

Table of Contents

Executive summary	03
1. Qualitative analysis	04
1.1. Economic, Industry and Company (EIC) analysis	04
1.1.1. Economic	04
1.1.2. Industry	04
1.1.3. Company	05
1.2. Corporate governance issues	05
1.3. Assessing the chairman statements	07
2. Quantitative financial analysis	08
2.1. Ratio analysis and competitor analysis	08
2.2. Relative valuation	15
2.3. F-Score and Z-Score model	15
3. Conclusion	18
3.1. Sensitivity analysis	18
3.2. Recommendations	19
4. References	22
Appendices	28

Executive summary

General Motors (GM) is one of the oldest and the biggest automobile company in the world, with a stated goal to mix the passion of engineering, technology and design to help drive the world towards a better future (General Motors, 2021a). The aim of the report is to assess the financial performance of GM, and recommend its prospects as an investment. This has been done through an assessment of the environment of GM and its financial position. The report uses both quantitative and qualitative secondary data. Ford Motors and Tesla Inc have been used as comparators to evaluate the relative performance of GM. Industry averages have been used where possible. Non-financial data has been used to provide context to the financial data.

The report concludes that in the short-run, GM is a good investment due to its strong and above-average fundamentals, especially due to the state of the market. The qualitative and quantitative analysis along with GM's dividend history suggests that a long-term investment in GM is also recommended as the company has positioned itself appropriately for financial growth, with the only variable being the company's liquidity and gearing problems, which has been improving.

Some consideration should be made regarding the limitations of the report. The report uses historical data, which might not always be the best indicator of the future prospects of a company. The heavy reliance on secondary data which do not specifically address the objectives of the report, means that interpretation is needed, which makes the report subjective. The resource and time restrictions for the report should also be considered when assessing the conclusion and recommendations.

1. Qualitative analysis

1.1. Economic, Industry and Company (EIC) analysis

1.1.1. Economic

With regards to the economy, the pandemic has led to a decrease in consumer demand due to reduced discretionary spending, translating into lower revenues and cash flows for companies like GM (Trefis, 2020). The pandemic also changed the market for lending to large companies (Sierra, 2020a). However, a swift recovery is expected (Carlsson-Szlezak et al., 2020). Thus, any fluctuation should be temporary. This should be considered when assessing the financial figures for 2020, and assessing the prospects of GM.

1.1.2. Industry

The automobile industry is capital and knowledge intensive (Saber, 2018). The large capital and regulatory requirements mean that the threat of new entrants is low. As most companies are well established, it is hard for new companies to enter the market successfully. Similarly, personal vehicles have seen increased competition from ride-sharing platforms, with the likely direction for carmakers being a shift to commoditization compared to the current niche production model (Hughes, 2017). However, brand loyalty and the existence of enthusiasts means that the threat of substitutes is moderate.

The bargaining power of buyers is moderately high as the customers have an increasingly dominant voice with regulations ensuring it is heard. Easier access to information and increasing competition within the industry also helps strengthen their power. Due to the size of the companies in the industry relative to the suppliers, the bargaining power of suppliers is low. Companies are well-diversified in their use of suppliers, and have low switching cost, further decreasing the power of suppliers.

Overall, due to the large number of companies in the market, the competitive rivalry of the industry is high. This places pressure on companies, including GM to focus on both market and product development, and on improving their service.

Porter's five forces	Strength
----------------------	----------

Threat of New Entrants	Low
Threat of Substitutes	Moderate
Bargaining Power of Buyers	Moderately High
Bargaining Power of Suppliers	Low
Competitive Rivalry	High

1.1.3. Company

As a pioneer of the industry, GM is a maturing company with the majority of its products in the declining stage of their lifecycle. However, with the Electric Vehicles (EVs) and Autonomous Vehicles (AVs) revolution, GM has an opportunity to enter a new sub-industry that is currently in the introduction stage.

The major strength of GM is its powerful brand. GM has a market share of 15% in North America, and is the largest foreign auto-maker in emerging markets (Marketline, 2021). Product development is another one of GM's strengths, as showcased by its commitment to research and development, the expenditure for which has been 5% of revenue in recent years (General Motors, 2021b). A major weakness of GM is its frequent product recalls (Basu, 2014). GM's lack of diversification and heavy reliance on its domestic market and SUVs is also another weakness (Butler, 2020).

A major opportunity for GM is the recent demand for EVs, with the company currently selling several EVs and expanding its lineups (Marketline, 2021). Another opportunity for GM is the forecasted growth of the automotive industry (Winton, 2021). There have been strict regulations and requirements for manufacturers to produce zero-emission vehicles (ZEVs), and other emission requirements (Marketline, 2021). This is an issue throughout the world, increasing costs for the company, and is a potential threat for GM, limiting the models that can be sold to specific markets. Another threat for GM is foreign currency exchange rate fluctuations.

1.2. Corporate governance issues

Corporate governance helps ensure that the board of directors are held accountable for achieving their corporate objectives (CFI, 2021a). Lack of good corporate governance can lead to low profitability, higher wastages and decrease in performance (Joh, 2003).

This results in loss of shareholder confidence, sell-offs, and falling stock prices (Lister, 2017). Governance mechanisms are based on codes that outline the standards for good practice in terms of shareholder relations, board composition, remuneration and accountability (Price, 2019). In the US, where GM is based, the corporate governance framework is made of legal, accounting and securities rules designed to safeguard shareholder interest (Lessambo, 2014). Listed companies are also required to produce an annual corporate governance report.

Currently, GM has a structure in place to enhance its board's effectiveness. It has a governance and corporate responsibility committee, that formulates its corporate governance guidelines to encourage the board and committee members to practice good governance (General Motors, 2017b). GM's shareholders elect the board members accountable for corporate governance structures, as well as formulating policies that help the company create long-term shareholder value (General Motors, 2021d). Thus, the company is responsive to shareholders, with the board accountable to them and shareholder voting rights in proportion to their economic interest. GM also has one of the most diverse board in the industry, along with 12 independent directors, which might provide it with a possible competitive advantage (LaReau, 2021). Similarly, GM has a longstanding tradition of offering employee stock ownership plans (ESOP), having paid out \$924 million in ESOP in the 1980s (AP News, 1986). Thus, GM is in compliance with the corporate governance code for listed companies in the US.

