



Financial Management

LCMB7002

Topic: Strategic CFO Challenge

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Words :- 5085

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1. Introduction

The report is an assessment of financial performance and strategic financial position of Volkswagen AG in the period 2021-2025. Volkswagen AG is a global automotive manufacturer which holds a wide chain of brands in the world market that includes passenger vehicles, luxury automobiles, as well as commercials. Volkswagen is a manufacturer of EVs based in Germany and it was founded in 1937 (Volkswagen Group, 2025). According to the report, the market share of the company in the European market has increased by 78.2% of its total sales (Volkswagen Group, 2025c). The company has encountered severe financial and strategic risks in recent years; this is because of the lots of shifts by the global automotive industry to the rapid shift towards electric vehicles (EVs), technological advancement, and the growing environmental regulations.

This report is aimed at evaluating the financial health of Volkswagen through reviewing its financial ratios, cash flow performance and working capital management using its annual reports. Strategic financial restructuring alternatives, as well as evaluation of potential investment projects, are also considered and evaluated in the report using capital budgeting methods that include Payback Period, Net Present Value (NPV), and Internal Rate of Return (IRR). The results should be useful in making informed financial choices and offering the recommendation needed to increase the long-term financial viability and shareholder value of Volkswagen.

2. Financial Health Check

2.1 Financial Statement Analyses

Income statement is a financial statement employed in determining the income, profitability and costing in the business operation. According to Income statement of Volkswagen it is observed that the Revenue of the business amounted to €250,200 million in 2021, which went up to €279,232 million in 2022, and €322,284 million in 2024 and then came down to 321,913 million (Volkswagen Group, 2025b).

The profitability trends are more volatile than the revenue growth. Volkswagen also reported high operating profits on 2022 and 2023 due to better products mix and vehicle prices. Nevertheless, the profitability decreased in 2024 with operating profit decreasing to €19.1 billion and net income declining to about €12.4 billion (Volkswagen Group, 2025b). It was significantly caused by the increased cost of production, the restructuring costs and the investment in the electric vehicle technologies. Profitability also became under pressure in

2025 because operating profit decreased across the board because of tariffs, worldwide market rivalry, and decreased demand of electric vehicles in certain markets (More, 2026).

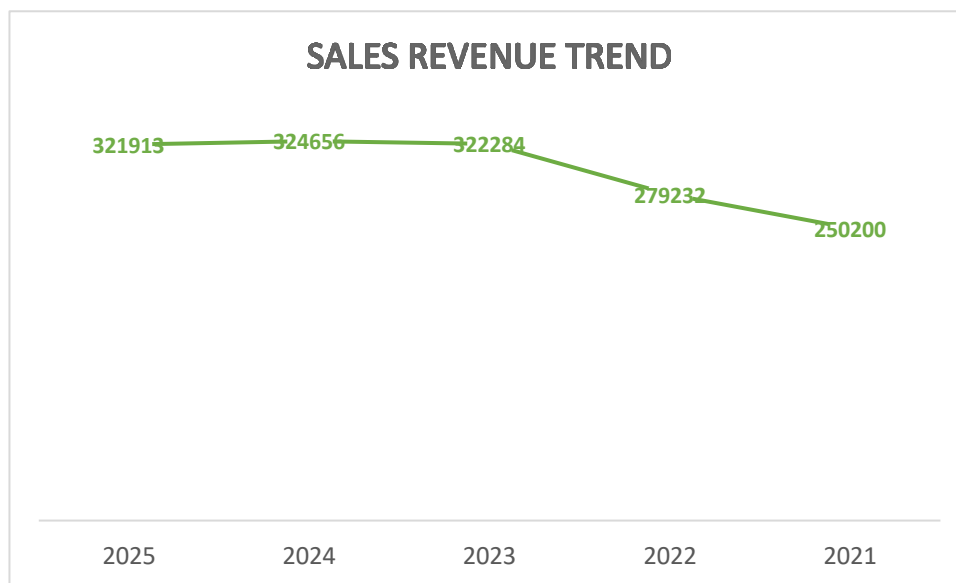


Figure 1: Sales Revenue trend analyses

(Source: Self-created)

In 2024, Volkswagen has already demonstrated a relatively consistent image in terms of revenue performance. The company registered sales revenue of approximately €324 billion compared to previous year whose increment is minimal as opposed to the previous year (Volkswagen Group, 2025b). However, the operating profit declined by an estimated 15%, mainly due to the increase in the cost of restructuring programmes, cost of production, as also due to strategic investments in electric vehicle technologies, costs. This indicates that though there was no bad performance of the revenue generation of Volkswagen, the increase in profitability was affected by the rising costs of operations and transition programs.

The financial statements of the company also indicate that a massive investment is necessary in the process of transitioning the company to electric mobility and digital technologies (Volkswagen Group, 2025b). To be in the changing car business, Volkswagen has been committing a lot of resources to research and development, battery technology, and new electric vehicle platforms. These investments have raised the short term capital expenditure and cost of operations however in the long run, it is likely to facilitate long term growth and sustainability.

Regarding financial stability, the Volkswagen is still in very good liquidity and cash position. In 2023, the Automotive Division is reported as having net liquidity in in the order of the size of €40.3 billion, which indicates that the group is capable of financing future investments and

the financial risks are handled successfully (Volkswagen Group, 2025b). The significance of this robust cash position is especially given the current intense global competition within the company, supply chain disruption, and regulation that is associated with environmental sustainability.

All in all, the analysis of financial statements shows that Volkswagen is still financially strong despite the trends in the global automotive market. The company is in a position to respond to the technological change to remain competitive due to stable growth rate in revenue, high liquidity and heavy investment in the area of innovation. Nevertheless, the declining margin of operation and augmenting cost of restructuring talks of the necessity in taking great care of financial management and strategic restructuring that would see to it sustainable profitability in the future.

2.2 Ratio Analyses

Profitability ratio

Operating Margin



Figure 2: Operating Profit Margin

(Source: Excel, Annual Report Volkswagen)

Return on Capital Employed (ROCE)

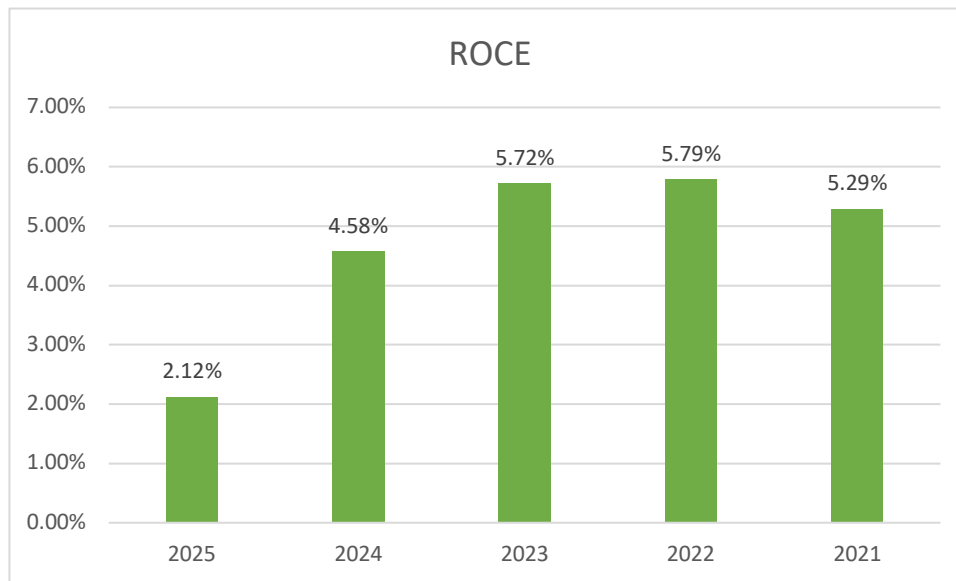


Figure 3: Return on Capital Employed (ROCE)

(Source: Excel, Annual Report Volkswagen)

Trend Analyses

The Volkswagen AG has significantly lost its profitability in 2021-2025. As per figure 2 it is observed that the operating margin now dropped to 2.75% (2025) as compared to 7.70% (2021), and figure 3 indicated that the ROCE had declined to 2.12% as compared to 5.29 per cent, which is a poorer payoff on invested capital. According to Bhoomika and Pougajendy, (2025), the operating margin shows the efficiency of a company in terms of rates of operation and cost management. The negative trend would indicate the increasing cost of production, heavy investment on electric cars, and restructuring costs. The automotive industry average of approximately 6.5% operating margin indicates that Volkswagen 2025 performance is indicating lower competitiveness and strain on profit margins.

