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### Final Thesis

#### **A critical analysis of Rolls-Royce Holdings plc's Shareholder Wealth creation in the five-year period from 2017 to 2021.**

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# Chapter 1, Introduction

## 1.1 Introduction

Shareholder Wealth Maximization is seen by many authors as the main objective of a business, it entails the ability of the firm to generate returns to stockholders and maximize these returns. The value of a company can be summarized by its market capitalization, and it is tied to the value of its shares. In short, Shareholder Wealth can be built by creating enough profit to sustain the growth of the business while redistributing the residual claims to its owners, however one must not limit its views on the mere accounting profit. There are many aspects in business management that affect the ability of a firm to generate value, during our analysis we will focus on some key aspects of the operational and strategic choices of the firm, in order to understand to what extent Shareholder Wealth is maximized. The analysis will be carried out using the Case Study method and Rolls-Royce Holdings PLC will be used as an example to determine the ways and the extent to which Shareholder Wealth is maximized during the period from 2017 to 2021.

## 1.2 Company Background

Rolls-Royce Holding PLC is a large British multinational that operates in the Aerospace and Defence industry and in the Power Systems business. Its core business is the manufacturing and servicing of powerful propulsion systems that have civil and military applications. Rolls-Royce is a public limited company listed in the London Stock Exchange as LON: RR and is part of the FTSE 100. The company has currently a market capitalization of 7.2 £Bn and it has operations in 49 countries, its largest markets in terms of revenues are the USA, UK and China, and it has customers in over 150 countries. The company's current Chair is Anita Frew, and its Chief Executive Officer is Warren East.

## 1.3 Industry Background

The Aerospace and Defence industry can be divided between two key sectors: commercial or civil Aerospace and, Defence. In the commercial sector, demand from air travel passengers is a key revenue driver as it affects demand for aircraft components and the frequency of maintenance. For what concerns the defence sector, government spending is a key driver. The engine manufacturing sector has seen a revenue decline in the past five years. The Aerospace and Defence industry has faced difficult market conditions in 2020 with the COVID-19 pandemic and it is set to slowly recover, the commercial aerospace was the most affected by the travel restrictions. In these sectors, energy efficient power will be a key requirement for

future development, a sustainable competitive advantage can be achieved by superior technology integrating sustainable and efficient products.

#### **1.4 Aims and Objectives**

Rolls-Royce Holdings PLC will be the subject of this Case Study analysis which will evaluate the ability of the firm to create value for its shareholders during the five-year period from 2017 to 2021. Our primary purpose will be linking the firm's operational and strategic choices, analysing financial data, to the capacity of generating returns and wealth for the company's stockholders. We will consider the impact of industry wide shocks on demand and study the capabilities of resilience of the firm. In this view we will consider both short-term and forward-looking approaches to evaluate Shareholders Wealth Maximization. The objectives of this projects are the following:

- Review the relevant literature on Shareholder Wealth Maximization, identifying different perspectives and conflicting views.
- Analyse the industry dynamics and the economic conditions in which Rolls-Royce operates and define its approach to business management and value creation.
- Analyse Rolls-Royce's financial performance during the five-year period (2017-2021)
- Link our results to the company's strategy and the relevant theories to evaluate the ability to maximize Shareholder Wealth.

#### **1.5 Design and Methodology**

Given the objectives stated above, we will follow the following steps to derive our conclusion:

- 1) Gather evidence from the existing literature and discuss the different approaches and findings.
- 2) Collect quantitative and qualitative data to evaluate the company's operations and strategy
- 3) Analyse the data and represent the results in tables in graphs
- 4) Discuss and evaluate the results
- 5) Draw a conclusion

This project will utilize the Case Study method, gathering the data from the company's annual reports, press releases, financial websites, and financial data providers. Once collected, the data will be represented in tables in graphs to facilitate the interpretation. For what concerns the profitability analysis we will use the relative valuation method comparing the company with

two of its peers. This project is based on the data available and might have some limitations, since, in many cases annual report represent a holistic view of the firm and may conceal some important information. The topic is discussed from a subjective point of view with personal interpretation of data, furthermore, it makes assumptions about the future of the firm which are limited to the availability of information and might not realize in the future.

## **1.6 Project Structure**

### Literature Review

This section analyses a variety of published articles and books on Shareholder Wealth creation and maximization, it focuses on defining Shareholder Wealth and how to measure it. It then discusses some of the most relevant topics for the purpose of our analysis, namely capital structure, working capital management and the firm's strategy.

### Industry Overview and Company Overview and Strategy

In this chapter we analyse the most significant trends and how the market develops, afterwards we look at what the core business of Rolls-Royce is and how it the business is structured and managed.

### Shareholder Wealth Creation Analysis

This chapter examines the gathered data, and comments on the performance of the firm from 2017 through 2021 and it compares it with competitors.

### Discussion and Evaluation

This section evaluates the results of the analysis and discusses the ability of the firm to generate wealth for its shareholders, linking our findings to the relevant theory.

### Conclusion

This section summarizes our finding and concludes the project.

## Chapter 2, Literature Review

### 2.1 Shareholder Wealth Maximization

According to Means (1991) the traditional objective of a corporation is to create benefits for its owners, shareholders, that should be entitled to all profits that are distributed. Since the establishment of private property, the owners have been entitled to full use and enjoyment of the benefits derived from the ownership, in the same way, shareholders are entitled to reap the benefits of their investment in the firm. Adam Smith (1776) argued that the firm, by maximizing the return to its owners, will produce greater value that can, ultimately, benefit society at large; this theory was supported by the notorious economist Milton Friedman that stated that “the social responsibility of business is to increase profits” (1970). Shareholder Wealth Maximization (SWM) according to the traditional theories is the ultimate goal of a business, shareholders own all the shares and consequently bear the risk annexed with the operations and potential losses of the firm (Neale and McElroy, 2004), if the profit increases also the ability to distribute it to the owners will increase. Shareholder Wealth (SW) can also be seen as the ultimate residual claim of the company’s owners, that after having satisfied all other obligations such as creditors, payment of taxes, warranty claims, can be rewarded with the remaining claims (Smith, 2014). SWM as a corporate objective is closely linked to agency theory in which managers, defined as agents, act on behalf of principals, in this case, shareholders. The agents have a fiduciary duty to conduct the business in the sole interest of the shareholders, that by being owners are the beneficiaries of the business activities (Dodd, 1932), Dodd also argued that the sole function of the corporation is to make profit for its shareholders. Some argue that the SWM aim of a corporation can be attributable to the control function of its owners, in fact, since stockholders can exercise their voting rights in the board of directors’ meetings and thus indirectly control the operations of the firm, they are the most important stakeholders. As a result, managers and employees will try to maximize stockholders’ wealth (O’Connell and Ward, 2020). Having defined that SWM is a key objective of the modern corporation, one needs to consider how this value is created, specifically from gains attributable to share price increases and dividends distribution, how to measure SW will be the aim of the following paragraph. SWM can be seen as a short-term objective of companies that merely try to maximize profits and their distribution, this strategy might maximize short-term value, but profits distributed will mean sacrificing future investments in growth and development of the firm. Conversely, a more credible approach states that SWM should be a long-term objective and cash inflows to owners should be distributed through time (Arnold,

2013), with a long-term prospective, dividends might be retained in the short run, but they will be invested in business developments that could yield higher pay-outs in the future.