However, GM faced a major corporate governance failure in 2014. GM was found to be responsible for almost three hundred injuries and more than a hundred deaths due to the vehicle's faulty ignition switches, with the board unaware of the problems, although was known to the internal team (Lipman, 2017). It was also revealed that the company had fired a whistle blower who had warned about the safety problems (Higgins and Summers, 2014). The GM stock decreased by 17%, and GM had to pay \$900 million as settlement of the lawsuit (Glinton, 2015). Hence, GM has had issues with corporate governance, and needs to work on ensuring it builds a culture where employees feel free to communicate with the board without having to worry about the risk of retaliation (Lipman, 2017).

1.3. Assessing the Chairman Statement

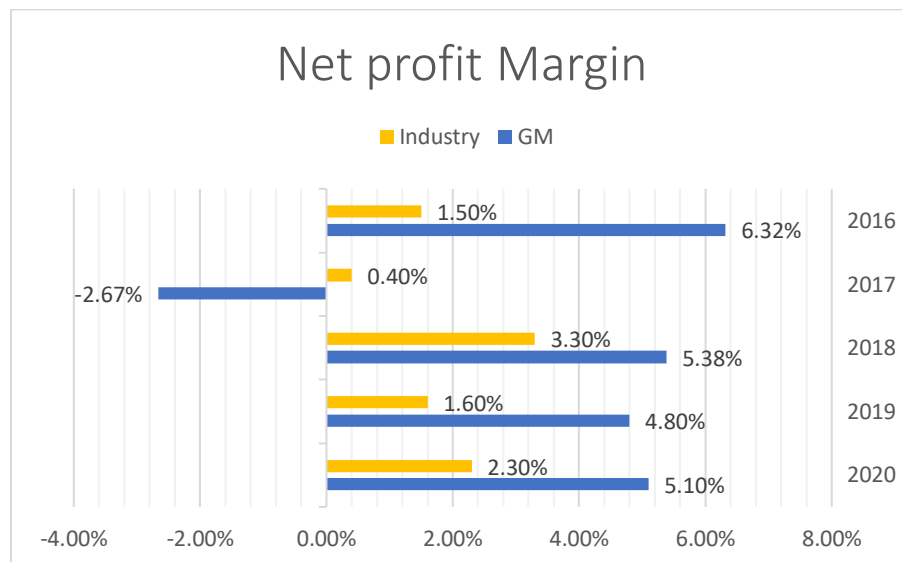
GM has placed increased emphasis on Corporate Social Responsibility (CSR), with programs to help minorities and underrepresented groups, and a commitment to inclusiveness (GM, 2020b). Recently, GM was named one of the World's Most Ethical Companies (GM, 2021c). During the peak of the pandemic, GM also supported the production of medical equipment and helped build 30,000 ventilators (GM, 2021c). GM has also made progress in renewable energy, with the company's largest solar project allowing the company to meet 21% of its global energy demand. Thus, it can be seen that GM is committed to social and environmental causes, which although expensive in the short-term, can reap benefits for the company and its stakeholders, including the investors, in the long run (Juniarti, 2020).

The chairman statement also shows that GM has made investments to transform the company through innovation and technology. In 2018, GM launched their EV architecture with the goal to provide affordable yet profitable EVs (GM, 2019b). The company also introduced a proprietary battery technology, Ultium, that is expected to reduce cobalt use by 70%, and allows the company to develop EVs across its platforms (GM, 2019b). In an inevitable paradigm shift, the automotive industry is slowly reshaping itself to make way for EVs and AVs (Teece, 2018). GM appears to be positioning itself for this shift. This can be seen by its commitment of \$27 billion in investment for the development of EVs and AVs through 2025, which will allow GM to offer affordable EVs globally. GM also continues to invest in its core products, including the production of SUVs, trucks, and crossovers, with over \$23 billion invested in its U.S. facilities (GM, 2021c). Thus, it can be concluded that GM is committed to its current portfolio of products, while preparing to adapt to future disruptions and changes in the industry.