Liquidity ratio **Current ratio**

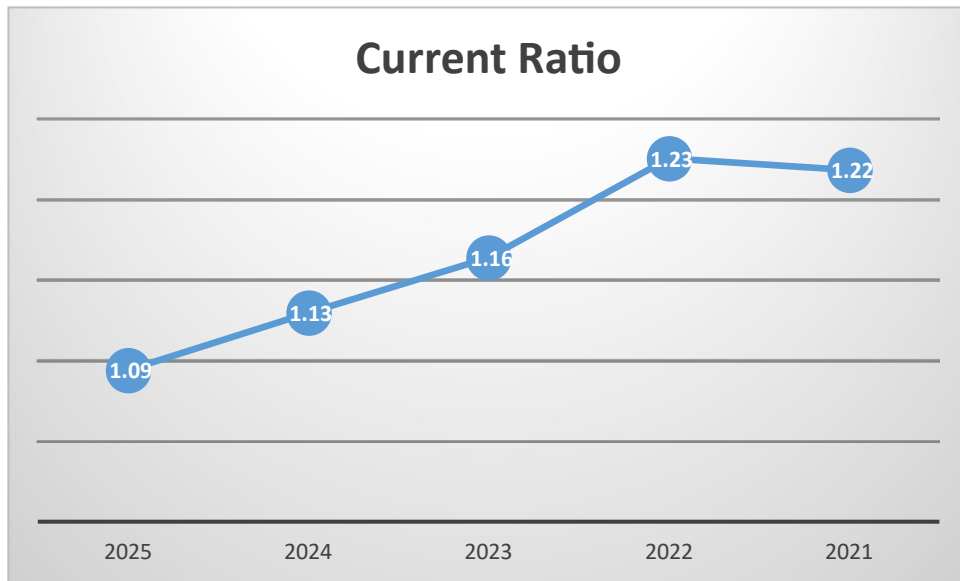


Figure 4: Current Ratio

(Source: Excel, Annual Report Volkswagen)

Quick ratio

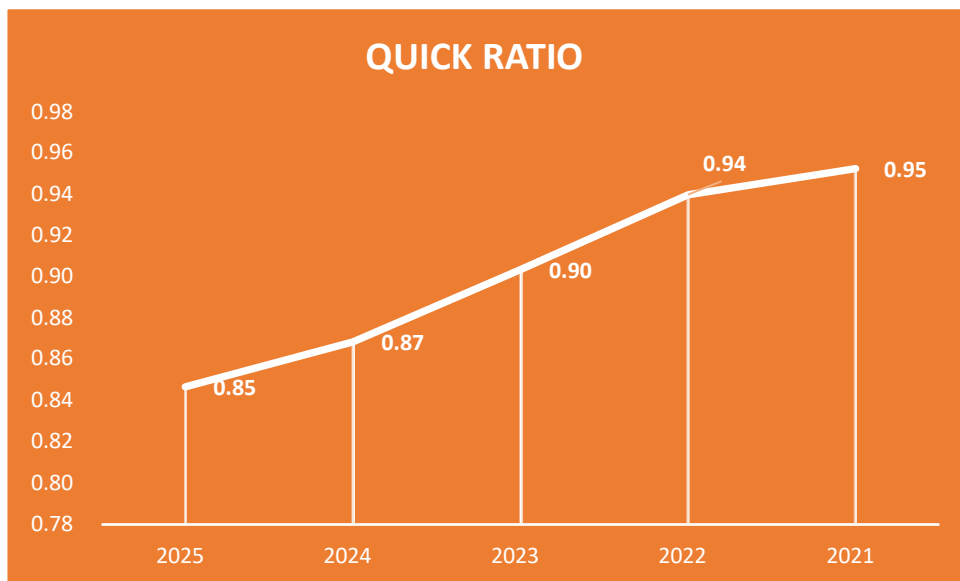


Figure 5: Quick Ratio

(Source: Excel, Annual Report Volkswagen)

Trend analyses

Liquidity ratios measure the capacity of the company to address the immediate financial liabilities. In the case of Volkswagen AG, figure 4 shows that the current ratio has reduced to 1.09 in 2025 compared to the previous year of 1.22 whereas the quick ratio dropped to 0.85 in 2025 compared to 2021. This slow downward trend means that liquidity position is weakening

in the short term which implies that the growth in current liabilities is outpacing the growth in liquid assets. The decrease is associated with increased operational expenses, supply chains and high working capital demands of Volkswagen. According to Rizqullah and Mujiyati (2024), liquidity ratios play a significant role in facilitating seamless operations in business and financial stability in the automotive industry. Overall, Volkswagen has a fair liquidity but with slight waning pattern.

Efficiency ratio

Assets Turnover ratio

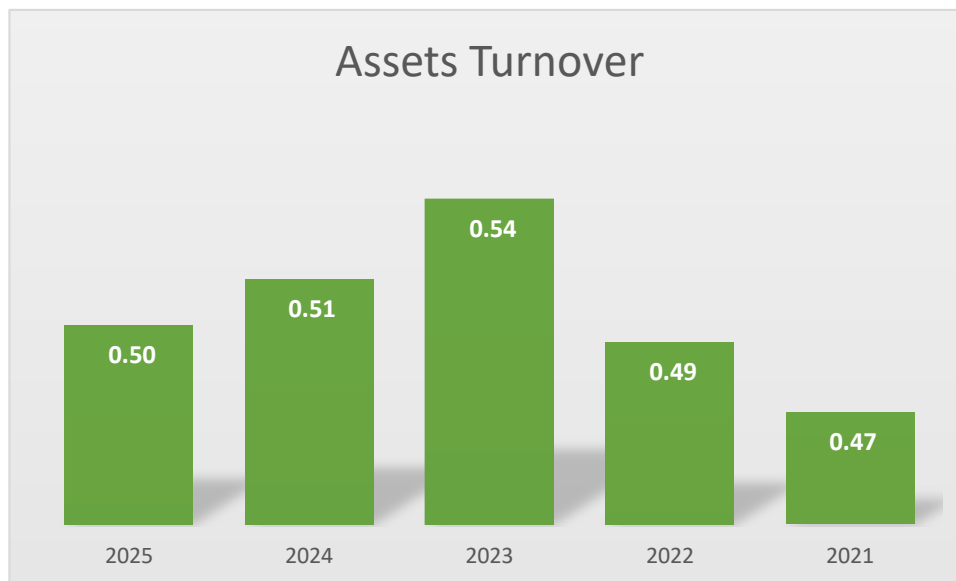


Figure 6: Assets Turnover

(Source: Excel, Annual Report Volkswagen)

