

Case Preparation Questions

1. Valuation using the P/E ratio:
 - (a) Volkswagen's P/E multiple is 21, while the industry average is 7.58. Mr. Klaus Farra wants to multiply the industry's P/E ratio by Volkswagen's EPS to find the fair valuation of Volkswagen's shares. Is this the right way to proceed? Does this imply that Volkswagen is over-valued, under-valued, or correctly priced in December 2008?
 - (b) What should be the comparable firm set for the P/E analysis? Think about the factors affecting your choice.
 - (c) What is the value of Volkswagen stock using P/E multiples valuation?
2. Valuation using the EV/EBITDA ratio:
 - (a) What are the right companies for the comparable set in the EV/EBITDA analysis? What value do you obtain for the multiple? Is this different than the one you used in the P/E analysis? (Hint: Do not forget to adjust for debt when computing share price.)
 - (b) What is the value of Volkswagen stock using EV/EBITDA multiples valuation?

Introduction

It was 6 a.m. on May 7, 2009 and Klaus Farra was already at his office working as an analyst at the Finance division of Volkswagen. On the previous day, Volkswagen and Porsche had announced a preliminary agreement to merge¹ and Farra was part of a team in charge of establishing a fair valuation of Volkswagen.

Farra's boss had asked him to prepare a multiples-based valuation while the rest of the team finished preparing the full discounted cash-flow valuation. His results would be presented to the board of directors in advance so that they could have a quick idea of how much Volkswagen is worth. Farra stared at his computer and began to think about the necessary steps needed to complete his task.

Company Background

Volkswagen is the third largest car manufacturer in the world, with sales of over 6.4 million units in 2008, corresponding to about 10% of the global market. Relative to Volkswagen, Porsche is a much smaller firm, having sold only about 100,000 units in 2008, a figure that would not even place it among the top 40 manufacturers in the world (see Exhibit 1).

Rumors of a merger between the two companies had been going on since 2005. Unlike most deals, in this case the acquirer (Porsche) is much smaller than the target (Volkswagen). In September 2005, Porsche announced the acquisition of a 20% stake in Volkswagen and disclosed its intention of taking over the firm. This stake was slowly increased and on October 2008 Porsche surprised markets by announcing it held 74.1% of Volkswagen through direct ownership of shares and stock options.

The onset of the financial crisis in 2008 brought Porsche's strategy to a halt. The firm's acquisition strategy relied on borrowing money from capital markets to leverage the size of the stake it could buy in Volkswagen. Porsche benefited from the low interest rates and the large liquidity available in credit markets until October 2008. However, problems in renewing credit lines meant that Porsche could no longer borrow money to raise its stake. The possibility under study was to merge the two companies and use part of Volkswagen's cash balances to reduce Porsche's debt burden.

Volkswagen's share price has done pretty well since early 2006 (Exhibit 2). After trading at the €30-€60 range between 1999 and 2005, the operational improvements and rumors about a takeover by Porsche had steadily pushed up its share price, which was around €228 in May 2009. The stock return in 2007 was 94% and 84% in 2008 notwithstanding the financial crisis (Exhibit 3). Measured by the price-earnings ratio (P/E ratio), the company had a larger P/E ratio (16.3x) than the industry average (7.6x) and this ratio has been quite volatile over the past decade (Exhibit 4).

Valuation

Farra's first task was to pick the proper set of comparable companies. It is crucial to avoid comparing "apples with oranges", i.e., avoid choosing firms that have nothing in common with Volkswagen. He logged on his Bloomberg terminal and looked up financial information for Volkswagen itself and the following publicly traded firms: Toyota, General Motors, Ford, DaimlerChrysler, Honda, Peugeot, Fiat, Renault, BMW and Porsche.

The next step was to decide what variables should be used as comparables. He needed to be careful to ensure that no figures were affected by the different leverage ratios observed in the industry or by extraordinary charges. Porsche's pre-tax EBITDA announced the previous November was still on his mind. The €9.9bn stellar performance on revenues of just €7.4bn was due to the huge financial profits Porsche made on trading options on Volkswagen shares. The company had in fact made €1bn from its operations and €8.9bn from the derivatives' strategies.

