changed over time, mostly due to the COVID-19 pandemic, its core remained mostly the same. In this chapter I will present the structure of the merger, its changes over its course, and the timeline of the events.

4.1. The first steps

On 31 October 2019, FCA and PSA issued a joint press release in which they announced their plan to join forces through a 50/50 merger agreement. While many of the details, and a confirmation, were still missing, the objective of creating the world's fourth biggest automotive group, by units sold, was evident.

Some of the numbers of the merger were already available: they expected synergies worth €3.7B, 80% of which would be achieved within four years, for a total cost of €2.8B, and without closing any of the existing factories.

The new parent company would be based in the Netherlands and would be referred as DutchCo until the definition of its official name. Regarding the management of DutchCo, the company would have 11 Board members, 5 of which (including the Chairman of the Board) would be nominated by FCA and 6 (including the CEO, the Vice Chairman and the Senior Independent Director) would be nominated by PSA. John Elkann, CEO of Exor and former Chairman of FCA, would become Chairman of the Board, while Carlos Tavares, CEO of PSA, would become the Chief Executive Officer of the new company for an initial term of five years. DutchCo would be listed on the French, the Italian and the New York stock exchanges, respectively *Euronext, Borsa Italiana* and *New York Stock Exchange*.

In order to equalize the value of FCA and PSA, the former would distribute a special dividend of €5.5B to its shareholders, as well as its shareholding in Comau, while the latter would distribute its 46% stake in Faurecia.

In what regards the by-laws of DutchCo, it was proposed that the loyalty voting program would not operate to grant voting rights to any shareholder which would exceed 30% of the

total votes cast and that there would be no carry-over from the merging companies of existing double voting rights, but that after a three-year holding period of the shares, new ones would be issued.

Box 4.1. The initial agreement

Key Points

- 50/50 all stock merger resulting in a Dutch company (DutchCo)
- DutchCo will be listed in France, Italy and New York
- Exchange ratio set at 1-1 and 1.742 respectively for FCA and PSA shareholders
- A €1.1B ordinary dividend issued by each company, prior to the closing
- A €5.5B special dividend issued by FCA, prior to the closing
- The assignment of PSA's 46% stake in Faurecia to its shareholders, prior to the closing
- The assignment of FCA's stake in Comau to DutchCo's shareholders, after the closing

Resulting majority shareholders of DutchCo

- 14% EXOR N.V.
- 6% Peugeot Family
- 6% Bpifrance Participations SA
- 4.5% Dongfeng Motor Group (DFG)
- (0.00000127% Alessandro Magaldi)

The Management of DutchCo

- John Elkann as Chairman of the Board
- Carlos Tavares as CEO
- 9 non-executive Board Members, 5 of which independent
- 5 Board Members, including the Chairman, nominated by FCA
- 6 Board Members, including the CEO, nominated by PSA

Other details

- A 7-year standstill for EXOR N.V., BpiFrance Participations SA, DFG and the Peugeot Family
- A 3-year lock-up period for EXOR N.V., Bpifrance Participations SA and the Peugeot Family
- No carryover of existing double voting rights, new double voting rights for holding shares of DutchCo for three years
- Loyalty voting program will not grant voting rights which exceed 30% of total votes cast in a shareholders meeting

Note. Based on information from Groupe PSA & FCA (2019)

It was also stated that, for the main shareholders of FCA and PSA (namely Exor, Bpifrance Participations, Dongfeng and the Peugeot family) a standstill (which is a form of anti-takeover measure) would apply. A lock-up period (in which the shares of the company cannot be sold) of three years would also apply (excluding Dongfeng), with an exception for the Peugeot Family to increase its participation by a maximum of 2.5%, achieved only by acquiring stock from Bpifrance Participations and DFG.

On 18 December 2019, a Combination Agreement was signed, confirming almost all the information released in October. Among the differences from the previous outlook can be mentioned that during the three-year lock-up period, the Peugeot family would be able to increase its shareholding by a maximum of 2.5% not only by acquiring stakes from Bpifrance and DFG, but also from the market, and Bpifrance would be able to further reduce its participation. Moreover, Dongfeng would sell 30.7M shares to PSA prior to the closing of the deal and would be subject to a lock-up period until the signing, in order to figure in the ownership of DutchCo for 4.5%. The press release also stated that Exor, Bpifrance, the Peugeot family and Dongfeng had irrevocably committed to vote in favor of the transaction at their respective shareholders' meetings. Finally, the exchange ratio was set to 1-1 for the FCA stockholders and 1.742-1 for the Groupe PSA stockholders (1.742 shares of DutchCo for every share of PSA) and it was communicated that both companies would distribute a €1.1B dividend to their respective shareholders based on the 2019 financial results. The main information of the initial merger agreement can be seen in Box 4.1.

3.2. Criticisms of the deal

Although the deal has been publicized as a 50/50 horizontal merger or, in other words, a merger between equals, some analysts defined it as an *acquisition* of FCA by Groupe PSA. A few reasons justify this claim. Firstly, more than half of the board of directors (6 out of 11), including the CEO, was nominated by PSA. This kind of managerial majority is usually seen in acquisitions more than in mergers. Secondly, even though the majority shareholder will be Exor, the shareholders of PSA will have a combined participation of approximately 16.5% of the resulting company. The former shareholders of FCA will also receive a premium, under

the form of an extraordinary dividend. According to Kepler Chevreux (Redazione ANSA, 2019), PSA is also paying a premium for the acquisition of around €6.7B, based on the market capitalization of both companies prior to the communication of the merger. Lastly, under the IFRS 2 principles, every transaction of this type has to list one of the participants as the acquirer, and the French company has covered this role in the prospect (Bertolino, 2020).

3.3. The impact of the COVID-19 Pandemic

The global emergency caused by the COVID-19 pandemic has had a huge impact on both the economy and our lives, and the long-term effects are still to be understood. Nevertheless, its consequences on the merger have not been particularly strong.

On 13 May 2020, the companies announced that the €1.1B dividend would not be distributed, because of the economic impact of the pandemic, but stated that the transaction would continue as planned and that they were actively moving forward with all the necessary activities (Redazione ANSA, 2020).

A few months later, on 14 September, the two companies announced a revision of the distribution plans previously made in order to equalize their value. FCA's special dividend's value was almost halved, going from €5.5B to €2.9B, while the distribution of PSA's stake in Faurecia would not happen prior to the closing and would be restricted to its own shareholders, but it would happen after the closing and would be available to all the resulting company's participants. On the same date, they also communicated that the expected annual synergies would increase from €2.7B to €5B, with the same implementation cost and the same timeline, and they confirmed that the transaction would close within Q1 2021 (Mangano, 2020).

3.4. The Birth of Stellantis

On 15 July 2020, FCA and PSA christened the new parent company for the 15 automotive brands involved in the merger as 'Stellantis'. The name is rooted in the Latin verb 'stello' (stellas, stellatum, stellare), which means 'to brighten with stars'. The aim of the name is to evoke the rich history of the two companies while, at the same time, capturing the spirit of

optimism and projection into a sidereal future. While the name will be used at a corporate level brand, it will not appear on any of the vehicles of the group, as was the case with the FCA and PSA brands (Groupe PSA, 2020). The logo of the new company was later revealed on 9 November.

Figure 3.1. The Stellantis Logo

Note. Downloaded from the Stellantis website

On 29 September, the composition of the Board of Directors was published. Apart from Carlos Tavares as CEO and John Elkann as Chairman, who had already been nominated, Robert Peugeot was appointed Vice-Chairman and Henri de Castries as Senior Independent Director. The Non-Executive Directors were Andrea Agnelli, Fiona Clare Cicconi, Nicolas Dufourcq, Ann Frances Godbehere, Wan Ling Martello, Jaques de Saint-Exupéry and Kevin Scott (Stellantis, 2021). On 18 December, John Elkann communicated that Mike Manley would be responsible for the American activities of the Group.

Regarding the regulatory steps, on 20 November the prospect for the listing of Stellantis was approved, and on 21 December the merger was approved by the Antitrust Branch of the European Commission, which had started its inquiry on 8 June (Redazione ANSA, 2021). According to Automotive News (Malan & Sigal, 2020), as of 2019, PSA had a market share in Europe of 25% for light commercial vehicles which, together with FCA, could bring the total market share of Stellantis to 34% (by comparison, Ford and Renault had 16% each in the same year). The figure further increases when considering the Italian and the French markets, in which the new Group could reach, respectively, 48% and 45%. According to the same source (Malan & Sigal, 2020), even though there is no regulatory threshold, this level of market

concentration could have lengthened the investigation by the authorities, had they detected possible anti-competitive behaviors, leading to a possible extension of the merger's deadline.

On 4 January 2021, the shareholders meetings of both companies approved the merger. The official birth date of Stellantis was set to 16 January. The listing on the Italian and French stock exchanges occurred on 18 January, while the listing on the NYSE was on the next day, as the 18 was Martin Luther King's Day, an American holiday.

It is worth mentioning that, on 24 December 2020, the Stichting Stellantis SVS foundation was created in the Netherlands. This foundation has two FCA managers as Directors and has a non-expiring option to buy all the loyalty shares of the Group which, as I previously noted, will be distributed after the three-year holding period of the ordinary stock. This type of foundation is often used by majority shareholders to protect their company from hostile takeovers or from operations made unilaterally by other relevant shareholders (Bertolino, 2021).

***

The unfolding of the deal between FCA and PSA could be characterized as a textbook case, as it smoothly followed all the prescribed procedural steps, in the forecasted time. The analysis of synergies and initial valuations were carefully crafted and broadly confirmed, with only slight adjustments, in the finalization of the merger. This smooth working can certainly be ascribed to the mutual commitment of the two firms to a consolidation that is expected to benefit both, as I shall illustrate in the next chapter.

5. The Rationales for the Merger

As mentioned in the chapter about the history of the two companies, FCA has been actively looking for a partner for the last three decades. The main reason behind this search, especially in most recent times, is that the Italo-American Group's development of electric vehicles has constantly trailed behind its main competitors. In fact, most of the top 10 firms by revenues have been developing and selling PHEVs (Plug-in Hybrid Electric Vehicles) and EVs (Electric Vehicles) for years, while Fiat, for example, only offers one MHEV (Mild Hybrid Electric Vehicle) model and just recently introduced its first (if one does not consider the 1990 Panda Elettra) fully electric vehicle, the Nuova 500, the platform of which is not modular but might be used for other small vehicles (Magni, 2020).

It is worth quickly explaining the difference between MHEV and PHEV, while EV (sometimes referred to as BEV – Battery Electric Vehicle) is quite self-explanatory. A mild hybrid electric vehicle (MHEV) has a traditional internal combustion engine which is helped by an electric engine. The batteries that power the electric engine are recharged by the internal combustion engine and/or by recovering energy when braking. Therefore, the vehicle cannot rely solely on the electric power unit. In contrast, a plug-in electric vehicle (PHEV) has a more powerful electric motor, a bigger battery pack and can be recharged at a power outlet or at a dedicated charger. The main advantage of PHEVs over MHEVs is that the former can travel for some distance relying only on the electric power unit and provide a greater fuel economy advantage when compared to both traditional vehicles and mild hybrids, while the latter has a lower fuel economy and only a torque advantage over traditional cars. On the other hand, the cost of a PHEV is quite higher than its MHEV counterpart (Mantero, 2020).

Groupe PSA, on the contrary, has been developing hybrid vehicles and fully electric vehicles for some time now, with the first prototype presented in 2010 and the first hybrid platform released in 2013. The main disadvantage that the French group has with its competitors is the fact that its market is mostly limited to Europe, while FCA has a much wider global footprint.

In what follows, I will review in some detail all the rationales behind the creation of Stellantis.

5.1. Segment Lineup

The first motive to stress is that the vehicle lineup of the two groups is broad and almost complementary, meaning that FCA and PSA produce cars in a vast range of different automotive segments and they also aim at different consumers and markets. If we divide the automotive market into 6 segments (Luxury, Premium, SUV, Mainstream, Pick-up trucks and Light commercial vehicles, see Table), we can see that the overlaps occur mostly in the mainstream small and medium cars segments, as can be seen in Table 5.1.

Table 5.1. Brands by segment

Segment	Brand (Group)
Luxury	Maserati (FCA)
Premium	Alfa Romeo (FCA); DS (PSA)
SUV	Jeep (FCA)
Mainstream small and medium	Abarth, Fiat, Lancia, Dodge, Chrysler (FCA); Peugeot, Opel, Vauxhall, Citroen (PSA)
Pick-up trucks	RAM (FCA)
Light commercial vehicles	Fiat Professional (FCA); Peugeot, Opel, Vauxhall, Citroen (PSA)

Note. Based on information from Groupe PSA & FCA (2019)

It must be noted, however, that the overlapping brands in the Mainstream medium and small car segment often operate in different geographical markets. To make an example, Opel and Vauxhall are two brands that commercialize the same models (the former in the EU, the latter in the UK, the Isle of Man and Australia), apart from some country-specific models (for example the Australian UTEs), while Chrysler and Dodge operate mainly in North America, where Fiat, Lancia and the brands from PSA are almost non-existent. Moreover, the current automotive market seeks a high level of model and brand diversification; therefore, the remaining overlap should not cause cannibalization (Gomes et al, 2010).

5.2. Merger synergies

As stated by the two companies in the initial presentation of the transaction, published in December 2019, the merger would create synergies for around €3.7 billion per year, which was later increased to €5B (Reuters Staff, 2020), with a cumulative implementation cost of €2.8B. It is notable that, according to the companies, the positive effect on the cash flows of Stellantis would start since the first year of activity, with 80% of the synergies achieved by year four.

As explained in chapter 1, synergies can be of various types and are mainly cost saving. In the case of the FCA-PSA merger, most of the synergies would come directly from a reduction of the 'cost of goods sold' (COGS) line of the income statement, increasing the gross margin of Stellantis. But synergies would also come, although in a smaller amount, from a reduction in other operating expenses, such as R&D investments and SG&A, also improving the operating margin.

Going deeper into the details released by the companies, 40% of the forecasted synergies, or €2B in the long run, would be on the purchasing side, thanks to scale economies, best price alignment and possible access to new suppliers. Another 40% would come from other product related expenses, such as R&D on both traditional and electric powertrains, manufacturing efficiencies gained through economies of scale and scope, and the convergence of vehicle platforms (more on vehicle platforms will be discussed later). Finally, 20% of the synergies, or €1B, would come from other operating expenses, such as marketing, IT, logistics and G&A.

The detailed effect that synergies will have on the cash flows and on the overall valuation of Stellantis will be discussed in the next chapter, where the company will be evaluated using the DCF method, with and without the synergies in place.