Days Inventory ratio

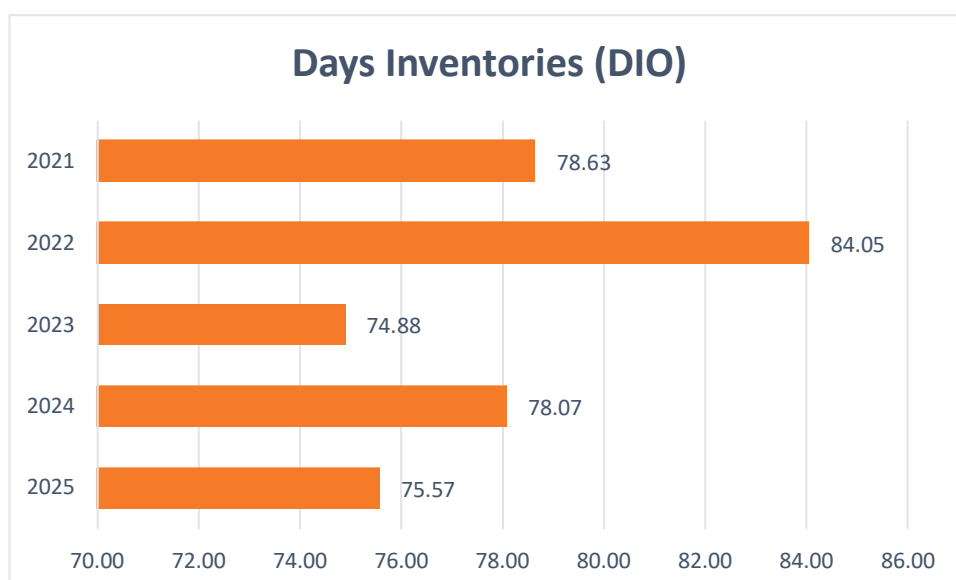


Figure 7: Days Inventories (DOI)

(Source: Excel, Annual Report Volkswagen)

Trend Analyses

The efficiency ratios of Volkswagen show that there are moderate yet slightly fluctuating operational performances between 2021 and 2025. According to figure 6 the ratio of assets turnover has become better in 2023 in terms of using the assets to generate revenue as it is 0.54 (then the ratio improved to 0.50 in 2025) whereas it was worse with 0.47 in 2021. Figure 7, however, indicates that Days Inventory Outstanding (DIO) did not significantly decrease or increase relative to its value 75.57 days (2025) as 84.05 days (2022), indicating ongoing inventory holding problems. According to Andini (2026), the activity ratios are a measure of the efficiency of the company in using its resources to produce revenue. The growth in asset turnover implies efficiency in sales, whereas the high inventory days imply the inefficiency in the supply chain and its slow flow. This is due to shortage of semiconductors, complexity of EV transition, and demand fluctuations internationally. Altogether, Volkswagen has a stable but not high efficiency which needs to be improved by introducing better inventory to improve work with operations.

Gearing Ratio

Debt to Equity Ratio

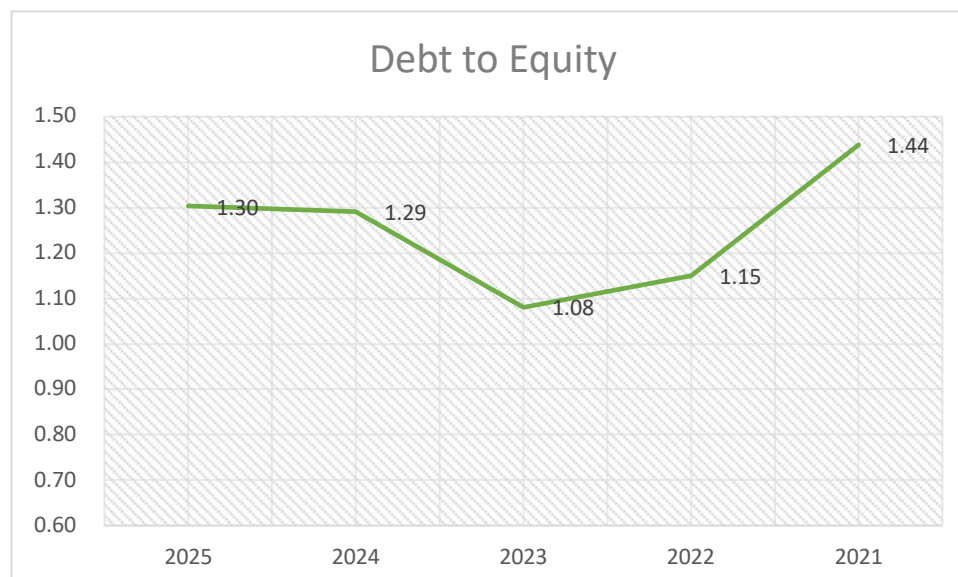


Figure 8: Debt to Equity Ratio

(Source: Excel, Annual Report Volkswagen)

Times Interest Earned (TIE)

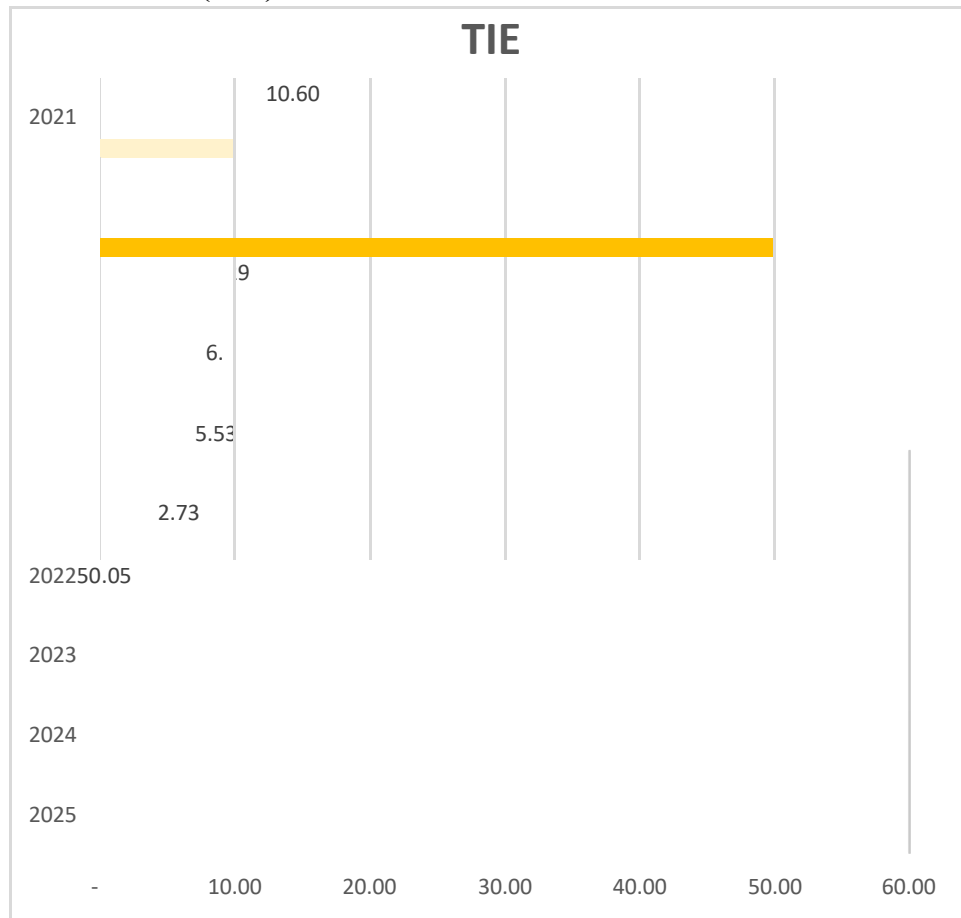


Figure 9: Times Interest Earned

(Source: Excel, Annual Report Volkswagen)

Trend Analyses

The gearing position of Volkswagen depicts a growing financial risk over time. As shown in figure 8, the debt to equity ratio increased by increasing the 1.08 (2023) to 1.30 (2025), which is a bigger dependence on debt financing. Also, the figure 9 shows that Times Interest Earned (TIE) ratio dropped significantly during the period between 6.29 (2023) to 2.73 (2025), as there is less capability to meet the interest payments. The literature emphasizes that the indicators of a financial risk and solvency in companies are leverage ratios, which are vital forecasts (Lusy et al., 2018). The deteriorating TIE indicates an increase in the cost of interest and a decreased ability to earn. This is probably an outcome of more borrowing to invest in EV and restructuring which raises questions regarding the long-term financial stability.

