

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

Is the Plant-based Industry beyond Beyond Meat?

JOÃO PEDRO NATIVIDADE CARÔTO 39220

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Rosário André

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Abstract

This equity report focuses on the valuation of Beyond Meat, a plant-based meat alternative producer. It is based on the forecast of the main value drivers behind the company's revenues as well as expenses. The other main component estimated is the weighted average cost of capital which serves as the discount rate for the discounted cash flow model through which the value of the company is estimated. The valuation of the company yielded a per-share value of less than the price it is currently trading at, which points towards an overvaluation of Beyond Meat and leads to a final recommendation of selling the stock.

Keywords (up to four)

Beyond Meat, Meat substitutes, Vegan alternatives, Equity Research

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This report is part of the Beyond Meat Equity Research report (annexed), developed by João Pedro Carôto and Ana Beatriz Ribeiro and should be read as an integral part of it.

Table of Contents

Table of Contents

A WORK PROJECT, PRESENTED AS PART OF THE REQUIREMENTS FOR THE AWARD OF A MASTER DEGREE IN FINANCE FROM THE NOVA – SCHOOL OF BUSINESS AND ECONOMICS.	1
INTRODUCTION	6
VALUATION	7
REVENUE	7
▪ <i>US Market</i>	7
▪ <i>International Market</i>	8
OPERATING EXPENSES	9
▪ <i>Cost of Sales</i>	10
▪ <i>Selling, General & Administrative Expenses</i>	10
▪ <i>Research & Development Expenses</i>	11
CAPITAL EXPENDITURES	11
NET WORKING CAPITAL	12
▪ <i>Accounts Receivable</i>	12
▪ <i>Accounts Payable</i>	12
▪ <i>Inventory</i>	12
WEIGHED AVERAGE COST OF CAPITAL.....	13
DISCOUNTED CASH FLOW ANALYSIS.....	14
SENSITIVITY ANALYSIS	16
RECOMMENDATION	17
REFERENCES	18

Introduction

The main purpose of this thesis is to perform a valuation of Beyond Meat based on its value drivers and a discounted cash flow approach. The objective is to reach a value for the company's share price and inform investors on how they should be positioned around the stock.

The initial part of the joint report first provides a introduction of Beyond Meat as of now, its current products, and how it operates its supply chain. Then, the plant-based meat substitutes industry is discussed to get an overall picture of the risks presented to the market as a whole. The risks, competition and sustainability concerns are addressed and finally, we get a better picture of where Beyond Meat fits into the industry, its market share as well as positioning.

The second part of the joint report and shown in this individual report focuses on the financials of the company and sector. First, a discussion of the main drivers and how they affect the financial statements and schedules of the firms. It is clear that in a high-growth company and sector scenario such as this one, growing the amount of sales and developing in new markets while maintaining the first mover's advantage position is the critical part to Beyond Meat's success. Sales are the main focus point of the value drivers and are analysed based on Meat industry and other plant-based substitutes statistics.

The final segment is dedicated to the calculation of the weighed average cost of capital which serves as discount rate for the discounted cash flow analysis to arrive at an enterprise value from which a stock price of \$11.76 is obtained, signifying a SELL recommendation. Finally, there is a small discussion around the main risks which could affect the share price such as a different discount rate and terminal growth rate.

Valuation

Revenue

Projecting sales of a category of products which is still in its infancy can be quite challenging as the historical data is scarce and drivers of growth are not well defined. Beyond Meat only publishes data for US and International markets and segments it further for Retail and Foodservice. But even industry forecast data is still quite hard to come by and requires many more growth assumptions than a mature industry. Beyond Meat has had a massive slowdown in revenue growth as consumers trade down in protein due to increasing living costs. Consumers seek lower cost protein which they can afford and up until now Beyond Meat's pricing has been above that of regular meat and even some plant-based competitors.

- US Market

The US Meat Market in 2021 was valued at \$147.72 billion, according to Statista. Using the meat consumption for 2021 (see exhibit 1) recorded by the OECD of 41.98 million tons, we arrive at a dollar value of circa \$3500 per ton of meat consumed in the US in 2021. Using future inflation data and Central Bank objectives, we can estimate this dollar value for the years until 2029. Inflation is expected to converge back to the long-term objective of 2% with a higher value in the short term due to supply chain constraints and energy inputs being much more expensive due to the Ukraine conflict. The US meat market is therefore estimated to be \$189.65 billion by 2029 (see exhibit 4), representing a CAGR of 3,17% for the 2021-2029 period, which is used to estimate the growth of the market until 2033, for which the OECD has no meat consumption forecasts.

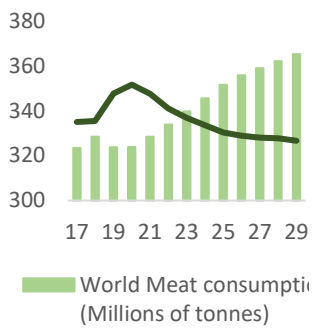
Having arrived at the total market value of meat, where Beyond Meat is trying to act as a substitute to the already existing products, it is important to understand the dynamics of the substitution of Meat by Plant based alternatives. There are various ways of looking at this issue. The first and most obvious way is understanding how many people currently eat meat and what types of diets are currently present in the US market. For this, we must consider the diets currently present in the US. As of 2022, according to Statista, 16% don't eat any meat, meaning they are either pescetarian, vegan or vegetarian, while another 10% identify themselves as flexitarian, which means they mostly eat plant-based foods while occasionally eating meat and/or fish. In total, 26% of US consumers very rarely eat meat.

The US market for plant-based meats is estimated in 2021 to have been \$1.4 billion which is only 0.9% of the total meat market (see exhibit 2). Clearly there is a massive gap between the consumers not eating meat and the products which are being consumed. An explanation may be that vegan, vegetarian and even pescetarian consumers simply don't like the taste of meat, which is what Beyond Meat is trying to recreate. But even then, if we assume, none of these consumers would buy any plant-based food, there are still another 10% which occasionally eat meat, meaning they most likely enjoy the taste, which are not buying plant-based meat alternatives. There is a clear growth opportunity for the industry to be present in more households which currently don't eat meat due to ethical concerns but have no problem with the taste and health of the product itself.

Another way is by looking at other plant-based substitutes and seeing how that market compares to the plant-based meat market. A common comparison is to the milk industry where

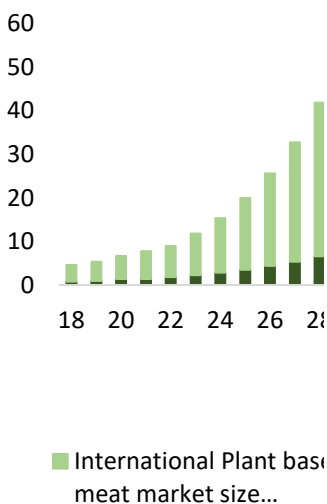
The US meat market alone was worth \$147.72 billion in 2021

Exhibit 1. World Meat consumption



Source: OECD

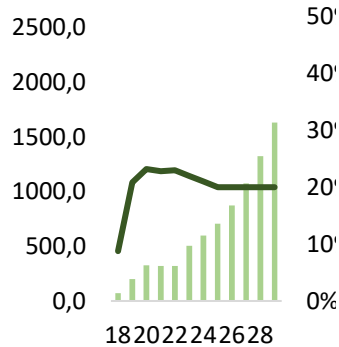
Exhibit 2. Plant based meat market size



Source: Own Calculations

plant-based substitutes represent the largest share of the overall industry at 16% in 2021. It is possible to argue that this product is more mature and use the growth of market share here to estimate the future growth of market share of plant-based meat in the future. A problem with this comparison is that a significant portion of consumers are lactose intolerant making plant-based alternatives an obvious alternative for regular milk while the meat industry has no such problem at such a large scale.

Exhibit 3. Beyond Meat Revenues in the US



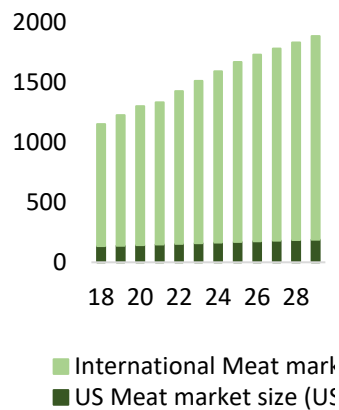
50' In order to estimate the market share of plant-based substitutes in the meat industry, we can
 40' use inputs from both the dietary composition of the US as well as a more mature plant-based
 30' alternative to get a more complete picture of how the plant-based meat industry will evolve in
 20' relation to the overall meat industry.

We can conservatively estimate that in 10 years by 2033 the share of plant-based products will be 9.8%. Thus, the total US plant-based meat market will be \$8.15 billion in 2029 (see exhibit 2).

Now the important factor is understanding where Beyond Meat fits into this market in the future. In 2021, they were the biggest player and represented around 23% of the market. However, this advantage is under pressure as existing meat companies understand the threat they are facing and try to enter this market, either by acquisitions or launching their own products from scratch. These companies have supply chains in place which are much more efficient than Beyond Meat's is. This is mentioned as the biggest threat to their market position in the last current report, as well as retailers establishing their own brands which normally have a lower price tag. This means that to stay relevant in the market, Beyond Meat needs to leverage their brand in order to be able to charge higher prices at least until more suppliers exist and they can have more bargaining power in negotiations, as described in the Net Working Capital Section. We forecast that market share in the US will decrease slightly until 2025 to 20% and plateau from then on as the market matures. Even with no growth in market share, due to general market growth, US revenues for Beyond are expected to grow at a rate of 22,58% and be \$1.63 billion in 2029 (see exhibit 3).

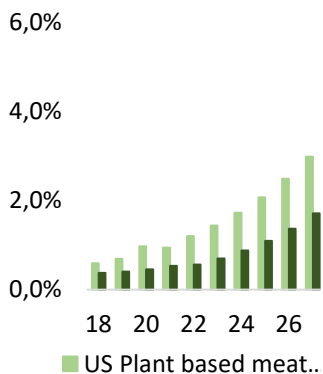
■ US Revenues (USD M)
 Source: Own Calculations

Exhibit 4. World meat market size



Source: Own Calculations

Exhibit 5. Plant-based meat market as % of total meat market



Source: Own Calculations

▪ International Market

The forecast for the international market is very similar to the rationale followed for the US market using different data

The World Meat Market sans US in 2021 was valued at \$1.18 trillion, according to a Meticulous Research report. Using the meat consumption for 2021 recorded by the OECD of 286.42 million tons, we arrive at a dollar value of circa \$4127 per ton of meat consumed in the international market in 2021. The International meat market is therefore estimated to be \$1.69 trillion by 2029 (see exhibit 4), representing a CAGR of 4,58% for the 2021-2029 period, which is used to estimate the market until 2033, for which the OECD has no meat consumption forecasts.

Using a similar logic to the US Market, we arrive at a value of \$6.35 billion for the plant-based meat market sans US, representing 0,5% of the total meat market in 2021. (see exhibit 5), slightly lower when compared with the US value of 0,9%. An explanation for this bias can be the fact that consumers in developed countries consumed more meat and are also more conscious of the health and ethical problems facing the overconsumption of meat. The International market is comprised by a large percentage of developing countries where the market for these products is still small. However, as the countries develop and middle classes emerge, there is

Exhibit 6. 2021-2029 annual growth rates

	US	International
Plant Based	36,8%	37,3%
Meat market	3,2%	4,6%
BYND	22,6%	42,7%

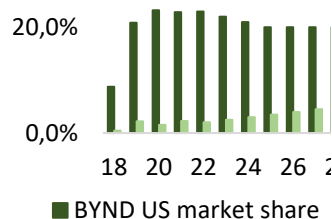
Source: Own Calculations

chance to incorporate plant-based meat substitutes as soon as more disposable income exists instead of having to change consumer habits as in the more developed countries. This fact, along with the growth in the more developed European and East Asian markets presents a high growth opportunity for these products.

The forecast for the international market share of plant-based substitutes in the meat industry used had very similar approach to that of the US. The market is not as developed yet and therefore can be seen as being around 4-6 years behind the US (see exhibit 5). Thus, we forecast this growth to follow that of the US and reach 2,7% (\$45.3 billion) of the total meat market in 2029 (\$80.4 billion -4,7% in 2033) at an average growth rate of 37.3% until 2029 (see exhibit 6).

Exhibit 7. Beyond Meat Market Share

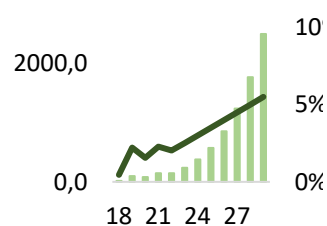
40,0%



Source: Own Calculations

Looking at Beyond Meat's market share of only 2.28% (compared with 23% in the US), a very different picture arises. The brand is less known comparatively and must instead gain market share. Their strategic partnerships in the Foodservice sector with their partnerships with Starbucks and KFC in China as well as development of specific products for China will translate into a higher market share in this important market. At the same time, Beyond Meat can establish itself in Europe using the same strategy with their McDonald's partnerships. We forecast an increase in market share from 2.28% in 2021 to 5.5% in 2029 and 7% in 2033 (see exhibit 7). In dollar values, the international sales volume in 2021 was \$144 million and forecasted to be \$2.49 billion in 2029 and \$5.63 in 2033 due to growth in market share as well as industry growth (see exhibit 8).

Exhibit 8. Beyond Meat International Revenues



Source: Own Calculations

Operating Expenses

Operating expenses are normally tied to profitability almost as much as revenues themselves. In the consumer goods industry, most operating expenses scale with revenues as it is an industry with normally low margins and very price competitive. However, some are more fixed and as Beyond grows, they may be able to lower some operating expenses and thus generate more Operating Income.

These operating expenses should not exceed 100% as this is the first step for a new company to achieve profitability, having positive operating income. If a company has to spend more on the cost of their inputs (cost of sales), their business model must allow them to spend less on marketing, research & development, distribution or vice-versa. In the case of Beyond Meat, we forecast that the point where Operating Income will be positive to be around the 2026. (see exhibit 9).

Exhibit 9. Operating Expenses as % of Sales



Source: Own Calculations

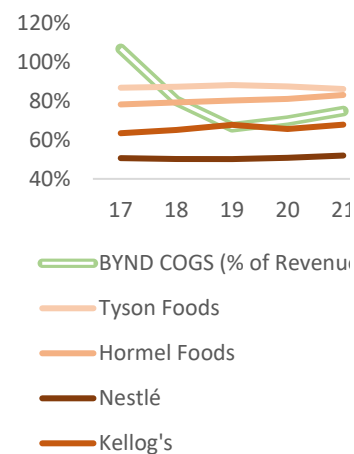
A brief description of each operating expense and their forecast method is shown below.

