

Aston Martin Lagonda Joint Venture Opportunity

Business Report: Financial Management & Planning (ACPA7002)

Prepared by:

Richard Burnell

ID Number: 2117173

University of Wales Trinity Saint David

Supervisor: Howard Davies

January 2023

Table of Contents

Executive Summary	2
1. Introduction	3
2. Ratio Analysis	4
2.1. Aston Martin Lagonda Financial Ratios (2017–2021)	4
2.2. Financial Statements	4
2.3. Use and Limitations of Ratios	5
2.4. Profitability Ratios	5
2.4.1. Gross Profit Margin.....	5
2.4.2. Operating Profit Margin.....	6
2.4.3. Net Profit Margin.....	6
2.4.4. Return on Assets (ROA).....	6
2.4.5. Return on Equity (ROE).....	6
2.5. Liquidity Ratios	7
2.5.1. Current Ratio	7
2.5.2. Quick Ratio	7
2.5.3. Cash Ratio.....	7
2.6. Activity Ratios.....	7
2.6.1. Inventory Turnover.....	7
2.6.2. Days Payable Outstanding (DPO)	8
2.6.3. Days Sales Outstanding (DSO).....	8
2.7. Leverage Ratios	8
2.7.1. Gearing Ratio	8
2.7.2. Debt / Equity Ratio	9
2.7.3. Long Term Debt / Equity Ratio.....	9
2.7.4. Interest Coverage Ratio	9
2.8. Investor Ratios.....	9
2.8.1. Earnings per Ordinary Share (EPS)	9
2.8.2. Price per Earnings Ratio	10
2.8.3. Dividend Cover and Dividend Yield Ratio	10
3. Summary	10
4. Conclusion.....	11
5. Recommendations.....	11
6. References.....	13
7. Appendix	17
7.1. Ratio Calculations.....	17
7.2. Aston Martin Lagonda Financial Data (2017-2021)	18

Executive Summary

In this report, the financial statements of luxury car manufacturer Aston Martin Lagonda between 2017 and 2021 were reviewed and analysed using five groups of financial ratios: Profitability, Liquidity, Activity, Leverage, and Investor ratios.

The analysis identified that Aston Martin has failed to turn a profit since 2017, a result of significant losses equating to more than £760m over the five-year period. This has led to large amounts of additional borrowing that has to date failed to prevent the company's cash-flow issues, ultimately harming the company's market value with shares being at their lowest price since the company went public in 2018. Despite the difficulty the company has faced in recent times, there is no denying that the Aston Martin brand is iconic, priding itself on its history and being a luxury British manufacturer.

By performing a ratio analysis and a deep dive into the company's financial status, this report provides a data driven decision on whether a £5m joint venture with Aston Martin should proceed.

1. Introduction

Founded in 1913 by Lionel Martin and Robert Bamford, Aston Martin has become one of the world's most iconic global brands that is synonymous with luxury, style, performance, and exclusivity (Aston Martin Lagonda, 2020). Based in Gaydon (England), the company design, manufacture and sell luxury cars to countries throughout the world. In 1947, the late Sir David Brown (DB) purchased Aston Martin and struggling manufacturer Lagonda resulting in a merge of the two companies creating 'Aston Martin Lagonda'.

The company pride themselves on their long history and craftsmanship that they state is embedded into every vehicle when manufactured in one of only two factories, both of which are located in the UK. The company's sport cars i.e. Vantage, DB11 and DBS start their life in Gaydon and the company's latest venture the DBX, a luxury SUV (Sport Utility Vehicle), began production on a new 90-acre site based in the Welsh village of St. Athan in June 2019 (Aston Martin Lagonda, 2020).

In recent years, Aston Martin on the surface has had much to celebrate. For example, in 2020 the company returned to Formula-One racing for the first time in 60 years with the Aston Martin Cognizant Formula One Team and the opening of a new factory in South Wales in 2019.

However, there are signs that not all is well. For example, in early 2022, the company appointed its third CEO in only three years while the leadership team has seen a complete overhaul, ringing alarm bells for many investors (Jolly, 2022).

If the company is to succeed in their vision 'To be the world's most desirable, ultra-luxury British brand' (Aston Martin Lagonda, 2021), they must have stability, investor confidence and solid finances.

In the next section, a ratio analysis will be performed on Aston Martin's financial statements using five categories of ratios; Profitability Ratios, Efficiency Ratios, Liquidity Ratios, Gearing Ratios and Investor ratios. Once the analysis is complete and the ratios critically evaluated, the findings will be summarised and a conclusion and/or recommendations will be given on whether to proceed with a £5m joint venture with Aston Martin.