5.3. Geographic Balance

As explained in the first chapter, geographical expansion is one of the core reasons behind M&As. FCA operates almost worldwide, but 87% if its revenues, as of 2018, come from North America ($72,6B) and the EMEA (Europe, Middle-East and Asia) area ($23.1B). In contrast,

PSA operates mainly in the Old Continent, with 92% of its revenues ($54.2B) originating in Europe. Considering the combined revenues of the resulting Group, 43% would come from North America and 46% would come from Europe.

Thus, from a geographical expansion perspective, it is mostly PSA that benefits from the merger, as it should greatly profit from FCA's existing network to expand its operations outside of the EU, instead of having to create a new distribution system from scratch.

5.4. Platform Sharing

The greatest example of synergy in the biggest car manufacturing groups is the sharing of platforms amongst different models and brands. The platform can be considered the basic structure of the car and may include the floor, the axles, the steering mechanism, the suspensions and the type of powertrain.

Automaker groups invest billions in powertrains. To make an example, VW spent around $60B in the MQB (Modularer Querbaukasten) platform (Holder, 2012), which later evolved into the MLB Evo, which is used across a wide range of bigger cars, including the Audi A4, the Volkswagen Tuareg, the Porsche Cayenne, the Bentley Bentayga and the Lamborghini Urus.

Especially in a time when the product life cycle is getting shorter, developing a modular platform that can be used not only in several models of the same generation, but also across generations, becomes essential to reduce the R&D costs and the development time of new cars. While sharing a standard platform among models might reduce the differentiation between the models that adopt it, the development of a 'modular' platform, which can more easily adapt to different varieties of vehicles and can be improved over time with less resources, contributes to bypass the product differentiation issue and further reduces longer-term costs (Mahmoud-Jouini & Lenfle, 2010).

FCA uses three main platforms: the Giorgio, the Small Wide and the Compact. These platforms are shared among many of the brands of the group thanks to constant improvements that allow their use in a wide variety of engines and drives. However, they cannot be used on PHEVs and EVs. The only fully electric platform that FCA has developed is the one used in the

Nuova 500 which, as I previously stressed, is not modular. The absence of modularity makes it more difficult to use it on vehicles of a different size.

FCA is also working on the full electrification of the Maserati brand, with a fully electric variation of the MC20 supercar and a new Gran Turismo and Gran Cabrio, which should be electric-only. This might mean that an electric luxury car platform is being developed, which might be also used in the fully electric variations of the luxury sedan Quattroporte and the Levante SUV, expected before 2025 (Pini, 2020).

PSA, on the contrary, already has a number of PHEVs and BEVs in its line-up, and has developed two main modular platforms: the CMP (Common Modular Platform) and the EMP2 (Efficient Modular Platform 2). These platforms are complementary, which means that between them they can be used on all the vehicles of the group. The CMP and its electric vehicle variation, the e-CMP, have been developed together with Dongfeng Motors and are used on the small vehicles and the compact SUVs. Its modularity gives it the possibility of being configured for three different wheelbases, two different widths, several wheel diameters and many different powertrains, from fully electric to hybrids, to traditional petrol and diesel engines. It has also been developed to increase comfort, reduce emissions and to be fitted with the latest driving assistance devices (Groupe PSA, 2018b). The EMP2 is used on the medium-large vehicles of the group, as well as on the light commercial vehicles. According to the company, it is used on 50% of the product lines and can accommodate both traditional engines and plug-in powertrains (Groupe PSA, 2016).

PSA has also been developing the eVMP (Electric Vehicle Modular Platform), which is an evolution of the EMP2 and will be ready in 2023. This platform will be used mainly on fully electric vehicles but will also be compatible with PHEVs. An evolution of the e-CMP is also in the works, and should be ready by 2025 (Canali, 2020).

The two platforms, and their future evolutions, will greatly reduce the R&D costs that FCA would otherwise have incurred into for the development of new small, medium and large mass-market electric and hybrid vehicles, a product segment in which it has lagged behind the competition in the last decade. Between the two PSA platforms, the one used in the Nuova 500, which could be used in city-cars, and the one that is being developed in Maserati,

Stellantis would have platforms that cover most (if not all) of the vehicles in the current and future line-ups, with an increased component sharing, which would significantly reduce the overall costs of production and development.

The two companies actually stated, in their merger presentation, that their top two platforms would be used in approximately two thirds of Stellantis' models, improving the much-sought economies of scale and reaching the industry benchmark levels for platform usage. Moreover, the convergence of platforms could also bring about a higher level of parts commonization, i.e., the sharing of parts across different models, further reducing the cost related to R&D and production.

5.5. Car sharing and autonomous driving

As mentioned in Chapter 2, the market might be reshaping in what concerns how consumers use automobiles. Newer generations are less interested in owning a car as much as having the availability of one when needed and thus, in larger metropolitan areas, car sharing is on the rise.

Both FCA and PSA are involved in the car sharing business, the former with the partnership with Eni which resulted in the Enjoy car sharing company, the latter with its subsidiary Free2Move, which provides a vast portfolio of services to both private and business customers. Among the services provided by Free2Move there are car sharing, fleet sharing, short and long-term car rental, and car and fleet leasing (Free2Move, 2021).

When compared to competitors such as ShareNow, the geographical extent of Enjoy and Free2Move appears limited. The Italian company Enjoy only operates in Italy's major cities, and while it provides services to a higher number of metropolitan areas than its German counterpart ShareNow, the latter is present across all major European countries (ShareNow, 2021). Free2Move's car-sharing services, in contrast, are available only in four major cities, namely Paris, Madrid, Lisbon and Washington DC, but the rest of its service portfolio is available in 170 countries, which means that there is already a of corporate infrastructure in place which could be used for further expansion. Stellantis, having the availability of both

Enjoy and Free2Move, could further improve its international presence in the car-sharing business.

Moreover, both PSA and FCA are partnering with multiple companies for the development of autonomous driving systems and connected vehicles ecosystems. As some of the partner companies overlap, the joint effort in the development of these systems should yield a higher return than before.

5.6. CO2 compliance

We live in an era where not only regulators, but also the market, aim for a greener world. This means that the production of electric and hybrid vehicles is not only linked to the steadily more stringent regulations concerning the emissions of both the vehicles sold and the factories that produce them, but also to the increasing demand coming from customers. Before the merger, FCA was not compliant with EU regulations on carbon emissions, and, even though it relied on emissions credit pooling with Tesla (McGee & Campbell, 2019), which broadly consists in offsetting its own excess emissions by buying credits from companies that pollute below the regulatory level (EU, 2009), it had to pay fines for excessive pollution generated by its vehicles in the USA (EPA, 2019).

In contrast, PSA was already fully compliant with the emission regulations. Therefore, Stellantis as a whole should be able to comply since year one with both the EU and American regulations (Groupe PSA & FCA, 2019).

***

In conclusion, there are multiple motives behind the merger. Some of the motives benefit both companies, in particular the synergies coming from platform sharing and R&D. This is a particularly important aspect, especially when taking in consideration what emerged from Chapter 2, i.e., that in the last half century the focus of automotive manufacturers has shifted from economies of scale to economies of scope. The merger allows Stellantis to spread its investments across a wider portfolio of brands and therefore models.

Other advantages deriving from the merger are specific to one or the other firm. FCA has lagged behind its competitors in what concerns the electrification of its vehicles, while PSA has invested greatly in this department. The knowledge of PSA will be available to the whole group, reducing the disparities with its competitors. FCA was also not compliant to the emission regulations, and the merger with the French company solves this issue. On the other hand, PSA is present mainly in Europe, and with the merger will have access to FCA's existing international distribution network, particularly developed in North America.

6. Valuation

In this final chapter, I carry out my valuation of the FCA-PSA merger. First, I evaluate the two companies separately; subsequently, I proceed to evaluate Stellantis, both *without* and *with* the expected synergies implemented.

It should be noted that the COVID-19 pandemic has significantly influenced the financial results for 2020 and will almost certainly also impact the ones of the following years. Consequently, as the financial results of the two companies have not yet been published at the time of the writing of this thesis, the 2020 results used in my valuation are based mainly on assumptions. I will explain in detail the logical process behind these assumptions, clarifying that, in regard to the objective of this thesis, which is the evaluation of synergies, the result does not change, as long as the same assumptions are used for both the merging companies and the merged one.

Before detailing the assumptions, I will briefly explain the process I developed to create the data on which I based my DCF valuation. I started by downloading FCA's and PSA's financial statements from the Eikon database, and proceeded to reclassify the Income Statements, the Balance Sheets and the Cash Flow Statements of the two companies. The reclassification was necessary to obtain the EBIT values, otherwise not specified, which I used to estimate the NOPAT, an essential element of the DCF method, and to correctly evaluate the changes in NWC, net of the 'other operating cash flows'.

6.1. Assumptions

The assumptions are a very important element of the valuation, as they influence its outcome, and they must be as realistic as possible. Hereafter I will explain the rationales behind my assumptions on revenues, cost of goods sold, S&A and R&D expenses, capital expenditures and depreciation, expected synergies, interest expenses, tax rate and on all the elements necessary to calculate the weighted average cost of capital (WACC).

6.1.1. Revenues

Even though the 2020 financial results have not yet been published, both companies have released reports on the volume of sales, either ad interim or for the whole FY, with the corresponding values of the previous year.

In particular, PSA published the Group's volume of sales for 2020 (Groupe PSA, 2021), which is around 2.5M vehicles sold. If we consider that the volume of sales in 2019 was almost 3.5M vehicles, the 2020's revenues should see a decline of 27.8% compared to the previous year.

FCA, on the other hand, has not yet released the figures for the whole year, but using the data from the Q3 ad interim report (FCA, 2020), we can see that the sales volume of the first nine months of 2020 is 2.3M, which is a decrease of 30.3% from the 3.3M sales of the three quarters of 2019.

Forecasting the earnings for the next years presents another challenge, as the usual method of using the average YoY growth rate of the revenues, starting from the 2020 sales, would give not only improbable results, but also negative FCFFs for the foreseeable future. However, even though there are not yet forecasts for FCA and PSA specifically, there are some expectations for the automotive industry as a whole. The shared consensus (ACEA, 2021; Martinovich et al., 2020; Roberts, 2021) is that in 2021 there will be a sales rebound of around 10%, with the pre-COVID-19 levels to be reattained no sooner than in three years. Making a conservative estimation, I set the revenue levels for 2024 (which is the last forecasted year for this analysis) equal to the ones of 2019, assuming a linear progression in the next three years.

6.1.2. COGS

The process of forecasting the Cost of Goods Sold was quite straightforward: I used the average COGS/Revenues ratio of the last seven years, as COGS are usually a variable cost, and applied it to the forecasted revenues of the following five years.

6.1.3. SG&A and R&D

Selling, General and Administrative (SG&A) and Research and Development (R&D) are usually fixed costs which, as the past data shows, do not vary by much YoY. I therefore calculated the average growth rate of these costs for the last seven years and applied it to the following five. Estimating the variation, if any, caused by the COVID-19 Pandemic was not possible given the data available, as the 2020 detailed results have not yet been published and as the ad interim reports have a format very different from the Thomson Reuters (2021) source I used.

6.1.4. Depreciation and Capex

The depreciation of both companies has been quite constant for the past four years, I therefore used the simple average depreciation to forecast it for the next five years. Moreover, the depreciation should not be influenced much by the COVID-19 Pandemic, as it is based on past investments and there have not been significant divestments made by either company in 2020.

The Depreciation used in my DCF calculation is based on the Depreciation and Amortization values found in the Cash Flow Statements of FCA and PSA and has been forecasted using the same method used for the Income Statement. The main difference here is that, for FCA, the 2018-2022 business plan was available (Richard Palmer – FCA, 2018). I therefore used the data from the business plan to estimate FCA's Capital Expenditure (Capex) for the next years and increased the Depreciation by an amount corresponding to 10% of the change from the initial expected depreciation.

6.1.5. Interest/Investment expense and other expenses

For the interest expense and for the other expenses I used the simple average of the past four years. Regarding the interest expense, the ratio behind this choice is that both companies have been keeping a constant leverage ratio in recent years, with no expected changes in the future. On the other hand, the other expenses are very volatile and difficult to forecast, and therefore I assumed that the average would be the optimal representation of future expenses.

6.1.6. Income Tax Provisions

Finally, to set the tax provisions I used the KPMG tax rates by region (KPMG, 2021) considering the regions where the legal base of operations for the two groups was, i.e., France for PSA and the Netherlands for FCA. I used the Netherland tax rate also for Stellantis, as the new company is based there.

6.1.7. WACC estimation

I then proceeded to estimate the Weighted Average Cost of Capital (WACC). To calculate the cost of capital, I first had to determine the cost of debt and the cost of equity. To calculate the cost of debt there are two possible systems. The first is to calculate the Interest Coverage Ratio (ICR) using the following formula:

$$ICR = \frac{EBIT}{InterestExpense}$$

And then proceed to use Damodaran's tables to estimate the rating of the company based on the ICR. The rating then provides the spread over the risk-free rate. The issue with using this method is that, considering the really low (or even negative) risk-free rates of the current era, the resulting cost of debt would be improbably low. I therefore used the more straightforward alternative system, which is to calculate the effective cost of debt for the companies using the following formula:

$$r_d = \frac{i_t}{D_{t-1}}$$

Using this formula, I calculated the average cost of debt for the last six years, which gave me a more realistic value, and used it in the WACC formula.

To calculate the cost of equity, I first found the 5Y monthly beta of the companies on the Thomson Reuters database and then used the formula already reviewed in the first chapter:

$$r_e = rf + \beta * ERP$$

For the risk-free rate I used the German 10Y Bund rate for the EU and the 10Y Treasury rate for the US. For the ERP I used Damodaran's country risk premium. The process for Groupe PSA was quite straightforward, as the company was listed only on the French stock exchange, and therefore I used the EU risk-free rate and the French country risk premium. For FCA, which was listed on both the Italian and the New York stock exchanges, I used the average risk premium of Italy and the US and the average risk-free rate of the EU and the US.

As the two companies have almost exactly the same amount of debt, I then used the average cost of debt to calculate the one of Stellantis. The calculation for the cost of equity of the new company was similar to the one used for FCA and PSA, with a weighted average for the risk free and the ERP that takes into consideration the fact that Stellantis is listed on three different stock exchanges.

The last items needed to calculate the WACC are the amount of debt and of equity, which I found on the reclassified balance sheet of the companies.

After finding the cost of debt, the cost of capital and the leverage of the companies I applied the WACC formula:

$$WACC = r_e * \frac{E}{E+D} + r_d * \frac{D}{E+D} * (1-t)$$

Where the tax rate used is the one of the country where the company is headquartered.

6.1.8. Synergies

In the merger presentation and in its subsequent updates, the merging companies stated that the annual synergies would be worth €5B per year, with 80% of them expected to be achieved by the fourth year. They also stated that the cumulative implementation cost to achieve these synergies would be €2.8B, and that there would be a positive cash flow from them already in the first year of the merger.