- Cost of Sales

Beyond Meat does not communicate a broken-down version of their cost of sales. However, as their line of products is not that varied and the entirety of it falls under plant-based meat substitutes, it is not as important to differentiate product cost of sales as it might be in more complex enterprises.

Therefore, the method used for projecting the future cost of sales was to compare to their industry peers and understand where the meat industry, as well as the consumer goods industry is heading. Looking at their competitors (see exhibits 20 and 21), we can immediately see that their competitors have a more stable COGS to Sales ratio, while Beyond is still more variable. This makes sense as the company is in a much earlier stage. It is clear we can make a distinction in these 4 competitors: Tyson Foods and Hormel Foods products are less differentiated while branding is more important for Kellogg's and Nestlé. This means that they can charge a higher price for their cost of sales while the first two are mostly trying to minimize price as much as possible. This is also reflected in their Selling, General & Administrative Expenses covered in the next section.

Exhibit 10. Operating Expenses as % of Sales



Source: Own Calculations

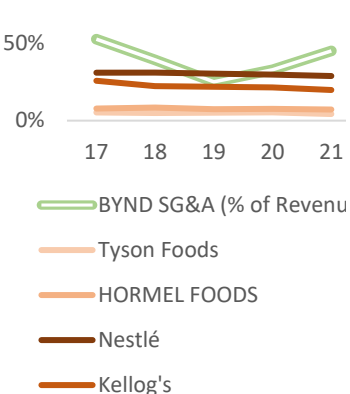
Beyond Meat seems to have characteristics which can place them into either camp. On the one hand, their branding is very important to their customers and depend on it to be able to charge a higher price tag, while at the same time, producing a product which aims to be as close to regular meat as possible. If all plant-based meat ends up tasting the same, Beyond Meat will have to compete on price with its plant-based competitors. However, there is a possibility that differentiation will play a larger role than it does in regular meat. If Beyond Meat's products are tastier, healthier and/or simulate regular meat better, differentiation becomes a key component, and higher price can be charged.

Therefore, we estimate that Beyond Meat will gradually reach a similar level of their competitor Kellogg's, around 65%.

- Selling, General & Administrative Expenses

Selling, General & Administrative expenses includes all other expenses directly related to the operation of the business which are not an input of the end product. This varies from marketing to utilities, human resources & IT payroll, etc. In Beyond Meat's case, they spent 45,1% of their sales in R&D, this is much higher than their traditional meat competitors (see exhibits 20 and

Exhibit 11. SG&A as % of Sales



Source: Own Calculations

22).

This value is likely to come down as the restructuring expenses of the past years will disappear and the reduction in workforce takes effect. In their Q3 earnings call, Beyond Meat CEO, mentioned the need to right size their operations for the number of sales and stop sizing them for growth. This will likely translate in cuts in SG&A and so we can forecast a lower future value, even in the short-term.

In the long-term, the value of these expenses as a percentage of sales should lie between the values of the two different types of consumer goods companies mentioned in the Revenues – Us Market section. We forecast a medium to long-term value of 15% for SG&A as a percentage of Sales by 2028, with a similar thought process to that of Cost of Sales.

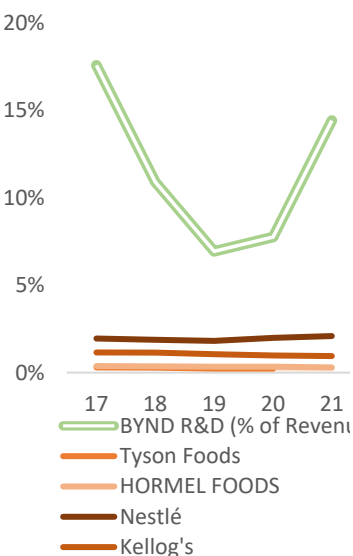
▪ Research & Development Expenses

When it comes to Research & Development, it is clear that Beyond Meat spends much more as a percentage of sales than any of its traditional competitors (see exhibits 20 and 23), which spend on average 1.2%. By functioning in a growing market based on technological improvements, Beyond Meat needs to spend a much larger amount (at least in % of sales) relative to its competitors on R&D in order to maintain and increase competitiveness.

Beyond Meat is in the process of opening their first R&D centre outside the US. The new centre will be built in Shanghai, China and includes a pilot lab and sensory testing capabilities. This is a clear sign that Beyond Meat is maintaining their pattern of R&D spending while also being able to reduce cost to scientific output with cheaper labour in China. Another advantage of this new centre is their ability to develop a feel for local preferences in taste and launch specialised range of products. An example of this is the recent launch of Beyond Pork specifically for the Chinese market.

Another aspect to consider is that Beyond Meat's goals mentioned above in the Selling, General & Administrative Expenses will give a lot more leeway for further investments into R&D. We predict a continuing of the trend and use an average of the previous years for the future values of R&D as a percentage of sale and a gradual shift to around 8% of Sales.

Exhibit 12. R&D as % of Sales



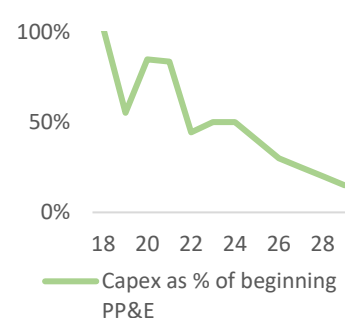
Source: Own Calculations

Capital Expenditures

Beyond Meat is a company in a growing niche industry which is still massively investing in growing market share for both the industry of plant-based meat substitutes as well as inside the industry. Unlike in more mature segments where most capital expenditures (CapEx) is based on maintaining existing property plant & equipment (PP&E), Beyond Meat's CapEx has mostly been focused on growth and expansion, both in product range as well as geographically.

However, the economic environment mentioned above has forced change in strategy to focus on sustainable growth and cash flow positive operations in 2023. This will mean that Beyond Meat will no longer focus on expanding production at all costs and will be more selective in investments as well. A lot of their manufacturing is currently based on co-manufacturing deals which are more expensive than in-house manufacturing. Part of the new sustainable growth and lean operations objective is cutting these co-manufacturing deals. In order to do so, they will have to invest in capabilities inside their own production facilities.

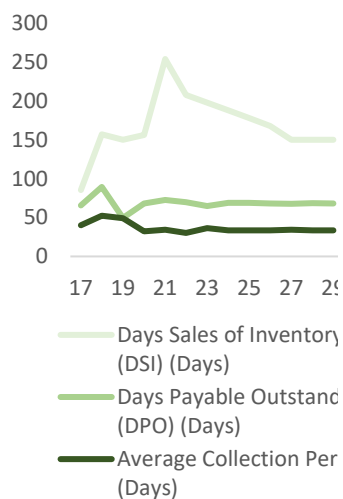
Exhibit 13. CapEx as % of Previous Year PP&E



Source: Own Calculations

We expect CapEx to focus more on expanding their core production than on pure expansion from now on, meaning CapEx is forecasted to be lower than it has been in recent past. Taking this into account, we anticipate that the ratio of CapEx to previous year PP&E will decrease from its current level of 83% in 2021 to 15% in 2029 and stabilize from then on. This decrease can already be seen in first 3 quarters of 2022 with it having decreased to 44%. (see exhibit 13)

Exhibit 14. Important Net Working Capital ratios



Source: Own Calculations

Net Working Capital

Accounts receivable represent the cash which is yet to be received by clients. Beyond Meat has a collection period averaging the 37-day mark for the past 4 years. The forecast is for this level to be sustained and not fluctuate as the company is not investing into different industries which might impact this ratio. The dollar value of accounts receivable will therefore increase with sales (see exhibits 25 and 26).

- Accounts Receivable

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- Accounts Payable

Going the opposite way of the Accounts receivable, payables represent the cash which is yet to be paid to suppliers. As the Days payable outstanding actually surpass the level of the average collection period (65 days on average for the past 4 years), Beyond Meat is able to have less working capital needs. Using the same rationale as for receivables, this level is not expected to fluctuate much and the ratio is forecasted to be stable. The dollar value of accounts payable will therefore increase with the cost of sales. (see exhibits 25 and 26).

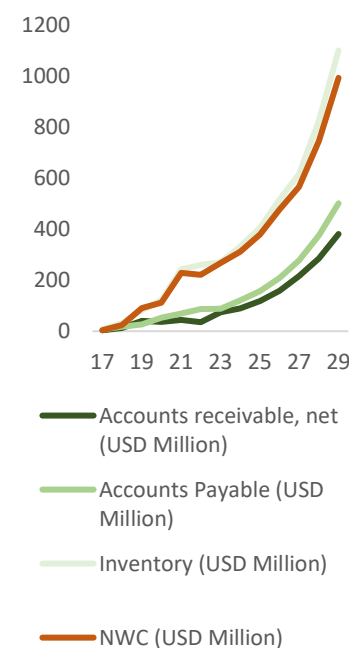
- Inventory

Inventory management in Beyond Meat has thus far been focused on having a wide selection of products always ready to ship and focusing on products which provide a healthy margin of sales. Combined with the slowdown in sales growth compared to the previous years partly attributed to consumers trading down for cheaper products has translated into a buildup in inventory. The peak in inventory was reached around the end of Q1 and Beyond Meat has since attempted to drawdown their inventory having decreased it by around \$37 million until October 1st (\$283.8 million to to \$247 million from Q1 to Q3 2022).

This inventory behaviour is expected to continue as Beyond Meat streamlines their operation and implements lean value streams and tries to minimize the number of days in inventory.

The forecast for future inventory values was based on this ratio and calculated by dividing the inventory at the end of a year (or 4 quarters) by the cost of goods sold for that period. The forecast follows a trend of reduction from 2021 (254 days) to 2022 (193 days) and 2023 (183 days) as a consequence of drawing down inventory. We expect the days in inventory to steadily decline and reach a stable level similar to before 2021 of 150 in 2027 and a dollar value of \$260

Exhibit 15. Accounts Receivable and Payable



Source: Own Calculations

million by end of 2023 (see exhibits 25 and 26).

Weighed Average Cost of Capital

In order to calculate the weighted average cost of capital (WACC) for Beyond Meat, the initial focus was on the cost of debt. Beyond Meat issued a \$1 billion bond in 2021 maturing in March 2027 with a 0% coupon. From this bond, a yield to maturity (YTM) was obtained of 3.5%. Dividing the 5-year probability of default Spread in the CDS market of 2.48% and the average Loss Given Default (LGD) of their competitors, we were able to get a 5-year probability of default of 24.62%, compared with an average of 5.92%.

Exhibit 16. Beyond Meat and Competitor's Debt

Source: Own Calculations

	YTM (of plain vanilla debt)	Probability of Default (5y)	Loss given Default	Spread in CDS Market
Beyond Meat	3,50%	24,62%	10,07%	2,48%
Nestlé	4,28%	5,23%	9,17%	0,48%
Hormel Foods	4,25%	4,46%	10,76%	0,48%
Kellogg's	4,69%	6,67%	9,44%	0,63%
Tyson Foods	4,79%	7,32%	10,92%	0,80%
<i>Average for Competitors</i>	4,50%	5,92%	10,07%	0,60%

This allowed us to calculate the cost debt (R_D) and Beta for Beyond Meat and their competitor's debt using $R_D = YTM \text{ (of plain vanilla debt)} - PD * LGD$.

Using data on the risk-free rate and average annual return of the market for the past 5 years (2.44% and 8.06%, respectively), we calculated the debt beta as the division between R_D – risk-free rate and the average annual return of the market minus the risk-free rate. We arrived at a beta of -0,252 and an average for competitors of 0.261:

Exhibit 17. Beyond Meat and Competitor's Debt Beta

Source: Own Calculations

	Rd	Bd
Beyond Meat	1,02%	-0,252
Nestlé	3,80%	0,242
Hormel Foods	3,77%	0,237
Kellogg's	4,06%	0,288
Tyson Foods	3,99%	0,276
<i>Average for Competitors</i>	3,91%	0,261

In order to find the equity beta, we first used the same market returns used for the debt beta and Beyond Meat's returns and calculated the covariance between them (0.0058). Dividing this value with the market variance of 0.2772%, we obtained the equity beta of 2.1 for Beyond Meat and an average of 0.392 for their competitors:

Exhibit 18. Beyond Meat and Competitor's Equity Beta

Source: Own Calculations

	Covar	Be
Beyond Meat	0,00582	2,10
Nestlé	0,00131	0,47
Hormel Foods	0,00044	0,16
Kellogg's	0,00129	0,47
Tyson Foods	0,00131	0,47
<i>Average for Competitors</i>	0,00109	0,39

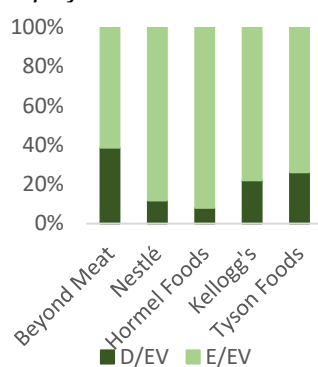
Using data on the balance sheets of Beyond Meat and their competitors, the Debt to Enterprise Value as well as the Equity to Enterprise Value were calculated to “un-lever” the Beta. The unlevered beta for Beyond was 1.19 while the average for their competitors was only 0.56:

Exhibit 19. Beyond Meat and Competitor’s Unlevered Beta

Source: Own Calculations

	D/EV	E/EV	Bu
Beyond Meat	0,39	0,61	1,19
Nestlé	0,12	0,88	0,45
Hormel Foods	0,08	0,92	0,16
Kellogg's	0,22	0,78	0,43
Tyson Foods	0,26	0,74	0,42
Average for Competitors	0,20171	0,80	0,56

Exhibit 20. Beyond Meat and Competitor’s Debt and Equity Mi



For the final step in the WACC calculation, the releveled beta was calculated as 1.75 using the debt beta, the unlevered beta and the Debt to Enterprise Value ratio. Then, using the CAPM framework the return on equity was calculated as 12.3%.

Finally, the WACC was calculated using the formula: $WACC = Re * E/EV + Rd * D/EV * (1 - tax\ rate)$ and obtained a value of 7.83%.

Exhibit 21. Final WACC Calculation

Source: Own Calculations

Rd	1,0%
Be	1,75
Re (CAPM)	12,3%
Corporate Tax Rate	21,0%
WACC	7,83%

Discounted Cash Flow Analysis

The discounted cash flow analysis was performed last taking into account the inputs from all the forecasts done in both the value drivers as well as expenditure forecasting. The forecast was made until the year of 2033, meaning 10 years of forecasts were taken into account as this is a growth company which has had volatile returns and earnings and therefore, needs more years than the typical 5 year outlook to get a better picture of the value of the company.

