

A Work Project, presented as part of the requirements for the Award of a Master Degree in Management from the NOVA – School of Business and Economics.

Harley Davidson: Will the Youths save The Motor Company?

Inês Alves Matias 44405

A Project carried out on the Master's in Management Program, under the supervision of:

Angelo Corelli

Nuno Vasconcelos e Sá

17/12/2021

Abstract

This report aims to give a buy recommendation for the company Harley Davidson, Inc. The company has experienced several problems in the last years, mainly in 2020 due to the Pandemic situation. Despite this setback, Harley created “The Hardwire Strategy”, a plan that intends to renovate the brand, explore new target markets - while adapting to all types of customers - and to expand the company geographically. Therefore, we expect that Harley Davidson will increase its profits and significantly improve its operations in the future.

Keywords

Generation X and Generation Y
Hardwire Strategy
Electric Motorcycle Market
United States Region

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

This report is part of the Harley Davidson's Equity Research report (annexed) and should be read as an integral part of it.

Table of Contents

DRIVERS AND FORECASTING	5
REVENUE VALUE DRIVERS.....	5
OPERATING COSTS	8
CAPEX	9
NET WORKING CAPITAL	9
EQUITY AND DEBT	11
VALUATION.....	12
DCF – INTRINSIC VALUATION	12
MULTIPLES – RELATIVE VALUATION	13
SENSITIVITY ANALYSIS	14
SCENARIO ANALYSIS.....	15
CONCLUSION.....	16

Drivers and Forecasting

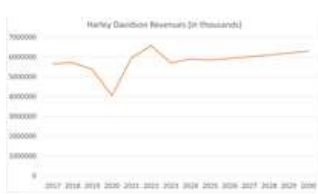
Revenue Value Drivers

Harley Davidson' revenues (Graph 26) are defined by the number of customers and the respective ARPU (Average Revenue per User). Revenues' forecast was estimated through the variation of the inflation rate (which affects ARPU, since average sale prices will increase as inflation also increases), the variation of GDP per capita and the variation of the urban population indicator (both affect the number of customers) (Graphs 27, 28 & 29). We believe that these 3 indicators reflect an accurate forecasting strategy, since macroeconomic conditions (mainly in US, unquestionably the most relevant operating region for Harley) will have a major impact on the company's profitability. Any change in motorcycles' demand could affect the financial performance of the company. A macro slowdown could disturb sales for the overall industry, affecting the company's ability to generate positive gross margins. It could also result in poor credit lending, leading to negative consumer impression. Additionally, even though motorcycle's market will somehow change in the future due to developments in novel technologies (improving robotic efficiency, accuracy, and consistency), it is a market which growth has been consistent throughout the years and will continue to be.

All the three indicators were predicted based on 5-region average where Harley Davidson operates (US, Canada, Latin America, EMEA and Asia Pacific), being the ones considered throughout the Work Project. The company is split into two segments: "Harley Davidson Motorcycle Company" (HDMC) and "Harley Davidson Financial Services" (HDFS). HDMC is divided into "Motorcycles", "Parts & Accessories", "General Merchandise" and "Others". Until 2020, Motorcycle segment was the one generating more revenues to Harley Davidson. However, this percentage has been dropping over the last 4 years, being compensated with an increase in the percentage of Parts & Accessories.

In the past, Harley Davidson revenues experienced its highest levels closely to regional riding seasons, since at this time of the year the company's wholesale motorcycle shipments are often higher. This seasonality is usually correlated with the timing of retail sales made by independent dealers (HD Annual Report, 2020). Last year, retail sales of new motorcycles models have dropped by 17.4% when compared to 2019, being this one of the highest decreases felt in the company in the latest years. Due to Covid-19, retail sales were negatively affected in Q1 and Q2 of 2020, as the company briefly interrupted its manufacturing operations and independent dealers closed their own stores. On top of that, during 2020, the company's choice to hold-up from Q3 to Q1 the launch of the its annual new model highly impacted wholesale shipments and retail sales - as a result, the first shipments of this model only happened in Q1 of 2021, which contributed to the decrease in 2021 revenues (HD Annual Report, 2020). Overall, this decrease in revenue was mainly due to a decrease in volume as there were lower wholesale motorcycle shipments, as well as lower P&A and General Merchandise sales. As an additional note, foreign currency exchange rate relative to the US dollar was weaker, which negatively affected revenues.

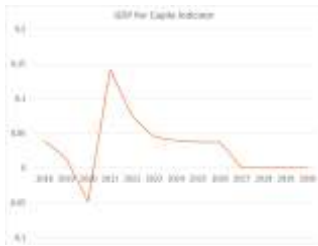
Besides the previously mentioned sales drivers, we also choose to pursue several perspectives to be able to evaluate HD revenues' through many indicators and through several segments (such as Regions, Operating Sectors and Motorcycle Model) (Graph 30 and 31). Likewise, we



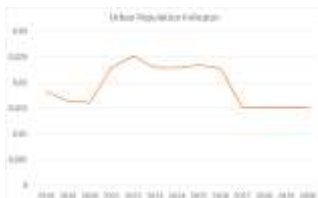
Graph 26



Graph 27



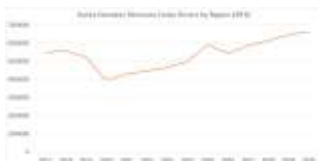
Graph 28



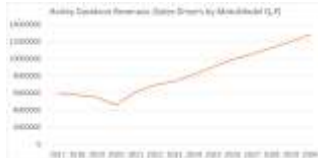
Graph 29



Graph 30



Graph 31



Graph 32



Graph 33

performed an analysis of the revenues from each motorcycle sold (Graph 32 and 33) (Sportster/Street Motorcycle, Cruiser Motorcycle, Touring Motorcycle and Other Models). Lastly, we performed a “Sales Drivers Top Down” (Graph 34) approach based on each region.

MOTORCYCLES

In comparison to its competitors, Harley Davidson feels its motorcycles keep attracting a higher retail price.

Motorcycle segment represented 72% of the company’s revenue in 2020. By 2030, Motorcycle’s revenues are forecasted to be 3.644.813,03\$, indicating that the company will recover from the decline felt in the past 4 years in the long-term, since the revenues from this segment were 3,823,891\$ (the highest value from 2017 until 2020).



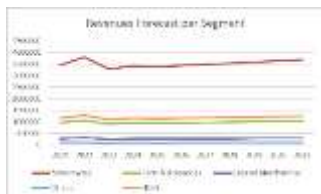
Graph 34

As a consequence of Covid-19, motorcycle shipments decreased by 32,1% in 2020, when compared to 2019. This turndown reflects the provisional closure of many independent dealership points in Q1 and Q2 of 2020, as well as the layoff of the company production operations. Touring motorcycles as a percentage of total shipments decreased during 2020, while the % of Sportster/Street Motorcycles increased compared to 2021 (Harley Davidson report).

Motorcycle’ revenues will slightly increase from 2021 until 2030, based on our forecast. Regarding the evolution of sales per motorcycle model, the same will happen. Additionally, we believe that “Pan America Motorcycle Model” will significantly contribute to the segment growth, as it is part of the Adventure Touring Segment which is expected to grow just like it has been rising since 2017.

PARTS&ACCESSORIES, GENERAL MERCHANDISE, OTHERS

“Parts & Accessories”, “General Merchandise”, “Others” and “Financial Services” Sectors Revenue are expected to grow at a positive similar rate (from 2021 on), following the same growth trend, as we can see in Graph 35. They are all fundamental to the company's ultimate and worldwide success. The company intends to boost the profitability of these businesses through the "Hardwire Strategy" by including new product and program offerings, improved execution, and more digital and in-dealership purchase options (HD Annual Report, 2020).

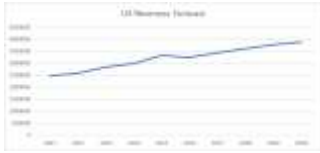


Graph 35

HDFS

“Financial Services” segment primarily consists of financing wholesale inventory and retail consumer loans, mainly for the purchase of the motorcycles (HD Annual Report, 2020). Inventory levels at independent dealers, who in general have more inventory in both Q1 and Q2 of every year, have an impact on wholesale financing. Usually, between mid-March and August, the retail financing sector experiences the highest volumes (HD Annual Report, 2020). One of the Hardwire Strategy goals is to double-digit the company’s growth in FS segment operating income from 2021 until 2025. Financial Services income guidance raised between 95% and 105%, compared to the previous results (between 75% and 85%), driven by lower interest expense. Additionally, Q3 2021 retail credit losses were 0,84%, compared to Q3 2020 annualized credit loss of 1,40%. We also note that Harley extended terms for payment due dates, which avoids having to recognize loans as delinquent. All in all, despite the risks this segment represents – such as the management of the credit portfolio and increased competition environment – and the setback due to Covid-19, we expect that the company will be able to achieve the goal mentioned in the Hardwire Strategy.

UNITED STATES



Graph 36

Looking at each region in detail, United States is where Harley Davidson has the biggest presence in the market (66% of HD revenues in the past years), as this is reflected in the company's revenues. Harley Davidson has a lack of international appeal, and as such this is reflected in its revenues. This tendency could be somehow changed in the future, with more promotional campaigns and/or incentives, as the company would be more internationally present. It is a challenge that HD is trying to overcome. For instance, in international markets, the company uses third-party eCommerce websites and third-party financial institutions which provide products for Harley Davidson's retail clients, such as finance and insurance, not being a more accurate and direct way to represent the company's products to its customers. Furthermore, there are additional risks associated while performing the operations in international markets, such as political risks, economic volatility, local labor market conditions, imposing foreign tariffs and other trading barriers, and the impact of both foreign and US government legislation and regulations to apply to international operations. This could represent a risk for Harley Davidson; therefore, it is recommended that the US continues to be the region that most contributes for the company success, but for the company to not be highly dependent on it.

We expect the percentage of US revenues to increase (+21% from 2020 to 2021). US customers are expected to increase as both US population indicator and US GDP per capita indicator are forecasted to increase, according to the International Monetary Fund (IFM Datamapper, 2021). In the long run (from 2030 onwards), we expect that the US market will slowly be shrunk, giving space for the other existing regional markets to grow and develop (-13% from 2030 to 2035) (Graph 36). The US market will still be a priority to the company, but at the same time HD will concentrate efforts to expand other markets.

When developing the sales drivers by region perception, HD revenues were based both on the number of customers and on the number of units sold. In both perspectives, US sales will rise until 2030.

CANADA



Graph 37

Canada accounts for a small part of the revenues for Harley Davidson. Based on the number of customers, Canada sales will decrease in the future (Graph 37), following the fact that the ARPU will keep decreasing in this country. Based on the number of units sold, the forecast will be the same. Consequently, Canada will be the less significant region for the company in the future, and Harley will prefer to concentrate itself in other regions.

ASIA PACIFIC

In terms of unit sales, Asia Pacific is the biggest marketplace in the world for the motorcycle industry. In June 2020, motorcycle sales in China reached about 1.3 million units. Until now, Harley Davidson hasn't made its own mark in this regional market. APAC is the third regional market in the ranking of independent dealership points, coming after the US and EMEA, and followed by Canada and Latin America. With this, Harley Davidson planned to take different measures to penetrate this regional market: the company partnered both in China – Qianjiang Motorcycle Company to build more suitable motorcycles to the market – and in India – Hero MotoCorp to try to regain the lost market share in India. Rising incomes in India gives potential for the premium bike market (Mukherjee,2020).

Despite Harley Davidson efforts, we believe that these measures will not have that much impact

in APAC. Harley Davidson announced that it is looking to wind down its assembly operations in India, because of the weak sales in this country and a poor future perspective. The company believes that the profitability doesn't support the continuous investments in line with the future strategy. Based on our forecast – and in line with the company strategy – Asia Pacific revenues will decrease (Graph 37), both based on the customers base (-22%) and quantity sold (-14%).

EMEA AND LATIN AMERICA

Meanwhile, the EMEA region accounts for the second largest region as percentage of Harley Davidson revenues until 2025. From 2026 onwards, this region is surpassed by Latin America, which highly increases its growth rate.

Regarding Latin America, revenues are expected to decrease by 69% from 2020 to 2024 and then, in the long term, our expectation is that revenues will increase by 67% from 2025-2030, recovering from the previous decline.

Meanwhile, EMEA revenues will decrease (-14% from 2020 to 2021) in short term and in the long term (-10% from 2020 to 2030) (Graph 38), according to both perspectives. Weather may influence retail sales of independent dealers. As motorcycles are vehicles that don't account for any protection of the driver in terms of weather conditions, unusually cold or wet conditions in a specific region (such as Middle East and/or Africa), may affect the demand of motorcycles for that specific region and adversely impacting sales.

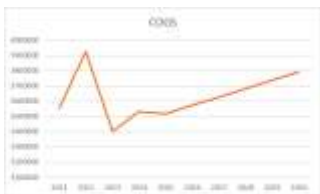


Graph 38

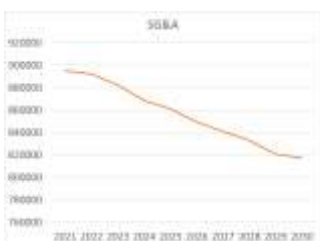
Operating Costs

Harley-Davidson has its cost structure highly dependent of its Costs of Goods Sold (COGS) and SG&A.

From 2019 to 2020 operating expenses decreased from 3,305,700\$ to 2,500,322\$. This happened primarily due to a lower employee cost caused by a decrease in the number of employees (5000 to 4600), a reduction in the incentive-based compensation cost and due to a lower discretionary budget, as the company was forced to put a lot of effort in managing its own costs as a response to the COVID-19 pandemic (HD Annual Report, 2020). However, this reduction was in part cancelled out by an increase in restructuring spending and, as so, even though operating expenses decreased, revenues also decreased in the same period. Moreover, manufacturing and other costs were negatively affected by an increase in the fixed cost per unit on lower production volumes. We expect the inflation cost of 6% of raw materials and components in Q3 2021 will continue in Q4. Also, there were incremental tariff costs imposed by European Union and China in the beginning of 2018 on Harley Davidson products shipped from the US and on specific items imported from China. In 2020 HD paid \$24.5 million in tariff costs and in 2019 the company paid \$97.9 million – these costs were reduced in 2020 as the company started to ship to EU motorcycles produced in its Thailand facilities, and so reduced the cost of tariffs.

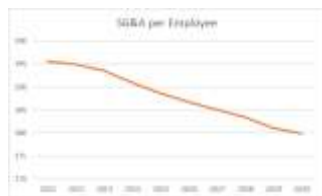


Graph 39

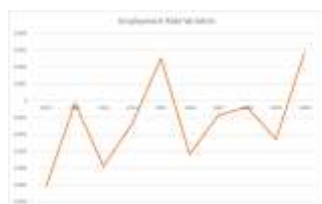


Graph 40

However, from 2020 onwards, COGS are forecasted to increase, according to our estimate of the future (we estimated COGS as a % of revenues) (Graph 39). This forecast is not only based on the increase of steel prices worldwide, but also on the inflation expected for the following years. Likewise, average selling prices will also increase, avoiding gross margin to decline. With the objective of trying to avoid some of these costs, Harley Davidson motorcycles have standardized designs and key components, even though the brand still offers wide customizations. Additionally,



Graph 41



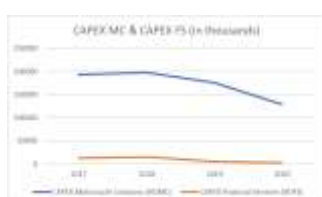
Graph 42

to avoid surplus, it is noticeable that Harley has been cutting production for the last 6 years. Therefore, HD planned production cuts are more related to the continuation of the shipment cuts.

SG&A is composed by salaries and personnel-related costs. SG&A was forecast based on the number of employees and the SG&A per employee (Graph 41 and 42). Despite the labour cost inflation of 3% in 2021, SG&A costs are expected to slightly diminish over time (Graph 40), mainly due to the decreasing number of employees throughout the years. We believe in the accuracy of this forecast for the following 5-10 years as the Hardwire strategies include a workforce reduction and restructuring expenses, related to both employee and contract termination costs.

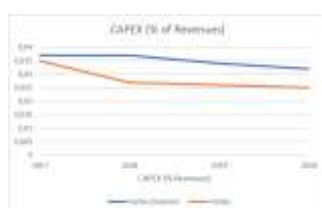
CAPEX

Every year, Harley Davidson needs equipment to manufacture its motorcycles, therefore it must spend money in replacements and/or repairs. This reduces the cash flow of the company.



Graph 43

By looking at Graph 48, we can see how the CAPEX allocated to both HDMC and HDFS develops throughout the years. Naturally, HDMC is where more spending on physical assets is allocated, as this segment manufacturers all the motorcycles, parts & accessories. So far, the highest value for CAPEX in HDMC was almost 200,000\$ (2018) and for HDFS was about 15,000\$ (2018). Regarding CAPEX in HDFS, it showed a big decrease from 2017 to 2018 ($\approx 56\%$) and from 2018 to 2019 ($\approx 67\%$). Based on The Hardwire Strategy, capital Expenditures are expected to have values between 190\$M and 220\$M, showing a moderate increase from 2019 to 2020. Regarding % of revenues, Harley Davidson has a higher percentage than its major competitor, Honda (Graph 43 and 44). We also expect Capex values to increase in the future, not only due to the reclassification of Opex vs Capex, but also due to their recent announcement – “cash allocation priorities are to reinvest in the business, then pay dividend and only then to perhaps repurchase shares” (in 2021 and 2022).



Graph 44

Lease assets only appeared in this company in 2019 (61,618,000\$), showing a 36% decrease in 2020 (45,203,000\$). On the 1st of January of 2019, the company adopted “Accounting Standards Update 2016-02 Leases” (New Accounting Standards) using the modified retrospective method. As a result, the company recognized a \$60 million right-of-use lease asset and a matching lease obligation. It is important to state that most of the equipment and real state a company requires to operate is leased (rather than bought). Leasing has indeed several benefits, such as deploying the cash saved towards other investments that will grow in value, as well as the restorage of aged equipment with newer technology on a regular basis, boosting the productivity and profitability. Lease assets also impact ROIC, making it lower (9,14% in 2018 and 7,81% in 2019).

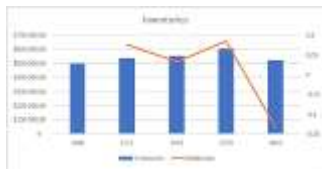


Graph 45

Harley Davidson’s asset turnover has showed a decrease from 2017 until 2020 (mostly from 2019 to 2020). This is a bad sign, as this ratio can be used as an indicator of efficiency reflecting how the company is using its assets to generate revenue. Harley Davidson, in comparison with its peers (Honda and Kawasaki) has the lowest asset turnover ratio (2017 to 2020). Kawasaki has been the one with the highest ratio (in the 4-year range), being always above 80% (Graph 45).

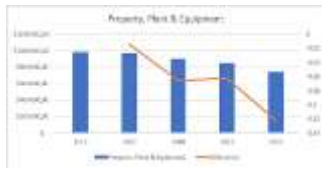
Net Working Capital

The most relevant captions from the Net Working Capital in 2020 are Finance Receivables (6,443,008\$), Operating Cash (1,177,890\$), Property, Plant and Equipment (743,784\$) and



Graph 46

Inventories (523,497\$). By looking at Graphs 46, 47, 48 and 49, we can see the variation (in %) for these captions throughout the past years.



Graph 47

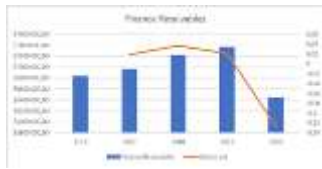
By looking at Graphs 50 and 51, we can observe the evolution of short-term activity ratios both for Harley Davidson and its competitor BMW Motorcycles.

HD's average collection period is quite low (has been decreasing from 2017 to 2020), being positive for the company. Everything else being equal, the company doesn't have to allocate resources to pay other external sources since clients will pay soon. In BMW case, this indicator is also quite low.