The companies also detailed how these synergies would be achieved, with 40% of them coming from R&D and the manufacturing processes, 40% from the increase in purchasing

power of the resulting company and 20% coming from other areas, connected mainly to the SG&A expenses.

Using this information, I estimated a linear increase of the annual synergies up to €4B in the fourth year, with a distribution of 40% in the COGS, 40% in the R&D line of the reclassified income statement and 20% in the SG&A expenses.

With regard to the implementation costs, considering the fact that the companies expect a positive cash flow from the synergies starting in the first year, I divided the €2.8B into three tranches, one of €800M in the first year, and the other two, of €1B each, the following two years. The implementation costs, where then added to the capital expenditure line of the DCF valuation of Stellantis

I assumed a depreciation of ten years for these implementation costs, adding the corresponding values to the depreciation line in both the forecasted income statement and in the DCF valuation of the resulting company.

The synergies, and how I implemented them, can be seen in Table 6.1.

Table 6.1. Stellantis Expected Synergies (in million €)

	2021	**2022**	**2023**	**2024**
COGS	400	800	1 200	1 600
SG&A	200	400	600	800
R&D	400	800	1 200	1 600
Total	**1 000**	**2 000**	**3 000**	**4 000**
Capex	800	1 000	1 000	-
Depreciation	-	80	180	280

Note. Based on data from Groupe PSA & FCA, 2019

6.2. Results

Before presenting the results of my valuation, it should be noted that FCA, just prior to the merger, distributed a special dividend of €2.9B in order to equalize its value to the one of PSA, as this was a 50/50 merger. Therefore, after finding the market value of equity of the

company through the DCF method, I subtracted the value of the dividend. This was necessary because when a firm distributes a cash dividend to its shareholders, the value of equity decreases by the amount of the dividend itself (Hawawini & Viallet, 2015).

As a result of my valuation, the market value of equity for FCA, according to the DCF method and net of the dividend, amounted to €20.9B, while the PSA market value of equity obtained through the same method was equal to €21.1B.

To evaluate Stellantis, I merged the forecasted income statements of the two companies I previously made, simply summing the revenues and the costs present in the various lines and continued with the DCF method. The estimated market capitalization resulting from the valuation without the synergies amounts to €39.8B, which is lower than the €43.4B euros of effective market capitalization at the closing of its first day of negotiations on the NYSE.

After implementing the synergies in the model, the resulting valuation of the company totaled a staggering €86.2B, which is more than double the result obtained without considering the synergies.

6.3. Discussion

The valuation made using the DCF method generates interesting results. With the implementation of the synergies, the value of Stellantis more than doubles, from €39.8B to €86.2B. Moreover, the estimated value of the company with the synergies is also double the effective market capitalization which, in the first month of negotiations, has remained between €40B and €44B.

Table 6.2 presents the FCFF calculation for Stellantis without the synergies, while Table 6.3 contains the calculation considering the synergies. The increase in the Free Cash Flows is evident, especially in the year 2024.

Table 6.2. Stellantis forecasted FCFF *without* synergies (in million €)

	2020	2021	2022	2023	2024
EBIT	**2 479**	**4 037**	**5 806**	**7 510**	**9 140**
NOPAT	**1 859**	**3 028**	**4 354**	**5 633**	**6 855**
Capex	-14 334	-13 834	-13 334	-13 334	-13 334
Depreciation	8 553	8 754	8 754	8 754	8 754
Change in NWC	1 725	1 725	1 725	1 725	1 725
FCFF	**-2 197**	**-328**	**1 499**	**2 777**	**3 999**

Note. Based on data from Thomson Reuters, 2021

Table 6.3. Stellantis forecasted FCFF *with* synergies (in million €)

	2020	2021	2022	2023	2024
EBIT	**2 479**	**5 037**	**7 726**	**10 330**	**12 860**
NOPAT	**1 859**	**3 778**	**5 794**	**7 748**	**9 645**
Capex	-14 334	-14 634	-14 334	-14 334	-13 334
Depreciation	8 553	8 754	8 834	8 934	9 034
Change in NWC	1 725	1 725	1 725	1 725	1 725
FCFF	**-2 197**	**-378**	**2 019**	**4 072**	**7 069**

Note. Based on data from Thomson Reuters, 2021 and Groupe PSA & FCA, 2019

Table 6.4. Stellantis forecasted IS *without* synergies (in million €)

	2020	2021	2022	2023	2024
Revenues	**129 396**	**142 336**	**155 863**	**169 391**	**182 918**
COGS	108 112	118 924	130 254	141 585	152 916
Gross Profit	**21 284**	**23 412**	**25 609**	**27 805**	**30 002**
SG&A	12 867	12 868	12 869	12 871	12 873
R&D	3 737	4 107	4 533	5 024	5 589
EBITDA	**4 679**	**6 437**	**8 206**	**9 911**	**11 540**
Depreciation	2 200	2 400	2 400	2 400	2 400
EBIT	**2 479**	**4 037**	**5 806**	**7 510**	**9 140**
Interest/investment	888	888	888	888	888
Other	2 312	2 312	2 312	2 312	2 312
EBT	**-720**	**837**	**2 607**	**4 311**	**5 941**
Taxes	-180	209	652	1 078	1 485
Net Income	**-540**	**628**	**1 955**	**3 233**	**4 455**

Note. Based on data from Thomson Reuters, 2021

Table 6.5. Stellantis forecasted IS *with* synergies (in million €)

	2020	2021	2022	2023	2024
Revenues	**129 396**	**142 336**	**155 863**	**169 391**	**182 918**
COGS	108 112	118 524	129 454	140 385	151 316
Gross Profit	**21 284**	**23 812**	**26 409**	**29 005**	**31 602**
SG&A	12 867	12 668	12 469	12 271	12 073
R&D	3 737	3 707	3 733	3 824	3 989
EBITDA	**4 679**	**7 437**	**10 206**	**12 911**	**15 540**
Depreciation	2 200	2 400	2 480	2 580	2 680
EBIT	**2 479**	**5 037**	**7 726**	**10 330**	**12 860**
Interest/investment	888	888	888	888	888
Other	2 312	2 312	2 312	2 312	2 312
EBT	**-720**	**1 837**	**4 527**	**7 131**	**9 661**
Taxes	-180	459	1 132	1 783	2 415
Net Income	**-540**	**1 378**	**3 395**	**5 348**	**7 245**

Note. Based on data from Thomson Reuters, 2021 and Groupe PSA & FCA, 2019

The effect of the synergies can be further appreciated by comparing the forecasted income statements of Stellantis, with and without the synergies implemented, as presented in Tables 6.4 and 6.5.

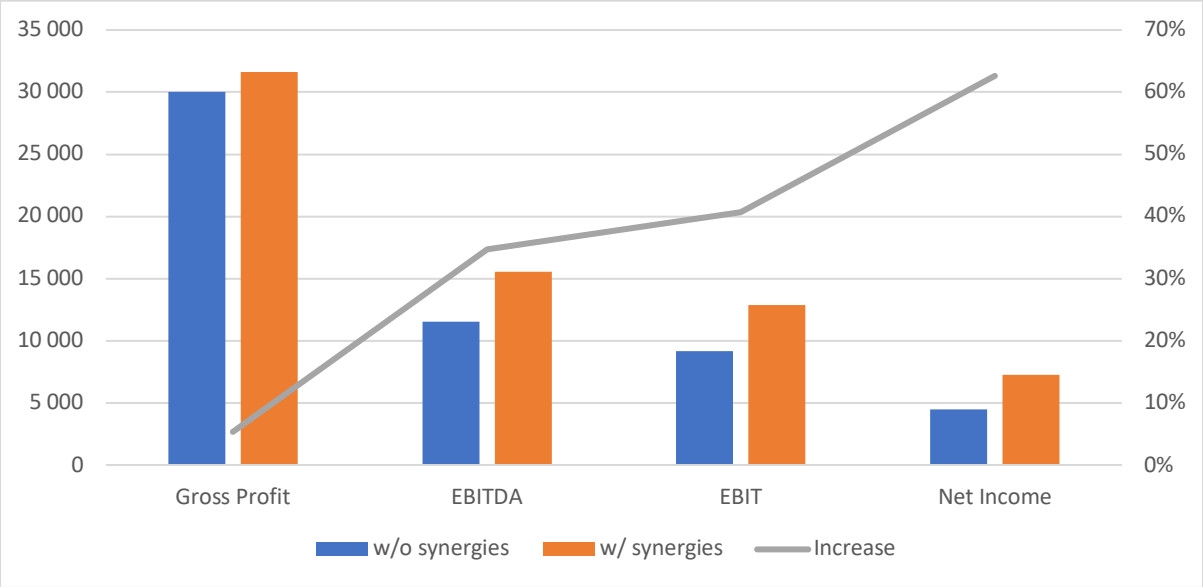
To further understand the huge difference between the valuation with and without the synergies, it is useful to look at the comparison of some key metrics, presented in Table 6.6 and Figure 6.1.

Table 6.6. 2024 Ratios of key indicators, *with* and *without* synergies

	w/ synergies	w/o synergies	% change
Gross Margin	17.28%	16.40%	5.3%
EBITDA Margin	8.50%	6.31%	34.7%
EBIT Margin	7.03%	5.00%	40.7%
Net Margin	3.96%	2.44%	62.6%
Net Income (in million €)	7 245	4 455	62.6%

Note. Based on data from Thomson Reuters, 2021 and Groupe PSA & FCA, 2019

Figure 6.1. 2024 Ratios of key indicators, *with* and *without* synergies



Note. Based on data from Thomson Reuters, 2021 and Groupe PSA & FCA, 2019

While with the implementation of the synergies the gross margin only increases by 5.3% (going from 16.4% to 17.3%), the other operating margins see a much higher increment. The EBITDA margin increases by 34.7%, the EBIT margin by 40.7% and the net margin by a staggering 62.6%, effectively increasing the net income from €4.5B without synergies, to €7.2B with.

Table 6.7 presents a comparison between my forecasted 2024 key metrics (with synergies) of Stellantis and the 2019 industry standard provided by Thomson Reuters (2021). It is interesting to note that while the net margin is in line with the industry standard, moving upwards in the ratios of the income statement, the gross margin of the company is 78.3% lower. Meaning that most of the profitability is achieved through a reduction in the fixed costs of SG&A, R&D and Depreciation.

Table 6.7. Key Ratios compared to the industry standards

	Stellantis 2024	Industry 2019	Difference
Gross Margin	17.28%	30.80%	-78.28%
EBITDA Magin	8.50%	14%	-64.79%
EBIT Margin	7.03%	6.30%	10.39%
Net Margin	3.96%	3.80%	4.06%

Note. Based on data from Thomson Reuters, 2021 and Groupe PSA & FCA, 2019

Although my valuation of Stellantis with the synergies implemented might seem particularly high, especially considering the current market capitalization of the new group, the target prices proposed by different sources (Thomson Reuters, 2021; CNN Business, 2021), clearly indicate that analysts expect an average increase in value of around +30%, with peaks of almost +50%. These expected increases would bring the average target market capitalization to €55B with a peak of €63B. These prices are still lower than the result from my valuation. This might be ascribed to the fact that, oftentimes, the parties involved in a transaction tend to overvalue the expected synergies, undervalue the cost of their implementation, underestimate the time needed to achieve them, and do not fully consider the possible dyssynergies (Christofferson et al., 2004). Therefore, the analysts have probably reduced the positive effects of the synergies in their valuation to a more realistic level, increasing, at the same time, their implementation costs. It could also be that the analysts are making more pessimistic assumptions about the rebound of the automotive market compared to the ones I used.

Summary and Conclusions

Is consolidation necessary to survive in the contemporary automotive market?

Yes.

This simple answer to a very complicated question needs to be substantiated. But before doing that, I need to briefly recapitulate the main steps of my research.

In the first chapter, I reviewed the theoretical background necessary to identify the main concepts used to frame my research question and build my research methodology. I thus explored the various theories behind corporate restructuring, focusing on M&As and paying particular attention to the role of synergies (economies of scale and scope) and how they influence the strategies and outcomes of consolidation. I then reviewed the main valuation methods, pinpointing the indicators and parameters used to assess M&As, both before and after the transaction, and I selected the DCF valuation method for my case study of the 2021 merger between FCA and PSA.

In the second chapter, I briefly outlined the evolution of the automotive industry from the perspective of consolidation. Here, I highlighted how, starting in the 1970s, the automakers' attention shifted from the search of economies of scale to the search of economies of scope, as a consequence of several factors. The first oil crisis created demand for more compact and fuel-saving vehicles. At the same time, the slowing-down of the growth rate of the automobile market, and the consequent over-capacity, generated an increase in competition. This, in turn, determined the need to increase investment in R&D in order to diversify the product portfolio, and the need to reduce the life cycle of products. These were, and still are, important drivers for consolidation. I also briefly introduced the recent change in mobility preferences towards car-sharing and other forms of non-ownership.

In the third chapter I introduced the two companies object of the case study, briefly tracing their history from a M&A perspective. Both companies have a long history of consolidation behind them, Fiat-FCA more than PSA, which contributed to increase their experience, as well as the number of brands in their portfolio. I also highlighted how Fiat-FCA historically had a wider geographical reach compared to PSA, especially in North America, and how, for the last

three decades, it has been looking for a partner, as it was starting to lag behind the competition in what concerns the R&D department. These differences are important to understand the advantages sought by both companies with the merger, while at the same time highlighting the experience gained by both FCA and PSA with previous M&As.

In the fourth chapter, I briefly outlined the process and structure of the merger, highlighting how it has evolved from its first announcement at the end of 2019 to its finalization at the beginning of 2021. I also described the different gains and synergies that the two companies expected from the merger and how the transaction was influenced by the COVID-19 pandemic.

In the fifth chapter, I further elaborate on such advantages and synergies, examining in greater detail the different motives driving the merger and outlining the gains each company derived from it. I argued that in the contemporary automotive market, characterized by fast-evolving products and stagnant markets, consolidation is necessary and that the FCA-PSA merger appears to be the right decision, at the right time, with multiple advantages to both companies.

In the sixth, and final, chapter, I proceeded first with the valuation of the two companies independently, and then with the valuation of Stellantis, both *without* and *with* the expected synergies implemented. I used the DCF method for the valuation, which I had introduced in Chapter 1, and detailed all the assumptions I made to estimate the different indicators and parameters necessary for the valuations. I then presented the results of the valuations and discussed the positive effects that the synergies have on the value of Stellantis, comparing the increases in the key ratios forecasted for the year 2024.

In the light of this brief summary of my research development, I can now discuss the results of my valuation and elaborate on my findings, in order to answer my initial research question.