## 2.2 Measuring Shareholder Wealth

Having defined Shareholder Wealth as one of the firm's key objectives, the next step is to define how is Shareholder Wealth creation can be measured in a quantifiable manner. Different approaches throughout the years have measured SW in different ways, Rappaport (1998) defined shareholder value as the *corporate value minus debt*, where corporate value is the *sum of the present value of future cash flows forecasted plus the residual value*, beyond the forecasting period. This formula divides the total corporate value between debt and equity holders, the latter being what needs to be measured. Windsor (2010) defined SW for publicly listed companies, as the market capitalization, meaning the *number of outstanding shares multiplied by their price*. Both these measurements are aimed at deriving SW as a collective number but fail to measure its incremental change over time or the return for individual shareholders. Total Shareholder Return (TSR) is a comprehensive measure that, in percentage, shows the return for investors in a business.

$$TSR = \frac{\text{Dividend} + (\text{Closing share price} - \text{Opening share price})}{\text{Opening share price}}$$

The formula, TSR, shows how the determinants of shareholder's returns are two: dividends and capital gains (the appreciation of shares). Dividends are easily identifiable as the profit of the year that is distributed to the owners rather than being kept within the firm. Companies need to balance two conflicting views on dividends policy, dividends distributed in the short term will benefit owners but could sacrifice higher long-term returns, in fact, a firm, as per the dividend as a residual theory, should return cash to shareholders only after having pursued all profitable investments, that could create more value in the future (Smith, 2009). The other element of TSR is capital gains derived by an increase in share price, that is affected by a multitude of factors, for the purpose of our analysis we will focus on performance, financing, and strategic factors. Another comprehensive incremental measure of Shareholder Wealth creation is the Economic Value Added:

$$EVA = \text{Net Operating Profit After Tax} - (\text{Invested capital} * \text{Cost of capital})$$

This measure is an attempt to identify value creation of a firm by taking the profit generated and subtracting the related financing costs. Stewart (1991) stated that, quite simply, when EVA is positive SW is created and if EVA is negative value is destroyed. Given the SWM goal of

businesses, EVA is a better measure compared to accounting profit according to Alam and Nizamuddin (2013), it represents the real value to owners. Furthermore, Stewart (2014) argues that TSR is a function of earning economic profit (EVA), the two measures are closely linked with the expected future cash flows that will reflect in share price changes. By merging the TSR approach with EVA, and the shareholder value drivers identified by Rappaport (1998) we can conclude that the key is generating positive cash flows greater than the negative ones. In this case study, we will measure value creation in terms of business strategy, analysing growth, margins, and returns, investing strategy, focusing on capital investment and working capital, lastly, financing strategy, focusing on capital structure. Furthermore, we will analyse accounting measures such as net income, revenues, and Return On Assets, that can provide a relevant insight on how measures such as TSR, EVA and Market Capitalization are influenced and will help us investigate how Shareholder Wealth is maximized.

### **2.3 Capital Structure**

Companies need to finance the assets that allow them to operate, the rising of the required capital can be done by using equity or debt. Equity is the portion of capital raised by the owners of the firm, ordinary shares sold to investors (Neale and McElroy, 2004), or created by retentions, which are funds generated within the firm by the previous years' profits that were not distributed to owners and are retained within the business. On the contrary a firm can choose to finance its operations accessing third party borrowed capital, debt. According to Brigham and Houston (2011), debt has two main advantages: it's tax deductible, which lowers its effective cost, and it increases the expected return of shareholders. If the company wants to raise additional funds, issuing new shares to the public will lead to more owners entitled to profit distribution, while borrowing, at a fixed rate, will leave the additional profit to the existing equity holders. In addition, issuing new shares will create ownership dilution and might reduce the control exercisable by majority shareholders. A business needs to carefully examine the targeted capital structure and the weighting of the two components (debt and equity), the optimal financing policy will be aimed at maximizing the value of the firm (Hirdinis, 2019). Among the factors to be considered in the choice of source of financing we consider the level of risk, with debt being riskier than equity, and the cost of capital. According to the notorious economists Modigliani and Miller (1958), the cost of capital and capital structure are "completely independent", and will not alter firm value, however, subsequently Bradley et Al. (1984), by reviewing the relevant literature, found that, despite both debt and equity holders are being ultimately taxed there is a net tax advantage when issuing corporate



debt. The firm's optimal capital structure needs to consider the tax advantages but also the debt related costs, if these costs are significant, they will alter the cost of capital. Cost of capital can be measured by using the WACC formula.

$$WACC = C_e \times \frac{E}{E + D} + C_d \times \frac{D}{E + D} \times (1 - T)$$

*Where:*

$C_e$  = Cost of Equity

$C_d$  = Cost of Debt

$E$  = Equity

$D$  = Debt

$T$  = Tax rate

The Weighted Average Cost of Capital considers both the cost of equity and debt, their proportion within the firm and the tax rate which will lower the cost of debt. An analysis of the capital structure of a firm can be done by utilizing gearing (leverage) ratios, in which the Debt-to-Assets ratio is a key indicator of the financing choices of the firm.

## **2.4 Working Capital Management**

Value creation in terms of investing strategy refers to the return that a particular capital investment yields, investments can be in long term, non-current assets, or in short term current assets that allow the business to operate. Working Capital (WC) is defined as the difference between current assets and current liabilities. Working Capital management refers to the policies adopted by the firm, essential for daily operations, to fund the difference between short-term assets and short-term liabilities (Harris, 2005), managing WC has an important role in the firm's profitability, risk and value (Smith, 1980). This view is confirmed by Aktas et al. (2014) that argued, when the firm achieves the optimal level of working capital, stock prices and performance will be improved. Managers often do not realize that by neglecting working capital investment, cash resources that could fund growth will be sacrificed, on the contrary, by overinvesting resources in WC, unnecessary funds will be in idle and stock and operating performance will decline. Extensive literature analysed by Kieschnick et al (2013), shows that metrics such as Return On Assets and Return On Equity are improved with reduced Cash Conversion Cycles. The Cash Conversion Cycle is a comprehensive measure that signals the time elapsing between parting with cash and receiving it from clients (Neale and McElroy, 2004). Also known as WC cycle, this metric helps managers understand the impact of decisions

in terms of cash flows, it is affected by creditors, debtors and goods held in inventory. An optimal level of working capital is achieved by balancing risk and efficiency, while maintaining a proper level of the different components of current assets and liabilities (Nazir and Afza, 2009). WC is significantly influenced by other firm's metrics, such as sales expectations, debt load, financial constraints, and bankruptcy risks (Kieschnick et al., 2013). In order to study the impact of WC policies on Shareholder Wealth we will consider the impact on Free Cash Flow, current Free Cash Flow might be reduced by further WC expenditures, but future Free Cash Flow might benefit. For instance, if a firm limits its cash outflow and does not invest in enough stock, it will not be able to meet customers request and this will in turn affect future sales.

## **2.5 Strategic Considerations**

Creating value for shareholders, as a prime purpose of the firm, entails careful strategic planning in which shareholders' interests direct the decisions and operations of the business. Strategic decisions will concern the choice of the targeted market and which products or services to provide, keeping the Shareholders Wealth Maximization objective in mind, business will need to achieve and maintain a competitive advantage exploiting their core capabilities to extract value. According to Haksever et al. (2004), the value dimensions that create or destroy Shareholder Wealth can be grouped into: Financial, Non-financial and Time dimensions. The Financial dimension is about aiming for stable and profitable operations in which revenues, income and stock prices are carefully managed to achieve superior performance, it entails striving for efficiency and quality. Non-financial drivers are about the firm's reputation, customers and society's views and reliability of returns to its owners. Lastly, the Time dimension is key, plans of investments in R&D, human resources, partnerships, etc., will lead to the creation of time related value. Rappaport (2006) stated that the most effective strategy to create shareholder value is to maximize future expected value at the expense of near-term profits. The long-term view of value creation is important as short-term returns are increasingly volatile, in this view, Research and Development becomes a key indicator for future value creation. Kelm et al. (2014) found that investors usually react positively to innovation announcements or commercialization of new products, in turn this will affect shareholder value. Stockholders can ultimately control the undertaking of a certain value producing project through their voting powers, for instance they can take decisions of the firm's R&D spending. The firm's strategy, will also be influenced by the shareholders requirements shifting towards a sustainable value creation, changing traditional market relations (Salvoni and Gennari, 2017). In fact, owner's returns are also affected by the company's conduct in

terms of Corporate Social Responsibility (CSR) and Environmental Social Governance (ESG). In a study by: Zumente and Bistrova (2021), higher ESG disclosure and sustainability commitment will affect financial performance and in turn create higher shareholder value in the long-term. In conclusion, to reach the objective of SWM, firms need to evolve and innovate with a clear long-term strategy focusing on projects that create time resistant value.

