

DePaul University

Financial Analysis Report

Automotive Industry

TESLA, GM & FORD

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ABSTRACT

This paper discusses whether Tesla is an investable company in 2021 with its competitors being GM and Ford. It will touch on areas pertaining to the qualitative and quantitative aspects of companies Tesla, GM, and Ford. Specific emphasis will be put on liquidity ratios, leverage ratios, profitability and valuation of each company as deciding factors.

Introduction

The automobile industry includes an array of companies and organizations, many of which are involved in the development, manufacture, marketing, and sales of motor vehicles. By revenue, it is one of the biggest industries in the world. Though there have been advancements in the automotive industry over the past 50 years, any new manufacturing changes and technologies have occurred rather slowly across similar platforms by the same companies. Despite this, electric vehicles are increasingly being developed in both the passenger car and whole transport sector, creating a strong trend that will likely spread over the next few years. As electrification becomes mainstream, many companies are joining the trend even though it has been something that was thoroughly rejected in the past. There is an estimate that by 2027, driverless cars will replace current vehicles.

TESLA

Type of Business

Tesla was founded in 2003 by a group of engineers who believed that driving electric was the future and did not require drivers to compromise on their wish to drive electric. They wanted to show the world that electric vehicles could be overall better than gasoline cars. Tesla has developed a reputation for creating the best electric products. The Roadster was the first to change the image of all-electric cars being small, slow vehicles to sports cars. There is no other company that has an electric car that can rival the performance/price ratio of the Tesla Model 3 and its in-house permanent magnet synchronous reluctance motor. This shows by the Model 3 selling more than three times more units than the second best selling electric car in the world got in 2019.

Business Segments

Tesla produces 4 all-electric vehicles — the Tesla Models S, X, 3, and Y, all of which require significant battery capacity. Tesla does not limit themselves to just cars, they have created infinitely scalable clean

energy generation and storage products. This has led to countless innovations including their Supercharger Network that is a proprietary superfast-charging station to create efficient recharging opportunities for Tesla's electric vehicle drivers. Also their Over-the-air updates, this is very similar to the ones we receive on our smartphones. The latest update in June 2020, created 7 new software updates: improved traffic light and stop sign control, backup camera improvements, dashcam viewer improvements, walkaway door lock improvements, TuneIn improvements, new language support, and cabin camera. Tesla's autonomous driving capacity, offered at its highest level in the "Full Self Driving" package, is getting better quarter after quarter, with more autonomous features regularly added. Tesla AI analyzes countless images from Tesla owners' cars while they drive around and uses them to train the autonomous-driver neural nets Tesla keeps developing for its vehicles' Autopilot/Full Self Driving features. Tesla's development strategy for 2020 comes in two primary categories: Headline-grabbing moves like launching the cybertruck or the Roadster 2.0, which the company claims that it accelerates faster than any production car ever made and big bets are being made on its core vehicles, the Models S, X, 3 and Y.

CEO's Take

Tesla CEO Elon Musk in August 2020 announced that the company will focus on new product development and product scaling and not Formula E racing. They had a successful year in 2019 with a significant increase in production and several new product launches. In 2020, Tesla is bringing to market some of those products and more. Tesla Model Y- The unveiling of Model Y took place in March 2019. The volume production for the electric crossover was planned for mid-2020 which was likely to start in early 2020. Tesla Model S and X refresh-It was in the summer of 2018 that Tesla announced the refresh of Model S and Model X interior. The company ended up focusing on the Model 3 ramp-up and bringing Model Y to production. Currently, the automaker is working on introducing its new 'Plaid tri-motor powertrain,' as the company might be planning to release both the performance improvements and the new interior at the same time. Tesla Semi- Tesla announced its all-electric heavy-duty truck, the Tesla Semi in 2017 which was planned to be released in 2019. But since then, the company has delayed all-electric trucks despite having taken thousands of reservations with deposits worth between US\$5,000 and US\$20,000 each. However, in 2020, Tesla said that the company is planning to start the production of an electric truck with limited volumes in 2020. New Tesla Battery- Elon Musk has announced that Tesla has a new battery coming up 2021, that will last a million miles.

Competitive Strategy

Tesla's competitive Strategy is built around approaching situations different than other automotive companies. For example, they develop their cars as if it was a software product. They use unique hardware similar to Apple which enables them to improve their functionality every few weeks. No other automotive company improves their vehicles after the purchase. They also sell their product directly to consumers, they allow their customers to simplify the process of buying a car. Allowing the consumer to be in control of the entire process. Tesla also leverages their battery technology because they were the first to market. This leverage allows them to minimize the cost of ownership over the automotives lifespan. It is estimated that they only have around 20 parts in the internal combustion engines while their competitors have around 2,000.

Competitors

GENERAL MOTORS

Type of Business

General Motors, an American multinational corporation, is one of the world's largest automakers that designs, manufactures and distributes vehicles and its parts. GM used to be the world's largest automaker from 1931 to 2007 and had half the market share in the United States. Today GM is the largest American automobile manufacturer ranking 18 in terms of total revenue in Fortune 500 rankings of the largest United States corporations. General Motors is home to the four automobile brands, Chevrolet, Buick, GMC & Cadillac.

Business Segments

General Motors key sources of revenue comes from its main four business segments: GM North America (GMNA), GM International (GMI), GM Financial and Cruise. Together from all four segments GM has generated a total revenue of \$122.5 billion in the year 2020. In 2019, they were able to generate \$137 billion dollars. Hence there has been an unfavorable reduction in total revenue from 2019 to 2020 by a total of \$14.7 billion.

GMNA covers all the businesses meeting the demands of North American customers with development, manufacturing and marketing of their vehicles under the four core brands Chevrolet, Buick, Cadillac and GMC. Though GMNA covers only the customers from North America, it generates almost 79% of GM's revenue (\$97 billion) from the vehicles manufactured. Among all the other business segments, GMNA contributed highest to GM's profit with its EBIT-adjusted as \$9.7 billion in 2020.

In a similar way to GMNA, GMI meets the demands of those customers outside of North America. GMI also generates revenue from the development, manufacturing and sales of their vehicles. But when compared to GMNA the contribution of GMI to the total revenue is only around 10% (\$11.5 billion) in 2020. GMI had a larger contribution in 2019 with \$16 billion reaching almost 12% of the total revenue.

GM Financial, being an automotive finance company, specializes in providing lease programs and loans through dealers, offering lending products like real estate loans, insurance for car dealerships, constructions etc. This is GM's global captive automotive finance company and global provider of automotive finance solutions. GMF deals in North America, South America and in Asia Pacific through joint ventures. In 2020, GMF is GM's second highest revenue generating segment after GMNA with almost \$14 billion covering 11.2% of the total revenue.

Cruise is a globally operating segment which started in 2019 working for the development and commercialization of technology for autonomous vehicles. Because of the growing relevance of autonomous technology and self-driving technology, this business unit was separated from their automotive unit (GMNA & GMI). Since it has only been 2 years after the introduction of this new unit, the revenue earned from this is very meagre compared to the other 3 units. In 2020, a total of \$103 million was generated as revenue with an increase of 3% from the previous year.

CEO's Take

General Motors CEO Mary Barra and other executives had recently in a conference revealed GM's plans for the future and how they plan to achieve it. Barra said she already has planned out near-, medium- and long- term plans for the company. Barra was able to induce confidence into the investors by laying out plans about their development in electric vehicles, autonomous technology, self-driving vehicles, hydrogen fuel cell technology and even flying cars. Company's decision to invest in these promising technologies of the future and on alternative fuel vehicle technology will also help in

achieving Barra's vision of "triple zero" – transportation without emissions, congestion and crashes. GM has already invested \$27 billion in electric and autonomous vehicle technology and has plans to bring 30 new models globally within 2025. GM has also planned to deliver its first 500 commercial all-electric van EV600 to FedEx by the end of this year.

Competitive Strategy

GM's general competitive strategy is to create competitive advantage based on the attractiveness of low costs and corresponding low prices of products. This is called cost leadership. When it comes to automotive, GM has four brands which covers all the price range possible making choices available for customers of all financial status. Thereby continuing this will only help GM to maintain its position in market share as one of the leaders in this area. Most relevant opportunity for GM comes from the increasing demand for SUVs and pickup trucks. Since the fuel prices have hit their lowest in almost a decade, the number of potential customers looking into buying not so fuel-efficient SUVs and pickups will increase. Moreover, investing more money and time in future technologies like Air-taxis, Ultium cells etc. sets GM apart from its competitors. GM's smart alliance strategy to improve its strength on EV will attract more long-term investors.

FORD MOTOR COMPANY

Type of Business

Ford, like Tesla and GM, is an American automotive company that designs, manufactures and sells cars. It has a luxury car brand called Lincoln. It provides financing through Ford Credit which offers a wide variety of automotive financing products to and through automotive dealers throughout the world. The company produced half of America's cars in the 1930's and is currently the world's 5th largest automaker. Today, the company is ranked 12 in terms of total revenue in Fortune 500 rankings of the largest United States corporations.