As argued, the advantages of consolidation are multiple. However, consolidation is not the only possible course. Some of the advantages of consolidation can be attained also though strategic alliances and joint ventures, as the Renault-Nissan-Mitsubishi Alliance and Toyota respectively show. What these strategies have in common is the spreading of costs, especially R&D investment and parts commonization, across a higher number of brands and models,

achieving economies of scope. On the other hand, joint ventures and alliances are at a disadvantage when it comes to achieving financial synergies and in what concerns the duration of the deal, as the parties involved are not contractually bound (in the case of the alliances) or their collaboration is limited to specific contractual objectives (in the case of joint ventures).

Consolidation, as both existing literature and my case study on the FCA-PSA merger suggest, brings about an increase in the performance of the companies involved. It is observed in most slow growing old industries (Penrose, 1995), but applies particularly well to the automotive industry for the reasons I will now discuss.

For starters, the fact that the automotive industry has steadily concentrated since its beginning is, per se, proof that it is a viable path to follow, if not the only one. This trend has become particularly important since the switch, in the 1970s, from the mass production of fewer models with a longer time span (e.g., Ford produced the Bronco for more than 15 years), to a greater diversification of the model portfolio and a decrease of the product update times. This switch has moved the attention of the automakers from economies of scale to economies of scope, which work through the spreading of the fixed costs related to production, R&D and administrative expenses across several product lines.

By consolidating, and therefore increasing the number of brands and models in the group portfolio, companies can spread their investment across a higher number of products, and therefore invest more efficiently in the development of new technologies and parts (e.g. Volkswagen invested €50B in the development of the MLB platform, which is used across almost all its brands, both mass-market and premium). FCA and PSA were well aware of these advantages, as can be seen in the definition of their expected synergies right from the initial proposal for the merger into Stellantis. Table 6.6 and Figure 6.1 show how the increase in gross profit, which is mostly based on variable costs and therefore benefits from scale economies, is only 5.3%, whereas when we consider the subsequent ratios based on the forecasted income statement, the increase is far greater. In fact, the EBITDA margin increases by 34.7% and the EBIT margin, which takes in consideration not only the fixed costs but also the longer-term investments, increases by 40.7%. Reaching the bottom line, the profitability of the combined firm, without an effective change in sales, increases by as much as 62.6%.

Even if the expected synergies were hugely overvalued and their cost of implementation underestimated, an increase in profitability would still be seen, as most analysts predict an increase in the value of the combined company of around 30%, with peaks of 50%.

The risk of overestimation is indeed a real one. Some literature argues that M&A transactions tend to reduce the value of the companies involved, because of reasons connected, among others, to a wrong estimation of the synergies and of their costs, and/or to the payment of an excessive premium for the target company. An exception to this trend can be made for mega-mergers, especially when the companies involved have a long experience in M&As achieved through previous transactions (Hu et. al., 2020). In the case of the automotive industry, most Western companies are almost a century old and have gained this experience through a high number of mergers in their history. In fact, both FCA and PSA, the former in particular, have carried out many successful transactions in their past. Therefore, it can be safely assumed that they have realistically estimated all the costs and savings involved in the merger.

Apart from the gains connected to the above-described synergies, which bring about economies of scale and especially economies of scope, there are other gains coming from consolidating. A bigger company is usually perceived less risky by its creditors, reducing the overall cost of debt in the long run. Moreover, a merger between companies that operate in different markets (either from a service and a geographical point of view) can give access to the respective existing networks without the need for new investments. Both these advantages should be taken into consideration, although they are more difficult to quantify for valuation purposes.

In light of the above considerations, I conclude that consolidation in the current automotive industry context is the right strategic choice. If consolidation cannot be put on the table for whatever reason, the next best choices are strategic alliances and joint ventures, which generate some of the advantages deriving from consolidating. In the case of the merger between FCA and PSA into Stellantis, I will further conclude that this is not only the best strategic choice, but that the merger has high chances of achieving the expected synergies because of the know-how the two companies have developed through past transactions.

Bibliographical References

ACEA – European Automobile Manufacturers Association (2021), 'EU Car Sales: COVID Recovery Expected to Start in 2021, Auto Industry Says', Press Release, February 3. Available at: https://www.acea.be/press-releases/article/eu-car-sales-covid-recovery-expected-to-start-in-2021-auto-industry-says [Accessed: February 2021]

Automoto (2015), 'VW-Suzuki: ora è finite per davvero. FCA nuovo partner dei giapponesi?', *Automoto.it*, August 31. Available at: https://www.automoto.it/news/vw-suzuki-ora-finita-per-davvero-fca-nuovo-partner-dei-giapponesi.html [Accessed: January 2021]

Automoto (2017), 'GM-Honda, joint venture per le fuel cell', *Automoto.it*, January 31. Available at: https://www.automoto.it/news/gm-honda-joint-venture-per-le-fuel-cell.html [Accessed: January 2021]

Autoweb (2020), 'Hace 40 años nacía Sevel Argentina', *Autoweb*, December 3. Available at https://www.autoweb.com.ar/2020/12/03/hace-40-anos-nacia-sevel-argentina/ [Accessed: December 2020]

Berk, J. & DeMarzo, P. (2020), *Corporate Finance*, Fifth Edition, Harlow (UK): Pearson

Bertolino, F. (2020), 'Perché è Peugeot a comprare FCA', *Milano Finanza*, November 25

Bertolino, F. (2021), 'La fondazione per blindare Stellantis spinge Fiat-Crysler in borsa', *Milano Finanza*, January 7. Available at: https://www.milanofinanza.it/news/la-fondazione-per-blindare-stellantis-spinge-fiat-chrysler-in-borsa-202101071507223006 [Accessed: January 2020]

Bricco, P. (2021), 'Finisce una caccia lunga 30 anni', *Il sole 24 ore*, January 5

Cambridge Dictionary (2020a), 'Synergy'. Available at: https://dictionary.cambridge.org/it/dizionario/inglese/synergy [Accessed: September 2020]

Cambridge Dictionary (2020b), 'Due Diligence'. Available at: https://dictionary.cambridge.org/it/dizionario/inglese/due-diligence [Accessed: November 2020]

Canali, C. (2020), 'Stellantis rilancerà le ambizioni nel segmento lusso', *Il Sole 24 Ore*, October 14. Available at: https://www.ilsole24ore.com/art/stellantis-rilancera-ambizioni-segmento-lusso-ADmosBq [Accessed: December 2020]

Canestrini, G. (1969), 'Fiat corre Ferrari', *L'automobile*, (27)

Caparello, A. (2019), 'Toyota e Suzuki; Partnership per l'elettrificazione e la guida autonoma', *Wall Street Italia*, August 29. Available at: https://www.wallstreetitalia.com/toyota-e-suzuki-partnership-per-lelettrificazione-e-la-guida-autonoma/ [Accessed: January 2021]

Chandler, A. D., Jr. (1990), *Scale and Scope, the Dynamics of Industrial Capitalism*, Cambridge MA (USA): Harvard University Press

Christofferson, S. A., McNish, R. S. & Sias, D. L. (2004), 'Where Mergers Go Wrong', *McKinsley Quarterly*, (2), 92-99

CNN Business (2021), 'Stellantis NV'. Available at: https://money.cnn.com/quote/forecast/forecast.html?symb=FCAU [Accessed: February 05, 2021]

Daimler (2008), 'Daimler Starts Mobility Concept for the City: car2go – As Easy as Using a Mobile Phone', Press Release, October 21. Available at: https://media.daimler.com/marsMediaSite/en/instance/ko/Daimler-starts-mobility-concept-for-the-city-car2go--as-easy-as-using-a-mobile-phone.xhtml?oid=9914253 [Accessed: January 2021]

Donelly, T., Mellahi, K. & Morris, D. (2002), 'The European Automobile Industry: Escape From Parochialism', *European Business Review*, 14 (1), 30-39

EC – European Commission (2020), 'Mergers: Commission approves the merger of Fiat Chrysler Automobiles N.V. and Peugeot S.A., subject to conditions', Press Release,

December 21. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2506 [Accessed: January 2021]

EPA – United States Environmental Protection Agency (2019), 'FCA (Fiat Chrysler Automobiles) Diesel Vehicle Violations'. Available at: https://www.epa.gov/fca/learn-about-fca-violations [Accessed: December 2020]

EU – European Union (2009), 'Regulation (EC) No 443/2009 of the European Parliament and of the Council of 23 April 2009', *Official Journal of the European Union*, L140/1

Fahri, S. (1997), 'Bertrand Faure, Ecia Plan Merger', *Automotive News*, December 15. Available at: https://www.autonews.com/article/19971215/ANA/712150771/bertrand-faure-ecia-plan-merger [Accessed: December 2020]

FCA (2017), 'Enjoy, il modo migliore per muoversi in città', Press Release, November 21. Available at: https://www.fcagroup.com/it-IT/media_center/insights/Pages/enjoy.aspx?adobe_mc_ref=# [Accessed: January 2021]

FCA (2020), 'Interim Report As Of and for the Three and Nine Months Ended September 30, 2020'. Available at: https://www.fcagroup.com/it-IT/investors/financial_regulatory/financial_reports/files/FCA_NV_2020_09_30_Interim_Report.pdf [Accessed: January 2021]

Fiat (2007), '"Fiat Professional" is the New Brand Name for Fiat Light Commercial Vehicles', Press Release, May 5. Available at: https://web.archive.org/web/20070828175024/http:/www.fiatcommercialvehicles.co.za/news/article.jsp?displayArticle_id=73600 [Accessed: December 2020]

Free2Move (2021), 'Business Solutions'. Available at: https://www.free2move.com/it-IT/business-solutions [Accessed: January 2021]

Fuhrmans, V. (2011), 'VW-Suzuki Partnership Nears Collapse', *The Wall Street Journal*', September 12. Available at: https://www.wsj.com/articles/SB10001424053111903532804576564671448602578 [Accessed: January 2021]

Gaughan, P. A. (2018), *Mergers, Acquisitions and Corporate Restructurings*, Seventh Edition, Hoboken NJ (USA): Wiley

Gomes, E., Donnelly, T., Morris, D. & Collis, C. (2010), *Mergers and Acquisitions as Strategic Methods of Business Development in the Global Automobile Industry. An Analysis of Five Cases*, Lewiston NY (USA): Edwin Mellen Press

Groupe PSA (2016), 'EMP2: a Lates-Generation Global Modular Platform', Press Release, August 1. Available at: https://www.groupe-psa.com/en/newsroom/automotive-innovation/emp2-modular-platform/ [Accessed: December 2020]

Groupe PSA (2017), 'Brands and Services'. Available at: https://www.groupe-psa.com/en/brands-and-services/free2move/ [Accessed: December 2020]

Groupe PSA (2018a), 'Groupe PSA and Toyota Open the Next Chapter of Their Long Partnership in Europe', Press Release, November 30. Available at: https://media.groupe-psa.com/en/groupe-psa-and-toyota-open-next-chapter-their-long-term-partnership-europe [Accessed: January 2021]

Groupe PSA (2018b), 'CMP: The New Modular, Multi-Energy Platform for Groupe PSA', Press Release, October 2. Available at: https://www.groupe-psa.com/en/newsroom/corporate-en/cmp-modular-platform/ [Accessed: December 2020]

Groupe PSA (2020), 'STELLANTIS. The name of the New Group Resulting From the Merger of FCA and Groupe PSA', Press Release, July 15. Available at: https://www.groupe-psa.com/en/newsroom/corporate-en/stellantis-le-nom-du-nouveau-groupe-qui-sera-issu-de-la-fusion-de-fca-et-groupe-psa/ [Accessed: January 2020]

Groupe PSA (2021), 'Worldwide Sales by Model and Energy 2020', Press Release, January 14. Available at: https://www.groupe-psa.com/en/publication/volume-des-ventes-par-modeles-et-energies-2020/ [Accessed: January 2021]

Groupe PSA & FCA (2019), 'Proposed Merger. Building a Leader for a New Era in Sustainable Mobility', Press Release, December 18. Available at: https://www.fcagroup.com/it-IT/investors/events/FCA_PSA_Merger/PSA_FCA_Proposed_Merger_Presentation_Dec_18_19.pdf [Accessed: November 2020]

Hawawini, G. & Viallet, C. (2015), *Finance for Executives, Managing Value Creation*, Andover (UK): Cengage Learning

Holder, J. (2012), 'The Volkswagen Group's Radical MQB Platform, Which Will Underpin the Next Audi A3, VW Gold and Seat Leon, Among Other Cars, Could Be Sold to Third Parties in the Medium to Long Term', *Autocar*, March 26. Available at: https://www.autocar.co.uk/car-news/industry/vw-could-sell-50bn-mqb-platform [Accessed: November 2020]

Hu, N., Li, L., Li, H. & Wang, X. (2020), 'Do Mega-Mergers Create Value? The Acquisition Experience and Mega-Deal Outcomes', *Journal of Empirical Finance*, 55, 119-142

Iacocca, L. (2014), 'Chrysler', *Encyclopedia Britannica*, January 22. Available at: https://www.britannica.com/topic/Chrysler [Accessed: December 2020]

Kopp, J. (2020), *Success Factors for Future Growth of Car Sharing Services*, Wiesbaden (DE): Springer Gabler

Kostov, N., Walker, M. & McLain, S. (2019), 'How Fiat Chrysler's Proposed Merger With Renault Crashed', *The Wall Street Journal*, June 6. Available at: https://www.wsj.com/articles/how-fiat-chryslers-proposed-merger-with-renault-crashed-11559860056?mod=article_inline [Accessed: December 2020]

KPMG (2021), 'Corporate Tax Rates Table'. Available at: https://home.kpmg/it/it/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html [Accessed: January 2021]

Kumar, V. & Sharma, P. (2019), *An Insight into Mergers and Acquisitions. A Growth Perspective*, London (UK): Palgrave

La Repubblica (2000), 'Agnelli: "La Borsa voleva che vendessimo la Fiat"', March 14. Available at: https://www.repubblica.it/online/economia/fiat/agnelli/agnelli.html?ref=search [Accessed: December 2020]

Magni, M. (2020), 'Fiat 500 elettrica. La piattaforma potrebbe servire per altri modelli, anche ibridi', *Quattroruote*, October 26. Available at: https://www.milanofinanza.it/news/la-fondazione-per-blindare-stellantis-spinge-fiat-chrysler-in-borsa-202101071507223006 [Accessed: January 2021]

Mahmoud-Jouini, S. B. & Lenfle, S. (2010), 'Platform Re-Use Lessons From the Automotive Industry', *International Journal of Operations & Production Management*, 30 (1), 98-124

Malan, A. & Sigal, P. (2020), 'PSA, FCA Market Share for Vans Draws Scrutiny. Concerns Arise in EU Officials' Review of Proposed Merger', *Automotive News*, June 15, 34 (6938), 16

