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THE STELLANTIS MERGER – FCA'S MASTERPIECE?

FCA's Merger Chess: Reassessing the Decision for PSA instead of Renault

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Abstract

The case study examines the merger of equals between Fiat Chrysler Automobiles and Peugeot S.A., which created the world's third-largest automaker. It examines whether the merger was sensible for FCA, looking at strategic, valuation, and corporate governance dimensions. The analysis confirmed that the merger makes sense for FCA in every respect. The individual part reassesses FCA's choice of PSA over Renault, concluding that PSA was the better option.

Keywords

Mergers & Acquisitions, Merger of Equals, Fiat Chrysler Automobiles, Peugeot S.A., Company Valuation, Trading Multiples, Discounted Cash Flows, Event Studies, Strategic Analysis

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Case A: The Stellantis Merger - FCA's Masterpiece?

At the end of 2019, the global automotive industry experienced a significant event with the announcement of Fiat Chrysler Automobiles' (FCA) offer for a merger of equals with Peugeot S.A. (PSA). The proposed merger is notable not only for its ambition but also for its impact on the global automotive landscape.

The path to this merger began on October 31, 2019, when the two automotive giants FCA and PSA stated their intention to explore the possibility of a merger (Stellantis, 2019c). This resulted in the announcement of the first draft of the merger agreement on December 18, 2019, setting the stage for one of the most talked-about developments in the industry (Stellantis 2019b).

Upon completion of the merger the NewCo, named “Stellantis”, would become the fourth largest automaker in the world by volume and the third largest by revenue (€169 bn). The merger is expected to generate annual synergies of €3.7 bn, giving both companies a stronger position in the increasingly competitive and dynamic global automotive market. (Stellantis 2019b)

In order to achieve the 50/50 ownership structure, PSA shareholders would receive 1.742 NewCo shares for each of their PSA shares, while FCA shareholders would receive one NewCo share for each of their FCA shares (Stellantis 2019b). In addition, several compensation payments would be made to both PSA and FCA shareholders (Stellantis 2019b). However, PSA would receive the majority of the board and PSA CEO Carlos Tavares would become CEO of Stellantis (Stellantis 2019b). FCA CEO Michael Manley, on the other hand, is not to be given a board seat at all (Piovaccari 2020). However, it is questionable whether FCA and PSA will really be on an equal footing and whether the merger makes strategic sense for FCA.

The Global Automotive Industry

The automotive industry, one of the world's most important industries for decades, recorded

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sales of \$2.9 tn in 2019, with a total of 81.4 m vehicles sold (Deloitte 2022; IBISWorld 2023). Although sales had been steadily increasing in previous years, they recorded a declining trend since 2017 (Deloitte 2022). In recent years, the market has become increasingly concentrated (Khalaf 2019). In 2019, 87% of all vehicles were sold by the top ten automakers (Exhibit A1). With a market share of 33.3%, China maintained its position as the largest sales market, followed by Europe with 24.2% and North America with 21.4% (Exhibit A2) (Statista 2023). A particular focus is on SUVs, which represent the largest vehicle segment and enjoyed increasing popularity internationally (Statista 2022). At the same time, SUVs provide manufacturers with high-profit margins (Voelk 2020; Statista 2022).

“The automotive industry is going through a transformation of unprecedented magnitude”, according to Faurecia CEO Patrick Koller (Koller 2018). The challenges include managing geopolitical risks as well as technical issues around connectivity, shared mobility solutions, autonomous driving, and electrification (McKinsey 2019; Pandey 2019).

Global trade conflicts, particularly between the USA and China, are having a significant impact on the automotive industry (Pandey 2019). Uncertainties around tariffs and trade restrictions are disrupting supply chains and forcing manufacturers to adjust their business plans (Pandey 2019). This also applies to Brexit, which brings uncertainties for companies with plants in the UK and supply chains crossing Europe (Deloitte 2020, 1).

Probably the biggest challenge facing the automotive industry, however, is electrification (McKinsey 2021). Stricter emissions regulations, especially in the EU, and growing environmental awareness among consumers are forcing manufacturers to invest more heavily in the development of battery technologies and the expansion of the charging infrastructure (Pooler and Miller 2019). At the same time, new players specializing exclusively in electric cars are increasingly entering the market and presenting established automakers with new competitive conditions (Deloitte 2019, 10). Two of them, Tesla from the US and BYD from

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China have already been able to establish themselves and dominate the emerging market for electric vehicles (Exhibit A3).

The COVID-19 pandemic that hit the world in 2020 has far-reaching implications for the automotive industry (Becker 2020). Supply chains stalled as global transportation routes were affected (Becker 2020). As a result, sourcing of parts and components became more difficult, leading to delays in production and increases in material costs (Korsh 2022). The uncertainty and economic impact of the pandemic led to a significant drop in demand for new vehicles (Oliver Wyman 2020). Many people either were reluctant to make large financial commitments or were unable to purchase a new car due to job losses or loss of income (Iyer 2022). In light of this, many automakers have been forced to take drastic cost-cutting measures (Vaswani 2020). This has resulted in restructuring such as plant closures and layoffs (Economist Intelligence 2020).

Peugeot S.A.

PSA is a renowned French automotive manufacturer with a rich history dating back to 1810 when it was founded as a family-run business producing coffee mills and bicycles. Over the decades, the company transitioned into the automaker industry, becoming one of the pioneers of the French automobile sector. (Scalera 2011, 1245)

Since the company was founded, the Peugeot family has been the main shareholder of PSA. However, the family reduced their 25% share to 14% in 2014. At the same time, PSA's long-term Chinese joint-venture partner Dongfeng Motor acquired 14% of PSA. Both companies hoped that a deepened partnership would gain them access to the other's market. To balance Dongfeng's stake, the French government acquired 14% of PSA, too, mainly to ensure that French control over PSA was not lost to the Chinese group. PSA is not only a figurehead of engineering and national identity for France, but also an essential player in the French economy

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and a major employer. The French government is therefore keen to protect national interests, for example by maintaining jobs and factories in France. As a result, Dongfeng and the French state tied the Peugeot family as the biggest shareholders of PSA. (Jolly 2014)

The automaker has been managed by Carlos Tavares since 2014 (Stellantis 2023b). His record in turning around companies is impressive (Bryant 2019). He transformed PSA and then repeated the trick with the Opel/Vauxhall unit acquired from General Motors in 2017 to create a stronger presence in the European automotive market and achieve economies of scale (Ruddick 2017; Bryant 2019).

The group had revenues of €74.7 bn in 2019 and is the ninth-largest automaker by the number of vehicles sold (Exhibit A1). Its focus region is Europe, which accounted for 78.6% of its revenue in 2019, followed by China with 4.8% (Exhibit A5). In the third largest automotive market, North America, PSA is not present at all (Exhibit A5). The French automaker sells premium cars through DS Automobiles and mainstream passenger cars through its brands Peugeot, Citroën, Opel, and Vauxhall (Exhibit A7).

Having encountered several challenges when dealing with EU regulations on electric vehicles in recent years, PSA had to overhaul its product lineup to meet stringent emission targets and invest heavily in electric vehicle technology (Keohane 2018; Pooler and Miller 2019).

Fiat Chrysler Automobiles

FCA is a prominent player in the global automotive industry. The company's roots can be traced to the founding of Fiat in 1899 and the establishment of Chrysler in the United States in 1925 (Stellantis 2023a; Kollwe 2009). Through its brands, including Fiat, Chrysler, Dodge, Jeep, and Ram, the company generated €108.2 bn in revenues in 2019 and is the eighth-largest automaker by the number of vehicles sold (Exhibit A1; Exhibit A7). In 2019, FCA generated most of its revenues in North America (58.0%), while Europe, Fiat's home market, accounted

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for just 26.1% (Exhibit A6).

With 28.5% of the shares in FCA and 44.4% of the voting rights, Exor N.V. is by far the largest shareholder (Bloomberg 2023a). Exor is an investment company under the control of the Italian Agnelli family, the descendants of one of the founders of Fiat (Exor 2023). Through its CEO John Elkann, who is also chairman of FCA, they exert direct control over the car manufacturer (S&P Capital IQ 2023). FCA had been led by the experienced Sergio Marchionne for over a decade, but he died suddenly in 2018 (Boudette and Povoledo 2018). Michael Manley, who had previously been CEO of FCA's subsidiary Jeep, then took over the helm (Boudette and Povoledo 2018).

Fiat gained influence in the North American market through the acquisition of Chrysler, which was a strategic move that began with a 20% stake purchase in 2009 and culminated in the takeover of Chrysler in 2014, forming FCA. This acquisition allowed Fiat to expand its global reach and gain access to Chrysler's North American market share. It also facilitated the sharing of resources, leading to cost savings and enhanced competitiveness in the automotive industry. (Wright and Foy 2014)

As the industry shifted towards sustainable mobility solutions such as the development of electric cars and plug-in hybrids, FCA is lagging behind other automakers. To close this gap, and to tackle increasing costs, FCA is actively looking for a strong partner in the automotive industry to merge with. (DeBord 2019)

Merger Talks with Renault

Prior to the merger plans with PSA, in May 2019, FCA approached Renault intending to forge a merger in a bid to confront the various challenges facing the global automotive industry. Such a merger would have provided numerous advantages for both companies, including synergies in research and development, cost savings through shared technologies and platforms, and a

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stronger global market presence. The NewCo would have been the world's third-largest automaker by number of vehicles sold. The proposed deal would have been structured as a merger of equals, with each company maintaining its existing brand identity while collectively harnessing its strengths to navigate the evolving automotive landscape. (Stellantis 2019a; Piovaccari and Frost 2019)

Just ten days later, however, the talks ultimately failed due to several factors, most notably the concerns of the French government, which held a 15% stake in Renault. The government would have agreed to the merger with the explicit support of Renault's long-time alliance partner, the Japanese automaker Nissan. This was not a given, as Nissan abstained from the decision. As the relationship was already strained due to former Renault CEO Carlos Ghosn being arrested in Japan for treason, it was unclear how the merger would have affected that alliance (Kargupta 2019; Kiley 2019).

Merger Talks with PSA

After the talks with Renault failed, FCA was once again on the lookout for a suitable merger partner and finally approached PSA (Stellantis 2019d). Both companies already had a long-standing joint venture in commercial vehicle construction, so they already knew each other very well (Sanderson, Campbell, and Keohane 2019). Michael Manley even described the joint venture as "one of the best relationships we have" (Sanderson, Campbell, and Keohane 2019). With an increase in market share in Europe of 16% on average over the last four years, PSA will help FCA become less dependent on the stagnating US market (Winton 2019). At the same time, they will fulfill FCA's long-awaited desire to expand its currently weak presence in its home market of Europe (Malan 2018). In addition, PSA is further along in the development of EVs, an area where FCA is lagging heavily (Krisher, Barry, and Charlton 2019). So much so that they are currently unable to meet the European Union's emissions targets and therefore

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have to buy billions in emissions certificates from Tesla every year to compensate (Campbell and Keohane 2021). Together, FCA and PSA would have great resources to master the major technological challenges in the automotive industry. PSA will also benefit from FCA's highly profitable North American business, where they generate 2/3 of their sales, while PSA is not represented there at all (Exhibit A2).

The announcement of the preliminary merger terms in October 2019 was followed by a year of intensive negotiations. An amended offer was finally published on September 14, 2020. To compensate for the valuation differences, FCA shareholders will now receive a special dividend of €2.9 bn before closing, instead of €5.5 bn as previously announced. PSA, on the other hand, is selling 7% of its Faurecia stake, the proceeds of which amounting to €308 m will be distributed equally to FCA and PSA shareholders after closing. While synergies were still estimated at €3.5 bn annually one year ago, new calculations put them at €5 bn annually and are expected to be fully realized for the first time in 2024. The majority of the synergies, amounting to €2 bn per year, are generated through savings in capital expenditure, while the remaining synergies are achieved through further cost savings (Exhibit A9). At the same time, the projected implementation costs increased from €2.8 bn to €4.0 bn. (Stellantis 2020a)

After the merger talks with Renault failed due to the French government, the latter is now showing more willingness to cooperate (Eisenstein 2019). However, in order for the French government to approve the merger, FCA and PSA have agreed to preserve jobs in France and rule out plant closures (Eisenstein 2019). In addition, they would appoint the highly experienced Carlos Tavares as CEO of NewCo and PSA would obtain a majority on the board, which is favored by the French government (Stellantis 2020a). In return, FCA chairman Elkann would remain in his position (Stellantis 2020a). However, FCA CEO Manley would only become head of the North American operations in NewCo (Piovaccari 2020).