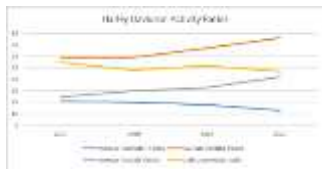
Graph 48

We can also comment on the high levels of the average holding period (low turnover ratio) of both companies (76 days for HD and 129 days for BMW Motorcycles, in 2020). Naturally, the Motorcycle Industry needs to sustain a higher turnover ratio (low average holding period), since holding goods in this highly competitive industry – evolving several areas – can be extremely costly. Therefore, both these companies have higher values than they should have, which brings several consequences, such as the pressure of the cash flow and the need to get external funding. Also, this metric is experiencing a rise throughout the last 4 years, being positive for the future of the company.



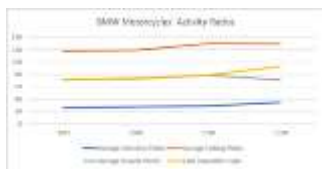
Graph 49

The Average Payable Period represents the average number of days that it takes for the company to settle with its suppliers. The longer a company must pay to its suppliers, the less pressure it puts on its cash flow. This indicator in HD has been increasing, being positive for the company (25 days in 2017 to 42 days in 2020). Nevertheless, this indicator in BMW Motorcycles is much higher, being better for the latter company.



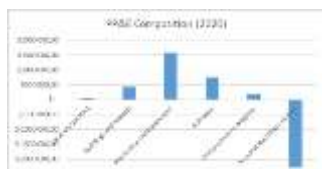
Graph 50

Regarding the inventories, we can see an increase from 2017 to 2019 and a decrease of 13,27% from 2019 to 2020. Despite this reduction, the Average Holding Period in HD increased about 13%. The decrease from 2019 to 2020 might have been justified by the JIT (Just in Time) Inventory System. The company implemented this system many years ago, with the goal of reducing inventory waste while increasing productivity, by quickly locating and solving manufacturer inefficiencies. Additionally, Harley Davidson reported a major decrease (48%) in new motorcycle shipments during the 4th quarter of 2020. This happened to adjust some errors that had already happened in the past, such as the excess of shipments which led to an offer surplus (compared to the level of demand they had back then). The reduced shipments resulted in a decrease in inventories, which eventually led to higher final prices for the motorcycles sold. This strategy was built under new CEO of the company, Jochen Zeitz, to drive up retail prices and eliminate model year-end discounting due to excess inventories. For the future, we believe that Harley Davidson will need to manage inventory levels to be structurally lower compared to Pre-Covid Period (avoiding production surplus) which can help pricing power.



Graph 51

From 2019 to 2020, there was an increment in the operating cash flow mainly due to a positive variation in the working capital, owned by the lower levels of accounts receivable and inventory, as well as positive cash flows resulting from a lower wholesale financing activity because of lower loan originations.



Graph 52

PP&E has been decreasing from 2016 to 2020, starting with a 1.41% decline from 2016 to 2017 and ending up with a 12.23% decline from 2019 to 2020. One of the reasons why Harley Davidson's PP&E is not increasing could be because the company doesn't need to constantly upgrade its equipment to stay competitive – HD already has a durable competitive advantage. Instead, the company only replaces it when it wears out. By looking at Graph 52, we may observe

the composition of PP&E of Harley Davidson in 2020. The sectors with the highest weight are: Accumulated Depreciation and Machinery and Equipment. Given the cost of depreciable assets of 2,765,183\$ (calculated with 428,171\$ in Buildings, 1,577,337\$ in Machinery and Equipment and 759,675\$ in Software) and 2,279,740\$ of accumulated depreciation, PP&E is 82% depreciated assuming straight line depreciation. We may conclude that Harley-Davidson's PPE is older than we would expect assuming a regular replacement policy.

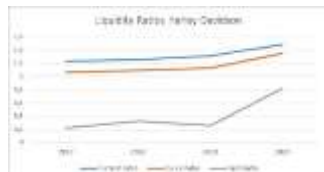
Equity and Debt

Harley Davidson's D/E ratio (4,04 in 2020) means that the debt is 4,04 times higher than the equity. Regarding last year, Harley Davidson had 5\$ of debt for every 1\$ of equity, which results in a highly leveraged company and mainly dependent on debt financing.

Regarding the competitors, Honda is a less leveraged firm, finishing 2020 with a D/E of 1,42 and Kawasaki had a ratio of 3,47 (see exhibit x). Looking at the median, we may see that Harley has a higher leverage ratio than the industry's median. Furthermore, it is also stated that the average D/E ratio of "motorcycles, bicycles and parts" industry was 0,71 in 2020.

The company showed a historical Debt over Asset ratio between a range of 70% and 75% from 2017 to 2020 (see exhibit z).

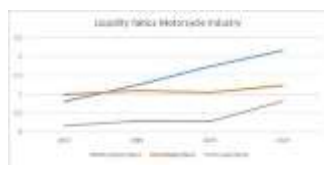
There are some risks for a firm to be highly leveraged since it can indicate a low borrowing capacity and borrowers may consider this firm not suitable to meet its obligations when it should. This might lower the firm's financial flexibility. Nevertheless, there are some advantages in having a leveraged firm, such as the tax breaks. The tax return is deductible, and the amount of the interest paid on the loan reduces the total amount of taxable income for business. Therefore, it also reduces the effective cost associated with borrowing money for business purposes.



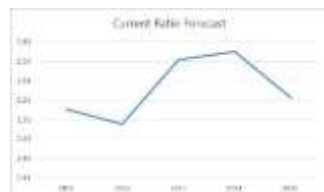
Graph 53



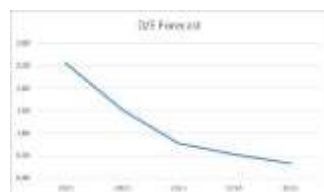
Graph 54



Graph 55



Graph 56



Graph 57

In 2020, HD had a current ratio of 1,48, which means that the firm was able to use its short-term assets to meet short term obligations. In our comparison with BMW Motorcycle company, we may even see that HD is doing better in terms of liquidity than BMW Motorcycles (Graph 53 and 54). Nevertheless, it is important to state that Harley Davidson is a company with a high value of operating cash and inventories, therefore it is normal that its short-term assets are high. We must evaluate other metrics to see if the company actually has a high liquidity position in the market. The quick ratio is also higher than 1 from 2017 until 2020. We considered that the firm has a positive liquidity position. Finally, we can see that the cash ratio of the entity is below 1 in all years (2017 – 2020). This indicates that the firm has no ability to meet its short-term obligations using only the cash that is currently available in the company. Comparing to the ratios from the Motorcycle Industry, HD is worse than the average in 2018, 2019 and 2020 in terms of the current ratio and slightly equal in terms of quick ratio and cash ratio (Graph 55). Furthermore, HD has a high Gearing Ratio (about 80% from 2017 until 2020), meaning that 80% of the invested capital of the company is financed with debt.

Concluding, the position of the firm liquidity is positive (due to the analysis on the Current Ratio and on the Quick Ratio), nonetheless it is getting each time more dependent on the execution of its current assets (selling inventories or receiving from clients, for instance). If these two operations don't happen as expected, the company will have a worse liquidity position than it had 2 years ago. From a liquidity perspective (short – term), we may state the company is doing fine. From a capital structure perspective (long – term), the company's position is not that positive

due to the high level of D/E and D/A. This may be confirmed with the low value of the solvency ratio (decreasing from 23% in 2017 to 17% in 2020). A low solvency ratio means that the company is at risk of defaulting on its own debt. The fact that HD continues to finance itself with debt it is not the best idea because it may not be able to repay its long-term debt to its borrowers.

Through Graph 56 and 57, we may observe the forecast of the Current Ratio and the D/E ratio. According to this, the entity will rely less on debt to leverage itself in the next 5 years.

Valuation

DCF – Intrinsic Valuation

We apply a 10-year DCF model as our primary valuation tool for HOG. We believe a DCF captures HOG's intrinsic value, driven by its strong FCF generation, always taking into account Harley Davidson's past performance, and the work developed on its value drivers, relevant inputs and assumptions. We use a 2021 to 2030 WACC of 5,8% and a terminal growth rate of 0.50%.

We estimate the cost of equity to be 8,91% (Table 2). This estimate is derived by the beta of 1,351, a Market Risk Premium of 5,5% and a risk-free rate of 1,48%. The risk-free rate was the last observed rate of 2021 of the US 10-year Treasury Yield and so we considered this percentage as a proxy for our risk-free rate, as the US is Harley Davidson's main regional market. We considered a MRP of 5,5%, recommended by Duff&Phelps. Regarding the levered beta, this was computed with data ranging from January 2011 until December 2020, considering monthly returns and the above mentioned 10-year Treasury Yield – after un-levering and re-levering the beta, we reached a 1,351 levered beta for Harley Davidson. When comparing with competitor's betas, our beta is within the competitors' betas range [0,96; 2,4].

RE Calculation	
r _f	1,48%
MRP	5%
Levered Beta	1,351
Re	8,91%

Table 2

RD Calculation	
Bond Yield	3,99%
Recovery Rate	45%
LGD	55%
Cumulative PD (8 years)	4,65%
PD (Annualized)	0,57%
Rd	3,73%

Table 3

Then, we estimate the cost of debt to be 3,7% (Table 3), derived by the probability of default of 0,57% - according to the available data in Moody's and S&P –, loss given default of 55% - considering our credit rating – and a 3,99% return on Harley Davidson's bonds yield to maturity. As Harley-Davidson most recent notes are either medium-term notes – with the biggest maturity date to be July 2025 – or senior notes – mature in July 2045, we assumed an average of these two rates to be our 10-year bonds yield.

WACC Calculation	
Rd	3,73%
Re	8,91%
Equity (Mkt Cap)	\$ 5.186.000,00
Debt (Mkt Value)	\$ 7.280.000,00
Income Taxes	23%
WACC	5,61%

Table 4

Harley Davidson plans to maintain a high level of debt, reaching a market debt-to equity ratio of 55%. Taking all these inputs into account and considering the current US statutory tax rate 21%, we reached a cost of capital of 5,61% (Table 4).

To account for risk and capital structure considerations, all FCFs and terminal value were discounted at the WACC. The cash flows were calculated over a 7-year period, from 2021 to 2029, using the long-term growth rate and then a growing perpetuity model. In order to calculate the terminal value, a perpetuity growth formula was applied to the last projected FCF of 2029.

Table 5

	Discounted Cash-Flows (DCF)							
	1	2	3	4	5	6	7	
(in thousands)	2023	2024	2025	2026	2027	2028	2029 Terminal Value	
Free cash flow	\$ 2.456.708,76	\$ 744.145,98	\$ 1.021.580,97	\$ 1.042.893,11	\$ 943.398,98	\$ 942.450,21	\$ 962.136,94	\$ 18.931.494,48
DCF	\$ 2.326.261,03	\$ 667.397,21	\$ 867.335,47	\$ 838.414,69	\$ 718.156,76	\$ 679.339,77	\$ 656.704,94	\$ 12.921.659,42

After analysing Harley Davidson's Return on Investment, it is possible to have the perception of the company using its capital to generate returns. We can say that Harley Davidson will be able to generate some value for its investors during the following years. The positive ROIC along with

the high investment rate of the company produces a positive long-term growth rate of 0,5%.

Considering all these factors, the Core Enterprise Value is \$18M. By discounting non-core liabilities - \$140K - and net debt -\$6M – to non-core assets – \$90k –, and adding this to the core enterprise value, Common Equity Value of \$12M. Having 154K shares outstanding, we calculate a target price per share of \$78,76.

As of 16th December 2021, Harley Davidson current stock price is \$36,81. Our share price through the DCF method is \$78,76. Our final recommendation is then a BUY recommendation, as the stock price is undervalued and so any investor will have a positive return, according to our analysis.

Multiples – Relative Valuation

We conducted a Multiples Valuation approach - a comparable analysis method that seeks to evaluate similar companies using the same standardized financial metrics. For this approach, Harley Davidson was compared with Polaris, Triumph Bikes, Yamaha Motorcycles and Honda, as we believe these are similar companies selling goods in the market at relatively similar prices. Before concluding the final indicators to use, we performed an analysis on EV/EBITDA; EV/EBIT; EV/Revenues and P/E. We then reached the conclusion that EBIT is a better measure than EBITDA, since the latter one doesn't consider the investments made by the company. As a result, P/E and EV/EBIT are the best multiples to perform our analysis.

Harley Davidson's EV/EBIT is 13,16 (Table 7), higher than the mean of the peers – 8,295. According to that perspective, the estimated target share price is 55,50\$ (Table 6), confirming that the company is undervalued.

HD EBIT 2021	\$179 447 00	HD Earnings 2021	\$532 840 00
EVEBITDA (Median)	11,88	PriceEarnings (Median)	10,15
EVEBITDA (Lower)	8,245	PriceEarnings (Lower)	6,575
EVEBITDA (Upper)	18,78	PriceEarnings (Upper)	28,73
Equity Value	\$8 547 030,36	Equity Value	\$5 429 639,60
Shares Outstanding	154000	Shares Outstanding	154000
Share Price	\$55,50	Share Price	\$35,26

Table 6

Name	EV/EBITDA	EV/EBIT	EV/Revenues	P/E	Price-to-sales														
Polaris (US)	13,05	10,78	1,46	20,73	0,83														
Triumph Bikes (UK)	5,36	7,57	0,88	5,81	N/A														
Yamaha Motorcycles (Japan)	7,67	10,27	0,73	11,51	0,84														
Honda (Japan)	7,3	10,48	0,89	8,87	0,78														
Summary																			
Min	5,36	7,57	0,83	5,81															
Max	13,05	10,78	1,46	20,73															
Median	7,41	11,08	0,81	8,79															
Mean	8,295	12,275	0,94	11,73															
Harley Davidson	11,8	16,45	1,49	16,62															
EV (Median)	72477,38	11900,52	770595		Avg EV (Mean)														
EV (Mean)	80297,308	12973,425	808,26		77010,66														
Share Price (Median)				\$8,09															
Share Price (Mean)				\$8,11															
<table border="1"> <thead> <tr> <th>Harley Davidson</th> <th></th> </tr> </thead> <tbody> <tr> <td>EBITDA</td> <td>\$3 679 000</td> </tr> <tr> <td>EBIT</td> <td>\$4 675 000</td> </tr> <tr> <td>Revenues</td> <td>\$4 054 377 000</td> </tr> <tr> <td>Net Debt</td> <td>\$7 298 144 000</td> </tr> <tr> <td>Net Income</td> <td>\$1 200 000</td> </tr> <tr> <td>Shares Outstanding (in thous.)</td> <td>154000</td> </tr> </tbody> </table>						Harley Davidson		EBITDA	\$3 679 000	EBIT	\$4 675 000	Revenues	\$4 054 377 000	Net Debt	\$7 298 144 000	Net Income	\$1 200 000	Shares Outstanding (in thous.)	154000
Harley Davidson																			
EBITDA	\$3 679 000																		
EBIT	\$4 675 000																		
Revenues	\$4 054 377 000																		
Net Debt	\$7 298 144 000																		
Net Income	\$1 200 000																		
Shares Outstanding (in thous.)	154000																		

Table 7

Harley Davidson's Price-to-Earnings is 10.62, which means that an investor is willing to pay 10.62\$ for 1\$ of current earnings. The P/E benchmark of the Motorcycle Industry is 20.4 and the benchmark for US companies is 15. Harley-Davidson's P/E of 10.62 indicates relatively low sentiment towards the stock. Furthermore, the mean estimated for the peers is 13,73, confirming the small P/E for the company (Table 7). According to P/E perspective, HD's target share price is 35,26\$ (Table 6), not considered to be undervalued when compared to the current market share price – 38,02\$.

By looking at the indicator ROIC, we might have a negative view on the company, as HD did not exhibit good values from 2018 to 2020. The benchmark of the industry for ROIC is 10,10%, being negative for Harley Davidson as it is below this average.

Furthermore, a calculation of Harley Davidson's share price based on the median price-to-sales ratio of the 4 competitors was performed (Table 8). The result for the share price was 24,71\$. By looking at the graph below, we can also see the individual comparison between Harley Davidson and its peers – the analysis based on the P/S ratio of each company reflects a share price of 32,04\$ for Polaris; a share price of 24,71\$ for Yamaha; and a share price of 15,06\$ for Honda. Therefore, the share price of Harley Davidson is considered overvalued according to this perspective.

Table 8

Individual Comparison between Harley Davidson and peers								
	Polaris (PL)		Triumph Motorcycles (UK)		Yamaha Motorcycles (JP)		Honda (AH)	
	Sales 2021	\$ 945.294,57	Sales 2021	\$ 595.294,57	Sales 2021	\$ 945.294,57	Sales 2021	\$ 945.294,57
Polaris Price/Sales Ratio	0,03		Triumph Price/Sales Ratio	0,04	Yamaha Price/Sales Ratio	0,04	Honda Price/Sales Ratio	0,03
Equity Value	\$ 33.534		Equity Value	\$ 24.000,00	Equity Value	\$ 39.000,00	Equity Value	\$ 33.534,00
Shares Outstanding	10.000,00		Shares Outstanding	10.000,00	Shares Outstanding	10.000,00	Shares Outstanding	10.000,00
Share Price	\$ 3,35		Share Price	\$ 2,40	Share Price	\$ 3,90	Share Price	\$ 3,35

Finally, we performed a Football Field analysis (Table 9), reaching the conclusion that the company is stated as undervalued, as the target share price is 71,03\$ according to an average between Harley Davidson's EBIT and DCF and 60,91\$, according to an average between Harley Davidson's Earnings and DCF.

Table 9

Football Field					
Relative Valuation Methodologies	Median	Lower Bound	Upper Bound	Bounds Differential (Median-Lower)	Bounds Differential (Upper-Median)
Multiple Valuation (EBIT)	\$ 547.930,36	N/A	\$ 11.210.660,66	N/A	\$ 5.662.730,30
Multiple Valuation (Price to Earnings)	\$ 129.639,69	N/A	\$ 19.388.492,28	N/A	\$ 9.678.852,59
DCF	\$ 11.829.892,30	\$ 11.829.892,30	\$ 21.218.751,97	\$ 9.388,67	\$ 9.388,67
Valuation Average (1)	\$ 10.888.511,35	-	-	-	-
Valuation Average (2)	\$ 9.379.615,95	-	-	-	-
Shares Outstanding	154.000,00				
Share Price (EBIT vs DCF)	\$ 71,03				
Share Price (PE vs DCF)	\$ 60,91				

Sensitivity Analysis

Considering that the valuation outcome through the DCF method is highly sensitive to the assumptions made through the whole valuation process, we performed a sensitivity analysis to assess the impact of the uncertainties and risks previously mentioned. As our terminal value is a very positive and high value, it may not impact the final valuation – due to this, we will conduct an analysis based on variations in the cost of capital (WACC) and the terminal growth rate and how these may impact Harley Davidson's enterprise value and share price. As such, we applied a change of 1% in the WACC and a change of either 0,25% or 1% in the growth rate – as we wanted to test different intervals in the latter variables. We can see these results in Table 10 and 11.

Table 10

Sensitivity of enterprise value to WACC and Growth rate

Growth Rate	WACC	Enterprise Value				
		3,61%	4,61%	5,61%	6,61%	7,61%
0,00%	\$ 18.557.566,30	26377624	20929827,5	27420724,2	14970212	23160931
0,25%	27985053	21788313,3	17961621,3	15336455	13420624,8	
0,50%	29633120	22751298,3	18557566,3	13732680	13699000,3	
1,50%	40796424	28152635	21661544,3	17705401	15039430,7	
2,50%	71073736	38679518,5	26763182,3	20638739	16904736,5	

Table 11

Sensitivity of share price to WACC and Growth rate

Growth Rate	WACC	Share Price				
		3,61%	4,61%	5,61%	6,61%	7,61%
0,00%	\$ 78,76	129,54389	94,1685836	71,3821586	55,409779	43,7212164
0,25%	139,53239	99,7431664	74,9070306	57,847982	45,4088259	
0,50%	150,69581	105,996316	78,76428	60,420876	47,2151602	
1,50%	223,10752	141,069031	98,9199011	73,231137	55,9192533	
2,50%	416,27188	206,426317	132,047511	93,278723	68,051629	

With the changes considered in these two parameters, we obtain several different prices between 44 and 427 and enterprise values between \$13M and \$72M. With this analysis, it is possible to analyse how sensible both the price and EV are to changes in WACC and G. analysing Table 10, it is possible to say that the share price is more sensitive to the terminal growth rate, as for the same % change, the difference between the considered upper and lower limit is higher in the TGR rather than in the WACC.