Mangano, M. (2020), 'Fca e Psa rivedono l'accordo, maxi dividendo in cash e in asset', *Il Sole 24 Ore*, September 14. Available at: https://www.ilsole24ore.com/art/fca-psa-rivedono-l-accordo-maxi-dividendo-cash-e-asset-ADk7yLp [Accessed: January 2021]

Mantero, M. (2020), 'Differenze fra auto ibride e plug-in: le tre sigle fondamentali', *MotoriMagazine.it*. Available at: https://www.motorimagazine.it/differenze-auto-ibride-plug-in/ [Accessed: January 2021]

Martinovich, A., Schlosser, A., Nansé, F., Reeves, B., Song, N. & Seidel, P. (2020), 'Win the Automotive COVID-19 Rebound', *Arthur D. Little Global*, May. Available at: https://www.adlittle.com/en/insights/viewpoints/win-automotive-covid-19-rebound [Accessed: January 2021]

Maynard, M. (2009), 'Chrysler. A Short Story', *The New York Times*, April 30. Available at: https://www.nytimes.com/2009/05/01/business/01history.html [Accessed: December 2020]

McGee, P. & Campbell, P. (2019), 'Fiat Chrysler Pools Fleet with Tesla to Avoid EU Emissions Fines', *Financial Times*, April 7. Available at: https://www.ft.com/content/7a3c8d9a-57bb-11e9-a3db-1fe89bedc16e [Accessed: December 2020]

McLain, S. & Kostov, N. (2019), 'Renault in Talks on Nissan Stake, Hopes to Revive Fiat Deal', *The Wall Street Journal*, August 2. Available at: https://www.wsj.com/articles/renault-in-talks-on-nissan-stake-hopes-to-revive-fiat-deal-11564785972 [Accessed: December 2020]

Mopar (2020), 'Mopar Heritage'. Available at: https://www.mopar.eu/eu/en/mopar [Accessed: December 2020]

Nachemson-Ekwall, S. (2017), 'The Cross-Border Hostile Bid Fight Between Scania in Sweden and the two German Companies MAN and Volkswagen: Institutional Change and the Mandatory Bid Rule', *Journal of Management and Government*, (21), 27-62

Penrose, E. (1959), *The Theory of the Growth of the Firm*, Oxford (UK): Oxford University Press

Pini, S. (2020), 'Maserati, tutto quel che c'è da sapere sulla supercar MC20 e sulle elettriche in arrivo', *Il Sole 24 Ore*, October 13. Available at: https://www.ilsole24ore.com/art/maserati-tutto-quel-che-c-e-sapere-supercar-mc20-e-elettriche-arrivo-ADe9Yqv [Accessed: December 2020]

Portaleimpresa24 (2021), 'EXOR'. Available at: https://portaleimpresa24.it/trasporti/exor/ [Accessed: January 2021]

Rauwald, C. (2008), 'Porsche Gains Nearly 75% of VW, Tigthening Grip', *The Wall Street Journal*, October 27. Available at: https://www.wsj.com/articles/SB122506315406770367 [Accessed: December 2020]

Redazione ANSA (2019), 'Fca-PSA, chi compra chi?', *ANSA*, October 31. Available at: https://www.ansa.it/canale_motori/notizie/speciali/2019/10/31/fca-psa-chi-compra-chi_d9260ba4-607e-47ae-a343-d193748d41f6.html [Accessed: January 2021]

Redazione ANSA (2020), 'Fca-Psa: niente dividendo, fusione va avanti', *ANSA*, May 13. Available at: https://www.ansa.it/canale_motori/notizie/industria/2020/05/13/fca-psa-niente-dividendo-fusione-va-avanti_999db4b0-94dd-4251-9076-9dd21fe0b9b0.html [Accessed: January 2021]

Redazione ANSA (2021), 'Stellantis, le tappe della fusione tra Fca e Psa', *ANSA*, January 4. Available at: https://www.ansa.it/canale_motori/notizie/industria/2021/01/04/stellantis-le-tappe-della-fusione-tra-fca-e-psa_666783ed-b806-4313-8304-d9a372a5a028.html [Accessed: January 2021]

Reuters Staff (2020), 'Fiat Chrysler, Peugeot Maker PSA Amend Merger Terms to Conserve Cash', *Reuters*, September 14. Available at: https://www.reuters.com/article/uk-fca-m-a-psa/fiat-chrysler-peugeot-maker-psa-amend-merger-terms-to-conserve-cash-idUKKBN2653AI [Accessed: January 2021]

Richard Palmer – FCA (2018), '2018 – 2022 Business Plan Financial Overview', Press Release, June 1. Available at: https://www.fcagroup.com/capitalmarketsday/Presentations/FCA%20June%201%202018%20CMD_BP%20Financial%20Overview.pdf [Accessed: January 2021]

Roberts, G. (2021), 'Global Pandemic Sector Recovery Briefing', *Just Auto*, February 3. Available at: https://www.just-auto.com/news/free-to-read-global-pandemic-sector-recovery-briefing_id197509.aspx [Accessed: February 2021]

Roll, R. (1986), 'The Hubris Hypothesis of Corporate Takeovers', *Journal of Business*, 59 (2), 197-216

Schwartz, B. (2020), 'Le grandi interviste. Vittorio Ghidella, il padre della Uno', *Quattroruote*, April 9. Availble at: https://www.quattroruote.it/news/industria-

finanza/2020/04/09/le_grandi_interviste_vittorio_ghidella.html [Accessed: December 2020]

ShareNow (2021), 'Country List'. Available at: https://www.share-now.com/it/it/country-list/ [Accessed: January 2021]

Sobel, R. (1984), *Car Wars*, Dutton NY (USA): McGraw-Hill

Sprunk, W. H. & Villavicencio A. (1980), *Statistical Report on Mergers and Acquisitions 1978*, Washington DC (USA): Federal Trade Commission. Available at: https://www.ftc.gov/reports/statistical-report-mergers-acquisitions-1978 [Accessed: November 2020]

Stellantis (2021), 'Leadership'. Available at: https://www.stellantis.com/en/group/governance/leadership?adobe_mc_ref= [Accessed: January 2021]

Teksid (2015), 'Storia'. Available at: https://www.teksid.com/it/il-gruppo/storia [Accessed: December 2020]

Thomson Reuters (2020), 'Multiple Datasets', *Eikon* [Accessed: September – December 2020]

Toljagic, M. (2019), 'These are the 10 Biggest Automakers in the World', *Wheels.ca*, August 20. Available at: https://www.wheels.ca/top-ten/these-are-ten-biggest-automakers-in-the-world/ [Accessed: October 2020]

Toyota (2012), 'Joint Venture with GM', in Toyota (ed.) *75 Years of Toyota*, Part 3, Chapter 1, Section 3. Available at: https://www.toyota-global.com/company/history_of_toyota/75years/text/leaping_forward_as_a_global_corporation/chapter1/section3/item2.html [Accessed: January 2021]

Ward, J. A. (1995), *The Fall of the Packard Motor Car Company*, Stanford CA (USA): Stanford University Press

Wayland, M. (2020), 'Ford-Volkswagen Alliance to Include Shared Production of 8 Million Commercial Vehicles', *CNBC.com*, June 10. Available at: https://www.cnbc.com/2020/06/10/ford-vw-alliance-to-include-producing-8-million-commercial-vehicles.html [Accessed: December 2020]

Womack, J. P., Jones, D. T. & Roos, D. (1990), *The Machine that Changed the World*, New York NY (USA): Rawson Associates

Table A.1. FCA Forecasted Income Statement (€ millions)

	Actual							Forecast				
	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Revenues	**86 816**	**96 090**	**110 595**	**111 018**	**110 934**	**110 412**	**108 187**	**75 428**	**82 971**	**91 376**	**99 782**	**108 187**
YoY Growth								*-30.3%*	*10.0%*	*10.1%*	*9.2%*	*8.4%*
COGS	74570	83146	95896	94785	93958	95011	92657	64750	71225	78441	85656	92872
As % of Revenues	*85.9%*	*86.5%*	*86.7%*	*85.4%*	*84.7%*	*86.1%*	*85.6%*	*85.8%*	*85.8%*	*85.8%*	*85.8%*	*85.8%*
Gross Profit	**12 246**	**12 944**	**14 699**	**16 233**	**16 976**	**15 401**	**15 530**	**10 678**	**11 746**	**12 936**	**14 126**	**15 315**
SG&A	6 689	7 084	7 728	7 568	7 343	6 570	6 395	6 360	6 326	6 292	6 258	6 224
YoY Growth		*5.9%*	*9.1%*	*-2.1%*	*-3.0%*	*-10.5%*	*-2.7%*	*-0.5%*	*-0.5%*	*-0.5%*	*-0.5%*	*-0.5%*
R&D	1 344	1 480	1 449	1 661	1 696	1 448	1 305	1 306	1 306	1 307	1 307	1 308
YoY Growth		*10.1%*	*-2.1%*	*14.6%*	*2.1%*	*-14.6%*	*-9.9%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
EBITDA	**4 213**	**4 380**	**5 522**	**7 004**	**7 937**	**7 383**	**7 830**	**3 012**	**4 113**	**5 337**	**6 560**	**7 783**
Depreciation	887	1 057	1 194	1 492	1 424	1 456	1 358	1 433	1 633	1 633	1 633	1 633
EBIT	**3 326**	**3 323**	**4 328**	**5 512**	**6 513**	**5 927**	**6 472**	**1 579**	**2 481**	**3 704**	**4 928**	**6 151**
Interest/investment	1 343	1 364	1 739	984	633	539	406	641	641	641	641	641
Other	975	783	2 330	1 422	-281	1 280	2 045	1 117	1 117	1 117	1 117	1 117
EBT	**1 008**	**1 176**	**259**	**3 106**	**6 161**	**4 108**	**4 021**	**-178**	**724**	**1 947**	**3 171**	**4 394**
Taxes	-943	544	166	1 292	2 563	708	1 321	-133	543	1 461	2 378	3 295
Tax rate	*-93.6%*	*46.3%*	*64.1%*	*41.6%*	*41.6%*	*17.2%*	*32.9%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*
Net Income	**1 951**	**632**	**93**	**1 814**	**3 598**	**3 400**	**2 700**	**-44**	**181**	**487**	**793**	**1 098**

Note. Based on data from Thomson Reuters (2021)

Table A.2. FCA Forecasted FCFF

	Actual							Forecast				
	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
EBIT	**3 326**	**3 323**	**4 328**	**5 512**	**6 513**	**5 927**	**6 472**	**1 579**	**2 481**	**3 704**	**4 928**	**6 151**
NOPAT	**6 438**	**1 786**	**1 554**	**3 219**	**3 804**	**4 906**	**4 346**	**1 185**	**1 861**	**2 778**	**3 696**	**4 613**
Capex	-7 440	-8 121	-8 819	-8 815	-8 666	-5 392	-8 385	-10 000	-9 500	-9 000	-9 000	-9 000
Depreciation	4 574	4 897	5 414	5 956	5 890	5 507	5 445	5 700	5 900	5 900	5 900	5 900
Change in NWC	0	0	2 720	482	-786	178	3 137	753	753	753	753	753
Receivables	*0*	*0*	*191*	*177*	*-206*	*19*	*100*					
Payables	*0*	*0*	*1 571*	*776*	*1 086*	*-1 240*	*2 020*					
Inventories	*0*	*0*	*958*	*-471*	*-1 666*	*1 399*	*1 017*					
FCFF			**869**	**842**	**242**	**5 199**	**4 543**	**-2 363**	**-987**	**431**	**1 349**	**2 266**

Note. Based on data from Thomson Reuters (2021)

Table A.3. FCA Return on Equity

Tax rate (NL)	*25%*
Beta 5Y Monthly	*1.3*
ERP (IT)	*6.85%*
ERP (US)	*4.72%*
ERP (Avg.)	*5.79%*
rf (EU)	*-0.53%*
rf (US)	*1.19%*
rf (Avg.)	*0.33%*
re	**7.85%**

Note. Based on data from Thomson Reuters (2021)

Table A.4. FCA Cost of Debt

	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Total LT Debt	*29 902*	*33 724*	*27 786*	*16 111*	*10 726*	*8 667*	*8 025*
Interest expense	*1 343*	*1 364*	*1 739*	*984*	*633*	*539*	*406*
rd		*4.56%*	*5.16%*	*3.54%*	*3.93%*	*5.03%*	*4.68%*
Average rd	**4.48%**						

Note. Based on data from Thomson Reuters (2021)

Table A.5. FCA WACC

Debt	*8 025*
Equity	*28 537*
D/E	*28.12%*
WACC	**6.87%**

Note. Based on data from Thomson Reuters (2021)

Table A.6. FCA Valuation

LT Growth	*2%*
Terminal value	*47 502*
NPV	*31 831*
Mkt V. of E. (Valuation)	*23 806*
Special dividend	*2 900*
Mkt Value of Equity	**20 906**

Note. Based on data from Thomson Reuters (2021)

Table A.7. PSA Forecasted Income Statement (€ millions)

	Actual							Forecast				
	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Revenues	**54 090**	**53 607**	**54 676**	**54 030**	**65 210**	**74 027**	**74 731**	**53 968**	**59 365**	**64 487**	**69 609**	**74 731**
YoY Growth								*-27.8%*	*10.0%*	*8.6%*	*7.9%*	*7.4%*
COGS	45 964	44 763	44 509	43 709	53 092	59 233	59 083	43 362	47 698	51 814	55 929	60 045
As % of Revenues	*85.0%*	*83.5%*	*81.4%*	*80.9%*	*81.4%*	*80.0%*	*79.1%*	*80.3%*	*80.3%*	*80.3%*	*80.3%*	*80.3%*
Gross Profit	**8 126**	**8 844**	**10 167**	**10 321**	**12 118**	**14 794**	**15 648**	**10 606**	**11 667**	**12 673**	**13 680**	**14 686**
SG&A	6 418	5 914	5 576	5 171	5 889	6 623	6 472	6 507	6 542	6 577	6 613	6 649
YoY Growth		*-7.9%*	*-5.7%*	*-7.3%*	*13.9%*	*12.5%*	*-2.3%*	*0.5%*	*0.5%*	*0.5%*	*0.5%*	*0.5%*
R&D	1 131	1 280	1 858	1 094	1 396	1 815	2 111	2 432	2 801	3 226	3 717	4 281
YoY Growth		*13.2%*	*45.2%*	*-41.1%*	*27.6%*	*30.0%*	*16.3%*	*15.2%*	*15.2%*	*15.2%*	*15.2%*	*15.2%*
EBITDA	**577**	**1 650**	**2 733**	**4 056**	**4 833**	**6 356**	**7 065**	**1 667**	**2 323**	**2 869**	**3 350**	**3 757**
Depreciation	754	745	0	821	842	667	741	768	768	768	768	768
EBIT	**-177**	**905**	**2 733**	**3 235**	**3 991**	**5 689**	**6 324**	**900**	**1 556**	**2 102**	**2 583**	**2 989**
Interest/investment	489	545	288	220	194	366	209	247	247	247	247	247
Other	1 338	900	1 111	672	948	1 369	1 791	1 195	1 195	1 195	1 195	1 195
EBT	**-2 004**	**-540**	**1 334**	**2 343**	**2 849**	**3 954**	**4 324**	**-543**	**113**	**659**	**1 140**	**1 547**
Taxes	387	313	706	517	701	615	716	-152	32	185	319	433
Tax rate	*-19.3%*	*-58.0%*	*52.9%*	*22.1%*	*24.6%*	*15.6%*	*16.6%*	*28.0%*	*28.0%*	*28.0%*	*28.0%*	*28.0%*
Net Income	**-2 391**	**-853**	**628**	**1 826**	**2 148**	**3 339**	**3 608**	**-391**	**82**	**475**	**821**	**1 114**