2. Ratio Analysis

2.1. Aston Martin Lagonda Financial Ratios (2017–2021)

		2017	2018	2019	2020	2021	YoY/CAGR
Profitability Ratios	Net Profit Margin	9.02%	-5.21%	-10.47%	-67.10%	-17.28%	-214.54%
	Gross Profit Margin	43.36%	39.74%	35.56%	18.16%	31.38%	-6.26%
	Operating Profit Margin	16.98%	6.64%	-3.68%	-52.78%	-6.98%	-183.72%
	Return on Assets (ROA)	4.86%	-2.90%	-4.68%	-14.69%	-6.66%	-207.19%
	Return on Equity (ROE)	53.44%	-12.71%	-29.09%	-51.05%	-28.66%	-187.33%
Liquidity Ratios	Current Ratio	0.81	0.70	0.66	1.10	0.96	3.95%
	Cash Ratio	0.33	0.18	0.13	0.61	0.46	4.57%
	Quick Ratio	0.56	0.49	0.43	0.84	0.74	6.21%
Leverage Ratios	Debt / Equity Ratio	10.00	3.38	5.22	2.48	3.30	-0.60%
	Long Term Debt / Equity Ratio	6.54	1.63	2.83	1.47	1.93	-22.91%
	Gearing Ratio	86.73%	61.91%	73.86%	59.52%	65.91%	-5.54%
	Interest Coverage Ratio	3.30	1.64	-0.66	-3.28	-0.51	-168.72%
Activity Ratios	Inventory Turnover	3.88	4.51	3.51	2.45	3.72	-0.86%
	Days Sales Outstanding (DSO)	48.21	80.76	92.05	106.67	81.81	11.16%
	Days Payable Outstanding (DPO)	368.38	398.20	404.07	427.47	354.90	-0.74%
Investor Ratios	Earnings per ordinary share (EPS)	0.41	-0.28	-0.46	-5.32	-1.64	-232.83%
	Dividend Cover	0.00	0.00	0.00	0.00	0.00	N/A
	Price per earnings ratio	90.47	-278.06	-72.89	-3.77	-8.26	-160.20%
	Dividend Yield Ratio	0.00	0.00	0.00	0.00	0.00	N/A

Table 1: Aston Martin Lagonda Financial Ratios (2017-2021)

2.2. Financial Statements

To perform a ratio analysis on a company's financial position, three main financial statements are normally used; the income statement, the balance sheet and the cash flow statement. Firstly, the income statement, also referred to as the profit and loss (P&L) statement, provides an overview of the income and expenses during a set period. The income statement enables companies to review and compare any trends in their income and expenses over time (Cote, 2020). Secondly, the balance sheet, that breaks down the company's assets, liabilities, and equity. Finally, the cash flow statement, monitoring all cash coming in and going out of a business throughout a given period.

When assessed together, the three financial statements provide a comprehensive picture of the financial health of a company and can be used to highlight and learn from past mistakes or successes, or to support essential financial decision making that may be required (Cote, 2020).

2.3. Use and Limitations of Ratios

Financial ratio analysis is a way of gaining a better understanding of financial performance. Ratios enable comparisons between periods, providing simple tools that can track and reveal trends in profitability, efficiency, liquidity, gearing and investment. Evaluating business performance using financial ratios can quickly identify the real problems within an organisation or enable a company to benchmark themselves against a competitor or peer companies (Marsh, 2012).

Despite their many benefits, financial ratios do have their limitations. For example, the data used is historical and therefore the metrics used do not represent future performance or forecasting. Additionally, as financial statements are released periodically there can be significant time differences between the release of each statement, in which time, inflation may have occurred and the true costs may no longer be reflected in the statements and therefore cannot be compared to previous statements until adjusted for inflation.

Furthermore, financial analysts should also consider seasonal factors that can potentially be a limitation when use ratios, not adjusting the ratio analysis to seasonal effects can lead to false interpretations of the results (CFI, 2022).

2.4. Profitability Ratios

According to Webster (2004), profitability ratios track how well an organisation generates profit through its operations. The corporate finance institute (CFI), states that profitability ratios help to measure and evaluate a company's ability to generate income (profit) relative to its revenue, assets, shareholders equity and operating costs during a specific period. Ultimately demonstrating how well a company utilises its assets in order to generate profit and value to its shareholders.

Note: For the basis of this analysis, the industry standard will be an average comparison between three of Aston Martin Lagonda's top like for like competitors as identified by sales intelligence and business information research company Owler (2022). The three competitors selected are Ferrari, Bentley and McLaren.

2.4.1. Gross Profit Margin

Gross profit margin over the five years (2017-2021) for the majority has remained consistent at an average of 33.64%. This margin is just slightly above the industry average of 33.21%. The only year to show a significant change was in 2020 where gross profit margin dropped to 18.16%, driven down by a 32% reduction in sales compared to 2019 due to the COVID 19 pandemic. As a result, revenue was also down 39% (£385m) as a result of the closure of both manufacturing sites and car dealerships throughout 2020 (Jolly, 2021).

In 2021, revenue return to pre-COVID levels at £1.1bn, ultimately strengthening the gross profit margin to close the year at year at 31.38%, this was mainly driven by an 82% climb in sales thanks to strong demand for the DBX model (Page, 2022).