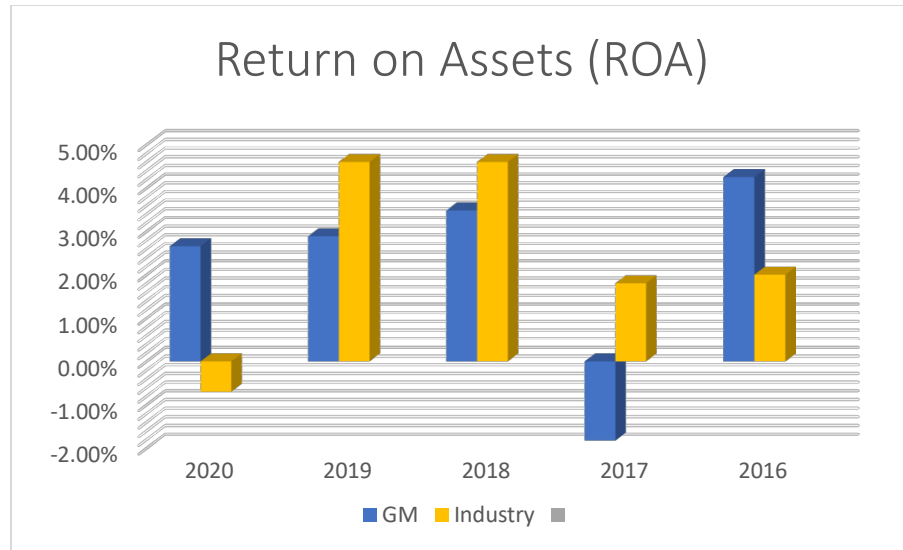
2. Quantitative financial analysis

2.1. Ratio analysis and competitor analysis

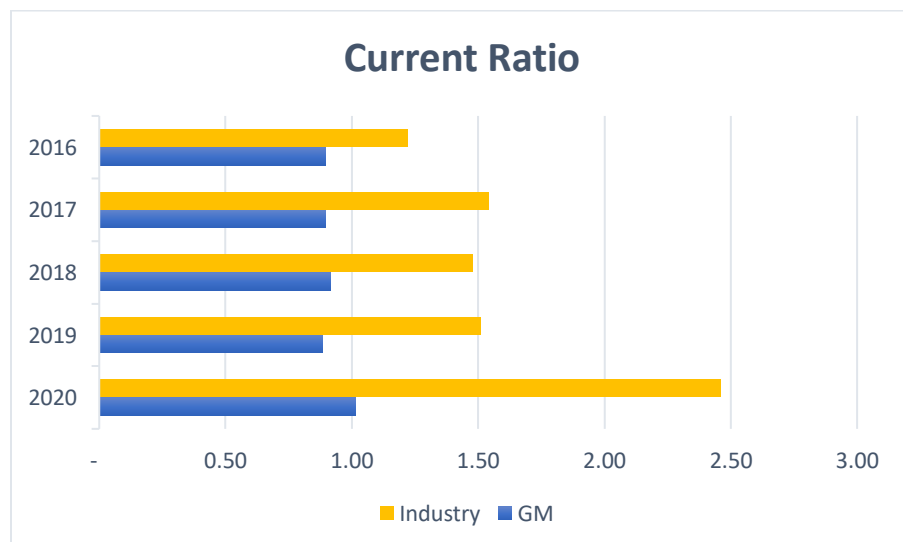
GM reported a 16.7% decline in its revenue from 2018 to 2020 (GM, 2021b). This was due to decreased sales in both its North-American and international operations, due to decreased demand for cars, decreased volume in wholesale and currency fluctuations (Marketline, 2021). The pandemic impacted its operation and demands for the industry, however, Tesla, a competitor, had a 28.3% increase in revenue for the same period (Tesla, 2021). Thus, GM is underperforming, which could be linked to its portfolio of declining products.



GM saw a decrease in its margins from 2016 to 2018, however from 2018 to 2020, the gross margin and operating profit margin has increased by 16.37% and 79.47% respectively. The return on capital employed (ROCE) shows a similar trend as the profitability ratios, increasing over the last two years. The net profit margin also increased of 6.25% to 5.1% in 2020, and is more than twice the industry average of 2.3%. Thus, it can be concluded that GM has been able to better control its expenses. This could be attributed to its recent restructuring plans (Ferris, 2019).

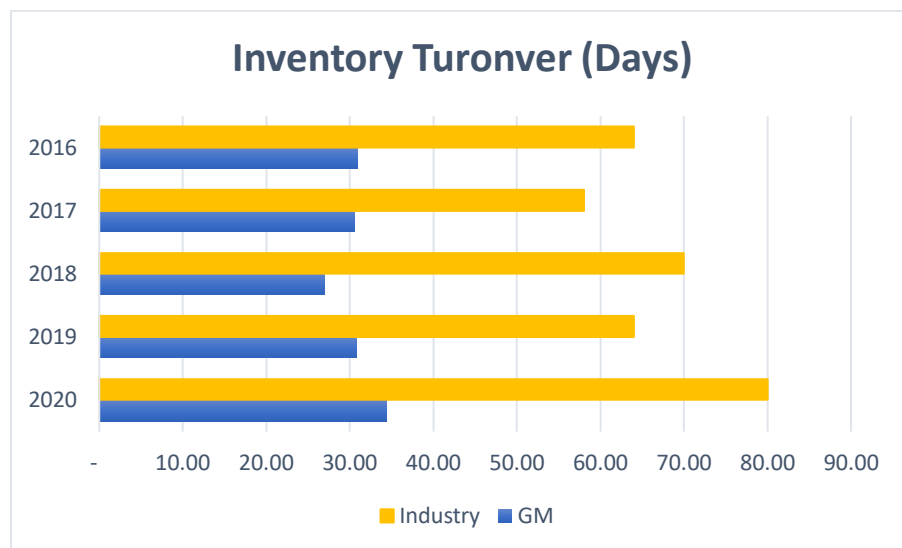


GM has seen a decreasing return on assets (ROA) for the last three years due to the decrease in absolute profits and an increasing asset base. This can also be explained by the elements of ROA, net profit margin and asset turnover decreasing year-on-year. The decrease in ROA has not been as sharp in 2020, due to the net profit margin increasing in the year. Regardless, GM has the best ROA amongst its comparators, which is 480% above the industry average. However, GM had been trailing behind the average in previous years, which could be an indication that compared to the industry, GM has maneuvered through the pandemic better. Thus, GM has been more efficient in converting its sales revenue into profits, and currently provides a better return on its assets.



GM has improved its liquidity with a 13.48% and 15.78% increase in its current and quick ratio respectively. This is supported by the working capital seeing a \$10 billion increase from 2016 to 2020. However, the current ratio of GM is 70.38% below the industry average, with the gap widening year-on-year, and the working capital is also well below the industry average. Thus, GM could face difficulties paying its short-term obligations if the trend continues into the future. GM might also need to arrange interest-bearing loans to fund its operation, which places further stress on the company finances.

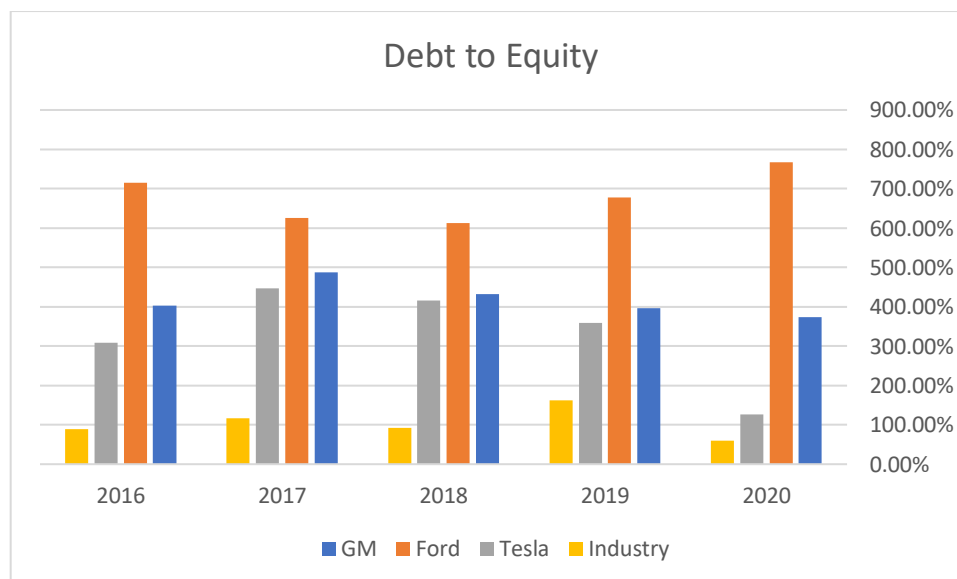
GM has an asset turnover of 0.52, which has been decreasing year-on-year. This indicates that GM is being inefficient in using its assets to earn revenue, and this is in line with the ROA.