Exhibit A1 Ten Largest Automakers Globally in 2019

#	Company	Headquarters	Vehicles Sold (in m)	Revenue (in €bn)	Profits (in €bn)
1	Volkswagen	Germany	10.8	252.6	13.9
2	Toyota	Japan	10.5	235.5	14.6
3	Renault-Nissan- Mitsubishi Alliance	Netherlands	10.3	109.8	3.4
4	General Motors	US	8.7	122.6	5.9
5	Hyundai Motors Group	South Korea	7.5	81.1	1.8
6	Ford	US	5.7	139.3	0.0
7	Honda Motor Group	Japan	5.2	123.8	4.8
8	FCA	Netherlands, UK	4.8	108.2	6.6
9	PSA	France	4.1	74.7	3.2
10	Suzuki	Japan	3.2	30.2	1.4

Source: Bloomberg 2023c

Exhibit A2 Market Shares by Region and Automaker in 2019

Region and Its Market Player	Market Share
China	33.3%
Volkswagen (FAW)	7.9%
Volkswagen (SAIC)	7.8%
General Motors (SAIC)	6.2%
Geely	5.3%
Nissan (Dongfeng)	5.0%
Wuling (SAIC/GM)	4.8%
Great Wall	3.6%
Changan	3.2%
Honda (Dongfeng)	3.1%
Honda (GAC)	3.0%
Other	50.2%
Europe	24.2%
Volkswagen	24.6%
PSA	15.6%
Renault	10.5%
Hyundai/Kia	6.7%
BMW	6.6%

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Daimler	6.4%
Ford	6.1%
FCA	6.0%
Toyota	5.1%
Other	12.4%
<hr/>	
North America	21.4%
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General Motors	16.5%
Ford	13.8%
Toyota	13.6%
FCA	12.6%
Honda	9.2%
Hyundai/Kia	7.6%
Nissan	7.7%
Other	19.0%
<hr/>	
Other Regions	21.1%

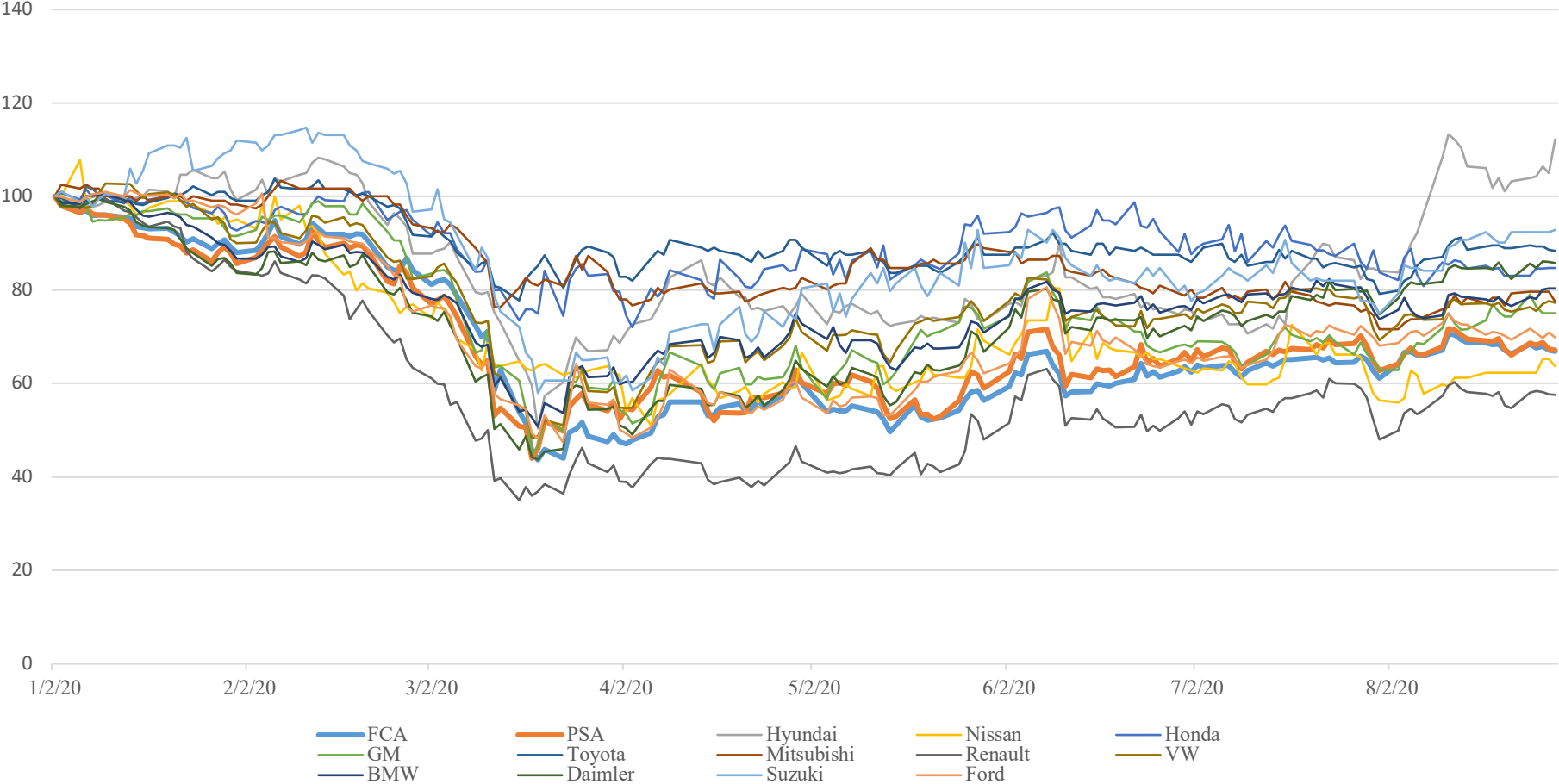
Source: Bloomberg 2023c; Stellantis 2020b

Exhibit A3 Market Shares in the Electric Vehicle Industry in 2019

Company	Market share
Tesla	16.2%
BYD	10.0%
BJEV	7.1%
BMW	5.9%
Nissan	3.9%
Volkswagen	3.7%
SAIC	3.4%
Geely	3.4%
Hyundai	3.2%
Renault	2.7%
Other	40.5%

Source: McKinsey 2020

Exhibit A4 Share Price Development of the Largest Automakers (Indexed, base = 100)



Source: Own representative based on data from Bloomberg 2023b

Exhibit A5 PSA's Revenue per Region in FY 2019

Region	Revenue in €m	% of Total Revenue
Europe	64,378	78.6%
North America	0	0.0%
China	3,624	4.8%
Other	6,729	9.0%
Total	74,731	100.0%








Source: Stellantis 2020b, 35

Exhibit A6 FCA's Revenue per Region in FY 2019

Region	Revenue in €m	% of Total Revenue
Europe	28,229	26.1%
China	2,226	2.1%
North America	62,787	58.0%
Other	14,944	13.8%
Total	108,187	100.0%

Source: Stellantis 2020c, 43ff.

Exhibit A7 Brand Portfolio FCA and PSA

	Luxury	Premium	Mainstream		
			SUV	Pass Car/ CUV/MPV	Truck/LCV
					
					

Source: Stellantis 2019d

Exhibit A8 Peer Group and Its Financial Data

in €m	EV¹⁾	Sales²⁾	EBITDA²⁾	EBIT²⁾
Volkswagen	70,719	223,569	29,662	4,217
Toyota	288,290	223,758	27,356	13,993
Renault	5,961	55,537	5,914	2,105
Nissan	13,816	72,622	5,341	(1,640)
Mitsubishi	4,045	16,428	256	(372)
Daimler	12,010	157,804	10,422	1,939
BMW	22,821	99,258	16,257	5,363
General Motors	40,669	104,731	13,145	1,079
Hyundai	65,686	77,177	5,505	2,268
Ford	21,753	117,946	3,080	(4,554)
Honda	82,867	109,248	7,921	2,238
Suzuki	16,244	25,150	2,586	1,286

¹⁾ as of June 30, 2020

²⁾ July 1, 2019 - June 30, 2020

Source: Bloomberg 2023c

Exhibit A9 Expected Annual Synergies

Expected Annual Synergies (in €m)	5,000
Savings in capital expenditures	2,000
Savings on purchases	1,750
Savings on sales operations and general expenses	350
Other cost savings	900

Source: Stellantis (2020a); Case writers assumptions

Exhibit A10 FCA and PSA and Its Financial Data

	FCA	PSA
Sales (in €m) ¹⁾	89,239	74,731
EBITDA (in €m) ¹⁾	6,339	8,056
EBIT (in €m) ¹⁾	1,090	3,168
Cash & Equivalents (in €m) ²⁾	15,591	19,232
Minority Interest (in €m) ²⁾	138	2,727
Total Debt ²⁾	12,918	11,415
Debt/Total Assets ²⁾	49.5%	40.6%
Cost of Debt	1.48%	1.44%
Market Return	8.55%	8.55%
Tax Rate	30%	30%
Terminal Growth Rate	0.9%	0.9%

¹⁾ July 1, 2019 - June 30, 2020 ²⁾ as of December 31, 2019

Free Cash Flows (€m)	2020F	2021F	2022F	2023F	2024F	2025F
FCA	(3,368)	2,146	(1,071)	2,192	1,827	1,153
PSA	(176)	426	1,321	296	634	1,179

Source: Bloomberg 2023c; Case writers assumptions

Exhibit A11 Historical Share Prices FCA and PSA, Weekly

Date	FCA Price (€)	PSA Price (€)	Date	FCA Price (€)	PSA Price (€)	Date	FCA Price (€)	PSA Price (€)
9/11/20	9.41	16.07	9/13/19	11.94	24.06	9/14/18	14.22	23.79
9/4/20	8.95	15.15	9/6/19	11.97	22.10	9/7/18	13.65	23.31
8/28/20	8.91	14.61	8/30/19	11.22	20.33	8/31/18	13.82	23.70
8/21/20	8.82	14.36	8/23/19	10.72	18.90	8/24/18	13.74	23.38
8/14/20	9.18	15.10	8/16/19	10.46	19.01	8/17/18	13.00	24.41
8/7/20	8.79	14.39	8/9/19	11.01	19.83	8/10/18	13.50	24.95
7/31/20	8.21	13.64	8/2/19	11.11	20.36	8/3/18	13.78	24.23
7/24/20	8.60	14.84	7/26/19	11.68	22.50	7/27/18	13.67	24.02
7/17/20	8.68	14.67	7/19/19	11.42	21.90	7/20/18	15.56	20.67
7/10/20	8.37	14.04	7/12/19	11.92	22.03	7/13/18	15.81	21.05
7/3/20	8.58	14.29	7/5/19	11.97	22.05	7/6/18	16.06	20.65
6/26/20	8.20	13.85	6/28/19	11.62	21.67	6/29/18	15.52	19.56
6/19/20	7.98	13.36	6/21/19	11.67	21.68	6/22/18	15.63	20.45
6/12/20	7.72	13.47	6/14/19	11.22	20.72	6/15/18	17.01	21.13