Business Segments

Ford has 3 business segments: Automotive, Ford Credit, and Mobility with Automotive generating about 91% of the company's revenue. In 2020 total revenue amounted to \$127 billion, a slight decrease in revenue compared to 2019 and 2018.

The sale of Ford vehicles are presented in 2 parts, Wholesale and Retail. Cars sold in wholesale to dealerships are largely impacted on the company's recognized revenue. With retail sales, this is not recognized as part of revenue. Ford does not consider the sale of a vehicle from dealership to end customer as direct revenue. Instead it is considered as part of the strength of the company's brand.

Ford Motor Credit is Ford's financial services subsidiary. It is a leading provider of automotive financial products and services globally to Ford and Lincoln dealers and their customers. Ford Credit was established in 1959 and supports Ford and Lincoln sales through dedicated dealer products and services, as well as a variety of financing plans and programs and strong services to meet consumer needs.~ Ford.com

CEO's Take

Ford CEO Jim Farley has promised a clear and decisive plan as the auto industry transitions to electric vehicles. Farley reinstated during a CNBC interview that 2021 was Ford's year of action, also mentioning that measures are being taken so that every business in their portfolio has a sustainable future. In his role as CEO, he is building upon and increasingly accelerating the \$11 billion restructuring plan he helped design as Ford's second in command. In addition, Farley is also prepared to debut new products including the Mach-E and anticipated Bronco SUV this summer with no major problems. Through his first four months as CEO, Ford's stock recovered 60%, largely because of optimism about his leadership and restructuring. This contrasts with a 60% decline in Ford's stock during his predecessors' tenure. Ford is evaluating overseas markets and has pledged \$11.5 billion in investments in "electrified" vehicles through 2022, including hybrid and plug-in hybrid vehicles.

Competitive Strategy

In efforts to stay innovative in the automotive industry, Ford invested \$7.1 billion in research and development. An amount less than what they invested in 2019. This R&D goes towards the production of cars that produce less carbon dioxide emissions. An advantageous strategy that Ford has committed to, with regards to customer and policymaker concerns, is its transition from the production of gas cars to a complete production of electric vehicles. With GM and Tesla, as well as other rising EV manufacturers, this will serve as a positive competitive advantage within the whole automotive industry for Ford.

Ford places its focus on customer satisfaction. This is one way that they continue to have a competitive edge over other manufacturers. With the right marketing campaigns, Ford has been able to engage its

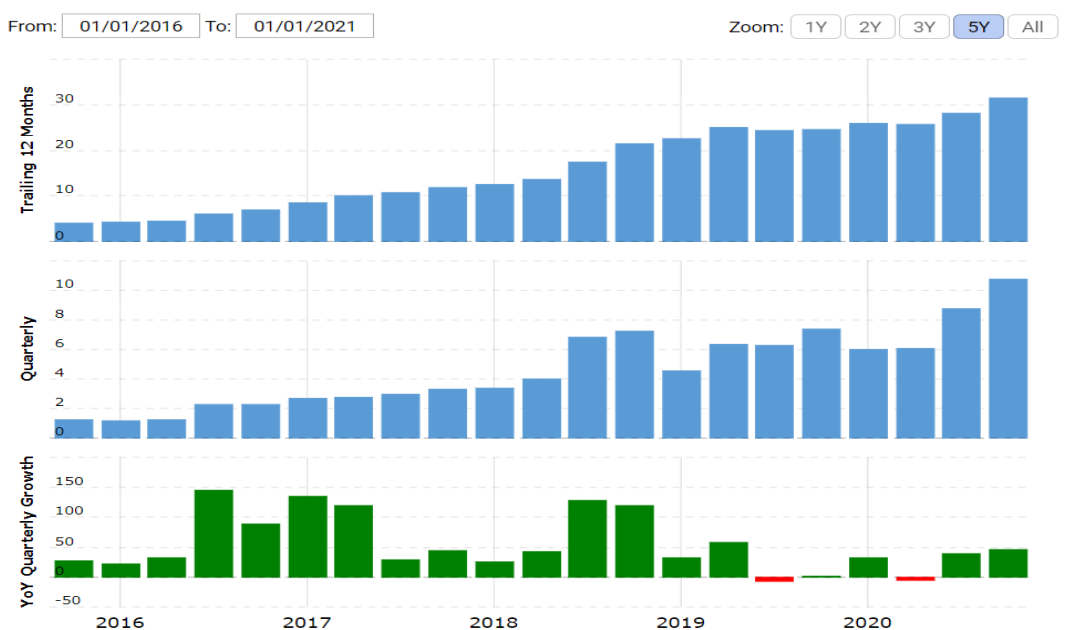
customers' and maintained customer loyalty. One that sets them well apart from competitors, particularly the US market.

Numbers

Tesla

Year	Revenue (in millions)	Revenue Growth Percentage
2020	\$ 31,536.00	28.3%
2019	\$ 24,578.00	14.5%
2018	\$ 21,461.00	82.5%
2017	\$ 11,758.00	67.9%
2016	\$ 7,000.00	

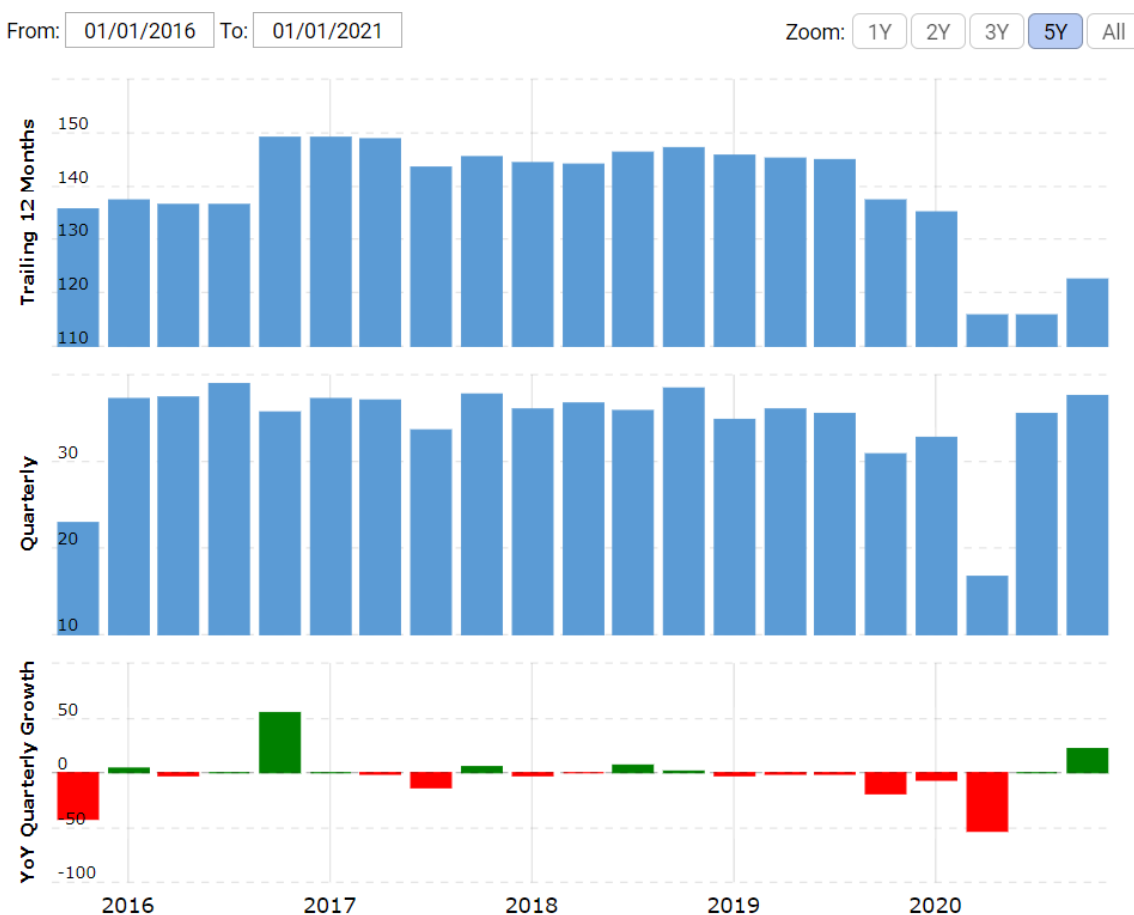
Tesla reported revenue of \$24.5 billion in 2019. This figure has grown every year since 2016, when Tesla's net income totalled \$7.0 billion. Tesla has reported a loss every year, with an improved loss from operations of \$69 million in 2019.