As the WACC components result from key assumptions, we thought it would be interesting to test these and assess how changes in these assumptions would impact our cost of capital. The results

can be seen on the following tables. We applied a 1% change in both the cost of debt and cost of equity – by analysing Table 12 we conclude WACC is similarly sensitive to both costs, being only 0,02% more sensitive to the cost of equity, when comparing to the cost of debt. Looking at Table 13, we can state that the cost of equity is more sensitive changes in the beta rather than to changes in the MRP – this is expected as the beta reflects the systematic risk of a company in relation to the market, being specific to the company, whereas the MRP is the same for the whole considered market.

Table 12

WACC	Cost of Debt					
	5,61%	1,73%	2,73%	3,73%	4,73%	5,73%
Cost of Equity	6,91%	3,84%	4,28%	4,71%	5,15%	5,59%
	7,91%	4,29%	4,71%	5,16%	5,60%	6,04%
	8,91%	4,73%	5,17%	5,61%	6,04%	6,48%
	9,91%	5,18%	5,62%	6,05%	6,49%	6,93%
	10,91%	5,62%	6,06%	6,50%	6,94%	7,37%

Table 13

Cost of equity	MRP	Beta				
		0,351	0,851	1,351	2,351	3,351
8,9%	4%	2,9%	4,0%	6,3%	10,9%	14,0%
	5%	3,2%	5,7%	8,2%	13,2%	18,2%
	5,50%	3,4%	6,2%	8,9%	14,4%	19,9%
	6%	3,8%	6,6%	9,6%	15,6%	21,6%
	7%	3,9%	7,4%	10,9%	17,9%	24,9%

Scenario Analysis

For the scenario Analysis, we performed an evaluation to estimate the enterprise value of Harley Davidson (meaning, the company's value in the market), based on 3 different scenarios. For that, we had in consideration the revenues' growth rate from 2021 until 2025 and other one from 2025 until 2030 (both values are uploaded according to the level of the scenario, being the actual one uploaded in the base scenario); a discount rate of 10% (the minimum return that the investor expects to get in the future) and the P/E. We assumed a discount rate of 10% as we considered that an investor may not be willing to invest in a company that would give him/her a return of less than 10% (since average return of S&P 500 is itself 10%).

To be worthy to take that risk, the investor may have the goal to receive a return at least equal to the one in the S&P500 ($\geq 10\%$).

We estimated 3 scenarios (a base scenario with the probability of 60%; the best scenario and the worst scenario, both with a likelihood to happen of 20%) (Table 14).

Table 14

		(in millions)										Terminal Value	Growth rate			
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2030	2021 - 2025	2025-2030	Expected Return	P/E
Base case Scenario	Earnings	1,30	1,50	1,73	2,00	2,31	2,67	2,70	2,73	2,78	2,79	3,82	44,03	11,48%	10%	18,0
	Intrinsic Value		1,42	1,54	1,68	1,83	2,00	1,90	1,81	1,73	1,66	1,57	24,02	10%	10%	42,06
Best case Scenario	Earnings	1,30	1,52	1,78	2,05	2,44	2,85	2,91	2,97	3,02	3,09	3,15	58,03	11,48%	10%	18,0
	Intrinsic Value		1,36	1,58	1,75	1,88	2,13	2,05	1,97	1,90	1,83	1,76	32,73	10%	10%	51,01
Worst case Scenario	Earnings	1,30	1,47	1,66	1,88	2,12	2,40	2,41	2,42	2,43	2,44	2,48	29,32	11,48%	10%	18,0
	Intrinsic Value		1,34	1,37	1,41	1,45	1,48	1,38	1,34	1,33	1,34	0,95	11,30	10%	10%	34,07
		Scenario	Probability	PV	Part											
		Scenario 1 (normal case)	0,6	42,06	25,24											
		Scenario 2 (best case)	0,2	51,01	10,20											
		Scenario 3 (worst case)	0,2	34,07	6,81											
				86,31	42,25											

In the base scenario the motorcycle shipments, model prices and retail sales rise in 2022 and 2023. New management begins putting in place the foundations of the Hardwire Strategy. Operation risks still exist and will remain in the future, as the long – term revenue growth will be less than 1%. In this case, we estimated an Intrinsic Value for the company of 42,06\$.

On the best-case scenario, Harley Davidson is considered to achieve a strong turnaround. The company meet the initial goals for the Hardwire Strategy (such as cutting costs and reducing excess inventory) and the segments will prospect, where motorcycle segment will rise more than 30% to 2022 and 2023. Harley market share will remain stable in the US and will increase in a global perspective. The company will be able to attract the younger generation and to succeed in

its electric motorcycle models, which will be highly significant for the company to prospect and to achieve an even better brand reputation. We estimated an Intrinsic Value for the company of 51,01\$.

On the worst-case scenario, Harley struggles to grow Motorcycle segment margins' and will still be highly affected due to covid in Q4 2021 and in 2022. The company won't be able to cut the production surplus and will face the obligation to cut prices. In general, global motorcycle retail sales will decline and the market won't be able to achieve the estimated CAGR neither in 2030 nor in 2038. Hardwire Strategy fails and the company won't be able to appeal the youngest generation. Also, the launch electric models won't achieve the success the company wanted. We estimated an Intrinsic Value for the company of 24,07\$.

Conclusion

After a wide research at Harley Davidson' operations, future outlooks, internal and external environment, market trends and a comparable analysis between its peers, we computed an intrinsic and relative valuation for the financial components of the company. Both perspectives indicate that the stock price is undervalued, which means that the share price in the market is lower than what the company actually values. According to our calculations, the target price in the future is 90\$, which indicate that the company will surpass the current complications and grow at a positive rate – like we performed on our assumptions and forecasts – and investors will have a much better return.

Besides the risks the company faces - such as the manufacturing challenges, macroeconomic conditions, HDFS delinquencies rise, pressure from competitors and the investment in the electric market – we predict that Harley Davidson will acknowledge a turnaround and operate according to the Hardwire Strategy, with all the segments driving growth. It is also expected the number of customers to increase (attraction of the younger generations) and its entry in the electric market to be successful.

Therefore, our final recommendation is to BUY.

Appendix

HARLEY DAVIDSON

AUTO

STUDENT: CATARINA MOURÃO, INÊS MATIAS

COMPANY REPORT

17 DECEMBER 2021

44408@novasbe.pt; 44405@novasbe.pt

A New Era for Harley Davidson

A step into the Success

- We recommend the average investor to BUY a position in Harley Davidson. Its current share price is 38,02\$ and the target price we estimated is 86,56\$. This leads to an investor expected return of 7,74% and an annual dividend of 0,60\$.
- HD has always been admired as one of the world's largest motorcycle companies, capturing about 1/2 heavyweight domestic retail motorcycle registrations. Besides the Covid-19 pandemic, the company repositioned its business in 2020, leading to a decrease in several operations parameters, like revenues. Still, the firm is expected to expand and recover from its latest setback. In Sep2021, a new launch model, Pan America, was a success.
- We expect a 6% increase in Revenues (2019-2023), namely based on the Hardwire Strategic Plan and on the projected growth for the Global Motorcycle Market (expected to reach a 2% CAGR in 2030 and 7,2% CAGR in 2028), overcoming the negative economic situation.
- It is an extremely competitive market for Harley Davidson. We also forecast positive margin expansion in the upcoming years as companies have a chance to add prices.
- The liquidity and activity position of the firm aims to financially support the company' transformations in the upcoming period.

Company description

Harley Davidson is an American company founded in 1903. The company has survived periods of poor economic health and intense global competition and is currently one of the world's largest motorcycle manufacturer. Its stock is traded on the NYSE ((New York Stock Exchange).

Recommendation: BUY

Price Target FY21: 86.56 \$

Price (as of 16-Dec-21) 38.02 \$

Reuters: HOG; Yahoo Finance: HOG

52-week range (€)	31.20\$-52.06\$
Market Cap (€m)	5.614\$B
Outstanding Shares (m)	154
Expected return	7.74%

Source: Yahoo Finance



(Values in € millions)	2020	2021E	2022F
Revenues	4.054\$B	5.04\$B	6,57\$B
EBITDA	0.281\$B	0.909\$B	1.762\$B
Operating Income	0.01\$B	0.711\$B	1.392\$B
EPS	0.01\$	1.05\$	1.98\$
P/E	8.4	10.98	11.50
P/FCF	5.31	6.76	7.65

Source: Harley Davidson, Financial Statements

THIS REPORT WAS PREPARED EXCLUSIVELY FOR ACADEMIC PURPOSES BY CATARINA AND INÊS, MASTER'S IN MANAGEMENT STUDENTS OF THE NOVA SCHOOL OF BUSINESS AND ECONOMICS. THE REPORT WAS SUPERVISED BY A NOVA SBE FACULTY MEMBER, ACTING IN A MERE ACADEMIC CAPACITY, WHO REVIEWED THE VALUATION METHODOLOGY AND THE FINANCIAL MODEL. (PLEASE REFER TO THE DISCLOSURES AND DISCLAIMERS AT END OF THE DOCUMENT)

Table of Contents

COMPANY OVERVIEW	3
BUSINESS MODEL.....	5
SHAREHOLDERS STRUCTURE	6
GEOGRAPHIC PRESENCE	6
STOCK PERFORMANCE.....	7
MACROECONOMIC ENVIRONMENT.....	8
MOTORCYCLES MARKET	9
COMPETITORS	10
GENERATION TRENDS	12
DRIVERS AND FORECASTING.....	13
REVENUE VALUE DRIVERS.....	13
OPERATING COSTS.....	18
CAPEX.....	19
NET WORKING CAPITAL	20
EQUITY AND DEBT	21
VALUATION.....	23
DCF – INTRINSIC VALUATION.....	23
MULTIPLES – RELATIVE VALUATION.....	24
SENSITIVITY ANALYSIS	26
SCENARIO ANALYSIS	27
CONCLUSION.....	28
APPENDIX	29
FINANCIAL STATEMENTS	29
DISCLOSURES AND DISCLAIMERS	31
REPORT RECOMMENDATIONS.....	31
REFERENCES	34

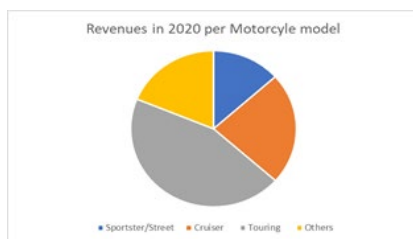
Company Overview

Harley-Davidson – a worldwide famous motorcycle company - was founded in 1903 by the three brothers – Arthur, Walter and William, along with William S. –, being now the number one player in the US in the motorcycle industry. Its headquarter is in Milwaukee, Wisconsin (United States), where the company built its first motorcycle. Both demand and supply boomed after the company’s founding year, and by 1907 the company began to advertise.

Today, Harley-Davidson is present worldwide, having more than 1400 independently owned Harley-Davidson dealerships in almost 100 countries through a combination of Authorized H-D Dealers, Authorized H-D Rental Dealers and Harley-Davidson Online Store, and more than 5000 employees around the world. The company retails a wide range of motorcycles, such as touring-, cruiser-, trike-, and off-road-bikes. As we can see in Graph 1, motorcycle shipments have always been more than 40000 units, regardless the motorcycle type and the year. The model with the highest variation in shipments was Touring Motorcycle, with 101942 in 2018 and only 50540 in 2020. Nevertheless, Touring was still the one that most contributed to the company’s revenue in 2020 (Graph 2), with approximately \$1.699.839,31 in sales, being the most expensive one.



Graph 2



Graph 1

Despite having only 4% global market share in revenue, the company’s motivation is to become the most hunted brand worldwide. They manage to stay head from the industry competitors by manufacturing with the highest quality and greatest innovation, focusing always on personalizing their costumers’ experience when riding a motorcycle by providing them products that offer a proper and unique community lifestyle. In 2020, Honda, Yamaha, Hero MotoCorp and Bajaj were ahead of Harley Davidson in terms of Global Market Share in revenue (Graph 3). Despite having higher prices than its competitors, the latter companies managed to sell more worldwide, being this reflected in their global market share. Harley-Davidson the larger motorcycle manufacturer based in the US – having 31% of market share -, however in the rest of the world the company still has to grow.



Graph 3



Graph 4

Harley-Davidson’s annual revenue has dropped from 2018 – \$5,716 Billion – to 2020 – \$4,053 Billion (Graph 4). Regarding the EBITDA, it decreased 67,86% from 2019 to 2020. This fall might be caused, not only by the Covid-19 pandemic – which highly affected the company supply chain, manufacturers, and dealers – but also by its low international presence – the percentage of sales from Europe, Africa and Asia together is less than half when compared to the company’s sales



Graph 5

in the US and those numbers are still declining (Graph 5). With revolutionary products, customized encounters and client esteem creation, Harley-Davidson has the mission to lead the Motorcycles Industry through development, advancement and feeling.

Throughout the past century, Harley-Davidson’s strongest competitors are considered to be Triumph (UK), Yamaha Motor (Japan), Ducati (Italy), Suzuki (Japan), Bajaj (India) and Honda (Japan). In the future, HD counts with new entrants in the market and is aiming to 'disrupt itself' ahead of new competition.

The “Hardwire” (Figure 1 and 2) is the company’s strategic plan that will be implemented from 2021 until 2025, designed to make Harley Davidson one of the most famous brands in the world. It will be a difficult task, looking at the last years’ operations of the company, which yield some negative results. The strategic priorities for the Hardwire are, among others, to invest in strongest motorcycle segments, such as the Touring, Cruiser and Trike Model; to mainly focus on United States, DACH (Germany, Austria and Switzerland), Japan, China, Canada, France, United Kingdom and Italy; to invest in the electric motorcycle market; to expand their operations in “Parts and Accessories” and “General Merchandise” segments; to improve in “Motorcycles” segment by increasing efficiencies across operations and, lastly, to create capital investments within the range of \$190 and \$250 Million, per year. The company will invest of the strongest segments by, at the same time, reducing its product line by 30% - this is a smart decision as many of their models overlap as they are very similar.

By eliminating the ones with worst results, the company will have a more streamlined product portfolio, helping to reduce costs, which is also one of the company’s goals. This will enable the company to fulfil some of its strategic priorities, such as the improvement in the “Motorcycles” segments and, at the same time, the investment in the strongest segments within this particular segment. Moreover, HD’s planned countries to focus on Europe will positively be aligned with the ended dispute between US and EU on steel and aluminium tariffs, the imported raw materials of the company. Nevertheless, regarding the investment in electric motorcycles, it will take time until this is a reality to the youngest generation, so HD should not consider electric sales as a major impact to the company total sales, in a 3-year range.

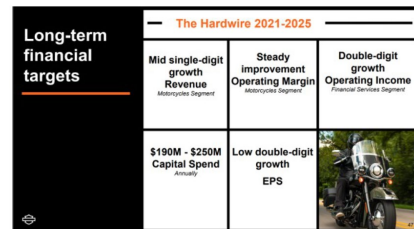
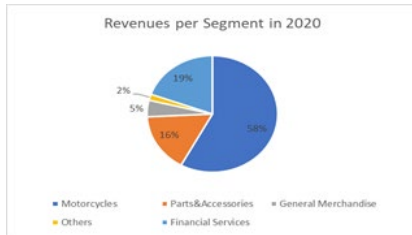


Figure 1



Figure 2

Business Model



Graph 6

The company sells its products worldwide - not only motorcycles, but also General Merchandise, Parts & Accessories (such as home décor, toys or video games) – under the “Harley Davidson” brand. Motorcycle’s segment is the one that most contributes to the company revenues’, followed by the Financial Services segment, Parts and Accessories, General Merchandise and Other (Graph 6).



Graph 7

Regarding the business model patterns, the company does Direct Selling – having several brand stores selling both the motorcycles and the merchandise of the brand –, Experience Selling – where Harley Davidson pretends to increase the customer experience offered with the product and/or service –, Franchising – HD works with individual dealers, supporting them with services related to Finance and Insurance. The dealers are an extremely important part of the company (Graph 7), as they both work as ambassadors of the brand and the keepers of the brand’s culture.

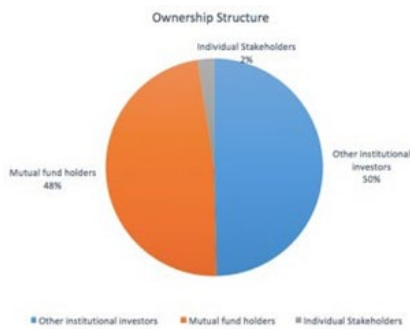
For the customer-relationship building strategies, HD created HOG - Harley Owners Group - a membership group that has the purpose to relate HD motorcycle’ riders with each other and with the entity itself. HOG provides access to exclusive benefits to help customers getting the most out of Harley’s ownership experience, assisting them with all kind of problems regarding riding a motorcycle, such as sessions related with maintenance or providing support and ideas on how to create a local motorbike club.

Merchandise segment is highly relevant for the company, regarding the sales it generates each year. Harley has a particular licensing strategy and takes products only when they are related to the image the company wants to pass its customers. This positively influences our expectation on sales growth of “General merchandise” Segment.

When it comes to Supply Chain, the entity insists on having severe rules for its multiple suppliers, in order to always comply with the quality of the products and to achieve the maximum level of productivity. All these strategies are significant to make sure that the relationship company-customer and the quality of the brand products are fulfilled. Therefore, we believe that even during bad times, the company will always have a large portion of loyal clients to rely on, affecting its revenues. This gives us some confidence for the future of the company.

Additionally, Harley has asked all dealers to put their used bike inventory on a shared national website, which reinforces the idea that the company is interested

in customer information. The new management often speaks about omni-channel sales, which leaves some dealers concerned that HD may try more direct sales.

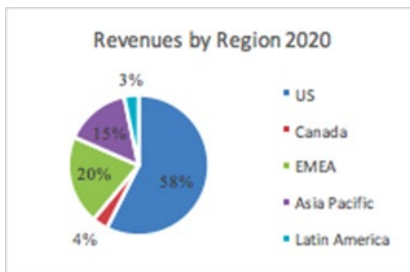


Graph 8

Shareholders Structure

In 1965, Harley Davidson went public and in 1986 completed the Initial Public Offering (IPO), with 1.43 million shares valued between 9\$ and 11\$ per share.

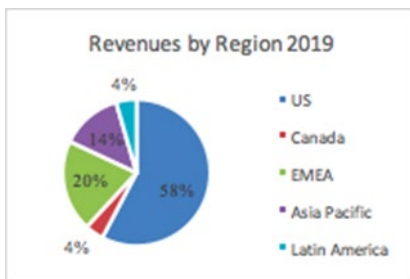
Harley-Davidson' (HOG) common stock is traded on the New York Stock Exchange. On 31st January 2020, 68 506 shareholders had the company' stock. There were also 154 million shares outstanding.



Graph 9

Institutional investors have a major part of the ownership of the company' shares (97,15%), the highest percentage compared with companies from the same Industry. The ownership structure is composed by 47,73% of mutual fund holders; 49,63% of other institutional investors and 2,49% of individual stakeholders (Graph 8).

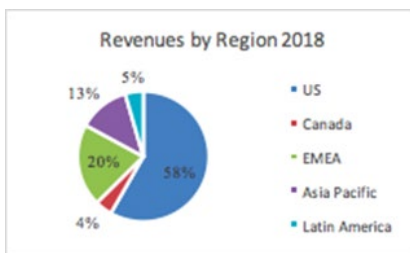
Currently, Jochen Zeitz is the Chairman, President and CEO of HD, while Julie Anding is the Vice President and CAO of the company.