Note. Based on data from Thomson Reuters (2021)

Table A.8. PSA Forecasted FCFF

	Actual							Forecast				
	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
EBIT	**-177**	**905**	**2 733**	**3 235**	**3 991**	**5 689**	**6 324**	**900**	**1 556**	**2 102**	**2 583**	**2 989**
NOPAT	**-211**	**1 430**	**1 287**	**2 521**	**3 009**	**4 804**	**5 277**	**648**	**1 120**	**1 513**	**1 859**	**2 152**
Capex	-2 406	-2 428	-2 968	-3 574	-4 120	-4 571	-5 071	-4 334	-4 334	-4 334	-4 334	-4 334
Depreciation	2 407	2 428	2 636	2 576	2 636	2 815	3 388	2 854	2 854	2 854	2 854	2 854
Change in NWC	1 813	1 707	925	315	536	2 004	1 033	972	972	972	972	972
Receivables	*1 413*	*405*	*76*	*291*	*-476*	*1 342*	*-197*					
Payables	*77*	*-27*	*863*	*389*	*1 179*	*294*	*745*					
Inventories	*323*	*1 329*	*-14*	*-365*	*-167*	*368*	*485*					
FCFF			**1 880**	**1 838**	**2 061**	**5 052**	**4 627**	**139**	**612**	**1 005**	**1 351**	**1 644**

Note. Based on data from Thomson Reuters (2021)

Table A.9. PSA Return on Equity

Tax rate (FR)	*28%*
Beta 5Y Monthly	*1.56*
ERP (FR)	*5.20%*
10Y Bund Yield	*-0.53%*
re	**7.58%**

Note. Based on data from Thomson Reuters (2021)

Table A.10. PSA Cost of Debt

	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Total LT Debt	*8 076*	*6 461*	*4 265*	*4 523*	*4 777*	*5 255*	*8 902*
Interest expense	*489*	*545*	*288*	*220*	*194*	*366*	*209*
rd		*6.75%*	*4.46%*	*5.16%*	*4.29%*	*7.66%*	*3.98%*
Average rd	**5.38%**						

Note. Based on data from Thomson Reuters (2021)

Table A.11. PSA WACC

Debt	*8 902*
Equity	*19 074*
D/E	*46.67%*
WACC	**6.40%**

Note. Based on data from Thomson Reuters (2021)

Table A.12. PSA Valuation

LT Growth	2%
Terminal value	38 085
NPV	30 010
Mkt Value of Equity	**21 108**

Note. Based on data from Thomson Reuters (2021)

Table A.13. STLA Forecasted Income Statement *w/o Synergies*

	2020	2021	2022	2023	2024
Revenues	**129 396**	**142 336**	**155 863**	**169 391**	**182 918**
COGS	108 112	118 924	130 254	141 585	152 916
Gross Profit	**21 284**	**23 412**	**25 609**	**27 805**	**30 002**
SG&A	12 867	12 868	12 869	12 871	12 873
R&D	3 737	4 107	4 533	5 024	5 589
EBITDA	**4 679**	**6 437**	**8 206**	**9 911**	**11 540**
Depreciation	2 200	2 400	2 400	2 400	2 400
EBIT	**2 479**	**4 037**	**5 806**	**7 510**	**9 140**
Interest/investment	888	888	888	888	888
Other	2 312	2 312	2 312	2 312	2 312
EBT	**-720**	**837**	**2 607**	**4 311**	**5 941**
Taxes	-180	209	652	1 078	1 485
Tax rate	*25.0%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*
Net Income	**-540**	**628**	**1 955**	**3 233**	**4 455**

Note. Based on data from Thomson Reuters (2021)

Table A.14. STLA Forecasted FCFF *w/o Synergies*

	2020	2021	2022	2023	2024
EBIT	**2 479**	**4 037**	**5 806**	**7 510**	**9 140**
NOPAT	**1 859**	**3 028**	**4 354**	**5 633**	**6 855**
Capex	-14 334	-13 834	-13 334	-13 334	-13 334
Depreciation	8 553	8 754	8 754	8 754	8 754
Change in NWC	1 725	1 725	1 725	1 725	1 725
FCFF	**-2 197**	**-328**	**1 499**	**2 777**	**3 999**

Note. Based on data from Thomson Reuters (2021)

Table A.15. STLA Return on Equity

Tax rate (NL)	*25%*
Beta 5Y Monthly	*1.43*
ERP (IT)	*6.85%*
ERP (US)	*4.72%*
ERP (FR)	*5.20%*
ERP (Avg.)	*5.59%*
rf (EU)	*-0.53%*
rf (US)	*1.19%*
rf (W. avg.)	*0.04%*
re	**8.04%**

Note. Based on data from Thomson Reuters (2021)

Table A.16. STLA WACC

Average rd	4.93%
Debt	*16 927*
Equity	*47 611*
D/E	*35.55%*
WACC	**6.90%**

Note. Based on data from Thomson Reuters (2021)

Table A.17. STLA Valuation *w/o Synergies*

LT Growth	*2%*
Terminal value	*83 262*
NPV	*59 672*
Mkt V. of E. (Valuation)	*42 745*
FCA special dividend	*2 900*
Mkt Value of Equity	**39 845**

Note. Based on data from Thomson Reuters (2021)

Table A.18. STLA Forecasted Income Statement *w/ Synergies*

	2020	2021	2022	2023	2024
Revenues	**129 396**	**142 336**	**155 863**	**169 391**	**182 918**
COGS	108 112	118 524	129 454	140 385	151 316
Gross Profit	**21 284**	**23 812**	**26 409**	**29 005**	**31 602**
SG&A	12 867	12 668	12 469	12 271	12 073
R&D	3 737	3 707	3 733	3 824	3 989
EBITDA	**4 679**	**7 437**	**10 206**	**12 911**	**15 540**
Depreciation	2 200	2 400	2 480	2 580	2 680
EBIT	**2 479**	**5 037**	**7 726**	**10 330**	**12 860**
Interest/investment	888	888	888	888	888
Other	2 312	2 312	2 312	2 312	2 312
EBT	**-720**	**1 837**	**4 527**	**7 131**	**9 661**
Taxes	-180	459	1 132	1 783	2 415
Tax rate	*25.0%*	*25.0%*	*25.0%*	*25.0%*	*25.0%*
Net Income	**-540**	**1 378**	**3 395**	**5 348**	**7 245**

Note. Based on data from Thomson Reuters (2021)

Table A.19. STLA Forecasted FCFF *w/ Synergies*

	2020	2021	2022	2023	2024
EBIT	**2 479**	**5 037**	**7 726**	**10 330**	**12 860**
NOPAT	**1 859**	**3 778**	**5 794**	**7 748**	**9 645**
Capex	-14 334	-14 634	-14 334	-14 334	-13 334
Depreciation	8 553	8 754	8 834	8 934	9 034
Change in NWC	1 725	1 725	1 725	1 725	1 725
FCFF	**-2 197**	**-378**	**2 019**	**4 072**	**7 069**

Note. Based on data from Thomson Reuters (2021)

Table A.20. STLA Valuation *w/ Synergies*

LT Growth	*2%*
Terminal value	*147 176*
NPV	*106 075*
Mkt V. of E. (Valuation)	*89 148*
FCA special dividend	*2 900*
Mkt Value of Equity	**86 248**

Note. Based on data from Thomson Reuters (2021)

Thesis Summary

At the beginning of 2021, the merger between Fiat Chrysler Automobiles (hereafter FCA) and Groupe PSA (PSA) was finalized, leading to the creation of Stellantis. Even though the new group's combined sales volume amounts to over 8.7 million vehicles (2019 data), this makes Stellantis just the fourth group in the world by sales, after Volkswagen (10.8 million), Toyota (10.5 million), and the Renault-Nissan-Mitsubishi Alliance (10.3 million).

For the last 30 years, Fiat, and later FCA, have been looking for a partner to merge with. There have been many negotiations, most of which failed, until the announcement, in December 2019, of the intention to merge with PSA, which led to the actual creation of Stellantis.

If we look at the top 10 automotive manufacturers by number of vehicles sold, the majority of them are large groups, and even the ones that are not, are involved in at least one joint venture or alliance with one of their competitors.

The aim of this thesis, through a review of the existing literature and the study of the FCA-PSA merger, is to assess to what extent consolidation in order to thrive in the automotive industry is a necessity, as recent trends in the automotive industry seem to suggest.

The thesis is divided into six chapters, followed by a synthesis and my concluding remarks. In the first chapter, I introduce mergers and acquisitions (henceforth M&As) and briefly explain their evolution and inner workings, in order to provide a theoretical background to the FCA-PSA merger and an overview of the terminology that I use in the subsequent chapters. In the second chapter, I describe the automotive industry in its modern state and briefly explain the market context and its evolution, focusing on the industry's consolidation trends and the reasons behind them. In the third chapter, I introduce the two companies object of the case study and elaborate on their history, focusing mainly on the M&As that led to the present groups' articulation, again focusing on the motives behind them. The fourth chapter is about the merger itself, detailing its structure and timeline and mentioning the effects of the COVID-19 pandemic on the transaction. In the fifth chapter, I review the reasons behind the merger and explain the advantages that both companies gain from it, detailing the expected synergies and how the new company is positioned in the market. In the sixth and final chapter I present my valuation of the two companies, first taken independently, then merged, both with and

without the expected synergies implemented. The valuation is made using the DCF method and in this chapter I also explain the assumptions made to create the forecasts on which the valuation is based.

1. Mergers and Acquisitions

As is common knowledge, the main objective of a business is profit maximization, which can be achieved through growth. Growth can be *organic* (or internal), realized through investments in technology, products, people, or *inorganic* (or external), by acquiring other firms. The main advantage of inorganic growth over organic growth is that while the latter is usually linear, the former can be exponential (Kumar & Sharma, 2019).

The subject of inorganic growth and the corporate restructuring processes it is associated with, including all its methods and implications, is incredibly interesting and has generated a quite vast literature. Inorganic growth has become a widespread strategy since the end of the XIX Century, developing in subsequent waves. It can be achieved through corporate restructurings, strategic alliances and other contractual relationships.

Corporate restructuring consists in a change in the business structure of a firm and can take multiple forms, the most important of which are mergers and acquisitions (M&As). Across the existing literature, and in the business world in general, the terminology related to M&A – namely acquisitions, mergers and consolidation – is often used interchangeably and needs some clarifications.

An *acquisition* occurs when a company (*acquirer* or *bidder*) acquires a controlling stake in the stock of another company (*target*), which continues to exist as a subsidiary under the control of the acquirer.

In a *merger*, on the other hand, a company (target) merges into another one (acquirer or bidder) and ceases to exist as an entity. All the assets (and liabilities) of the target company are passed to the acquirer and the stockholders of the target become stockholders of the acquirer.

Both mergers and acquisitions are also referred to as *takeovers*, because, regardless of being friendly or hostile, one company takes control over another (Berk & De Marzo, 2020).

The concept of *consolidation* is slightly different, although the term merger is often used also referring to consolidations. In this case *all* the original entities cease to exist, and an entirely new company is formed. The assets and liabilities of the dissolved companies flow into the new one, which usually has a new name, and the stockholders of the dissolved companies become proprietors of the new one. Usually, a consolidation happens when the companies to be mergedare of similar size (Gaughan, 2018).

Notwithstanding this distinction, in this thesis I will often refer to consolidations using the term merger, as is common practice in the field. In fact, FCA and PSA in their combination agreement and press releases refer to the transaction as a merger, even though it is effectively a consolidation. Moreover, the terms merger and acquisition can be used interchangeably when explaining the various types, and the inner workings, of the transactions (e.g. the explanation for horizontal mergers also applies to acquisitions).

As I previously stated, since its start at the end of the XIX Century, M&A activity in the capitalist world has developed in waves. Six main waves have been identified (Kumar and Sharma, 2019), although there is some disagreement about the last wave and some scholars argue that with the new Millennium we have entered a seventh wave (Gaughan, 2018).

1. 1895-1904 wave, characterized by *horizontal* mergers.
2. 1916-1929 wave, characterized by *vertical* mergers.
3. 1965-1969 wave, characterized by diversified *conglomerate* mergers.
4. 1981-1989 wave, characterized by *concentric* mergers and *hostile takeovers*.
5. 1990-2000 wave, characterized by *cross-border* mergers.
6. 2003-ongoing wave, characterized by the emergence of *private equity* and *leveraged buyouts*.

Besides the periodization, there is also a high variety of M&A *types*, and a single transaction usually fits into more than one (e.g., Olivetti's takeover of Telecom Italia was at the same time a conglomerate merger, a domestic merger, a hostile takeover and a leveraged buyout).

A first distinction can be made based on the *market* where the companies operate, which can lead to a *horizontal* merger, a *vertical* merger, a *co-generic* merger or a *conglomerate* merger (Kumar & Sharma, 2019). From a *geographical* perspective, there are *domestic mergers* and *cross-border* mergers. Moreover, excluding consolidations, takeovers can be *friendly* or *hostile*. This depends on the stance of the target company's board of directors.

While, in a merger, it is usually a smaller company or a subsidiary that merges with a larger, or parent, entity, in a *reverse merger* the opposite happens. Other types of merger yet are the *leveraged buyout (LBO)*, the *management buyout (MBO)* and the *management buy-in (MBI)*.

Why do mergers and acquisitions happen? As stated earlier, the main objective of a business is profit maximization in order to increase shareholder wealth. This objective can be achieved through growth, and M&As are a key tool for generating inorganic growth. Inorganic growth can be more uncertain than organic growth but has the potential to be exponential rather than linear (Kumar & Sharma, 2019). In the case of M&A transactions, inorganic growth is achieved because of both *synergies* and *expansion*, and can be pursued jointly with organic growth (in order to maximize it) or disjointly (in order to jump-start it in the case of a deceleration caused by the current corporate structure of the firm or industry related factors (Gaughan, 2018).