General Motors

Year	Revenue (in millions)	Revenue Growth Percentage
2020	\$122,485	10.7%
2019	\$137,237	-6.6%
2018	\$147,049	1%
2017	\$145,588	-2.4%
2016	\$149,184	

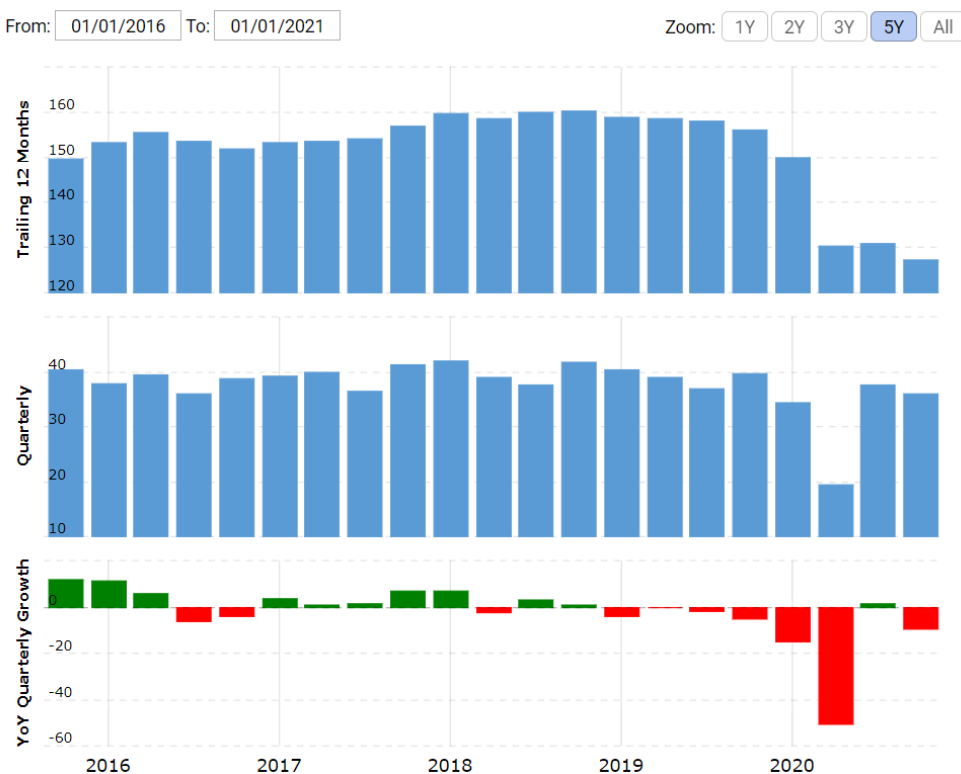
General Motors reported revenue of \$137.2 billion in 2019. Revenue was \$149.1 billion in 2016 and rose to \$147.0 billion in 2018. General Motors posted \$6.7 billion in net income in 2019. General Motors reported net income of more than \$8 billion in 2016 and 2018. Net income was only \$330 million in 2017.



Ford

Year	Revenue (in millions)	Revenue Growth Percentage
2020	\$127,144	18.4%
2019	\$155,900	-6.6%
2018	\$160,338	2.2%
2017	\$156,776	3.2%
2016	\$151,800	

Ford reported revenue of \$155.9 billion in 2019. Revenue improved each year from 2016 to 2018 before 2019's decline. Net income was only \$84 million in 2019, after four straight years of more than \$3.5 billion annually.



Source: Macrotrends

Looking at the common-size Balance Sheets, in Appendix C, we can see that there is a significant increase of almost 16% in the total current assets of Tesla and a significant decrease of around 21% in the total liabilities from 2019 to 2020. In the case of Ford, there has been a slight decrease in the total equity and total current assets from 2019 to 2020. And a slight increase in the total liabilities. Considering GM, we can see that there is a slight increase in the total current assets and total equity while there is a decrease in the total current liabilities. This means that Tesla is doing really well in terms that it has enough assets to continue its standard business operations over 2021. Whereas, the liabilities of Ford have increased indicating that it was not able to pay from the revenue generated from the operating activities of the company while Tesla and GM were able to.

Looking at the common-size income statements, in Appendix B we can see that the Net income for Tesla has decreased from 2018 to 2019 and was steady through 2019 to 2020. In the case of General Motors, the net income has decreased by 1% from 2018 to 2019 and then again has increased by 1% from 2019 to 2020. However, considering Ford's net income percentage, we can see that there is a steady decrease through the years 2018-2020.

Liquidity Ratios

As we know, investors are often interested in the current assets and current liabilities when evaluating the short-term liquidity of a company. Particularly, they look at the current ratio, working capital and acid test ratio or quick ratio which measure the short-term financial health of a company.

Current Ratio = Current assets (in millions) / Current Liabilities (in millions)

Tesla (in millions)	Ford (in millions)	GM (in millions)
26,717 / 14,248 = 1.87	Ford: 116,744 / 97,192 = 1.20	GM: 80,924 / 79,910 = 1.01

Looking at the current ratio, it is above 1 for all the three companies. Tesla's current ratio is 1.87 which is a result of the surge in the cash and cash equivalents. This ratio can be attributed to the cash generated from the sales of Model 3 and the addition of cash and cash equivalents in its balance sheets.

By looking at GM's current ratio it might seem like the company is just able to cover its short term liabilities with its current assets but the company's cash flow generation has been so powerful that it only needs to carry the minimum cash on hand when paying off the company's short-term liabilities.

Coming to Ford, its current ratio has increased by 0.04 from 2019 to 2020 because of the difference in the current liabilities over current assets.

Quick Ratio or Acid-Test = (Current Assets – inventory) (in millions) / Current Liabilities (in millions)

Tesla (in millions)	Ford (in millions)	GM (in millions)
$(26,717 - 4,101) / 14,248$ = 1.58	$(116,744 - 10,808) / 97,192$ = 1.08	$80,924 - 10,235 / 79,910$ = 0.88

The quick ratio considers only liquid assets such as cash and cash equivalents, marketable securities, accounts receivable, etc while excluding non-liquid assets such as inventory. Tesla's quick ratio was very low until 2018 and started improving only in 2019. From my understanding and analysis, these low ratios required Tesla to convert some of its inventory to cash through sales in order to generate cash to improve liquidity and the company had been able to do which resulted in the quick ratio beyond 1 in 2020. If Tesla had failed to perform the cash conversion cycle, it probably might have run into solvency problems in no time.

GM's quick ratio suggests that the company's liquid assets had not been enough to cover all short-term liabilities. If a liquidity crunch did occur because of an external shock, GM may run into a liquidity problem. But the company might have deflected this situation with taking a swift action during the COVID-19 outbreak by increasing its cash flow as reflected from all the higher liquidity ratios.

Comparatively, Ford maintains a quick ratio above 1 which means that it can cover its short-term debts from its current assets without having to sell its inventory to do so.

Working Capital

Tesla (in millions)	Ford (in millions)	GM (in millions)
\$12,469	\$19,552	\$1,014

The working capital looks similar to the trend of current ratio. Tesla's working capital has reached a record high of more than \$12 billion in 2020 as Tesla sold a record number of Model 3 that has generated tonnes of cash for the company. The improved working capital has been a result of several factors, including Tesla's positive cash flow and capital raise between 2018 and 2020. GM has been able to generate enough cash flow to cover the day-to-day business operations. GM was seen shoring up its working capital in 1Q 2020 when the figure increased drastically to more than \$6 billion in preparation for any worst-case scenario during the COVID-19 crisis and decreased to more than \$1 billion in the last quarter. GM only increases its working capital in a time of crisis when the company anticipates a possible liquidity crunch driven by the coronavirus pandemic. With the working capital of Ford being more than \$19 billion it seems to be operating the liquidity available well.

Cash flow Liquidity = (cash & cash equivalents + marketable securities + cash flow from operating activities) (in millions) / current liabilities (in millions)

Tesla (in millions)	Ford (in millions)	GM (in millions)
(19,384 + 5,943) / 14,248 = 1.77	(25,243 + 24,718 + 24,269) / 97,192 = 0.76	(19,992 + 9,046 + 16,670) / 79,910 = 0.57

Tesla's cash ratio improved from 2018 to 2019 and from 2019 to 2020. General Motors cash ratio deteriorated from 2018 to 2019 but then improved from 2019 to 2020 exceeding 2018 level. Ford's cash ratio deteriorated from 2017 to 2018 and from 2018 to 2019.

Average collection period = Net accounts receivable (in millions) / Average daily sales (in millions)

Average daily sales = Total revenue (in millions) / 365

	Tesla (in millions)	Ford (in millions)	GM (in millions)
Average Collection Period	1,886 / 86.4 = 21.82	42,401 / 348.33 = 121.72	8,035 / 335.57 = 23.94
Average Daily Sales	31,536 / 365 = 86.4	127,144 / 365 = 348.33	122,485 / 365 = 335.57

Days inventory held = Inventory (in millions) / Average daily cost of sales (in millions)

Average daily cost of sales = Total cost of revenue (in millions) / 365

	Tesla (in millions)	Ford (in millions)	GM (in millions)
Days Inventory Held	4,101 / 68.23 = 60.10	10,808 / 308.909 = 34.98	10,235 / 267.23 = 38.30
Average Daily Cost of Sales	24,906 / 365 = 68.23	112,752 / 365 = 308.909	97,539 / 365 = 267.23

Days inventory held indicates how many days on average a company turns its inventory into sales. It shows how quickly management can turn inventories into cash and the number of days for Tesla, Gm and ford are 60, 38 and 35 respectively.