2.4.2. Operating Profit Margin

Over the 5-year period (2017-2021), operating profit margin averaged -7.96%, significantly lower than the industry average of 7.77%. The negative value indicates total costs over this period were higher than the average revenue. In 2017 and 2018, the operating margin was positive at 16.98% and 6.64% respectively. Although, 2018 seen a significant drop (51% compared with 2017) due to costs equating to £74m incurred by the company decision to go public with an 'Initial Public Offering' (IPO) (Aston Martin Lagonda, 2018).

An IPO is the first public offering of a company's stock. Prior to an IPO, the company is considered private, with only a small number of investors. An IPO will allow the general public to buy shares.

2.4.3. Net Profit Margin

Following in line with the operating profit margin, the company has not made a profit since 2017 as costs continue to remain greater than its sales revenue, trending from -5.21% in 2018 (prior to the pandemic and Brexit) and reaching its lowest (-67.10%) at the end of 2020 where the company made a loss of £410 m. The average over the 5 year period was a concerning -18.21%, significantly lower than the industry average of 0.46%.

Net profit began to recover in 2021 to -17.28%, thanks to pre-COVID revenue levels of £1.1bn as sales began to ramp up. All eyes will be on 2022 to ensure the company can sustain this turnaround.

2.4.4. Return on Assets (ROA)

For Aston Martin, ROA has seen a steady decline since 2017, with 2017 being the last time any profit was generated from their assets at a value of 4.86%. Between 2018 and 2021, ROA average was -7.23%, whereby for every pound the company owns in assets, they were making a loss of £7.23. One contributing factor to this was the significant increase in assets that occurred in 2020 (up by £563m on 2019) which had an impact on the overall ROE measure, the main factor in this was a result of additional borrowing as the company's cash increased from £107.9m to £489.4m, an increase of 78%. Birken & Curry (2021), state that an ROA less than 5% is poor.

2.4.5. Return on Equity (ROE)

Return on equity (ROE) is a measure of a company's profitability and efficiency in generating profits. The greater the ROE, the more efficient a company is at generating income and growth from its equity financing (Fernando, 2022).

For Aston Martin, four of the last five years have returned a negative ROE, averaging -13.6%. Fernando (2022) claims the most common issue in regards to negative ROE is inconsistent profitability or excessive debt, which is clearly the case for Aston Martin. Fernando (2022), also states that the ROE ratio should not be used to analyse the company or its competitors if the value is negative and the competitors values are positive.

2.5. Liquidity Ratios

Liquidity ratios measure a company's ability to pay back its short-term debts on time, in other words, determining the company's short-term financial solvency. Hence why these ratios are also referred to as solvency ratios (Webster, 2004).

2.5.1. Current Ratio

The current ratio for 2021 was 0.96, meaning the company's current liabilities are greater than their current assets. Carlson (2020), states that a current ratio of less than 1.00 indicates that the company may run out of money within the next 12 months unless it can increase cash flow or capital from its investors. The story is the same for the company over the last 5 years, averaging 0.84. The only year within the 5-year period where the current ratio reached above 1.00 was in 2021 at 1.10, driven by a significant increase in current assets.

2.5.2. Quick Ratio

The Quick Ratio measures a company's ability to pay its short-term liabilities (less than 12 months) with assets that are readily convertible into cash. As with the other liquidity ratios, the aim is to be above 1.00. In Aston Martin's case, the quick ratio 5-year average equates to 0.61, indicating the company is constantly at risk of failing to pay their short-term liabilities as they have insufficient assets to cover them.

2.5.3. Cash Ratio

The cash ratio is the ratio comparing a company's total cash and cash equivalents and its current liabilities (Kenton, 2022). As with the other liquidity ratios, Aston Martin's cash ratio has consistently fell short of where they need to be, averaging 0.34 over the last 5 years, the highest result reaching only 0.61 in 2020. Again, this was due to the significant borrowing that took place in this year. These figures indicate that the company has more current liabilities than cash and cash equivalents on hand to pay off these short-term liabilities out right if and when required.

2.6. Activity Ratios

Activity ratios, also referred to as operational ratios, use revenue measures to show how efficiently a company operates and uses its assets (Webster, 2004).

2.6.1. Inventory Turnover

Inventory turnover measures how many times a company has turned over its inventory in relation to its cost of goods sold (COGS) in a given period. This ratio can help companies make better decisions on pricing, marketing, and purchasing.

Aston Martin's average inventory turnover for the past 5 years equates to 3.61, remaining relatively consistent over this period. In comparison, the company's inventory turnover average

of 3.6% is not too far off the luxury car industry's most profitable company over the last 5 years, Ferrari, with their 5-year average inventory turnover at 4.00% (Ferrari, 2017-2023).