With an inventory turnover day of 34.33, GM is among the quickest to turn its inventory into sales amongst its comparators, and is 57.09% quicker than the industry average.

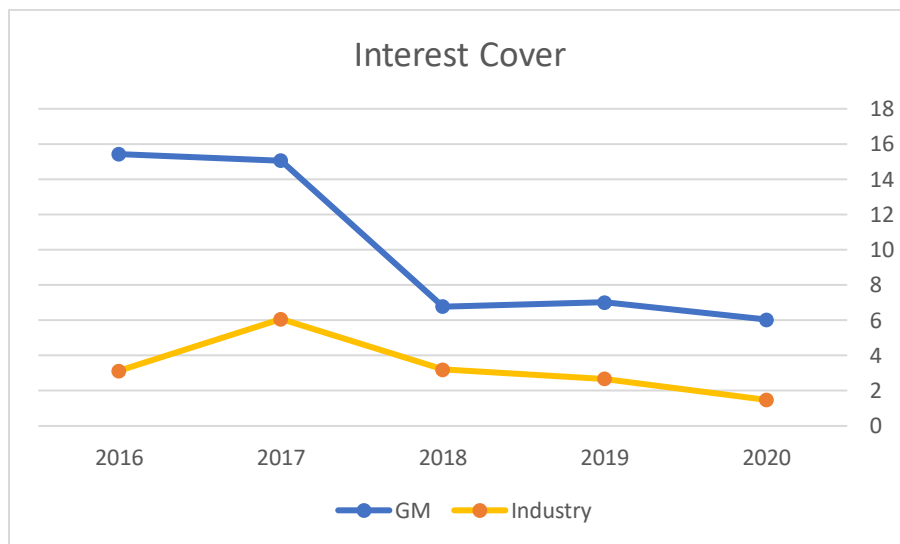
	GM	Ford	Tesla
Period Ending:	2020	2020	2020
Inventory days	34.33	34.99	60.10
Debtor days	102.05	28.69	21.83
Payable days	66.85	71.88	88.68
Cash conversion cycle (days)	69.53	- 8.20	- 6.75

However, GM has a very high debtor day ratio and a low payable day ratio compared to the comparators used, which places an increased pressure on the working capital of the company, and can cause liquidity problems in the future. GM takes twice the number of days to collect payment from its customers than the industry average, and it has been increasing year-on-year, going from 60.74 days in 2016 to 102.05 days in 2020. Similarly, GM pays its creditors earlier than its competitors. Thus, there is both a pull and a drag on liquidity. GM is depriving itself of cashflow by not using credit facilities provided by its creditors, while overextending the credit facilities it provides to its customers. This could explain GM's low liquidity ratios. The cash conversion cycle (CCC) for the three companies, shows that both Ford and Tesla have a negative CCC, whereas, GM takes 70 days to convert its cash outflow on inventories to inflow from sales. This could place the company at a risk of insolvency, and relative to the competition, GM will incur opportunity cost from the cash tied up to its working capital for a long time.

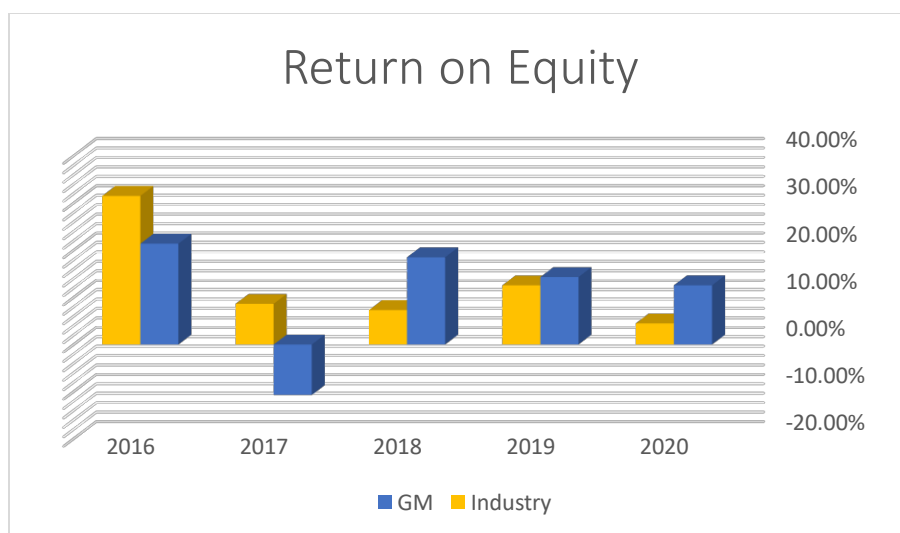


The debt to equity (D/E) of GM, calculated as total liabilities to total equity, has decreased year-on-year since 2017, by a total of 23.3%. The debt to assets follows the same trend. GM increased its total liabilities by 4.45% during the period, but it was insufficient to offset the 12.71% increase in total equity. Similarly, the financial leverage of GM, calculated as the total debt by total equity has also been decreasing steadily since 2017, which was a year when the total debt of GM increased by 25.41%, although

the total liabilities decreased. GM had an unprofitable year in 2017, leading to decreased total assets and equity, followed by year-on-year increases (GM, 2018). This might explain the trend for all three ratios. There has also been an increase in debt in 2020, which could be explained by GM raising and refinancing its debts as a response to a possible liquidity crunch due to the pandemic (Sierra, 2020b). However, even with the decreasing D/E ratio, GM's D/E is thrice the industry average. This could be an indication of financial distress, and as a riskier project, the beta of GM might increase, increasing the cost of capital for the company.



The interest cover shows that the company is finding it increasingly difficult to meet its interest obligations. The ratio fell from 15.43 times in 2016 to 6.04 times in 2020. However, the trend closely followed that of the industry in the last four years, with GM having a higher interest cover ratio, which can be traced back to its strong profitability ratios.