Days payable outstanding = Accounts payable (in millions) / Average daily cost of sales (in millions)

Tesla (in millions)	Ford (in millions)	GM (in millions)
6,051 / 68.23 = 88.68	22,204 / 308.909 = 71.87	19,928 / 267.23 = 74.57

Cash conversion or net trade cycle = Average collection period + days inventory held – days payable outstanding

Tesla (in millions)	Ford (in millions)	GM (in millions)
21.82 + 60.10 - 88.68 = -6.76	121.72 + 34.98 – 71.87 = 84.83	23.94 + 38.30 – 74.57 = -12.33

Leverage Ratios

Debt ratio = Total liabilities (in millions) / Total assets (in millions)

Tesla (in millions)	Ford (in millions)	GM (in millions)
28,418 / 52,148 = 0.54	236,450 / 267,261 = 0.88	185,517 / 235,194 = 0.78

Comparatively, Tesla is in a better position in terms of debt ratio. As an interest on a debt should be paid irrespective of business profitability, too much debt may compromise the entire operation if cash flow dries up. Ford and GM are at a risk as their debt ratio is higher than 0.6 which makes it difficult for them to borrow money.

Long-term debt to total capitalization = long-term debt / long-term debt + stockholders' equity (in millions)

Tesla (in millions)	Ford (in millions)	GM (in millions)
3,330 / 3,330 + 22,225 = 0.13	127,175 / 127,175 + 33,185 = 0.79	105,607 / 105,607 + 45,030 = 0.70

Debt to equity = Total liabilities (in millions) / Stockholders' equity (in millions)

Tesla (in millions)	Ford (in millions)	GM (in millions)
28,418 / 22,225 = 1.27	236,450 / 30,690 = 7.70	185,517 / 45,030 = 4.11

Tesla's low debt to equity ratio 1.27 can be attributed to the fact that Tesla has borrowed less debt but issued more equity. At this ratio, Tesla has about \$1.27 dollar of interest-bearing debt for every \$1.00 dollar of equity. GM's debt leverage with respect to equity was nearly 3 times higher than that of Tesla. Comparing Ford's ratio of 7.70 with General Motors' debt to equity ratio of 4.11, Ford's leverage was much higher, almost twice as much as GM's debt leverage.

Times interest earned = Operating profit / Interest expense

Operating profit = Net income + Depreciation expense + Accounts payable + Accounts receivable + inventory

	Tesla (in millions)	Ford (in millions)	GM (in millions)
Operating Profit	4,212 / 748 = 5.6	14,369 / 1,649 = 8.7	11,958 / 1,774 = 6.7

Cash interest coverage = -1* Operating income / interest expense

Tesla (in millions)	Ford (in millions)	GM (in millions)
-1 * 1994 / -748 = 2.67	-1* 14,369/1649 = -8.7	-1* 6634 / 1774 = -3.73

As known, interest coverage ratio indicates if the company generates enough earnings to cover the respective interest expenses. Tesla's interest coverage ratio is 2.67 indicating that the company's generated earnings were more than twice the interest expense. GM has a good financial strength in terms of interest coverage ratio in comparison to Ford but not ideal. Meanwhile Ford's interest coverage ratio suggests that the company did not have earnings to cover the interest expense. Generally, if a company's interest coverage ratio is less than 2 then the company is burdened by debt.

Fixed charge coverage = operating profit + lease payments / interest expense + lease payments

Tesla (in millions)	Ford (in millions)	GM (in millions)
4,212 + 4,636 / (748) + 4,636 = 2.2	14,369 + 3,203 / 1,649 + 3,203 = 3.6	11,958 + 6,634 / 1,774 + 6,634 = 2.2

Cash flow adequacy = cash flow from operating activities / capital expenditures + debt repayments + dividends paid

Tesla (in millions)	Ford (in millions)	GM (in millions)
16,670 / (3,157) + 3,330 = 96.3	24,269 / 4,901 + 127,175 + (596) = 0.18	16,670 / (5,300) + 105,607 + (669) = 0.16

Debt/EBITDA = Total Debt / EBITDA

Tesla (in millions)	Ford (in millions)	GM (in millions)
13,279 / 4224 = 3.14	162,998 / 7990 = 20.40	110,863 / 22008 = 5.04

As we know Debt-to-EBITDA measures a company's ability to pay off its debt. A high Debt-to-EBITDA ratio generally means that a company may spend more time paying off its debt. Comparing the 3 companies here, GM and Ford's ratio being greater than 4 indicates that the company may be financially distressed in the future and that of Tesla's shows that there is a higher probability of the company successfully paying off its debt as the ratio is nearly 3.

Profitability Ratios

Gross profit margin = gross profit / net sales

Gross profit = Total revenue - COGS

Tesla (in millions)	Ford (in millions)	GM (in millions)
28,865 / 31,536	14,392 / 127,144	24,946 / 122,485

= 0.91	0.11	= 0.20
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Tesla's adjusted gross margin has been much worse than that of GM from 2015 to 2017. However, Tesla's adjusted gross margin improved remarkably from 2018 to 2020. In the early periods, Tesla's automotive gross margin has been mostly negative, reflecting the heavy losses that the company has incurred. Tesla's adjusted gross margin tumbled again in early 2019. But, Tesla worked on its gross margin again throughout 2019 by launching a series of restructuring to cut costs. Other than restructuring, Tesla also achieved a record delivery of Model 3 when its Gigafactory Shanghai started production in early 2020. At the same time, General Motors' automotive gross margin started to decline in 2019 and dropped to negative territory in early 2020, due mainly to the COVID-19 disruption. On a long-term basis, we can see that Tesla's improved gross margin has surpassed that of GM in recent quarters, particularly in 2020. Ford was selling its automotive products at below costs, meaning that the company was selling at a loss since the costs of sales were higher than the sale price. In Ford's case, the real culprit was a significant drop in shipment volumes, leading to a higher cost of production.

Operating profit margin = operating profit / net sales

Tesla (in millions)	Ford (in millions)	GM (in millions)
4,212 / 31,536 = 0.13	14,369 / 127,144 = 0.11	11,958 / 122,485 = 0.09

The operating margin excludes other variables that are not related to core businesses such as interest expenses and taxes as well as gains or losses from investments and sales of assets.

Effective tax rate = income taxes / earnings before income taxes

Earnings before income taxes = Net income + Taxes + Interest

Tesla (in millions)	Ford (in millions)	GM (in millions)
292 / 3,869 = 0.07	160 / 9,250 = 0.01	1,774 / 9,980 = 0.17

Net profit margin = net profit / net sales

Tesla (in millions)	Ford (in millions)	GM (in millions)
1,724 / 31,536 = 0.05	1,279 / 127,144 = 0.01	12,674 / 122,485 = 0.10

Cash flow margin = cash flow from operating activities / net sales

Tesla (in millions)	Ford (in millions)	GM (in millions)
16,670 / 31,536 = 0.52	24,269 / 127,144 = 0.19	16,670 / 122,485 = 0.13

Return on total assets = net earnings / total assets

Tesla (in millions)	Ford (in millions)	GM (in millions)
1,724 / 52,148 = 0.03	1,279 / 267,261 = 0.004	12,674 / 235,194 = 0.05

Return on equity = net earnings / stockholder's equity

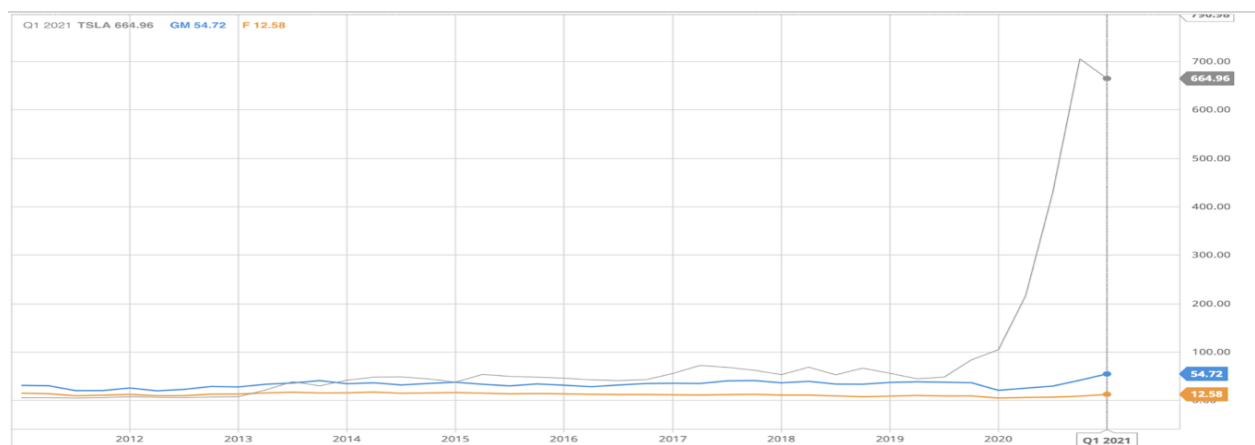
Tesla (in millions)	Ford (in millions)	GM (in millions)
1,724 / 22,225 = 0.07	1,279 / 30,690 = 0.04	12,674 / 45,030 = 0.28

Cash return on assets = cash flow from operating activities (in millions) / total assets (in millions)

Tesla (in millions)	Ford (in millions)	GM (in millions)
5,943 / 52,148 = 0.113	24,269 / 267,261 = 0.0908	16,670 / 235,194 = 0.0708

VALUATION

Comparing Stock Price History: The 3 companies



Graph 2

Source: Macrotrends

Reference Graph 2. This chart is a five year trend of stock price for the three companies. All prices were trading moderately until 2020 for Tesla. The company's stock price was at a high on Dec 31 2020, it was trading at \$705.67. The high, compared to the other companies; GM which was trading at \$41.64 and Ford which was trading at \$8.79. This is a huge increase compared to the beginning of 2020 when it was trading at \$88.60 per share. This increase is a bit shocking so what factors may have caused such an increase in its share price?