Graph 10

Geographic Presence

Harley Davidson operates all over the world, and its revenues are structured according to the following locations: US, Canada, EMEA (Europe, Middle East and Africa), Asia-Pacific and Latin America.



Graph 12

US has always been the region that generates more revenues – and the same is expected in the future –, contemplating the necessity in the US marketplace. It was composed by 57,50% of the total sales in 2020. Canada had 3,59% of the total sales in 2020; EMEA 20,48% (being the second largest market for HD motorcycles); Asia-Pacific 15,10% and Latin America 3,33%.



Graph 11

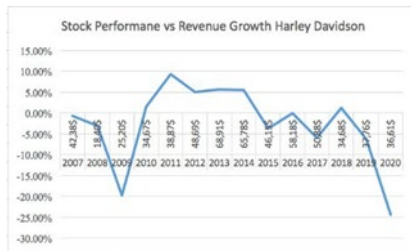
US region has showed a decrease in sales unit from 2017 until 2020 (Graph 9, 10, 11 & 12), which may be explained by several downside trends such as the aging of the population and the reduction of their physical abilities to ride a motorcycle. These trends may trigger complications in terms of market share in the future, since the company will have to expand to unexploited target markets, to maintain the same (or increase) number of clients. Therefore, in an early period of transformation, it might be difficult to represent the brand to the younger population, eliminating the idea that these bikes are only suitable for the older generation. In places such as Asia Pacific and Latin America, the unit sales as a

percentage of the total sales have been slightly rising, perhaps due to the increasingly focus of the company on unexploited demographic segments, such as Brazil, China and India. As so, with the diversification of the target market, the company assumes that its revenues and the overall operation will grow in the upcoming 5 years. In Canada and EMEA, the respective percentage has been constant over the years, with minor increases or downsides.

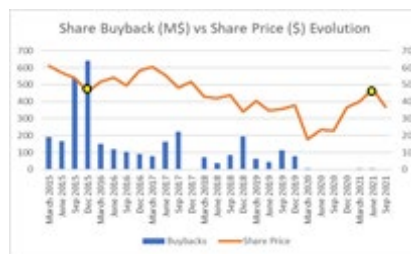
Stock Performance

Harley Davidson has a 52-week range (\$) between 31,20\$ (14,5% below the current share price) and 52,06\$ (42,7% above the current share price).

Harley Davidson' share price has showed an increase between 2008 and 2013 and a reduction from 2014 until 2020 (with a slight growth in 2016). Graph 13 reveals the comparison between the evolution of the stock price of the company and the revenue growth rate (%), both from 2007 until 2020. A relation between a negative growth rate and the decline of the stock price may be notable since the company wasn't growing and therefore investors weren't willing to buy Harley Davidson' shares at the current price. Likewise, a positive revenue growth demonstrates an increase in the stock price. S&P500 average return of the last 5 years is 116,58%, a lot compared to Harley Davidson 5-year average - 34,92%. Regarding the average of last year, HD has 7,74% return, while S&P has 39,13%. Even though Covid-19 situation has disputed negative results to the company through shareholder's eyes (as it may be noticed in the above-mentioned values), the company financially surpassed the situation, reporting 4,3\$ billion of revenues for the 1st, 2nd and 3rd quarter of 2021, being 30% above of 2020 (for the same period). For the full year, the company expects Motorcycle segment revenue growth to be above 30%. The business continues to perform well and has an improving earnings outlook. Therefore, we believe that revenues will continue to growth at a constant pace and stock price won't decrease considerably in the next upcoming periods. We perceive Harley stock price as a good opportunity for investors to climb in.



Graph 13



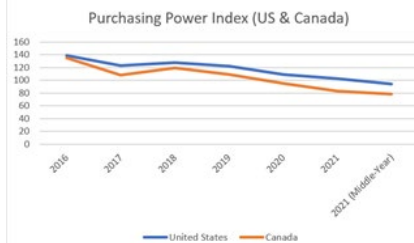
Graph 14

The evolution of the company buyback's is not constant (Graph 14), as there might be a negative relation between the growth of the share price and number of share buybacks. This will certainly be reflected in the future.

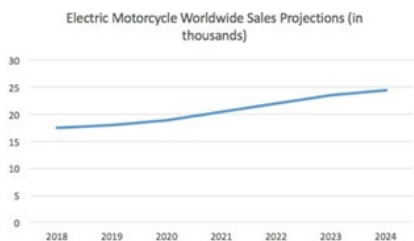
Macroeconomic Environment

This sector is likely to be threatened by the current environmental, economic, and legal trends – these can negatively impact the business results and weaken the value and benefits associated with their products and the companies' user base.

Looking at the economic situation, consumers' purchasing power (Graph 15) will diminish due to the economic recession caused by Covid-19, and therefore so does the demand for leisure motorcycles. Also, as an economic recession is expected due to the pandemic, the economy will be more fragile and, as a result, there will be less availability of credit (European Central Bank, 2021). Even so, if the pandemic doesn't persist in the long-term, the 2008 Recession keeps affecting consumer buying habits – there has been a decline in the purchasing rate of luxury items in the latest years (Freedonia, 2021). These events will poorly impact our expectation on sales growth. Even though we consider that the change on HD strategy will contribute to the company's growth on the following years – and some positive results can already be seen when looking to the Q3 2021 results –, this growth rate won't be as high as the Hardwire Strategy would have planned, mainly due to these unexpected events, which will flatter the growth rate.



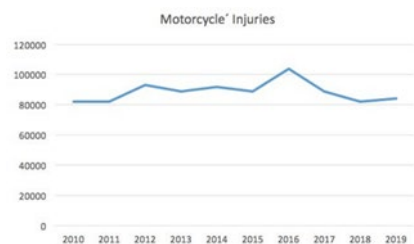
Graph 15



Graph 16

Furthermore, ecological concerns and carbon-regulations pose a major threat to the classic model of a motorcycle. There is an increasing demand for environmentally friendly products – in the motorcycle industry, for motorcycles that have the eco-friendly features with low-carbon lifestyles (Graph 16) – and as a result, companies need to adapt their manufacturing processes to fulfil its customers' needs, by using alternative and more sustainable materials.

Still, the technological advances in electric vehicles, governmental subsidies for decarbonization efforts and international free trade agreements – which ease companies' global expansion – could likewise set out huge open doors for the manufacturers, if they succeed in adapting to these trends soon enough. Moreover, the growing government endorsement of e-commerce enables firms to reach out different markets through online channels (Thompson, 2017).



Graph 17

Technologically, there is now an increasing accessibility of green technologies in the motorcycle industry. Manufacturers are adopting them as most motorcycles do not have high green standards and this is an important decision-making factor for most buyers nowadays (Thompson, 2017). Additionally, technological advances such as anti-lock brakes are making motorcycle riding less dangerous

(Hinchliffe, 2020), which will help to diminish the high rate of fatalities and accidents, and so contradict the belief that many people still have on how dangerous riding a motorcycle is (Graph 17).

The launch of an electric motorcycle is part of Harley Davidson’s (very soon) future plans, as the company intends to invest in the electric market (Hardwire Strategy). As soon as this big move is out in the market, in 2022 as announced, demand will slowly increase as the consumers’ sustainable desire will be fulfilled, contributing positively to the sales growth of the company.

Motorcycles Market

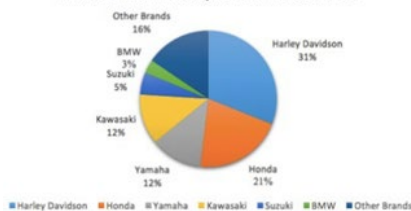
Harley-Davidson’s brand is known worldwide as one of the most relevant companies in the motorcycle market, being the number one player in the US, where the company has the highest market share of the industry (31,1%), followed by Honda (20,8%) (Graph 18). Driven by the rise of personnel income levels and consumer spending in certain areas, the booming of the demand for electric motorcycles and through the integration of advanced analytics and business intelligence the global motorcycle market is expected to witness a positive evolution onto the following years.

In a wider outlook, motorcycles’ global unit sales are about 44130.60 thousand, reaching a revenue in the last year of US\$ 109,087 million. The demand for the motorcycle industry is projected to increase about 4,3% per year until 2024, which is a considerable expansion over the period between 2014 – 2019. The market’s CAGR from 2021 until 2028 is expected to reach 7,2%, resulting in a predictable market capacity of 485.670M\$US in 2028. Regarding Motorcycles’ unit sales, it is expected to reach 60921.57 thousand in 2026, an increase of 38,05%. Harley Davidson is therefore expected to operate in a competitive environment and exposed to several threats.

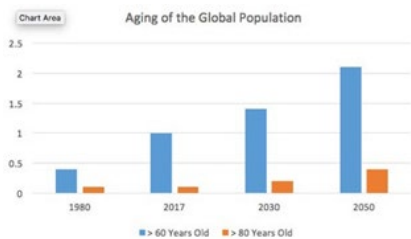
The aging of the population (Graph 19) has been reducing the motorcycles demand, cutting back some of the industry’s growth. Motorcycles turn out to be a less convenient way of travelling as the target customers continue to age and so their physical aptitudes are weaker. As a result, manufacturers are starting to focus on untapped demographic segments to diversify the customer base.

Regarding the market share of the industry by region, the most promising markets are China, India, United States and Japan (Press Release, 2021). Nevertheless, motorcycle production and demand in countries such as India and

Market Share Motorcycle Brands 2020 in US



Graph 18



Graph 19



Graph 20



Graph 21

China have been decreasing, mainly from 2018 until 2020 (Graphs 20 and 21). With the stagnation of production and the demand decline, the introduction of electric motorcycles is necessary, in order to accelerate the market growth. This could be harmful for Harley Davidson in the sense that they may depend more on unexploited markets to assure their new strategy.

Furthermore, steel prices (one of motorcycles' raw materials) have been rising gradually from 2016 onwards. 2021 has also experienced a similar jump on steel prices as the sector did between 2016 and 2017, when prices increased by nearly three times. Every year seems to be more volatile than the last, and 2020 was no exception. This is also a bad sign for motorcycle market.

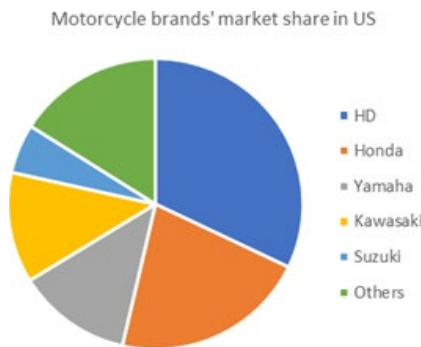
Regarding the positioning map of the industry, Harley-Davidson is considered a premium brand, but unreliable due to regular high maintenance costs and a bad history of breaking that they have already overcome, but reputation still stain for today; while Honda, for instance, is considered less premium but with a high level of reliability (Figure 3).



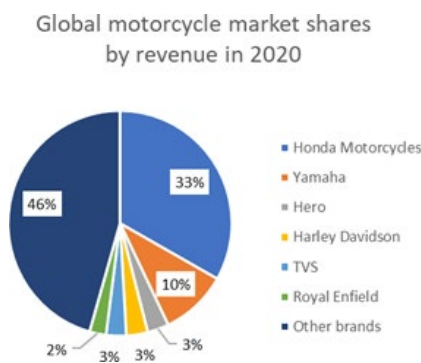
Figure 3

Competitors

Concerning the first Porter Analysis' metric – Industry Rivalry – we can state that Harley-Davidson creates a high level of rivalry within the Moto Industry, mainly due to the large number of strong competitors. The company competes with several large and powerful companies in US such as Harley-Davidson (31,1%), Honda (20,8%), Yamaha (12,2%), Kawasaki (11,9%), Suzuki (5,3%) and BMW (3,2%) (Graph 22). The remaining 15,5% of the market are shared between several smaller brands. On a global scale, Honda is the leader of the market with 33.2% market share in terms of revenue, while Harley-Davidson is on the fourth place with 3.1% market share (Graph 23). Globally, in the future, we believe that the market share of Harley Davidson will increase, not only due to their international expansion concern, but also due to increasing revenues across the several regions.



Graph 22



Graph 23

To start with, **Honda Motor** was a motorcycle manufacturer only. Nowadays, the company also produces automobiles (which constitutes 65% of the revenues) and power products such as boat engines, generators, and lawnmowers. In the past fiscal year – 2020 - Honda sold around 19.7 million cars and motorcycles. Its consolidated sales were JPY 13.2 trillion. Even though motorcycle' sales only accounts for 14% of revenues, Honda is a serious threat for HD, since the brand its known for its quality and popularity in cars worldwide. Therefore, Harley should keep up with Honda in the future, regarding new launch models and

partnerships.

Yamaha is an automobile and electronics manufacturing company. With \$1,471.3 billion per year in sales, the major percentage of the company's revenue comes from the motorcycle segment – approximately 64% -, which produces on- and off-road motorcycles, as well as related motorcycle parts. Yamaha draws most sales from Asia, with North America and Europe as the next most significant markets, which constitutes a risk to Harley Davidson mainly in Asia Pacific, since it is a region the company pretends to expand.

Kawasaki is a Japanese corporation that produces motorcycles, engines, heavy equipment, aerospace and defence equipment, rolling stock and ships, headquartered in Japan (Kawasaki, 2021).

Suzuki is one of the leading Japanese companies in the industry that manufactures automobiles, motorcycles, and their related parts. The company has manufactures in the United States, Japan, Taiwan, India, Pakistan, Indonesia, Thailand, and Hungary, being Japan the leader in sales, accounting for nearly 35% of sales (History of Suzuki, 2021).

BMW is a company that makes and sells automobiles and motorcycles. Automotive, motorbikes, financial services, and other businesses are BMW's business segments. BMW is also the parent company of Rolls-Royce Motor Automobiles and owns and makes Mini cars. BMW, along with Audi and Mercedes-Benz, is one of the "German Big 3" luxury automakers, considered the world's three best-selling luxury automakers (BMW Group, Company, 2021).

The average selling price per motorcycle model per brand is indicated in Graph 24. We can conclude that HD has one of the highest prices in the market.



Graph 24

KPIs (most updated values - retrieved from YahooFinance)				
in thousands	Harley-Davidson	Honda	Yamaha	Kawasaki
ROI	6,48%	7,10%	16,50%	-1,22%
Profit margin	10,55%	6,57%	8,73%	0,15%
Return on Assets	3,98%	3,02%	6,00%	0,96%
Revenues	\$1.532B	\$5.05B	\$1.71T	\$1.54T
Net income	\$0.206B	\$960.81B	\$148.89B	\$2.31B
Operating Expenses	\$1.232.497	\$2.070.622.000	\$290.139.000	\$196.467.000

Table 1

Considering some key performance indicators of Harley Davidson and its peers (Table 1), the company is having a poor performance when compared to Honda and Yamaha regarding the ROI and net income. However, in terms of market size, Harley Davidson is the biggest, presenting the highest profit margin.

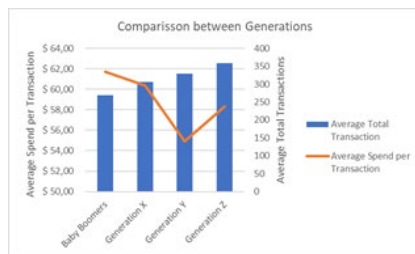
All in all, we believe that Harley will continue to have a highly competitive environment in the future, aligned with a difficult pivot to electrification. Nevertheless, the brand has an enormous value for its clients and a top

management team that can leverage the brand to find “profitable growth”, even during a pandemic time.

Generation Trends

Harley Davidson Target Market was mainly males, aged 55 and above. Their original target was the Baby Boomer Generation (born between 1946 and 1964). With a comfortable income, these consumers identified motorcycling as a passionate hobby and were able to buy expensive vehicles. Due to its portfolio of loyal clients, the brand Harley Davidson built an impressive legacy.

Nevertheless, the company is nowadays more associated with falling sales and loss of prestige. With an additional complicated consumer attraction due to the lower bike enthusiasts and the aging of the Baby Boomers, the firm was forced to expand its target market to younger consumers, between the ages of 22 and 38. The firm wants now to attract Generation X (born between 1965 and 1980) and Generation Y/Millennials (born between 1981 and 1996). In Graph 25, we can see how Baby Boomers Generation, despite being the one with the highest average spend per transaction (\$), is the one with the lowest number of total transactions. This target is composed by motorcycle supporters and non-riders with above-average income. To attract young consumers and convert them into loyal ones may be demanding since younger riders generally buy these vehicles for convenience and ease of transportation, not exactly due to the status of the brand or for recreational purposes. Therefore, it will be challenging for Harley Davidson to fully engage the brand perception into the consumer profile, since the firm wants its consumers to feel the community experience rather than just riding a motorcycle.

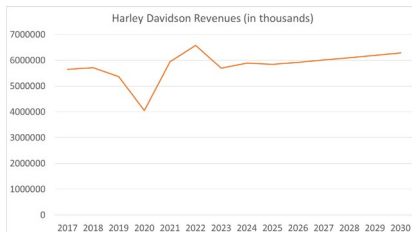


Graph 25

The main question for Harley Davidson is whether they are going to bring in Millennials at such a pace to be able to offset the lost sales from Baby Boomers, who are approaching the retirement age.

We believe that Harley Davidson will be able to update and reposition its brand into the new set of customers. Firstly, a new electric model (The “LiveWire One”) was already launched and will be available for purchase in 2022. We believe that Harley Davidson should build the “LiveWire” as a stand-alone brand, since may not appeal to Harley core customer demographics, leading to brand diluting if kept together under the same umbrella. It will be quite a long process since the market is yet limited (lack of fast charge infrastructure) and the bike will only be available in 12 dealerships spread over 3 states. Nonetheless, it is a good start to attract the younger generation. Furthermore, according to the Hardwire Strategy,

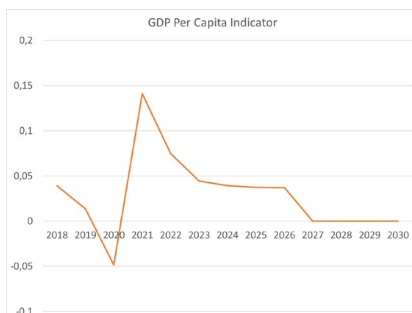
the company wants to focus on customers, creating customized products, services, and experiences. The Hardwire Strategy puts customers at the forefront of the company’s products - from riders who are not fully familiar with the brand and just learned how to ride a motorcycle, until loyal clients who are passionate about this lifestyle. We also believe that – in a near future - the company should invest in models related to young people and their practical lifestyle, such as the Street and the Sportster Model, selling these models mainly to US and Europe. Considering the assessment of the success of the electric model will take years, we believe the company shouldn’t depend on those sales for the next 2-3 years.



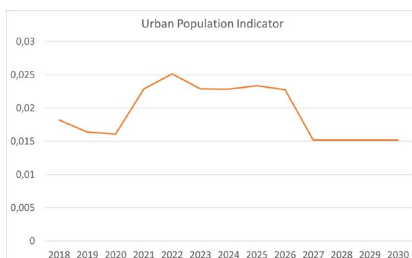
Graph 26



Graph 27



Graph 28



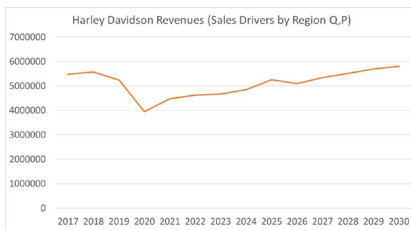
Graph 29

Drivers and Forecasting

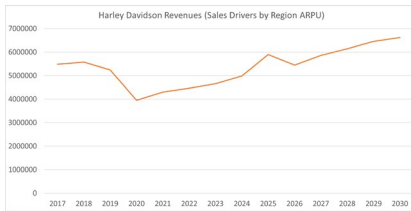
Revenue Value Drivers

Harley Davidson’ revenues (Graph 26) are defined by the number of customers and the respective ARPU (Average Revenue per User). Revenues’ forecast was estimated through the variation of the inflation rate (which affects ARPU, since average sale prices will increase as inflation also increases), the variation of GDP per capita and the variation of the urban population indicator (both affect the number of customers) (Graphs 27, 28 & 29). We believe that these 3 indicators reflect an accurate forecasting strategy, since macroeconomic conditions (mainly in US, unquestionably the most relevant operating region for Harley) will have a major impact on the company’s profitability. Any change in motorcycles’ demand could affect the financial performance of the company. A macro slowdown could disturb sales for the overall industry, affecting the company’s ability to generate positive gross margins. It could also result in poor credit lending, leading to negative consumer impression. Additionally, even though motorcycle’s market will somehow change in the future due to developments in novel technologies (improving robotic efficiency, accuracy, and consistency), it is a market which growth has been consistent throughout the years and will continue to be.