## **2.6 Conclusions**

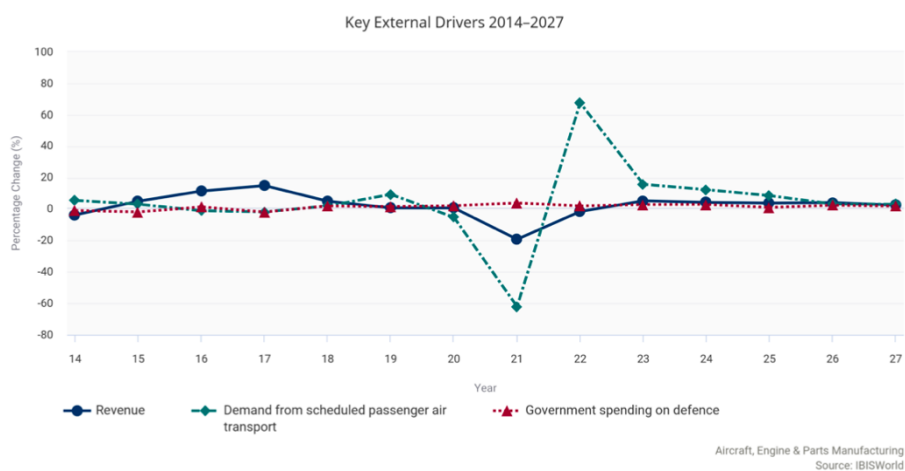
Shareholder Wealth Maximization is the prime objective of the firm according to literature from Smith, Friedman, Means and others. Owners, as such, should be rewarded for their investment in the firm and be entitled to profit redistribution. Shareholder Wealth is affected by virtually every area of business management, for the purpose of this case analysis we limit our scope to the areas that are more relevant for the analysis of Rolls-Royce Holdings PLC's value creation. Measures such as TSR and EVA can be used to estimate Shareholder Wealth, however, also accounting measures provide us with valuable insights on value creation as they ultimately influence these measures. The literature proves that capital structure of the firm, as part of the financing strategy affects the owners' returns, and capital investment in fixed asset and working capital are also key decisions that a manager need to make with the SWM objective in mind. Overall, the strategy of the firm needs to be directed towards value creation, in which the time variable is important. Some authors fail to understand the importance of a long-term value creation approach that sacrifices short-term profits. The SWM objective has some flaws and has been criticized, for instance, Steve Dennis in 2011 defined SWM as "the dumbest idea in the world", he argued that the stock markets are flawed as the value of companies is tied to the expectations market rather than the real market, and executive compensation is tied to the wrong objectives were signalling shareholders prevails over actual returns. Theories such as the stakeholder theory try to shift the focus of corporations away from owners and argue that value should be maximized for all stakeholders and society. Further analysis should be focused on how the SWM approach can satisfy a wider range of interests and whether it ultimately maximizes value for society.

## Chapter 3, Industry and Company Overview

### 3.1 Industry Overview

Rolls Royce Holdings PLC operates mainly in the Aerospace and Defence (A&D) sector. In this section we will focus on the global developments in the 5-years period from 2017 to 2021. The A&D industry performance can be affected by a variety of drivers, among the most relevant we can find the demand for scheduled passenger air transport, that in turn affects demand for new aircrafts thus engines and components. In addition, for the defence area, government spending is a key revenue driver.

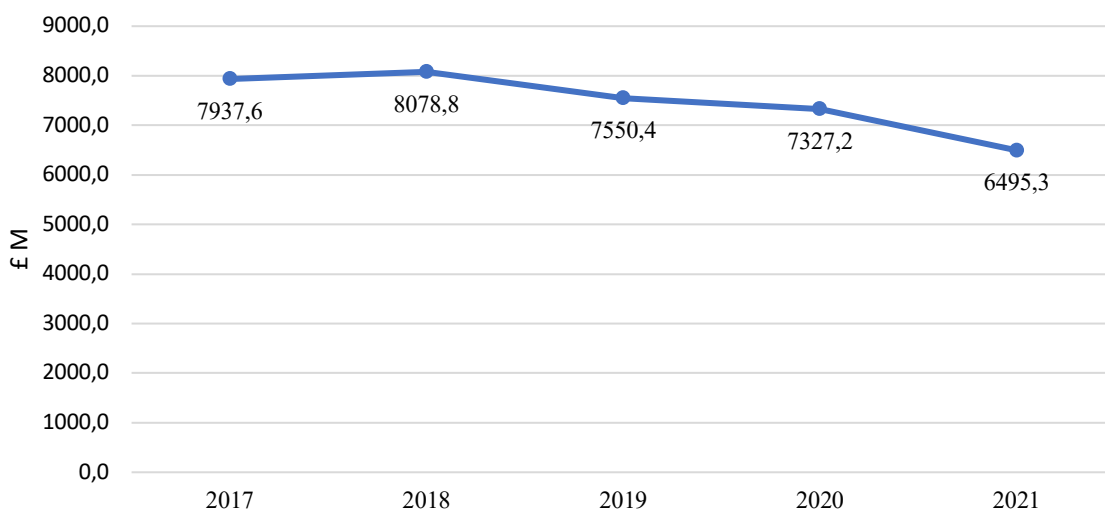
Figure 1, Aerospace and Defence Key Drivers 2014-2027



Starting our inquiry with 2017, the sector growth was slower than expected with global revenues growing 2.1% (Deloitte, 2018), during the year the production of aircrafts ramped up because of higher travel demand. Higher travel demand was led by the Asia-Pacific region that, given an increase in share of the middle class, had a strong travellers growth. On the same year, the defence sector revenues were expected to grow with a CAGR of about 3% over the 2017-2019 period (Deloitte, 2018). During 2018, the global industry revenues reduced, despite increased passenger travel and military spending. The year was characterized by high orders backlogs as demand for fuel efficient aircrafts and engines soared. The following year, 2019, the defence expenditure continued to rise as NATO members increased their military budget, regional powers such as China and Japan contributed to the sector's growth. Conversely the commercial aerospace sector experienced lower growth due to lower production rates for certain aircraft models (Deloitte, 2020). In 2020, with the discovery of the first COVID-19 cases, most countries introduced strict travel restrictions and according to the US Aerospace Industries Association, the industry suffered the most dramatic change in its century of history. As civil airlines were affected by huge losses in terms of passenger revenues (Figure 1),

manufacturers were in turn largely impacted. During the year airlines cancelled or deferred many aircraft deliveries, impacting the whole upstream value chain, demands for parts reduced and engine manufacturers such as Rolls-Royce were largely affected. Furthermore, as planes were flying less, revenues from maintenance and service contracts were largely impacted. The defence sector, on the other hand, was more stable and did not feel the impact of the pandemic in the short-medium term. The following year, 2021, was again impacted by the COVID-19 pandemic, London Heathrow airport reported an 83% fall in passenger levels in March 2021 (Yusuf, 2022). Later during the year, with the rollout of the first vaccines against the virus prospects improved but revenues will remain below pre-pandemic levels. Looking into the future, mass vaccinations around the globe will eventually lead to a recovery in the sector and revenue growth, a report by IBISWorld predicts an annual compound growth rate of 3.9% over the next five years in the UK. In the defence sector, global expenditure is expected to rise, accelerated by the Russian-Ukraine crisis that led countries such as the UK and Germany to increase public spending on defence. A trend worth identifying is the switch to cleaner energy sources, given increasing environmental charges, engine manufacturers could benefit from growing demand for clean and fuel-efficient power systems. Rolls-Royce Power Systems division could be classified as operating in the Engine manufacturing sector, Figure 2 shows the revenues in the UK for this sector. Revenues are decreasing and are mainly affected by factors such as Industrial production, business capital expenditure and the price of steel. In 2020, with the COVID-19 pandemic, these external drivers were all adverse with supply chain disruptions and businesses trying to cut expenses on investments. The low carbon emission

Figure 2, Engine and Turbine Manufacturing Revenues in the UK (£M)