Investment ratio

Price to Earnings Ratio (PE)

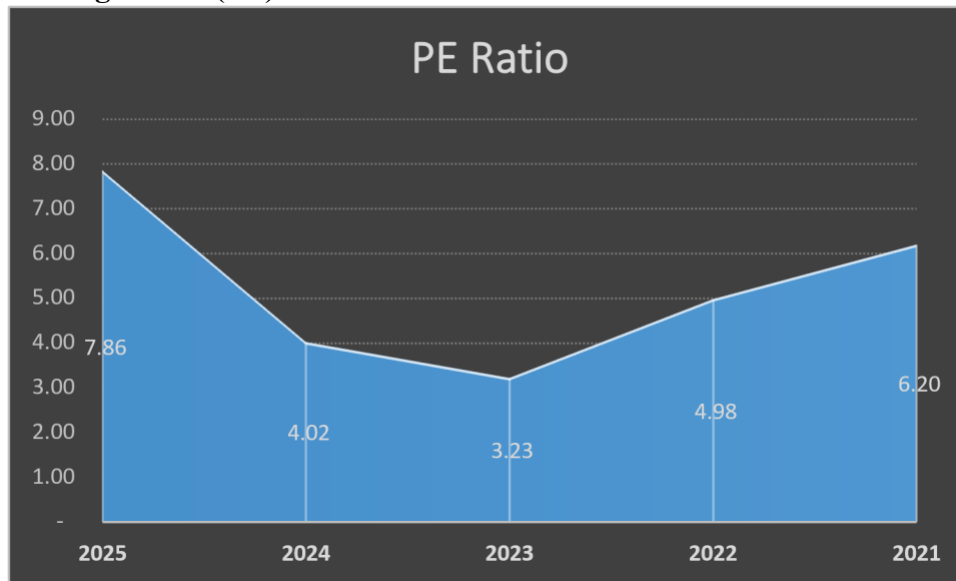


Figure 10: PE Ratio

(Source: Excel, Annual Report Volkswagen)

Trend Analyses

The investment ratios of Volkswagen indicate the perception and changing valuation of the investor with time. Figure 10 indicates that the Price-to-Earnings (P/E) ratio experienced an upward movement with a value of 3.23 (2023) being transformed into 7.86 (2025) as the market confidence was restored despite the decreasing profitability. Earnings per share (EPS) fell by 31.92 (2023) to 13.29 (2025) indicating lower earnings performance. According to the study of Wicaksana et al., (2025), the reason is that valuation ratios as P/E allow investors to evaluate future growth performance and the mood of stock holders towards a company. The increased P/E ratio, where EPS is declining, suggests that investors expect to grow in future and especially, the electric vehicle strategy of Volkswagen. Yet, the volatility of the valuation shows that there is unpredictability in the financial performance. Generally, although investor confidence seems to be on the recovery path, the decreasing profitability is an indicator of financial strains and implementation risks in the transformation plan of Volkswagen.

Cash Flow ratio

Working Capital ratio

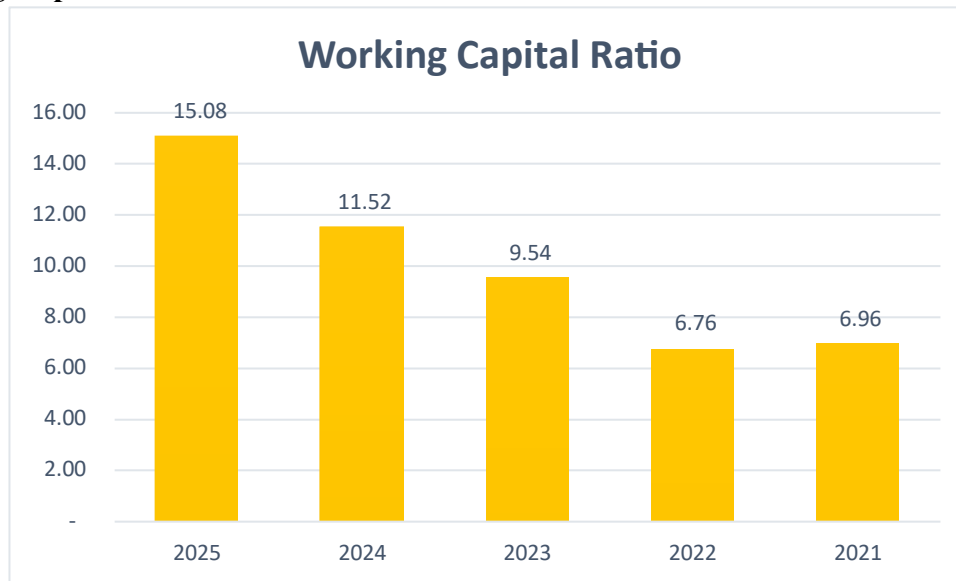


Figure 11: Working Capital Ratio

(Source: Excel, Annual Report Volkswagen)

Operating Cash Flow Ratio (OCF)

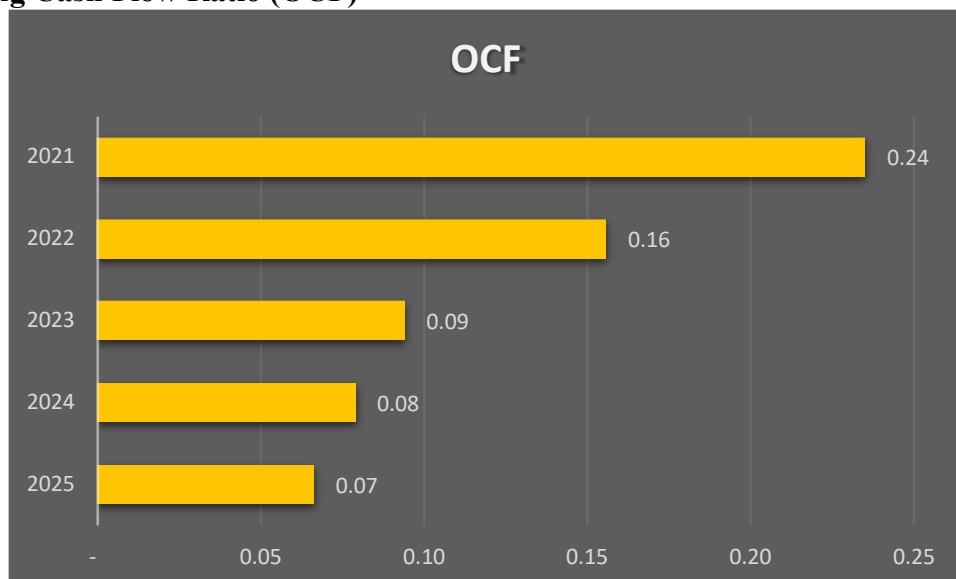


Figure 12: Operating Cash Flow Ratio

(Source: Excel, Annual Report Volkswagen)