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6/5/20	8.85	15.43	6/7/19	11.07	20.54	6/8/18	17.03	20.60
5/29/20	7.51	12.81	5/31/19	10.86	19.97	6/1/18	18.64	20.13
5/22/20	7.01	11.53	5/24/19	10.88	20.59	5/25/18	17.67	20.68
5/15/20	6.83	11.52	5/17/19	12.67	21.37	5/18/18	17.64	20.65
5/8/20	7.35	13.43	5/10/19	12.28	21.16	5/11/18	18.02	20.08
5/1/20	7.63	13.08	5/3/19	13.44	22.64	5/4/18	18.14	20.10
4/24/20	6.99	12.39	4/26/19	13.15	23.27	4/27/18	18.01	20.35
4/17/20	6.94	11.70	4/19/19	13.94	24.83	4/20/18	18.32	20.78
4/10/20	7.10	13.42	4/12/19	13.47	23.93	4/13/18	18.06	20.40
4/3/20	5.92	11.82	4/5/19	13.03	23.23	4/6/18	17.38	19.99
3/27/20	6.24	12.07	3/29/19	12.58	21.74	3/30/18	15.71	19.55
3/20/20	5.77	11.31	3/22/19	12.13	21.75	3/23/18	15.82	18.61
3/13/20	8.02	11.89	3/15/19	12.01	22.16	3/16/18	16.32	19.00
3/6/20	9.98	16.15	3/8/19	12.14	21.13	3/9/18	16.28	19.27
2/28/20	10.67	17.51	3/1/19	12.27	22.81	3/2/18	15.30	19.06
2/21/20	11.46	19.14	2/22/19	12.46	22.31	2/23/18	16.70	17.93
2/14/20	11.62	19.37	2/15/19	12.34	21.29	2/16/18	17.19	18.05
2/7/20	11.58	19.40	2/8/19	12.31	20.62	2/9/18	16.46	17.53
1/31/20	11.13	18.61	2/1/19	14.28	22.24	2/2/18	17.84	18.65
1/24/20	11.50	19.27	1/25/19	13.93	21.93	1/26/18	18.75	18.38
1/17/20	11.80	19.80	1/18/19	14.01	21.33	1/19/18	18.41	18.47
1/10/20	12.16	20.87	1/11/19	13.47	20.31	1/12/18	18.12	18.02
1/3/20	12.40	21.32	1/4/19	12.39	18.91	1/5/18	17.04	18.11
12/27/19	12.71	21.82	12/28/18	12.19	18.26	12/29/17	14.42	16.96
12/20/19	12.95	22.26	12/21/18	12.42	18.60	12/22/17	14.65	17.10
12/13/19	12.66	21.89	12/14/18	13.16	18.24	12/15/17	14.24	17.20
12/6/19	12.58	21.51	12/7/18	13.08	17.92	12/8/17	13.77	16.91
11/29/19	12.73	21.92	11/30/18	13.85	19.40	12/1/17	13.42	16.90
11/22/19	12.69	22.55	11/23/18	13.39	19.30	11/24/17	14.07	18.12
11/15/19	13.78	23.79	11/16/18	13.65	19.82	11/17/17	13.99	18.61
11/8/19	13.87	24.12	11/9/18	13.55	20.68	11/10/17	14.06	18.92
11/1/19	13.28	23.36	11/2/18	13.42	21.06	11/3/17	14.85	20.61
10/25/19	11.22	24.84	10/26/18	13.39	20.57	10/27/17	14.01	20.25
10/18/19	11.23	23.66	10/19/18	12.75	20.16	10/20/17	13.48	20.21
10/11/19	11.26	23.03	10/12/18	13.27	21.15	10/13/17	14.28	20.27
10/4/19	10.66	21.62	10/5/18	14.37	21.91	10/6/17	14.21	20.71
9/27/19	11.25	23.00	9/28/18	14.42	23.23			
9/20/19	11.69	24.02	9/21/18	14.77	24.57			

Source: Bloomberg 2023c

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Case A: The Stellantis Merger - FCA's Masterpiece?

Teaching Note

1. Synopsis

On December 18, 2019, Fiat Chrysler Automobiles (FCA) and Peugeot S.A. (PSA), the world's eighth and ninth largest automakers by number of vehicles sold, announced their intention to merge as part of a merger of equals valued at approximately \$52 bn. The NewCo, which will later be named "Stellantis", would become the fourth largest automaker in the world with annual sales of €168 bn. To achieve the 50/50 ownership structure, adjustments will be made to both FCA and PSA shareholders. However, PSA will receive the majority of the board and PSA CEO Carlos Tavares will become CEO of Stellantis. In return, John Elkann, CEO of Exor, FCA's largest shareholder, will become chairman of Stellantis. FCA CEO Michael Manley will not receive a board seat. This case study analyzes the two initial situations of FCA and PSA and also includes the merger talks of FCA with Renault and the initial deal terms regarding power distribution and strategic implications.

2. Positioning

This case is used in a module for Mergers & Acquisition, an advanced finance course for Master's students. In preparation for the case, it helps if students have a good understanding of general reasons why mergers occur and valuation concepts. Students should also be familiar with the different stakeholders of a company. The case is designed to be taught in a standard 80-minute class.

3. Pedagogical Objectives

The case has four pedagogical objectives:

1. The case provides the opportunity to learn and discuss the reasons why mergers of equals occur and what the advantages and disadvantages are.
2. Students should learn how to carry out a strategic analysis of companies and how to assess whether companies fit together strategically.
3. The specifics of valuation in a merger of equals can be learned by conducting a DCF valuation of the two companies. In addition, students should learn the limitations of multiple valuations.
4. By analyzing the question of whether both companies actually have equal influence in this merger of equals, students should be sensitized to the challenges of this merger concept and learn that it is difficult to achieve an equal power distribution by discussing post-merger organization and corporate governance.

4. Substantive Analysis

The analysis of the case can be broken down into three parts. First, the merger is evaluated from FCA's strategic perspective. For this, students must analyze the current challenges of FCA and discuss the principle of a merger of equals. The next part of the class focuses on the valuation of both companies considering synergies and adjustment measures to assess whether one of the two companies is overpaying. In the third part, students should discuss whether the power of the two companies in the NewCo will indeed be equally distributed. The class should end with the instructor asking the students if the merger of equals with PSA made sense for FCA.

4.1 Analysis of the Strategic Implications behind the Merger

Begin the discussion by asking students what the general reasons are for pursuing a merger of equals and which challenges it entails. This question will lead to a discussion about the rationale for merger of equals and thus provide an important basis of understanding for further analysis. A merger of equals is a very rare phenomenon among mergers (Alluru and Thomas 2016). However, there are still reasons that favor such a merger. As both companies merge as equals, neither of them must use debt financing to cover the merger. This enables companies who would not have been able to finance a takeover to pursue the merger (Crofton 2023).

Probably the greatest advantage of a merger of equals, however, involves psychological benefits. A takeover can lead to concerns and dissatisfaction among the target's workforce. This leads to negative synergies by lowering work motivation. In a merger of equals, concerns, and dissatisfactions are usually lower because both are acting as equal partners. In addition, a merger of equals helps to convince anxious shareholders of the benefits of the merger, especially those of the "weaker" partner, as it gives shareholders the feeling of being equal and not losing influence. (Alluru and Thomas 2016)

However, in a merger of equals, the major challenge is to unite the two companies. Emotions tend to run high, perceptions of fairness and unfairness are strongly related to identification with the former organization, and the idea of "equality" can backfire, as integration can never be equal in all aspects. (Alluru and Thomas 2016)

In the past, the merger of equals was often used for purely psychological reasons, while in truth one received more influence than the other. A prominent example of this is the last major merger in the automotive industry between Daimler and Chrysler. Former Chrysler CEO Jürgen Schrempp claimed that equality was just a word to make the deal appealing to Chrysler. The idea was a takeover by Daimler from the very beginning. This merger of equals ultimately failed

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years later, especially since Daimler was the dominant force and wanted to impose its culture. (Alluru and Thomas 2016)

After finding out what the common reasons and challenges of a merger of equals are, steer the discussion to FCA: What was FCA's situation before the merger? What were its weaknesses? Before analyzing FCA's challenges in more depth, it is recommended to gather key facts about FCA together and write them down on the board. This will facilitate subsequent analysis for students. An example board plan is given in Exhibit TN-A1. This board plan serves as a basic structure and can be adapted depending on the class discussion.

Consolidating this information should lead to the conclusion that FCA is very dependent on the North American market, has little market share in Fiat's home market Europe, and is also an irrelevant player in the Asian market. Moreover, FCA lags in EV development and thus has a very low market share in the rising EV market.

Students should identify that it would be beneficial for FCA to find a partner with a strong presence outside North America to achieve geographical diversification, as FCA's high dependence on one stagnating market poses risks due to potential market volatility or regulatory changes among others. In contrast, geographical diversification can also be risky and costly if companies pursue it on their own. This is due to geopolitical risks and challenges in navigating varied regulatory environments, adapting to diverse cultural and consumer preferences, and operational expenses for having a presence in multiple regions. Moreover, there is a financial risk of operating in foreign currencies. However, if FCA merges with another company present in new markets, the majority of these factors would not be relevant anymore, as the company has already adapted to these markets. (Zwilling 2016)

In addition, merging with an automaker with a strong focus on EVs could be fortunate, as it would help them to establish themselves in the EV market. Additionally, this would help FCA meet EU regulations by combining EV technologies.

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Now that the current situation of FCA has been examined, lead the discussion to the question of why FCA sought a merger of equals. Mainly due to declining market share and large electrification deficits, FCA is too weak to execute a takeover that would help the company solve its current problems. Moreover, the founding family Agnelli, through Exor, is the largest shareholder in FCA with 44% of the voting rights and has a strong personal interest in maintaining influence in FCA due to the family history. Therefore, a merger of equals is the only way left for FCA to position itself stronger for the future.

Now that FCA's reasons for a merger of equals have been discussed, the discussion will turn to whether PSA is a sensible partner for FCA from a strategic perspective. To do this, it is useful to first gather the relevant information on PSA and add it on the whiteboard so that students can compare the two companies briefly (Board Plan Exhibit TN-A1).

PSA generates a large part of its sales in Europe, where it also has the second-highest market share in Europe after Volkswagen (Exhibit A2). A NewCo resulting of PSA and FCA would therefore balance FCA's high US market share with PSA's high European market share, which reduces dependences for both companies. The two companies also complement each other very well in the portfolio. Both companies focus on passenger cars and offer equivalent products, which could lead to tremendous cost savings. Some students might argue that the comparable brands of FCA and PSA could lead to cannibalization. However, cannibalization already exists, simply because there are several competing brands in the same car category. This cannibalization will not be increased or decreased by the merger, as both companies agreed to keep all brands separately. Thus, the offer for the customers remains unchanged. Nonetheless, internal competition can lead to conflicts, as employees and executives often have a sense of belonging to their original brands. In addition, profitability is severely impaired as the NewCo has to bear the respective overhead costs for each brand, which could be bundled if you combine competing brands into one brand.

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PSA is also lagging in electric mobility but is further ahead than FCA. A joint EV strategy could solve FCA's EU regulation problems and the NewCo would particularly benefit from the combined research & development budget. In addition, PSA is a European company with a European management, which mitigates the risk of a culture clash. Cultural alignment is one of many critical success factors in any value-creating transaction since it facilitates the integration of both companies and reduces the risk of failure (Fernandes 2019).

Moreover, the market capitalization of PSA is as high as that of FCA, so hardly any adjustments would be necessary here to enter a merger of equals as equivalent companies. In addition, PSA has already gained experience in integrating other companies into its processes, having successfully integrated Opel and Vauxhall years ago.

4.2 Valuation of FCA and PSA

After analyzing whether PSA was strategically a sensible partner to merge with FCA, lead the discussion to the next section on deal structure and the value of FCA and PSA to answer the question of whether one firm is overpaying.

Before estimating the value of both companies, it is helpful to first examine the structure of this merger of equals. Two things are formally required in a merger of equals. First, a 50/50 ownership structure must be created through an exchange ratio of old shares to new shares. Second, measures must be taken to compensate for any differences in value, such as dividend payments. For a better understanding, it is helpful to write down the deal structure on the board. An example board plan is given in Exhibit TN-A2.

As of September 14, 2020, FCA had 1,574.15 m shares outstanding with a market capitalization of €15,611 m, while PSA had 903.65 m with a market capitalization of €14,541 m. As the FCA share will be converted into the Stellantis share, PSA shareholders will therefore receive 1.742 NewCo shares for each of their PSA shares, while FCA shareholders will receive one NewCo

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share for each of their FCA shares. Based on market capitalizations, the value of PSA is 6.8% slightly lower than that of FCA. To compensate for the valuation differences, FCA shareholders are to receive a special dividend of €2.9 bn. PSA, on the other hand, is contributing its shares in Faurecia, 7% of which are to be sold at €308 m. The proceeds from the share sale are to be distributed equally to FCA and PSA shareholders after closing. However, it should be noted that the valuation adjustments are not based on market capitalization, but on a comprehensive company valuation. In this case, the students are asked to determine the value of the two companies based on the discounted cash flow method and a multiple valuation to assess whether one company is overpaying.