Source: IBISWorld.com

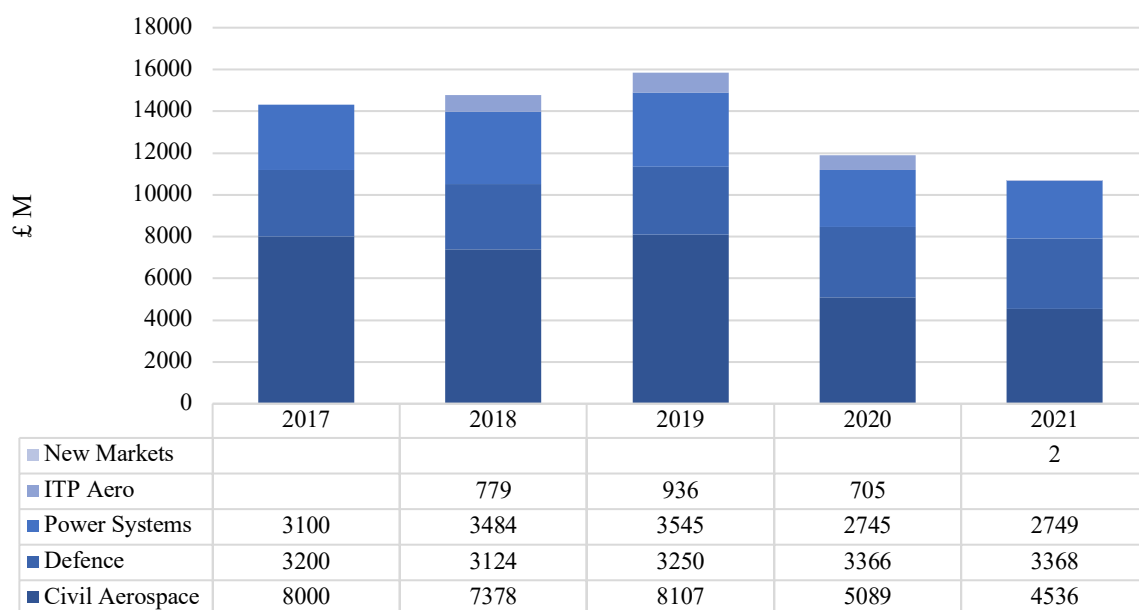
trend is an important determinant for the success of the industry as many players switch to low-emission and fuel-efficient engines.

Rolls-Royce operates in a highly competitive industry, where innovation is a key to maintain a competitive advantage, the company is the world second aircraft engine producer after General Electric according to Forbes (Aboulafia 2019). General Electric is a large conglomerate that operates in many different industries, and for this reason it is not an appropriate peer to compare financial performance with, on the other hand, MTU Aero Engines AG and Safran SA are two smaller aircraft engine and components producers that are more similar to Rolls-Royce in terms of market capitalization and business strategy.

### 3.2 Company Overview and Strategy

Rolls-Royce has more than a century of history but the company as we know it today was incorporated in 2011 as Rolls-Royce Holdings PLC. Rolls-Royce is a world leader in power solutions for Aerospace and Defence uses and it also operates in the marine and energy markets. It is among the largest commercial aviation engine suppliers, and it has contracts with governments around the world, such as UK and USA, for the supply of engines for military aircrafts, vessels, and submarines. The company strives to deliver with its cutting-edge technology, clean safe and competitive power solutions for most uses and applications (Rolls-Royce Holdings PLC, 2021). The company has a decentralized structure, and it is currently divided in four main business units: Civil Aerospace, Defence, Power Systems and until 2020,

Figure 3, Underlying revenues of Rolls-Royce Holdings PLC (£m)



Source: Rolls-Royce Holdings PLC 2017-2021

ITP Aero, and from 2021, New markets. In Figure 3, we can see the trend in revenues of the different business units. The Civil Aerospace segment produces gas turbines for commercial aircrafts, regional and business jets, furthermore, it provides customer support and maintenance for clients. The Defence branch is a leader in aero engines for transport and combat military aircrafts, it also supplies large power systems for vessels, and it supplies nuclear propulsion plants for all the submarines in the UK Royal Navy (Rolls-Royce Holding plc, 2021). The Power Systems unit, with its brand *mtu* provides integrated solutions for marine, industrial and power generation needs, guaranteeing sustainable and reliable energy sources. ITP Aero was acquired in December 2017, it focuses on the activities of maintenance, repair, and overhaul, and also develops some engine components. Lastly the new markets segment was introduced, it focuses on the development of new, high growth potential projects, as of 2021 these are the Rolls-Royce Small Modular Reactors and Rolls-Royce Electrical.

Figure 4, Number of shares 2017-2021 Rolls-Royce Holdings Plc

Types of shareholders	2017		2018		2019		2020		2021	
	Number of shares	% of total shares	Number of shares	% of total shares	Number of shares	% of total shares	Number of shares	% of total shares	Number of shares	% of total shares
Individuals	90,662,315	4,93	87,362,888	4,61	85,147,751	4,41	214,427,740	2,56	208,277,962	2,49
Institutional and other investors	1,749,934,793	95,07	1,808,347,563	95,39	1,845,807,562	95,59	8,153,169,249	97,44	8,159,319,027	97,51
Total	1,840,597,108	100	1,895,710,451	100	1,930,955,313	100	8,367,596,989	100	8,367,596,989	100

Source: markets.ft.com

Figure 5, Top 10 Shareholders of Rolls-Royce Holdings Plc at May 2022

Holder	Shares	% Held
Causeway Capital Management LLC	673.91m	8,05%
Harris Associates LP	417.54m	4,99%
The Vanguard Group, Inc.	267.93m	3,20%
Massachusetts Financial Services Co.	261.98m	3,13%
Hargreaves Lansdown Stockbrokers Ltd.	251.69m	3,01%
Capital Research & Management Co. (Global Investors)	247.43m	2,96%
Templeton Global Advisors Ltd.	199.95m	2,39%
FIL Investment Advisors (UK) Ltd.	198.44m	2,37%
Abrams Capital Management LP	187.46m	2,24%
BlackRock Fund Advisors	186.04m	2,22%

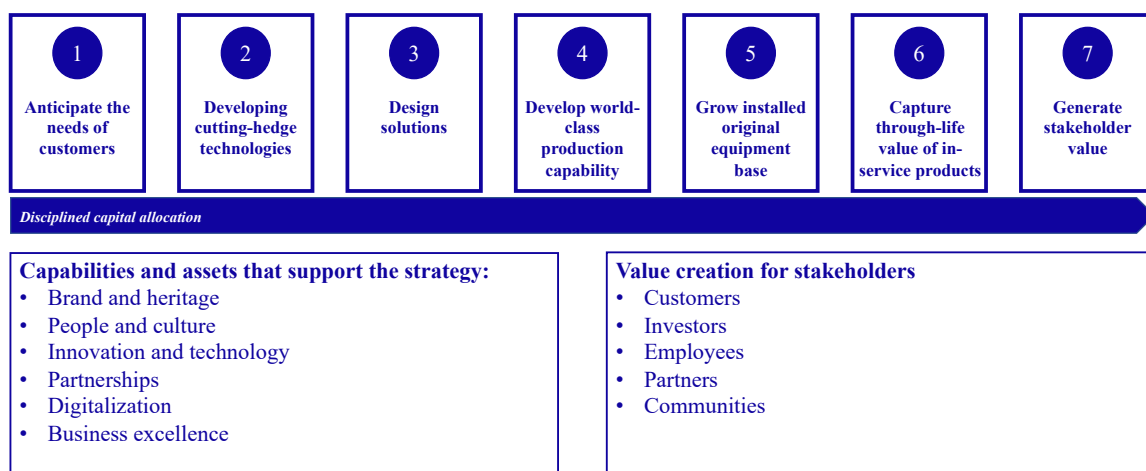
Data from 31 Mar 2022 - 05 May 2022. Source FactSet Research Systems Inc.

As we can see from Figure 4 the ownership of structure of the firm can be split between individual shareholders and institutional investors which account for around 95% of the ownership. Among these 34.56% of the shares is owned by 10 large investors, with Causeway Capital Management LLC having the largest share (Figure 5). The company is organized following a hierarchical structure, suited for this large organization, as of 2021, the board is chaired by Anita Frew and Warren East holds the chief executive role.