Taking the forecasted Earnings before Income and Taxes (EBIT) from the forecasts and removing the notional taxes Beyond Meat would pay at a statutory tax rate of 21% in the US, it is possible to calculate the Net Operating Profit less adjusted taxes until 2033:

Exhibit 22. Forecasted EBIT to NOPLAT (USD Million)

Source: Own Calculations

Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
EBIT	\$ -175	\$ -367	\$ 7	\$ 29	\$ 64	\$ 103	\$ 173	\$ 293	\$ 433	\$ 587	\$ 723	\$ 889	\$ 1 042
Notional taxes	\$ -	\$ -	\$ 2	\$ 6	\$ 13	\$ 22	\$ 36	\$ 62	\$ 91	\$ 123	\$ 152	\$ 187	\$ 219
Tax adjustments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NOPLAT	\$ -175	\$ -367	\$ 6	\$ 23	\$ 51	\$ 82	\$ 137	\$ 232	\$ 342	\$ 463	\$ 571	\$ 702	\$ 823

The forecast points to an already positive NOPLAT in 2023 of \$6 million. Beyond Meat had already been very close before the pandemic to a positive NOPLAT when, in 2019, it recorded an EBIT and NOPLAT of \$ -0.5 million.

However, this is still not the full picture for investors as depreciation and amortization are non-

cash expenses which affect the EBIT calculation and they must be added before to get a fuller picture of the future of Beyond Meat.

Exhibit 23. Forecasted NOPLAT to Gross Cash Flow (USD Million)

Source: Own Calculations

Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
NOPLAT	\$ -175	\$ -367	\$ 6	\$ 23	\$ 51	\$ 82	\$ 137	\$ 232	\$ 342	\$ 463	\$ 571	\$ 702	\$ 823
Depreciation and Amortization	\$ 22	\$ 22	\$ 33	\$ 49	\$ 69	\$ 88	\$ 109	\$ 128	\$ 143	\$ 153	\$ 154	\$ 155	\$ 157
Gross Cash flow	\$ -153	\$ -345	\$ 39	\$ 73	\$ 119	\$ 170	\$ 245	\$ 359	\$ 485	\$ 616	\$ 725	\$ 857	\$ 981

As capital expenditures rise, so will depreciation and this will have a larger impact in the firms cash flow.

Finally, to get to the operating free cash flows (FCF) these expenditures in property, plant & equipment as well as working capital needs must be added:

Exhibit 24. Forecasted Gross Cash Flow to Operating FCF (USD Million)

Source: Own Calculations

Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Gross Cash flow	\$ -153	\$ -345	\$ 39	\$ 73	\$ 119	\$ 170	\$ 245	\$ 359	\$ 485	\$ 616	\$ 725	\$ 857	\$ 981
Change in NWC	\$ 117	\$ -8	\$ 47	\$ 44	\$ 68	\$ 98	\$ 90	\$ 179	\$ 248	\$ 235	\$ 284	\$ 339	\$ 319
CapEx	\$ 136	\$ 136	\$ 221	\$ 332	\$ 398	\$ 418	\$ 453	\$ 453	\$ 408	\$ 313	\$ 172	\$ 181	\$ 190
Operating FCF	\$ -406	\$ -473	\$ -230	\$ -303	\$ -347	\$ -346	\$ -298	\$ -273	\$ -170	\$ 69	\$ 269	\$ 337	\$ 472

Using the WACC obtained in the previous chapter, the discounted FCF were calculated in order to value each cash flow at their present value. Summing all discounted cash flows yielded a negative value of \$790 million. However, there is still need to account for the value retained in 2033, the terminal value. This terminal value was estimated as a perpetuity with a growth rate the size of the regular meat industry (1.02%) as the plant-based meat substitutes meat industry will much more mature by 2033. The 2033 FCF is estimated at \$472 million which yields a terminal value of around \$7 billion in 2033. This value must be discounted back to the present value with WACC and added to the negative \$790 million yielding an enterprise value of \$2.6 billion:

Exhibit 25. Enterprise Value (USD Million)

Source: Own Calculations

Sum of DCF	\$ -789,7
Terminal growth rate	1,02%
Terminal value	\$ 7 072,2
Enterprise Value	\$ 2 560,9

Getting to the share price predicted by the model requires requires removing the 2023 debt of \$1.81 billion from the enterprise value to get to the amount of value attributable to shareholders. Dividing the shareholder's equity value by the \$63.67 million shares in the company, the predicted share price is \$11.76, which is 19.56% less than the \$14.62 it is trading at as of 14th of December 2022.

Exhibit 26. Share Price Calculation

Source: Own Calculations

Value of Debt	USD million	\$	-1 812,2
Value of Equity	USD million	\$	748,7
Number of Shares	million		63,7
Price per share	USD	\$	11,8
Share Price (14/12/22)	USD	\$	14,6
Premium	Percentage		-19,56%

Sensitivity Analysis

Before committing to a recommendation on the stock, some sensitivity analysis tests were made in order to ascertain the main variables influencing the stock price. To this end, a first test changing the terminal growth rate and WACC were computed as they are the two main variables outside the forecast influencing the enterprise value estimation.

Exhibit 27. Impact of WACC and Terminal Growth rate on Share Price

Source: Own Calculations

		WACC											
		6,51%	6,76%	7,01%	7,26%	7,51%	7,76%	8,01%	8,26%	8,51%	8,76%	9,01%	
Terminal growth rate	0,77%	\$ 28,6	\$ 24,1	\$ 20,0	\$ 16,3	\$ 12,9	\$ 9,7	\$ 6,8	\$ 4,1	\$ 1,6	\$ -0,7	\$ -2,8	
	0,82%	\$ 29,2	\$ 24,7	\$ 20,5	\$ 16,7	\$ 13,3	\$ 10,1	\$ 7,2	\$ 4,4	\$ 1,9	\$ -0,4	\$ -2,5	
	0,87%	\$ 29,9	\$ 25,3	\$ 21,1	\$ 17,2	\$ 13,7	\$ 10,5	\$ 7,5	\$ 4,8	\$ 2,2	\$ -0,1	\$ -2,3	
	0,92%	\$ 30,5	\$ 25,9	\$ 21,6	\$ 17,7	\$ 14,2	\$ 10,9	\$ 7,9	\$ 5,1	\$ 2,5	\$ 0,2	\$ -2,0	
	0,97%	\$ 31,2	\$ 26,5	\$ 22,1	\$ 18,2	\$ 14,6	\$ 11,3	\$ 8,3	\$ 5,4	\$ 2,9	\$ 0,5	\$ -1,8	
	1,02%	\$ 31,9	\$ 27,1	\$ 22,7	\$ 18,7	\$ 15,1	\$ 11,7	\$ 8,6	\$ 5,8	\$ 3,2	\$ 0,7	\$ -1,5	
	1,07%	\$ 32,6	\$ 27,7	\$ 23,3	\$ 19,2	\$ 15,5	\$ 12,1	\$ 9,0	\$ 6,1	\$ 3,5	\$ 1,0	\$ -1,2	
	1,12%	\$ 33,3	\$ 28,3	\$ 23,8	\$ 19,7	\$ 16,0	\$ 12,6	\$ 9,4	\$ 6,5	\$ 3,8	\$ 1,3	\$ -1,0	
	1,17%	\$ 34,0	\$ 29,0	\$ 24,4	\$ 20,3	\$ 16,5	\$ 13,0	\$ 9,8	\$ 6,9	\$ 4,1	\$ 1,6	\$ -0,7	
	1,22%	\$ 34,8	\$ 29,7	\$ 25,0	\$ 20,8	\$ 16,9	\$ 13,4	\$ 10,2	\$ 7,2	\$ 4,5	\$ 1,9	\$ -0,4	
	1,27%	\$ 35,5	\$ 30,3	\$ 25,6	\$ 21,3	\$ 17,4	\$ 13,9	\$ 10,6	\$ 7,6	\$ 4,8	\$ 2,2	\$ -0,1	

It is pretty clear that even a half p.p. increase in the WACC in either direction could alter the recommendation completely. At the same time, the terminal growth rate is less influential within an expectable band. WACC being so influential is easily explainable as most of the value for Beyond Meat is directly attributable to the terminal value. As a growth stock, the value for investors lies in the long-term and not in short to medium term gains. However, this presents a risk that if the discount rate (WACC) changes, the value (or not) proposition for Beyond Meat changes drastically. The following sensitivity test was conducted using two of the main factors directly influencing the WACC, the cost of debt and the cost of equity:

Exhibit 28. Impact of the Cost of Equity and Debt on the WACC

Source: Own Calculations

		Cost of equity								
		9,96%	10,48%	11,03%	11,61%	12,23%	12,84%	13,48%	14,15%	14,86%
Cost of Debt	0,83%	6,32%	6,64%	6,97%	7,32%	7,70%	8,07%	8,46%	8,87%	9,30%
	0,87%	6,33%	6,65%	6,98%	7,34%	7,71%	8,08%	8,47%	8,88%	9,31%
	0,92%	6,34%	6,66%	7,00%	7,35%	7,72%	8,10%	8,49%	8,90%	9,33%
	0,97%	6,36%	6,68%	7,01%	7,37%	7,74%	8,11%	8,50%	8,91%	9,34%
	1,02%	6,38%	6,69%	7,03%	7,38%	7,76%	8,13%	8,52%	8,93%	9,36%
	1,07%	6,39%	6,71%	7,05%	7,40%	7,77%	8,14%	8,53%	8,94%	9,37%
	1,12%	6,41%	6,73%	7,06%	7,42%	7,79%	8,16%	8,55%	8,96%	9,39%
	1,18%	6,42%	6,74%	7,08%	7,43%	7,80%	8,18%	8,57%	8,98%	9,41%
	1,24%	6,44%	6,76%	7,10%	7,45%	7,82%	8,20%	8,59%	9,00%	9,43%

The cost of equity proves key to understanding the dynamics in the WACC as even a 10% change would completely change the value proposition for investors. If the cost of equity were to increase 10% to 13.48%, the WACC would now be 8.52%, up from the 7.76% estimated now, the Share price would be around \$3.2, much lower than the predicted \$11.76.

Recommendation

Beyond Meat is inserted into a segment that is still in its infancy and is still yet to prove itself in the long-run. The research above points to a sell recommendation. Considering the difficulties Beyond Meat face due to the aftermath of the pandemic and the fact that more mature companies are making strides in the segment, Beyond Meat will have to focus heavily on lowering costs and above all, prices to maintain their market share and even continue into more homes. While it is true that more products in the sector may increase the overall market and maybe even have a positive impact on Beyond Meats revenues, in the long-term the challenge will be to compete with mature companies with lean and low cost operations.

The share price has already decreased more than 90% since its peaks in 2019 and 2020, however the recommendation is to SELL as the forecasted price is 19.56% below the current market price and we expect the share price to decline even further.

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“BEYOND MEAT”

COMPANY REPORT

CONSUMER GOODS

11 NOVEMBER 2022

STUDENT: JOÃO CARÔTO, ANA RIBEIRO 39220@novasbe.pt;39425@novasbe.pt

A struggling market leader in a new industry

Is the Plant-based Industry beyond Beyond Meat

- Beyond Meat’s share price is trading at \$14.62, down more than 93% from its all-time high of \$234.90 in July 2019.
- Revenue growth slowed down from 36.6% in 2020 to 14.2% in 2021 and is expected to be -9.3% in 2022.
- The plant-based industry is expected to grow at a CAGR of 27.35% until 2030. Most of the growth is in the international segment as the US is slightly more mature. Consumers are flocking to healthier and more ethical protein alternatives as climate change concerns mount.
- Major traditional multinationals as well as other startups are paying attention to the growth of this segment and have challenged the dominance of Beyond Meat. Nestlé, Kellogg’s and even other
- In a time of uncertainty and volatility and raising interest rates, Beyond Meat focuses on reaching cash flow positive operations by the Q3 2023. Beyond Meat can no longer rely on cheap debt and must instead focus on having leaner operations.
- The analysis in this report based on a discounted cash flow model concluded that the stock is overvalued by 25.68% and presents a SELL recommendation

Company description

Beyond Meat is an innovative alternative meat products producer based in the United States. Their products substitute meat with only plant-based products while trying to imitate the taste and texture of traditional meat products.

Recommendation: SELL

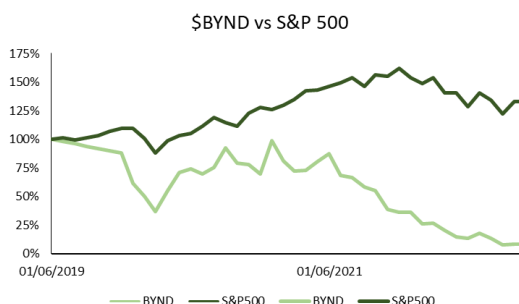
Price Target FY23: 11.76 \$

Price (as of 16-Dec-22) 14.78 \$

Bloomberg

52-week range (\$)	11.560-74
Market Cap (\$b)	0.93
Outstanding Shares (m)	63.670

Source: Bloomberg



Source: Bloomberg

(Values in \$ millions)	2021	2022E	2023F
Revenues	464.7	421.5	741.8
Gross Margin	25.2%	(8.5%)	33%
R&D as % of Sales	14%	15%	9%
EBITDA	(153.3)	(345.1)	40.2
Net Profit	(179.1)	(379.6)	(168)

Source: SEC, Own calculations

THIS REPORT WAS PREPARED EXCLUSIVELY FOR ACADEMIC PURPOSES BY JOÃO PEDRO CARÔTO A MASTER IN FINANCE STUDENT 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
SHAREHOLDER STRUCTURE & DIVIDEND POLICY	4
BEYOND MEAT'S BUSINESS MODEL.....	4
PRODUCTION	5
PRODUCT DISTRIBUTION	6
SOURCING & SUPPLY	7
PRODUCT LINES.....	7
▪ <i>Beyond Burger</i>	8
▪ <i>Beyond Sausage</i>	8
▪ <i>Beyond Breakfast Sausage</i>	8
▪ <i>Cookout Classic</i>	8
▪ <i>Beyond Steak</i>	8
▪ <i>Beyond Meatballs</i>	9
▪ <i>Beyond Beef Crumbles</i>	9
▪ <i>Beyond Chicken Tenders</i>	9
▪ <i>Other products</i>	9
THE GROWTH OF THE PLANT-BASED INDUSTRY	11
THE PLANT-BASED MEAT CONSUMER	11
COMPETITION.....	12
▪ <i>Nestlé</i>	13
▪ <i>Kellogg's</i>	13
▪ <i>Tyson Foods</i>	14
▪ <i>Impossible Foods</i>	14
COMPETITIVE ADVANTAGES	15
▪ <i>Early Entry</i>	15
▪ <i>Innovation and R&D</i>	15
VALUATION.....	16
REVENUE	16
▪ <i>US Market</i>	16
▪ <i>International Market</i>	18
OPERATING EXPENSES	19
▪ <i>Cost of Sales</i>	19
▪ <i>Selling, General & Administrative Expenses</i>	20
▪ <i>Research & Development Expenses</i>	21
CAPITAL EXPENDITURES	21
NET WORKING CAPITAL	22
▪ <i>Accounts Receivable</i>	22
▪ <i>Accounts Payable</i>	22
▪ <i>Inventory</i>	22
WACC	ERROR! BOOKMARK NOT DEFINED.
DISCOUNTED CASH FLOW ANALYSIS	25
SENSITIVITY ANALYSIS	27
RECOMMENDATION	29
APPENDIX	30
FINANCIAL STATEMENTS.....	30

Company Overview

Ethan Brown founded Beyond Meat in 2009 in Los Angeles Los Angeles, USA. After receiving funding from big-name investors such as Bill Gates, Biz Stone, the Human Society and Tyson Foods, Beyond Meat developed its first line of plant-based meat substitutes. The company is headquartered in El Segundo, California and is currently the market leader in the segment in the US.