4.2.1 Discounted Cash-Flow Method

Based on the free cash flows given in Exhibit A10, students can use the DCF valuation method to determine the enterprise values of both companies. Therefore, students must determine an appropriate discount rate for both companies. The WACC approach is the most used valuation method (Dreher and Ernst 2022). The WACC consists of three main components: the cost of equity, the after-tax cost of debt, and the target capital structure of the company. Accurately estimating WACC is difficult because there is no way to directly measure an investor's opportunity cost, especially the cost of equity (Koller, Goedhart, and Wessels 2020). Therefore, students will calculate various discount rates, all of which may be appropriate.

From Exhibit A10, the cost of debt for both companies can be obtained, as well as the tax rates. The cost of equity is to be calculated by the students. There are several competing models for estimating the equity risk premium (De Luca 2018). The best-known of these is the equilibrium Capital Asset Pricing Model (CAPM) (De Luca 2018). The expected return on equity and thus the cost of equity is equal to the risk-free rate plus the equity risk premium, which is equal to the coefficient beta (β), multiplied by the difference between the expected return on the equity

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market, as measured by the market portfolio, and the return (certain) on risk-free assets, as measured by the risk-free rate (De Luca 2018). While the expected return on the stock market is given in Exhibit A10, students are asked to determine a risk-free rate and beta themselves.

Suitable risk-free rates are the yields of triple-A-rated government bonds with a maturity of ten or 30 years. The only European government bonds with this rating are Germany, Luxembourg, and the Netherlands. The risk-free rate used for the WACC calculation in Exhibit TN-A5 is based on the returns of the 30-year German government bond. Some students may think negative risk-free rates are not appropriate and hence, use a 0% risk-free rate instead. However, the CAPM does allow negative risk-free rates. Some students may also use the real risk-free rate, i.e. an inflation-adjusted risk-free rate. However, since the cost of equity is expressed in nominal terms, meaning it takes into account expected inflation, it would only be consistent to use a nominal risk-free rate.

For the determination of the beta, the historical stock prices of both companies are given in Exhibit A11. Students are asked to decide on their own which stock index is best suited as a proxy for the market portfolio. For the beta calculations in Exhibit TN-A5, the Stoxx Europe 600 Index (SXXP) is used because it includes the largest 600 listed European companies, and both FCA and PSA are European companies. However, it is important to note that other stock indices could also be appropriate to determine the stock betas.

According to the calculations in Exhibit TN-A7 and Exhibit TN-A8, FCA has a stand-alone enterprise value of €15,254 m and a stand-alone equity value of €17,789 m. PSA, on the other hand, has a stand-alone enterprise value of €13,653 m and a stand-alone equity value of €18,743 m.

The synergies are exclusively cost synergies. As these are easier to achieve and are most certain, a lower discount rate should also be applied to these synergies due to the lower risk (Gaughan 2018, 103). A rate close to the risk-free rate or cost of debt is appropriate (Gaughan 2018, 103).

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The calculation in Exhibit TN-A6 uses the latter. The synergies will be achieved in full for the first time in 2024. In the calculation in Exhibit TN-A6, it is assumed that synergies will increase linearly until then. These assumptions result in a present value of synergies of €33,403 m for FCA and €33,469 m for PSA. After adding these present values of the synergies and considering the adjustment measures under the final merger terms, the equity value for FCA is €49,191 m and for PSA €51,905 m (Exhibit TN-A7 and Exhibit TN-A8).

As the WACC and the terminal growth rate have the greatest influence on the equity value, it is advisable to carry out a scenario analysis in order to take various possible developments into account. In Exhibit TN-A9, FCA's equity value including synergies and adjustment measures is calculated at a WACC of between 5.19% and 8.19%, and PSA's value at a WACC of between 6.30% and 9.30%. At the same time, the terminal growth rate varied between 0.75% and 1.05% for both companies. This results in an equity value including synergies and adjustment measures of between €45.092 million and €56.568 m for FCA and a value between €48.914 m and €56.813 million for PSA.

Based on the baseline scenario, PSA will enter the NewCo with a 5.5% higher value, whereas it was stand-alone valued at 6.8% lower than FCA on the market. However, students should conclude that the two equity values after consideration of the synergies and the adjustment measures are roughly equal. Such small valuation differences do not indicate that PSA is overpaying, as the DCF valuation only allows an estimate of the equity value. Overpayment can only be concluded if the differences are larger. Hence, it seems neither FCA nor PSA is overpaying.

4.2.2 Multiple Valuation

In addition, students should perform a multiple valuation to better classify the equity values calculated in the DCF valuation. According to the multiple valuation in Exhibit TN-A10, FCA

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has a stand-alone equity value between €20,814 m and €32,253 m. PSA, on the other hand, has a stand-alone equity value between €26,110 m and €58,217 m. Accordingly, the stand-alone equity values from the DCF valuation (FCA: €17,789 m; PSA: €18,743 m) are both below the lower range from the multiple valuation.

Ask the students for reasons why the equity values from the multiple valuations are so high. The multiple valuation is based on the latest available data, June 30, 2020, which is during the COVID-19 pandemic. The automotive industry is strongly affected by the pandemic. Supply bottlenecks and falling sales figures have had a negative impact on the income statements. In contrast, since April 2020, equity markets have been recovering rapidly after plunging precipitously in February 2020 (Exhibit TN-A4). These distortions lead to higher enterprise values and correspondingly to higher equity values in the multiple valuations. If students do not come up with this limitation on their own, it is recommended to refer to Exhibit A4.

In addition, the new trends of connectivity, shared mobility, autonomous driving, and electrification ("CASE") pose major challenges for the automotive industry. The stock market considers how well an automaker masters this transformation process. At present, however, these future trends do not yet have a meaningful impact on the income statement. This also leads to distortions within the company valuation through trading multiples.

Students should conclude that trading multiples are not appropriate at this time to adequately determine enterprise values or equity values for FCA and PSA due to high distortions. For this reason, it makes more sense to focus on forward-looking valuation methods such as DCF.

4.3 Analysis of Power Distribution

Since previous discussions have already addressed the question of whether this merger makes strategic sense for FCA and whether one company is overpaying, the question arises as to

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whether power is equally distributed between both companies. For this purpose, the distribution of board seats and the filling of key positions at the NewCo should be considered.

According to the final merger terms, PSA will have the majority of the board and Carlos Tavares remains CEO of the NewCo. FCA CEO Michael Manley, on the other hand, will not get a board seat at all. Exor CEO and FCA chairman John Elkann will be the chairman at the NewCo. The question can be raised here as to why PSA is given such an advantage on the board of directors, while FCA can only occupy the position of chairman. What measures will ensure that it is still a merger of equals and that FCA is not disadvantaged? The students should stimulate the discussion here and learn about the bodies of companies and their tasks. This also helps to analyze how equal FCA and PSA really are in this merger.

The students should work out that Carlos Tavares has already proven himself during the integration of Opel and Vauxhall into PSA and is considered an experienced cost saver. Therefore, he has a clear advantage over Michael Manley for the NewCo CEO position, as Manley has been CEO of FCA for a short time and only because of the death of former CEO Sergio Marchionne. To balance the important position of the CEO, it is very fitting for FCA to make its chair John Elkann the NewCo chairman. For Elkann and FCA, this is the desired solution, as it allows them to continue to exert influence while the operational fortunes of the NewCo will be controlled by the experienced Tavares.

Now the discussion should be directed to the board seats - why will PSA get the majority here? To answer this question, it should be considered how much negotiating power both entered the talks with. Prior to the merger talks with PSA, FCA negotiated with Renault, but these failed after a short time. The small number of potential partners for a merger of equals therefore significantly weakened FCA's negotiating position. PSA was able to take advantage of this and secure a majority on the board.

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As for whether both companies will get equal influence in NewCo, there are indications that PSA will get more influence than FCA because of its majority on the board. Either way, there is no clear answer to this question. Students may have different views on the distribution of power. The important thing is that they give adequate arguments for their answer. The instructor could end the discussion on this topic by asking students to vote by raising their hands on whether they think this is truly a merger of equals or not, to get a sense of the students' assessments.

4.4 Conclusion

After the discussion, the instructor should end the session by asking whether the merger with PSA makes sense for FCA. From a strategic point of view, the deal makes sense for FCA, as PSA, after a thorough evaluation of different criteria, is a suitable partner with whom FCA can enter the merger on an equal footing, and which enables geographical diversification and helps to catch up in the EV market. The DCF valuation shows that the equity values of both companies are approximately the same, considering the adjustment measures and synergies. Consequently, the merger is fair in terms of valuation. It seems that neither FCA nor PSA is overpaying. Students will probably be undecided as to whether this is truly a merger of equals, especially given the clear majority on the board of directors for PSA.

All in all, after the students have processed and consolidated all the results from the various questions throughout the case, they should be able to use their acquired knowledge to assess whether FCA has reached a sensible deal here.

5. Suggested Assignment Questions

1. Was the merger sensible for FCA from a strategic perspective?
 - a. Search for arguments as to why FCA sought a merger of equals.
 - b. Determine the strategic fit of FCA and PSA.
2. Is one of the two companies overpaying?
 - a. Determine how much FCA and PSA are worth using the DCF valuation method, taking synergies into account.
 - b. In addition, perform a multiple valuation and compare the values with those from the DCF valuation.
3. Do both companies receive an equal power distribution?

6. Suggested Teaching Plan

25 minutes	1. Introduction: Was the merger sensible for FCA from a strategic perspective? What the reasons are for doing a merger of equals? What was FCA's situation before the merger? Why FCA sought a merger of equals? Is PSA strategically a sensible partner for FCA?
35 minutes	2. How much are FCA and PSA worth according to DCF and trading multiple valuation after considering adjustment measures and synergies? Is one company overpaying? What are the limitations of this multiple valuation?
15 minutes	3. Was it really a merger of equals?
5 minutes	4. Conclusion: Was the merger with PSA sensible for FCA?

Exhibit TN-A1: Board Plan Company Analysis

	Fiat Chrysler Automobiles	Peugeot S.A.¹⁾
Headquarters	Netherlands	France
CEO	Michael Manley (former CEO Marchionne died unexpectedly in 2018)	Carlos Tavares (highly experienced turnaround boss)
Chairman	John Elkann	
MarketCap	€15,611.7 m	€14,540.6 m
Vehicles sold	4.8 m (8 th largest automaker)	4.1 m (9 th largest automaker)
Revenues	€108.2 bn (7 th largest automaker)	€74.7 bn (9 th largest automaker)
Revenue share / market share per region		
Europe	26.1% / 6.0% ↘	86.1% / 16.6% ↗
China	2.1% / 0.4% ↗	4.8% / 0.6% ↘
North America	58.0% / 12.6% →	0.0% / 0.0% →
Other	13.8% / 2.8% ↗	9.0% / 1.1% ↘
Gross margin	13.9%	20.9%
Portfolio	Mainstream: 7 brands Premium: 1 brand Luxury: 1 brand	Mainstream: 4 brands Premium: 1 brand
EV technology	Low market share, barely advanced in development	Low market share, far advanced in development
Important shareholders	Exor (Agnelli Family), 28.5%, 44.4% of voting rights	Peugeot Family, 14.0% French government, 14.0%