The term *synergy*, which comes from sciences more related to physics than to economics, is defined by the Cambridge Dictionary (2020a) as 'the combined power of a group of things when they are working together that is greater than the total power achieved by each working separately'. When applied to mergers and acquisitions, the objective is to obtain a resulting entity that has lower costs and/or higher earnings than the simple sum of the two companies object of the transaction. Synergies can be *operating* or *financial*, the former increasing revenues or lowering the costs on the operating side of the business, the latter decreasing the cost of capital. The main potential synergies accruing from M&As include the following:

Economies of scale are synergies achieved thanks to size. They are defined by Chandler (1990, p. 17) as 'those that result when the increased size of a single operating unit producing or distributing a single product reduces the unit cost of production or distribution'.

Economies of scope (or *economies of joint production or distribution*) are operating synergies that work thanks to the combination of the complementary skills of the entities involved in the transaction or thanks to the unification of business divisions that would otherwise be redundant after the merger (e.g., using the same division to manufacture a broader set of products or services).

The combination of *functional strengths* is a revenue enhancing operating synergy which has to do with the particular strengths of the merging companies. To make an example, as will be shown in the FCA-PSA consolidation case, one of the companies might have a larger distribution network extending to different continents (FCA), while the other might have a more advanced R&D activity in a particular department (PSA with the EV platforms).

Vertical integration, as mentioned earlier, is achieved through the acquisition of companies which are part of the supply chain (*backward integration*) or distribution chain (*forward* integration) of the bidder.

Finally, *Market power* is a form of synergy directly connected to the size of the resulting entity: the bigger the size, the strongest the market power.

Moving on from synergies, the other main form of growth that can be achieved thanks to mergers and acquisitions is *expansion*. Expansion can also occur in various forms, the main being sector diversification, geographical diversification and time to market.

Not all reasons behind M&As lead to value creation. There are theories that state that the motives behind a merger or an acquisition can be *value neutral*, meaning that the transaction may have little or no effect on the growth of the firms, or even *value reducing*, meaning that it lowers the profitability of the involved companies. The main value neutral theory is the *Hubris Hypothesis of Corporate Takeovers* (Roll, 1986), while an important value reducing theory is the one of *managerial entrenchment*.

There are several other motives behind M&As. Here I only reviewed the most pertinent to my case studies. For further reading see Gaughan (2018) and Kumar & Sharma (2019).

Although there is consensus in the literature that M&As, on average, destroy value in the long run, especially in the case of large transactions, recent studies have found that if the two

counterparts of the deal, especially the buying side, have gained a high degree of experience through previous mergers, mega-deals do increase the value for the shareholders. Moreover, in the case of failed mega-mergers, i.e., where the acquiring company recorded a decline in performance, experienced acquirers proved to recover faster, with an average recovery period of three years (Hu et al., 2020).

In what concerns the *process*, although M&As follow roughly the same procedure as every other commercial transaction, given the size of the operation, they are more complex. The friendly M&A process s generally articulated in five main steps:

1. Identification of the target
2. Target evaluation
3. Negotiations
4. Due diligence
5. Closing
6. Shareholders and regulatory approval

These are the steps from the buy-side, which is the one that in most cases initiates the transaction. There are, however, also instances of seller-initiated transactions, in which case the first step becomes hiring an investment bank, who will contact one or more possible interested buyers.

To assess a M&A, different *evaluation methods* can be applied, and more often than not a combination of them is used. These valuation techniques include:

- The comparable company analysis (Comps or Multiple analysis)
- The comparable acquisitions valuation (Compaq)
- The assets-based valuation
- The discounted cash flow method (DCF)
- The flow to equity (FTE) method

If these methods are combined, different weights are assigned to the results of each, with the DCF method usually having the highest weight, in order to create an average valuation. After

considering the different techniques, for my valuation of the FCA-PSA Merger, I selected the DCF method.

2. The automotive Industry

Among the top ten automakers by volume in 2019 (Toljagic, 2019), more than half are very large automotive groups. It should also be noted that all four standalone manufacturers – Toyota, Ford, Honda and Suzuki – also are, or have recently been, involved in at least one joint venture, alliance or partnership with another of the top ten.

During the first half of the Twentieth Century, there was a clear trend towards concentration in the Western automotive industry, with the number of firms steadily decreasing as a result of subsequent waves of mergers and acquisition, as well as the closure of the least efficient companies. Despite the entry of the new Japanese manufacturers in the automobile market in the 1980s, the concentration in the industry continued also in the second half of the XX Century, with the number of independent car manufacturers decreasing from 52 to just 12 (Gomes et al., 2010).

Up until the 1970s, the demand coming from a growing wage-earning middle class was for standardized products, which allowed for significant economies of scale (mass production for mass consumption). Achieving economies of scale was thus the main objective for automakers and manufacturers would keep the production line of a single model running for more than a decade. However, since the 1970s, the annual growth rate for the worldwide auto industry has remained at just 2%, mainly fueled by the growth of the demand in newly developing countries. At the same time, productivity in the industrialized countries, where the market was becoming saturated, increased by 3% per year, generating over-capacity. Overproduction was further aggravated by a shrinking of the middle-class and its economic stability in both Europe and the US (Gomes et al., 2010).

As some studies suggest, slow growth in an old industry favors concentration, as does fast growth in new industries (Penrose, 1959). Together with the over-capacity issues, this pushed the automobile manufacturers to merge and form alliances and joint ventures in order to increase their share of the markets they already operated in and to expand into new markets,

whilst reducing the costs for research and development of new technologies (Donnelly et al., 2002). Moreover, since the 1980s, the heightened competition in the existing markets, pushed producers to diversify their products and to increase the speed of product change. This required manufacturers to increase their spending on innovation and to create differentiated product lines, with a higher degree of flexibility, as the life cycle of the products had drastically shortened (Gomes et al., 2010). The need for a wider range of models produced at lower volumes shifted the attention of automakers from economies of scale towards economies if scope.

In the last decade, this search for economies of scope is being further fuelled by the shift in mobility preferences that is developing in the more urbanized areas, with the rise of app-based car-sharing services, such as DriveNow and Enjoy. B It is still unclear if this trend will continue to grow or if it will remain a niche market, but automotive manufacturers are starting to enter this segment (Kopp, 2020).

3. History of the Two Companies

The history of both FCA (formerly Fiat) and PSA (formerly Peugeot) dates back to the end of the XIX Century. Both companies have a long history of growth, both internal and external, which provides them with a respectable experience in M&As, and both have expanded into multiple countries. In fact, FCA and PSA bring into the merger 10 and 5 automotive brands, respectively.

Relaying the history of the two companies, even in short, would be too long for the purposes of this summary. Suffice to say that, in the last three decades, Fiat-FCA has been actively looking for a partner to merge with. The reasons behind this search for a partner were multiple, the main ones being that the company was lagging behind its competitors in what concerned R&D (especially in the new electric powertrains) and a sub-optimal liquidity situation. , A negotiation with Ford was attempted in the 1980s; two more were attempted with Daimler and General Motors in the 1990s; andan industrial alliance with GM was made from 2000 to 2005. In 2009 the acquisition of Chrysler began, which led to the formation of FCA in 2014. But this merger did not solve the criticalities of the company. In 2015 the idea of merging with GM, through a hostile LBO, was evaluated and then discarded and in 2019, a

negotiations had been attempted with Renault, just before the announcement of the merger with PSA.

4. The Merger into Stellantis

On 31 October 2019, FCA and PSA issued a joint press release in which they announced their plan to join forces, through a 50/50 merger agreement, within 15 months. While some of the details of the transaction changed over time, mostly due to the COVID-19 pandemic, its core remained mostly the same. The key points of the merger are summarised in Box 4.1.

Box 4.1. The final agreement

Key Points

- 50/50 all stock merger resulting in a Dutch company called Stellantis
- Stellantis will be listed in France, Italy and New York
- Exchange ratio set at 1-1 and 1.742 respectively for FCA and PSA shareholders
- A €2.9B special dividend issued by FCA, prior to the closing
- The assignment of PSA's 46% stake in Faurecia to Stellantis' shareholders, after the closing
- The assignment of FCA's stake in Comau to Stellantis' shareholders, after the closing

Resulting majority shareholders of Stellantis

- 14% EXOR N.V.
- 6% Peugeot Family
- 6% Bpifrance Participations SA
- 4.5% Dongfeng Motor Group (DFG)
- (0.00000127% Alessandro Magaldi)

The Management of Stellantis

- John Elkann as Chairman of the Board (FCA)
- Carlos Tavares as CEO (PSA)
- Robert Peugeot as Vice-Chairman (PSA)
- Henri de Castries as Senior Independent Director (PSA)
- Andrea Agnelli (FCA), Fiona Clare Cicconi (FCA), Nicolas Dufourcq (PSA), Ann Frances Godbehere (PSA), Wan Ling Martello (FCA), Jaques de Saint-Exupéry (PSA) and Kevin Scott (FCA) as Non-Executive Directors

Other details

- A 7-year standstill for EXOR N.V., BpiFrance Participations SA, DFG and the Peugeot Family

- A 3-year lock-up period for EXOR N.V., Bpifrance Participations SA and the Peugeot Family
- No carryover of existing double voting rights, new double voting rights for holding shares of DutchCo for three years
- Loyalty voting program will not grant voting rights which exceed 30% of total votes cast in a shareholders meeting

Note. Based on information from Groupe PSA & FCA (2019), Redazione ANSA (2020), Mangano (2020) and Stellantis (2021)

Although the deal has been publicized as a 50/50 horizontal merger or, in other words, a merger between equals, some analysts define it as an *acquisition* of FCA by Groupe PSA. There are a few reasons to justify this claim. Firstly, more than half of the board of directors (6 out of 11), including the CEO, was nominated by PSA. Secondly, even though the majority shareholder will be Exor, the shareholders of PSA will have a combined participation of approximately 16.5% of the resulting company.. Lastly, under the IFRS 2 principles, every transaction of this type has to list one of the participants as the acquirer, and the French company has covered this role in the prospect (Bertolino, 2020).

The company was Christened as 'Stellantis' on 15 July 2020. The name is rooted in the Latin verb 'stello' (stellas, stellatum, stellare), which means 'to brighten with stars'.

Regarding the regulatory steps, on 20 November the prospect for the listing of Stellantis was accepted, on 21 December the merger was approved by the Antitrust Branch of the European Commission, and on 4 January 2021 the shareholders meetings of both companies licensed the merger. The official birth date of Stellantis was16 January, the listing on the Italian and French stock exchanges occurred on 18 January, while the listing on the NYSE was on the next day, as the 18 was Martin Luther King's Day, a holiday in the US.

5. The Rationales for the Merger

There are multiple motives behind the merger. Some of the motives benefit both companies, while others are more specific to either of them.

Synergies are probably the first and foremost motive behind the merger. The estimated synergies are valued €5B per year, with a cumulative implementation cost of €2.8B. It is

notable that, according to the companies, the positive effect on the cash flows of Stellantis would start since the first year of activity, with 80% of the synergies achieved by year four. Going deeper into the details released by the companies, 40% of the forecasted synergies, will be on the purchasing side, thanks to scale economies, best price alignment and possible access to new suppliers. Another 40% will come from other product related expenses, such as R&D on both traditional and electric powertrains, manufacturing efficiencies gained through economies of scale and scope, and the convergence of vehicle platforms. Finally, 20% of the synergies will come from other operating expenses.

Platform sharing is one of the most important synergies that will come from the merger. PSA has been developing platforms for electric vehicles for some time now and has two in its portfolio. These platforms are modular, which means that they can be adapted to a wide range of vehicles. The two platforms, and their future evolutions, will greatly reduce the R&D costs that FCA would otherwise have to incurfor the development of mass-market electric and hybrid vehicles, a product segment in which it has lagged behind the competition in the last decade. The two companies actually stated, in their merger presentation, that their top two platforms would be used in approximately two thirds of Stellantis' models, improving the much-sought economies of scale and reaching the industry benchmark levels for platform usage. Moreover, the convergence of platforms could also bring about a higher level of parts commonization, further reducing the cost savings related to R&D and production and therefore achieving economies of scope.

Another motive is that the vehicle lineup of the two groups is broad and almost complementary, with little overlaps, meaning that Stellantis will produce cars in a vast range of different automotive segments, aiming at different consumers and markets.

Geographical expansion is another core reason behind this merger. FCA operates almost worldwide, but 87% if its revenues, as of 2018, come from North America ($72,6B) and the EMEA (Europe, Middle-East and Asia) area ($23.1B). In contrast, PSA operates mainly in the Old Continent, with 92% of its revenues ($54.2B) originating in Europe. Considering the combined revenues of the resulting Group, 43% would come from North America and 46% would come from Europe. From this perspective, it is mostly PSA that benefits from the

merger, as it will profit from FCA's existing network to expand its operations outside of the EU.

Among the other reasons behind the mergers can be mentioned CO2 compliance, autonomous driving and car sharing. Regarding CO2 compliance, FCA will benefit from the fact that PSA is already compliant with the existing regulations, while the Italo-American company is not. Stellantis, thanks to the fact that PSA's reduced emissions offset the excessive ones of FCA, is compliant since day 1 with the regulations. In what concerns the development of autonomous driving, both companies have already invested in the R&D of these systems and the joint effort should yield higher returns. Finally, by joining the existing car sharing networks of FCA and PSA, Stellantis could further improve its international presence.

6. Valuation

The assumptions are a very important element of the valuation, as they influence its outcome, and they must be as realistic as possible. Hereafter, I explain the assumptions I made.

In what concerns *revenues*, since the 2020 financial results have not yet been published, I have used the ad-interim reports of the two companies to estimate the revenues for the whole FY. For the forecast, I used the expectations for the rebound of the automotive market published by multiple sources, which expect a 10% YoY increase in 2021 and the return to pre COVID-19 levels in three years.

In what concerns the *cost of goods sold (COGS)*, I simply used the average COGS/Revenues ratio of the past seven years.

Since the *Selling, General and Administrative (SG&A)* and R&D expenses are fixed costs, I used the average YoY growth rates of the two companies to forecast the expenses for the next four years.

In what concerns the *Depreciation* and the *Capex*, since the former has been quite constant in the last four years, I used the simple average to estimate the value of the forecasted period. As to the Capex, I used the same system used for Depreciation for PSA, while I used the published business plan to estimate the one of FCA.

For the *Interest/Investment expenses*, I used the simple average of the past four years as the two companies have been keeping a constant leverage ratio.

For the *Income Tax Provisions*, I used the KPMG listed tax rate of the country where the companies are based.