Beyond Meat is a leading plant-based meat company offering several types of plant-based meat. An initiative that is based on allowing consumers to experience the taste, texture and other sensory attributes of popular animal meat products while enjoying the nutritional and environmental benefits of eating plant-based products.

Beyond Meat's commitment, "Eat What You Love," represents the belief that the way we eat can have a major impact on our personal health and the health of our planet. Since by reducing our consumption of animal-based meat and choosing to eat plant-based meat, we positively impact four global issues: human health, climate change, natural resource constraints and animal welfare. The main selling point is that the products are both good for the planet and the taste buds, where no taste compromise is necessary to be ethically concerned.

In 2013, Beyond Meat launched its plant-based chicken substitute at Whole Foods across the US, its first entry into the retail market. Since then, they are present worldwide and have expanded to manufacturing facilities in the Netherlands and China

Beyond Meat extracts protein mostly from yellow pea but other proteins are also used such as beet juice, fava beans and other plants. The company's current portfolio includes burgers, sausages, cookout specials, steak, beef jerky as well as various breakfast sausages and patties. They have established important partnerships with McDonald's, Burger King, KFC, Starbucks, as well as major retailers in the US, Europe and China.

Beyond Meat is continuously launching new products in order to get more market share and get the brand into more households. New products are launched every year but now Beyond seems to be narrowing down their product line in the face of harshening economic conditions. Still, products such as Beyond Steak which launches in 2022.

Exhibit 1. Beyond Meat's strategy



Exhibit 2. Beyond Pork launches only in China in 2020



Source: Beyond Meat

Beyond Meat is now trying to streamline their operations in an environment of more uncertainty for consumers and focus on the products which sell the most and trying to lower their prices.

Shareholder Structure & Dividend Policy

On May 6, 2019, Beyond Meat went public by completing its first IPO (initial public offering) with great performance by selling 9.6 million shares at a price of \$25 per share, having traded up to \$72 and closing the trading day \$65.75. The stock is listed on the Nasdaq Global Select Market.

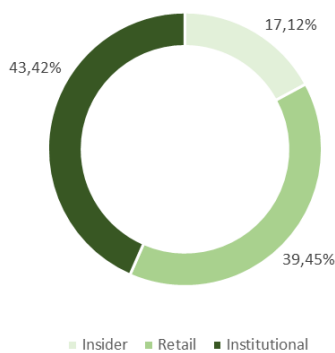
The stock reached an all-time high on July 26th 2019, as the price per share was \$234.9. A few days later, on July 31st 2019, they announced a second public offering closing on August 5th 2019, where they announced they had offered 3.74 million shares, of which 0.25 million by Beyond Meat itself. Beyond Meat received \$38.5 million net proceed with a \$160 per share price to the public.

In order to innovate in plant-based protein products and beverages, on January 25, 2021, they entered into The PLANeT Partnership, LLC ("TPP"), a joint venture company with PepsiCo, Inc.

Beyond Meat is broadly distributed, between 43.42% institutional shareholders, 17.13% Beyond Meat insiders and 39.45% retail investors. The largest individual shareholder is the Vanguard group which holds 8.96%, followed by 7.72% which is owned by Kleiner Perkins Caufield Byers Xiv LLC.

As the company does not generate enough cash to support its own operations, it does not have the financial means to pay a dividend now and is not expected to do so in the near future. At this point, Beyond Meat needs to retain all the profits and cash it can to sustain itself and keep the company afloat, as although revenue growth has been great, this does not translate into profitability and positive cash flows.

Exhibit 3. Shareholder Structure



Source: Beyond Meat

Beyond Meat’s Business Model

Beyond Meat is a leading plant-based meat company offering a portfolio of innovative plant-based meats made from simple ingredients with no GMOs, hormones, antibiotics or cholesterol. They separate their business units into retail and food service in the US as well as International markets. As of December 2021, the products were available in 130,000 distribution points in over 90 countries worldwide (up 8,000 when compared to 2020).

Exhibit 4. First Joint Venture’s Product, Beyond Meat Jerky



Through new partnerships with some of the world's largest and most recognised QSR brands, Beyond Meat has been consistently increasing its distribution points in the market and believes that such partners can accelerate increased brand recognition, scale-oriented cost savings and consumer adoption. In collaboration with household names such as McDonald's, Yum Brands, KFC, Pizza Hut, A&W Canada, Panda Express and Carl's Jr. among others, they continue to execute various market trials and launches. They have also entered into the PLANeT, LLC Partnership, a joint venture with PepsiCO (one of the world's largest food and beverage companies), to produce and innovate plant-based protein snacks and beverages. On March 23rd 2022, this partnership enabled the launch of Beyond Meat jerky. They believe this joint venture allows them to reach more consumers by entering new product categories and distribution channels around the world.

Production

Beyond Meat production facilities are located in the US, Netherlands and China

Beyond Meat's main purpose is to serve nutritious plant-based meats that cook look, and have the same texture as real meat, in order to deliver an eating experience that is indistinguishable from that provided by animal-based meats.

Beyond Meat trust that research, development and innovation represent a critical competitive advantage as they are the core elements of their business strategy. Their "state-of-the-art Manhattan Beach Project Innovation Center in El Segundo, California brings together leading scientists from chemistry, biology, material science, food science and biophysics disciplines who work together with process engineers and culinary specialists to pursue our vision of perfectly building plant-based meat".

The manufacturing process is mostly done internally, especially in the beginning of the process, but the later stages are outsourced to co-manufacturers. However, in the latest earnings call, Beyond Meat's CEO and founder Ethan brown has mentioned they are looking to identify which co-manufacturers are needed and bring as much production in-house as possible.

The first step of their manufacturing process is to receive the dry blend containing primarily pea protein. The dry blend then enters their extruder, where both water and steam are added to form a more cohesive mix. The subsequent step is to use a combination of heating, cooling and varying pressure to create woven protein. This woven protein serves as the basis of all their products to which other ingredients and flavors are added forming different products. Through either their own manufacturing or co-manufacturers in the US,

Netherlands and China, Beyond Meat then packages the products and ships them out

Beyond Meat primary facilities are located in Columbia, Missouri, and Devault Pennsylvania, while their research and administrative offices are located in El Segundo, California.

Columbia, Missouri is home to their main production facilities for their woven protein and dry blends. They lease manufacturing facilities totaling about 26,000 square feet under a lease that expires on June 30, 2022, and about 64,000 square feet under a lease that expires on July 31, 2025. The latter lease, which expires on July 31, 2025, is subject to automatic extensions for two subsequent three-year periods in accordance with the terms of the lease, unless they give notice terminating the lease at least a year before that date.

They have an 86,000 square feet (8045 square meters) manufacturing facility in Devault, Pennsylvania, which is mostly utilized to produce completed goods, and it sits on roughly 19.34 acres of land.

In their roughly 48,000 square feet (4460 square meters) manufacturing facility in Enschede, the Netherlands, they manufacture their woven protein and dry blend flavor systems for delivery to regional co-manufacturers, such as one of their distributors who established a co-manufacturing facility there to produce their finished products.

They rent a manufacturing space in Jiaxing, China, where they house end-to-end production and make their woven protein. This space is roughly 43,000 square feet (4000 square meters). The leased facility's renovations were nearly finished when trial production started in the first quarter of 2021. Several commercial trials of a few of their production techniques were completed in the second quarter of 2021. The facility finished commercializing end-to-end production at the end of 2021 after successfully qualifying its extrusion production capabilities in the third quarter of 2021 and completing its FSSC 22000 and ISA Halal certifications in the fourth quarter of the same year. They have rented a 12,100 square foot space in Shanghai, China, in the fourth quarter of 2021. This space will serve as a local research and development facility to support their nearby manufacturing operations.

Exhibit 5. US vs UK products

- | | |
|--------------------|------------------|
| STEAK | BURGERS |
| CHICKEN | MINCE |
| GROUND BEEF | MEATBALLS |
| SAUSAGE | SAUSAGE |
| BURGERS | |
| MEATBALLS | |
| JERKY | |

Product Distribution

Beyond Meat's is available in large supermarket chains as well as varying franchises throughout mostly the US, the UK, the EU and China. Their bet on

three main production centres means they can get the product easily to these 4 markets, with the UK one serving as an extent of the EU market and therefore acting as more or less separate distribution centers. That is also why some products are only available in one or two markets but not in others (see exhibit 5)

This strategy also ensures that less time is necessary from production to shelf-placement, a key requirement in the fresh produce section.

Sourcing & Supply

The principal ingredient that Beyond Meat use to manufacture their products is yellow pea protein. They procure the raw materials for their woven protein from a high number of different suppliers, but for pea protein they only rely on two suppliers: the French Roquette Freres and Puris Proteins, LLC, which in turn is owned the multinational Cargill.

In January 2020, Beyond Meat announced a multi-year sales agreement with Roquette Freres, a global leader in plant-based ingredients and a pioneer of plant proteins, that will expire on December 31, 2022.

Puris Proteins, LLC, expanded its production capacity, is the leader supplier of pea protein in North America and is providing Beyond Meat withing the framework of a supply agreement that will end on the same date of the agreement with Roquette. In 2022, Cargill invested a further \$25 million in Puris in order to take advantage of the increasing demand for alternative protein.

The price of pea protein has been increasing and the number of suppliers is not large. This is a key bottleneck for the alternative meat industry and could present a big challenge for Beyond Meat. Beyond Meat might face problems sourcing this key ingredients the supply of pea protein. Given that Beyond has already been through supply issues in 2017 and 2018 and from 2022 onward they will not have a reliable supplier, which might leave them with high supply bottlenecks. Even if getting the supply isn't a problem in and of itself, the price increases might put in jeopardy the financials of Beyond Meat.

Product Lines

Beyond Meat used to separate their revenues into fresh and frozen produce. This is really key in understanding the difference in their products. They now mostly fall into ready-to-cook or ready-to-heat formats, depending on the product and

channel. The company sell a range of plant-based across the three core platforms of beef, pork, and poultry.

- **Beyond Burger**

The Beyond Burger is their first product merchandised in the meat case of grocery stores in the US. This product is constantly being improved as it is compared to a regular hamburger and has less than 35% saturated fat and 75% more iron than the regular hamburger. Its direct competitor is the Impossible Burger and they are in the same category of plant-based meat alternatives. It is made from a blend of pea and rice proteins, and has no cholesterol, soy, gluten or GMOs (see exhibit 6).

Exhibit 6. Beyond Burger



Source: Beyond Meat

- **Beyond Sausage**

Beyond Sausage was launched in 2017, like the Beyond Burger this product has 35% less saturated fat than the leading pork dinner sausage. Currently comes into three flavours: Brat Original, Hot Italian and Sweet Italian.

- **Beyond Breakfast Sausage:**

A similar product to the Beyond Sausage is the Beyond Breakfast Sausage Patties and Links which are created to resemble a traditional pork breakfast sausage patty or link. Using a combination of rice and pea proteins, Beyond Breakfast Sausage is flavoured with delicious herbs and spices. In comparison to the popular pork breakfast sausage, Beyond Breakfast Sausage Patties offer 11 grams of plant-based protein per serving and 35% less saturated fat and salt. Beyond Breakfast Sausage Links offer 8 grams of plant-based protein per serving and 40% less sodium. Each is free of GMOs, soy, gluten, and cholesterol.

- **Cookout Classic:**

In response to Covid-19, they launched their cookout classic value packs in the US, a limited edition pack which seeks to make plant-based grilling more accessible. It then became a permanent product and as of June 14th 2022, it is available in over 10 thousand stores nationwide (see exhibit 8).

- **Beyond Steak:**

Beyond Beef was introduced in 2022 and is only available in the US, has 35% less saturated fat than 80/20 beef or five grams per four-ounce serving. And has better levels of nutrition. And, also, can be used in different types of dishes, such as tacos and meatballs. The product seeks to emulate the flavour and texture of steak (see exhibit 9).

Exhibit 7. Beyond Sausage



Source: Beyond Meat

Exhibit 8. Cookout Classic



Source: Beyond Meat

Exhibit 9. Beyond Steak



Source: Beyond Meat

- **Beyond Meatballs:**

Ground beef or pork meatballs are the inspiration for the pre-formed Beyond Meatballs. Beyond Meatballs are manufactured from a combination of pea and rice proteins and are intended to be a quick dinner option for consumers. They have no cholesterol, soy, gluten, or GMOs and each serving has 19 grams of protein.

- **Beyond Beef Crumbles:**

Beyond Beef Crumbles are pre-heated foods that resemble minced or ground beef in appearance and flavour. With 14 grams of protein per serving and no soy, gluten, or GMOs, Beyond Beef Crumbles' main source of protein is peas. There are currently two flavours of Beyond Beef Crumbles available for retail: Beefy and Feisty. Italian Sausage, Plain, Beefy, and Feisty are the four varieties that are offered for foodservice.

- **Beyond Chicken Tenders:**

A plant-based breaded food called Beyond Chicken Tenders is created to resemble and satisfy chicken tenders made from animal products. Beyond Chicken Tenders' main source of protein is fava beans, and they don't contain any GMOs or cholesterol. In comparison to the top animal-based chicken nugget, the ready-to-cook foodservice variant, introduced in July 2021, has 40% less saturated fat and 14 grams of protein per serving. In comparison to the leading chicken nugget made from animals, the ready-to-heat retail version, which was first offered in September 2021, contains 13 grams of protein per serving and 50% less saturated fat.

- **Other products**

Other products are available in certain geographies or even made specifically for certain franchises, such as the Beyond Orange Chicken announced in September 2022, made specifically for Panda Express, a Chinese food franchise in the US (see exhibit 10). Some are limited edition and some are not.

Exhibit 10. *Beyond Orange Chicken*



Source: Panda Express

Covid-19 Impact

The global spread and unprecedented impact of Covid-19 continues to create significant volatility, uncertainty and economic disruption. The Covid-19 pandemic lead a large number of companies to cease or adapt themselves in order to keep their business.

When compared to the same quarters in the previous year, the COVID-19 pandemic had a mixed effect on their quarterly foodservice channel net revenues in 2021, falling in the first quarter and rising in the following three. Overall, the foodservice channel's net revenues for the year ending December 31, 2021, increased by 31.7% to \$139.9 million from \$106.2 million the previous year. Despite the fact that the foodservice sector has improved in 2021 compared to the same time last year, we acknowledge that our expectation of a continued gradual recovery in the sector is predicated on the premise that COVID-19 infection rates in the U.S. and abroad would be reasonably limited.