All information is as of the end of 2019

¹⁾ Peugeot S.A. will be added later in the lesson after FCA

Exhibit TN-A2: Board Plan Deal Structure

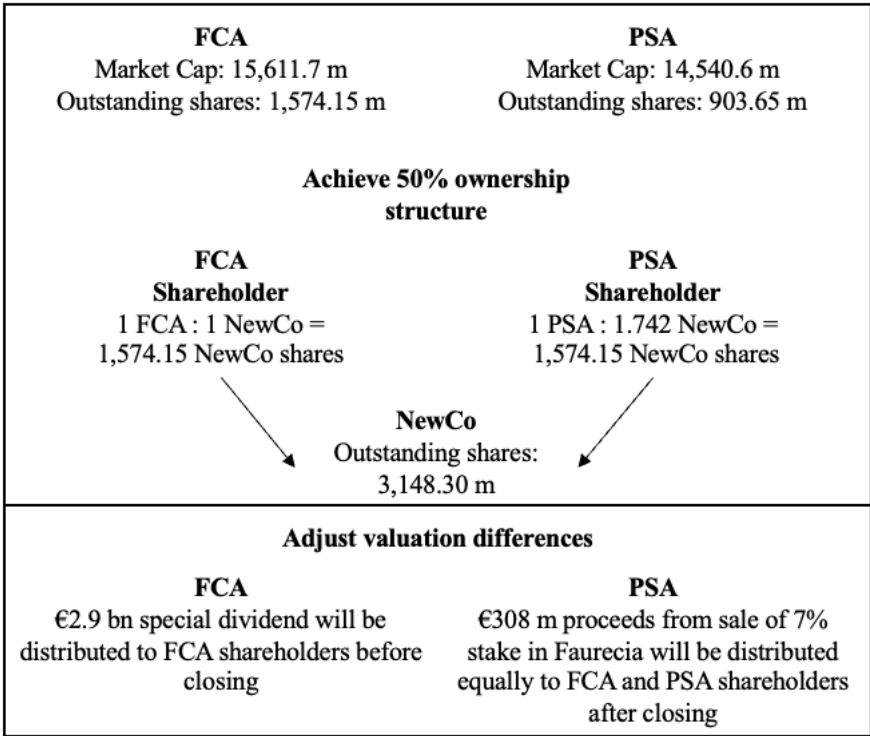


Exhibit TN-A3: Board Plan Corporate Governance Structure

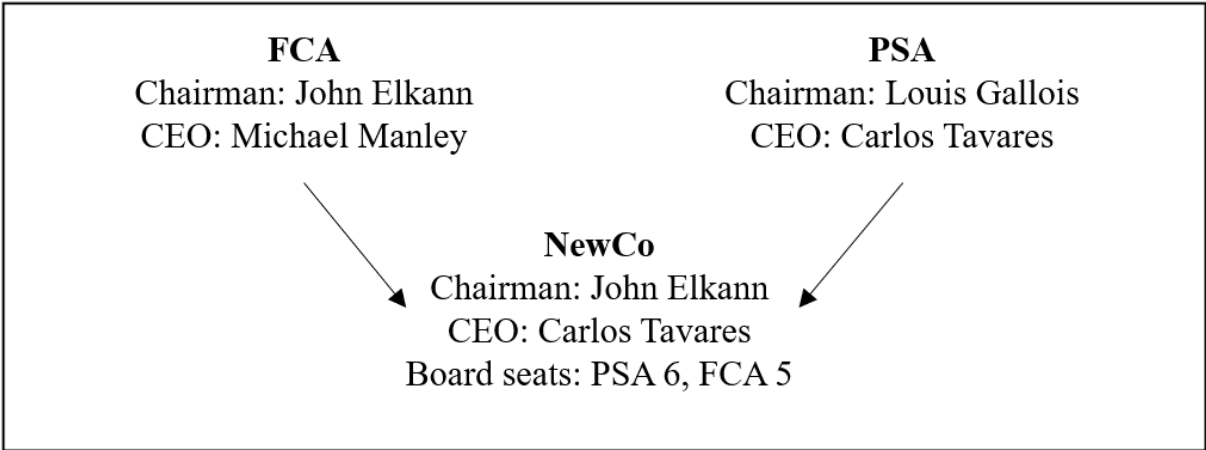
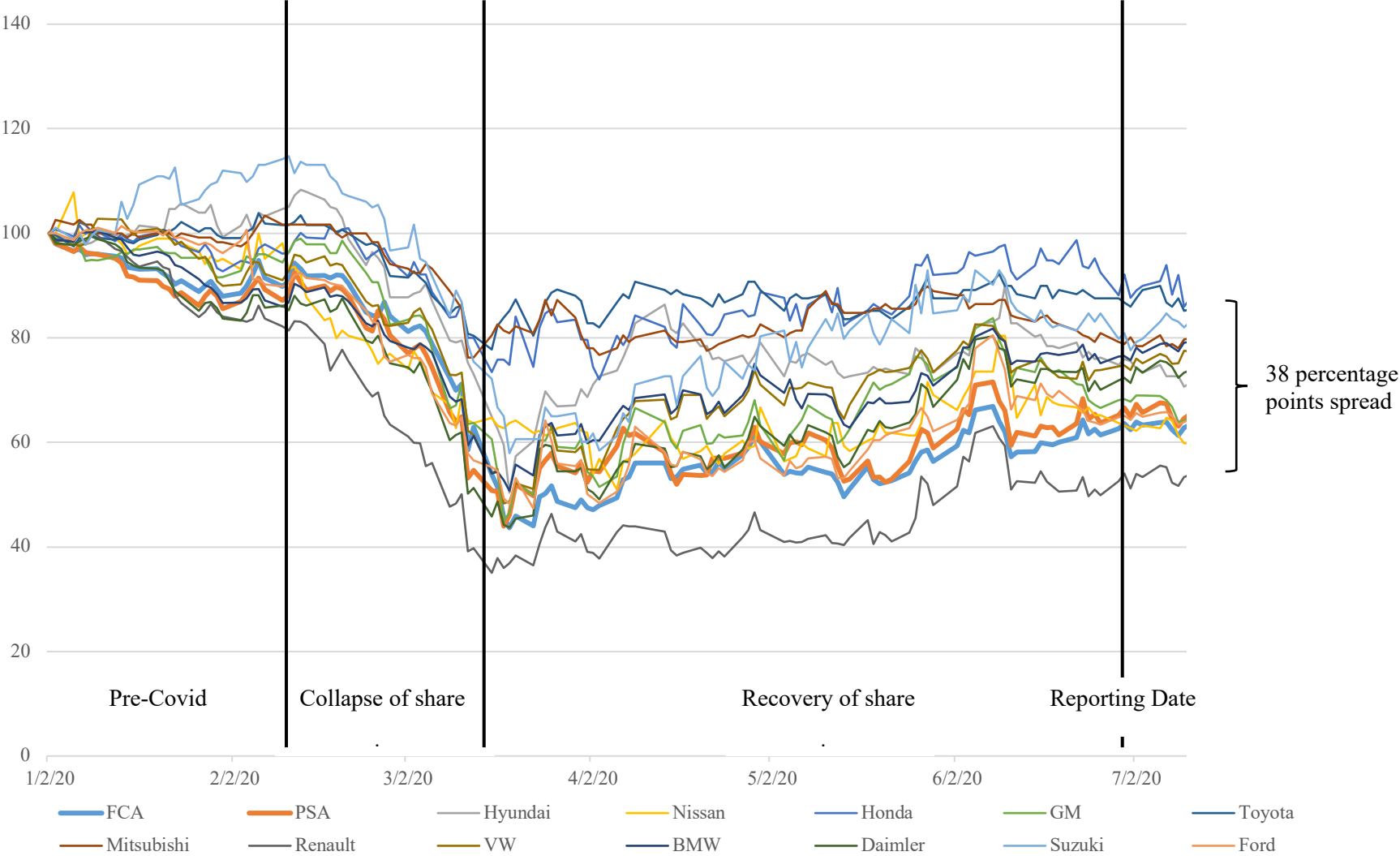


Exhibit TN-A4: Share Price Development of the Largest Automaker (Indexed, base = 100)



Source: Own representation based on data from Bloomberg 2023

Exhibit TN-A5: WACC Calculation

Beta FCA: 1.43

Beta PSA: 1.45

Risk-free rate: -0.078% (30 years German government bond yield)

FCA	Weight	Cost	W x C
Debt	49.5%	1.03%	0.51%
Equity	50.5%	12.24%	6.18%
WACC			6.69%

PSA	Weight	Cost	W x C
Debt	40.6%	1.01%	0.41%
Equity	59.4%	12.44%	7.39%
WACC			7.80%

Exhibit TN-A6: Present Value of Synergies

Synergies FCA in €m	2020	2021F	2022F	2023F	2024F	2025F	TV
Cost Savings (after tax)		263	525	788	1,050	1,050	
Savings in Capital Expenditures		250	500	750	1,000	1,000	
Implementation Costs (after tax)		-1,400					
Free Cash Flows		-888	1,025	1,538	2,050	2,050	30,632
Discount Factor ¹⁾		0.97	0.96	0.94	0.93	0.92	0.92
Present Value		-862	981	1,450	1,905	1,877	28,052
Net Present Value	33,403						

Synergies PSA in €m	2020	2021F	2022F	2023F	2024F	2025F	TV
Cost Savings (after tax)		263	525	788	1,050	1,050	
Savings in Capital Expenditures		250	500	750	1,000	1,000	
Implementation Costs (after tax)		-1,400					
Free Cash Flows		-888	1,025	1,538	2,050	2,050	30,632
Discount Factor ¹⁾		0.97	0.96	0.94	0.93	0.92	0.92
Present Value		-862	982	1,452	1,908	1,881	28,109
Net Present Value	33,469						

¹⁾ The cost of debt was used as the discount rate

Source: Stellantis 2020; Case writers' assumption

Exhibit TN-A7: DCF-Valuation FCA

WACC	6.69%
Terminal Growth	0.90%

in €m	2019	1 2020F	2 2021F	3 2022F	4 2023F	5 2024F	6 2025F	6 TV
Free Cash Flows		-3,368	2,146	-1,071	2,192	1,827	1,153	20,078
Discount Factor		0.94	0.88	0.82	0.77	0.72	0.68	0.68
Present Value		-3,157	1,885	-882	1,692	1,322	781	13,612
Enterprise Value (Stand-alone)								15,254
Enterprise Value (with Synergies)								48,656
Cash & Equivalents	15,591							
Minority Interest	138							
Total Debt	12,918							
Equity Value (Stand-alone)								17,789
Equity Value (with Synergies)								51,191
Special dividend								2,000
Equity Value (with synergies, after adjustment measures)								49,191

Exhibit TN-A8: DCF-Valuation PSA

WACC	7.80%
Terminal Growth	0.90%

in €m	2019	1 2020F	2 2021F	3 2022F	4 2023F	5 2024F	6 2025F	6 TV
Free Cash Flows		-176	426	1,321	296	634	1,179	17,246
Discount Factor		0.93	0.86	0.80	0.74	0.69	0.64	0.64
Present Value		-164	366	1,054	219	436	751	10,990
Enterprise Value (Stand-alone)								13,653
Enterprise Value (with Synergies)								47,123
Cash & Equivalents	19,232							
Minority Interest	2,727							
Total Debt	11,415							
Equity Value (Stand-alone)								18,743
Equity Value (with Synergies)								52,213
Faurecia shares distributed post-closing to all Stellantis shareholders								308
Equity Value (with synergies, after adjustment measures)								51,905

Exhibit TN-A9: Scenario Analysis

Scenario Analysis: Equity Value with Synergies and after Adjustment Measures FCA
in €m

		Cost of Capital						
		5.19%	5.69%	6.19%	6.69%	7.19%	7.69%	8.19%
Terminal Growth	1.05%	56,568	53,732	51,450	49,574	48,005	46,674	45,531
	1.00%	56,310	53,532	51,290	49,444	47,898	46,585	45,455
	0.95%	56,059	53,335	51,133	49,317	47,793	46,496	45,380
	0.90%	55,813	53,143	50,980	49,191	47,689	46,410	45,307
	0.85%	55,573	52,955	50,829	49,068	47,587	46,324	45,234
	0.80%	55,338	52,770	50,681	48,947	47,487	46,240	45,163
	0.75%	55,109	52,590	50,535	48,828	47,388	46,156	45,092

Scenario Analysis: Equity Value with Synergies and after Adjustment Measures PSA
in €m

		Cost of Capital						
		6.30%	6.80%	7.30%	7.80%	8.30%	8.80%	9.30%
Terminal Growth	1.05%	56,813	54,990	53,463	52,166	51,051	50,083	49,236
	1.00%	56,657	54,863	53,357	52,077	50,976	50,019	49,181
	0.95%	56,504	54,738	53,254	51,990	50,902	49,956	49,126
	0.90%	56,354	54,615	53,152	51,905	50,830	49,894	49,072
	0.85%	56,206	54,494	53,051	51,820	50,758	49,832	49,019
	0.80%	56,061	54,375	52,952	51,737	50,687	49,771	48,966
	0.75%	55,918	54,258	52,855	51,655	50,617	49,711	48,914