The position of Volkswagen on cash flow has deteriorated significantly in the last five years. According to the above figure 12, the Operating Cash Flow (OCF) ratio decreased with the years passing by as it turned into 0.24 (2021) and then to 0.07 (2025), meaning that the company

can no longer cover its current liabilities using the operating cash. Simultaneously, in the figure 11, the working capability ratio turned more prominent between 6.96 (2021) and 15.08 (2025), which indicates the inefficiency in using short-term resources. Oloyede (2024) emphasizes that cash flow ratios are more dynamic in reflecting on liquidity as well as financial health than conventional ratios. The decreasing trend in the OCF ratio indicates that it has less cash to generate because it has brought about high expenditure on capital and costs, and restructuring. The trend causes some concerns about the sustainability of liquidity. Altogether, the declining cash flow stance of Volkswagen has pointed to the increasing financial stress, the necessity to manage its cash flow better and enhance its operational efficiency.

2.3 Key Financial Strength and Weakness

Strengths

The Volkswagen AG shows various financial strength even in the presence of adverse automotive environment. The operational efficiency of the company remains relatively stable, with the cash conversion cycle being improved in the year of 2021 (73.36 days) to the year of 2025 (71.12 days), which demonstrates an increase in the inventory control and the utilisation of working capital (Volkswagen Group, 2025b). The level of liquidity is also at an acceptable level as current ratio remained above 1.0 (1.22 in 2021 and 1.09 in 2025) which implies that the current assets are still able to meet short-term obligation. Moreover, the debt-to-equity ratio decreased by 1.44 in 2021 to 1.30 in 2025 indicating slow enhancement of financial leverage. Wolfe and diversified brands also play a major role in ensuring that Volkswagen survives in an otherwise very competitive motor market.

Weaknesses

Although it is a large company, Volkswagen displays a number of financial vulnerabilities according to ratio trends. Profitability is also low, as the net profit margin dropped to 2.14% in 2025, down to 6.17% in 2021, and the ROE decreased to 3.40%, which means that shareholders have not received as much (Volkswagen Group, 2025b). There are also poor cash flow performances with the operating, cash flow being 0.24 in 2021 and 0.07 in 2025 indicating a weakening of the ability to meet short term liabilities with the operating cash. These drops are strongly caused by the escalating production costs, high investments in the electrification and the software, and the increasing worldwide competition, especially in the context of the EV.

3. Working Capital Management Analysis

3.1 Cash Operating Cycle

Cash Operating Cycle = Days Inventory Outstanding (DIO) + Days sales Outstanding (DSO)

– Days payable Outstanding (DPO)

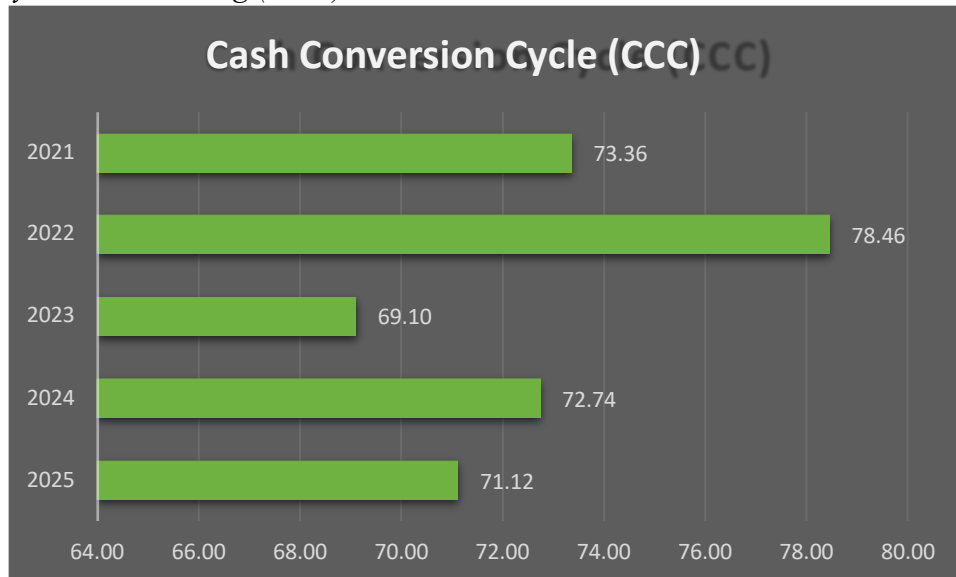


Figure 15: Cash Conversion Cycle

(Source: Excel, Annual Report Volkswagen)

The Cash Conversion Cycle (CCC) is an indicator showing the efficiency of a firm in its use of working capital by showing how many days it takes to turn inventory investments into cash inflows due to sales (Asman et al., 2022). It has been calculated in Days Sales Outstanding (DSO), Days Inventory Outstanding (DIO) and Days Payables outstanding (DPO). According to academic literature, CCC is the difference between the time that elapses between settling suppliers and with which customers react and receive cash, hence an important indicator of liquidity and performance. The lower CCC normally reflects a stronger management of working capital and accelerated cash flow.

In the case of Volkswagen AG, the CCC was varying in a moderate way within the five years. The CCC was 73.36 days in 2021, and it has risen sharply to 78.46 days in 2022, indicating the slower working capital turnover (Volkswagen Group, 2025b). The rise of this was largely contributed by an increase in Days Inventory Outstanding (84.05 days) which means that the vehicles and components stayed longer in the inventory. The company however became efficient in later years. The CCC has dropped to 69.10 days in 2023, which indicates that the

inventory keeps low and has better supplier payment terms as observed in a higher DPO of 30.52 days.

In 2024 and 2025, the CCC was comparably steady at 72.74days and 71.12days respectively. Its stability implies that Volkswagen remained in the state of balanced control over the receivables, inventory, and payables regardless of disruptions in the global supply chains and higher production of electric vehicles. The DSO was approximately 23-24 days and this indicates an efficiency in collecting its receivables and DIO fluctuated at a very slow rate, showing improvement in 2025, with a reduction of 78.07 days in 2024 to 75.57 days in 2025.

In general, the working capital management of Volkswagen is relatively stable and shows moderate positive gains in the past years. The decreasing CCC in 2022 is an indication of the attempts to streamline inventory and payments to enhance the liquidity and efficiency in the operation of the capital-intensive automotive business.

3.2 Working Capital Challenges

The capital-intensive nature of the automotive industry and the current shift to electric instruments place Volkswagen AG at the risk of suffering several working capital problems (Volkswagen Group, 2025b). Its Cash Conversion Cycle was quite high at 71.12 days of 2025, meaning that it takes the company over two months to recover managed to have cash placed in inventory and owed to customers. High Days Inventory Outstanding (75.57 days in 2025) implies that there should be large inventories of vehicles and components that have to be supported to address the global production and supply chain needs. In the annual report, it is also emphasized that operating cash flows were being challenged by increases in inventories and receivables because the company tried to produce several electric vehicles and battery technology (Volkswagen Group, 2025b). Also, there is the external pressure of geopolitical tensions, supply chain pressures, and increasing major markets competition which further place pressure on working capital efficiency (Moradlou et al., 2025). These forces reflect that Volkswagen should keep on streamlining inventory control and receipt collection in order to ensure a high degree of liquidity.