2.6.2. Days Payable Outstanding (DPO)

DPO is a financial measure used to indicate the average number of days it takes a company to pay its bills and invoices to its trade creditors. Aston Martin's DPO 5 year average equates to 390 days. Between 2017 and 2020, DPO increased from 368 days to 427 days (increase of 16% or 59 days). One significant factor to this is supply chain issues that started to appear in late 2017, prior to the tsunami that followed with COVID-19. As a result, the company had to review its contracts and payment schedules with their suppliers, ultimately leading to an increase in DPO, ensuring the company kept cash in the business for as long as possible.

2.6.3. Days Sales Outstanding (DSO)

DSO is an average measure of how long it takes a company to collect payment for a sale (Kenton, 2022). Aston Martin's DSO trend has climbed significantly year on year, ending 2019 with a 122% increase compared to 2017, totalling 106.67 days. This is the highest the company's DSO has risen to in the last 10 years (gurufocus, 2022), driven by year on year revenue increase and longer-term payment plans being introduced by the company (Aston Martin Lagonda, 2018). If the company wishes to improve their liquidity and cash reserves then they should be looking to decrease the DSO while extending DPO (Wiggins, 2020).

2.7. Leverage Ratios

Leverage ratios, also referred to as debt ratios or gearing ratios; indicate how well and to what extent a company uses borrowed funds to finance its operations and are often used to measure financial risk within a company (Webster, 2004).

2.7.1. Gearing Ratio

Aston Martin's gearing ratio averaged 69% in the 5-year period, ending 2021 at 65%. According to Boyte-White (2021), a gearing ratio that is higher than 50% is considered highly geared or levered. This was a result of lower profits year on year and higher interest rates affecting the company, leaving the company more susceptible to loan default and potential bankruptcy. When comparing to other similar manufacturer's such as Ferrari, Aston Martin's numbers are concerning, with Ferrari averaging 46% over the same 5 years, ending 2021 at 21.89% (Ferrari, 2017-2023). A ratio lower than 25% is considered low-risk by both lenders and investors (Boyte-White, 2021). In short, Aston Martin are a far cry from where they need to be.

2.7.2. Debt / Equity Ratio

The debt-to-equity ratio is similar to the gearing ratio, although the focus is the total debt and not just long-term debt. For Aston Martin, it is evident that they are carrying significantly more debt than they would like. The 5-year average ratio was 4.88; meaning for every pound of equity in the business there was 4.88 times of debt. A good debt to equity ratio depends on the industry, although, in general a ratio below 1.0 would be considered reasonably safe and anything higher than 2.0 (as in Aston Martin's case) is considered a risk not to be ignored (Fernando, 2022).

2.7.3. Long Term Debt / Equity Ratio

Average for the 5-year period at Aston Martin was 2.8; meaning for every pound of equity there was 2.8 times that of long-term debt. This is significantly higher in comparison to its Italian competitor (Ferrari) who averaged 0.85 within the same period and is driven by continuous borrowing over the five years.

To put Aston Martins problems into perspective, at the end of 2021, the company's total liabilities exceeded £2bn, whereby £1bn of this was long-term borrowings.

2.7.4. Interest Coverage Ratio

The interest coverage ratio is used to determine how easily a company can pay any interest owed on an outstanding debt (Hayes , 2022). A ratio below 1.00 is considered bad as this confirms that the company's current earnings are insufficient to service any outstanding debt. In 2017 and 2018, Aston Martin's interest coverage ratios were positive at 3.30 and 1.64 respectively. Then spiralling down significantly in 2019 and reaching its lowest in 2020 at -3.28, remaining negative in 2021 (-0.51) also. This highlights the company's unprofitability, whereby it is unable to generate positive earnings from its operations while having to manage increasing interest payments due to additional borrowing year on year.

2.8. Investor Ratios

Investor ratios enable investors to evaluate the company's ability to generate a return from their investment.

2.8.1. Earnings per Ordinary Share (EPS)

Average EPS over the 5-year period was -£1.46, 2017 being the last period to see a positive EPS at £0.41. Post 2017, EPS has continued to decline hitting its lowest in 2020 at -£5.32 due to the effects of the COVID pandemic. At the end of 2021, EPS started to recover but each share was still losing money with a value of -£1.64. Looking elsewhere, there are much more attractive options to investors within the luxury car market; Ferrari's EPS for example has averaged +£3.25 with the trend increasing up to its highest value of +£4.00 in 2021, a significant contrast compared to Aston Martin.

2.8.2. Price per Earnings Ratio

The price per earnings ratio measures a company's market price in comparison to its earnings, determining what the market would be willing to pay today for a share based on a company's past or future earnings (Folger, 2021).

Aston Martin's share price was performing fairly strongly up until Q4 of 2018 when the company launched its IPO (Initial Public Offering) on the London Stock Exchange in October, costing the company £136m in the process. In its first 12 months as a stock market listed company, its market value dropped from £4.33bn to below £1bn (-77%) and has been in decline ever since, with the a 5-year average of -54.50. A major factor to this decline has been a steep drop in sales in 2019 with sales falling by 22% in the UK and 28% across Europe, Africa and the Middle East compared to the previous year (Davies & Sweeney, 2019).