Exhibit TN-A10: Trading Multiples

in €m	EV¹⁾	Sales²⁾	EBITDA²⁾	EBIT²⁾	EV/Sales	EV/EBITDA	EV/EBIT
Fiat Chrysler		89,239	6,339	1,090			
Peugeot		74,731	8,056	3,168			
Volkswagen	70,719	223,569	29,662	4,217	0.32	2.38	16.77
Toyota	288,290	223,758	27,356	13,993	1.29	10.54	20.60
Renault	5,961	55,537	5,914	2,105	0.11	1.01	2.83
Nissan	13,816	72,622	5,341	(1,640)	0.19	2.59	
Mitsubishi	4,045	16,428	256	(372)	0.25	15.79	
Daimler	12,010	157,804	10,422	1,939	0.08	1.15	6.19
BMW	22,821	99,258	16,257	5,363	0.23	1.40	4.26
General Motors	40,669	104,731	13,145	1,079	0.39	3.09	37.69
Hyundai	65,686	77,177	5,505	2,268	0.85	11.93	28.96
Ford	21,753	117,946	3,080	(4,554)	0.18	7.06	
Honda	82,867	109,248	7,921	2,238	0.76	10.46	37.03
Suzuki	16,244	25,150	2,586	1,286	0.65	6.28	12.63
Median					0.28	4.69	16.77

¹⁾ as of June 30, 2020

²⁾ July 1, 2019 - June 30, 2020

Group Part | Exhibits

EV/Sales Multiple	FCA	PSA
Enterprise Value	25,101	21,020
Cash & Equivalents	15,591	19,232
Minority Interest	138	2,727
Total Debt	12,918	11,415
Equity Value	27,636	26,110

EV/EBITDA	FCA	PSA
Enterprise Value	29,718	37,767
Cash & Equivalents	15,591	19,232
Minority Interest	138	2,727
Total Debt	12,918	11,415
Equity Value	32,253	42,857

EV/EBIT	FCA	PSA
Enterprise Value	18,279	53,127
Cash & Equivalents	15,591	19,232
Minority Interest	138	2,727
Total Debt	12,918	11,415
Equity Value	20,814	58,217

Total Range	FCA	PSA
Equity Value min	20,814	26,110
Equity Value max	32,253	58,217

all values in €m

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Case B: FCA's Merger Chess: Reassessing the Decision for PSA instead of Renault

On May 26, 2019, the Italian-American car manufacturer Fiat Chrysler Automobiles (FCA) caused a stir in the automotive industry when they made an offer to the French automaker Renault for a merger of equals (Stellantis 2019a). If successful, the merger would make them the world's third-largest car manufacturer with 8.7 million vehicles sold in 2018, and would bring annual cost savings of €5 bn per year in the long term (Stellantis 2019a). The alliance between Renault and the Japanese car manufacturers Nissan and Mitsubishi would then even become the world's largest car group with 15.4 million cars sold in 2018 (Stellantis 2019a). But nothing came of it - after ten days, the merger talks collapsed (Stellantis 2019b). Almost one and a half years later, FCA merged with PSA (Stellantis 2021). But would Renault have been the better deal?

The negotiations with Renault started promisingly as both companies recognized the synergies, which were estimated at €5 bn annually and were to be achieved for the first time after 6 years. In particular, the joint purchasing of materials and parts and the sharing of costs for the development of new products and technologies are expected to generate cost savings. However, analysts are skeptical about the level of projected synergies, as FCA has stated that no plants will be closed. (Ewing, Boudette, and Dooley 2019)

The merger talks caused tensions due to uncertainty about the future structure and distribution of power within the existing alliance between Renault, Nissan, and Mitsubishi (Ewing, Boudette, and Dooley 2019). Nissan had long been bothered by the fact that Renault sold significantly fewer cars than them but had significantly more voting rights in the alliance (Ewing, Boudette, and Dooley 2019). If FCA were to merge with Renault, this would likely have shaken up the distribution of power in the three-party alliance even further, with the Japanese fearing a loss of influence (Ewing, Boudette, and Dooley 2019). In addition, the alliance was severely affected by the arrest of Carlos Ghosn for embezzlement in November

2018 (Inagaki, Lewis and Campbell 2018). Ghosn was chairman of Nissan and Mitsubishi as well as chairman and CEO of Renault and the alliance (Inagaki, Lewis and Campbell 2018). His unexpected leaving has thus completely shaken up the management level within the alliance and its member companies (Inagaki, Lewis and Campbell 2018).

Just ten days later, however, the talks collapsed due to several factors, most notably the French government, which is the largest shareholder with a 15% stake in Renault (Kollewe 2019; Stellantis 2019b). Among other things, the government demanded a corporate headquarters in Paris and wanted job cuts in the United States and Italy before employees in France would be affected (Kollewe 2019). The government also insisted on the involvement of Renault's partner Nissan, in which the French state holds a 43% stake (Kollewe 2019). In order to be able to discuss the merger plans with Nissan, the Renault board of directors asked for a postponement at the insistence of the French government representatives (Kollewe 2019). FCA then ended the merger talks. "It has become clear that the political conditions in France do not currently exist for such a combination to proceed successfully", said FCA in a statement (Stellantis 2019b).

Exhibit B1: Daily Share Prices FCA from December 21, 2018 to November 13, 2019 in €

Date	Last Price	Date	Last Price	Date	Last Price	Date	Last Price	Date	Last Price
12/21/18	12.42	2/1/19	14.28	3/8/19	12.14	4/12/19	13.47	5/20/19	11.31
12/27/18	11.80	2/4/19	14.04	3/11/19	12.18	4/15/19	13.57	5/21/19	11.28
12/28/18	12.19	2/5/19	14.36	3/12/19	12.18	4/16/19	13.73	5/22/19	11.20
1/2/19	11.94	2/6/19	14.45	3/13/19	12.04	4/17/19	13.94	5/23/19	10.86
1/3/19	11.78	2/7/19	12.69	3/14/19	11.98	4/18/19	13.94	5/24/19	10.88
1/4/19	12.39	2/8/19	12.31	3/15/19	12.01	4/19/19	13.63	5/27/19	11.78
1/7/19	12.55	2/11/19	12.33	3/18/19	12.01	4/22/19	13.37	5/28/19	11.62
1/8/19	12.71	2/12/19	12.25	3/19/19	12.71	4/23/19	13.32	5/29/19	11.50
1/9/19	13.04	2/13/19	12.42	3/20/19	12.33	4/24/19	13.15	5/30/19	11.39
1/10/19	13.12	2/14/19	12.29	3/21/19	12.43	4/25/19	13.04	5/31/19	10.86
1/11/19	13.47	2/15/19	12.34	3/22/19	12.13	4/26/19	13.15	6/3/19	10.78
1/14/19	13.41	2/18/19	12.33	3/25/19	12.38	4/29/19	13.11	6/4/19	11.20
1/15/19	13.71	2/19/19	12.34	3/26/19	12.43	4/30/19	13.01	6/5/19	11.10
1/16/19	13.82	2/20/19	12.60	3/27/19	12.76	5/2/19	12.83	6/6/19	11.06
1/17/19	13.82	2/21/19	12.43	3/28/19	12.51	5/3/19	13.44	6/7/19	11.07
1/18/19	14.01	2/22/19	12.46	3/29/19	12.58	5/6/19	13.16	6/10/19	11.07
1/21/19	14.04	2/25/19	12.54	4/1/19	12.88	5/7/19	12.97	6/11/19	11.38
1/22/19	13.79	2/26/19	12.49	4/2/19	13.00	5/8/19	12.92	6/12/19	11.24
1/23/19	13.61	2/27/19	12.35	4/3/19	13.04	5/9/19	12.35	6/13/19	11.28
1/24/19	13.84	2/28/19	12.32	4/4/19	13.01	5/10/19	12.28	6/14/19	11.22
1/25/19	13.93	3/1/19	12.27	4/5/19	13.03	5/13/19	12.07	6/17/19	11.35
1/28/19	13.76	3/4/19	12.17	4/8/19	13.28	5/14/19	12.23	6/18/19	11.48
1/29/19	13.76	3/5/19	12.27	4/9/19	13.15	5/15/19	12.42	6/19/19	11.55
1/30/19	13.91	3/6/19	12.74	4/10/19	13.17	5/16/19	12.49	6/20/19	11.68
1/31/19	14.16	3/7/19	12.45	4/11/19	13.19	5/17/19	12.67	6/21/19	11.67

6/24/19	11.67	7/29/19	11.61	9/2/19	11.23	10/7/19	10.74	11/11/19	13.80
6/25/19	11.53	7/30/19	11.07	9/3/19	11.32	10/8/19	10.64	11/12/19	13.94
6/26/19	11.50	7/31/19	11.40	9/4/19	11.59	10/9/19	10.71	11/13/19	13.78
6/27/19	11.58	8/1/19	11.46	9/5/19	11.92	10/10/19	11.02		
6/28/19	11.62	8/2/19	11.11	9/6/19	11.97	10/11/19	11.26		
7/1/19	11.68	8/5/19	11.08	9/9/19	12.08	10/14/19	11.33		
7/2/19	11.69	8/6/19	11.17	9/10/19	11.94	10/15/19	11.47		
7/3/19	11.98	8/7/19	11.10	9/11/19	11.80	10/16/19	11.58		
7/4/19	12.04	8/8/19	11.19	9/12/19	11.91	10/17/19	11.54		
7/5/19	11.97	8/9/19	11.01	9/13/19	11.94	10/18/19	11.23		
7/8/19	11.93	8/12/19	11.01	9/16/19	11.95	10/21/19	11.37		
7/9/19	11.80	8/13/19	11.19	9/17/19	11.75	10/22/19	11.31		
7/10/19	11.78	8/14/19	10.80	9/18/19	11.75	10/23/19	11.24		
7/11/19	11.72	8/15/19	10.54	9/19/19	11.74	10/24/19	11.26		
7/12/19	11.92	8/16/19	10.46	9/20/19	11.69	10/25/19	11.22		
7/15/19	11.95	8/19/19	10.66	9/23/19	11.57	10/28/19	11.30		
7/16/19	11.57	8/20/19	10.61	9/24/19	11.31	10/29/19	11.17		
7/17/19	11.57	8/21/19	10.94	9/25/19	11.18	10/30/19	12.21		
7/18/19	11.57	8/22/19	10.94	9/26/19	11.20	10/31/19	13.24		
7/19/19	11.42	8/23/19	10.72	9/27/19	11.25	11/1/19	13.28		
7/22/19	11.37	8/26/19	10.86	9/30/19	11.24	11/4/19	13.65		
7/23/19	11.73	8/27/19	11.00	10/1/19	11.17	11/5/19	13.70		
7/24/19	11.96	8/28/19	11.03	10/2/19	10.84	11/6/19	13.71		
7/25/19	11.75	8/29/19	11.16	10/3/19	10.71	11/7/19	13.74		
7/26/19	11.68	8/30/19	11.22	10/4/19	10.66	11/8/19	13.87		

¹⁾ Major vehicle recall ²⁾ Rumors emerged that the merger talks with Renault could fail

Source: Bloomberg 2023

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Case B: FCA's Merger Chess: Reassessing the decision for PSA instead of Renault

Teaching Note

1. Synopsis

In May 2019, Fiat Chrysler Automobiles (FCA) attempted to merge equally with Renault, promising to create the world's third-largest car manufacturer. The potential benefits included significant cost savings and the formation of a powerful alliance with Renault, Nissan, and Mitsubishi. However, internal and external challenges, such as the arrest of Carlos Ghosn and tensions within the existing alliance, complicated the negotiations. The talks ultimately collapsed, leading FCA to pursue a merger of equals with PSA.

The case concludes by asking students to critically assess whether Renault would have been a better merger partner. The case combines strategic analysis and empirical evaluation in the context of an event study and provides a comprehensive understanding of FCA's merger decisions.

2. Positioning

This case is used in a module for Mergers & Acquisitions, an advanced finance course for Master's students. In preparation for the case, it helps if students have a good understanding of the concept of event studies including statistical tests.

3. Pedagogical Objectives

The case has two pedagogical objectives:

1. Students should learn how to identify the opportunities and risks of a merger, especially the risks of government ownership in a deal-making process.
2. The case provides the opportunity to understand and apply the methodology of an event study to assess the market's reaction to a merger announcement.