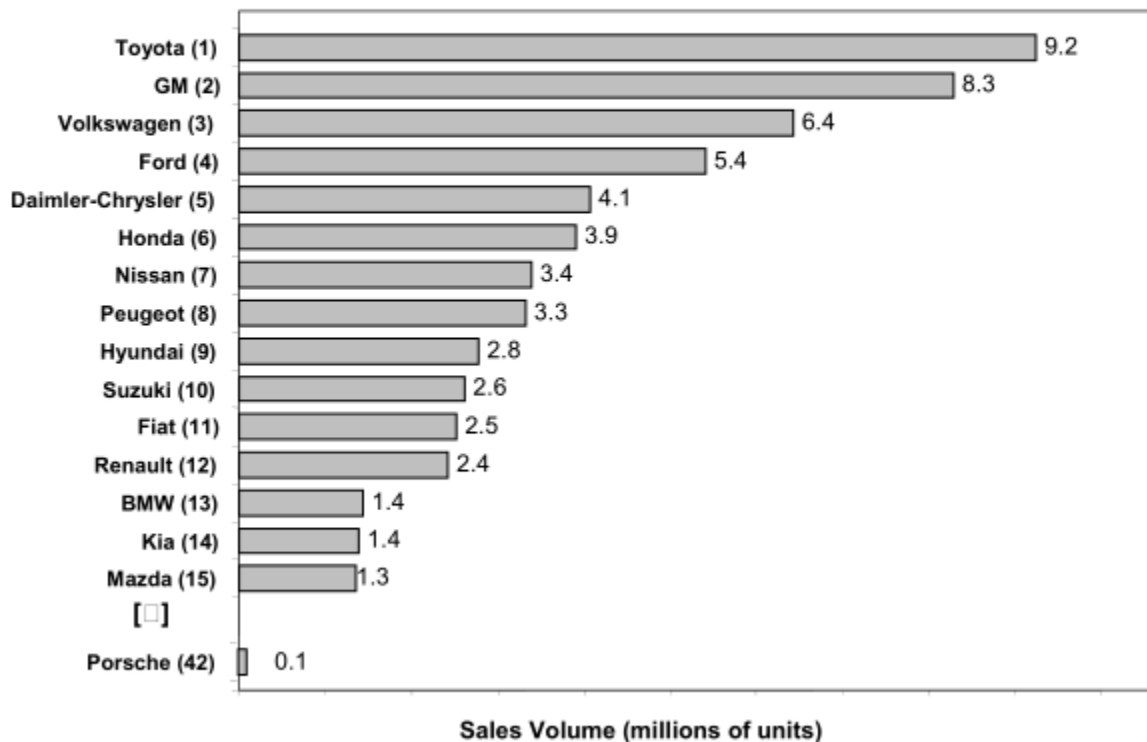
As it is easier to err on the side of too many variables, Farra decided to grab a long list of financial variables from the last two years and decide later which ones to use (Exhibit 5). He also produced a snapshot with the latest stock price and equity analysts' EPS and EBITDA estimates of Volkswagen and its peers (Exhibit 6).

Having obtained all the data he needed, Farra had to decide what ratios to compute and use his results to obtain a valuation range for Volkswagen. The board would be bound to ask him the reasons for picking a particular multiple and find problems with each one of them.

Exhibit 1

Car Manufacturers - Global Sales 2008

The graph below shows the world ranking of manufacturers in 2008 according to their global sales

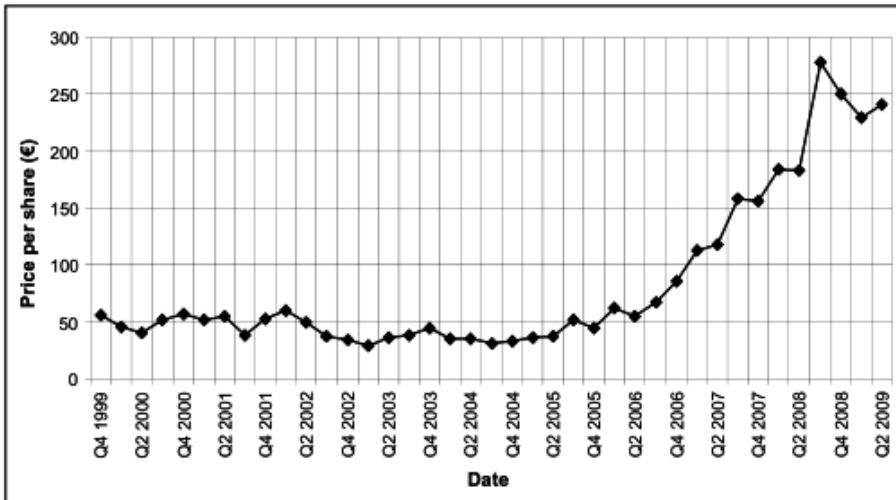


Source: International Organization of Motor Vehicle Manufacturers (OICA).