Built on a strong brand history and heritage, Rolls-Royce identifies among its competitive advantages three key competences that allows for a sustainable business model and value creation. First its cutting-edge technologies, the company pledges to increasingly meet customer needs of sustainable power systems for all applications, for this reason, it strongly focuses on R&D and innovation. A second competitive advantage is identified as “system solutions” meaning that the marketed products integrate into complete systems working together. Lastly, “system life” the ability of the firm to provide throughout life support and maintenance (Rolls-Royce Holdings Plc, 2021). The company’s business model depicted in Figure 6, incorporates this competitive advantage into a value creation model that starts with the importance of accommodating customer needs and develops along the value chain creating high-end products and the ability for future growth, ultimately creating value for all stakeholders. Roll-Royce, in addition, has a disciplined capital allocation policy that evaluates future investments based on financial measures such as returns and non-financial measures such as risk and carbon emissions and other ESG measures. It is worth noting for our further analysis that Rolls-Royce has built strong relationship with its customers, the nature of its business allows for long-term supply contracts with airlines for civil aerospace and engines and with governments for military application ones. An example could be the five-year “Mission Care” contract with the US Marines, Navy and Air Force signed in 2019 (Rolls-Royce Holdings Plc, 2019). The “sticky” nature of the business allows for certain and reliable future cash inflows derived mainly from maintenance, repair, and overhaul revenues.



Figure 6, Rolls-Royce’s Business Model



Source: Rolls-Royce Holdings PLC, 2021



## Chapter 4, Shareholders Wealth Creation Analysis

There are several different approaches in measuring Shareholders Wealth creation, in this section we will examine some key aspects of the Financial and Non-financial performance of Rolls-Royce Holding PLC during the five-year period 2017-2021. For the purpose of analysing Financial performance, we will use a relative valuation approach selecting two peers that are comparable in size and business model, namely Mtu Aero Engines AG and Safran SA.

Figure 7, Comparative Information (2021)

Name	Ticker	Mkt Cap (£M)	EPS	Operating Margin	Profit Margin	WACC	Debt/Assets
<b>Median</b>		<b>8211.19</b>	<b>0.09</b>	<b>9.00</b>	<b>1.28</b>	<b>10.53</b>	<b>19.32</b>
ROLLS-ROYCE HOLDINGS PLC	RR/LN	7202.83	0.01	9.52	0.37	10.85	27.12
MTU AERO ENGINES AG	MTX GR	8211.19	3.58	9.00	7.00	9.41	19.32
SAFRAN SA	SAF FP	35085.60	0.09	6.84	1.28	10.53	17.12

Source: Bloomberg.com

### 4.1 Share Price Analysis

As we have seen, the market capitalization of a company is a fundamental measure to indicate value creation, and it depends on changes in the share price of the firm. Share prices are highly volatile and are affected by the preference and demand of investors, a drastic change in price will eventually alter the value available to owners. In Figure 8, the changes in share price of the company from 2017 to 2021 are represented. In 2017 the price increased quite significantly, during the year, the company recorded record figures in terms of turnover and profit, set against the losses of the previous year. The Civil Aerospace and Power Systems segments improved their overall contribution, with 2700 Trent XWB aircraft engines ordered to be delivered in a five-year period and fitted in the new Airbus A350 models (Robinson, 2017). With investors' confidence restated the share price reached 995 pence, increasing by about 45% from the beginning of the year. During 2018 the company reached the highest market capitalization of the 5 years period: 15.7 billion pounds and performed better than analysts predicted and improved Free Cash Flow and recorded a double-digit growth in the Power Systems segment. Despite unexpected expenses caused by the faulty Trent 1000 engines, Rolls-Royce delivered strong performance for its owners, with its shares trading at premium, increased market capitalization and thus value creation for shareholders. During 2019, the stock price declined over further production issues that resulted to be costly and resource intensive. As part of the FTSE 100, the company is among the top 100 firms registered in the London Stock Exchange in terms of market capitalization. This Index can also be used as a benchmark to evaluate how the share price of the company relates to the performance of other firms and the economy in

general, as we can see from the share price graph, the company largely outperformed the index from 2017 to 2020, when its stock value plummeted after the first COVID-19 outbreak that caused travel restrictions and rising precariousness in the civil aerospace industry. During 2020 and 2021 the stock underperformed the index, as Rolls-Royce was faced by harsh market conditions and uncertainty by its investors, however with the initiation of a large restructuring plan and the launch new products with high growth potential the business may expect to return to pre-pandemic levels of market capitalization and share price, creating new value for its shareholders. The company's Beta is a good indication on how the stock price reacts to macroeconomic events and systematic risk in the market, if Beta is less than 1, the stock is less volatile than the market, if its greater than 1, the stock is more volatile than the market, this might entail higher risk but possibly higher returns. Rolls-Royce currently has a Beta of 1.83 (07/2022, fame.com), this figure is an indication on how its share price is volatile, and in the case of systematic shock like the COVID-19 pandemic, this confirms the large price fall.

Figure 8, Rolls-Royce's Share Price compared to the FTSE 100 Index (2017-2021)

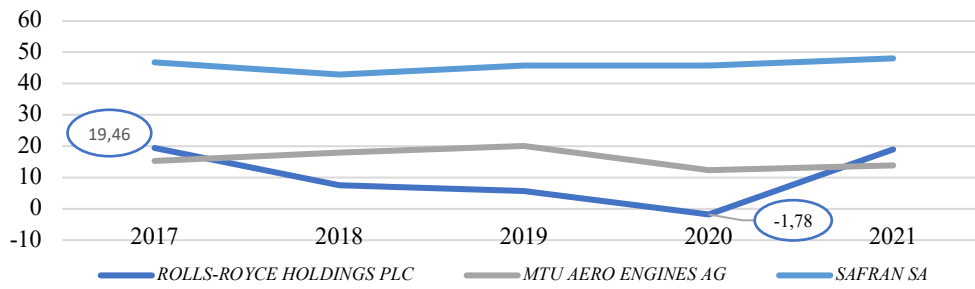


Source: Morningstar.com

## 4.2 Profitability Analysis

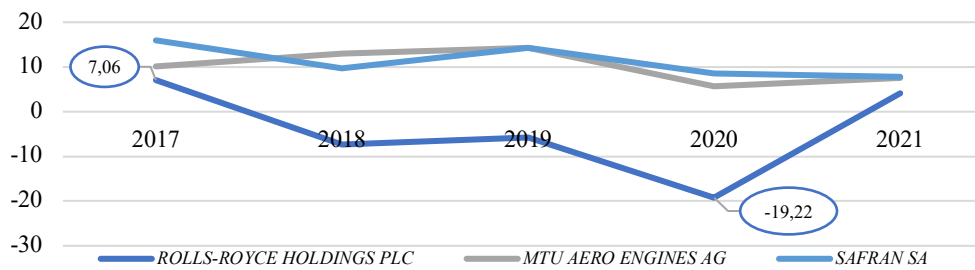
Value for the owners of the firm is ultimately tied to the ability of generating profits that can be reinvested or redistributed, thus analysing to what extent Rolls-Royce is able to efficiently use resources and produce accounting profit is a fundamental part of our study.