4. Substantive Analysis

The analysis can be divided into two parts. The first step is a qualitative analysis of the opportunities and risks of a deal with Renault and a comparison of the results with PSA. Next, students should analyze in an event study whether the market values Renault higher than PSA as a merger partner for FCA. The class should end with the instructor asking the students whether Renault would have been the better deal than PSA.

4.1 Strategic Analysis

Begin the class by asking the students how Renault is positioned and what its strengths and weaknesses are. First, it is a useful way of collecting key facts about Renault and noting them on the board (Board Plan Exhibit TN-B1). It is recommended to expand the Board Plan TN-A1 from Case A. Please note that the data in Board Plan Exhibit TN-A1 is as of December 31, 2019. As the merger discussions between FCA and Renault took place in May 2019, the latest available year-end data are as of December 31, 2018. As the data and facts about FCA and PSA contained in the Board Plan have changed only slightly between 2018 and 2019, a comparison of the Renault data as of December 31, 2018 with the FCA and PSA data as of December 31, 2019 is nevertheless possible and will not result in any changes in the further analysis.

Once the key facts about Renault have been outlined on the board, it is advisable to ask the students whether Renault would have been a better strategic fit for FCA than PSA, based on the Board Plan and the results of Case A.

Like PSA, Renault generates a significant proportion of its sales in Europe. PSA has there the second largest market share with 15.6%, followed by Renault with 10.5% (Exhibit A2). In the context of a merger, both Renault and PSA could thus balance FCA's significant share in the stagnating US market with a high market presence in Europe, which would reduce the dependencies of both companies. In addition, Renault, like PSA, has a comparable product

portfolio to FCA. All three focus on the production of mainstream passenger cars, which means that both a merger with Renault and a merger with PSA would lead to significant cost savings. Renault has a more advanced position in the development of electric vehicles than PSA and has even been a leader in the electric vehicle market for many years. FCA, which is lagging in electric mobility, could benefit significantly from Renault's expertise and a joint research and development budget. However, both Renault and PSA would be able to help FCA to finally meet the EU emission targets and thus save high costs for compensation certificates. In addition, Renault is as well as PSA a European company with European management, which mitigates the risk of a culture clash. Cultural alignment is one of many critical success factors in any value-creating transaction since it facilitates the integration of both companies and reduces the risk of failure (Fernandes 2019). Furthermore, Renault's market capitalization is as well as PSA's market capitalization very similar to that of FCA. This means that in both cases only a few adjustments would be required to enable a merger of equals, which was a precondition set by John Elkann. FCA could gain additional benefits from Renault's alliance with Nissan and Mitsubishi, particularly through Nissan's advanced level of electric vehicle technology and access to the Asian market. In addition, the alliance would then have as the world's largest automaker group significant market power.

After the qualitative strategic analysis, the students should conclude that PSA and Renault were more or less equivalent merger partners. While Renault is more advanced in the development of e-cars than PSA and, unlike PSA, is a member of a car manufacturer alliance, PSA has more market power in Europe than PSA.

Now turn the discussion to the failure of the merger talks with Renault. Ask the students why FCA broke off the merger talks with Renault and was able to achieve a successful merger with PSA a short time later, even though Renault was more or less an equivalent merger partner for FCA as PSA. To answer this question, the ownership structure and corporate governance of

Renault and PSA must be analyzed. The French government is the largest shareholder of Renault with 15.0% and the largest shareholder of PSA with 14%. Here it makes sense to make a short digression by asking the students to what extent the interests of governments as shareholders differ from those of other investors. While investors are generally interested purely in increasing wealth, national interests such as job security, the protection of a strategically important industry such as defense, or protection from foreign competition play a role for governments. (Gylfason, Herbertsson, and Zoega 2001, 432). As part of the merger talks between FCA and Renault, the French government demanded, among other things, a headquarters in Paris and job security in France, which complicated the merger talks and ultimately caused them to fail. Although the French government was also the largest shareholder in PSA, it wanted to spare itself the embarrassment of once again being the reason for the failure of merger talks and therefore showed itself to be more cooperative in the merger talks between FCA and PSA and reduced its demands. However, without the previous merger talks between FCA and Renault, it can be assumed that the French government would have taken a similarly demanding position in the merger negotiations with PSA as it did in the negotiations with Renault, which would have complicated the talks with PSA.

In addition to government ownership, corporate governance risks also played a decisive role in the failure of the merger negotiations with Renault. In particular, a merger with Renault would have entailed potential risks for the Renault-Nissan-Mitsubishi alliance. Relations within the alliance were already strained as Nissan resented Renault's considerable influence and feared that this would have been further strengthened by a merger with FCA. There was therefore a risk that relations within the alliance would have deteriorated further and, in the worst case, would have led to a collapse of the alliance. Another critical aspect was that both FCA and Renault lost their CEOs just a few months before the merger talks began. The sudden death of FCA CEO Sergio Marchionne and the arrest of Renault CEO Carlos Ghosn for embezzlement

in Japan in 2018 led to a switch to less experienced CEOs. It is questionable whether they would have been able to successfully merge and integrate both companies. In contrast, PSA is led by the experienced Carlos Tavares, who has successfully managed the company for years and has already successfully integrated Opel/Vauxhall into PSA.

In conclusion, Renault and PSA were more or less equal merger partners for FCA and the merger talks with Renault failed due to the French government's shareholding in Renault and additional complexity due to the alliance. In contrast, the French government's stake in PSA posed a comparatively minor challenge, as the government did not want to be the cause of the failure of the merger talks again and therefore adopted a cooperative attitude. In addition, PSA, in contrast to Renault and FCA, is characterized by the leadership of a very experienced CEO, which significantly reduces the risk of failure of a merger. For these reasons, in retrospect, the merger with PSA was a more promising deal than a merger with Renault.

4.2 Event Study

After analyzing whether Renault would have been a better deal than PSA, ask the students to conduct an event study to determine whether the market valued the merger plans with Renault more highly than those with PSA. Since this case study analyzes the merger plans with Renault and PSA from FCA's point of view, this event study will only analyze the impact of the announcements of the two merger talks on FCA's share price. However, you can also ask the students to analyze the impact on the Renault and PSA share prices in order to get a holistic picture of the market reactions (Appendix 1 and 2).

In the first step of the event study, the timing of the event must be defined (Brooks 2019). The merger talks between FCA and Renault were announced on May 26, 2019 (Stellantis 2019a). As this is a Sunday and the markets are closed there, the following trading day should be

selected as the event date, i.e. Monday, May 27, 2019 (Brooks 2019). The announcement of the merger talks with PSA was made on October 30, 2019 (Stellantis 2019b).

In addition to the event date, any effects of the merger announcement on the share price in the period before and after the event date must be analyzed (Gaughan 2018, 126). The period before the event date, known as the anticipation period, can rule out insider trading or reveal reactions to rumors. In the period after the event, the so-called adjustment period, corrections can be made to any reactions on the event day (Brooks 2019). It is common practice to analyze the period ten trading days before and ten trading days after the event day (Brooks 2019). However, the FCA-Renault event study in Exhibit TN-B2 deviates from this. Since FCA's share price fell by 10.67% five trading days before the announcement due to a major vehicle recall, the anticipation period for FCA and Renault is shortened to four trading days before the event date. In addition, rumors about the failure of the merger talks between FCA and Renault have already sparked four trading days after the announcement, causing FCA's share price to fall by 4.7%. In order not to distort the reactions to the announcement of the merger talks, the adjustment period is limited to three trading days after the event.

To separate the influence of the announcement of the merger talks from other influences, abnormal returns must be calculated, which result from the difference between the actual returns and the returns expected without the event (Brooks 2019). There are various ways to determine these (Brooks 2019). In Exhibit TN-B2 and TN-B3, the calculations are carried out using the Comparison Period Mean Adjusted Model, Market Model, and Market Adjusted Model as examples.

The simplest way to determine the abnormal returns is to assume the average return before the anticipation period as a constant expected return (Comparison Period Mean Adjusted Model) (Brooks 2019). Armitage (1995) proposes an estimation period of between 100 and 300 days. The calculations in Exhibit TN-B2 and TN-B3 use the proposed lower limit of 100 days.

In the Market Adjusted Model and the Market Model, the abnormal return is calculated based on the returns of a proxy for the market portfolio (Brooks 2019). Therefore, a broad stock index is suitable as a proxy (Brooks 2019). The calculations in Exhibits TN-B2 and TN-B3 use the STOXX Europe 600 (SXXP) index for this purpose. This index is suitable because it includes the largest 600 listed European companies, and FCA, Renault, and PSA are all European companies. Students might criticize that these three companies are listed in the STOXX Europe 600 Index and therefore any abnormal returns due to the announcement of the merger talks will also affect the returns of the index. As of March 31, 2019, however, FCA, PSA, and Renault each had a weighting of less than 1% in the index (Bloomberg 2023a). This implies that neither company has any significant influence on the index performance. Consequently, the index can be used as an estimate for market returns in this event study. However, other indices may also be appropriate. Students should give adequate reasons for their selection of the index.

The abnormal returns can be calculated as cumulative abnormal returns (CARs) or as buy-and-hold abnormal returns (BHARs) (Brooks 2019). The calculations in Exhibit TN-B2 and TN-B3 result in abnormal returns on the event date_{Renault} for FCA between 8.02% and 8.23% and on event date_{PSA} between 9.24% and 9.32%, which could indicate significant market reactions to both announcements. As the event date is only one trading day in each case, the CAR and BHAR are identical. In the Anticipation Period_{Renault}, FCA achieved CARs of -2.08% to -3.88% and BHARs of -2.07% to -3.85%. In the Anticipation Period_{PSA}, on the other hand, FCA achieved CARs of -2.63% to -3.73% and BHARs of -2.65% to -3.71%. In the adjustment period_{Renault}, FCA achieved CARs of between -0.18% and -3.38% and BHARs of between -0.22% and -3.34%. In the adjustment period_{PSA}, on the other hand, CARs of between 10.74% and 12.54% and BHARs of between 10.88% and 12.91% were achieved.

To test the statistical significance of these results, students should perform a T-test. The null hypothesis of the T-test is that the average abnormal return is zero. The alternative hypothesis

is that the average abnormal return is not equal to zero. According to the calculations in Exhibit TN-B2 and TN-B3, the Market Model, the Market Adjusted Model, and the Comparison Period Mean Adjusted Model for the abnormal returns on both event dates result in a p-value below the significance level of 5%. This means there is statistical evidence that the announcement of the merger talks between FCA and Renault and between FCA and PSA led to abnormal returns at FCA on the days of both announcements. However, the p-values in both anticipation and adjustment windows are greater than the significance level of 5%, meaning that the null hypothesis cannot be rejected here. It can therefore be concluded that there is no statistical evidence that the announcements of the merger talks led to abnormal returns before and after the event dates.

Students might now jump to the conclusion that the market considers the merger with PSA to be more valuable for FCA than one with Renault, as higher relative abnormal returns were achieved when the merger talks with PSA were announced. However, since the market capitalizations prior to the announcements were different, the absolute abnormal return should rather be determined for the comparison. According to calculations in Exhibit TN-B2 and TN-B3, FCA achieved absolute abnormal returns of around €1.4 bn after the announcement of the merger talks with Renault and around €1.6 bn after the announcement of the merger talks with PSA.

The students should summarize that statistically significant abnormal returns were achieved by FCA on the days of the announcement of both merger talks. However, on the day the merger talks with PSA were announced, FCA achieved slightly higher abnormal returns, both in relative and absolute terms, than on the day the merger talks with Renault were announced. The market estimated the added value of the merger with PSA for FCA at around €200 million higher than those of a merger with Renault.

4.3 Conclusion

Following the discussion, the instructor should end the class by asking the students to reflect on whether, given the insights gleaned from this case and case A, they believe Renault would have been the better deal than PSA. Renault and PSA are both advanced in the development of electric drives, but Renault is more advanced than PSA. Therefore, a merger with Renault would be the more effective way for FCA to compensate for its weaknesses in battery technology. Another advantage of Renault is that FCA could additionally benefit from the alliance with Nissan and Mitsubishi, especially due to Nissan's advanced position in electric vehicle technology and access to the Asian market.