3.3 Strategy Recommendation to improve liquidity through working capital reforms

To improve the liquidity, several working capital reforms can be projected to be implemented by Volkswagen, and they will involve inventory management, receivables management, and supplier finance management. Firstly, the company should enhance digital supply chain and inventory management systems to reduce the high degree of stocks and enhance the accuracy

of forecasts. By lowering the inventory, Days Inventory Outstanding (75.57 days) would be minimized along with total cash conversion cycle (Nobanee and Al Hajjar, 2014). Second, Volkswagen should speed up the collection process of the current receivables and maintain the Days Sales Outstanding at a level of 23 days or less by enforcing more a stricter credit control policy and implementing automated receivables control tools. Third, there is a potential on the company to introduce additional supplier financing programme and negotiate on longer terms with the suppliers, as this will improve Days Payable Outstanding and cash availability. As mentioned in the annual report, the improved working capital management also contributed to the creation of better net cash flow in the automotive division and, therefore the importance of a structured liquidity management. These reforms will make the Volkswagen have a stable liquidity position as well as will maintain its huge investments in electric mobility and innovation in technologies.

3.4 Compare short-term vs long-term financing options

The short-term and the long-term financing options available to Volkswagen provide different advantages and risks that the company can use in its operations and investments. Day-to-day working capital requirements are normally financed through short-term financing facilities including bank overdrafts, trade credit, and commercial paper (Gandhi and Nasit, 2022). The sources are easy way out to secure funds fast and overcome temporary liquidity crises due to changes in stocks or debts. Nevertheless, short-term funding is associated with refinancing risk and financial pressure risks might have gone up in case of interest rate increase.

Conversely, long-term financing, like corporate bonds, bank loans in the long term, or equity sources are able to assure a stable capital flow towards long-term investments, such as electric vehicle development and digital transformation (Tang et al., 2025). The annual report of Volkswagen states that electrification and battery technology have been heavily invested in, which needs long-term stability in funding (Volkswagen Group, 2025b). Thus, short-term financing will be appropriate in case of the liquidity requirements regarding the liquidity of operations of the company, whereas the use of long-term financing will be more suitable in case of the strategic investments of Volkswagen and the massive technological change.

4. Strategic Financial Restructuring Plan

4.1 Need of Restructuring

Volkswagen AG needs to be financed so as to address the increasing operational expenses, the changing technology, and the decreasing profitability in the past years. According to the annual

report of 2025, the firm incurred restructuring costs of about € 1.3 billion, of which organisational restructuring, in Audi, in Cariad and other doctrines, constituted the major part of the costs (Volkswagen Group, 2025b). Also massive investments in the electrification, software development, and battery technologies have strained the group financially.

Changing market conditions in the global markets, such as decreased EV adoption in certain markets and intense competition, are also being managed by the company, especially in China (Volkswagen Group, 2024). These reasons suggest that there should be restructuring to deliver efficiency, minimize expenses and enhance financial sustainability in the long term.

4.2 Possible Restructuring Options

Volkswagen can implement a number of restructuring measures which will enable it to position itself better financially and help it in the long-term transformation.

Divestiture: Divestiture is one of the options, where the company attempts to sell non-core or under-performing business unit to generate capital and eliminate operational complexity. Divesting enables companies to invest in their main strategic objectives like the electric mobility and digital technology (PricewaterhouseCoopers, 2025).

Mergers/partnerships: Strategic mergers or partnerships are another form of strategy where companies develop with the aim of developing technology, cutting development expenses and enhancing innovation (Attah et al., 2024). As an example, Volkswagen has established connection with technology organizations and electric-vehicle producers to assist its electrification plan.

Equity: Equity is another alternative, and it would raise more capital by issuing shares or bringing in strategic people. Scholarly literature shows that the efficiency of an organisation can be enhanced through restructuring techniques like divestitures and equity financing to facilitate strategic change in the large organisations (Riju, 2022). These alternatives would enable Volkswagen to take the financial strain off its hands, enhance its operational focus and finance its massive investment in sustainable mobility.

4.3 Impact on shareholder value, debt structure, and operational flexibility

Shareholder value, capital structure and operational flexibility can be greatly affected by financial restructuring. In the case of Volkswagen (VW), profitability and shareholder returns in the long-term might be increased through restructuring activity, including cost reduction programs, asset optimisation and alliances (O'Carroll, 2026). Cost-cutting initiatives and

operational changes to enhance efficiency and financial resiliency already have been initiated by the company.

Being a shareholder, restructuring can rise company values given that they become more serviceable in their operations and spares them of unnecessary costs. Studies have also revealed that restructuring strategies are likely to enhance the performance and market value of firms in the case that the strategies are well enacted in order to streamline operations and better resource allocation (Jerab and Mabrouk, 2023). VW has a potential to boost profitability and investor confidence in the future by targeting high-growth areas including electric vehicles, software development and battery-research.

Restructuring also impacts on the debt structure of the company. Should Volkswagen increase more equity or sell non-core countries, it will decrease its dependence on debt funding and enhance its leverage ratios. The reduction of financial risk through lower leverage and the improvement of credit profile can help the company to minimize its long-term costs of borrowing (Akhtar et al., 2022). On the other hand, when restructuring involves high investment in new technologies, the company can in the meantime raise debts to finance such projects.

Enhancing the operational flexibility is also another significant impact of restructuring (Jerab and Mabrouk, 2023). Restructuring the organisation and collaboration will enable the Volkswagen to simplify the process of decision-making, increase the speed of innovation and respond more promptly to the new market conditions. As an illustration, partnerships with technology firms and the manufactures of EV will enable the company to share the cost of research and development and still acquire the latest technologies.

In general, successful financial restructuring may help Volkswagen to increase its competitiveness, shareholder value and flexible organisational structure able to adapt to the faster technological and market changes in the global automotive industry.

4.4 International and ethical considerations

Being a global producer of automobile whose production is launched in many countries, it is necessary that Volkswagen take into consideration several international and ethical considerations regarding its use of financial restructuring strategies. Taxation is one of them because multinational corporations usually operate amid complicated tax laws in the various jurisdictions (Umeaduma, 2022). Proper tax planning would enable companies to maximize their tax payments internationally and ensure they adhere to the international standards.

Nevertheless, to keep the corporate image and meet the law companies should implement transparency and protect against aggressive tax evasion strategies.

Another issue of great concern is currency risk. Volkswagen generates a lot of revenue in the global markets in which they feature China, the United States and Europe. The fluctuations of the exchange rates can have significant implications on the financial operation of a company, particularly when the income and costs are determined using the other currencies (Badhan et al., 2024). Financial volatility may be reduced by means of currency risk management strategy in terms of hedging and diversified global business operations.

The other factor that is global economically is the inflation factor and which impacts on costs of production, supply chains and the consumer power to buy. Increasing inflation will raise the price of raw materials, labour, and logistics, which will decrease the profitability in the automotive industry (Erozan and Erozan, 2025). To address these risks, such companies as Volkswagen should develop effective cost-control practices and supply-chain management approaches.

Social responsibility (CSR) and environmental sustainability are also becoming critical issues in regard to ethical consideration (Voyko and Voyko, 2022). In its sustainability, Volkswagen has pledged to minimize carbon emissions and increase its electric vehicle line-ups. To facilitate the shift to sustainable mobility, the firm is placing a heavy investment in battery manufacturing, changing infrastructure and integration of renewable energy.

Wahyuni et al., (2024) point out that the incorporation of CSR and sustainability in corporate strategy positively impacts long term corporate reputation, trust and financial performance among stakeholders. Hence, Volkswagen has to harmonize financial restructuring as well as its ethical duties in a manner that makes transformation efforts sustainable to the environment, employee needs as well as responsible business ethics in the world.