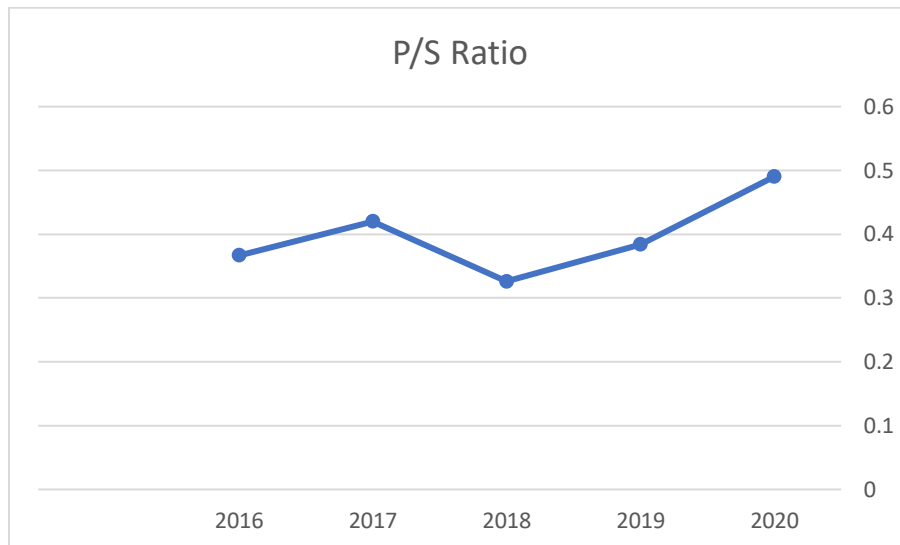


The earnings per share of GM is much higher than the two comparators used. Similarly, GM also has the best return on equity (ROE) amongst its comparators, which is 180% above the industry average, which is due to the strong profitability of GM. However, the ROE has been decreasing year-on-year, falling by 41.18% over the five-year period due to decreasing profits and increasing equity. In the same period, the industry average decreased by 85.75%. Thus, in relative terms, GM has performed better in utilizing its equity investment. However, over time it has become less efficient in generating profit per dollar of equity invested.

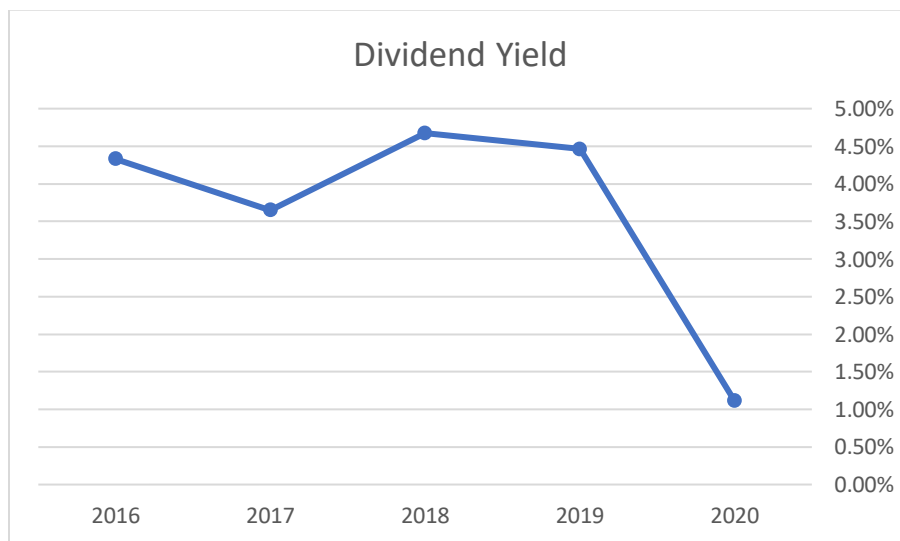
Three Step DuPont Analysis	GM				
Period Ending:	2020 31/12	2019 31/12	2018 31/12	2017 31/12	2016 31/12
Net profit margin	5.10%	4.80%	5.38%	-2.67%	6.32%
Asset turnover	0.52	0.60	0.65	0.69	0.67
Equity multiplier	4.73	4.96	5.31	5.87	5.03
ROE	12.58%	14.32%	18.51%	-10.72%	21.39%

The DuPont analysis shows that the decreasing ROE over the years can be attributed to the decreasing asset turnover and equity multiplier. The lower percentage decrease in 2020 was due to GM improving its net margins, however it was insufficient to offset the impact of the other two ratios. This is in line with the previous analysis, with the strength of GM being improving profitability, and its weakness being its inability to utilize

its assets to earn revenue. Similarly, over the years, the increase in equity has been greater than the increase in assets, leading to an increasing multiplier.



The P/E ratio of GM, which is the price paid by investors for a dollar in earnings is 9.61. It is 96.32% lower than the industry average. Similarly, the P/S ratio, the price paid by investors for a dollar in sales stands at 0.49. Both the P/E and the P/S ratio have been steadily increasing over the last two years, but are lagging behind that of the industry.



The total dividends paid to GM shareholders has remained fairly stable in the last four years, but in 2020, dividends decreased by 70.25%. This is in line with GM preparing for a liquidity crisis. The dividend yield of the company has also decreased by 75.11% in

2020. This is due to the decreasing dividends and the stock price increasing by 13.77% in the bull run of 2020. The lower dividends have also increased the dividend cover and retention rate, and ultimately the sustainable growth rate, which is amongst the highest in the industry.

2.2. Relative valuation

P/E has been used for the purpose of relative valuation. The average P/E of the three companies has not been used as the average of the auto industry was deemed to be a more appropriate measure. The average P/E ratio of the industry was 261.56 (Damodar, 2021). Using it, we can see that GM is grossly undervalued at current prices. However, consideration should be made that the market sentiment surrounding the prospects of GM might not be positive.