1. Starting in Q2 there was a dip in price because Elon Musk had tweeted that Tesla's stock price is too high. Which cost the company \$14 billion in value.
 - a. Right after that, the SpaceX Falcon launched in May of 2020. While this is not a Tesla company, the owner is also Elon Musk and this affected the car manufacturing's stocks because there was some advertising of the car brand in the whole process of the rocket launch.
2. Q3 is where there was significant increases in price and one reason is that Tesla reported 4 profitable quarters in a row even in the middle of a pandemic.
 - a. In August the company announced a stock split which essentially means there was 5 times the number of shares outstanding, not affecting the market cap. This brings down the price of the stock allowing smaller investors a chance to invest. As demand and supply will allow, it boosted the overall standing of Tesla stock in Q3.
3. In Q4 Tesla's market cap crossed \$500bn and this allowed it to be included in the S&P 500 companies. GM and Ford were only affected by the pandemic as many other companies.

	2020		
Valuation Metric	Tesla	GM	Ford
Market Cap (in billions)	\$677	\$79.20	\$50.33
P/E ratio	1,127	9.64	0
Dividend	0	0	0
PEG	1760	2.23	Negative
EPS	\$0.64	\$4.33	\$(0.32)

Table 3

Price/Earnings Ratio

Tesla had a market cap of \$677 billion, at the end of 2020, which gave them a PE ratio of 1,127. And compared to GM and Ford's P/E ratio this seems to be overvalued. With a P/E ratio of 1,127, it means that it will take them over 1000 years to make as much earnings as their valuation. Usually a high P/E ratio tends to imply larger potential for future growth whereas a lower P/E ratio tends to mean a company has matured or is close to maturing. As seen in GM and Ford's ratios being so low compared to Tesla. One thing that's important to note here is that Tesla is a high growth company. Its value increases very quickly. So seeing their PE ratio increase this high compared to previous years really lets you think that there is a lot of potential for growth.

For Tesla, this is very true because if you look at their income statement Appendix A1 you'll see that in just the last quarter alone they made \$10million in total revenue which is higher than it was last year for the sale of their car models. In their earnings call Elon Musk mentioned that its revenue and operating margin is only going up from here because of their new factory in Austin, TX. They will be able to increase production and delivery of the new models of cars. He also mentioned that revenue went up 28% because they manufactured and are selling more affordable cars now increasing sales. If tesla keeps these numbers high, it definitely will make up for the market valuation as of Dec 31, 2020.. They are also ramping up production in their Gigafactories in Shanghai and Berlin so there is great potential for growth reflected in the P/E ratio.

Dividend

With these ranging P/E ratios for the three companies, Tesla does not pay any dividends. It never has. GM and Ford on the other hand, pay dividends but for 2020 with Covid-19, they suspended paying any dividends. March and April is when they plan to pay dividends. GM will pay at \$44.47 at \$64million market value and Ford will pay at \$8.86 at \$35.2 million market value.

Price/Earnings Growth Ratio

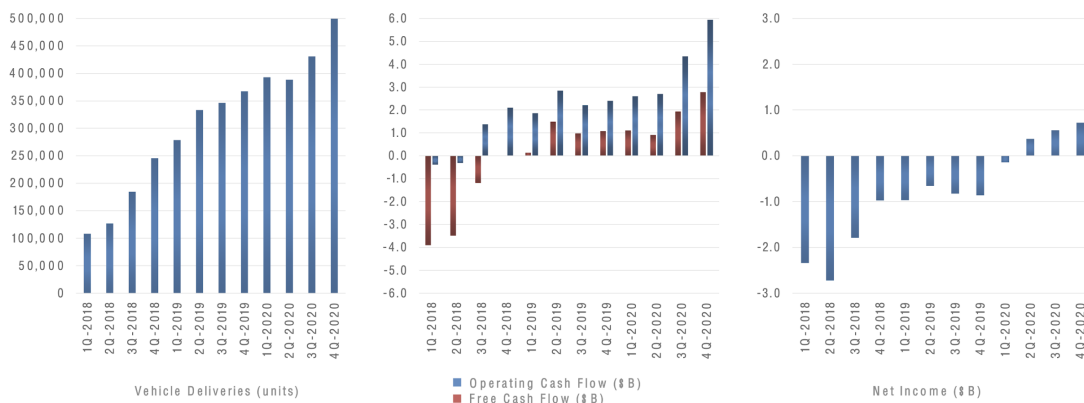
Again, for Tesla this goes to show how overvalued the stock price is so it only makes sense for Tesla to have a 1,760 PEG ratio at 1,127 P/E ratio. It can only mean that Tesla has some potential earnings growth in the long-term. Compared to GM and Ford, GM is doing much better and is a better buying option than Ford who was operating in a deficit in 2020, all due to the Covid-19 pandemic.

Earnings Per Share

GM is doing far better in EPS meaning their earnings were high with low shares outstanding whereas Ford did terribly. Again, Ford numbers are as a result of the negative implications of the pandemic. They had low earnings and a lot of shares outstanding. That was the case for Tesla 5 years ago. See Appendix E1 below. EPS has always been in the negative numbers until 2020 when they made 64 cents on every share.

Tesla's Key Performance Metrics

KEY METRICS TRAILING 12 MONTHS (TTM)
(Unaudited)



Graph 3

Source: Tesla earnings call transcript

Most companies have their own measures of performance and projected earnings. Here is Tesla's:

Vehicle Deliveries

As seen in Graph 1, on the left chart we see their production and deliveries increased overall. And In 2020 they delivered half a million cars just in that year. Tesla also acquired 2 companies: A German Engineering Company and Perbix Machine Co. which helped them increase its manufacturing efficiency and capacity.

Free Cash Flow and Operating Cash Flow

Q4 of 2018 is when the company starts to have enough cash flow to fund their long-term expansion plans, specifically in Austin, TX. They, also, expect Operating Margin to continue to grow over time, which will let them reach industry levels. Free Cash Flow reached \$2.8B in 2020, a \$4.9B increase in Cash and Cash Equivalents by Q4.

Net Income

With a production and delivery of about 500,000 cars, revenue is due to increase in the same time period in Q4. This revenue spike is the sharpest increase since Q2 FY 2019.

Conclusion

To summarize, 2020 was not a good year for General Motors and Ford, along with many others in the car manufacturing company. Previous years' analysis values both of these companies greatly. However for Tesla, it proved itself sustainable during a pandemic and looking forward to it in 3-5 years, the company will pull through in its valuation. GM and Ford are better and matured companies to make an investment on. Buying their stocks will yield some profits for investors. Tesla's investment choice can wait a few years to come to a meaningful stock price.

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Appendix A

Income Statements

Appendix A1 - Tesla Income Statement

	Year Ended December 31,		
	2020	2019	2018
Revenues			
Automotive sales	\$ 26,184	\$ 19,952	\$ 17,632
Automotive leasing	1,052	869	883
Total automotive revenues	27,236	20,821	18,515
Energy generation and storage	1,994	1,531	1,555
Services and other	2,306	2,226	1,391
Total revenues	31,536	24,578	21,461
Cost of revenues			
Automotive sales	19,696	15,939	13,686
Automotive leasing	563	459	488
Total automotive cost of revenues	20,259	16,398	14,174
Energy generation and storage	1,976	1,341	1,365
Services and other	2,671	2,770	1,880
Total cost of revenues	24,906	20,509	17,419
Gross profit	6,630	4,069	4,042
Operating expenses			
Research and development	1,491	1,343	1,460
Selling, general and administrative	3,145	2,646	2,835
Restructuring and other	—	149	135
Total operating expenses	4,636	4,138	4,430
Income (loss) from operations	1,994	(69)	(388)
Interest income	30	44	24
Interest expense	(748)	(685)	(663)
Other (expense) income, net	(122)	45	22
Income (loss) before income taxes	1,154	(665)	(1,005)
Provision for income taxes	292	110	58
Net income (loss)	862	(775)	(1,063)
Net income (loss) attributable to noncontrolling interests and redeemable noncontrolling interests in subsidiaries	141	87	(87)
Net income (loss) attributable to common stockholders	\$ 721	\$ (862)	\$ (976)
Less: Buy-out of noncontrolling interest	31	8	—
Net income (loss) used in computing net income (loss) per share of common stock	\$ 690	\$ (870)	\$ (976)
Net income (loss) per share of common stock attributable to common stockholders (1)			
Basic	\$ 0.74	\$ (0.98)	\$ (1.14)
Diluted	\$ 0.64	\$ (0.98)	\$ (1.14)
Weighted average shares used in computing net income (loss) per share of common stock (1)			
Basic	933	887	↑
Diluted	1,083	887	853