5. Investment Appraisal and Capital Budgeting

5.1 Investment Appraisal technique and Capital budgeting

Net Present Value (NPV)

Net Present Value (NPV) is used to calculate the variation between present value of all future cash inflows and the cost of the initial investment (Chen, 2022). It helps in defining the value of the time value of money and it can be used to tell whether a project is value creating or not. Research indicates that NPV is among the most credible methods of capital budgeting as it has

a direct value formation effect of investments. According to research conducted on capital budgeting, it is common to pick projects with higher NPV. In the analysis, the value of NPV in Project A (-£8.68m), Project B (-£8.30m) and Project C (-£1.98m) are all negative meaning that there are no returns on the projects at the 10% discounted rate.

Payback Period (PBP)

Payback Period is used to determine how long it will take an investment to pay back the initial investment to the project cash inflows (Dai et al., 2022). It has extensive application in the investment appraisal as it gives a clear indication of the liquidity risk and capital recovery. Studies indicate that most companies use payback and discounted techniques in making a capital project analysis. In this instance, the computed payback periods are 4.5 years in project A, 4.55 years in project B, and 3.6 years in project C showing that Project C will recover the investment at the shortest time.

Accounting Rate of Return (ARR)

Accounting Rate of Return (ARR) is the evaluation of profitability of an investment by comparing average accounting profit and the initial investment. ARR is based on anticipated accounting returns as opposed to discounted cash flows. Research shows that ARR continues to be a very frequent additional tool employed by companies to gauge the profitability of project in capital budgeting. The ARR results obtained are calculated as 21.6%, 22% and 26% in the Project A, B and C respectively. Project C offers the best accounting return.

Internal Rate of Return (IRR)

Internal Rate of Return (IRR) simply can be defined as a discount rate under which the net present value of a project is zero (Wangchuk, 2022). It is an indication of the rate of expected returns on investment. According to academic literature, the acceptance of projects mainly depends on their having an IRR that is more than the required level of the firm. This analysis has shown that the computed IRR values of Project A, Project B, and Project C are -7%, -6% and -1.28% respectively, lower than the requisite 10 percent discount rate, meaning that they are not of financial interest.

Profitability Index (PI)

Profitability Index (PI) is used to estimate the ratio of future cash inflows at the present value as compared to initial investment in a project and rank projects under capital rationing conditions. PI of above 1 represents a viable project. Research points out that PI will come in

handy when organisations require prioritising investment projects in terms of value created per unit of capital invested (Rumallang et al., 2025). By doing this analysis, project A gives a PI value of 0.826, whereas project B and C give 0.834 and 0.960 respectively and the PI values are less than 1 indicating that none of the project is financially viable.

5.2 Selection of Investment Projects

Project C will be the option of choice based on the outcomes of investment appraisal since it holds strong grounds against other options on the basis of most indicators of capital budgeting. Though it can be seen that all projects have negative Net Present Values at 10% discount rate, Project C has the lowest negative Net Present Value (NPV of £-1.98 million) compared with Project A (£-8.68 million) and Project B (£-8.30 million). This implies that the Project C will bring the least loss in terms of present value. Besides, Project C is moving at the quickest payback period of 3.6 years, in comparison with Project A 4.5 years and they have a payback period of 4.55 years, which implies that the initial investment is recouped in less time. Project C also has the highest Accounting Rate of Return of 26 above the Project A (21.6%) and Project B (22%). Moreover, Project C is the most efficient in terms of the Profitability Index (0.960), showing that the investment in this project will be more efficient. Thus, although the NPV of Project C is negative, the financial appeal of the project is the most favourable of the three options.

5.3 Recommendation of Project

Project C is the one that should be used in relation to Volkswagen as it shows a rather better financial performance compared to the other investment options. Accounting rate of return of a project is the highest (26%), it's Payback Period is the shortest (3.6 years) and probability Index of a project is the highest (0.960) compared to the other two projects. All these signs point to the fact that the project will bring more accounting profitability and will have a shortened recovery of the initial investment of £50 million. Regarding the economic situation of Volkswagen, the choice of the project that will be more readily recovered in monetary terms is especially significant. According to recent financial reports, the company is experiencing a decline in profitability because of they have spent high on making electric vehicle technology, restructuring expenses and international competition (Volkswagen Group, 2025b).

In terms of liquidity, the payback can be faster to assist in the working capital management of Volkswagen as well as source the investments with their future strategies. Also, the NPV has a small negative (– £1.98 million) value, but that is much closer to zero as compared to the other projects and this reflects lower financial risk. Project C is also chosen basing on nonfinancial

factors. Political threats, custom duties, and competition amid the emergence of electric vehicle producers, especially in China, are the threats being faced by the automotive industry at the moment. Possibility to choose the project that has a faster cash recovery and a better profitability enhances the financial flexibility and assists Volkswagen to deal with such uncertainties and keep on moving towards sustainable mobility.

5.4 Best Combination of Project with maximum £100 million investment

In the capital rationing conditions, the maximum investment budget of Volkswagen is £100 million; thus only two projects can be picked as each project requires an investment of £50 million. Thus, we may have three alternatives to address project A + project B, project A + project C and project B + project C. In order to establish optimal combination, Net Present Value and Profitability Index of every project should be assessed.

Project C and Project B combined are the most appropriate. Project A has an NPV of -£8.30 million and Project B has an NPV of -£1.98 million and the existing NPV is 10.28 million. Comparatively, the summation of Project A and Project B result in a combined NPV of -£16.98 million pound whereas Project A and Project C results in a combined NPV of -£10.66 million pound. Consequently, the combination Project B and Project C produces the maximum NPV (no negative) of the options.

On the same note, the values of the Profitability Index also justify the same decision in that, a combination of Project B (0.834) and Project C (0.960) generate higher efficiency in investment, compared to a combination of Project B (0.826) and Project A (0.817). Project B and C are the choice made hence maximizing the returns on the restricted capital budget. This would be consistent with the principles of capital rationing, in which projects with the highest value, but are financially viable, are chosen according to the industry requirements and in line with the long-term strategic goals of the firm.

6. Conclusion

In conclusion, the financial analysis of the Volkswagen AG in 2021-2025 allows seeing both benefits and emerging financial problems. The entire company remained enjoying high global revenue and scale of operation, however, share of cash flow and profitability declined during the period due to rise in restructuring costs, costs of production, and huge investment in electric technology vehicles. Global competition, geopolitical threats and trade restrictive measures have also put a strain on the financial performance and the operating margins at Volkswagen.

The working capital analysis demonstrated that the efficiency of the operations was quite consistent but at the same time, the cash conversion cycle was also moderate. The analysis of investment appraisals has shown that Project C would be the best choice as it has the shortest payback period (3.6 years), the highest ARR (26%) and profitability index (0.960) in the available options. Projects B and C is the best combination under capital rationing to utilize the limit of investment, £100 million. In sum, proper financial management, reorganization plans, and planning investments will be important to the financial sustainability of Volkswagen in the long run.