For the estimation of the *Weighted Average Cost of Capital (WACC)*, I first had to determine the cost of debt and the cost of equity. For the cost of debt, since the *Interest Coverage Ratio* method gave improbable results because of the really low (or negative) risk-free rates of the present time, I used the average cost of debt calculated from the financial reports. For the cost of equity, I used the *beta* from the Eikon database. My calculations for the WACC take into consideration the fact that the companies are based in different regions and are listed on multiple stock exchanges.

Finally, in my evaluation of the *synergies*, I used the information provided by the companies in the merger presentation, which I have summarized in Table 6.1. As can be seen in the table, the companies expect €5B of synergies in the long run, 80% of them before year 2024. I therefore applied a linear progression for the four forecasted years. Regarding the allocation of the synergies, based on the information provided by the companies, I estimated a 40% decrease in COGS, 20% decrease in SG&A costs and a 40% decrease in R&D expenses. As the companies expect a positive cash flow from the synergies already from year 1 (2020), I divided the €2.8B into three tranches, one of €800M in the first year, and the other two, of €1B each, the following two years.

Table 6.1. Stellantis Expected Synergies (in million €)

	2021	**2022**	**2023**	**2024**
COGS	400	800	1 200	1 600
SG&A	200	400	600	800
R&D	400	800	1 200	1 600
Total	**1 000**	**2 000**	**3 000**	**4 000**
Capex	800	1 000	1 000	-
Depreciation	-	80	180	280

Note. Based on data from Groupe PSA & FCA, 2019

The result of my valuation put the market value of equity for FCA, according to the DCF method and net of the dividend, at €20.9B, while the PSA market value of equity obtained through the same method was equal to €21.1B.

To evaluate the new company Stellantis, I merged the forecasted income statements obtained for the two companies and continued with the DCF method. The estimated market capitalization resulting from the valuation without the synergies amounts to €39.8B. After implementing the synergies, the resulting valuation of the company totaled a staggering €86.2B, which is more than double the result obtained without considering the synergies.

The valuation made using the DCF method with the implementation of the synergies, yields a value of Stellantis that is more than double:, from €39.8B to €86.2B. Moreover, the estimated value of the company with the synergies is also double the effective market capitalization which, in the first month of negotiations, has remained between €40B and €44B.

Table 6.2 presents the FCFF calculation for Stellantis without the synergies, while Table 6.3 contains the calculation considering the synergies. The increase in the Free Cash Flows is evident, especially in the year 2024.

Table 6.2. Stellantis forecasted FCFF *without* synergies (in million €)

	2020	2021	2022	2023	2024
EBIT	**2 479**	**4 037**	**5 806**	**7 510**	**9 140**
NOPAT	**1 859**	**3 028**	**4 354**	**5 633**	**6 855**
Capex	-14 334	-13 834	-13 334	-13 334	-13 334
Depreciation	8 553	8 754	8 754	8 754	8 754
Change in NWC	1 725	1 725	1 725	1 725	1 725
FCFF	**-2 197**	**-328**	**1 499**	**2 777**	**3 999**

Note. Based on data from Thomson Reuters, 2021

Table 6.3. Stellantis forecasted FCFF *with* synergies (in million €)

	2020	2021	2022	2023	2024
EBIT	**2 479**	**5 037**	**7 726**	**10 330**	**12 860**
NOPAT	**1 859**	**3 778**	**5 794**	**7 748**	**9 645**
Capex	-14 334	-14 634	-14 334	-14 334	-13 334
Depreciation	8 553	8 754	8 834	8 934	9 034
Change in NWC	1 725	1 725	1 725	1 725	1 725
FCFF	**-2 197**	**-378**	**2 019**	**4 072**	**7 069**

Note. Based on data from Thomson Reuters, 2021 and Groupe PSA & FCA, 2019

Table 6.4. Stellantis forecasted IS *without* synergies (in million €)

	2020	2021	2022	2023	2024
Revenues	**129 396**	**142 336**	**155 863**	**169 391**	**182 918**
COGS	108 112	118 924	130 254	141 585	152 916
Gross Profit	**21 284**	**23 412**	**25 609**	**27 805**	**30 002**
SG&A	12 867	12 868	12 869	12 871	12 873
R&D	3 737	4 107	4 533	5 024	5 589
EBITDA	**4 679**	**6 437**	**8 206**	**9 911**	**11 540**
Depreciation	2 200	2 400	2 400	2 400	2 400
EBIT	**2 479**	**4 037**	**5 806**	**7 510**	**9 140**
Interest/investment	888	888	888	888	888
Other	2 312	2 312	2 312	2 312	2 312
EBT	**-720**	**837**	**2 607**	**4 311**	**5 941**
Taxes	-180	209	652	1 078	1 485
Net Income	**-540**	**628**	**1 955**	**3 233**	**4 455**

Note. Based on data from Thomson Reuters, 2021

Table 6.5. Stellantis forecasted IS *with* synergies (in million €)

	2020	2021	2022	2023	2024
Revenues	**129 396**	**142 336**	**155 863**	**169 391**	**182 918**
COGS	108 112	118 524	129 454	140 385	151 316
Gross Profit	**21 284**	**23 812**	**26 409**	**29 005**	**31 602**
SG&A	12 867	12 668	12 469	12 271	12 073
R&D	3 737	3 707	3 733	3 824	3 989
EBITDA	**4 679**	**7 437**	**10 206**	**12 911**	**15 540**
Depreciation	2 200	2 400	2 480	2 580	2 680
EBIT	**2 479**	**5 037**	**7 726**	**10 330**	**12 860**
Interest/investment	888	888	888	888	888
Other	2 312	2 312	2 312	2 312	2 312
EBT	**-720**	**1 837**	**4 527**	**7 131**	**9 661**
Taxes	-180	459	1 132	1 783	2 415
Net Income	**-540**	**1 378**	**3 395**	**5 348**	**7 245**

Note. Based on data from Thomson Reuters, 2021 and Groupe PSA & FCA, 2019

The effect of the synergies can be further appreciated by comparing the forecasted income statements of Stellantis, with and without the synergies implemented, as presented in Tables 6.4 and 6.5.

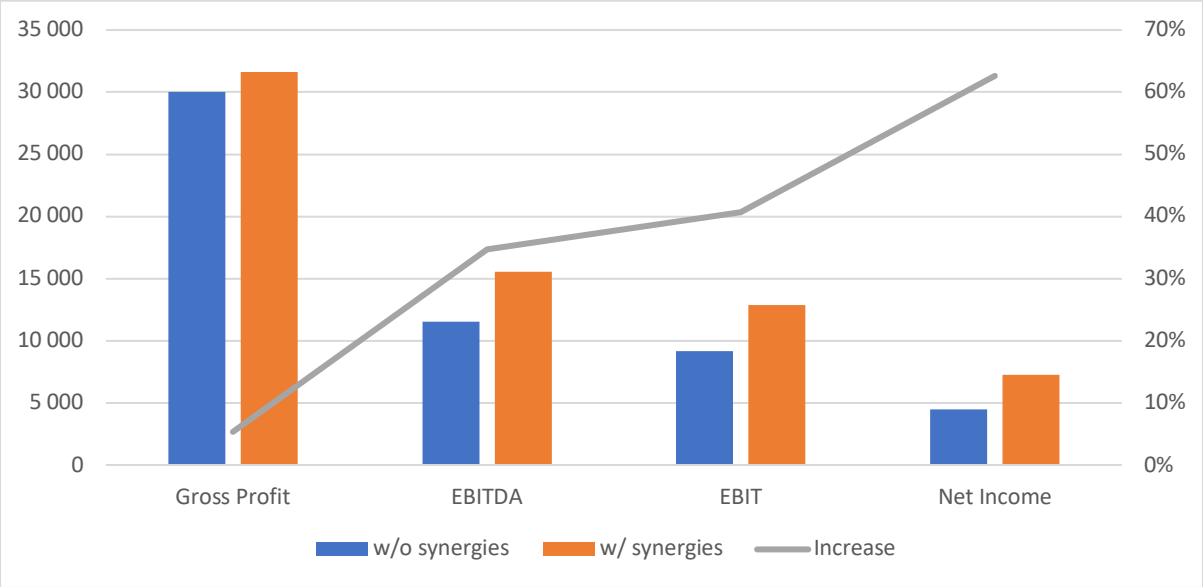
To further understand the huge difference between the valuation with and without the synergies, it is useful to look at the comparison of some key metrics, presented in Table 6.6 and Figure 6.1.

Table 6.6. 2024 Ratios of key indicators, *with* and *without* synergies

	w/ synergies	w/o synergies	% change
Gross Margin	17.28%	16.40%	5.3%
EBITDA Margin	8.50%	6.31%	34.7%
EBIT Margin	7.03%	5.00%	40.7%
Net Margin	3.96%	2.44%	62.6%
Net Income (in million €)	7 245	4 455	62.6%

Note. Based on data from Thomson Reuters, 2021 and Groupe PSA & FCA, 2019

Figure 6.1. 2024 Ratios of key indicators, *with* and *without* synergies



Note. Based on data from Thomson Reuters, 2021 and Groupe PSA & FCA, 2019

While the gross margin only increases by 5.3% with the implementation of the synergies (going from 16.4% to 17.3%), the other operating margins see a much higher increment. The EBITDA margin increases by 34.7%, the EBIT margin by 40.7% and the net margin by a staggering 62.6%, effectively increasing the net income from €4.5B without synergies, to €7.2B.

Table 6.7 presents a comparison between the forecasted 2024 key metrics (with synergies) of Stellantis and the 2019 industry standard provided by Thomson Reuters (2021). It is interesting to note that while the net margin is in line with the industry standard, moving upwards in the ratios of the income statement, the gross margin of the company is 78.3% lower. This means that most of the profitability is achieved through a reduction in the fixed costs of SG&A, R&D, and Depreciation.

Table 6.7. Key Ratios compared to the industry standards

	Stellantis 2024	Industry 2019	Difference
Gross Margin	17.28%	30.80%	-78.28%
EBITDA Magin	8.50%	14%	-64.79%
EBIT Margin	7.03%	6.30%	10.39%
Net Margin	3.96%	3.80%	4.06%

Note. Based on data from Thomson Reuters, 2021 and Groupe PSA & FCA, 2019

While the valuation of Stellantis with the synergies implemented might seem particularly high, especially considering the current market capitalization of the new group, the target prices proposed by different sources (Thomson Reuters, 2021; CNN Business, 2021), clearly indicate that analysts expect an average increase in value of around +30%, with peaks of almost +50%. These expected increases would bring the average target market capitalization to €55B with a peak of €63B. These prices, however, are still lower than the result from my valuation. This might be ascribed to the fact that, oftentimes, the parties involved in a transaction tend to overvalue the expected synergies, undervalue the cost of their implementation, underestimate the time needed to achieve them, and they also do not fully consider the possible dyssynergies (Christofferson et al., 2004). Therefore, the analysts have probably reduced the positive effects of the synergies in their valuation to a more realistic level, increasing, at the same time, their implementation costs. It could also be that the analysts are making more pessimistic assumptions about the rebound of the automotive market compared to the ones I used.

Conclusions

My initial research question was 'Is consolidation necessary to survive in the contemporary automotive market?' My answer is yes, but this simple answer to a very complicated question needs to be substantiated.

As argued, the advantages of consolidation are multiple. But consolidation is not the only viable solution. Some of the advantages of consolidation can be attained also though strategic alliances and joint ventures, as the Renault-Nissan-Mitsubishi Alliance and Toyota respectively show. What these different strategies have in common is the spreading of costs, especially R&D investment and parts commonization, across a higher number of brands and models, achieving economies of scope. However, joint ventures and alliances are at a disadvantage when it comes to achieving financial synergies and in what concerns the duration of the deal, as the parties involved are not contractually bound (in the case of the alliances) or their collaboration is limited to specific contractual objectives (in the case of joint ventures).

Consolidation, as both existing literature and my case study on the FCA-PSA merger suggest, brings about an increase in the joint performance of the companies involved. Consolidation is observed in most slow growing old industries (Penrose, 1995), but applies particularly well to the automotive industry for the reasons I will now discuss.

For starters, the fact that the automotive industry has steadily concentrated since its beginning is, per se, an indication that this is the most viable path. This trend has become particularly important since the switch, in the 1970s, from the mass production of fewer models with a longer time span (e.g., Ford produced the Bronco for more than 15 years), to a greater diversification of the model portfolio and a decrease of the product update times. This switch has moved the attention of the automakers from economies of scale to economies of scope, which work through the spreading of the fixed costs related to production, R&D and administrative expenses across several product lines.

By consolidating, companies can thus invest more efficiently in the development of new technologies and parts (e.g. Volkswagen invested €50B in the development of the MLB platform, which is used across almost all its brands, both mass-market and premium). FCA and PSA endorse this hypothesis when they define the expected synergies from the merger. As can be seen from Table 6.6 and Figure 6.1, the increase in gross profit, which is mostly based on variable costs and therefore benefits from scale economies, is only 5.3%, whereas when we consider the subsequent ratios based on the forecasted income statement, the increase is far greater. In fact, the EBITDA margin increases by 34.7% and the EBIT margin, which takes in consideration not only the fixed costs but also the longer-term investments, increases by 40.7%. Reaching the bottom line, the profitability of the combined firm, without an effective change in sales, increases by as much as 62.6%.

Even if the expected synergies were hugely overvalued and their cost of implementation underestimated, an increase in profitability would still be seen, as most analysts predict an increase in the value of the combined company of around 30%, with peaks of 50%.

It should be noted that some literature argues that M&A transactions tend to reduce the value of the companies involved, because of reasons connected, among others, to a wrong estimation of the synergies and their costs, and/or to the payment of an excessive premium

for the target company. An exception to this trend can be made for mega-mergers, when the companies involved have a long experience in M&As, achieved through previous transactions. Most Western companies in the automotive industry are almost a century old and have gained this experience through a high number of mergers in their history. In fact, both FCA and PSA, the former in particular, have carried out many successful transactions in their past. Therefore, it can be safely assumed that they have realistically estimated all the pros and cons of the merger.

Apart from the gains connected to the above-described synergies, which bring about economies of scale and especially economies of scope, there are other gains coming from consolidating. A bigger company is usually perceived less risky by its creditors, reducing the overall cost of debt in the long run. Moreover, a merger between companies that operate in different markets (either from a service and a geographical point of view) can give access to the respective existing networks without the need for new investments. Both these advantages can be factored in, but they are more difficult to quantify for valuation purposes.

In light of the above considerations, I conclude that consolidation in the current automotive industry context is the right strategic choice. If consolidation cannot be put on the table for whatever reason, the next best choices are strategic alliances and joint ventures, which can provide some of the advantages deriving from consolidating. In the case of the merger between FCA and PSA into Stellantis, I will further conclude that this is not only the best strategic choice, but that the merger has high chances of achieving the expected synergies because of the know-how the two companies have acquired through past transactions.