Appendix A2 - GM Income Statement

	Years Ended December 31,		
	2020	2019	2018
Net sales and revenue			
Automotive	\$ 108,673	\$ 122,697	\$ 133,045
GM Financial	13,812	14,540	14,004
Total net sales and revenue (Note 3)	122,485	137,237	147,049
Costs and expenses			
Automotive and other cost of sales	97,539	110,651	120,656
GM Financial interest, operating and other expenses	11,274	12,614	12,298
Automotive and other selling, general and administrative expense	7,038	8,491	9,650
Total costs and expenses	115,851	131,756	142,604
Operating income	6,634	5,481	4,445
Automotive interest expense	1,098	782	655
Interest income and other non-operating income, net (Note 19)	1,885	1,469	2,596
Equity income (Note 8)	674	1,268	2,163
Income before income taxes	8,095	7,436	8,549
Income tax expense (Note 17)	1,774	769	474
Income from continuing operations	6,321	6,667	8,075
Loss from discontinued operations, net of tax (Note 22)	—	—	70
Net income	6,321	6,667	8,005
Net loss attributable to noncontrolling interests	106	65	9
Net income attributable to stockholders	\$ 6,427	\$ 6,732	\$ 8,014
Net income attributable to common stockholders	\$ 6,247	\$ 6,581	\$ 7,916
Earnings per share (Note 21)			
Basic earnings per common share – continuing operations	\$ 4.36	\$ 4.62	\$ 5.66
Basic loss per common share – discontinued operations	\$ —	\$ —	\$ 0.05
Basic earnings per common share	\$ 4.36	\$ 4.62	\$ 5.61
Weighted-average common shares outstanding – basic	1,433	1,424	1,411
Diluted earnings per common share – continuing operations	\$ 4.33	\$ 4.57	\$ 5.58
Diluted loss per common share – discontinued operations	\$ —	\$ —	\$ —
Diluted earnings per common share	\$ 4.33	\$ 4.57	\$ 5.53

Appendix A3 - Ford Income Statement

	For the years ended December 31,		
	2018	2019	2020
Revenues			
Automotive	\$ 148,294	\$ 143,599	\$ 115,885
Ford Credit	12,018	12,260	11,203
Mobility	26	41	56
Total revenues (Note 4)	160,338	155,900	127,144
Costs and expenses			
Cost of sales	136,269	134,693	112,752
Selling, administrative, and other expenses	11,403	11,161	10,193
Ford Credit interest, operating, and other expenses	9,463	9,472	8,607
Total costs and expenses	157,135	155,326	131,552
Operating income/(loss)	3,203	574	(4,408)
Interest expense on Automotive debt	1,171	963	1,603
Interest expense on Other debt	57	57	46
Other income/(loss), net (Note 5 and Note 22)	2,247	(226)	4,899
Equity in net income/(loss) of affiliated companies	123	32	42
Income/(Loss) before income taxes	4,345	(640)	(1,116)
Provision for/(Benefit from) income taxes (Note 7)	650	(724)	160
Net income/(loss)	3,695	84	(1,276)
Less: Income/(Loss) attributable to noncontrolling interests	18	37	3
Net income/(loss) attributable to Ford Motor Company	\$ 3,677	\$ 47	\$ (1,279)
EARNINGS/(LOSS) PER SHARE ATTRIBUTABLE TO FORD MOTOR COMPANY COMMON AND CLASS B STOCK (Note 8)			
Basic income/(loss)	\$ 0.93	\$ 0.01	\$ (0.32)
Diluted income/(loss)	0.92	0.01	(0.32)
Weighted-average shares used in computation of earnings/(loss) per share			
Basic shares	3,974	3,972	3,973
Diluted shares	3,998	4,004	3,973

Common-size Income Statements

Appendix B1

TESLA Common Size Income Statement						
Particulars	2020	%	2019	%	2018	%
Revenues						
Automotive sales	\$ 26,184.00	83%	\$ 19,952.00	81%	\$ 17,632.00	82%
Automotive leasing	1052	3%	869	4%	883	4%
Total automotive revenues	27236	86%	20821	85%	18515	86%
Energy generation and storage	1994	6%	1531	6%	1555	7%
Services and other	2306	7%	2226	9%	1391	6%
Total revenues	31536	100%	24578	100%	21461	100%
Cost of revenues						
Automotive sales	19696	62%	15939	65%	13686	64%
Automotive leasing	563	2%	459	2%	488	2%
Total automotive cost of revenues	20259	64%	16398	67%	14174	66%
Energy generation and storage	1976	6%	1341	5%	1365	6%
Services and other	2671	8%	2770	11%	1880	9%
Total cost of revenues	24906	79%	20509	83%	17419	81%
Gross profit	6630	21%	4069	17%	4042	19%
Operating expenses						
Research and development	1491	5%	1343	5%	1460	7%
Selling, general and administrative	3145	10%	2646	11%	2835	13%
Restructuring and other	—		149	1%	135	1%
Total operating expenses	4636	15%	4138	17%	4430	21%
Income (loss) from operations	1994	6%	69	0%	388	2%
Interest income	30	0%	44	0%	24	0%
Interest expense	748	2%	685	3%	663	3%
Other (expense) income, net	122	0%	45	0%	22	0%
Income (loss) before income taxes	1154	4%	665	3%	1005	5%
Provision for income taxes	292	1%	110	0%	58	0%
Net income (loss)	862	3%	775	3%	1063	5%
Net income (loss) attributable to noncontrolling interests and redeemable	141	0%	87	0%	87	0%
Net income (loss) attributable to common stockholders	\$ 721.00	2%	\$ 862.00	4%	\$ 976.00	5%
Less: Buy-out of noncontrolling interest	31		8		—	
Net income (loss) used in computing net income (loss) per share of common stock	\$ 690.00	2%	\$ 870.00	4%	\$ 976.00	5%
Net income (loss) per share of common stock attributable to common						
Basic	\$ 0.74		\$ 0.98		\$ 1.14	
Diluted	\$ 0.64		\$ 0.98		\$ 1.14	
Weighted average shares used in computing net income (loss) per share of						
Basic	933		887		853	
Diluted	1083		887		853	

AppendixB2

General Motors Common Size Income Statement						
Particulars	2020	%	2019	%	2018	%
Net sales and revenue						
Automotive	\$ 108,673	88%	\$ 122,697	89%	\$ 133,045	90%
GM Financial	13,812	11%	14,540	10%	14,004	9%
Total net sales and revenue (Note 3)	122,485	100%	1,37,237	100%	147,049	100%
Costs and expenses						
Automotive and other cost of sales	97,539	79%	1,10,651	80%	120,656	82%
GM Financial interest, operating and other expenses	11,274	9%	12,614	9%	12,298	8%
Automotive and other selling, general and administrative expense	7,038	5%	8,491	6%	9,650	6%
Total costs and expenses	115,851	94%	131,756	96%	142,604	96%
Operating income	6,634	5%	5,481	4%	4,445	3%
Automotive interest expense	1,098	0%	782	0%	655	0%
Interest income and other non-operating income, net (Note 19)	1,885	1%	1,469	1%	2,596	1%
Equity income (Note 8)	674	0%	1,268	1%	2,163	1%
Income before income taxes	8,095	6%	7,436	5%	8,549	5%
Income tax expense (Note 17)	1,774	1%	769	0%	474	0%
Income from continuing operations	6,321	5%	6,667	4%	8,075	5%
Loss from discontinued operations, net of tax (Note 22)	—		—		70	0%
Net income	6,321	5%	6,667	4%	8,005	5%
Net loss attributable to noncontrolling interests	106	0%	65	0%	9	0%
Net income attributable to stockholders	\$ 6,427	5%	\$ 6,732	5%	\$ 8,014	5%
Net income attributable to common stockholders	\$ 6,247	5%	\$ 6,581	4%	\$ 7,916	5%
Earnings per share (Note 21)						
Basic earnings per common share – continuing operations	\$ 4.36		\$ 4.62		\$ 5.66	
Basic loss per common share – discontinued operations	\$ -		\$ -		\$ 0.05	
Basic earnings per common share	\$ 4.36		\$ 4.62		\$ 5.61	
Weighted-average common shares outstanding – basic	1,433	1%	1,424	1%	1,411	1%
Diluted earnings per common share – continuing operations	\$ 4.33		\$ 4.57		\$ 5.58	
Diluted loss per common share – discontinued operations	\$ -		\$ -		\$ 0.05	
Diluted earnings per common share	\$ 4.33		\$ 4.57		\$ 5.53	
Weighted-average common shares outstanding – diluted	1,442	1%	1,439	1%	1,431	1%