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Appendices

Appendix 1: Ratio Calculation

1. Profitability Ratio

Operating Profit Margin					
	2025	2024	2023	2022	2021
<i>Operating Margin = Operating Profit / Sales x 100</i>					
Operating Profit	8868	19060	22576	22124	19275
Sales	321913	324656	322284	279232	250200
Operating Margin	2.75%	5.87%	7.01%	7.92%	7.70%

Return on Capital Employed (ROCE)					
	2025	2024	2023	2022	2021
<i>ROCE = EBIT / Capital Employed x 100</i>					
EBIT	8868	19060	22576	22124	19275
Capital Employed	417942	415866	394464	381780	364216
ROCE	2.12%	4.58%	5.72%	5.79%	5.29%
Total Assets	644467	632905	600338	564772	528609
Current Liability	226525	217039	205874	182992	164393

2. Liquidity Ratio

Current Ratio					
	2025	2024	2023	2022	2021
<i>Current Ratio = Current Assets / Current Liabilities</i>					
Current Assets	247865	245231	239644	224309	200347
Current Liabilities	226525	217039	205874	182992	164393
Current Ratio	1.09	1.13	1.16	1.23	1.22

Quick Ratio					
	2025	2024	2023	2022	2021
<i>Quick Ratio = (Current Assets - Inventories) / Current Liabilities</i>					
Current Assets	247865	245231	239644	224309	200347
Current Liabilities	226525	217039	205874	182992	164393
Inventories	56042	56720	53601	52274	43725

Quick Ratio	0.85	0.87	0.90	0.94	0.95
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3. Efficiency ratio

Assets Turnover Ratio					
	2025	2024	2023	2022	2021
<i>Assets Turnover = Revenue / Average Total Sales</i>					
Revenue	321913	324656	322284	279232	250200
Average Total Assets	644467	632905	600338	564772	528609
Assets Turnover	0.50	0.51	0.54	0.49	0.47

Accounts Receivable Period					
	2025	2024	2023	2022	2021
<i>Accounts Receivable Period = (Avg Accounts Receivable / Sales) x 365</i>					
Avg Accounts Receivable	20760	21130	21849	18581	15521
Sales	321913	324656	322284	279232	250200
Accounts Receivable Period (DSO)	23.54	23.76	24.74	24.29	22.64

Accounts Payable Period					
	2025	2024	2023	2022	2021
<i>Accounts Payable Period = (Avg Accounts Payable / COGS) x 365</i>					
Avg Accounts Payable	20760	21130	21849	18581	15521
COGS	270671	265184	261262	227005	202959
Accounts Payable Period (DPO)	27.99	29.08	30.52	29.88	27.91

Days Inventories					
	2025	2024	2023	2022	2021
<i>Days Inventories = (Avg Inventories / COGS) x 365</i>					
Avg Inventories	56042	56720	53601	52274	43725
COGS	270671	265184	261262	227005	202959
Days Inventories (DIO)	75.57	78.07	74.88	84.05	78.63

Cash Conversion Cycle (CCC)					
	2025	2024	2023	2022	2021
<i>CCC = DSO + DIO - DPO</i>					
Days Sales Outstanding (DSO)	23.54	23.76	24.74	24.29	22.64
Days Inventory Outstanding (DIO)	75.57	78.07	74.88	84.05	78.63

Days Payable Outstanding (DPO)	27.99	29.08	30.52	29.88	27.91
Cash Conversion Cycle (CCC)	71.12	72.74	69.10	78.46	73.36

4. Gearing ratio

Debt to Equity					
	2025	2024	2023	2022	2021
<i>Debt to Equity = Total Debt / Total Equity</i>					
Total Debt	264703	254081	205185	205185	210202
Total Equity	203054	196731	189912	178327	146154
Debt to Equity	1.30	1.29	1.08	1.15	1.44

Time Interest Earned (TIE)					
	2025	2024	2023	2022	2021
<i>Time Interest Earned (TIE) = EBIT / Interest Expenses</i>					
EBIT	8868	19060	22576	22124	19275
Interest Expenses	3245	3446	3592	442	1818
TIE	2.73	5.53	6.29	50.05	10.60

5. Investment Ratio

PE Ratio					
	2025	2024	2023	2022	2021
<i>PE Ratio = Share price / EPS</i>					
Share Price (31st Dec)	104.4	86.03	103.05	147.55	183.52
EPS	13.29	21.39	31.92	29.63	29.59
PE Ratio	7.86	4.02	3.23	4.98	6.20

6. Cash Flow

Operating Cash Flow Ratio (OCF)					
	2025	2024	2023	2022	2021
<i>OCF = Operating Cash Flow / Current Liabilities</i>					
Operating Cash Flow	15009	17151	19356	28496	38633
Current Liabilities	226525	217039	205874	182992	164393
OCF	0.07	0.08	0.09	0.16	0.24

Working Capital Ratio					
	2025	2024	2023	2022	2021
<i>Working capital Ratio = Revenue / Working Capital</i>					
Revenue	321913	324656	322284	279232	250200
Working Capital	21,340	28,192	33,770	41,317	35,954
Current Assets	2,47,865	2,45,231	2,39,644	2,24,309	2,00,347
Current Liabilities	2,26,525	2,17,039	2,05,874	1,82,992	1,64,393
Working Capital Ratio	15.08	11.52	9.54	6.76	6.96

Appendix 2: Investment Appraisal

Calculation of NPV and IRR

Calculation of NPV for Project A						
	Years					
	0	1	2	3	4	5
Investment (£m)	-50					
Net Cash Inflow		10	12	14	10	8
Net Cash Flow	-50	10	12	14	10	8
PV Factor (10%)	1.00	0.91	0.83	0.75	0.68	0.62
Present Value (PV)	-50.00	9.09	9.92	10.52	6.83	4.97
Net Present Value (NPV)	-8.68					
IRR	-7%					

Calculation of NPV for Project B						
	Years					
	0	1	2	3	4	5
Investment (£m)	-50					
Net Cash Inflow		11	11	11	11	11
Net Cash Flow	-50	11	11	11	11	11
PV Factor (10%)	1.00	0.91	0.83	0.75	0.68	0.62
Present Value (PV)	-50.00	10.00	9.09	8.26	7.51	6.83
Net Present Value (NPV)	-8.30					
IRR	-6%					

Calculation of NPV for Project C						
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	Years					
	0	1	2	3	4	5
Investment (£m)	-50					
Net Cash Inflow		5	10	20	25	5
Net Cash Flow	-50	5	10	20	25	5
PV Factor (10%)	1.00	0.91	0.83	0.75	0.68	0.62
Present Value (PV)	-50.00	4.55	8.26	15.03	17.08	3.10
Net Present Value (NPV)	-1.98					
IRR	-1.28%					

Calculation of Payback Period (PBP)

Calculation of Payback Period Project A		
Year	Cash Flow	Cumulative Cash Flow
0	-50	-50
1	10	-40
2	12	-28
3	14	-14
4	10	-4
5	8	4
	Payback Period (Year)	4.5

Calculation of Payback Period Project B		
Year	Cash Flow	Cumulative Cash Flow
0	-50	-50
1	11	-39
2	11	-28
3	11	-17
4	11	-6
5	11	5
	Payback Period (Year)	4.55

Calculation of Payback Period Project B		
Year	Cash Flow	Cumulative Cash Flow
0	-50	-50
1	5	-45

2	10	-35
3	20	-15
4	25	10
5	5	15
	Payback Period (Year)	3.6

Calculation of Accounting Rate of Return (ARR)

Accounting Rate of Return (ARR)			
	Project A	Project B	Project C
Average Annual Profit	10.8	11	13
Initial Investment	50	50	50
ARR [(Average Annual Profit / Initial Investment) x 100]	21.60%	22.00%	26.00%

Calculation of Profitability Index

Profitability Index (PI)			
	Project A	Project B	Project C
PV of Future Cash Flow	-8.68	-8.30	-1.98
Initial Investment	50	50	50
PI [1+ (NPV / Initial Investment)]	0.826	0.834	0.960