2.8.3. Dividend Cover and Dividend Yield Ratio

As the company did not pay any dividends within the period 2017-2021, it is not possible to determine either the dividend cover or dividend yield ratios. The general statement from Aston Martin is that dividends have not been paid in recent years as the company is focused on “investing in future growth and focusing on the delivery of the Plan” (Aston Martin Lagonda, 2021). However, from the analysis, it is clear to see that dividends are not being paid simply because the company is losing every year.

3. Summary

After performing a ratio analysis on Aston Martin's financial reports (2107-2021), it is evident that the company has experienced a very challenging time, whereby 2017 was their last profitable year. Prior to this, the company had not made a profit since 2010 (Salmon, 2018). The company are relying on additional borrowing year-on-year to keep their head above the water but one wonders how much longer the company can keep swimming with such immense financial pressure (Total debt = £2.6bn). The major factor to this is a combination of accumulated debt and further supply chain issues preventing the completion of the manufacturing process on several hundreds of cars.

The continuing trend of not turning a profit had a significant negative impact on the majority of ratios discussed. For example, the company's earnings per share (EPS) is one of the lowest within the luxury car market, making it extremely difficult to attract new investors who the company rely on to bring in extra cash into the business.

Despite the efforts of several cash injections, such as the £500m bailout led by Executive Chairman Lance Stroll in 2020, the company continues to haemorrhage money. In 2022, the company launched a new fundraising strategy, raising £653m from the Saudi Public Investment Fund (PIF) (Sillars, 2022). This would enable the company tackle the mountain of debt, invest in product development, and improve the company's liquidity to protect itself from economic shocks (Vijayenthiran, 2022). Early indications on reviewing Q3 of the 2022 report indicates that the plan is not working, despite the reduction in debt that now stands at £833m, the company has

made a loss of almost £200m in Q3 alone. It is a fair assumption to say that there will be a significant interest from investors and the Aston Martin camp as to what 2022's Q4 report will bring.

4. Conclusion

Despite the cash flow issues Aston Martin are facing, there are some positives to take away when reviewing the 2022 YTD and Q3 results. For example, there is significant customer demand in place for all vehicles, Valhalla supercar programme progressing, and the company's brand continues to grow strength to strength driven by its return to Formula 1. The Aston Martin brand along with its history make are the company's USP (unique-selling-points) and to not have Aston Martin amongst the luxury car market would be hard to imagine. It is for this reason many investors choose Aston Martin, as they believe in such an iconic British brand and are hoping it will make it through such a challenging time.

In terms of the proposed £5m joint venture with Aston Martin, the ratio analysis raises many red flags as to why a joint venture should not proceed. However, it is a matter of context and risk. There are advantages to joint ventures that can benefit both sides. For example, both parties can share a common pool of resource to bring down costs, access new expertise and knowledge, and gain access into new markets areas (CFI, 2022). However, there are risks involved, especially when joining up with a struggling business such as Aston Martin and these risks will differ depending on the scope of the venture.

This report advises that based on Aston Martin's consistently poor performance over the last 5 years as identified in the ratio analysis, that a joint venture at this time presents too much risk.

5. Recommendations

To increase confidence in moving forward with a joint venture with Aston Martin, it is advised that the company conduct a full risk analysis prior to making this decision. As for Aston Martin, there is a mountain to climb if they are to recover from this difficult period. Here are some recommendations that could help them to change course in the short term:

- **Seek guidance from new CEO and Chief Technical Officer:**
New CEO Amedeo Felisa worked for Aston Martin's top competitor (Ferrari) for more than 25 years, 8 years as CEO. Chief technical officer Roberto Fedeli joined Aston Martin alongside Felisa. Between them, they bring a wealth of knowledge and experience in running a successful luxury car brand.
- **Apply additional resource to fix supply chain issues:**
Supply chain is the biggest headache for Aston Martin and has been for several years. Initially, teething problems as a result of Brexit and COVID-19 were blamed. However, it appears to be worsening. Applying additional resource to fixing these issues will ensure they are monitored and dealt with urgently.

- **Explore further cost cutting activities:**
While the company continues to borrow more and more, the company must remain focused on driving down its costs. Improving efficiencies, seeking new suppliers, cheaper materials and focusing on achieving Lean processes are ways in which the company can reduce their costs.