Exhibit 11. Covid revenues

	2019	2020	2021
Retail	144,8	300,6	324,8
Foodservice	153,1	106,2	139,9
Foodservice as % of total	51,4%	26,1%	30,1%

Their foodservice channel has wide exposure to specific outlets that we believe have been disproportionately impacted by COVID-19, excluding their sales to large QSR clients. These include, among other things, amusement parks, educational institutions, hotels, corporate catering services, movie theaters, sports arenas, and bars and pubs. These are places that are frequently characterized by sizable crowds of people congregating nearby or that may suffer from decreased business or leisure travel or decreased attendance at corporate offices.

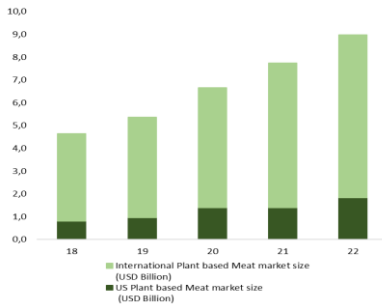
The demand for our foodservice industry did slightly increase in 2021, but the situation is still quite unclear due to the ongoing pandemic, the recurrence of COVID-19, and the appearance of variants.

In conclusion, future COVID-19-related occurrences and impacts cannot be predicted with certainty, and actual outcomes may differ materially from projections.

The Plant-based Meat Substitute Industry

As a result of meeting a variety of consumer needs, Beyond Meat operates in a market which is not yet fully developed. Beginning in 2010, a few firms entered the market with the idea that long-term meat consumption would evolve into plant-based meat due to environmental and health concerns as well as vegan trends. This was the beginning of the plant-based industry. To that end, the main two factors affecting this market are whether established players in the animal-meat sector will gain control of their replacement industries (either by product

Exhibit 11. Global plant-based meat market



Source: Statista and Good Food Institute

launching or acquisition), or whether emerging firms like Beyond Meat will have the ability to become the dominant trend in the plant-based industry. Burgers made from plants have become more and more popular. Firstly, they provide more options for vegetarians and vegans and, secondly, they leverage a meat-like taste to assist in attracting meat eaters to adopt ecologically friendly protein by not compromising on taste. Startups making these burgers are aiming to attain customers with both meat-based and plant-based diets.

The growth of the plant-based industry

The global market for plant-based products increased from \$6.7 billion in 2020 to \$7.7 billion in 2021 and an expected \$9 billion in 2022 (see exhibit 11). This market for plant-based meat is predicted to grow at a CAGR of 27.35% between 2022 and 2030. Looking more in-depth into the components, the US will represent 20.5% of the entire market but this can be explained as the US being ahead of the rest of the world in plant-based adoption, so this value is expected to lower.

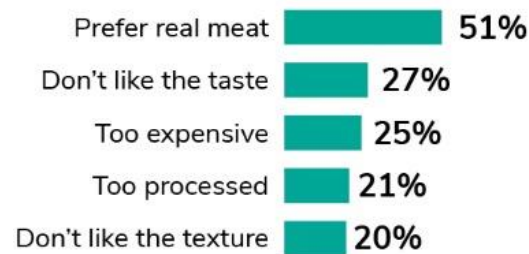
The first enterprises to launch their plant-based businesses did so in the USA. With a compound growth rate of 14.6%, Beyond Meat and Impossible Foods both began operations in the decade of 2010, concentrating on creating items to satisfy consumer demand while also growing their businesses internationally. The commercial potential for plant-based foods in Asia is growing as they become more and more well-liked there. The Asian population has begun to change to a better and more biological lifestyle, which is likely to result in an increase in industry sales in the next years. That equals a CAGR of 16.25% from now until 2027. From a broad viewpoint, the topics of sustainability, animal welfare, health, and the environment—all of which will be explored in more detail in the report—are fundamental to the expansion of that sector.

The plant-based meat consumer

Consumers are increasingly seeking to change the amount of meat they consume. Some are worried about the product's flavour, cost, safety, and naturalness while others are excited about the promise of lowering their health risks, environmental problems, and wellbeing of animals, issues typically connected with conventional meat production, others are less so. Cultural acceptance of clean meat will differ greatly.

Nielson estimates that 98% of Americans who buy plant-based meat also buy animal products. Contrarily, 21% of meat-eaters buy plant-based meat, showing that there is still room for expansion even if meat-eaters now make up the largest market segment for plant-based goods. 76% of omnivorous consumers for plant-based meat have a desire to find plant-based meat in the same meat aisles and frozen area where they already usually buy. However, this creates complications for retail shelf strategies. Over 75% of consumers have consumed or are willing to try plant-based meat. Of those who have, 90% intend to eat it again.

The group of young people who are most willing to consume this type of products, given their concern for nature and the environment, are the millennials. In general, the population aged over 40 who tend to purchase this type of food are those with medium/high incomes.



In conclusion, in order to identify measures and solutions to be implemented at Beyond Meat to improve its business, we tried to understand the main reasons that lead consumers not to buy plant-based meat. Through a study carried out by the Good Food Institute, we found that 25% voted "Too expensive", i.e. 25% consider product prices a relevant element. The intention to reduce prices and eventually reach price parity has already been expressed by Beyond Meat. 27% voted "Don't like the taste", as most of the company's earnings are spent on R&D, it is expected that this percentage will be reduced in a short period of time.

Competition

It is essential to take a closer look at Beyond Meat's primary competitors in order to better comprehend its position on the market. The success of Beyond Meat is largely contingent on their capacity to carry out their growth strategy and international expansion, as well as to engage in direct competition with established players in the meat industry and brand-new businesses solely dedicated to the plant-based meat market.

Beyond Meat's direct competition is either in the same state of maturity as themselves or have resources and finance-backing which far outweighs, allowing them to operate on a bigger scale at cheaper production costs, in addition to the

low entry hurdles in this industry. Companies that historically concentrated on animal protein products, such as Cargill, Hormel Foods, Tyson Foods, or WH Group, have recently begun to engage in this specialized industry, the plant-based sector. Those businesses are viewed as a danger to Beyond Meat's development due of their expertise and knowledge of the food sector.

Numerous start-ups were created to address the demand for plant-based proteins as a result of vegan trends and environmental concerns. Beyond Meat, Impossible Foods, and many other affiliated brands that came from major players in the food industry like Nestlé, Kraft Heinz, Kellogg's, or Conagra that are worried about their positioning regarding this new, trendy industry that has enormous potential fit perfectly into these types of businesses.

To understand their key tactics and investments in order to dominate the market, major competitors in that industry will be investigated in a more rigorous way below.

- **Nestlé**

Swiss multinational Nestlé is expected to generate \$94 billion in revenue in 2021 and has a market valuation of \$351 billion. Through its brand Garden Gourmet, the company has already introduced plant-based products in the USA and Europe. Garden Gourmet provides a variety of meat substitutes that use soy or pea protein, which is high in fibre and low in saturated fat, helping their goods get a high Nutri-score, which indicates a healthier level. They provide a wide variety of plant-based goods, including Sensational Burgers, mince, chorizo, fillets, and sausages.

Nestle expanded their Swiss Technology Centre to Shenzhen by 2020 and invested around \$100 million in plant-based food production facilities there. Garden Gourmet began selling its products in UK stores in September 2021. They make it obvious that they want to increase the availability of their plant-based cuisine all across the world.

- **Kellogg's**

With a market valuation of \$21.6 billion and annual revenues of \$13 billion, Kellogg's is an American multinational corporation in the food sector. Through its food division, the Morningstar Farm brand, the company was one of the first to enter the market for plant-based products. They concentrate on selling food for vegetarians and vegans, and in February 2020 they introduced plant-based burgers and sausages. The Incogmeato burger, their flagship item, was introduced in 2020.

By the end of the same year, Kellogg's had invested roughly \$43 billion to increase manufacturing capacity in the United States, which would be entirely devoted to the development and production of plant-based foods, and to convert Morningstar Farm into a fully plant-based business by the end of 2021. Kellogg's continued to invest in plant-based meat by September 2021 and had put \$21.5 million into the startup Duckweed Protein.

- **Tyson Foods**

A multinational corporation, Tyson Foods generated \$43.2 billion in revenue in 2020 and have a market capitalization of \$31.3 billion. The food company launched its Raised & Rooted plant-based meat brand in 2019 to enter the market for plant-based meat. With more than 10 items, Tyson Foods' alternative meat segment sells its goods in more than 10,000 retail locations throughout the US and Europe. Tyson Foods invested about \$34 million between 2016 and 2017 for 5% of the Beyond Meat share after exiting before to Beyond Meat's IPO. A few months after selling its BYND stock, Tyson Foods made a purchase from plant-based shellfish producer New Wave Foods. We think that plant-based protein offers a clear roadmap to where the big meat firms want to take their company in the future.

- **Impossible Foods**

Private company Impossible Foods, along with Beyond Meat, was one of the pioneers in the plant-based sector and was established in 2011. Is the closest and most similar competitor to Beyond Meat. Impossible Foods, is active all over the world, with the exception of Europe. Protein soy is one of the products used in the production of their products and is what distinguishes its goods from Beyond Meat. Since the European Food Safety Authority does not approve the use of GMO soy protein as the primary ingredient in their products (EFSA), the company cannot sell their products in Europe. However, in May 2021, FDA tested that soy protein is safe for consumption.

Impossible Foods have around 550 employees and has amassed a total of \$2 billion in funding from numerous investors since its founding in 2011. According to a corporate statement, the venture raised \$500 million in its most recent fundraising round to maintain growth in its retail channel and to invest in the supply chain, product development, technology, R&D, and international expansion. The business has expanded into foreign markets during the past year, including the United Arab Emirates, Australia, Canada, and New Zealand. The business sells a variety of plant-based meat products, including sausages, burgers, meatballs, and pork, in foodservice, retail locations, and online.

Competitive Advantages

- Early Entry

The pioneer of the plant-based revolution was Beyond Beyond Meat. As was previously noted, the company was founded in 2009, while Impossible Foods, its closest rival at the moment, was just founded in 2011. Beyond Meat profited from being the first company to provide the first "meatless meat" items to the market, giving them a competitive edge over newly emerging rival. Impossible Foods is a similar company to Beyond Meat, but it being private, is hard to compare the financial position and the growth. However, recently, Impossible Foods CEO says his company has not been facing the same setbacks Beyond Meat has.

- Innovation and R&D

Innovating is the key to the success of Beyond Meat long-term. If they keep churning out new reliable products, they can keep up with traditional multinationals making strides into this new market. Beyond Meat has spent 13.8% of sales on R&D in 2021 and is expected to spend 14.9% in 2022. That is still much less as most traditional multinational spend an average of 1.2%.

Valuation

Revenue

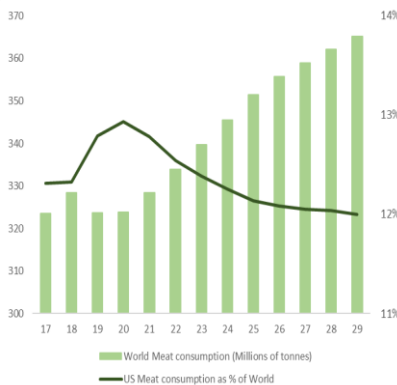
Projecting sales of a category of products which is still in its infancy can be quite challenging as the historical data is scarce and drivers of growth are not well defined. Beyond Meat only publishes data for US and International markets and segments it further for Retail and Foodservice. But even industry forecast data is still quite hard to come by and requires many more growth assumptions than a mature industry. Beyond Meat has had a massive slowdown in revenue growth as consumers trade down in protein due to increasing living costs. Consumers seek lower cost protein which they can afford and up until now Beyond Meat's pricing has been above that of regular meat and even some plant-based competitors.

The US meat market alone was worth \$147.72 billion in 2021

- US Market

The US Meat Market in 2021 was valued at \$147.72 billion, according to Statista. Using the meat consumption for 2021 (**see exhibit 12**) recorded by the OECD of 41.98 million tons, we arrive at a dollar value of circa \$3500 per ton of meat consumed in the US in 2021. Using future inflation data and Central Bank objectives, we can estimate this dollar value for the years until 2029. Inflation is expected to converge back to the long-term objective of 2% with a higher value in the short term due to supply chain constraints and energy inputs being much more expensive due to the Ukraine conflict. The US meat market is therefore estimated to be \$189.65 billion by 2029 (**see exhibit 15**), representing a CAGR of 3,17% for the 2021-2029 period, which is used to estimate the growth of the market until 2033, for which the OECD has no meat consumption forecasts.

Exhibit 12. World Meat consumption

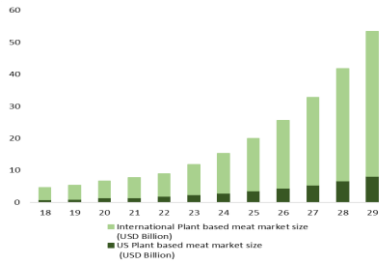


Source: OECD

Having arrived at the total market value of meat, where Beyond Meat is trying to act as a substitute to the already existing products, it is important to understand the dynamics of the substitution of Meat by Plant based alternatives. There are various ways of looking at this issue. The first and most obvious way is understanding how many people currently eat meat and what types of diets are currently present in the US market. For this, we must consider the diets currently present in the US. As of 2022, according to Statista, 16% don't eat any meat, meaning they are either pescetarian, vegan or vegetarian, while another 10% identify themselves as flexitarian, which means they mostly eat plant-based foods while occasionally eating meat and/or fish. In total, 26% of US consumers very rarely eat meat.

The US market for plant-based meats is estimated in 2021 to have been \$1.4 billion which is only 0.9% of the total meat market (see exhibit 13). Clearly there is a massive gap between the consumers not eating meat and the products which are being consumed. An explanation may be that vegan, vegetarian and even pescetarian consumers simply don't like the taste of meat, which is what Beyond Meat is trying to recreate. But even then, if we assume, none of these consumers would buy any plant-based food, there are still another 10% which occasionally eat meat, meaning they most likely enjoy the taste, which are not buying plant-based meat alternatives. There is a clear growth opportunity for the industry to be present in more households which currently don't eat meat due to ethical concerns but have no problem with the taste and health of the product itself.