Figure 9, Gross Margin (%)



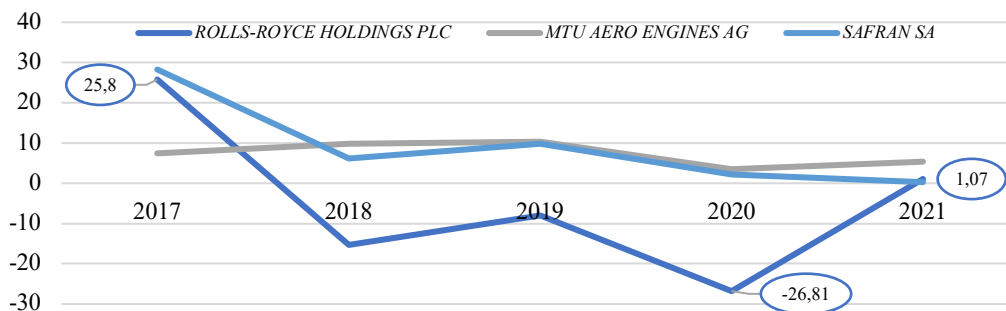
Source: Morningstar.com

Figure 10, Operating Margin (%)



Source: Morningstar.com

Figure 11, Net Profit Margin (%)



Source: Morningstar.com

Profitability margins are a good indicator of the ability of the company to generate profit and can help to determine how costs are controlled and efficiency is achieved. Gross margin indicates, in percentage, the profit available after considering the direct costs of production that a business faces. Operating margin considers the effect of other variable expenses such as administration and depreciation, and net profit margin measures, in percentage the extent to which revenues generate the bottom-line income in the profit and loss statement. Investigating Figures 9, 10 and 11, we can see how Rolls-Royce positions itself below its peers in the industry, the margins keep declining throughout the period, despite a recovery in 2021. A declining gross margin may be attributable to higher costs of sale from 2017 to 2019, the company in fact faced problems with the Trent 1000 engines that led to the accumulation of extraordinary expenses. In 2020, revenues fell below the cost of revenues and the company

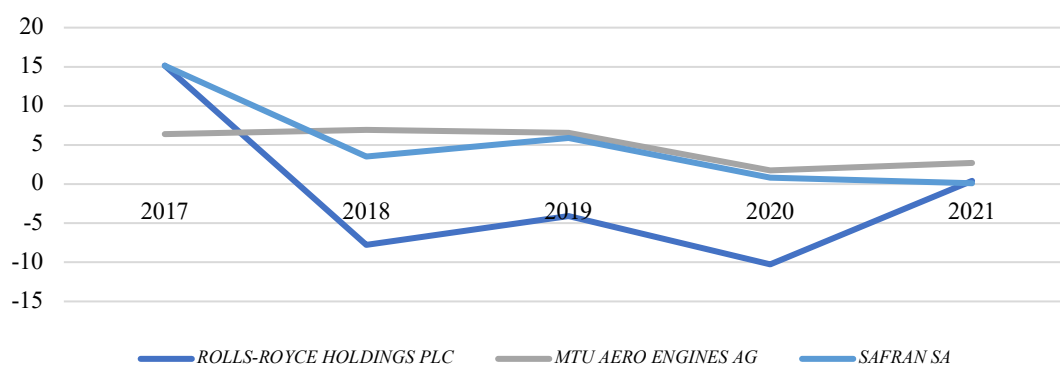
engaged in an extensive restructuring and cost mitigation program that led, in 2021, to an improved gross margin, surpassing the peer MTU Aero Engines AG. The operating margin and net profit margin declined in the 5 years period as the business struggled to contain expenses, however a significant percentage of operating expenses is attributable to Research and Development costs that should be regarded for the benefits they could yield in the long-term. Benefitting from the extensive restructuring program the company was able to improve its operating efficiency and slightly outperform Safran SA in 2021 in terms of net profit margin.

Figure 12, Profit and Loss Statement Extracts in £M (2017-2021)

	2017	2018	2019	2020	2021
<i>Total Revenue</i>	14,747	15,729	16,587	11,491	11,218
<i>Operating Income</i>	<b>1,151</b>	<b>-803</b>	<b>-713</b>	<b>-1986</b>	<b>569</b>
<i>Net Income</i>	<b>3,382</b>	<b>-2401</b>	<b>-1315</b>	<b>-3170</b>	<b>120</b>

Source: Rolls-Royce Holdings PLC

Figure 13, Return on Assets (%)



Source: Morningstar.com

The overall performance of Rolls-Royce over the period was poor, and as we can see from Figure 12, the company reported a loss in the years 2018 to 2020 but slightly recovered in 2021 as it carried out its restructuring program. A negative income affects the ability to generate returns for shareholders and ratios such as Return On Equity (ROE) are not applicable in this case as both numerator and denominator are negative, in fact the accumulated loss is greater than the share capital of the firm rendering the equity figure negative. Furthermore in Figure 13, Return On Assets is compared to Rolls-Royce's peers and shows the inability of the company to utilize the available resources efficiently to generate profit. Lastly, given its lack of profitability the company has paid low dividends to its shareholders in 2020 (Figure 14), it decided to stop payments due to the difficult financial situation, Rolls-Royce plans return to

prepandemic payout ratios in 2023 as it aims to rebuild shareholders confidence and redistribution.

Figure 14, Dividends per Share

	2017	2018	2019	2020	2021
<i>ROLLS-ROYCE HOLDINGS PLC</i>	0,02	0,04	0,04	0	0
<i>MTU AERO ENGINES AG</i>	1,9	0	0	0	0
<i>SAFRAN SA</i>	0,83	1,6	1,82	0	0,43

Source: morningstar.com

### 4.3 Capital Structure Analysis

The firm's capital structure is a key aspect to consider, as it shows the proportion of the equity and debt financing of a business and highlights to what extent owners or third-party lenders participate in the business. Rolls-Royce capital structure is not ideal from an investors' point of view as its liabilities are greater than its assets. In fact, the company has recorded a negative equity figure, since 2018 (Figure 15), due to the accumulated loss generated throughout the years. For the purpose of covering these losses, further use of costly third-party funds was necessary and as we can see, the level of total debt rises during the period. In 2020, with the aim of tackling the drop in revenues caused by the COVID-19 pandemic and the need of resources, £M 1,288 in shares were issued and £M 1,974 in non-current borrowing subscribed worsening the financial leverage of the business. Rolls-Royce has a WACC of 10.85% while Mtu Aero Engines AG and Safran SA have respectively 9.41% and 10.53% (Bloomberg.com,

Figure 15, Statement of Financial Position Extracts in £M (2017-2021)

	2017	2018	2019	2020	2021
Total Debt	3,488	4,662	5,685	7,330	7,776
<b>Total Liabilities</b>	<b>26,997</b>	<b>32,931</b>	<b>35,642</b>	<b>34,414</b>	<b>33,336</b>
Common Stock	368	379	386	1,674	1,674
Accumulated deficit	-178	-2,424	-4,382	-8,013	-7,645
<b>Total Equity</b>	<b>930</b>	<b>-1,074</b>	<b>-3,376</b>	<b>-4,897</b>	<b>-4,662</b>
<b>Total Liabilities and Equity</b>	<b>27,927</b>	<b>31,857</b>	<b>32,266</b>	<b>29,517</b>	<b>28,674</b>
Total Debt to Total Assets	0,97	1,03	1,10	1,17	1,16
Interest Cover Ratio	31,42	-0,22	-1,07	-2,30	0,73

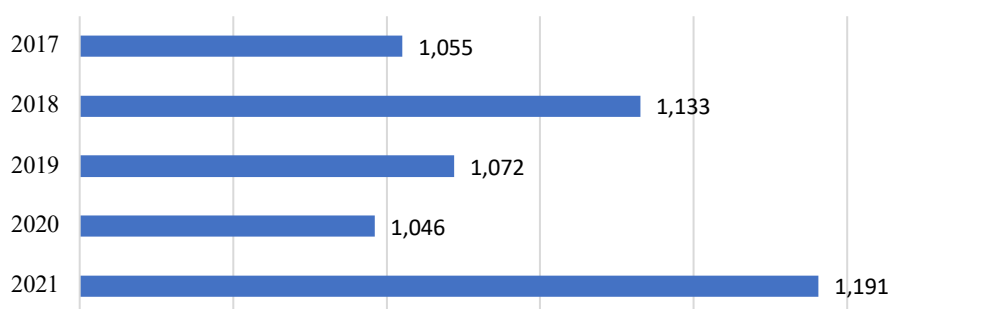
Source: Rolls-Royce Holdings PLC

2022), the company's peers are able to obtain cheaper sources of finance and to pay less interest. High interest payments are a consequence of high levels of borrowing, the ability of the company to pay these interests is represented by the Interest Cover Ratio, which is computed dividing EBITDA by Interest expenses. During the years 2018-2020 a negative Interest Cover Ratio indicates the inability of Rolls-Royce to pay its interest expense given the recorded losses, a figure of 0.73 in 2021 shows the partial recovery of the company that has improved its financial health and reduced insolvency risk. Gearing ratios, measured by the proportion of debt to equity, are a useful comparison tool for assessing the capital structure, however in this case, they are not computable as we have a negative equity figure, Mtu Aero Engines AG and Safran SA, on the contrary, have a solid capital structure and positive equity. Despite improvements in the capital structure, the business still appears in financial danger, managers need to carefully evaluate the next steps in the restructuring process which should focus on reducing the company's high dependence on debt and accumulated losses.