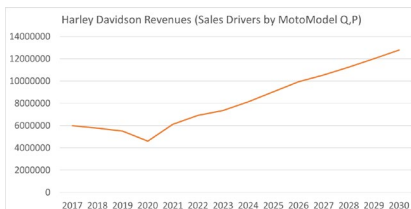
All the three indicators were predicted based on 5-region average where Harley Davidson operates (US, Canada, Latin America, EMEA and Asia Pacific), being the ones considered throughout the Work Project. The company is split into two segments: “Harley Davidson Motorcycle Company” (HDMC) and “Harley Davidson Financial Services” (HDFS). HDMC is divided into “Motorcycles”, “Parts & Accessories”, “General Merchandise” and “Others”. Until 2020, Motorcycle segment was the one generating more revenues to Harley Davidson. However, this percentage has been dropping over the last 4 years, being compensated with an increase in the percentage of Parts & Accessories.



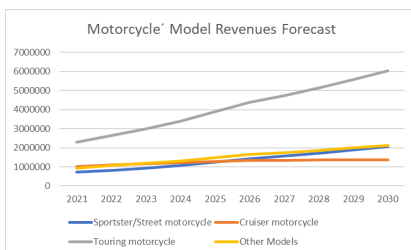
Graph 30



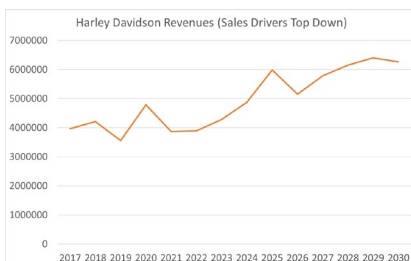
Graph 31



Graph 32



Graph 33



Graph 34

In the past, Harley Davidson revenues experienced its highest levels closely to regional riding seasons, since at this time of the year the company’s wholesale motorcycle shipments are often higher. This seasonality is usually correlated with the timing of retail sales made by independent dealers (HD Annual Report, 2020). Last year, retail sales of new motorcycle models have dropped by 17.4% when compared to 2019, being this one of the highest decreases felt in the company in the latest years. Due to Covid-19, retail sales were negatively affected in Q1 and Q2 of 2020, as the company briefly interrupted its manufacturing operations and independent dealers closed their own stores. On top of that, during 2020, the company's choice to hold-up from Q3 to Q1 the launch of its annual new model highly impacted wholesale shipments and retail sales - as a result, the first shipments of this model only happened in Q1 of 2021, which contributed to the decrease in 2021 revenues (HD Annual Report, 2020). Overall, this decrease in revenue was mainly due to a decrease in volume as there were lower wholesale motorcycle shipments, as well as lower P&A and General Merchandise sales. As an additional note, foreign currency exchange rate relative to the US dollar was weaker, which negatively affected revenues.

Besides the previously mentioned sales drivers, we also choose to pursue several perspectives to be able to evaluate HD revenues’ through many indicators and through several segments (such as Regions, Operating Sectors and Motorcycle Model) (Graph 30 and 31). Likewise, we performed an analysis of the revenues from each motorcycle sold (Graph 32 and 33) (Sportster/Street Motorcycle, Cruiser Motorcycle, Touring Motorcycle and Other Models). Lastly, we performed a “Sales Drivers Top Down” (Graph 34) approach based on each region.

MOTORCYCLES

In comparison to its competitors, Harley Davidson feels its motorcycles keep attracting a higher retail price.

Motorcycle segment represented 72% of the company’s revenue in 2020. By 2030, Motorcycle’s revenues are forecasted to be 3.644.813,03\$, indicating that the company will recover from the decline felt in the past 4 years in the long-term, since the revenues from this segment were 3,823,891\$ (the highest value from 2017 until 2020).

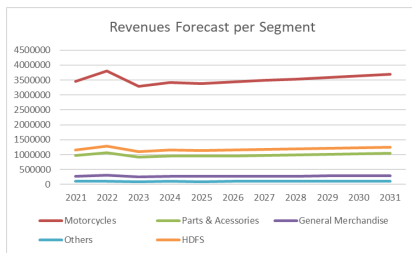
As a consequence of Covid-19, motorcycle shipments decreased by 32,1% in 2020, when compared to 2019. This turndown reflects the provisional closure of many independent dealership points in Q1 and Q2 of 2020, as well as the layoff of the company production operations. Touring motorcycles as a percentage of

total shipments decreased during 2020, while the % of Sportster/Street Motorcycles increased compared to 2021 (Harley Davidson report).

Motorcycle' revenues will slightly increase from 2021 until 2030, based on our forecast. Regarding the evolution of sales per motorcycle model, the same will happen. Additionally, we believe that "Pan America Motorcycle Model" will significantly contribute to the segment growth, as it is part of the Adventure Touring Segment which is expected to grow just like it has been rising since 2017.

PARTS&ACCESSORIES, GENERAL MERCHANDISE, OTHERS

"Parts & Accessories", "General Merchandise", "Others" and "Financial Services" Sectors Revenue are expected to grow at a positive similar rate (from 2021 on), following the same growth trend, as we can see in Graph 35. They are all fundamental to the company's ultimate and worldwide success. The company intends to boost the profitability of these businesses through the "Hardwire Strategy" by including new product and program offerings, improved execution, and more digital and in-dealership purchase options (HD Annual Report, 2020).



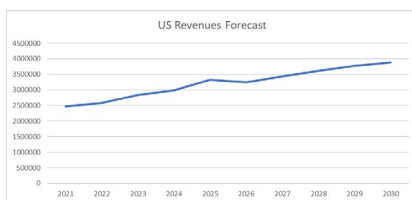
Graph 35

HDFS

"Financial Services" segment primarily consists of financing wholesale inventory and retail consumer loans, mainly for the purchase of the motorcycles (HD Annual Report, 2020). Inventory levels at independent dealers, who in general have more inventory in both Q1 and Q2 of every year, have an impact on wholesale financing. Usually, between mid-March and August, the retail financing sector experiences the highest volumes (HD Annual Report, 2020). One of the Hardwire Strategy goals is to double-digit the company's growth in FS segment operating income from 2021 until 2025. Financial Services income guidance raised between 95% and 105%, compared to the previous results (between 75% and 85%), driven by lower interest expense. Additionally, Q3 2021 retail credit losses were 0,84%, compared to Q3 2020 annualized credit loss of 1,40%. We also note that Harley extended terms for payment due dates, which avoids having to recognize loans as delinquent. All in all, despite the risks this segment represents – such as the management of the credit portfolio and increased competition environment – and the setback due to Covid-19, we expect that the company will be able to achieve the goal mentioned in the Hardwire Strategy.

UNITED STATES

Looking at each region in detail, United States is where Harley Davidson has the biggest presence in the market (66% of HD revenues in the past years), as this is reflected in the company's revenues. Harley Davidson has a lack of international



Graph 36

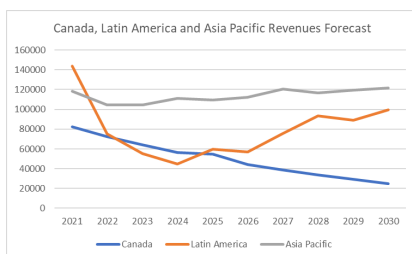
appeal, and as such this is reflected in its revenues. This tendency could be somehow changed in the future, with more promotional campaigns and/or incentives, as the company would be more internationally present. It is a challenge that HD is trying to overcome. For instance, in international markets, the company uses third-party eCommerce websites and third-party financial institutions which provide products for Harley Davidson's retail clients, such as finance and insurance, not being a more accurate and direct way to represent the company's products to its customers. Furthermore, there are additional risks associated while performing the operations in international markets, such as political risks, economic volatility, local labor market conditions, imposing foreign tariffs and other trading barriers, and the impact of both foreign and US government legislation and regulations to apply to international operations. This could represent a risk for Harley Davidson; therefore, it is recommended that the US continues to be the region that most contributes for the company success, but for the company to not be highly dependent on it.

We expect the percentage of US revenues to increase (+21% from 2020 to 2021). US customers are expected to increase as both US population indicator and US GDP per capita indicator are forecasted to increase, according to the International Monetary Fund (IFM Datamapper, 2021). In the long run (from 2030 onwards), we expect that the US market will slowly be shrunk, giving space for the other existing regional markets to grow and develop (-13% from 2030 to 2035) (Graph 36). The US market will still be a priority to the company, but at the same time HD will concentrate efforts to expand other markets.

When developing the sales drivers by region perception, HD revenues were based both on the number of customers and on the number of units sold. In both perspectives, US sales will rise until 2030.

CANADA

Canada accounts for a small part of the revenues for Harley Davidson. Based on the number of customers, Canada sales will decrease in the future (Graph 37), following the fact that the ARPU will keep decreasing in this country. Based on the number of units sold, the forecast will be the same. Consequently, Canada will be the less significant region for the company in the future, and Harley will prefer to concentrate itself in other regions.



Graph 37

ASIA PACIFIC

In terms of unit sales, Asia Pacific is the biggest marketplace in the world for the motorcycle industry. In June 2020, motorcycle sales in China reached about 1.3 million units. Until now, Harley Davidson hasn't made its own mark in this

regional market. APAC is the third regional market in the ranking of independent dealership points, coming after the US and EMEA, and followed by Canada and Latin America. With this, Harley Davidson planned to take different measures to penetrate this regional market: the company partnered both in China – Qianjiang Motorcycle Company to build more suitable motorcycles to the market – and in India – Hero MotoCorp to try to regain the lost market share in India. Rising incomes in India gives potential for the premium bike market (Mukherjee,2020).

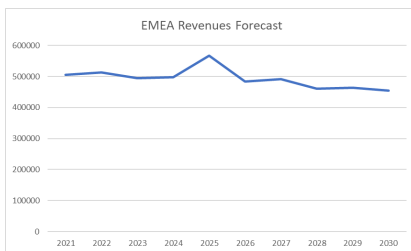
Despite Harley Davidson efforts, we believe that these measures will not have that much impact in APAC. Harley Davidson announced that it is looking to wind down its assembly operations in India, because of the weak sales in this country and a poor future perspective. The company believes that the profitability doesn't support the continuous investments in line with the future strategy. Based on our forecast – and in line with the company strategy – Asia Pacific revenues will decrease (Graph 37), both based on the customers base (-22%) and quantity sold (-14%).

EMEA AND LATIN AMERICA

Meanwhile, the EMEA region accounts for the second largest region as percentage of Harley Davidson revenues until 2025. From 2026 onwards, this region is surpassed by Latin America, which highly increases its growth rate.

Regarding Latin America, revenues are expected to decrease by 69% from 2020 to 2024 and then, in the long term, our expectation is that revenues will increase by 67% from 2025-2030, recovering from the previous decline.

Meanwhile, EMEA revenues will decrease (-14% from 2020 to 2021) in short term and in the long term (-10% from 2020 to 2030) (Graph 38), according to both perspectives. Weather may influence retail sales of independent dealers. As motorcycles are vehicles that don't account for any protection of the driver in terms of weather conditions, unusually cold or wet conditions in a specific region (such as Middle East and/or Africa), may affect the demand of motorcycles for that specific region and adversely impacting sales.



Graph 38

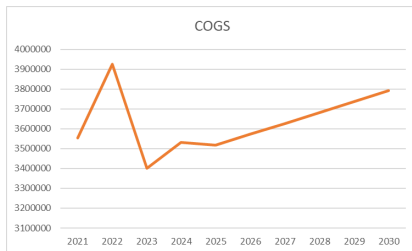
Operating Costs

Harley-Davidson has its cost structure highly dependent of its Costs of Goods Sold (COGS) and SG&A.

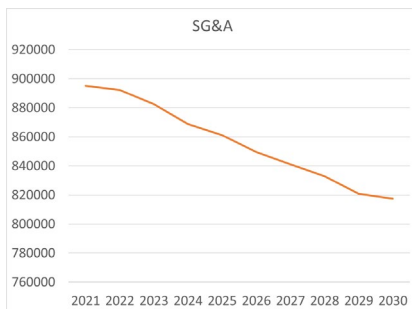
From 2019 to 2020 operating expenses decreased from 3,305,700\$ to 2,500,322\$. This happened primarily due to a lower employee cost caused by a decrease in the number of employees (5000 to 4600), a reduction in the incentive-based compensation cost and due to a lower discretionary budget, as the company was forced to put a lot of effort in managing its own costs as a response to the COVID-19 pandemic (HD Annual Report, 2020). However, this reduction was in part cancelled out by an increase in restructuring spending and, as so, even though operating expenses decreased, revenues also decreased in the same period. Moreover, manufacturing and other costs were negatively affected by an increase in the fixed cost per unit on lower production volumes. We expect the inflation cost of 6% of raw materials and components in Q3 2021 will continue in Q4. Also, there were incremental tariff costs imposed by European Union and China in the beginning of 2018 on Harley Davidson products shipped from the US and on specific items imported from China. In 2020 HD paid \$24.5 million in tariff costs and in 2019 the company paid \$97.9 million – these costs were reduced in 2020 as the company started to ship to EU motorcycles produced in its Thailand facilities, and so reduced the cost of tariffs.

However, from 2020 onwards, COGS are forecasted to increase, according to our estimate of the future (we estimated COGS as a % of revenues) (Graph 39). This forecast is not only based on the increase of steel prices worldwide, but also on the inflation expected for the following years. Likewise, average selling prices will also increase, avoiding gross margin to decline. With the objective of trying to avoid some of these costs, Harley Davidson motorcycles have standardized designs and key components, even though the brand still offers wide customizations. Additionally, to avoid surplus, it is noticeable that Harley has been cutting production for the last 6 years. Therefore, HD planned production cuts are more related to the continuation of the shipment cuts.

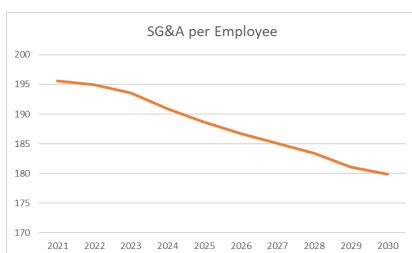
SG&A is composed by salaries and personnel-related costs. SG&A was forecast based on the number of employees and the SG&A per employee (Graph 41 and 42). Despite the labour cost inflation of 3% in 2021, SG&A costs are expected to slightly diminish over time (Graph 40), mainly due to the decreasing number of employees throughout the years. We believe in the accuracy of this forecast for the following 5-10 years as the Hardwire strategies include a workforce reduction and restructuring expenses, related to both employee and contract termination costs.



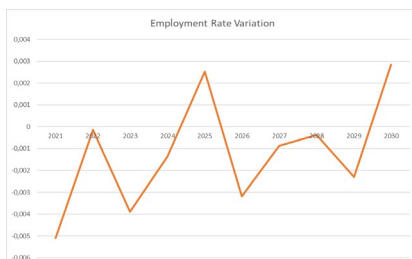
Graph 39



Graph 40



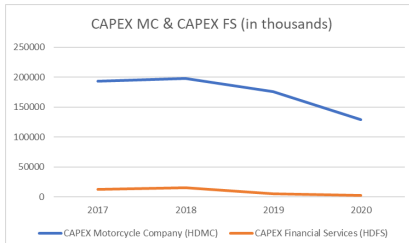
Graph 41



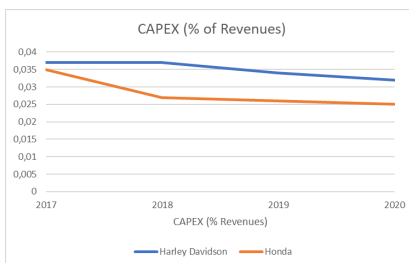
Graph 42

CAPEX

Every year, Harley Davidson needs equipment to manufacture its motorcycles, therefore it must spend money in replacements and/or repairs. This reduces the cash flow of the company.



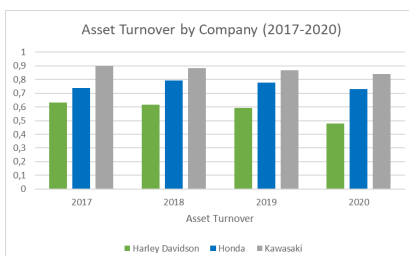
Graph 43



Graph 44

By looking at Graph 48, we can see how the CAPEX allocated to both HDMC and HDFS develops throughout the years. Naturally, HDMC is where more spending on physical assets is allocated, as this segment manufactures all the motorcycles, parts & accessories. So far, the highest value for CAPEX in HDMC was almost 200,000\$ (2018) and for HDFS was about 15,000\$ (2018). Regarding CAPEX in HDFS, it showed a big decrease from 2017 to 2018 (~56%) and from 2018 to 2019 (~67%). Based on The Hardwire Strategy, capital Expenditures are expected to have values between 190\$M and 220\$M, showing a moderate increase from 2019 to 2020. Regarding % of revenues, Harley Davidson has a higher percentage than its major competitor, Honda (Graph 43 and 44). We also expect Capex values to increase in the future, not only due to the reclassification of Opex vs Capex, but also due to their recent announcement – “cash allocation priorities are to reinvest in the business, then pay dividend and only then to perhaps repurchase shares” (in 2021 and 2022).

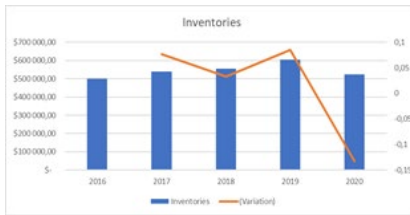
Lease assets only appeared in this company in 2019 (61,618,000\$), showing a 36% decrease in 2020 (45,203,000\$). On the 1st of January of 2019, the company adopted “Accounting Standards Update 2016-02 Leases” (New Accounting Standards) using the modified retrospective method. As a result, the company recognized a \$60 million right-of-use lease asset and a matching lease obligation. It is important to state that most of the equipment and real state a company requires to operate is leased (rather than bought). Leasing has indeed several benefits, such as deploying the cash saved towards other investments that will grow in value, as well as the restorage of aged equipment with newer technology on a regular basis, boosting the productivity and profitability. Lease assets also impact ROIC, making it lower (9,14% in 2018 and 7,81% in 2019).



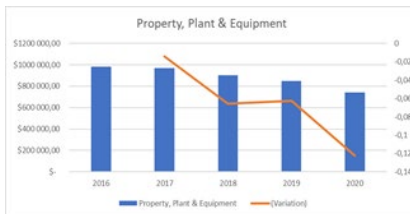
Graph 45

Harley Davidson's asset turnover has showed a decrease from 2017 until 2020 (mostly from 2019 to 2020). This is a bad sign, as this ratio can be used as an indicator of efficiency reflecting how the company is using its assets to generate revenue. Harley Davidson, in comparison with its peers (Honda and Kawasaki) has the lowest asset turnover ratio (2017 to 2020). Kawasaki has been the one with the highest ratio (in the 4-year range), being always above 80% (Graph 45).