6. References

- Accounting Tools, 2022. *Gearing ratio definition*. [Online]
Available at: <https://www.accountingtools.com/articles/gearing-ratio>
[Accessed 17 January 2023].
- Aston Martin Lagonda, 2018. *2018 ANNUAL REPORT*. [Online]
Available at: https://www.astonmartinlagonda.com/mwg-internal/de5fs23hu73ds/progress?id=pLlVOOFhxWXrtGmOM1X0fV_PKYi_vYc5ZKRPb3slh1I,&dl
[Accessed 15 January 2022].
- Aston Martin Lagonda, 2020. *About Us*. [Online]
Available at: <https://www.astonmartinlagonda.com/about-us>
[Accessed 12 November 2022].
- Aston Martin Lagonda, 2021. *ANNUAL REPORT AND ACCOUNTS 2021*. [Online]
Available at: <https://www.astonmartinlagonda.com/investors/annual-report>
[Accessed 3 December 2022].
- Atrill, P., 2011. *Financial management for decision makers*. 6 ed. Essex: Pearson Prentice Hall.
- Bentley , 2023. *Bentley Financial Data*. [Online]
Available at: <https://annualreport2018.volkswagenag.com/divisions/bentley.html>
[Accessed 17 January 2023].
- Birken, E. & Curry, B., 2021. *Understanding Return On Assets (ROA)*. [Online]
Available at: <https://www.forbes.com/advisor/investing/roa-return-on-assets/>
[Accessed 16 January 2022].
- Boyte-White, C., 2021. *Gearing Ratios: What Is a Good Ratio, and How to Calculate It*. [Online]
Available at: <https://www.investopedia.com/ask/answers/121814/what-good-gearing-ratio.asp>
[Accessed 18 January 2023].
- Carlson, R., 2020. *What Is the Current Ratio?*. [Online]
Available at: <https://www.thebalancemoney.com/what-is-the-current-ratio-and-how-do-you-measure-it-393218>
[Accessed 16 January 2023].
- CFI, 2022. *Dividend Coverage Ratio*. [Online]
Available at: <https://corporatefinanceinstitute.com/resources/valuation/dividend-coverage-ratio-formula/>
[Accessed 19 January 2023].
- CFI, 2022. *Joint Venture (JV)*. [Online]
Available at: <https://corporatefinanceinstitute.com/resources/valuation/what-is-joint-venture-jv/>
[Accessed 21 January 2023].
- CFI, 2022. *Limitations of Ratio Analysis*. [Online]
Available at: <https://corporatefinanceinstitute.com/resources/accounting/limitations-ratio-analysis/>
[Accessed 10 January 2022].

- CFI, 2022. *Quick Ratio*. [Online]
Available at: <https://corporatefinanceinstitute.com/resources/accounting/quick-ratio-definition/>
[Accessed 16 January 2023].
- CFI, 2022. *What are Profitability Ratios?*. [Online]
Available at: <https://corporatefinanceinstitute.com/resources/accounting/profitability-ratios/>
[Accessed 12 January 2023].
- Chrisos, M., 2019. *Limitations of Ratio Analysis in Financial Management*. [Online]
Available at: <https://www.techfunnel.com/fintech/limitations-of-ratio-analysis-in-financial-management/>
[Accessed 10 January 2022].
- Cote, C., 2020. *HOW & WHY MANAGERS USE FINANCIAL STATEMENTS*. [Online]
Available at: <https://online.hbs.edu/blog/post/how-managers-use-financial-statements>
[Accessed 13 December 2022].
- Davies, R. & Sweeney, M., 2019. *Aston Martin shares plunge after slump in sales across Europe*. [Online]
Available at: <https://www.theguardian.com/business/2019/jul/24/aston-martin-shares-plunge-after-slump-in-sales-across-europe>
[Accessed 19 January 2023].
- Fernando, J., 2022. *Debt-to-Equity (D/E) Ratio Formula and How to Interpret It*. [Online]
Available at: <https://www.investopedia.com/terms/d/debtequityratio.asp>
[Accessed 18 January 2023].
- Fernando, J., 2022. *Dividend Yield: Meaning, Formula, Example, and Pros and Cons*. [Online]
Available at: <https://www.investopedia.com/terms/d/dividendyield.asp>
[Accessed 19 January 2023].
- Fernando, J., 2022. *Return on Equity (ROE) Calculation and What It Means*. [Online]
Available at: <https://www.investopedia.com/terms/r/returnonequity.asp>
[Accessed 27 January 2023].
- Ferrari, 2017-2023. *Financial Documents*. [Online]
Available at: <https://www.ferrari.com/en-EN/corporate/financial-documents?year=2017>
[Accessed 18 January 2023].
- Folger, J., 2021. *How Do I Calculate the P/E Ratio of a Company?*. [Online]
Available at: <https://www.investopedia.com/ask/answers/070314/how-do-i-calculate-pe-ratio-company.asp>
[Accessed 19 January 2023].
- gurufocus, 2022. *Aston Martin Lagonda Global Holdings (XTER:A5SA) Days Sales Outstanding*. [Online]
Available at: <https://www.gurufocus.com/term/DaysSalesOutstanding/XTER:A5SA/Days-Sales-Outstanding/Aston-Martin-Lagonda-Global-Holdings>
[Accessed 15 January 2021].
- Hayes , A., 2022. *Interest Coverage Ratio: Formula, How It Works, and Example*. [Online]
Available at: <https://www.investopedia.com/terms/i/interestcoverageratio.asp>
[Accessed 17 January 2023].