Exhibit 13. Plant based meat market size



Source: Own Calculations

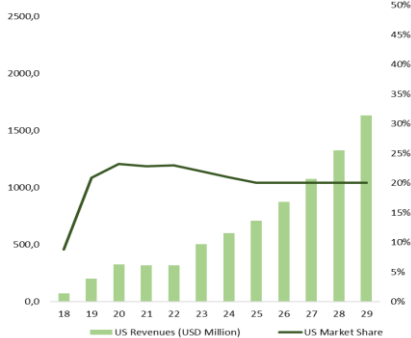
Another way is by looking at other plant-based substitutes and seeing how that market compares to the plant-based meat market. A common comparison is to the milk industry where plant-based substitutes represent the largest share of the overall industry at 16% in 2021. It is possible to argue that this product is more mature and use the growth of market share here to estimate the future growth of market share of plant-based meat in the future. A problem with this comparison is that a significant portion of consumers are lactose intolerant making plant-based alternatives an obvious alternative for regular milk while the meat industry has no such problem at such a large scale.

In order to estimate the market share of plant-based substitutes in the meat industry, we can use inputs from both the dietary composition of the US as well as a more mature plant-based alternative to get a more complete picture of how the plant-based meat industry will evolve in relation to the overall meat industry.

We can conservatively estimate that in 10 years by 2033 the share of plant-based products will be 9.8%. Thus, the total US plant-based meat market will be \$8.15 billion in 2029 (see exhibit 13).

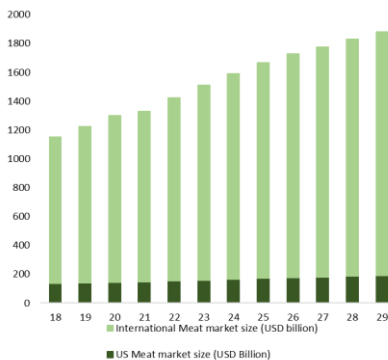
Now the important factor is understanding where Beyond Meat fits into this market in the future. In 2021, they were the biggest player and represented around 23% of the market. However, this advantage is under pressure as existing meat companies understand the threat they are facing and try to enter this market, either by acquisitions or launching their own products from scratch. These companies have supply chains in place which are much more efficient than Beyond Meat's is. This is mentioned as the biggest threat to their market position in the last current report, as well as retailers establishing their own brands which normally have a lower price tag. This means that to stay relevant in the market, Beyond Meat needs to leverage their brand in order to be able to

Exhibit 14. Beyond Meat Revenues in the US



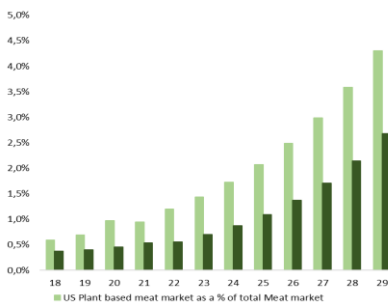
Source: Own Calculations

Exhibit 15. World meat market size



Source: Own Calculations

Exhibit 16. Plant-based meat market as % of total meat market



Source: Own Calculations

Exhibit 17. 2021-2029 annual growth rates

	US	International
Plant Based Meat market	36,8%	37,3%
BYND	22,6%	42,7%

Source: Own Calculations

charge higher prices at least until more suppliers exist and they can have more bargaining power in negotiations, as described in the Net Working Capital Section. We forecast that market share in the US will decrease slightly until 2025 to 20% and plateau from then on as the market matures. Even with no growth in market share, due to general market growth, US revenues for Beyond are expected to grow at a rate of 22,58% and be \$1.63 billion in 2029 (see exhibit 14).

▪ International Market

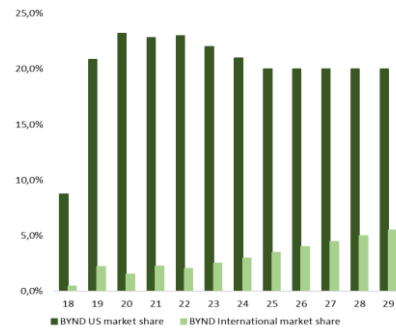
The forecast for the international market is very similar to the rationale followed for the US market using different data

The World Meat Market sans US in 2021 was valued at \$1.18 trillion, according to a Meticulous Research report. Using the meat consumption for 2021 recorded by the OECD of 286.42 million tons, we arrive at a dollar value of circa \$4127 per ton of meat consumed in the international market in 2021. The International meat market is therefore estimated to be \$1.69 trillion by 2029 (see exhibit 15), representing a CAGR of 4,58% for the 2021-2029 period, which is used to estimate the market until 2033, for which the OECD has no meat consumption forecasts.

Using a similar logic to the US Market, we arrive at a value of \$6.35 billion for the plant-based meat market sans US, representing 0,5% of the total meat market in 2021. (see exhibit 16), slightly lower when compared with the US value of 0,9%. An explanation for this bias can be the fact that consumers in developed countries consumed more meat and are also more conscious of the health and ethical problems facing the overconsumption of meat. The International market is comprised by a large percentage of developing countries where the market for these products is still small. However, as the countries develop and middle classes emerge, there is chance to incorporate plant-based meat substitutes as soon as more disposable income exists instead of having to change consumer habits as in the more developed countries. This fact, along with the growth in the more developed European and East Asian markets presents a high growth opportunity for these products.

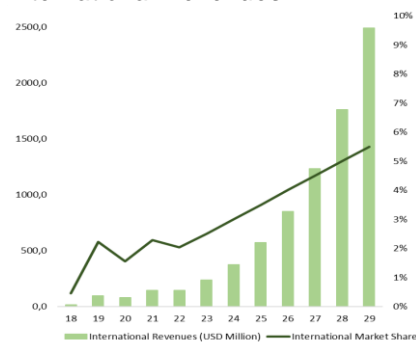
The forecast for the international market share of plant-based substitutes in the meat industry used had very similar approach to that of the US. The market is not as developed yet and therefore can be seen as being around 4-6 years behind the US (see exhibit 16). Thus, we forecast this growth to follow that of the US and reach 2,7% (\$45.3 billion) of the total meat market in 2029 (\$80.4 billion - 4,7% in 2033) at an average growth rate of 37.3% until 2029 (see exhibit 17).

Exhibit 18. Beyond Meat Market Share



Source: Own Calculations

Exhibit 19. Beyond Meat International Revenues



Source: Own Calculations

Looking at Beyond Meat's market share of only 2.28% (compared with 23% in the US), a very different picture arises. The brand is less known comparatively and must instead gain market share. Their strategic partnerships in the Foodservice sector with their partnerships with Starbucks and KFC in China as well as development of specific products for China will translate into a higher market share in this important market. At the same time, Beyond Meat can establish itself in Europe using the same strategy with their McDonald's partnerships. We forecast an increase in market share from 2.28% in 2021 to 5.5% in 2029 and 7% in 2033 (see exhibit 18). In dollar values, the international sales volume in 2021 was \$144 million and forecasted to be \$2.49 billion in 2029 and \$5.63 in 2033 due to growth in market share as well as industry growth (see exhibit 19).

Operating Expenses

Operating expenses are normally tied to profitability almost as much as revenues themselves. In the consumer goods industry, most operating expenses scale with revenues as it is an industry with normally low margins and very price competitive. However, some are more fixed and as Beyond grows, they may be able to lower some operating expenses and thus generate more Operating Income.

These operating expenses should not exceed 100% as this is the first step for a new company to achieve profitability, having positive operating income. If a company has to spend more on the cost of their inputs (cost of sales), their business model must allow them to spend less on marketing, research & development, distribution or vice-versa. In the case of Beyond Meat, we forecast that the point where Operating Income will be positive to be around the 2026. (see exhibit 20).

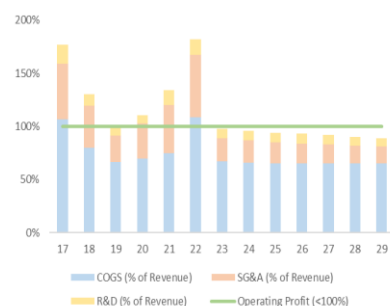
A brief description of each operating expense and their forecast method is shown below.

- Cost of Sales

Beyond Meat does not communicate a broken-down version of their cost of sales. However, as their line of products is not that varied and the entirety of it falls under plant-based meat substitutes, it is not as important to differentiate product cost of sales as it might be in more complex enterprises.

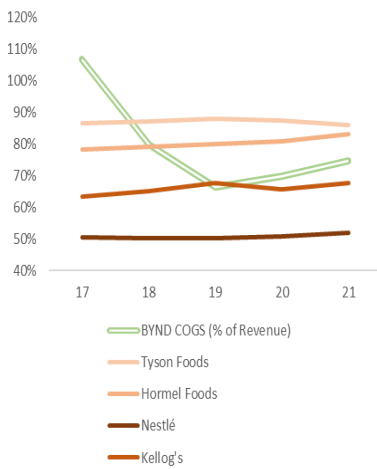
Therefore, the method used for projecting the future cost of sales was to compare to their industry peers and understand where the meat industry, as well

Exhibit 20. Operating Expenses as % of Sales



Source: Own Calculations

Exhibit 21. Operating Expenses as % of Sales



Source: Own Calculations

as the consumer goods industry is heading. Looking at their competitors (see exhibits 20 and 21), we can immediately see that their competitors have a more stable COGS to Sales ratio, while Beyond is still more variable. This makes sense as the company is in a much earlier stage. It is clear we can make a distinction in these 4 competitors: Tyson Foods and Hormel Foods products are less differentiated while branding is more important for Kellogg's and Nestlé. This means that they can charge a higher price for their cost of sales while the first two are mostly trying to minimize price as much as possible. This is also reflected in their Selling, General & Administrative Expenses covered in the next section.

Beyond Meat seems to have characteristics which can place them into either camp. On the one hand, their branding is very important to their customers and depend on it to be able to charge a higher price tag, while at the same time, producing a product which aims to be as close to regular meat as possible. If all plant-based meat ends up tasting the same, Beyond Meat will have to compete on price with its plant-based competitors. However, there is a possibility that differentiation will play a larger role than it does in regular meat. If Beyond Meat's products are tastier, healthier and/or simulate regular meat better, differentiation becomes a key component, and higher price can be charged.

Therefore, we estimate that Beyond Meat will gradually reach a similar level of their competitor Kellogg's, around 65%.

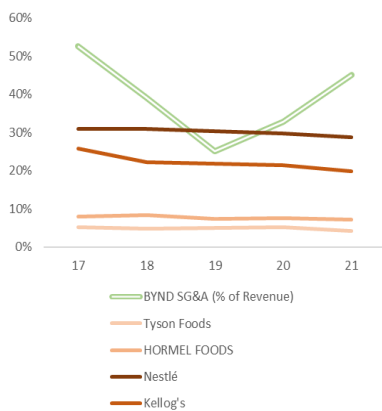
▪ **Selling, General & Administrative Expenses**

Selling, General & Administrative expenses includes all other expenses directly related to the operation of the business which are not an input of the end product. This varies from marketing to utilities, human resources & IT payroll, etc. In Beyond Meat's case, they spent 45,1% of their sales in R&D, this is much higher than their traditional meat competitors (see exhibits 20 and 22).

This value is likely to come down as the restructuring expenses of the past years will disappear and the reduction in workforce takes effect. In their Q3 earnings call, Beyond Meat CEO, mentioned the need to right size their operations for the number of sales and stop sizing them for growth. This will likely translate in cuts in SG&A and so we can forecast a lower future value, even in the short-term.

In the long-term, the value of these expenses as a percentage of sales should lie between the values of the two different types of consumer goods companies mentioned in the Revenues – Us Market section. We forecast a medium to long-term value of 15% for SG&A as a percentage of Sales by 2028, with a similar thought process to that of Cost of Sales.

Exhibit 22. SG&A as % of Sales



Source: Own Calculations

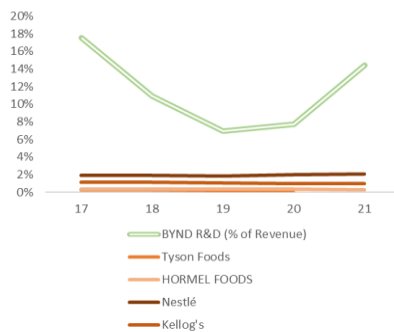
▪ Research & Development Expenses

When it comes to Research & Development, it is clear that Beyond Meat spends much more as a percentage of sales than any of its traditional competitors (see exhibits 20 and 23), which spend on average 1.2%. By functioning in a growing market based on technological improvements, Beyond Meat needs to spend a much larger amount (at least in % of sales) relative to its competitors on R&D in order to maintain and increase competitiveness.

Beyond Meat is in the process of opening their first R&D centre outside the US. The new centre will be built in Shanghai, China and includes a pilot lab and sensory testing capabilities. This is a clear sign that Beyond Meat is maintaining their pattern of R&D spending while also being able to reduce cost to scientific output with cheaper labour in China. Another advantage of this new centre is their ability to develop a feel for local preferences in taste and launch specialised range of products. An example of this is the recent launch of Beyond Pork specifically for the Chinese market.

Another aspect to consider is that Beyond Meat's goals mentioned above in the Selling, General & Administrative Expenses will give a lot more leeway for further investments into R&D. We predict a continuing of the trend and use an average of the previous years for the future values of R&D as a percentage of sale and a gradual shift to around 8% of Sales.

Exhibit 23. R&D as % of Sales



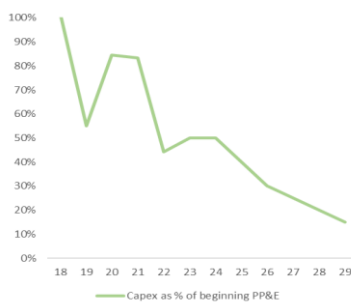
Source: Own Calculations

Capital Expenditures

Beyond Meat is a company in a growing niche industry which is still massively investing in growing market share for both the industry of plant-based meat substitutes as well as inside the industry. Unlike in more mature segments where most capital expenditures (CapEx) is based on maintaining existing property plant & equipment (PP&E), Beyond Meat's CapEx has mostly been focused on growth and expansion, both in product range as well as geographically.

However, the economic environment mentioned above has forced change in strategy to focus on sustainable growth and cash flow positive operations in 2023. This will mean that Beyond Meat will no longer focus on expanding production at all costs and will be more selective in investments as well. A lot of their manufacturing is currently based on co-manufacturing deals which are more expensive than in-house manufacturing. Part of the new sustainable growth and lean operations objective is cutting these co-manufacturing deals. In order to do so, they will have to invest in capabilities inside their own production facilities.

Exhibit 24. CapEx as % of Previous Year PP&E

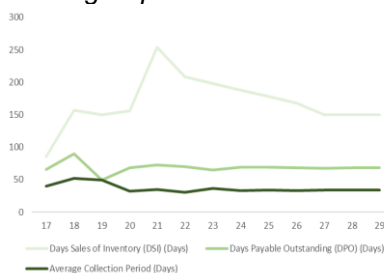


Source: Own Calculations

We expect CapEx to focus more on expanding their core production than on pure expansion from now on, meaning CapEx is forecasted to be lower than it has been in recent past. Taking this into account, we anticipate that the ratio of CapEx to previous year PP&E will decrease from its current level of 83% in 2021 to 15% in 2029 and stabilize from then on. This decrease can already be seen in first 3 quarters of 2022 with it having decreased to 44%. (see exhibit 24)

Net Working Capital

Exhibit 25. Important Net Working Capital ratios



Source: Own Calculations

The change in net working capital can be broadly shown as change in three main categories: Accounts Receivable, Accounts Payable and Inventory management. These three components influence most the amount of working capital Beyond Meat needs and will be analysed below to have a better picture of the company's cash flows (see exhibit 25).