Net Working Capital



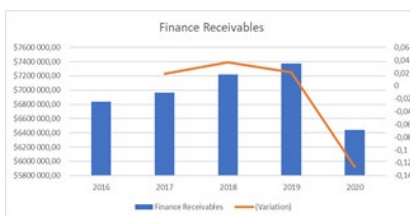
Graph 46



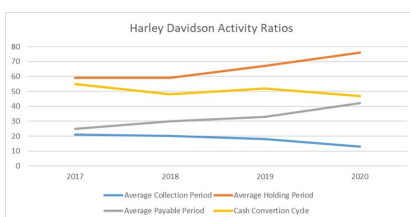
Graph 47



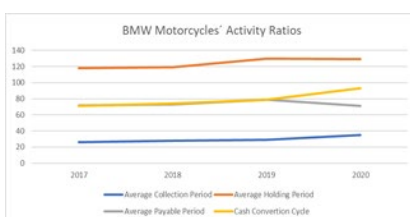
Graph 48



Graph 49



Graph 50



Graph 51

The most relevant captions from the Net Working Capital in 2020 are Finance Receivables (6,443,008\$), Operating Cash (1,177,890\$), Property, Plant and Equipment (743,784\$) and Inventories (523,497\$). By looking at Graphs 46, 47, 48 and 49, we can see the variation (in %) for these captions throughout the past years.

By looking at Graphs 50 and 51, we can observe the evolution of short-term activity ratios both for Harley Davidson and its competitor BMW Motorcycles.

HD's average collection period is quite low (has been decreasing from 2017 to 2020), being positive for the company. Everything else being equal, the company doesn't have to allocate resources to pay other external sources since clients will pay soon. In BMW case, this indicator is also quite low.

We can also comment on the high levels of the average holding period (low turnover ratio) of both companies (76 days for HD and 129 days for BMW Motorcycles, in 2020). Naturally, the Motorcycle Industry needs to sustain a higher turnover ratio (low average holding period), since holding goods in this highly competitive industry – evolving several areas – can be extremely costly. Therefore, both these companies have higher values than they should have, which brings several consequences, such as the pressure of the cash flow and the need to get external funding. Also, this metric is experiencing a rise throughout the last 4 years, being positive for the future of the company.

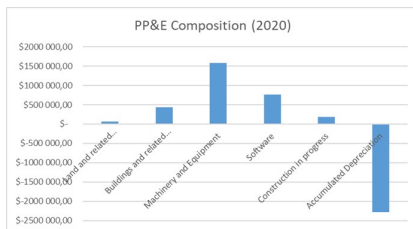
The Average Payable Period represents the average number of days that it takes for the company to settle with its suppliers. The longer a company must pay to its suppliers, the less pressure it puts on its cash flow. This indicator in HD has been increasing, being positive for the company (25 days in 2017 to 42 days in 2020). Nevertheless, this indicator in BMW Motorcycles is much higher, being better for the latter company.

Regarding the inventories, we can see an increase from 2017 to 2019 and a decrease of 13,27% from 2019 to 2020. Despite this reduction, the Average Holding Period in HD increased about 13%. The decrease from 2019 to 2020 might have been justified by the JIT (Just in Time) Inventory System. The company implemented this system many years ago, with the goal of reducing inventory waste while increasing productivity, by quickly locating and solving manufacturer inefficiencies. Additionally, Harley Davidson reported a major decrease (48%) in new motorcycle shipments during the 4th quarter of 2020. This happened to adjust some errors that had already happened in the past, such as the excess of shipments which led to an offer surplus (compared to the

level of demand they had back then). The reduced shipments resulted in a decrease in inventories, which eventually led to higher final prices for the motorcycles sold. This strategy was built under new CEO of the company, Jochen Zeitz, to drive up retail prices and eliminate model year-end discounting due to excess inventories. For the future, we believe that Harley Davidson will need to manage inventory levels to be structurally lower compared to Pre-Covid Period (avoiding production surplus) which can help pricing power.

From 2019 to 2020, there was an increment in the operating cash flow mainly due to a positive variation in the working capital, owned by the lower levels of accounts receivable and inventory, as well as positive cash flows resulting from a lower wholesale financing activity because of lower loan originations.

PP&E has been decreasing from 2016 to 2020, starting with a 1.41% decline from 2016 to 2017 and ending up with a 12.23% decline from 2019 to 2020. One of the reasons why Harley Davidson’s PP&E is not increasing could be because the company doesn’t need to constantly upgrade its equipment to stay competitive – HD already has a durable competitive advantage. Instead, the company only replaces it when it wears out. By looking at Graph 52, we may observe the composition of PP&E of Harley Davidson in 2020. The sectors with the highest weight are: Accumulated Depreciation and Machinery and Equipment. Given the cost of depreciable assets of 2,765,183\$ (calculated with 428,171\$ in Buildings, 1,577,337\$ in Machinery and Equipment and 759,675\$ in Software) and 2,279,740\$ of accumulated depreciation, PP&E is 82% depreciated assuming straight line depreciation. We may conclude that Harley-Davidson’s PPE is older than we would expect assuming a regular replacement policy.



Graph 52

Equity and Debt

Harley Davidson’s D/E ratio (4,04 in 2020) means that the debt is 4,04 times higher than the equity. Regarding last year, Harley Davidson had 5\$ of debt for every 1\$ of equity, which results in a highly leveraged company and mainly dependent on debt financing.

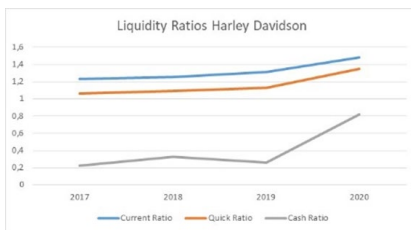
Regarding the competitors, Honda is a less leveraged firm, finishing 2020 with a D/E of 1,42 and Kawasaki had a ratio of 3,47 (see exhibit x). Looking at the median, we may see that Harley has a higher leverage ratio than the industry’s median. Furthermore, it is also stated that the average D/E ratio of “motorcycles, bicycles and parts” industry was 0,71 in 2020.

The company showed a historical Debt over Asset ratio between a range of 70% and 75% from 2017 to 2020 (see exhibit z).

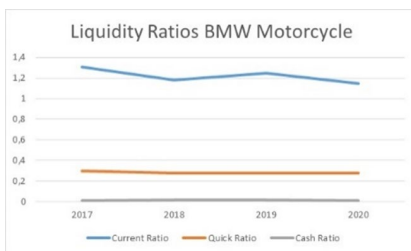
There are some risks for a firm to be highly leveraged since it can indicate a low borrowing capacity and borrowers may consider this firm not suitable to meet its obligations when it should. This might lower the firm’s financial flexibility. Nevertheless, there are some advantages in having a leveraged firm, such as the tax breaks. The tax return is deductible, and the amount of the interest paid on the loan reduces the total amount of taxable income for business. Therefore, it also reduces the effective cost associated with borrowing money for business purposes.

In 2020, HD had a current ratio of 1,48, which means that the firm was able to use its short-term assets to meet short term obligations. In our comparison with BMW Motorcycle company, we may even see that HD is doing better in terms of liquidity than BMW Motorcycles (Graph 53 and 54). Nevertheless, it is important to state that Harley Davidson is a company with a high value of operating cash and inventories, therefore it is normal that its short-term assets are high. We must evaluate other metrics to see if the company actually has a high liquidity position in the market. The quick ratio is also higher than 1 from 2017 until 2020. We considered that the firm has a positive liquidity position. Finally, we can see that the cash ratio of the entity is below 1 in all years (2017 – 2020). This indicates that the firm has no ability to meet its short-term obligations using only the cash that is currently available in the company. Comparing to the ratios from the Motorcycle Industry, HD is worse than the average in 2018, 2019 and 2020 in terms of the current ratio and slightly equal in terms of quick ratio and cash ratio (Graph 55). Furthermore, HD has a high Gearing Ratio (about 80% from 2017 until 2020), meaning that 80% of the invested capital of the company is financed with debt.

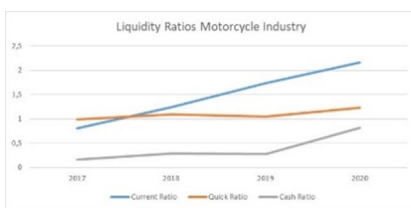
Concluding, the position of the firm liquidity is positive (due to the analysis on the Current Ratio and on the Quick Ratio), nonetheless it is getting each time more dependent on the execution of its current assets (selling inventories or receiving from clients, for instance). If these two operations don not happen as expected, the company will have a worse liquidity position than it had 2 years ago. From a liquidity perspective (short – term), we may state the company is doing fine. From a capital structure perspective (long – term), the company’s position is not that positive due to the high level of D/E and D/A. This may be confirmed with the low value of the solvency ratio (decreasing from 23% in 2017 to 17% in 2020). A low solvency ratio means that the company is at risk of defaulting on its own debt. The fact that HD continues to finance itself with debt it is not the best idea because it may not be able to repay its long-term debt to its borrowers.



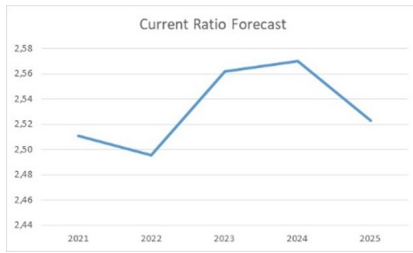
Graph 53



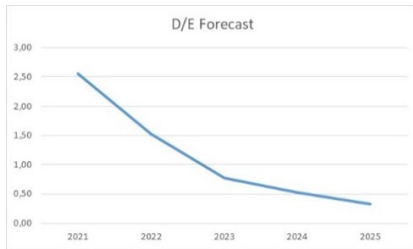
Graph 54



Graph 55



Graph 56



Graph 57

Through Graph 56 and 57, we may observe the forecast of the Current Ratio and the D/E ratio. According to this, the entity will rely less on debt to leverage itself in the next 5 years.

Valuation

DCF – Intrinsic Valuation

We apply a 10-year DCF model as our primary valuation tool for HOG. We believe a DCF captures HOG's intrinsic value, driven by its strong FCF generation, always taking into account Harley Davidson's past performance, and the work developed on its value drivers, relevant inputs and assumptions. We use a 2021 to 2030 WACC of 5,8% and a terminal growth rate of 0.50%.

We estimate the cost of equity to be 8,91% (Table 2). This estimate is derived by the beta of 1,351, a Market Risk Premium of 5,5% and a risk-free rate of 1,48%. The risk-free rate was the last observed rate of 2021 of the US 10-year Treasury Yield and so we considered this percentage as a proxy for our risk-free rate, as the US is Harley Davidson's main regional market. We considered a MRP of 5,5%, recommended by Duff&Phelps. Regarding the levered beta, this was computed with data ranging from January 2011 until December 2020, considering monthly returns and the above mentioned 10-year Treasury Yield – after un-levering and re-levering the beta, we reached a 1,351 levered beta for Harley Davidson. When comparing with competitor's betas, our beta is within the competitors' betas range [0,96; 2,4].

RE Calculation	
rf	1,48%
MRP	6%
Levered Beta	1,351
Re	8,91%

Table 2

RD Calculation	
Bonds Yield	3,99%
Recovery Rate	45%
LGD	55%
Cummulative PD (8 years)	4,65%
PD (Annualized)	0,570%
Rd	3,73%

Table 3

WACC Calculation	
Rd	3,73%
Re	8,91%
Equity (Mkt Cap)	\$ 5 864 000,00
Debt (Mkt Value)	\$ 7 280 000,00
Income Taxes	21%
WACC	5,61%

Then, we estimate the cost of debt to be 3,7% (Table 3), derived by the probability of default of 0,57% - according to the available data in Moody's and S&P –, loss given default of 55% - considering our credit rating – and a 3,99% return on Harley Davidson's bonds yield to maturity. As Harley-Davidson most recent notes are either medium-term notes – with the biggest maturity date to be July 2025 – or senior notes – mature in July 2045, we assumed an average of these two rates to be our 10-year bonds yield.

Harley Davidson plans to maintain a high level of debt, reaching a market debt-to equity ratio of 55%. Taking all these inputs into account and considering the current US statutory tax rate 21%, we reached a cost of capital of 5,61% (Table 4).

To account for risk and capital structure considerations, all FCFs and terminal value were discounted at the WACC. The cash flows were calculated over a 7-year period, from 2021 to 2029, using the long-term growth rate and then a

growing perpetuity model. In order to calculate the terminal value, a perpetuity growth formula was applied to the last projected FCF of 2029.

Table 5

(in thousands)	Discounted Cash-Flows (DCF)							
	1 2023	2 2024	3 2025	4 2026	5 2027	6 2028	7 2029 Terminal Value	
Free cash flow	\$ 2 456 708,76	\$ 744 345,98	\$ 1 021 580,97	\$ 1 042 893,11	\$ 943 398,98	\$ 942 450,21	\$ 962 136,94	\$ 18 931 494,48
DCF	\$ 2 326 261,03	\$ 667 397,21	\$ 867 335,47	\$ 838 414,69	\$ 718 156,76	\$ 679 339,77	\$ 656 704,94	\$ 12 921 659,42

After analysing Harley Davidson’s Return on Investment, it is possible to have the perception of the company using its capital to generate returns. We can say that Harley Davidson will be able to generate some value for its investors during the following years. The positive ROIC along with the high investment rate of the company produces a positive long-term growth rate of 0,5%.

Considering all these factors, the Core Enterprise Value is \$18M. By discounting non-core liabilities - \$140K - and net debt -\$6M – to non-core assets – \$90k –, and adding this to the core enterprise value, Common Equity Value of \$12M. Having 154K shares outstanding, we calculate a target price per share of \$78,76.

As of 16th December 2021, Harley Davidson current stock price is \$38,02. Our share price through the DCF method is \$78,76. Our final recommendation is then a BUY recommendation, as the stock price is undervalued and so any investor will have a positive return, according to our analysis.

Multiples – Relative Valuation

We conducted a Multiples Valuation approach - a comparable analysis method that seeks to evaluate similar companies using the same standardized financial metrics. For this approach, Harley Davidson was compared with Polaris, Triumph Bikes, Yamaha Motorcycles and Honda, as we believe these are similar companies selling goods in the market at relatively similar prices. Before concluding the final indicators to use, we performed an analysis on EV/EBITDA; EV/EBIT; EV/Revenues and P/E. We then reached the conclusion that EBIT is a better measure than EBITDA, since the latter one doesn’t consider the investments made by the company. As a result, P/E and EV/EBIT are the best multiples to perform our analysis.

Harley Davidson’s EV/EBIT is 13,16 (Table 7), higher than the mean of the peers – 8,295. According to that perspective, the estimated target share price is 55,50\$ (Table 6), confirming that the company is undervalued.

HD EBIT 2021	\$719 447,00	HD Earnings 2021	\$532 840,00
EV/EBITDA (Median)	11,88	Price/Earnings (Median)	10,19
EV/EBITDA (Lower)	8,245	Price/Earnings (Lower)	6,575
EV/EBITDA (Upper)	19,78	Price/Earnings (Upper)	28,73
Equity Value	\$8 547 030,36	Equity Value	\$5 429 639,60
Shares Outstanding	154000	Shares Outstanding	154000
Share Price	\$55,50	Share Price	\$35,26

Table 6

Name	EV/EBITDA	EV/EBIT	EV/Revenues	P/E	Price-to-sales
Polaris (US)	13,05	19,78	1,46	28,73	0,83
Triumph Bikes (UK)	5,16	7,57	0,88	5,81	NA
Yamaha Motorcycles (Japão)	7,67	10,27	0,73	11,51	0,64
Honda (Japão)	7,3	13,49	0,69	8,87	0,39

Summary					
	EV/EBITDA	EV/EBIT	EV/Revenues	P/E	
Min	5,16	7,57	0,69	5,81	
Max	13,05	19,78	1,46	28,73	
Median	7,49	11,88	0,81	10,19	
Mean	8,295	12,7775	0,94	13,73	
Harley Davidson	13,16	67,40	2,46	10,62	

EV (Median)	72447,315	14986,52	7791,535	-	Avg EV (Mean)
EV (Mean)	80287,305	123673,4225	9098,26	-	71019,66
Share Price (Median)	-	-	-	\$0,09	-
Share Price (Mean)	-	-	-	\$0,12	-

Harley Davidson	
EBITDA	\$3.679,00
EBIT	\$3.679,00
Revenues	\$4.054.377,00
Net Debt	\$7.990.944,00
Net Income	\$1.298,00
#Shares Outstanding (in thous.)	154000

Table 7

Harley Davidson’s Price-to-Earnings is 10.62, which means that an investor is willing to pay 10.62\$ for 1\$ of current earnings. The P/E benchmark of the Motorcycle Industry is 20.4 and the benchmark for US companies is 15. Harley-Davidson's P/E of 10.62 indicates relatively low sentiment towards the stock. Furthermore, the mean estimated for the peers is 13,73, confirming the small P/E for the company (Table 7). According to P/E perspective, HD’s target share price is 35,26\$ (Table 6), not considered to be undervalued when compared to the current market share price – 38,02\$.

By looking at the indicator ROIC, we might have a negative view on the company, as HD did not exhibit good values from 2018 to 2020. The benchmark of the industry for ROIC is 10,10%, being negative for Harley Davidson as it is below this average.

Furthermore, a calculation of Harley Davidson’s share price based on the median price-to-sales ratio of the 4 competitors was performed (Table 8). The result for the share price was 24,71\$. By looking at the graph below, we can also see the individual comparison between Harley Davidson and its peers – the analysis based on the P/S ratio of each company reflects a share price of 32,04\$ for Polaris; a share price of 24,71\$ for Yamaha; and a share price of 15,06\$ for Honda. Therefore, the share price of Harley Davidson is considered overvalued according to this perspective.

Individual Comparison between Harley Davidson and peers									
	Polaris (US)		Triumph Bikes (UK)		Yamaha Motorcycles (Japão)		Honda (Japão)		
Sales 2021	\$5 945 294,57		\$5 945 294,57		\$5 945 294,57		\$5 945 294,57		
Polaris Price/Sales Ratio	0,83		Triumph Price/Sales Ratio	N/A	Yamaha Price/Sales Ratio	0,64	Honda Price/Sales Ratio	0,39	
Equity Value	\$4 934 594		Equity Value	N/A	Equity Value	\$3 804 989,53	Equity Value	\$2 318 554,88	
Shares Outstanding	154 000,00		Shares Outstanding	154 000,00	Shares Outstanding	154 000,00	Shares Outstanding	154 000,00	
Share Price	\$	32,04	Share Price	N/A	Share Price	\$	24,71	Share Price	\$
									15,06

Table 8

Finally, we performed a Football Field analysis (Table 9), reaching the conclusion that the company is stated as undervalued, as the target share price is 71,03\$ according to an average between Harley Davidson’s EBIT and DCF and 60,91\$, according to an average between Harley Davidson’s Earnings and DCF.

Football Field					
Relative Valuation Methodologies	Median	Lower-Bound	Upper-Bound	Bounds Diferential (Median-Lower)	Bounds Diferential (Upper-Median)
Equity Value					
Multiples Valuation (EBIT)	\$8 547 030,36	N/A	\$14 230 661,66	N/A	\$5 683 631,30
Multiples Valuation (Price to Earnings)	\$5 429 639,60	N/A	\$15 308 493,20	N/A	\$9 878 853,60
DCF	\$13 329 592,30	\$13 329 592,30	\$27 226 751,97	\$0,00	\$13 897 159,67
Valuation Average (1)	\$10 938 311,33	-	-	-	-
Valuation Average (2)	\$9 379 615,95	-	-	-	-
Shares Outstanding	154 000,00				
Share Price (EBIT vs DCF)	\$71,03				
Share Price (PE vs DCF)	\$60,91				

Table 9

Sensitivity Analysis

Considering that the valuation outcome through the DCF method is highly sensitive to the assumptions made through the whole valuation process, we performed a sensitivity analysis to assess the impact of the uncertainties and risks previously mentioned. As our terminal value is a very positive and high value, it may not impact the final valuation – due to this, we will conduct an analysis based on variations in the cost of capital (WACC) and the terminal growth rate and how these may impact Harley Davidson’s enterprise value and share price. As such, we applied a change of 1% in the WACC and a change of either 0,25% or 1% in the growth rate – as we wanted to test different intervals in the latter variables. We can see these results in Table 10 and 11.