Period Ending:	GM 2020 31/12
Trailing P/E Auto Industry	261.56
Earnings	4.332177531
Valuation	1,133.12
Price	41.64
Signal	Underpriced

2.3. F-Score and Z-Score model

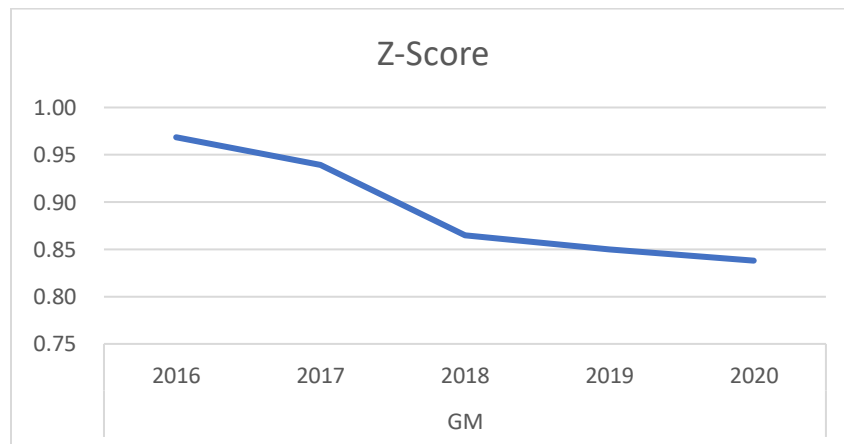
F-score is a financial statement-based measure of the strength of a firm's financial position (CFI, 2021b). The cut-off point for an investment is a score of eight or above for good value, and a score of 2 or below for a bad value. Using the latest financial statements, GM has a score of 5. A breakdown shows that GM's position in terms of profitability is relatively strong, as it has scored three out of four, losing a point for a negative change in ROA. GM has performed poorly in the liquidity, leverage and source of funds section, scoring one out of three, foregoing points from an increased leverage ratio and issue of new equity. With regards to operating efficiency GM has seen an increase in gross margin and a decrease in asset turnover. Thus, the F-Score model

indicates that GM is in the upper-range of the gray zone and can be deemed to be acceptable.

Period Ending:	GM	
	2020 31/12	Score
Profitability		
Return on Assets	2.66%	1.00
Operating Cash Flow	16,670.00	1.00
Change in Return of Assets	-0.23%	-
Accruals	0.04	1.00
Leverage, liquidity and source of funds		
Change in leverage (long-term) ratio	-22.75%	-
Change in current ratio	0.13	1.00
Change in the number of shares	9.00	-
Operating Efficiency		
Change in gross margin	0.98%	1.00
Change in asset turnover ratio	- 0.08	-
F-Score		5.00

However, the founder of the model, Piotroski himself has admitted that the use of the binary model could lead to potentially useful information being ignored (Taylor, 2021). Thus, it is advisable to not consider the F-score in isolation.

Z-score is a credit-strength test model used to predict the risk of bankruptcy of a company, where the lower the score, the greater the risk (CFI, 2021c).



The Z-score of GM is 0.84, placing GM in the distress zone as it is below 1.81. Thus, GM has a high risk of bankruptcy. Furthermore, it can be seen that the Z-Score has been deteriorating over the years. The total assets of GM have steadily increased, and the sales revenue have been steadily decreasing. This could should explain the decrease in the variable 'e', which has seen a 22.39% decrease from 2016 to 2020. GM has been in the distress zone for all of the five years considered, which is alarming and can be attributed to inefficient working capital management, and a decreasing sales revenue and operating profit.

3. Conclusion

3.1. Sensitivity analysis

GM has seen its inventory decreasing by 1.75% and its equity increasing by 3.96% on average from 2016 to 2020, which has been consistent and stable. Thus, the average change in inventory and equity were deemed to be an appropriate adjustment for 2021. However, based on the EIC analysis, GM should see an increase in its sales in 2021, with its shift towards EVs and commitment to its growth strategy (GM, 2021c). GM had to suspend the majority of its manufacturing operations in 2020 due to the pandemic (GM, 2021b). However, the financials were in line with its 2019 performance, suggesting that the company could have possibly performed much better. The economy is also expected to rebound from the pandemic, with a projected increase of 6.39% in US GDP (O'Neill, 2021). Based on these factors, sales are expected to grow by 3% in 2021. The cost of goods sold are expected to increase by 3.5%, as it has consistently shadowed the change in revenue.

In 2017, GM paid an incremental \$7.2 billion in taxes due to changes in tax laws, and \$4.2 billion of the losses was from discontinued operations (GM, 2018). Thus, the net profit for 2017 has been excluded in the net profit estimate, as 2017 was an outlier for GM, with the last year of negative profits being 2008. With its recent restructuring and focus on improving efficiency, GM has become better at cost control as evidenced by the fact that in 2020 when GM's sales decreased by 10.75%, its net profit decreased only by 5%. Thus, following the 3% increase in sales, GM is expected to see a 5.5% increase in its net profit. This is in line with the CEO statement as GM expects to have a net profit of around \$7 billion in 2021 (GM, 2021b).

The overall range of possible figures for the ratios that were considered to be important based on the audience of the report and the nature of the industry has been summarized in the sensitivity table. Overall, the analysis shows that GM is expected to see a decrease in its inventory days, and an increase in its ROE and net profit in 2021.

		Inventory				
Inventory Days	32.59	9,380	9,550	9,710.00	9,880	10,055.97

	108,680	31.5026	32.0735	32.6109	33.1818	33.7728
	112,621	30.4001	30.9510	31.4696	32.0205	32.5908
Cost of Sales	116,560.00	29.3729	29.9052	30.4062	30.9386	31.4896
	120,640	28.3795	28.8938	29.3779	29.8922	30.4246
	124,860	27.4203	27.9173	28.3850	28.8819	29.3964

		Net Income				
Return on Equity	12.76%	6,230	6,591	6,950.00	7,330	7,730
	49,600	12.56%	13.29%	14.01%	14.78%	15.58%
	51,645	12.06%	12.76%	13.46%	14.19%	14.97%
Shareholder's Equity	53,690	11.60%	12.28%	12.94%	13.65%	14.40%
	55,815	11.16%	11.81%	12.45%	13.13%	13.85%
	58,025	10.74%	11.36%	11.98%	12.63%	13.32%

		Net Income				
Net Profit Margin	5.22%	6,230	6,591	6,950.00	7,330	7,730
	122,370	5.09%	5.39%	5.68%	5.99%	6.32%
	126,160	5.09%	5.39%	5.68%	5.99%	6.32%
Revenue	129,945.00	4.79%	5.07%	5.35%	5.64%	5.95%
	133,845.00	4.65%	4.92%	5.19%	5.48%	5.78%
	137,860.00	4.52%	4.78%	5.04%	5.32%	5.61%

3.2. Recommendations

In conclusion, in terms of profitability, GM is in a relatively strong position. However, with decreasing sales, the absolute amount of profit has been decreasing, which can hamper the growth and expansion prospects of GM. Qualitative analysis suggests that

the trend should reverse in the near future. Similarly, the restructuring plans which are inherently long-term in nature are starting to bear fruits in the form of cost-control, and the improvements will only increase going forward, which is supported by the sensitivity analysis. The CEO and chairman statement are optimistic as well, with the company doubling down on its commitment to zero emissions, growth and EVs.