AppendixB3

Ford Common Size Income Statement						
Particulars	2020	%	2019	%	2018	%
Revenues						
Automotive	\$ 115,885	91%	\$ 143,599	92%	\$ 148,294	92%
Ford Credit	11,203	8%	12,260	7%	12,018	7%
Mobility	56	0%	41	0%	26	0%
Total revenues (Note 4)	127,144	100%	155,900	100%	1,60,338	100%
Costs and expenses						
Cost of sales	112,752	88%	134,693	86%	136,269	84%
Selling, administrative, and other expenses	10,193	8%	11,161	7%	11,403	7%
Ford Credit interest, operating, and other expenses	8,607	6%	9,472	6%	9,463	5%
Total costs and expenses	131,552	103%	155,326	99%	157,135	98%
Operating income/(loss)	-4408	-3%	574	0%	3,203	1%
Interest expense on Automotive debt	1,603	1%	963	0%	1,171	0%
Interest expense on Other debt	46	0%	57	0%	57	0%
Other income/(loss), net (Note 5 and Note 22)	4,899	3%	-226	0%	2,247	1%
Equity in net income/(loss) of affiliated companies	42	0%	32	0%	123	0%
Income/(Loss) before income taxes	-1116	0%	-640	0%	4,345	2%
Provision for/(Benefit from) income taxes (Note 7)	160	0%	-724	0%	650	0%
Net income/(loss)	-1276	-1%	84	0%	3,695	2%
Less: Income/(Loss) attributable to noncontrolling interests	3	0%	37	0%	18	0%
Net income/(loss) attributable to Ford Motor Company	\$ -1279	-1%	\$ 47		\$ 3,677	2%
EARNINGS/(LOSS) PER SHARE ATTRIBUTABLE TO FORD MOTOR COMPANY COMMON AND CLASS B STOCK (Note 8)						
Basic income/(loss)	\$ -0.32		\$ 0.01		\$ 0.93	
Diluted income/(loss)	-0.32		0.01		0.92	
Weighted-average shares used in computation of earnings/(loss) per share						
Basic shares	3,973	3%	3,972	2%	3,974	2%
Diluted shares	3,973	3%	4,004	2%	3,998	2%

Appendix C

Consolidated Balance Sheet

Appendix C1- Tesla Balance Sheet

Tesla, Inc. Consolidated Balance Sheets (in millions, except per share data)			
	December 31, 2020	December 31, 2019	
Assets			
Current assets			
Cash and cash equivalents	\$ 19,384	\$ 6,368	
Accounts receivable, net	1,386	1,324	
Inventory	4,101	3,552	
Prepaid expenses and other current assets	1,346	959	
Total current assets	26,717	12,103	
Operating lease vehicles, net	3,091	2,447	
Solar energy systems, net	5,979	6,138	
Property, plant and equipment, net	12,747	10,396	
Operating lease right-of-use assets	1,558	1,218	
Intangible assets, net	313	339	
Goodwill	207	198	
Other non-current assets	1,536	1,470	
Total assets	\$ 52,148	\$ 34,309	
Liabilities			
Current liabilities			
Accounts payable	\$ 6,051	\$ 3,771	
Accrued liabilities and other	3,855	3,222	
Deferred revenue	1,458	1,163	
Customer deposits	759	726	
Current portion of debt and finance leases	2,132	1,785	
Total current liabilities	14,248	10,667	
Debt and finance leases, net of current portion	9,556	11,634	
Deferred revenue, net of current portion	1,264	1,207	
Other long-term liabilities	3,330	2,691	
Total liabilities	28,418	26,199	
Commitments and contingencies (Note 16)			
Redeemable noncontrolling interests in subsidiaries	604	643	
Convertible senior notes (Note 12)	31	—	
Equity			
Stockholders' equity			
Preferred stock, \$0.001 par value, 100 shares authorized, no shares issued and outstanding	—	—	
Common stock, \$0.001 par value, 2,000 shares authorized, 960 and 805 shares issued and outstanding as of December 31, 2020 and December 31, 2019, respectively (1)	1	1	
Additional paid-in capital (1)	27,260	12,736	
Accumulated other comprehensive income (loss)	363	(36)	
Accumulated deficit	(5,399)	(6,083)	
Total stockholders' equity	22,225	6,613	
Noncontrolling interests in subsidiaries	850	849	
Total liabilities and equity	\$ 52,148	\$ 34,309	

Appendix C2- Ford Balance Sheet

FORD MOTOR COMPANY AND SUBSIDIARIES CONSOLIDATED BALANCE SHEETS (in millions)

	December 31, 2019	December 31, 2020
ASSETS		
Cash and cash equivalents (Note 9)	\$ 17,504	\$ 25,243
Marketable securities (Note 9)	17,147	24,718
Ford Credit finance receivables, net of allowance for credit losses of \$192 and \$394 (Note 10)	93,861	42,491
Trade and other receivables, less allowances of \$63 and \$84	8,237	9,993
Inventories (Note 11)	10,788	10,888
Assets held for sale (Note 2, Note 10, and Note 22)	3,383	47
Other assets	9,239	3,654
Total current assets	174,947	116,744
Ford Credit finance receivables, net of allowance for credit losses of \$351 and \$911 (Note 10)	93,703	85,277
Net investment in operating leases (Note 12)	29,230	27,951
Net property (Note 13)	36,486	37,883
Equity in net assets of affiliated companies (Note 14)	2,519	4,901
Deferred income taxes (Note 7)	11,883	12,423
Other assets	10,708	12,882
Total assets	\$ 286,537	\$ 267,261
LIABILITIES		
Payables	\$ 20,872	\$ 22,384
Other liabilities and deferred revenue (Note 16 and Note 26)	22,897	23,645
Automotive debt payable within one year (Note 19)	1,446	1,154
Ford Credit debt payable within one year (Note 19)	52,371	49,969
Other debt payable within one year (Note 19)	130	180
Liabilities held for sale (Note 22)	529	—
Total current liabilities	96,132	97,192
Other liabilities and deferred revenue (Note 16 and Note 26)	26,324	28,379
Automotive long-term debt (Note 19)	13,233	22,342
Ford Credit long-term debt (Note 19)	87,868	87,708
Other long-term debt (Note 19)	470	291
Deferred income taxes (Note 7)	490	538
Total liabilities	226,507	236,496
EQUITY		
Common Stock, par value \$0.01 per share (4,026 million shares issued of 8 billion authorized)	40	40
Class B Stock, par value \$0.01 per share (17 million shares issued of 830 million authorized)	1	1
Capital in excess of par value of stock	22,166	22,290
Retained earnings	20,320	18,243
Accumulated other comprehensive income/(loss) (Note 23)	(7,728)	(8,294)
Treasury stock	(1,613)	(1,560)
Total equity attributable to Ford Motor Company	33,186	30,690
Equity attributable to noncontrolling interests	46	121
Total equity	33,232	30,811
Total liabilities and equity	\$ 286,537	\$ 267,261

Appendix C3- General Motors Balance Sheet

	December 31, 2020		December 31, 2019	
ASSETS				
Current Assets				
Cash and cash equivalents	\$	19,992	\$	19,069
Marketable debt securities (Note 4)		9,044		2,174
Accounts and notes receivable (net of allowance of \$224 and \$201)		6,033		6,797
GM Financial receivables, net (Note 5; Note 11 at VIEs)		56,209		56,651
Inventories (Note 6)		10,231		10,398
Other current assets (Note 4; Note 11 at VIEs)		7,407		7,853
Total current assets		103,924		104,992
Non-current Assets				
GM Financial receivables, net (Note 5; Note 11 at VIEs)		31,781		36,333
Equity in net assets of nonconsolidated affiliates (Note 8)		8,406		8,562
Property, net (Note 9)		37,633		38,750
Goodwill and intangible assets, net (Note 10)		5,230		5,337
Equipment on operating leases, net (Note 7; Note 11 at VIEs)		39,819		42,053
Deferred income taxes (Note 17)		24,136		24,640
Other assets (Note 4; Note 11 at VIEs)		7,344		7,344
Total non-current assets		154,279		155,045
Total Assets	\$	258,194	\$	228,037
LIABILITIES AND EQUITY				
Current Liabilities				
Accounts payable (principally trade)	\$	19,928	\$	21,018
Short-term debt and current portion of long-term debt (Note 13)				
Automotive		1,276		1,897
GM Financial (Note 11 at VIEs)		35,637		35,503
Accrued liabilities (Note 12)		23,069		26,487
Total current liabilities		79,910		84,905
Non-current Liabilities				
Long-term debt (Note 13)				
Automotive		16,193		12,489
GM Financial (Note 11 at VIEs)		56,788		33,433
Pension and other postretirement benefits other than pensions (Note 15)		9,277		9,933
Pensions (Note 15)		12,902		12,170
Other liabilities (Note 12)		13,447		13,146
Total non-current liabilities		108,607		97,175
Total Liabilities		188,517		182,080
Commitments and contingencies (Note 16)				
Equity (Note 20)				
Common stock, \$0.01 par value		14		14
Additional paid-in capital		26,542		26,074
Retained earnings		31,962		26,860
Accumulated other comprehensive loss		(13,488)		(11,156)
Total stockholders' equity		45,030		41,792
Noncontrolling interests		4,647		4,165
Total Equity		49,677		45,957
Total Liabilities and Equity	\$	238,194	\$	228,037