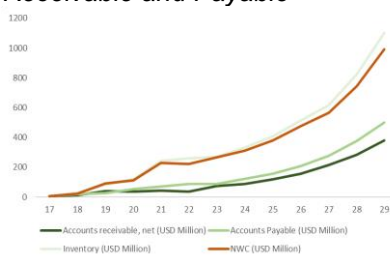
- Accounts Receivable

Accounts receivable represent the cash which is yet to be received by clients. Beyond Meat has a collection period averaging the 37-day mark for the past 4 years. The forecast is for this level to be sustained and not fluctuate as the company is not investing into different industries which might impact this ratio. The dollar value of accounts receivable will therefore increase with sales (see exhibits 25 and 26).

- Accounts Payable

Going the opposite way of the Accounts receivable, payables represent the cash which is yet to be paid to suppliers. As the Days payable outstanding actually surpass the level of the average collection period (65 days on average for the past 4 years), Beyond Meat is able to have less working capital needs. Using the same rationale as for receivables, this level is not expected to fluctuate much and the ratio is forecasted to be stable. The dollar value of accounts payable will therefore increase with the cost of sales. (see exhibits 25 and 26).

Exhibit 26. Accounts Receivable and Payable



Source: Own Calculations

- Inventory

Inventory management in Beyond Meat has thus far been focused on having a wide selection of products always ready to ship and focusing on products which

provide a healthy margin of sales. Combined with the slowdown in sales growth compared to the previous years partly attributed to consumers trading down for cheaper products has translated into a buildup in inventory. The peak in inventory was reached around the end of Q1 and Beyond Meat has since attempted to drawdown their inventory having decreased it by around \$37 million until October 1st (\$283.8 million to to \$247 million from Q1 to Q3 2022).

This inventory behaviour is expected to continue as Beyond Meat streamlines their operation and implements lean value streams and tries to minimize the number of days in inventory.

The forecast for future inventory values was based on this ratio and calculated by dividing the inventory at the end of a year (or 4 quarters) by the cost of goods sold for that period. The forecast follows a trend of reduction from 2021 (254 days) to 2022 (193 days) and 2023 (183 days) as a consequence of drawing down inventory. We expect the days in inventory to steadily decline and reach a stable level similar to before 2021 of 150 in 2027 and a dollar value of \$260 million by end of 2023 (see exhibits 25 and 26).

Weighted Average Cost of Capital

In order to calculate the weighted average cost of capital (WACC) for Beyond Meat, the initial focus was on the cost of debt. Beyond Meat issued a \$1 billion bond in 2021 maturing in March 2027 with a 0% coupon. From this bond, a yield to maturity (YTM) was obtained of 3.5%. Dividing the 5-year probability of default Spread in the CDS market of 2.48% and the average Loss Given Default (LGD) of their competitors, we were able to get a 5-year probability of default of 24.62%, compared with an average of 5.92%.

Exhibit 27. Beyond Meat and Competitor's Debt

Source: Own Calculations

	YTM (of plain vanilla debt)	Probability of Default (5y)	Loss given Default	Spread in CDS Market
Beyond Meat	3,50%	24,62%	10,07%	2,48%
Nestlé	4,28%	5,23%	9,17%	0,48%
Hormel Foods	4,25%	4,46%	10,76%	0,48%
Kellogg's	4,69%	6,67%	9,44%	0,63%
Tyson Foods	4,79%	7,32%	10,92%	0,80%
<i>Average for Competitors</i>	4,50%	5,92%	10,07%	0,60%

This allowed us to calculate the cost debt (R_D) and Beta for Beyond Meat and their competitor's debt using $R_D = YTM \text{ (of plain vanilla debt)} - PD * LGD$.

Using data on the risk-free rate and average annual return of the market for the past 5 years (2.44% and 8.06%, respectively), we calculated the debt beta as the division between R_D – risk-free rate and the average annual return of the market minus the risk-free rate. We arrived at a beta of -0,252 and an average for competitors of 0.261:

Exhibit 28. Beyond Meat and Competitor's Debt Beta

Source: Own Calculations

	Rd	Bd
Beyond Meat	1,02%	-0,252
Nestlé	3,80%	0,242
Hormel Foods	3,77%	0,237
Kellogg's	4,06%	0,288
Tyson Foods	3,99%	0,276
<i>Average for Competitors</i>	3,91%	0,261

In order to find the equity beta, we first used the same market returns used for the debt beta and Beyond Meat's returns and calculated the covariance between them (0.0058). Dividing this value with the market variance of 0.2772%, we obtained the equity beta of 2.1 for Beyond Meat and an average of 0.392 for their competitors:

Exhibit 29. Beyond Meat and Competitor's Equity Beta

Source: Own Calculations

	Covar	Be
Beyond Meat	0,00582	2,10
Nestlé	0,00131	0,47
Hormel Foods	0,00044	0,16
Kellogg's	0,00129	0,47
Tyson Foods	0,00131	0,47
<i>Average for Competitors</i>	0,00109	0,39

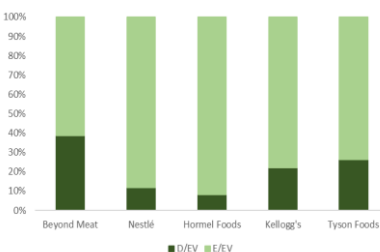
Using data on the balance sheets of Beyond Meat and their competitors, the Debt to Enterprise Value as well as the Equity to Enterprise Value were calculated to “un-lever” the Beta. The unlevered beta for Beyond was 1.19 while the average for their competitors was only 0.56:

Exhibit 30. Beyond Meat and Competitor's Unlevered Beta

Source: Own Calculations

	D/EV	E/EV	Bu
Beyond Meat	0,39	0,61	1,19
Nestlé	0,12	0,88	0,45
Hormel Foods	0,08	0,92	0,16
Kellogg's	0,22	0,78	0,43
Tyson Foods	0,26	0,74	0,42
<i>Average for Competitors</i>	0,20171	0,80	0,56

Exhibit 31. Beyond Meat and Competitor's Debt and Equity Mix



For the final step in the WACC calculation, the releveled beta was calculated as 1.75 using the debt beta, the unlevered beta and the Debt to Enterprise Value ratio. Then, using the CAPM framework the return on equity was calculated as 12.3%.

Finally, the WACC was calculated using the formula: $WACC = Re * E/EV + Rd * D/EV * (1 - \text{tax rate})$ and obtained a value of 7.83%.

Exhibit 32. Final WACC Calculation

Source: Own Calculations

Rd	1,0%
Be	1,75
Re (CAPM)	12,3%
Corporate Tax Rate	21,0%
WACC	7,83%

Discounted Cash Flow Analysis

The discounted cash flow analysis was performed last taking into account the inputs from all the forecasts done in both the value drivers as well as expenditure forecasting. The forecast was made until the year of 2033, meaning 10 years of forecasts were taken into account as this is a growth company which has had volatile returns and earnings and therefore, needs more years than the typical 5 year outlook to get a better picture of the value of the company.

Taking the forecasted Earnings before Income and Taxes (EBIT) from the forecasts and removing the notional taxes Beyond Meat would pay at a statutory tax rate of 21% in the US, it is possible to calculate the Net Operating Profit less adjusted taxes until 2033:

Exhibit 33. Forecasted EBIT to NOPLAT (USD Million)

Source: Own Calculations

Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
EBIT	\$ -175	\$ -367	\$ 7	\$ 29	\$ 64	\$ 103	\$ 173	\$ 293	\$ 433	\$ 587	\$ 723	\$ 889	\$ 1 042
Notional taxes	\$ -	\$ -	\$ 2	\$ 6	\$ 13	\$ 22	\$ 36	\$ 62	\$ 91	\$ 123	\$ 152	\$ 187	\$ 219
Tax adjustments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
NOPLAT	\$ -175	\$ -367	\$ 6	\$ 23	\$ 51	\$ 82	\$ 137	\$ 232	\$ 342	\$ 463	\$ 571	\$ 702	\$ 823

The forecast points to an already positive NOPLAT in 2023 of \$6 million. Beyond Meat had already been very close before the pandemic to a positive NOPLAT when, in 2019, it recorded an EBIT and NOPLAT of \$ -0.5 million.

However, this is still not the full picture for investors as depreciation and amortization are non-cash expenses which affect the EBIT calculation and they must be added before to get a fuller picture of the future of Beyond Meat.

Exhibit 34. Forecasted NOPLAT to Gross Cash Flow (USD Million)

Source: Own Calculations

Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
NOPLAT	\$ -175	\$ -367	\$ 6	\$ 23	\$ 51	\$ 82	\$ 137	\$ 232	\$ 342	\$ 463	\$ 571	\$ 702	\$ 823
Depreciation and Amortization	\$ 22	\$ 22	\$ 33	\$ 49	\$ 69	\$ 88	\$ 109	\$ 128	\$ 143	\$ 153	\$ 154	\$ 155	\$ 157
Gross Cash flow	\$ -153	\$ -345	\$ 39	\$ 73	\$ 119	\$ 170	\$ 245	\$ 359	\$ 485	\$ 616	\$ 725	\$ 857	\$ 981

As capital expenditures rise, so will depreciation and this will have a larger impact in the firms cash flow.

Finally, to get to the operating free cash flows (FCF) these expenditures in property, plant & equipment as well as working capital needs must be added:

Exhibit 35. Forecasted Gross Cash Flow to Operating FCF (USD Million)

Source: Own Calculations

Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Gross Cash flow	\$ -153	\$ -345	\$ 39	\$ 73	\$ 119	\$ 170	\$ 245	\$ 359	\$ 485	\$ 616	\$ 725	\$ 857	\$ 981
Change in NWC	\$ 117	\$ -8	\$ 47	\$ 44	\$ 68	\$ 98	\$ 90	\$ 179	\$ 248	\$ 235	\$ 284	\$ 339	\$ 319
CapEx	\$ 136	\$ 136	\$ 221	\$ 332	\$ 398	\$ 418	\$ 453	\$ 453	\$ 408	\$ 313	\$ 172	\$ 181	\$ 190
Operating FCF	\$ -406	\$ -473	\$ -230	\$ -303	\$ -347	\$ -346	\$ -298	\$ -273	\$ -170	\$ 69	\$ 269	\$ 337	\$ 472

Using the WACC obtained in the previous chapter, the discounted FCF were calculated in order to value each cash flow at their present value. Summing all discounted cash flows yielded a negative value of \$790 million. However, there is still need to account for the value retained in 2033, the terminal value. This terminal value was estimated as a perpetuity with a growth rate the size of the regular meat industry (1.02%) as the plant-based meat substitutes meat industry will much more mature by 2033. The 2033 FCF is estimated at \$472 million which yields a terminal value of around \$7 billion in 2033. This value must be discounted back to the present value with WACC and added to the negative \$790 million yielding an enterprise value of \$2.6 billion:

Exhibit 36. Enterprise Value (USD Million)

Source: Own Calculations

Sum of DCF	\$	-789,7
Terminal growth rate		1,02%
Terminal value	\$	7 072,2
Enterprise Value	\$	2 560,9

Getting to the share price predicted by the model requires removing the 2023 debt of \$1.81 billion from the enterprise value to get to the amount of value attributable to shareholders. Dividing the shareholder's equity value by the \$63.67 million shares in the company, the predicted share price is \$11.76, which is 19.56% less than the \$14.62 it is trading at as of 14th of December 2022.

Exhibit 37. Share Price Calculation

Source: Own Calculations

Value of Debt	USD million	\$	-1 812,2
Value of Equity	USD million	\$	748,7
Number of Shares	million		63,7
Price per share	USD	\$	11,8
Share Price (14/12/22)	USD	\$	14,6
Premium	Percentage		-19,56%

Sensitivity Analysis

Before committing to a recommendation on the stock, some sensitivity analysis tests were made in order to ascertain the main variables influencing the stock price. To this end, a first test changing the terminal growth rate and WACC were computed as they are the two main variables outside the forecast influencing the enterprise value estimation.

Exhibit 38. Impact of WACC and Terminal Growth rate on Share Price

Source: Own Calculations

		WACC										
		6,51%	6,76%	7,01%	7,26%	7,51%	7,76%	8,01%	8,26%	8,51%	8,76%	9,01%
Terminal growth rate	0,77%	\$ 28,6	\$ 24,1	\$ 20,0	\$ 16,3	\$ 12,9	\$ 9,7	\$ 6,8	\$ 4,1	\$ 1,6	\$ -0,7	\$ -2,8
	0,82%	\$ 29,2	\$ 24,7	\$ 20,5	\$ 16,7	\$ 13,3	\$ 10,1	\$ 7,2	\$ 4,4	\$ 1,9	\$ -0,4	\$ -2,5
	0,87%	\$ 29,9	\$ 25,3	\$ 21,1	\$ 17,2	\$ 13,7	\$ 10,5	\$ 7,5	\$ 4,8	\$ 2,2	\$ -0,1	\$ -2,3
	0,92%	\$ 30,5	\$ 25,9	\$ 21,6	\$ 17,7	\$ 14,2	\$ 10,9	\$ 7,9	\$ 5,1	\$ 2,5	\$ 0,2	\$ -2,0
	0,97%	\$ 31,2	\$ 26,5	\$ 22,1	\$ 18,2	\$ 14,6	\$ 11,3	\$ 8,3	\$ 5,4	\$ 2,9	\$ 0,5	\$ -1,8
	1,02%	\$ 31,9	\$ 27,1	\$ 22,7	\$ 18,7	\$ 15,1	\$ 11,7	\$ 8,6	\$ 5,8	\$ 3,2	\$ 0,7	\$ -1,5
	1,07%	\$ 32,6	\$ 27,7	\$ 23,3	\$ 19,2	\$ 15,5	\$ 12,1	\$ 9,0	\$ 6,1	\$ 3,5	\$ 1,0	\$ -1,2
	1,12%	\$ 33,3	\$ 28,3	\$ 23,8	\$ 19,7	\$ 16,0	\$ 12,6	\$ 9,4	\$ 6,5	\$ 3,8	\$ 1,3	\$ -1,0
	1,17%	\$ 34,0	\$ 29,0	\$ 24,4	\$ 20,3	\$ 16,5	\$ 13,0	\$ 9,8	\$ 6,9	\$ 4,1	\$ 1,6	\$ -0,7
	1,22%	\$ 34,8	\$ 29,7	\$ 25,0	\$ 20,8	\$ 16,9	\$ 13,4	\$ 10,2	\$ 7,2	\$ 4,5	\$ 1,9	\$ -0,4
	1,27%	\$ 35,5	\$ 30,3	\$ 25,6	\$ 21,3	\$ 17,4	\$ 13,9	\$ 10,6	\$ 7,6	\$ 4,8	\$ 2,2	\$ -0,1