The F-Score indicates that GM is in the grey zone and is neither a good investment, nor a bad one. However, the low P/E and P/S ratio could be interpreted as GM being a value stock. This is supported by the relative valuation, but this could have been inflated by GM's higher earnings compared to its P/E ratio which is 96.5% lower than the industry average. Considering the lifecycle of GM, the low P/E and P/S ratio could simply be an indication that the market believes GM to be a stable and mature company with a relatively lower upside.

The major risk for GM is its liquidity as shown by the ratio analysis, with the Z-score also indicating that GM has been in the distress zone for a prolonged period. The gearing ratios also shows that GM might be in financial distress and may find it difficult to pay its liabilities in the event of a business downturn. However, GM has been making progress in its liquidity and gearing position, albeit slowly.

Investments are inherently risky, and GM is no different. The analysis indicates that GM is a value stock as suggested by its relative valuation, but has been overlooked due to the emergence of younger and faster companies. However, GM does the basics of an automobile company right, and is also committed to the technology and innovation aspect of the industry that investors use to justify the valuation of newer companies (Munarriz, 2020). Thus, the report concludes that it is advisable to invest in GM, as it is probably that in the long-run GM will address its problems, and with its strong leadership will ensure the achievement of its future goals. GM's maneuver to help the community against the coronavirus, while raising and refinancing its debt, and decreasing its dividends despite it potentially sending a negative signal to the market shows that the management is committed towards its long-term vision and is willing to make the difficult decisions required to ensure that the company stays afloat without sacrificing its CSR aspirations. Similarly, GM has a history of consistent dividends, thus,

will satisfy both the dividend and capital appreciation requirements of many investors. Even in the short-run, with its strong fundamentals, GM stock, which has doubled in the last 12 months is expected to further increase in value as the economy is in a bull market which can last for years (Rosenbaum, 2021).

4. References

- AP News (1986) Chrysler, GM announce employee stock plan transactions. *AP News* [Online], 21 January. Available from: <<https://apnews.com/article/c920e64a4d5e04303ff5518331c4558e>> [Accessed 1 June 2021].
- Basu, T. (2014) Timeline: a history of GM's ignition switch defect. *NPR* [Online], 31 March. Available from: <<https://www.npr.org/2014/03/31/297158876/timeline-a-history-of-gms-ignition-switch-defect>> [Accessed 24 May 2021].
- Butler, D. (2020) History of General Motors: timeline and facts. *The Street* [Online], 2 January. Available from: <<https://www.thestreet.com/lifestyle/cars/history-of-general-motors>> [Accessed 23 May 2021].
- Carlsson-Szlezak, P., Swartz, P. and Reeves, M. (2020) Why the global economy is recovering faster than expected. *Harvard Business Review* [Online], 3 November. Available from: <<https://hbr.org/2020/11/why-the-global-economy-is-recovering-faster-than-expected>> [Accessed 26 May 2021].
- CFI (2021a) *Corporate governance*. [Online] Available from: <<https://corporatefinanceinstitute.com/resources/knowledge/other/corporate-governance/>> [Accessed 20 May 2021].
- CFI (2021b) *Piotroski F Score Calculator*. [Online] Available from: <<https://corporatefinanceinstitute.com/resources/templates/excel-modeling/piotroski-f-score-calculator/>> [Accessed 23 May 2021].
- CFI (2021c) *Altman's Z-Score Model*. [Online] Available from: <<https://corporatefinanceinstitute.com/resources/knowledge/credit/altmans-z-score-model>> [Accessed 23 May 2021].
- Damodar, A. (2021) *PE Ratio by Sector* [Dataset]. New York: NYU Stern. Available from: <http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/pedata.html> [Accessed 26 May 2021].

Ferris, R. (2019) GM says 'we are already seeing savings from restructuring'. *CNBC* [Online], 6 February. Available from: <<https://www.cnbc.com/2019/02/06/gm-says-we-are-already-seeing-savings-from-restructuring.html>> [Accessed 27 May 2021].

General Motors (2021a) *About us*. [Online] Available from: <<https://www.gm.com/our-company/about-gm.html>> [Accessed 23 May 2021].

General Motors (2021b) Annual Report 2020 [Online]. Michigan. General Motors. Available from: <<https://investor.gm.com/sec-filings>> [Accessed 22 May 2021].

General Motors (2021c) Sustainability Report 2020 [Online]. Michigan. General Motors. Available from: <<https://www.gmsustainability.com/>> [Accessed 25 May 2021].

General Motors (2021d) *Corporate governance*. [Online] Available from: <<https://www.gmsustainability.com/esg-governance/corporate-governance.html>> [Accessed 20 May 2021].

General Motors (2020a) Annual Report 2019 [Online]. Michigan. General Motors. Available from: <<https://investor.gm.com/sec-filings>> [Accessed 22 May 2021].

General Motors (2020b) Sustainability Report 2019 [Online]. Michigan. General Motors. Available from: <<https://www.gmsustainability.com/>> [Accessed 25 May 2021].

General Motors (2019a) Annual Report 2018 [Online]. Michigan. General Motors. Available from: <<https://investor.gm.com/sec-filings>> [Accessed 22 May 2021].

General Motors (2019b) Sustainability Report 2018 [Online]. Michigan. General Motors. Available from: <<https://www.gmsustainability.com>> [Accessed 25 May 2021].

General Motors (2018) Annual Report 2017 [Online]. Michigan. General Motors. Available from: <<https://investor.gm.com/sec-filings>> [Accessed 22 May 2021].

General Motors (2017a) Annual Report 2016 [Online]. Michigan. General Motors. Available from: <<https://investor.gm.com/sec-filings>> [Accessed 22 May 2021].

General Motors (2017b) General Motors company board of directors corporate governance guidelines [Online]. Michigan. General Motors. Available from:

<<https://investors.gm.com/static-files/c09a27f3-a30b-4f88-8888-dd7282766949>>
[Accessed 23 May 2021].