Appendix D

Common-Size Balance Sheet

Appendix D1- Tesla Common-Size Balance Sheet

Tesla Common Size Balance Sheet				
Particulars	2020	%	2019	%
Assets				
Current assets				
Cash and cash equivalents	\$19,384	37.17%	\$6268	18.26%
Accounts receivable, net	1886	3.61%	1324	3.85%
Inventory	4101	7.86%	3552	10.35%
Prepaid expenses and other current assets	1346	2.58%	959	2.79%
Total current assets	26717	51.23%	12103	35.27%
Operating lease vehicles, net	3091	5.92%	2447	7.13%
Solar energy systems, net	5979	11.46%	6138	17.89%
Property, plant and equipment, net	12747	24.44%	10396	30.30%
Operating lease right-of-use assets	1558	2.98%	1218	3.55%
Intangible assets, net	313	0.60%	339	0.98%
Goodwill	207	0.39%	198	0.57%
Other non-current assets	1536	2.94%	1470	4.28%
Total assets	\$52,148	100%	\$34,309	100%
Liabilities				
Current liabilities				
Accounts payable	\$6051	11.60%	\$3771	11%
Accrued liabilities and other	3855	7.39%	3222	9.39%
Deferred revenue	1458	2.79%	1163	3.38%
Customer deposits	752	1.44%	726	2.11%
Current portion of debt and finance leases	2132	4.08%	1785	5.20%
Total current liabilities	14248	27.32%	10667	31.09%
Debt and finance leases, net of current portion	9556	18.32%	11634	34%
Deferred revenue, net of current portion	1284	2.46%	1207	3.51%
Other long-term liabilities	3330	6.38%	2691	7.84%
Total liabilities	28418	54.49%	26199	76.36%
Commitments and contingencies (Note 16)				
Redeemable noncontrolling interests in subsidiaries	604	1.15%	643	1.87%
Convertible senior notes (Note 12)	51	0.09%	—	
Equity				
Stockholders' equity				
Preferred stock; \$0.001 par value; 100 shares authorized; no shares issued and outstanding	—		—	
Common stock; \$0.001 par value; 2,000 shares authorized; 960 and 905 shares issued and outstanding as of December 31, 2020 and December 31, 2019, respectively (1)	1		1	
Additional paid-in capital (1)	27260	52.27%	12736	37.12%
Accumulated other comprehensive income (loss)	363	0.69%	-36	-0.10%
Accumulated deficit	-5,399	-10.35%	-6,083	-17.73%
Total stockholders' equity	22225	42.61%	6618	19.28%
Noncontrolling interests in subsidiaries	850	1.62%	849	2.47%
Total liabilities and equity	\$52,148	100%	\$34,309	100%

Appendix D2- Ford Common-Size Balance Sheet

Ford Common Size Balance Sheet				
Particulars	2020	%	2019	%
Assets				
Cash and cash equivalents (Note 9)	\$25,243	9.44%	\$17,504	6.77%
Marketable securities (Note 9)	24,718	9.24%	17,147	6.63%
Ford Credit finance receivables, net of allowance for credit losses of \$162 and \$394 (Note 10)	42,401	15.86%	53,651	20.75%
Trade and other receivables, less allowances of \$63 and \$84	9,993	3.73%	9,237	3.57%
Inventories (Note 11)	10,808	4.04%	10,786	4.17%
Assets held for sale (Note 2, Note 10, and Note 22)	47	0.01%	2,383	0.92%
Other assets	3,534	1.32%	3,339	1.29%
Total current assets	116,744	43.68%	114,047	44.11%
Ford Credit finance receivables, net of allowance for credit losses of \$351 and \$911 (Note 10)	55,277	20.68%	53,703	20.77%
Net investment in operating leases (Note 12)	27,951	10.45%	29,230	11.30%
Net property (Note 13)	37,083	13.87%	36,469	14.10%
Equity in net assets of affiliated companies (Note 14)	4,901	1.83%	2,519	0.97%
Deferred income taxes (Note 7)	12,423	4.64%	11,863	4.58%
Other assets	12,882	4.82%	10,706	4.14%
Total assets	\$267,261	100%	\$258,537	100%
Liabilities				
Payables	\$22,204	8.30%	\$20,673	8%
Other liabilities and deferred revenue (Note 16 and Note 25)	23,645	8.84%	22,987	8.89%
Automotive debt payable within one year (Note 19)	1,194	0.44%	1,445	0.55%
Ford Credit debt payable within one year (Note 19)	49,969	18.69%	52,371	20.25%
Other debt payable within one year (Note 19)	180	0.06%	130	0.05%
Liabilities held for sale (Note 22)	—	—	526	0.20%
Total current liabilities	97,192	36.36%	98,132	38%
Other liabilities and deferred revenue (Note 16 and Note 25)	28,379	10.61%	25,324	9.79%
Automotive long-term debt (Note 19)	22,342	8.35%	13,233	5.11%
Ford Credit long-term debt (Note 19)	87,708	32.81%	87,658	34%
Other long-term debt (Note 19)	291	0.10%	470	0.18%
Deferred income taxes (Note 7)	538	0.20%	490	0.18%
Total liabilities	236,450	88.47%	225,307	87.14%
Equity				
Common Stock, par value \$0.01 per share (4,025 million shares issued of 6 billion authorized)	40	—	40	—
Class B Stock, par value \$0.01 per share (71 million shares issued of 530 million authorized)	1	—	1	—
Capital in excess of par value of stock	22,290	8.34%	22,165	8.57%
Retained earnings	18,243	6.82%	20,320	7.85%
Accumulated other comprehensive income/(loss) (Note 23)	-8294	-3.10%	-7728	-2.98%
Treasury stock	-1590	-0.60%	-1613	-0.62%
Total equity attributable to Ford Motor Company	30,690	11.48%	33,185	12.83%
Equity attributable to noncontrolling interests	121	0.04%	45	0.01%
Total equity	30,811	11.52%	33,230	12.85%
Total liabilities and equity	\$267,261	100%	\$258,537	100%

Appendix D3- General Motors Common-Size Balance Sheet

General Motors Common Size Balance Sheet				
Particulars	2020	%	2019	%
Current Assets				
Cash and cash equivalents	\$19,992	8.50%	\$19,069	8.36%
Marketable debt securities (Note 4)	9,046	3.84%	4,174	1.83%
Accounts and notes receivable (net of allowance of \$224)	8,035	3.41%	6,797	3%
GM Financial receivables, net (Note 5; Note 11 at VIEs)	26,209	11.14%	26,601	11.66%
Inventories (Note 6)	10,235	4.35%	10,398	4.55%
Other current assets (Note 4; Note 11 at VIEs)	7,407	3.15%	7,953	3.48%
Total current assets	80,924	34.40%	74,992	32.88%
Non-current Assets				
GM Financial receivables, net (Note 5; Note 11 at VIEs)	31,783	13.51%	26,355	11.55%
Equity in net assets of nonconsolidated affiliates (Note 8)	8,406	3.57%	8,562	3.75%
Property, net (Note 9)	37,632	16%	38,750	17%
Goodwill and intangible assets, net (Note 10)	5,230	2.22%	5,337	2.34%
Equipment on operating leases, net (Note 7; Note 11 at VIE)	39,819	16.93%	42,055	18.44%
Deferred income taxes (Note 17)	24,136	10.26%	24,640	10.80%
Other assets (Note 4; Note 11 at VIEs)	7,264	3.08%	7,346	3.22%
Total non-current assets	154,270	65.59%	153,045	67.11%
Total Assets	\$235,194	100%	\$228,037	100%
Current Liabilities				
Accounts payable (principally trade)	\$19,928	8.47%	\$21,018	9.21%
Short-term debt and current portion of long-term debt (Note 13)				
Automotive	1,276	0.54%	1,897	0.83%
GM Financial (Note 11 at VIEs)	35,637	15.15%	35,503	15.56%
Accrued liabilities (Note 12)	23,069	9.80%	26,487	11.61%
Total current liabilities	79,910	34%	84,905	37.23%
Non-current Liabilities				
Long-term debt (Note 13)				
Automotive	16,193	6.88%	12,489	5.47%
GM Financial (Note 11 at VIEs)	56,788	24.14%	53,435	23.43%
Postretirement benefits other than pensions (Note 15)	6,277	2.66%	5,935	2.60%
Pensions (Note 15)	12,902	5.48%	12,170	5.33%
Other liabilities (Note 12)	13,447	5.71%	13,146	5.76%
Total non-current liabilities	105,607	45%	97,175	42.61%
Total Liabilities	185,517	78.87%	182,080	79.84%
Commitments and contingencies (Note 16)				
Equity (Note 20)				
Common stock, \$0.01 par value	14		14	
Additional paid-in capital	26,542	11.28%	26,074	11.43%
Retained earnings	31,962	13.58%	26,860	11.77%
Accumulated other comprehensive loss	-13,488	-5.73%	-11,156	-4.89%
Total stockholders' equity	45,030	19.14%	41,792	18.32%
Noncontrolling interests	4,647	1.97%	4,165	1.82%
Total Equity	49,677	21.12%	45,957	20.15%
Total Liabilities and Equity	\$235,194	100%	\$228,037	100%

Appendix E

Appendix E1 - Earnings per Share