#### 4.4 Working Capital Analysis

A good working capital management depicts the ability to conduct operations in an efficient way, face daily expenses of the business, assuring that the right level of cash reserves is kept and will ultimately boost productivity and earnings. In order to analyse Rolls-Royce Working Capital methodology we start by computing the current ratio, a good indicator of the proportion of current assets to current liabilities. The current ratio (Figure 16) shows that the company is managing WC efficiently as current assets are greater than liabilities, signalling the ability of the business to meet its current obligations such as paying suppliers and other operational cash outflows. As we can expect the worst figure can be found in 2020, however the following year we can see a drastic improvement with the company reducing the level of its current liabilities.

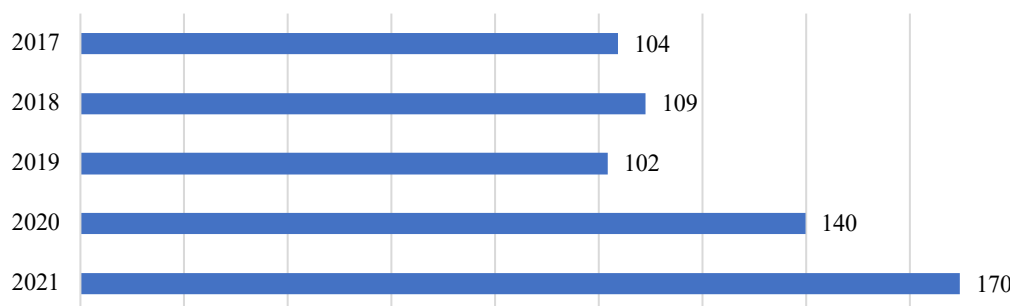
Figure 16, Current Ratio (2017-2021)



Source: Rolls-Royce Holdings PLC

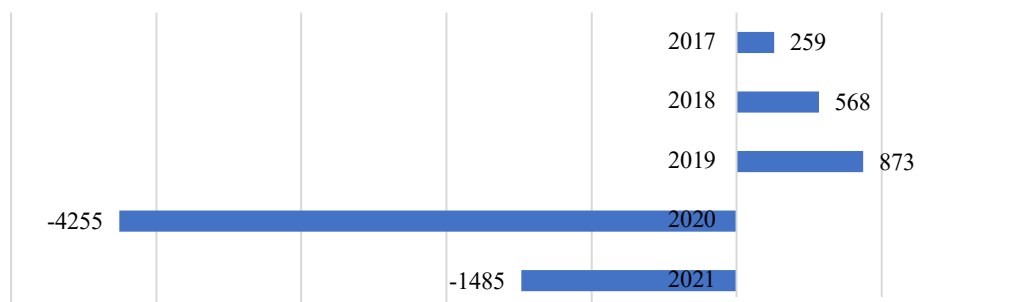
The Cash Conversion Cycle (Figure 17) is a good indicator of the time elapsed between cash outflows and inflows and thus explains the ability of a firm to sell inventory and receive payments promptly while delaying its payables with suppliers. Rolls-Royce's cycle has lengthened during the five-year period, showing a reduction in the ability to collect cash. This trend may, however, be attributable to the uncertainty caused by the COVID-19 pandemic in the civil aerospace industry that affected the financial health of Rolls-Royce's clients and reduced the demand for engines causing clients to delay payments and goods to remain longer in stock. Lastly, in Figure 18, we can see the fluctuations of Free Cash Flow (FCF) during the 5 years period. Improved FCF has been a major objective of Rolls-Royce's strategy throughout the period, as it is the ultimate measure of efficiency and indicates the residual cash after accounting for capital expenditure. FCF can be used by shareholders to evaluate the ability of the business to pay dividends and buyback shares while considering long-term capital investments that could yield future benefits. Except for 2020, the company's FCF has improved during the period and analysts predict further improvements with a return to a positive figure in 2022 (Bloomberg.com, 2022).

Figure 17, Cash Conversion Cycle in days (2017-2021)



Source: Rolls-Royce Holdings PLC

Figure 18, Free cash flow from continuing operations in £M (2017-2021)

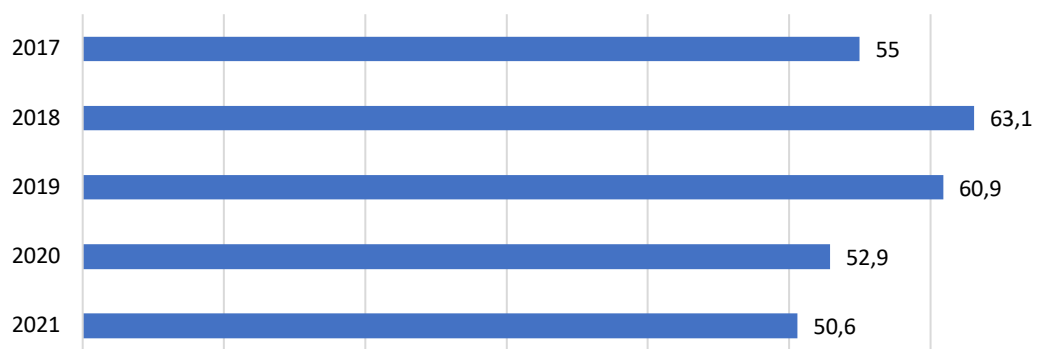


Source: Rolls-Royce Holdings PLC

## 4.5 Strategic Analysis

Roll-Royce's business can be considered a "long-term business", and this may be a key strategic consideration when determining how Shareholders Wealth is created. Firstly, the company sells engines before they are produced, with contracts where there is no right to cancel, thus creating a solid future stream of payments that will arise once the product is delivered. The value of order backlogs (Figure 19) shows the expected stream of future revenues, that will assure long-term performance, as we can see from the graph, the number has slightly reduced, however it is still more than three times the revenues of 2021 and depending on engine delivery times will be included in the sales of the following year. Rolls Royce is expected to deliver 1500 large aircraft engines that will allow to reach a 52% market share in the segment (Rolls-Royce Holdings PLC, 2021). Another key aspect to consider is the servicing that the firm provides under the LTSAs (Long Term Servicing Agreements) that amount for around 64% of the Civil Aerospace revenues for 2021 (Rolls-Royce Holdings PLC, 2021), these long-term contracts, usually lasting up to 10 years, provide a guarantee of future revenues. LTSAs revenues depend on Engine Flying Hours, and for this reason, a scenario like the COVID-19 pandemic that had a large impact on flying hours, ultimately affected the company's revenues from servicing. These two aspects of the aerospace business provide us with positive insights about the future profitability of the firm. Long-term performance is usually achieved by the extent to which a firm plans its future expansions towards new products and markets, capital expenditure and R&D expenditure are good indicators on the company's plans to grow. In Figure 20, the ratio between capital expenditure and underlying revenues is computed for the five-year period, and it represents the balance between long-term investments in infrastructure and short-term shareholder returns. Furthermore, Figure 21, shows the

Figure 19, Order Backlog in £BN (2017-2021)



Source: Rolls-Royce Holdings PLC



proportion of self-funded R&D to underlying revenues and highlights the commitment to strategic long-term investments.

Non-financial performance is another indicator that has become increasingly important as companies are evaluated for their CSR values and on their approach to tackle climate change. In a world where these themes are evaluated by investors, Rolls-Royce focuses in delivering substantial change towards net zero emissions, and it has published its decarbonization strategy in 2021 (Rolls-Royce Holdings PLC, 2021). The company has engaged in extensive research to create efficient engines that run on sustainable fuel, and it has been pioneering an all-electric aircraft project, furthermore, the company pledges to reduce the impact of its production by reducing net zero GHG emissions by 2030. Fighting to reduce the business environmental impact is nowadays a key shareholders requirement, and while CSR and sustainability practices are implemented to benefit society as a whole, they might allow the firm to develop new technologies and achieve a competitive advantage in the market.