Glinton, S. (2015) GM to pay \$900 million to settle criminal case over faulty ignition switch. *NPR* [Online], 17 September. Available from
<<https://www.npr.org/2015/09/17/441222406/gm-to-pay-900-million-to-settle-criminal-case-over-faulty-ignition-switches>> [Accessed 23 May 2021].

Hughes, T. (2017) The effect of ride-sharing on the auto industry. *Moody's Analytics* [Online], July. Available from: <<https://www.moodyanalytics.com/risk-perspectives-magazine/managing-disruption/op-ed/the-effect-of-ride-sharing-on-the-auto-industry>> [Accessed 30 May 2021].

Higgins and Summers (2014) GM recalls: how General Motors silenced a whistle-blower. *Bloomberg Businessweek* [Online], 20 June. Available from:
<<https://www.bloomberg.com/news/articles/2014-06-18/gm-recalls-whistle-blower-was-ignored-mary-barra-faces-congress>> [Accessed 21 May 2021].

Joh, S.W. (2003) Corporate governance and firm profitability: evidence from Korea before the economic crisis. *Journal of Financial Economics* [Online], 68 (2) May, pp. 287-322. Available from:
<<https://www.sciencedirect.com/science/article/abs/pii/S0304405X03000680#!>>
[Accessed 26 May 2021].

Juniarti, J. (2020) Does mandatory CSR provide long term benefits to shareholders? *Social Responsibility Journal* [Online], July. Available from:
<<https://www.emerald.com/insight/content/doi/10.1108/SRJ-03-2019-0114/full/html>>
[Accessed 25 May 2021].

LaReau, J.L. (2021) GM just became the only automaker with board of directors that's majority women. *Detroit Free Press* [Online], 25 March. Available from:
<<https://www.freep.com/story/money/cars/general-motors/2021/03/25/gm-board-women-diversity-meg-whitman-mark-tatum/6969922002/>> [Accessed 1 June 2021].

Lessambo, F.I. (2014) *The International Corporate Governance System*. London: Palgrave Macmillan.

Lipman, F.D. (2017) Why corporate governance failures continue. *Blank Rome* [Online], 17 April. Available from: <<https://www.blankrome.com/publications/why-corporate-governance-failures-continue>> [Accessed 20 May 2021].

Lister, J. (2017) *Corporate governance effects*. [Online] Available from: <<https://bizfluent.com/info-8019695-corporate-governance-effects.html>> [Accessed 20 May 2021].

Macrotrends (2021) *General Motors revenue 2009-2021*. [Online] Available from: <<https://www.macrotrends.net/stocks/charts/GM/general-motors/revenue>> [Accessed 5 June 2021].

MarketLine (2021) *Company Profile: General Motors Company* [Online]. London: Marketline. Available from: <<http://search.ebscohost.com.ezproxy.leedsbeckett.ac.uk/login.aspx?direct=true&db=buh&AN=149046304&site=eds-live&scope=site>> [Accessed 16 February 2021].

Munarriz, R. (2020) Is Tesla a tech stock like Apple? *The Motley Fool* [Online], 26 April. Available from: <<https://www.fool.com/investing/2020/04/26/is-tesla-a-tech-stock-like-apple.aspx>> [Accessed 30 May 2021].

O'Neill, A. (2021) Gross domestic product (GDP) growth rate in the United States 2026. *Statista* [Online], 1 June. Available from: <<https://www.statista.com/statistics/263614/gross-domestic-product-gdp-growth-rate-in-the-united-states/>> [Accessed 2 June 2021].

Price, N.J. (2019) *What is the corporate governance code?* [Online] Available from: <<https://insights.diligent.com/corporate-governance/what-is-the-corporate-governance-code/>> [Accessed 20 May 2021].

Rosenbaum, E. (2021) When the bull market in stocks will end, according to S&P 500 history. *CNBC* [Online], 19 April. Available from:

<<https://www.cnbc.com/2021/04/19/when-the-bull-market-will-end-according-to-sp-500-history.html>> [Accessed 30 May 2021].

Saberi, B. (2018) The role of the automobile industry in the economy of developed countries. *International Robotics & Automation Journal* [Online], 4 (3) May, pp. 179-180. Available from: <<http://medcraveonline.com/IRATJ/IRATJ-04-00119.pdf>> [Accessed 30 May 2021].

Sierra, M. (2020a) GM strategy shift shows how 'liquidity is king' during COVID-19 crisis. *Reuters* [Online], 29 April. Available from: <<https://www.reuters.com/article/gm-strategy/gm-strategy-shift-shows-how-liquidity-is-king-during-covid-19-crisis-idUSL2N2C91PH>> [Accessed 27 May 2021].

Sierra, M. (2020b) GM undergoes delicate balancing act to shore up liquidity through crisis. *Reuters* [Online], 26 March. Available from: <<https://www.reuters.com/article/gm-liquidity/gm-undergoes-delicate-balancing-act-to-shore-up-liquidity-through-crisis-idINL1N2BI2OL>> [Accessed 27 May 2021].

Trefis (2020) Should GM investors worry about liquidity? *Forbes* [Online], 9 July. Available from: <<https://www.forbes.com/sites/greatspeculations/2020/07/09/should-gm-investors-worry-about-liquidity/>> [Accessed 26 May 2021].

Winton, N. (2021) Strong growth forecast for global auto sales in 2021 with Europe strongest, barring anything unexpected. *Forbes* [Online], 3 January. Available from: <<https://www.forbes.com/sites/neilwinton/2021/01/03/strong-growth-forecast-for-global-auto-sales-in-2021-with-europe-strongest-barring-anything-unexpected/?sh=68734122141a>> [Accessed 23 May 2021].

Taylor, Y. (2021) Why Piotroski's F-score no longer works. *Seeking Alpha* [Online], 20 February. Available from: <<https://seekingalpha.com/article/4407684-why-piotroskis-f-score-no-longer-works>> [Accessed 25 May 2021].

Teece, D. (2018) Tesla and the reshaping of the auto industry. *Management and Organization Review* [Online], 14 (3) August, pp. 501–512. Available from: <<https://www.cambridge.org/core/journals/management-and-organization->

review/article/tesla-and-the-reshaping-of-the-auto-industry/5E551257839D03D5E430F61CB93AFA62> [Accessed 26 May 2021].

The World Bank (2021) *GDP growth (annual %)*. [Online] Available from:
<<https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>> [Accessed 1 June 2021].

Appendices