Exhibit 2

Volkswagen's Stock Price, 1999-2009

The graph below tracks Volkswagen's stock price performance during the last decade

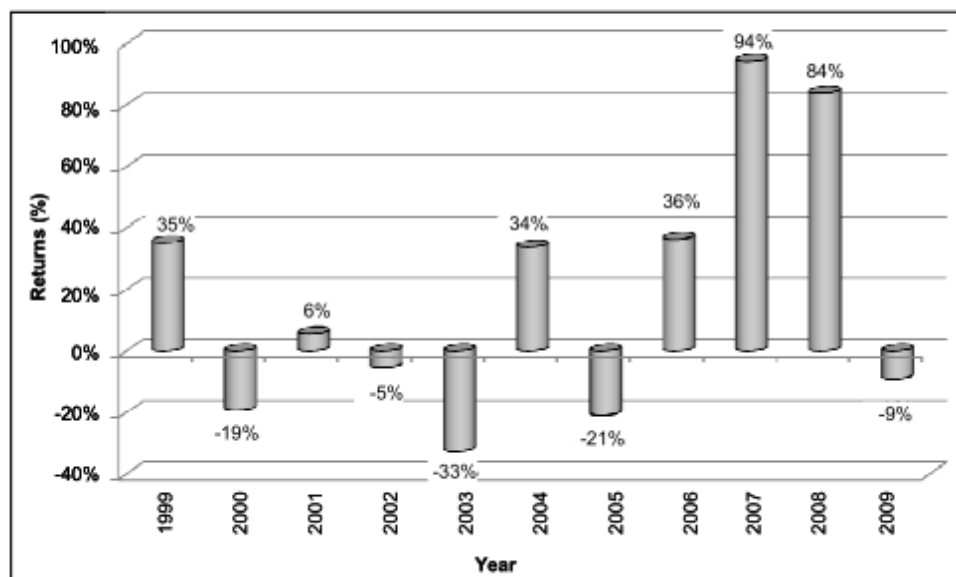


Source: Datastream.

Exhibit 3

Volkswagen's Stock Returns, 1999-2009

The graph below shows Volkswagen's annual stock returns during the last decade, in terms of percentage of stock returns. The figure for 2009 is computed until May 7, 2009.

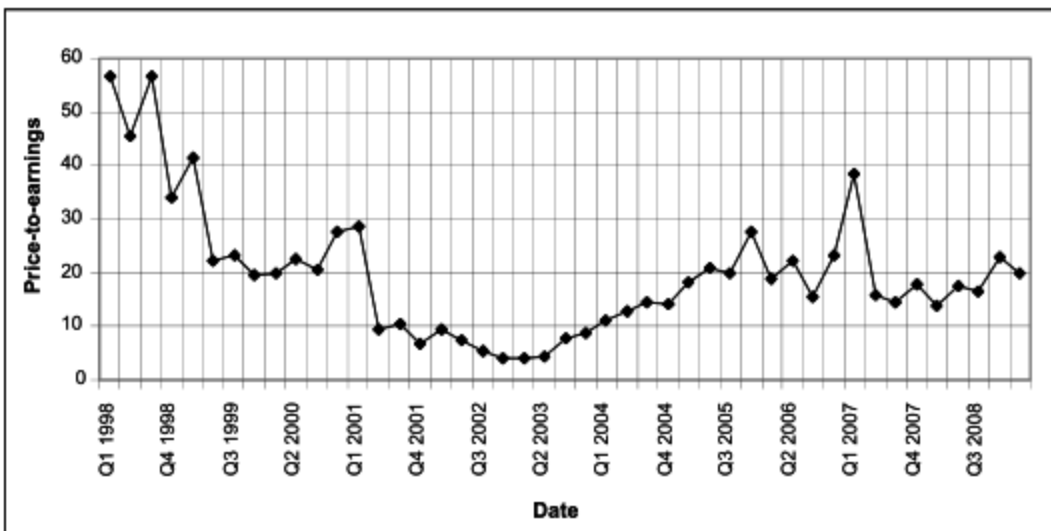


Source: Datastream.

Exhibit 4

Volkswagen's Price-to-earnings, 1999-2009

The graph below displays quarterly price-earnings ratio (P/E) over the last decade



Source: Datastream.