Figure 20, Capital Expenditure as a proportion of underlying revenue in % (2017-2021)

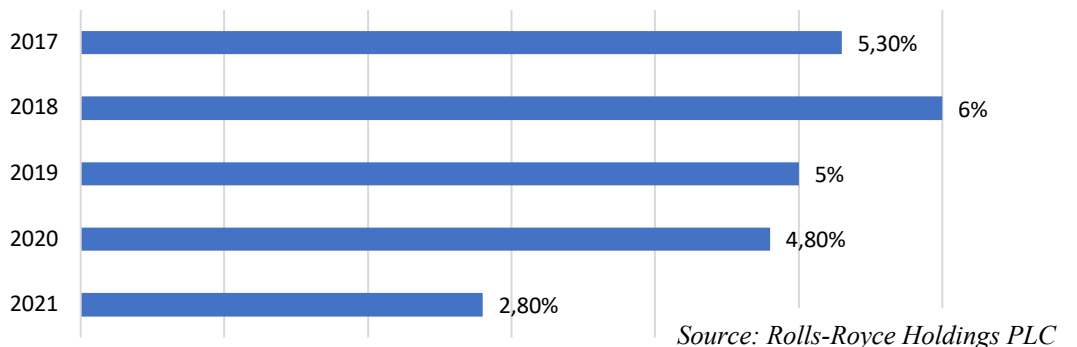
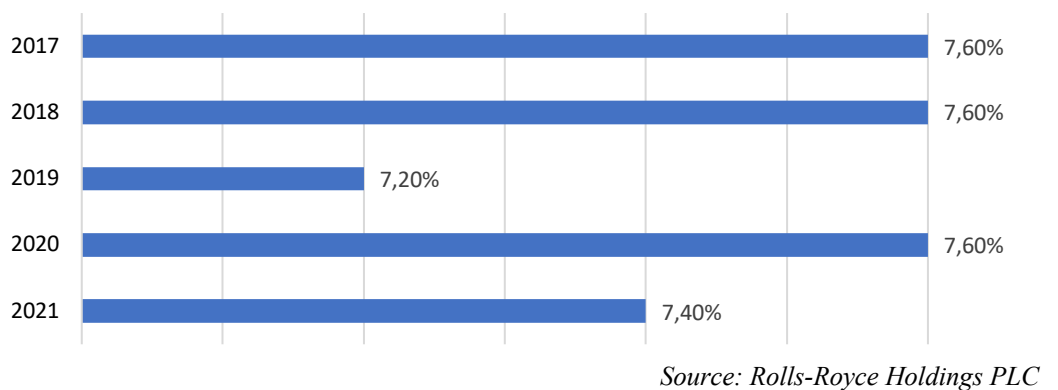


Figure 21, Self-funded R&D as a proportion of underlying revenue in % (2017-2021)



## Chapter 5, Discussion and Evaluation of Results

As Windsor (2010) states, the ultimate and short-term operating goal of a business is to maximize value creation for equity holders, this statement may work for many organizations but in the context of Rolls-Royce our findings may highlight otherwise as Shareholder Wealth Maximization in the immediate period may not be feasible or desired.

The first section of our analysis focuses on the share price, which has fallen during the five-year period and was affected by strong systematic factors such as the 2020 pandemic. The industry in which the company operates was hardly hit and it continues to struggle to recover, in this view the share price will also depend on the macroeconomic outlook. It can be expected that once the industry recovers, the share price will rise accordingly, and it will then be largely dependent on the performance of the firm in terms of profitability and growth. Shareholder Wealth creation in terms of capital gains may be realized as the stock is currently traded at a low price and, acquiring it now may yield large price growths in the following years.

From a profitability point of view, in 2017 results were positive with a large ability to generate cash and profits, however the company did not perform well during the following years and did not achieve the traditional objective of the firm according to Means (1991). The inability to be profitable was both attributable to operating setbacks and macroeconomic events, causing the firm to accumulate losses year by year, for this reason, dividends payments were stopped. Furthermore, Rolls-Royce's capital structure was also affected by the losses, its equity became negative, and it had to be offset by a large share of borrowed capital. The use of debt as a financing source may increase the return of owners and avoid share dilution, but in this case given the weak profit generation it may lead, according to Bradley et al (1984), to the so-called leverage-related costs such as bankruptcy costs.

From a shareholder point of view, the 2021 results could be encouraging and a sign of potential recovery, the company is engaging in an extensive restructuring program that is showing promising signs. Firstly, an effective cost reduction campaign was carried out, duplicated functions were removed, workforce was cut to reduce redundancy and processes were simplified. Secondly, an asset disposal program was executed rising useful cash resources, for instance, the ITP Aero division was sold in 2021. With improved cash balances the company is expected to return to a positive free cash flow figure in 2022, that will allow dividends payments to shareholders. Overall, the process of strengthening the balance sheet is still

ongoing, but these improvements showed financial resilience and might help Rolls-Royce create future value for its owners.

The future holds a series of challenges for Roll-Royce, and we cannot predict their magnitude, in the following years the company will have to face rising inflation, supply chain disruptions and most of all, the switch to sustainable energy and GHG emission standards. The company will have to make targeted investments to address these challenges and will have to work hard to achieve its target of net zero emissions, on the positive note, during the last two years it showed resilience and the ability to react to a crisis such as the pandemic. Its diversified business is a strength that ought not to be ignored as with the Civil Aerospace, Defence, and Power Systems divisions the business will be able to survive despite a crisis in one of these sectors.

In conclusion Rolls-Royce has a strong client base that needs to be maintained to assure a constant revenue stream, and it has great chances to return to profitability. The firm will have to work hard for its shareholders and deliver structural improvements with its restructuring program, a stronger balance sheet will not only improve shareholder returns but it may attract further financing. The company remains a key player in its industry and long-term benefits and competitive advantage will be achievable by focusing on its core capabilities, investing in new technology and sustainable power. Given our analysis of Rolls-Royce's performance and strategy, we can conclude that the firm has a long-term business strategy, aligning to one of the key aspect of shareholders wealth creation according to Rappaport (2006) that advised to "Make strategic decisions that maximize expected value, even at the expense of lowering near-term earnings."

## Chapter 6, Conclusions

The purpose of this Case Study is to analyse the achievement of Shareholder Wealth Maximization by Rolls-Royce Holding PLC. Shareholders Wealth can be created in a variety of ways and virtually every area of business management can have an impact on the value created for owners of the firm. This study is focused on the five-years period from 2017 to 2021 and analyses Rolls-Royce in its competitive environment, with a focus on financial performance and business strategy. Results show how the company remains a key player in the Aerospace and Defence industry despite four years of poor performance, with a large accumulation of losses and debt, in addition, the Aerospace and Defence industry was hardly hit by the Covid-19 pandemic that halted civil aviation travel and caused a market wide crisis, worsening the company's situation. From a short termism point of view, we could conclude that value for shareholders was not created as the company's market capitalization declined during the period, losses were accumulated, and dividends payments were stopped. An average stockholder that purchased a share in 2017 would have lost part of its investment as the findings of our financial analysis can confirm. However, as many theorists argue there are plenty of limitations in the mere accounting profit of the year and other short-term measures, for this reason, a strong component of our analysis focuses on the long-term business strategy of Rolls-Royce. In fact, the company has great potential for future revenue generation with its disciplined capital allocation and brilliant research and development programs. Shareholders Wealth is a key aspect of the firm's forward-looking strategy that regards owners as a key group of stakeholders and aims at strengthening its reputation by delivering improved returns. Further confirmation of our results can be found in the statement of the chairman, Ian Davis, in 2017 that stated, "This is a long-term business that needs shareholders with a long-term perspective".

To conclude, we cannot state for certain that Rolls-Royce will be able to create long-term value for its shareholders, given the diverse challenges it will have to face in the following years, however we cannot ignore the positive signs of recovery. Success will depend on the ability of managers to anticipate these challenges and make decisions that will enable the business to maintain its competitive advantage in a dynamic environment where innovation is key for success. Rolls-Royce has the capabilities to deliver strong value creation and to maximize value for its shareholders but only time will tell.

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