- Hayes, A., 2022. *Days Payable Outstanding (DPO) Defined and How It's Calculated*. [Online]
Available at: <https://www.investopedia.com/terms/d/dpo.asp>
[Accessed 17 January 2023].
- Hayes, A., 2022. *Operating Margin: What It Is and the Formula for Calculating It, With Examples*. [Online]
Available at: <https://www.investopedia.com/terms/o/operatingmargin.asp>
[Accessed 13 January 2023].
- Jolly, J., 2021. *Losses at Aston Martin almost quadruple as Covid cuts sales*. [Online]
Available at: <https://www.theguardian.com/business/2021/feb/25/losses-at-aston-martin-almost-quadruple-as-covid-cuts-sales>
[Accessed 12 January 2022].
- Jolly, J., 2022. *Aston Martin appoints third CEO in three years as Tobias Moers steps down*. [Online]
Available at: <https://www.theguardian.com/business/2022/may/04/aston-martin-appoints-third-ceo-in-three-years-as-tobias-moers-steps-down>
[Accessed 12 December 2022].
- Kenton, W., 2022. *Cash Ratio: Definition, Formula, and Example*. [Online]
Available at: <https://www.investopedia.com/terms/c/cash-ratio.asp>
[Accessed 17 January 2023].
- Kenton, W., 2022. *Days Sales Outstanding (DSO): Meaning in Finance, Calculation, and Applications*. [Online]
Available at: <https://www.investopedia.com/terms/d/dso.asp>
[Accessed 15 January 2023].
- Marsh, C., 2012. *Financial management for non-financial managers*. London: Kogan Page.
- Maverick, J. B., 2021. *What is a bad interest coverage ratio?*. [Online]
Available at: <https://www.investopedia.com/ask/answers/121814/what-bad-interest-coverage-ratio.asp>
[Accessed 28 January 2023].
- Mclaren, 2023. *Mclaren Results centre*. [Online]
Available at: <https://investors.mclaren.com/investors/result-centre/year/2022>
[Accessed 17 January 2023].
- Monaghan, A., 2018. *Aston Martin IPO disappoints as luxury carmaker's value falls*. [Online]
Available at: <https://www.theguardian.com/business/2018/oct/03/aston-martin-ipo-flotation-lse>
[Accessed 15 January 2023].
- Owler, 2022. *Aston Martin Competitors or Alternatives*. [Online]
Available at: <https://www.owler.com/company/astonmartinlagonda/competitors>
[Accessed 12 January 2022].
- Page, F., 2022. *Aston Martin boosts revenues and slashes losses in 2021*. [Online]
Available at: <https://www.autocar.co.uk/car-news/business-finance-and-corporate/aston-martin-boosts-revenues-and-slashes-losses-2021>
[Accessed 13 January 2023].

Salmon, J., 2018. *Export boom drives Aston Martin to first profit in eight years as new DB11 proves a hit in China and the US*. [Online]

Available at: <https://www.thisismoney.co.uk/money/markets/article-5437179/Exports-drive-Aston-Martin-profit-eight-years.html>

[Accessed 20 January 2023].

Sillars, J., 2022. *Saudi Arabia's PIF drives to Aston Martin's aid under £653m fundraising*. [Online]

Available at: <https://news.sky.com/story/saudi-arabias-pif-drives-to-aston-martins-aid-under-653m-fundraising-12652330>

[Accessed 23 January 2023].

Vijayenthiran, V., 2022. *Aston Martin's second largest shareholder is now Saudi Arabia*. [Online]

Available at: https://www.motorauthority.com/news/1136513_aston-martin-s-second-largest-shareholder-is-now-saudi-arabia

[Accessed 21 January 2023].

Walters, S., 2019. *Can You Have a Negative Operating Profit Margin Ratio?*. [Online]

Available at: <https://yourbusiness.azcentral.com/can-negative-operating-profit-margin-ratio-17235.html>

[Accessed 15 January 2023].

Webster, W. H., 2004. *Accounting for Managers*. 1st ed. New York: McGraw-Hill Education.

Wiggins, P. D., 2020. *Increase DPO, If You Can: Metric of the Month*. [Online]

Available at: <https://www.cfo.com/accounting-tax/2020/04/increase-dpo-if-you-can-metric-of-the-month/>

[Accessed 17 January 2023].