However, a merger with Renault would also entail high risks. For one reason, it could have further worsened the relationship between the Renault-Nissan-Mitsubishi alliance. In addition, FCA and Renault both had inexperienced CEOs, making it questionable whether they would have been able to carry out the merger successfully. In contrast, PSA is led by the experienced Carlos Tavares, who has successfully managed the company for years and has already successfully integrated Opel/Vauxhall into PSA.

Even if Renault is further along in the development of electric cars than PSA, a merger with PSA seems more advantageous, as there are high risks of failure in a merger with Renault due to the inexperienced CEOs of FCA and Renault and the already strained Renault-Nissan-Mitsubishi alliance. This assessment is also in line with that of the market.

5. Suggested Assignment Questions

1. Would Renault have been a strategically good partner for FCA?
2. How did the market react to the merger talks with Renault and PSA at FCA? Which merger did the market rate higher for FCA?
 - a. Calculate the market reactions to the FCA share price following the announcements of the merger talks with Renault and PSA in the context of event studies.
 - b. Test the statistical significance of the results assuming a significance level of 5%.
3. Would Renault have been the better deal than PSA?

6. Suggested Teaching Plan

20 minutes	1. Would Renault have been a strategically good partner for FCA? Based on your evaluation of Renault's strengths and weaknesses, why do you think that the deal did not succeed?
30 minutes	2. How did the market react to the merger talks with Renault and PSA? Are the results of the event studies statistically significant? Which merger did the market rate higher for FCA?
10 minutes	3. Conclusion: Would Renault have been the better deal than PSA?

Exhibit TN-B1: Board Plan: Company Comparison

	FCA (Case A)	PSA (Case A)	Renault
Headquarters	Netherlands	France	France
CEO	Michael Manley (former CEO Marchionne died unexpectedly in 2018)	Carlos Tavares (highly experienced turnaround boss)	Thierry Bolloré (former CEO Ghosn arrested in November 2019)
Chairman	John Elkann		
MarketCap	€15,611.7 m	€14,540.6 m	€16,131.6 m
Vehicles sold	4.8 m (8 th largest automaker)	4.1 m (9 th largest automaker)	3.9 m (10 th largest automaker) Alliance: 9.5 m (3 rd largest)
Revenues	€108.2 bn	€74.7 bn	€57.4 bn Alliance: €166.6 bn
Revenue share / market share per region and change to PY			
Europe	26.1% / 6.0% ↘	86.1% / 16.6% ↗	67.6% / 14.2% ↗
China	2.1% / 0.4% ↗	4.8% / 0.6% ↘	0.5% / 0.5% ↗
North America	58.0% / 12.6% ↗	0.0% / 0.0% ↗	0.0% / 0.0% ↗
Other	13.8% / 2.8% ↗	9.1% / 1.1% ↘	31.9% / 4.9% ↗
Gross margin	13.9%	20.9%	20.9%
Portfolio	Mainstream: 7 brands Premium: 1 brand Luxury: 1 brand	Mainstream: 4 brands Premium: 1 brand Luxury: 0 brand	Mainstream: 2 brands Premium: 0 brands Luxury: 1 brand
EV technology	Low market share, barely advanced in development	Low market share, far advanced in development	Moderate market share, advanced technology
Important shareholders	Exor (Agnelli Family), 28.5%, 44.4% of voting rights	French Republic, 14.0% Peugeot Family, 14.0%	French Republic, 15.0% Nissan, 15.0%

The board plan serves as a basic structure and can be adapted depending on the class discussion and can be used to highlight important information during the following discussion on whether Renault fits strategically to FCA.

Exhibit TN-B2: Event Study FCA - Renault Announcement | Reaction FCA

Key Considerations

Event date (Ed)	5/27/19
Anticipation window	4
Adjustment window	3
Estimation window	100
Shares outstanding (in m)	1.574.2

Auxiliary Calculations

Average return	0.01%
Alpha	-0.23%
Beta	2.00

	Comparison Period Mean Adjusted Model	Market- adjusted Model	Market Model
Stdev	2.50%	2.13%	1.98%
Stdev (3 days)	4.32%	3.68%	3.43%
Stdev (4 days)	4.99%	4.25%	3.96%
Stdev (8 days)	7.06%	6.01%	5.61%
Return (CAR)			
Event	8.23%	8.02%	8.04%
<i>Absolut (€ m)</i>	<i>1,409.7</i>	<i>1,374.6</i>	<i>1,377.3</i>
Anticipation	-3.88%	-3.42%	-2.08%
Adjustment	-3.38%	-2.11%	-0.18%
Total	0.97%	2.49%	5.77%
Return (BHAR)			
Event	8.23%	8.02%	8.04%
<i>Absolut (€ m)</i>	<i>1,409.7</i>	<i>1,374.6</i>	<i>1,377.3</i>
Anticipation	-3.85%	-3.38%	-2.07%
Adjustment	-3.34%	-2.11%	-0.22%
Total	0.58%	2.17%	5.57%
t-stat (CAR)			
Event	3.30	3.77	4.06
Anticipation	-0.78	-0.80	-0.53
Adjustment	-0.78	-0.57	-0.05
Total	0.14	0.41	1.03
t-stat (BHAR)			
Event	3.30	3.77	4.06
Anticipation	-0.77	-0.80	-0.52
Adjustment	-0.77	-0.57	-0.06
Total	0.08	0.36	0.99
p-value (CAR)			
Event	0.14%	0.03%	0.01%
Anticipation	43.91%	42.29%	60.03%
Adjustment	43.66%	56.79%	95.82%
Total	89.10%	67.96%	30.55%
p-value (BHAR)			
Event	0.14%	0.03%	0.01%
Anticipation	44.23%	42.82%	60.24%
Adjustment	44.16%	56.87%	94.95%
Total	93.45%	71.88%	32.29%

Source: Calculations based on data from Bloomberg 2023b

Exhibit TN-B3: Event Study FCA - PSA Announcement | Reaction FCA

Key Considerations

Event date (Ed)	10/30/19
Anticipation window	10
Adjustment window	10
Estimation window	100
Shares outstanding (in m)	1,574.2

Auxiliary Calculations

Average return	0.00%
Alpha	-0.06%
Beta	1.17

	Comparison Period Mean Adjusted Model	Market- adjusted Model	Market Model
Stdev	1.88%	1.68%	1.68%
Stdev (10 days)	5.94%	5.31%	5.30%
Stdev (21 days)	8.60%	7.69%	7.68%
Return (CAR)			
Event	9.32%	9.24%	9.29%
<i>Absolut (€ m)</i>	<i>1,638.8</i>	<i>1,624.1</i>	<i>1,632.1</i>
Anticipation	-2.63%	-3.73%	-3.33%
Adjustment	12.54%	10.74%	11.04%
Total	19.23%	16.25%	17.00%
Return (BHAR)			
Event	9.32%	9.24%	9.29%
<i>Absolut (€ m)</i>	<i>1,638.8</i>	<i>1,624.1</i>	<i>1,632.1</i>
Anticipation	-2.65%	-3.71%	-3.32%
Adjustment	12.91%	10.88%	11.20%
Total	20.16%	16.63%	17.50%
t-stat (CAR)			
Event	4.97	5.50	5.54
Anticipation	-0.44	-0.70	-0.63
Adjustment	2.11	2.02	2.08
Total	2.24	2.11	2.21
t-stat (BHAR)			
Event	4.97	5.50	5.54
Anticipation	-0.45	-0.70	-0.63
Adjustment	2.17	2.05	2.11
Total	2.34	2.16	2.28
p-value (CAR)			
Event	0.00%	0.00%	0.00%
Anticipation	65.92%	48.35%	53.19%
Adjustment	3.73%	4.57%	4.00%
Total	2.76%	3.72%	2.92%
p-value (BHAR)			
Event	0.00%	0.00%	0.00%
Anticipation	65.57%	48.58%	53.30%
Adjustment	3.21%	4.30%	3.71%
Total	2.11%	3.30%	2.49%

Source: Calculations based on data from Bloomberg 2023b

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Appendix

Appendix 1: Event Study FCA - Renault Announcement | Reaction Renault

Key Considerations

Event date (Ed)	5/27/19
Anticipation window	4
Adjustment window	3
Estimation window	100
Shares outstanding	295.7

Auxiliary Calculations

Average return	0.07%
Alpha	-0.08%
Beta	1.18

Appendix

	Comparison Period Mean Adjusted Model	Market- adjusted model	Market Model
Stdev	1.99%	1.82%	1.82%
Stdev (3 days)	3.44%	3.15%	3.16%
Stdev (4 days)	3.97%	3.64%	3.64%
Stdev (8 days)	5.62%	5.15%	5.15%
Return (CAR)			
Event	12.03%	11.88%	11.91%
<i>Absolut (€ m)</i>	1,777.6	1,755.3	1,761.0
Anticipation	-1.54%	-0.87%	-0.48%
Adjustment	0.62%	2.05%	2.51%
Total	11.11%	13.06%	13.95%
Return (BHAR)			
Event	12.03%	11.88%	11.91%
<i>Absolut (€ m)</i>	1,777.6	1,755.3	1,761.0
Anticipation	-1.56%	-0.87%	-0.48%
Adjustment	0.62%	2.04%	2.50%
Total	10.96%	13.16%	14.16%
t-stat (CAR)			
Event	6.05	6.52	6.54
Anticipation	-0.39	-0.24	-0.13
Adjustment	0.18	0.65	0.80
Total	1.98	2.54	2.71
t-stat (BHAR)			
Event	6.05	6.52	6.54
Anticipation	-0.39	-0.24	-0.13
Adjustment	0.18	0.65	0.79
Total	1.95	2.56	2.75
p-value (CAR)			
Event	0.00%	0.00%	0.00%
Anticipation	69.96%	81.26%	89.62%
Adjustment	85.66%	51.64%	42.76%
Total	5.08%	1.27%	0.80%
p-value (BHAR)			
Event	0.00%	0.00%	0.00%
Anticipation	69.56%	81.13%	89.47%
Adjustment	85.77%	51.87%	42.94%
Total	5.39%	1.21%	0.71%

Source: Calculations based on Data from Bloomberg 2023b

Appendix

Appendix 2: Event Study FCA - PSA Announcement | Reaction PSA

Key Considerations

Event date (Ed)	10/30/19
Anticipation window	10
Adjustment window	10
Estimation window	100
Shares outstanding	903.6

Auxiliary Calculations

Average return	0.21%
Alpha	0.11%
Beta	1.52

Appendix

	Comparison Period Mean Adjusted Model	Market- adjusted Model	Market Model
Stdev	2.09%	1.76%	1.70%
Stdev (10 days)	6.62%	5.57%	5.36%
Stdev (21 days)	9.59%	8.08%	7.77%
Return (CAR)			
Event	-13.07%	-12.37%	-12.23%
<i>Absolut (€ m)</i>	<i>(3,076.6)</i>	<i>(2,911.9)</i>	<i>(2,879.2)</i>
Anticipation	7.33%	8.11%	6.27%
Adjustment	2.06%	2.24%	0.11%
Total	-3.68%	-2.02%	-5.85%
Return (BHAR)			
Event	-13.07%	-12.37%	-12.23%
<i>Absolut (€ m)</i>	<i>(3,076.6)</i>	<i>(2,911.9)</i>	<i>(2,879.2)</i>
Anticipation	7.42%	8.25%	6.30%
Adjustment	1.94%	2.17%	0.02%
Total	-4.81%	-3.08%	-6.68%
t-stat (CAR)			
Event	-6.24	-7.02	-7.21
Anticipation	1.11	1.45	1.17
Adjustment	0.31	0.40	0.02
Total	-0.38	-0.25	-0.75
t-stat (BHAR)			
Event	-6.24	-7.02	-7.21
Anticipation	1.12	1.48	1.17
Adjustment	0.29	0.39	0.00
Total	-0.50	-0.38	-0.86
p-value (CAR)			
Event	0.00%	0.00%	0.00%
Anticipation	27.08%	14.91%	24.50%
Adjustment	75.58%	68.80%	98.43%
Total	70.24%	80.30%	45.34%
p-value (BHAR)			
Event	0.00%	0.00%	0.00%
Anticipation	26.50%	14.20%	24.31%
Adjustment	77.05%	69.82%	99.63%
Total	61.70%	70.35%	39.23%

Source: Calculations based on Data from Bloomberg 2023b