Exhibit 5

Financial Data - December 2008

This table shows a list of financial variables of Volkswagen and its competitors in 2008 based on financial statements released by each company

Variable	Volkswagen ³	Toyota	General Motors	Ford	Chrysler	Honda	Peugeot	Fiat	Renault	BMW	Porsche
Enterprise Value (€ billions)	133.78	161.84	24.60	99.20	73.96	64.00	26.01	22.42	30.24	63.12	37.66
Booked (€ billions)	69.20	98.50	33.46	111.28	93.64	34.48	27.23	21.28	20.14	29.53	18.17
Buy/Equity (€ billions)	35.01	94.19	-41.66	-12.65	31.22	36.05	13.14	10.35	18.06	20.27	15.07
Wdr/Equity (€ billions)	77.62	71.24	1.33	3.74	25.29	27.47	2.77	5.69	4.76	14.35	9.76
Cash (€ billions)	9.47	33.02	10.11	14.96	6.91	8.34	2.10	3.46	2.65	7.45	6.99
Net Debt (€ billions)	95.14	78.00	23.27	82.54	48.63	26.54	23.25	16.73	21.48	48.77	7.70
Free Cash (€ billions)	113.81	206.63	907.37	105.23	95.87	95.35	64.36	69.38	37.79	53.20	9.50
EBITDA (€ billions)	13.71	31.54	27.20	27.78	30.03	11.26	2.63	6.41	4.46	6.15	6.28
Net Income (€ billions)	4.73	33.00	-22.20	-10.56	18.84	4.76	-0.34	1.01	0.87	0.82	6.28
Net Income (€ billions)	14.19	23.05	2.20	1.95	29.40	15.13	12.15	4.69	19.55	21.97	55.79
Share Price (€)	113.94	4.29	-28.24	4.65	1.71	2.62	-1.51	1.30	2.23	0.50	35.93
Earnings per share (EPS) (€)	1.93	1.11	0.36	0.00	0.60	0.68	0.00	0.00	0.30	0.30	2.70
Dividends per share (€)	16.334	5.378	-0.064	-0.354	16.444	5.778	-8.054	8.534	8.334	44.804	1.554
Price/Earnings	8.524.10	4.814	-3.154	14.824	7.264	4.764	8.134	3.554	7.424	7.744	1.774
Enterprise Value/EBITDA	43.87	98.77	-32.11	27.15	36.79	43.45	13.71	32.31	31.13	81.51	813.46
EBITDA/Enterprise	6.56%	7.08%	N/A	-6.55%	1.91%	6.91%	-0.04%	6.23%	1.75%	0.65%	28.21%
ROIC (%)	0.85	0.87	0.82	0.94	1.59	N/A	1.20	1.96	2.32	1.07	1.71
Market Data											
Number of Employees	367,207	379,121	243,000	273,000	273,216	174,940	267,200	196,348	130,955	100,041	12,202
Shares Outstanding (thousands)	304,031	3,177,445	579,000	2,272,000	927,705	1,815,356	227,614	1,229,880	296,532	653,291	175,000

Source: Datastream

Exhibit 6

Financial Snapshot - May 7, 2009

This table shows a list of financial variables of Volkswagen and its competitors on May 7, 2009 based on financial statements and financial analysts' forecasts

Variable	Volkswagen ³	Toyota	General Motors	Ford Motor	Daimler	Honda	Peugeot	Fiat	Renault	BMW	Porsche
Share Price (€)	181.20	30.45	1.19	4.52	27.57	23.36	7.47	26.72	27.91	46.99	
EPS - Actual - Dec 2008	11.94	4.29	-38.34	-4.65	1.71	2.62	-1.51	1.30	0.50	35.95	
EPS - Analyst Forecast - Dec 2009	3.69	0.79	-19.99	-1.40	-1.34	0.87	-0.94	-0.31	-0.03	7.48	
EPS - Analyst Forecast - Dec 2010	5.84	1.37	-6.15	-0.24	1.37	1.29	-1.54	0.78	-1.23	1.63	5.29
EPS - Analyst Forecast - Dec 2011	7.25	N/A	-1.19	0.40	2.87	N/A	2.57	0.65	2.87	3.24	8.16
EBITDA - Actual - Dec 2008	15.71	31.54	-7.80	5.78	10.05	11.26	2.65	6.41	4.08	8.15	9.93
EBITDA - Analyst Forecast - Dec 2009	13.95	7.30	N/A	4.90	7.99	4.40	3.13	4.90	3.10	6.30	-0.24
EBITDA - Analyst Forecast - Dec 2010	10.33	10.15	N/A	N/A	7.04	5.00	3.09	4.36	2.79	6.60	1.63

Source: Datastream