7. Appendix

7.1. Ratio Calculations

PROFITABILITY RATIOS	Net Profit Margin	=	$\frac{\text{Net income (profit or loss)}}{\text{Revenue}}$
	Gross Profit Margin	=	$\frac{\text{Gross Profit (or loss)}}{\text{Revenue}}$
	Operating Profit Margin	=	$\frac{\text{Operating Profit (or loss)}}{\text{Revenue}}$
	Return on Assets (ROA)	=	$\frac{\text{Net income (profit or loss)}}{\text{Total Assets}}$
	Return on Equity (ROE)	=	$\frac{\text{Net income (profit or loss)}}{\text{Total Equity}}$

LIQUIDITY RATIOS	Current Ratio	=	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$
	Cash Ratio	=	$\frac{\text{Cash \& Cash Equivalents}}{\text{Current Liabilities}}$
	Quick Ratio	=	$\frac{\text{Current Assets less Inventory}}{\text{Current Liabilities}}$

LEVERAGE RATIOS	Debt / Equity Ratio	=	$\frac{\text{Total Liabilities}}{\text{Stockholders Equity}}$
	Long Term Debt / Equity Ratio	=	$\frac{\text{LongTerm Debt}}{\text{Stockholders Equity}}$
	Gearing Ratio	=	$\frac{\text{Non-current Liabilities}}{\text{Equity plus non-current liabilities}}$
	Interest Coverage Ratio	=	$\frac{\text{Earning Before Interest and Taxes (Operating profit)}}{\text{Interest Payments}}$

ACTIVITY RATIOS	Inventory Turnover	=	$\frac{\text{CoGS}}{\text{Average Inventory}}$
	Days Sales Outstanding (DSO)	=	$\frac{\text{Trade and other receivables (i.e. debtors)}}{\text{Average revenue per day (annual revenue / 365)}}$
	Days Payable Outstanding (DPO)	=	$\frac{\text{Trade and other payables (i.e. creditors)}}{\text{Average COGS per day (annual COGS / 365)}}$

INVESTOR RATIOS	Earnings per share (EPS)	=	$\frac{\text{Net Income}}{\text{Number of shares}}$
	Dividend Cover	=	$\frac{\text{Net Income}}{\text{Dividend per share}}$
	Price per earnings ratio	=	$\frac{\text{Market value per share}}{\text{EPS}}$
	Dividend Yield Ratio	=	$\frac{\text{Dividend per share}}{\text{Market value per share}}$

7.2. Aston Martin Lagonda Financial Data (2017-2021)

	2017	2018	2019	2020	2021
Revenue (£m)	£ 876.0	£ 1,093.5	£ 997.3	£ 611.8	£ 1,095.3
CoGS (£m)	£ 496.2	£ 660.7	£ 642.7	£ 500.7	£ 751.6
Gross Profit (£m)	£ 379.8	£ 435.8	£ 354.6	£ 111.1	£ 343.7
Operating Profit (£m)	£ 148.8	£ 72.8	-£ 36.7	-£ 322.9	-£ 76.5
Net Income (£m)	£ 79.0	-£ 57.1	-£ 104.4	-£ 410.5	-£ 189.3
Current Assets (£m)	£ 412.7	£ 551.6	£ 567.5	£ 889.5	£ 867.9
Total Assets (£m)	£ 1,626.4	£ 1,970.2	£ 2,231.1	£ 2,794.8	£ 2,842.5
Current Liabilities (£m)	£ 512.2	£ 790.3	£ 858.2	£ 808.3	£ 905.2
Non-current Liabilities (£m)	£ 966.5	£ 730.5	£ 1,014.0	£ 1,182.4	£ 1,276.9
Total Liabilities (£m)	£ 1,478.6	£ 1,520.8	£ 1,872.2	£ 1,990.7	£ 2,182.1
Inventory (£m)	£ 127.8	£ 146.6	£ 183.0	£ 204.1	£ 202.1
Cash & Cash Equivalents (£m)	£ 167.9	£ 144.6	£ 107.9	£ 489.4	£ 418.9
Stockholders Equity (£m)	£ 147.8	£ 449.4	£ 358.9	£ 804.1	£ 660.4
LongTerm Debt (£m)	£ 966.5	£ 730.5	£ 1,014.0	£ 1,182.4	£ 1,276.9
Interest Payments (£m)	£ 45.1	£ 44.3	£ 55.3	£ 98.4	£ 151.3
Trade and other receivables (£m)	£ 115.7	£ 242.6	£ 251.5	£ 178.8	£ 245.5
Trade and other payables (£m)	£ 500.8	£ 720.8	£ 711.5	£ 586.4	£ 730.8
Average revenue per day (£m)	£ 2.4	£ 3.0	£ 2.7	£ 1.7	£ 3.0
Average COGS per day (£m)	£ 1.4	£ 1.8	£ 1.8	£ 1.4	£ 2.1
Number of shares (mil)	193.8	202.1	228	77.2	115.5
Dividend per share (£)	£ -	£ -	£ -	£ -	£ -
Market value per share (£)	£ 36.88	£ 78.56	£ 33.37	£ 20.09	£ 13.53
Earnings per Share (£)	£ 0.41	-£ 0.28	-£ 0.46	-£ 5.32	-£ 1.64

Aston Martin (2017-2021)