Table 10

Sensitivity of enterprise value to WACC and Growth rate:

Growth Rate	WACC	WACC				
		3,61%	4,61%	5,61%	6,61%	7,61%
0,00%	\$ 18 557 566,30	26377624	20929827,5	17420724,2	14970212	13160932
0,25%	27885053	21788313,3	17962621,3	15336455	13420824,8	
0,50%	29635020	22751298,3	18557566,3	15732680	13699000,3	
1,50%	40786424	28152635	21661544,3	17705461	15039430,7	
2,50%	72073736	38679518,5	26763182,3	20638789	16904736,5	

Table 11

Sensitivity of share price to WACC and Growth rate:

Growth Rate	WACC	WACC				
		3,61%	4,61%	5,61%	6,61%	7,61%
0,00%	\$ 78,76	129,54389	94,1685836	71,3821986	55,469779	43,7212104
0,25%	139,33239	99,7431664	74,9010106	57,847982	45,4088259	
0,50%	150,69581	105,996316	78,76429	60,420876	47,2151602	
1,50%	223,10752	141,069931	98,9199911	73,231137	55,9192537	
2,50%	426,27188	209,426317	132,047511	92,278723	68,031629	

With the changes considered in these two parameters, we obtain several different prices between 44 and 427 and enterprise values between \$13M and \$72M. With this analysis, it is possible to analyse how sensible both the price and EV are to changes in WACC and G. analysing Table 10, it is possible to say that the share price is more sensitive to the terminal growth rate, as for the same % change, the difference between the considered upper and lower limit is higher in the TGR rather than in the WACC.

As the WACC components result from key assumptions, we thought it would be interesting to test these and assess how changes in these assumptions would impact our cost of capital. The results can be seen on the following tables. We applied a 1% change in both the cost of debt and cost of equity – by analysing Table 12 we conclude WACC is similarly sensitive to both costs, being only 0,02% more sensitive to the cost of equity, when comparing to the cost of debt. Looking at Table 13, we can state that the cost of equity is more sensitive changes in the beta rather than to changes in the MRP – this is expected as the beta reflects the systematic risk of a company in relation to the market, being specific to the company, whereas the MRP is the same for the whole considered market.

Table 12

WACC	Cost of Equity	Cost of Debt				
		5,61%	1,73%	2,73%	3,73%	4,73%
6,91%	3,84%	4,28%	4,71%	5,15%	5,59%	
7,91%	4,29%	4,72%	5,16%	5,60%	6,04%	
8,91%	4,73%	5,17%	5,61%	6,04%	6,48%	
9,91%	5,18%	5,62%	6,05%	6,49%	6,93%	
10,91%	5,62%	6,06%	6,50%	6,94%	7,37%	

Table 13

Cost of equity	MRP	Beta				
		8,9%	0,351	0,851	1,351	2,351
4%	2,9%	4,9%	6,9%	10,9%	14,9%	
5%	3,2%	5,7%	8,2%	13,2%	18,2%	
5,50%	3,4%	6,2%	8,9%	14,4%	19,9%	
6%	3,6%	6,6%	9,6%	15,6%	21,6%	
7%	3,9%	7,4%	10,9%	17,9%	24,9%	

Scenario Analysis

For the scenario Analysis, we performed an evaluation to estimate the enterprise value of Harley Davidson (meaning, the company’s value in the market), based on 3 different scenarios. For that, we had in consideration the revenues’ growth rate from 2021 until 2025 and other one from 2025 until 2030 (both values are uploaded according to the level of the scenario, being the actual one uploaded in the base scenario); a discount rate of 10% (the minimum return that the investor expects to get in the future) and the P/E. We assumed a discount rate of 10% as we considered that an investor may not be willing to invest in a company that would give him/her a return of less than 10% (since average return of S&P 500 is itself 10%).

To be worthy to take that risk, the investor may have the goal to receive a return at least equal to the one in the S&P500 (>= 10%).

We estimated 3 scenarios (a base scenario with the probability of 60%; the best scenario and the worst scenario, both with a likelihood to happen of 20%) (Table 14).

Table 14

(in millions)

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Terminal Value	Growth rate		
Base case Scenario	exhibit e														
	Earnings	1,30	1,50	1,73	2,00	2,31	2,67	2,70	2,73	2,76	2,79	2,82	44,63	15,48%	2021 - 2025
	Intrinsic Value		1,42	1,54	1,68	1,83	2,00	1,90	1,81	1,73	1,65	1,57	24,92	6%	Expected Return P/E
Best case Scenario	exhibit y														
	Earnings	1,30	1,52	1,78	2,08	2,44	2,85	2,91	2,97	3,02	3,09	3,15	58,62	17,00%	2021 - 2025
	Intrinsic Value		1,38	1,58	1,75	1,93	2,13	2,05	1,97	1,90	1,83	1,76	32,73	10%	Expected Return P/E
Worst case Scenario	exhibit i														
	Earnings	1,30	1,47	1,66	1,88	2,12	2,40	2,41	2,42	2,43	2,44	2,46	29,32	13,00%	2021 - 2025
	Intrinsic Value		1,34	1,37	1,41	1,45	1,49	1,36	1,24	1,13	1,04	0,95	11,30	10%	Expected Return P/E

Scenario	Probability	PV	Part
Scenario 1 (normal case)	0,6	42,06	25,24
Scenario 2 (best case)	0,2	51,01	10,20
Scenario 3 (worst case)	0,2	24,07	4,81
	Sum	40,26	

In the base scenario the motorcycle shipments, model prices and retail sales rise in 2022 and 2023. New management begins putting in place the foundations of the Hardwire Strategy. Operation risks still exist and will remain in the future, as the long – term revenue growth will be less than 1%. In this case, we estimated an Intrinsic Value for the company of 42,06\$.

On the best-case scenario, Harley Davidson is considered to achieve a strong turnaround. The company meet the initial goals for the Hardwire Strategy (such as cutting costs and reducing excess inventory) and the segments will prospect, where motorcycle segment will rise more than 30% to 2022 and 2023. Harley market share will remain stable in the US and will increase in a global perspective. The company will be able to attract the younger generation and to succeed in its electric motorcycle models, which will be highly significant for the

company to prospect and to achieve an even better brand reputation. We estimated an Intrinsic Value for the company of 51,01\$.

On the worst-case scenario, Harley struggles to grow Motorcycle segment margins' and will still be highly affected due to covid in Q4 2021 and in 2022. The company won't be able to cut the production surplus and will face the obligation to cut prices. In general, global motorcycle retail sales will decline and the market won't be able to achieve the estimated CAGR neither in 2030 nor in 2038. Hardwire Strategy fails and the company won't be able to appeal the youngest generation. Also, the launch electric models won't achieve the success the company wanted. We estimated an Intrinsic Value for the company of 24,07\$.

Conclusion

After a wide research at Harley Davidson' operations, future outlooks, internal and external environment, market trends and a comparable analysis between its peers, we computed an intrinsic and relative valuation for the financial components of the company. Both perspectives indicate that the stock price is undervalued, which means that the share price in the market is lower than what the company actually values. According to our calculations, the target price in the future is 90\$, which indicate that the company will surpass the current complications and grow at a positive rate – like we performed on our assumptions and forecasts – and investors will have a much better return.

Besides the risks the company faces - such as the manufacturing challenges, macroeconomic conditions, HDFs delinquencies rise, pressure from competitors and the investment in the electric market – we predict that Harley Davidson will acknowledge a turnaround and operate according to the Hardwire Strategy, with all the segments driving growth. It is also expected the number of customers to increase (attraction of the younger generations) and its entry in the electric market to be successful.

Therefore, our final recommendation is to BUY.

Appendix

Financial Statements

Income Statement

(In thousands)		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
FORECASTED INCOME STATEMENT															
Core Operations															
REVENUES															
Motorcycles		3 823 891.01	3 880 512.53	3 539 252.77	2 350 188.88	3 446 188.90	3 813 404.59	3 298 644.77	3 413 405.59	3 387 528.59	3 431 943.56	3 483 965.20	3 536 777.32	3 590 388.89	3 644 813.03
# customers		385 363	386 906	376 250	339 095	395 015.2	436 101.72	465 893.15	495 225.17	525 806.01	557 625.90	566 078.59	574 655.40	583 370.27	592 213.16
Customers Variation		0.24%	-2.75%	9.41*	-6.70%	6.82*	8.7%	7.08*	6.2%	6.2%	6.2%	6.1%	6.1%	6.1%	6.1%
APPU		9.91*	10.03*	9.41*	6.93*	8.71*	8.74*	7.08*	6.44*	6.44*	6.15*	6.15*	6.15*	6.15*	6.15*
APPU Variation															
Parts & Accessories		806 064.43	755 234.19	713 337.77	659 338.91	966 847.44	1 069 871.84	925 453.11	957 649.00	950 389.97	962 860.83	977 446.07	992 262.53	1 007 303.55	1 022 572.54
# customers		81 360	75 300	73 633	95 195	111 044.31	122 390.76	130 708.31	138 938.17	147 517.80	156 445.04	158 976.43	161 223.89	163 667.77	166 148.63
Customers Growth Rate		9.91*	9.91*	10.03*	9.41*	6.93*	8.71*	8.74*	7.08*	6.89*	6.44*	6.15*	6.15*	6.15*	6.15*
APPU		9.91*	10.03*	9.41*	6.93*	8.71*	8.74*	7.08*	6.89*	6.44*	6.15*	6.15*	6.15*	6.15*	6.15*
APPU Growth Rate															
General Merchandise		260 496.43	243 463.65	237 773.26	186 051.08	272 823.29	301 894.53	261 142.71	270 227.94	268 179.35	271 695.53	275 813.99	279 984.87	284 239.12	288 547.70
# customers		22 894	21 027	21 528	21 612	25 229.27	27 794.79	29 593.50	31 963.00	33 912.06	35 540.09	36 070.82	36 625.71	37 190.90	37 744.49
Customers Growth Rate		9.91*	9.91*	10.03*	9.41*	6.93*	8.71*	8.74*	7.08*	6.89*	6.44*	6.15*	6.15*	6.15*	6.15*
APPU		9.91*	10.03*	9.41*	6.93*	8.71*	8.74*	7.08*	6.89*	6.44*	6.15*	6.15*	6.15*	6.15*	6.15*
APPU Growth Rate															
Others		24 575.14	89 435.53	82 308.20	68 545.13	100 513.84	111 224.30	96 210.47	99 557.66	98 802.92	100 098.35	101 615.68	103 156.01	104 719.68	106 307.05
# customers		2 400.48	8 917.36	8 700.00	9 890.27	11 544.21	12 719.63	13 988.55	14 444.67	15 336.01	16 264.09	16 510.63	16 700.39	17 014.97	17 272.88
Customers Growth Rate		9.91*	9.91*	10.03*	9.41*	6.93*	8.71*	8.74*	7.08*	6.89*	6.44*	6.15*	6.15*	6.15*	6.15*
APPU		9.91*	10.03*	9.41*	6.93*	8.71*	8.74*	7.08*	6.89*	6.44*	6.15*	6.15*	6.15*	6.15*	6.15*
APPU Growth Rate															
Financial Services		732 197.00	748 229.00	789 110.00	790 323.00	1 158 921.00	1 282 412.30	1 109 303.38	1 147 996.38	1 139 194.18	1 154 130.52	1 171 625.25	1 189 385.14	1 207 414.20	1 225 716.53
# customers		73 303.96	74 602.03	83 888.54	114 034.50	133 104.32	146 656.90	156 675.48	166 535.56	176 823.61	180 366.90	183 252.54	185 625.71	187 500.90	189 155.71
Customers Growth Rate		9.91*	10.03*	9.41*	6.93*	8.71*	8.74*	7.08*	6.89*	6.44*	6.15*	6.15*	6.15*	6.15*	6.15*
APPU		9.91*	10.03*	9.41*	6.93*	8.71*	8.74*	7.08*	6.89*	6.44*	6.15*	6.15*	6.15*	6.15*	6.15*
APPU Growth Rate															
G rate revenues															
Total Revenues		\$5 647 224.00	\$5 716 875.00	\$5 361 789.00	\$4 054 377.00	\$5 945 294.57	\$6 578 807.57	\$5 690 754.45	\$5 888 737.47	\$5 844 095.01	\$5 920 718.01	\$6 010 467.19	\$6 101 575.86	\$6 194 065.44	\$6 287 956.85
COGS															
Inflation variation															
Quantity Sold by HD' Variation															
Total COGS		\$3 320 079.00	\$3 438 113.00	\$3 305 700.00	\$2 500 322.00	\$3 554 530.46	\$3 924 237.57	\$3 402 153.26	\$3 530 587.94	\$3 516 523.21	\$3 573 324.24	\$3 626 924.10	\$3 681 327.96	\$3 736 547.88	\$3 792 596.10
SG&A															
# employees		5 200.00	5 300.00	5 000.00	4 600.00	4 576.53	4 575.86	4 558.09	4 551.89	4 563.36	4 548.80	4 544.85	4 543.13	4 532.64	4 545.51
Employment Rate Variation															
SG&A per employee		\$199.52*	\$208.48*	\$206.36*	\$197.23*	\$195.61*	\$194.96*	\$193.60*	\$190.87*	\$188.70*	\$186.74*	\$185.09*	\$183.35*	\$181.07*	\$179.83*
Employment Rate Variation															
SG&A per employee Variation															
Total SG&A		\$1 037 529.00	\$1 104 919.00	\$1 034 921.00	\$907 257.00	\$895 203.17	\$892 130.82	\$882 435.86	\$868 824.48	\$861 110.21	\$849 458.55	\$841 186.48	\$832 932.97	\$820 726.99	\$817 432.34
Core Result Before Tax		\$1 289 616.00	\$1 173 843.00	\$1 021 168.00	\$646 798.00	\$1 495 560.93	\$1 762 379.17	\$1 406 165.34	\$1 489 325.05	\$1 466 461.58	\$1 497 936.01	\$1 542 356.60	\$1 587 254.93	\$1 636 790.56	\$1 677 928.41
Motorcycles Core Result Before Tax		\$470 620.70	\$339 616.11	\$238 302.17	\$56 942.56	\$733 373.40	\$838 344.24	\$439 510.54	\$363 442.77	\$532 729.10	\$432 656.89	\$472 159.08	\$481 360.23	\$512 671.50	\$508 524.82
% Core Result		37%	34%	23%	14%	12%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Parts & Accessories Core Result Before Tax		\$99 247.55	\$77 813.51	\$48 041.60	\$15 947.50	\$40 362.72	\$34 794.58	\$22 285.24	\$17 562.35	\$27 644.73	\$25 041.18	\$23 828.78	\$24 263.98	\$26 174.97	\$27 714.16
% Core Result		8%	7%	7%	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
General Merchandise Core Result Before Tax		\$32 073.90	\$25 054.62	\$15 013.87	\$4 500.04	\$3 749.94	\$3 308.47	\$2 182.15	\$1 763.81	\$2 653.70	\$2 427.26	\$2 324.41	\$2 364.64	\$2 536.96	\$2 905.46
% Core Result		2%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Others Core Result Before Tax		\$3 025.84	\$9 214.76	\$5 543.26	\$1 657.91	\$380.74	\$380.74	\$215.52	\$84.36	\$267.21	\$256.67	\$236.92	\$238.50	\$259.52	\$277.44
% Core Result		0.2%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Financial Services Core Result Before Tax		\$530 216.00	\$497 289.00	\$537 951.00	\$573 488.00	\$851 983.52	\$769 177.71	\$714 189.12	\$772 630.03	\$705 347.27	\$731 831.24	\$752 373.55	\$764 044.75	\$766 360.35	\$782 580.25
% Core Result		41%	42%	52%	88%	56%	60%	64%	67%	62%	64%	64%	63%	63%	64%
Taxes		-\$361 678.40	-\$161 463.33	-\$136 868.47	\$12 080.19	-\$314 067.80	-\$370 099.63	-\$295 294.72	-\$312 788.26	-\$307 956.93	-\$314 566.56	-\$323 894.89	-\$333 323.54	-\$343 726.02	-\$352 364.37
Rate (%)		-27.2%	-13.7%	-16.2%	1.9%	-20.7%	-21.0%	-21.0%	-21.0%	-21.0%	-21.0%	-21.0%	-21.0%	-21.0%	-21.0%
Total Core Result		\$937 937.60	\$1 011 379.67	\$884 299.53	\$658 878.19	\$1 181 493.14	\$1 392 279.55	\$1 110 870.62	\$1 176 566.79	\$1 158 504.65	\$1 123 461.72	\$1 153 931.40	\$1 193 064.54	\$1 239 064.54	\$1 285 563.44
Non Core Operations															
Investing Income		\$3 580.00	\$951.00	\$16 371.00	\$7 560.00	\$8 499.11	\$10 713.30	\$11 347.27	\$10 182.58	\$9 907.43	\$10 430.66	\$10 789.02	\$10 648.10	\$10 835.51	\$11 084.73
Revenues (%)		0.06%	0.02%	0.3%	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Non Core Result Before Tax		\$3 580.00	\$951.00	\$16 371.00	\$7 560.00	\$8 499.11	\$10 713.30	\$11 347.27	\$10 182.58	\$9 907.43	\$10 430.66	\$10 789.02	\$10 648.10	\$10 835.51	\$11 084.73
Taxes		-\$1 253.00	-\$139.71	-\$3 437.51	-\$1 597.50	-\$1 784.81	-\$2 249.79	-\$2 362.50	-\$2 198.24	-\$2 080.56	-\$2 190.44	-\$2 265.70	-\$2 236.31	-\$2 275.46	-\$2 327.79
Rate (%)		-35.0%	-14.6%	-20.9%	-20.9%	-20.9%	-21.0%	-21.0%	-21.0%	-21.0%	-21.0%	-21.0%	-21.0%	-21.0%	-21.0%
Total Non Core Result		\$2 327.00	\$751.29	\$12 933.09	\$5 972.40	\$6 714.30	\$8 463.51	\$8 964.34	\$8 044.24	\$7 826.87	\$8 240.23	\$8 523.33	\$8 412.79	\$8 560.06	\$8 756.94
Financing Result															
Interest Expense		-\$31 004.00	-\$30 884.00	-\$31 078.00	-\$31 121.00	-\$36 834.45	-\$38 424.31	-\$24 393.82	-\$14 788.11	-\$12 321.41	-\$9 250.74	-\$4 235.87	-\$602.39	\$0.00	\$0.00
(% Debt of Previous Year)		0.4%	0.4%	0.4%	0.3%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Non Core Result Before Tax		-\$31 004.00	-\$30 884.00	-\$31 078.00	-\$31 121.00	-\$36 834.45	-\$38 424.31	-\$24 393.82	-\$14 788.11	-\$12 321.41	-\$9 250.74	-\$4 235.87	-\$602.39	\$0.00	\$0.00
Taxes		\$10 851.40	\$8 496.54	\$8 536.38	\$8 536.38	\$8 536.38	\$7 756.23								

Balance Sheet

(In thousands)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
FORECASTED BALANCE SHEET														
Holding Period	53.2	53.0	66.6	76.4	65.3	62.5	61.5	62.1	62.3	62.3	62.2	62.4	62.3	62.3
Other Current Assets	175,653.00	144,368.00	168,974.00	280,470.00	233,476.04	209,170.27	181,333.47	197,375.84	199,353.29	194,330.62	198,820.40	203,686.71	206,565.45	208,457.22
Other Current Assets (% Revenue)	2.7%	2.5%	2.7%	3.3%	2.9%	2.5%	2.3%	2.4%	2.4%	2.3%	2.3%	2.3%	2.3%	2.3%
Lease Assets	0.00	0.00	616.00	45,203.00	33,652.22	28,210.54	14,153.48	18,307.36	22,710.71	20,382.32	19,420.74	20,650.10	21,643.55	21,355.63
Lease Assets (% Revenue)	0.0%	0.0%	0.2%	1.9%	1.4%	1.2%	0.7%	0.9%	1.1%	0.9%	0.9%	0.9%	0.9%	0.9%
Deferred income taxes	1109,073.00	1141,464.00	1101,204.00	1150,530.00	1151,660.60	1145,463.73	1130,431.72	1132,282.67	1135,660.33	1134,319.71	1137,220.42	1139,163.64	1141,006.05	1143,394.18
Deferred Income taxes (% Revenue)	16.0%	16.0%	15.0%	15.0%	15.0%	14.9%	14.8%	14.8%	14.8%	14.8%	14.8%	14.8%	14.8%	14.8%
Goodwill	455,947.00	455,048.00	464,160.00	465,976.00	471,009.06	471,455.60	460,238.42	463,741.94	464,539.05	464,128.65	465,055.27	466,404.38	467,502.72	468,201.09
Goodwill (% Revenue)	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%
Prepaid pension costs	19,616.00	-	56,014.00	-	20,742.94	28,691.53	16,165.54	20,963.46	20,804.54	21,183.33	20,326.07	21,466.93	21,735.97	21,965.63
Prepaid pension costs (% Revenue)	0.8%	0.0%	0.8%	0.0%	0.8%	1.1%	0.6%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
Property, plant and equipment	967,781.00	904,132.00	847,382.00	743,784.00	632,216.40	537,383.94	417,931.53	710,690.26	617,293.00	539,887.87	1080,871.05	1243,001.71	1429,451.96	1643,869.76
Other Long Term Assets	75,689.00	73,071.00	28,965.00	122,487.00	91,869.88	77,493.06	76,940.24	79,540.20	79,391.84	77,211.67	80,291.68	81,363.54	82,507.66	83,437.72
Other Long Term Assets (% Revenue)	1.0%	1.0%	0.9%	1.6%	1.0%	0.9%	0.9%	1.0%	1.0%	0.9%	1.0%	1.0%	1.0%	1.0%
Accounts payable & accrued liabilities	-757,418.00	-865,931.00	-676,668.00	-648,118.00	-668,815.82	-1,004,214.64	-662,487.74	-891,413.43	-999,518.34	-911,777.23	-924,787.94	-939,851.11	-956,661.42	-968,533.62
Payable Period	63.2	62.1	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8
Other long-term liabilities	-209,600.00	-204,219.00	-265,776.00	-220,001.00	-426,593.10	-4273,966.60	-4225,710.27	-4229,363.32	-4242,707.62	-4241,986.62	-4244,439.74	-4249,748.69	-4259,974.36	-4256,934.63
Other long-term liabilities (% Revenue)	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Total	9,275,667.00	9,518,327.00	9,291,416.00	9,635,916.00	10,297,737.27	10,702,032.24	9,365,158.44	9,805,423.46	9,950,174.03	10,098,890.53	10,382,476.66	10,702,370.63	11,041,858.29	11,385,137.42
INVESTED CAPITAL CORE OPERATIONS	9,275,667.00	9,518,327.00	9,291,416.00	9,635,916.00	10,297,737.27	10,702,032.24	9,365,158.44	9,805,423.46	9,950,174.03	10,098,890.53	10,382,476.66	10,702,370.63	11,041,858.29	11,385,137.42
Motorcycles Invested Capital	7,216,468.33	7,433,913.33	7,191,555.38	6,217,787.52	7,659,733.77	6,128,862.36	7,063,231.76	7,346,751.85	7,527,977.12	7,623,619.47	7,825,587.10	8,065,435.75	8,333,308.32	8,587,071.14
(% Invested Capital)	78.0%	78.0%	76.0%	64.0%	74.0%	60.0%	75.0%	74.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%
Parts & Accessories Invested Capital	1,521,209.39	1,446,785.70	1,449,460.30	1,744,434.83	1,735,178.84	1,815,332.22	1,629,930.23	1,750,651.12	1,718,134.64	1,754,351.96	1,814,237.67	1,872,033.34	1,921,418.89	1,984,963.27
(% Invested Capital)	16.0%	15.0%	15.0%	18.0%	16.0%	17.0%	17.0%	17.0%	17.0%	17.0%	17.0%	17.0%	17.0%	17.0%
General Merchandise Invested Capital	491,610.35	466,390.02	463,153.63	492,241.51	543,208.01	563,865.32	502,000.29	529,607.76	529,992.52	539,210.20	556,386.62	573,217.48	590,153.05	609,076.96
(% Invested Capital)	5.0%	4.8%	4.8%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Other Invested Capital	46,378.34	171,238.95	87,245.49	181,352.14	79,615.86	193,974.33	170,036.16	178,417.74	174,068.74	181,706.06	186,465.07	191,684.07	196,978.03	204,084.03
(% Invested Capital)	0.5%	1.8%	0.9%	2.0%	0.8%	1.8%	1.8%	1.8%	1.7%	1.8%	1.8%	1.8%	1.8%	1.8%
Non Core Invested Capital	-	-	56,014.00	95,711.00	44,052.96	57,227.79	62,598.78	67,168.83	57,605.61	62,282.73	66,153.95	67,363.62	67,971.54	71,127.57
Pension and postretirement assets	-	-	56,014.00	95,711.00	44,052.96	57,227.79	62,598.78	67,168.83	57,605.61	62,282.73	66,153.95	67,363.62	67,971.54	71,127.57
(% Invested Capital)	0.0%	0.0%	0.6%	1.0%	0.4%	0.5%	0.7%	0.7%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
Marketable securities	-	10,007.00	-	63,343.00	21,930.00	28,046.88	28,217.66	36,930.25	28,558.36	30,989.00	33,021.64	34,487.15	34,079.62	35,743.23
(% Invested Capital)	0.0%	0.1%	0.0%	0.7%	0.2%	0.3%	0.3%	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Pension and postretirement healthcare liabilities	-173,359.00	-202,229.00	-128,651.00	-114,206.00	-172,505.72	-174,092.38	-140,687.73	-150,944.38	-157,605.59	-157,656.04	-160,383.01	-166,441.72	-172,336.80	-177,111.87
(% Invested Capital)	-1.9%	-2.1%	-1.4%	-1.2%	-1.7%	-1.6%	-1.5%	-1.5%	-1.6%	-1.6%	-1.6%	-1.6%	-1.6%	-1.6%
Total	-173,359.00	-192,222.00	-128,651.00	-114,206.00	-172,505.72	-174,092.38	-140,687.73	-150,944.38	-157,605.59	-157,656.04	-160,383.01	-166,441.72	-172,336.80	-177,111.87
Invested Capital Mon Core Operations	8,802,308.33	9,046,615.00	8,813,760.38	7,903,580.52	9,507,233.05	7,954,769.98	8,842,295.57	9,155,279.08	9,369,571.42	9,461,217.73	9,659,466.61	9,938,313.43	10,267,413.81	10,606,043.83
Net Financial Assets	431,740.00	43,155.00	434,464.00	33,979,313.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Revised Cash	447,590.00	443,275.00	464,554.00	413,642.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Short Term Debt	-11,773,483.00	-11,195,830.00	-11,749,100.00	-11,014,274.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Current portion of long-term debt, net	-11,773,483.00	-11,195,830.00	-11,749,100.00	-11,014,274.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Long-term debt, net	-14,587,258.00	-14,887,667.00	-15,124,826.00	-16,114,963.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Debt	14,587,258.00	14,887,667.00	15,124,826.00	16,114,963.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Financial Assets	431,740.00	43,155.00	434,464.00	33,979,313.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Total	8,720,909.33	8,854,393.00	8,684,609.38	7,789,380.52	9,507,283.05	7,954,819.98	8,842,345.57	9,155,329.08	9,369,621.42	9,461,767.73	9,659,816.61	9,938,664.43	10,267,563.81	10,606,143.83
Equity	8,720,909.33	8,854,393.00	8,684,609.38	7,789,380.52	9,507,283.05	7,954,819.98	8,842,345.57	9,155,329.08	9,369,621.42	9,461,767.73	9,659,816.61	9,938,664.43	10,267,563.81	10,606,143.83

Disclosures and Disclaimers

Report Recommendations

Buy	Expected total return (including expected capital gains and expected dividend yield) of more than 10% over a 12-month period.
Hold	Expected total return (including expected capital gains and expected dividend yield) between 0% and 10% over a 12-month period.
Sell	Expected negative total return (including expected capital gains and expected dividend yield) over a 12-month period.

This report was prepared by Catarina Mourão and Inês Matias, Master's in Management students of Nova School of Business and Economics ("Nova SBE"), within the context of the Field Lab – Equity Research.

This report is issued and published exclusively for academic purposes, namely for academic evaluation and master graduation purposes, within the context of said Field Lab – Equity Research. It is not to be construed as an offer or a solicitation of an offer to buy or sell any security or financial instrument.

This report was supervised by a Nova SBE faculty member, acting merely in an academic capacity, who revised the valuation methodology and the financial model.

Given the exclusive academic purpose of the reports produced by Nova SBE students, it is Nova SBE understanding that Nova SBE, the author, the present report and its publishing, are excluded from the persons and activities requiring previous registration from local regulatory authorities. As such, Nova SBE, its faculty and the author of this report have not sought or obtained registration with or certification as financial analyst by any local regulator, in any jurisdiction. In Portugal, neither the author of this report nor his/her academic supervisor is registered with or qualified under COMISSÃO DO MERCADO DE VALORES MOBILIÁRIOS ("CMVM", the Portuguese Securities Market Authority) as a financial analyst. No approval for publication or distribution of this report was required and/or obtained from any local authority, given the exclusive academic nature of the report.

The additional disclaimers also apply:

USA: Pursuant to Section 202 (a) (11) of the Investment Advisers Act of 1940, neither Nova SBE nor the author of this report are to be qualified as an investment adviser and, thus, registration with the Securities and Exchange Commission ("SEC", United States of America's securities market authority) is not necessary. Neither the author nor Nova SBE receive any compensation of any kind for the preparation of the reports.

Germany: Pursuant to §34c of the WpHG (*Wertpapierhandelsgesetz*, i.e., the German Securities Trading Act), this entity is not required to register with or otherwise notify the *Bundesanstalt für Finanzdienstleistungsaufsicht* (“BaFin”, the German Federal Financial Supervisory Authority). It should be noted that Nova SBE is a fully-owned state university and there is no relation between the student’s equity reports and any fund raising programme.

UK: Pursuant to section 22 of the Financial Services and Markets Act 2000 (the “FSMA”), for an activity to be a regulated activity, it must be carried on “by way of business”. All regulated activities are subject to prior authorization by the Financial Conduct Authority (“FCA”). However, this report serves an exclusively academic purpose and, as such, was not prepared by way of business. The author - a Master’s student - is the **sole and exclusive responsible** for the information, estimates and forecasts contained herein, and for the opinions expressed, which exclusively reflect his/her own judgment at the date of the report. Nova SBE and its faculty have no single and formal position in relation to the most appropriate valuation method, estimates or projections used in the report and may not be held liable by the author’s choice of the latter.

The information contained in this report was compiled by students from public sources believed to be reliable, but Nova SBE, its faculty, or the students make no representation that it is accurate or complete, and accept no liability whatsoever for any direct or indirect loss resulting from the use of this report or of its content.

Students are free to choose the target companies of the reports. Therefore, Nova SBE may start covering and/or suspend the coverage of any listed company, at any time, without prior notice. The students or Nova SBE are not responsible for updating this report, and the opinions and recommendations expressed herein may change without further notice.

The target company or security of this report may be simultaneously covered by more than one student. Because each student is free to choose the valuation method, and make his/her own assumptions and estimates, the resulting projections, price target and recommendations may differ widely, even when referring to the same security. Moreover, changing market conditions and/or changing subjective opinions may lead to significantly different valuation results. Other students’ opinions, estimates and recommendations, as well as the advisor and other faculty members’ opinions may be inconsistent with the views expressed in this report. Any recipient of this report should understand that statements regarding future prospects and performance are, by nature, subjective, and may be fallible.

This report does not necessarily mention and/or analyze all possible risks arising from the investment in the target company and/or security, namely the possible exchange rate risk resulting from the security being denominated in a currency either than the investor’s currency, among many other risks.

The purpose of publishing this report is merely academic and it is not intended for distribution among private investors. The information and opinions expressed in this report are not intended to be available to any person other than Portuguese natural or legal persons or persons domiciled in Portugal. While preparing this report, students did not have in consideration the specific investment objectives, financial situation or

particular needs of any specific person. Investors should seek financial advice regarding the appropriateness of investing in any security, namely in the security covered by this report.

The author hereby certifies that the views expressed in this report accurately reflect his/her personal opinion about the target company and its securities. He/ She has not received or been promised any direct or indirect compensation for expressing the opinions or recommendation included in this report.

[If applicable, it shall be added: *“While preparing the report, the author may have performed an internship (remunerated or not) in [insert the Company’s name]. This Company may have or have had an interest in the covered company or security”* and/ or *“A draft of the reports have been shown to the covered company’s officials (Investors Relations Officer or other), mainly for the purpose of correcting inaccuracies, and later modified, prior to its publication.”*]

The content of each report has been shown or made public to restricted parties prior to its publication in Nova SBE’s website or in Bloomberg Professional, for academic purposes such as its distribution among faculty members for students’ academic evaluation.

Nova SBE is a state-owned university, mainly financed by state subsidies, students tuition fees and companies, through donations, or indirectly by hiring educational programs, among other possibilities. Thus, Nova SBE may have received compensation from the target company during the last 12 months, related to its fundraising programs, or indirectly through the sale of educational, consulting or research services. Nevertheless, no compensation eventually received by Nova SBE is in any way related to or dependent on the opinions expressed in this report. The Nova School of Business and Economics does not deal for or otherwise offer any investment or intermediation services to market counterparties, private or intermediate customers.

This report may not be reproduced, distributed or published, in whole or in part, without the explicit previous consent of its author, unless when used by Nova SBE for academic purposes only. At any time, Nova SBE may decide to suspend this report reproduction or distribution without further notice. Neither this document nor any copy of it may be taken, transmitted or distributed, directly or indirectly, in any country either than Portugal or to any resident outside this country. The dissemination of this document other than in Portugal or to Portuguese citizens is therefore prohibited and unlawful.

References

- BMW group. 2021 (Online). BMW Group. Available at: <https://www.bmwgroup.com/en/company.html>
- Businessmodelnavigator.com. 2021. Harley Davidson Business Model | Business Model Navigator. [online] Available at: <https://businessmodelnavigator.com/case-firm?id=43> [Accessed 13 December 2021].
- Cars, B., 2021. About BMW. [online] BMW Art Cars. Available at: <https://www.bmwartcarcollection.com/about-bmw/> [Accessed 13 December 2021].
- Clark, B., 2020. 24K Marketing | Attracting A Younger Consumer Target for the Harley Davidson Brand Using Consumer Insights. [online] 24kmarketing.com. Available at: <https://24kmarketing.com/2020/08/attracting-a-younger-consumer-target-for-the-harley-davidsonbrand-using-consumer-insights.html> [Accessed 13 December 2021].
- CLARK, Bob. Attracting A Younger Consumer Target for the Harley Davidson Brand Using Consumer Insights. 24 Marketing, 9th August 2020 (Online). Available at: <https://24kmarketing.com/2020/08/attracting-a-younger-consumer-target-for-the-harley-davidson-brand-using-consumer-insights.html>
- cnbc.com. 2021. Harley Davidson's plan to take iconic motorcycle brand into transportation's future. (Online). Available at: Harley Davidson's iconic brand in future of transportation (cnbc.com)
- CNN Business. 2021. HOG - Harley-Davidson Inc Shareholders - CNNMoney.com. [online]. Available at: <https://money.cnn.com/quote/shareholders/shareholders.html?symb=HOG&subView=institutional> [Accessed 13 December 2021].
- COVID-19 Impact Analysis and Forecasts. 2021 (Online). The Freedonia Group, Online. Available at: <https://www.freedoniagroup.com/Content/COVID-19-Economic-Impact-Tracker>
- EMERY, K.; CANTOR, R. Special Comment. Moody's Ultimate Recovery Database (Online)
- European Central Bank. Economic and monetary developments. European Central Bank, 2021 (Online). Available at: <https://www.ecb.europa.eu/pub/economicbulletin/html/eb202008.en.html>
- Finance.yahoo.com. 2021. Yahoo is part of the Yahoo family of brands. [online] Available at: https://finance.yahoo.com/news/motorcycle-market-size-2021-2028-095300820.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAEtP1YbvUVXCgXG90RYjHggE0m15wxcQnPgkvN3H4wdbGcN7sCeUgcnMp6QbuaGKvc7m2Ce9AKWuH6AoWk5f4Kn5DTgnxDG9ATi9RL3Ik9LiYqvB8KQgouYcmqYgrAfHk_hAD9ahDJ5FZHm6Q3UTuH1tyaVgC0OOQq_v3rZ8k6 [Accessed 13 December 2021].
- Global Motorcycles - Demand and Sales Forecasts, Market Share, Market Size, Market Leaders. The Freedonia Group, May 2020 (Online). Available at: <https://www.freedoniagroup.com/World-Motorcycles.html>
- Global.honda. 2021. Honda Global | Company Overview. [online]. Available at: <https://global.honda/about/profile.html> [Accessed 13 December 2021].

Harley-Davidson USA. 2021. Investor Relations | Harley-Davidson USA. [online] Available at: <<https://investor.harley-davidson.com/>> [Accessed 13 December 2021].

Hasanaj, E., 2017. 5 Lessons From Harley-Davidson Brand Tactics to Revolutionize Your Customer Experience. [online] Customer Think. Available at: <<https://customerthink.com/5-lessons-from-harleydavidson-brand-tactics-to-revolutionize-your-customer-experience/>> [Accessed 13 December 2021].

History of Suzuki 4X4 - Automobile, Global Suzuki. 2021 (Online). Available at: <https://www.globalsuzuki.com/automobile/history/>

Kawasaki.eu. 2021. Our Story - Kawasaki. [online]. Available at: <https://www.kawasaki.eu/en/about_kawasaki/Our_Story?UId=09B6XwoKXgoNUQsJC1FRXAibDQoNDV4OCgIfWIoNCI5ZX1w> [Accessed 13 December 2021].

KRAEMER, N., 2021. S&P Global Ratings. 2020 Annual Global Corporate Default And Rating Transition Study (Online).

MORAN, E., 2018.livewiremarkets.com. Quantifying the risk of bonds with S&P credit ratings. (Online). Available at: Quantifying the risk of bonds with S&P credit ratings - Elizabeth Moran | Livewire (livewiremarkets.com)

PARASHAR, J., 2016. What Are the Key Geographical Markets for Harley-Davidson?.[online] Market Realist. Available at: <<https://marketrealist.com/2016/03/key-geographical-markets-harley-davidson/>> [Accessed 13 December 2021].

Ray, S., 2013. Channel of Distribution - HD | PDF | Merchandising | Harley Davidson. [online] Scribd. Available at: <<https://www.scribd.com/document/293728218/Channel-of-Distribution-hd>> [Accessed 13 December 2021].

Statista. 2021. Harley-Davidson - worldwide motorcycle sales by region 2020 | Statista. (online). Available at: <<https://www.statista.com/statistics/252220/worldwide-motorcycle-retail-sales-of-harley-davidson/>> [Accessed 13 December 2021].

STEWARDS, Mike. A Look at Recent Advances in Motorcycle Technology. TMCnet, November 2018 (Online). Available at: <https://www.tmcnet.com/topics/articles/2018/11/27/440419look-recent-advances-motorcycle-technology.htm>

United States Securities and Exchange Commission. Harley-Davidson, Inc (Online)

YAMAHA MOTOR CO., LTD. 2021. Overview - Company information | YAMAHA MOTOR CO., LTD.. [online]Available at: <<https://global.yamaha-motor.com/about/overview/>> [Accessed 13 December 2021].

ycharts.com.2021. 10 Year Treasury Rate.(Online).Available at: 10 Year Treasury Rate (ycharts.com)