It is pretty clear that even a half p.p. increase in the WACC in either direction could alter the recommendation completely. At the same time, the terminal growth rate is less influential within an expectable band. WACC being so influential is easily explainable as most of the value for Beyond Meat is directly attributable to the terminal value. As a growth stock, the value for investors lies in the long-term and not in short to medium term gains. However, this presents a risk that if the discount rate (WACC) changes, the value (or not) proposition for Beyond Meat changes drastically. The following sensitivity test was conducted using two of the main factors directly influencing the WACC, the cost of debt and the cost of equity:

Exhibit 39. Impact of the Cost of Equity and Debt on the WACC

Source: Own Calculations

		Cost of equity								
		9,96%	10,48%	11,03%	11,61%	12,23%	12,84%	13,48%	14,15%	14,86%
Cost of Debt	0,83%	6,32%	6,64%	6,97%	7,32%	7,70%	8,07%	8,46%	8,87%	9,30%
	0,87%	6,33%	6,65%	6,98%	7,34%	7,71%	8,08%	8,47%	8,88%	9,31%
	0,92%	6,34%	6,66%	7,00%	7,35%	7,72%	8,10%	8,49%	8,90%	9,33%
	0,97%	6,36%	6,68%	7,01%	7,37%	7,74%	8,11%	8,50%	8,91%	9,34%
	1,02%	6,38%	6,69%	7,03%	7,38%	7,76%	8,13%	8,52%	8,93%	9,36%
	1,07%	6,39%	6,71%	7,05%	7,40%	7,77%	8,14%	8,53%	8,94%	9,37%
	1,12%	6,41%	6,73%	7,06%	7,42%	7,79%	8,16%	8,55%	8,96%	9,39%
	1,18%	6,42%	6,74%	7,08%	7,43%	7,80%	8,18%	8,57%	8,98%	9,41%
	1,24%	6,44%	6,76%	7,10%	7,45%	7,82%	8,20%	8,59%	9,00%	9,43%

The cost of equity proves key to understanding the dynamics in the WACC as even a 10% change would completely change the value proposition for investors. If the cost of equity were to increase 10% to 13.48%, the WACC would now be 8.52%, up from the 7.76% estimated now, the Share price would be around \$3.2, much lower than the predicted \$11.76.

Recommendation

Beyond Meat is inserted into a segment that is still in its infancy and is still yet to prove itself in the long-run. The research above points to a sell recommendation. Considering the difficulties Beyond Meat face due to the aftermath of the pandemic and the fact that more mature companies are making strides in the segment, Beyond Meat will have to focus heavily on lowering costs and above all, prices to maintain their market share and even continue into more homes. While it is true that more products in the sector may increase the overall market and maybe even have a positive impact on Beyond Meats revenues, in the long-term the challenge will be to compete with mature companies with lean and low cost operations.

The share price has already decreased more than 90% since its peaks in 2019 and 2020, however the recommendation is to SELL as the forecasted price is 19.56% below the current market price and we expect the share price to decline even further.

Appendix

Financial Statements

Income Statement

(In Millions) Year	2020	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F
Revenue	\$ 407	\$ 465	\$ 421	\$ 742	\$ 974	\$ 1 281	\$ 1 723	\$ 2 306	\$ 3 086	\$ 4 122	\$ 5 101	\$ 6 289	\$ 7 726	\$ 9 062
US	\$ 325	\$ 320	\$ 320	\$ 505	\$ 600	\$ 707	\$ 873	\$ 1 075	\$ 1 326	\$ 1 631	\$ 1 964	\$ 2 366	\$ 2 850	\$ 3 433
International	\$ 82	\$ 145	\$ 145	\$ 237	\$ 375	\$ 574	\$ 851	\$ 1 231	\$ 1 760	\$ 2 491	\$ 3 137	\$ 3 922	\$ 4 876	\$ 5 629
COGS	\$ 285	\$ 347	\$ 457	\$ 497	\$ 643	\$ 833	\$ 1 120	\$ 1 499	\$ 2 006	\$ 2 679	\$ 3 316	\$ 4 088	\$ 5 022	\$ 5 890
Gross Profit	\$ 122	\$ 117	\$ -36	\$ 245	\$ 331	\$ 448	\$ 603	\$ 807	\$ 1 080	\$ 1 443	\$ 1 785	\$ 2 201	\$ 2 704	\$ 3 172
SG&A	\$ 134	\$ 209	\$ 247	\$ 163	\$ 205	\$ 256	\$ 327	\$ 415	\$ 525	\$ 659	\$ 765	\$ 943	\$ 1 159	\$ 1 359
R&D	\$ 32	\$ 67	\$ 63	\$ 67	\$ 88	\$ 115	\$ 155	\$ 208	\$ 247	\$ 330	\$ 408	\$ 503	\$ 618	\$ 725
Restructuring	\$ 6	\$ 16	\$ 21	\$ 7	\$ 10	\$ 13	\$ 17	\$ 12	\$ 15	\$ 21	\$ 26	\$ 31	\$ 39	\$ 45
EBIT	\$ -49	\$ -175	\$ -367	\$ 7	\$ 29	\$ 64	\$ 103	\$ 173	\$ 293	\$ 433	\$ 587	\$ 723	\$ 889	\$ 1 042
Interest expense	\$ -3	\$ -4	\$ -4	\$ -172	\$ -217	\$ -147	\$ -315	\$ -354	\$ -396	\$ -441	\$ -488	\$ -635	\$ -703	\$ -773
Remeasurement of w.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Other, net	\$ -1	\$ -0	\$ -9	\$ -3	\$ -4	\$ -5	\$ -4	\$ -5	\$ -5	\$ -5	\$ -5	\$ -5	\$ -5	\$ -5
EBT	\$ -53	\$ -179	\$ -380	\$ -168	\$ -192	\$ -89	\$ -216	\$ -186	\$ -108	\$ -13	\$ 94	\$ 84	\$ 181	\$ 265
Income Tax	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ -19	\$ -45	\$ -39	\$ -23	\$ -3	\$ 20	\$ 18	\$ 38	\$ 56
Equity in losses of ur	\$ -	\$ 3	\$ 3	\$ 3	\$ 3	\$ 3	\$ 3	\$ 3	\$ 3	\$ 3	\$ 3	\$ 3	\$ 3	\$ 3
Net Earnings	\$ -53	\$ -179	\$ -380	\$ -168	\$ -192	\$ -70	\$ -171	\$ -147	\$ -85	\$ -10	\$ 74	\$ 66	\$ 143	\$ 209

Cash Flows

(In Millions) Year	2020	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F
Cash flows from operating activities														
Net Income	\$ -53	\$ -179	\$ -380	\$ -168	\$ -192	\$ -89	\$ -216	\$ -186	\$ -108	\$ -13	\$ 94	\$ 84	\$ 181	\$ 265
Depreciation and Amortization	\$ 13	\$ 22	\$ 22	\$ 33	\$ 49	\$ 69	\$ 88	\$ 109	\$ 128	\$ 143	\$ 153	\$ 154	\$ 155	\$ 157
Changes in WC	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Change in Accounts receivable, net	\$ 4	\$ -8	\$ 9	\$ -39	\$ -15	\$ -29	\$ -40	\$ -58	\$ -68	\$ -96	\$ -91	\$ -111	\$ -131	\$ -124
Change in Inventory	\$ -40	\$ -120	\$ -19	\$ -9	\$ -62	\$ -75	\$ -109	\$ -101	\$ -208	\$ -277	\$ -262	\$ -317	\$ -384	\$ -357
Change in Prepaid expenses and other cur	\$ -9	\$ -18	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Change in ST Debt	\$ 17	\$ -24	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Change in Payables & Accruals	\$ 23	\$ 31	\$ 18	\$ 1	\$ 33	\$ 36	\$ 52	\$ 69	\$ 98	\$ 125	\$ 118	\$ 144	\$ 176	\$ 162
Change in Other ST Liabilities	\$ 1	\$ -3	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CF from Operating activities	\$ -44	\$ -298	\$ -349	\$ -182	\$ -186	\$ -88	\$ -225	\$ -167	\$ -159	\$ -117	\$ 11	\$ -47	\$ -3	\$ 103
Cash flows from investing activities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Purchase of PPE	\$ -95	\$ -144	\$ -136	\$ -221	\$ -332	\$ -398	\$ -418	\$ -453	\$ -453	\$ -408	\$ -313	\$ -172	\$ -181	\$ -190
Purchase of Other LT assets	\$ -5	\$ -68	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CF from Investing activities	\$ -100	\$ -212	\$ -136	\$ -221	\$ -332	\$ -398	\$ -418	\$ -453	\$ -453	\$ -408	\$ -313	\$ -172	\$ -181	\$ -190
Cash flows from financing activities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Increase in LT Debt	\$ -3	\$ 1 140	\$ 3	\$ 680	\$ 906	\$ 544	\$ 652	\$ 783	\$ 939	\$ 1 127	\$ 1 353	\$ 1 623	\$ 1 948	\$ 2 338
Increase in Other LT Liabilities	\$ -5	\$ 0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
proceeds from Share issuance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
proceeds from APIC	\$ 34	\$ -50	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Changes in Preferred stock	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Changes in Accumulated other comprehensive inco	\$ 2	\$ -2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CF from Financing activities	\$ 26	\$ 1 091	\$ 3	\$ 680	\$ 906	\$ 544	\$ 652	\$ 783	\$ 939	\$ 1 127	\$ 1 353	\$ 1 623	\$ 1 948	\$ 2 338
Cash balance	\$ 158	\$ 740	\$ 251	\$ 666	\$ 1 054	\$ 1 112	\$ 1 121	\$ 1 284	\$ 1 611	\$ 2 213	\$ 3 265	\$ 4 670	\$ 6 434	\$ 8 685

Balance Sheet

(In Millions) Year	2020	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F
Cash and cash equivalents	\$ 159	\$ 733	\$ 390	\$ 666	\$ 1,054	\$ 1,112	\$ 1,121	\$ 1,284	\$ 1,611	\$ 2,213	\$ 3,265	\$ 4,670	\$ 6,434	\$ 8,685
Accounts receivable, net	\$ 36	\$ 44	\$ 35	\$ 74	\$ 89	\$ 118	\$ 158	\$ 216	\$ 285	\$ 381	\$ 472	\$ 583	\$ 715	\$ 839
Inventory	\$ 122	\$ 242	\$ 260	\$ 270	\$ 331	\$ 406	\$ 516	\$ 616	\$ 824	\$ 1,101	\$ 1,363	\$ 1,680	\$ 2,064	\$ 2,421
Prepaid expenses and other current assets	\$ 15	\$ 33	\$ 33	\$ 33	\$ 33	\$ 33	\$ 33	\$ 33	\$ 33	\$ 33	\$ 33	\$ 33	\$ 33	\$ 33
Total Current Assets	\$ 332	\$ 1,052	\$ 719	\$ 1,043	\$ 1,508	\$ 1,669	\$ 1,827	\$ 2,149	\$ 2,753	\$ 3,728	\$ 5,132	\$ 6,966	\$ 9,246	\$ 11,978
Net Property, Plant and Equipment	\$ 130	\$ 253	\$ 368	\$ 556	\$ 839	\$ 1,168	\$ 1,498	\$ 1,843	\$ 2,168	\$ 2,433	\$ 2,593	\$ 2,611	\$ 2,636	\$ 2,669
Gross Property, Plant and Equipment	\$ 163	\$ 307	\$ 443	\$ 664	\$ 996	\$ 1,395	\$ 1,813	\$ 2,266	\$ 2,719	\$ 3,127	\$ 3,440	\$ 3,612	\$ 3,793	\$ 3,982
Accumulated Depreciation	\$ -33	\$ -53	\$ -75	\$ -108	\$ -157	\$ -226	\$ -314	\$ -423	\$ -551	\$ -694	\$ -847	\$ -1,001	\$ -1,156	\$ -1,314
Other LT assets	\$ 6	\$ 74	\$ 74	\$ 74	\$ 74	\$ 74	\$ 74	\$ 74	\$ 74	\$ 74	\$ 74	\$ 74	\$ 74	\$ 74
Prepaid lease costs, non-current	\$ -	\$ 59	\$ 59	\$ 59	\$ 59	\$ 59	\$ 59	\$ 59	\$ 59	\$ 59	\$ 59	\$ 59	\$ 59	\$ 59
Other non-current assets, net	\$ 6	\$ 7	\$ 7	\$ 7	\$ 7	\$ 7	\$ 7	\$ 7	\$ 7	\$ 7	\$ 7	\$ 7	\$ 7	\$ 7
Investment in unconsolidated joint venture	\$ -	\$ 8	\$ 8	\$ 8	\$ 8	\$ 8	\$ 8	\$ 8	\$ 8	\$ 8	\$ 8	\$ 8	\$ 8	\$ 8
Total Non-Current Assets	\$ 136	\$ 327	\$ 442	\$ 630	\$ 913	\$ 1,242	\$ 1,572	\$ 1,917	\$ 2,243	\$ 2,507	\$ 2,667	\$ 2,685	\$ 2,710	\$ 2,743
Total Assets	\$ 468	\$ 1,379	\$ 1,160	\$ 1,673	\$ 2,420	\$ 2,912	\$ 3,400	\$ 4,066	\$ 4,996	\$ 6,235	\$ 7,799	\$ 9,651	\$ 11,956	\$ 14,720
Total Current Liabilities	\$ 89	\$ 94	\$ 112	\$ 114	\$ 146	\$ 183	\$ 234	\$ 303	\$ 401	\$ 527	\$ 644	\$ 788	\$ 964	\$ 1,126
Payables & Accruals	\$ 58	\$ 89	\$ 108	\$ 109	\$ 142	\$ 178	\$ 229	\$ 298	\$ 396	\$ 522	\$ 639	\$ 784	\$ 959	\$ 1,121
Accounts Payable	\$ 53	\$ 69	\$ 87	\$ 88	\$ 121	\$ 157	\$ 209	\$ 278	\$ 376	\$ 501	\$ 619	\$ 763	\$ 939	\$ 1,101
Accrued bonus	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Accrued expenses and other current liability	\$ 5	\$ 20	\$ 20	\$ 20	\$ 20	\$ 20	\$ 20	\$ 20	\$ 20	\$ 20	\$ 20	\$ 20	\$ 20	\$ 20
ST Debt	\$ 28	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5
Short-term borrowings under revolving cred	\$ 25	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Short-term capital lease liabilities	\$ 3	\$ 4	\$ 4	\$ 4	\$ 4	\$ 4	\$ 4	\$ 4	\$ 4	\$ 4	\$ 4	\$ 4	\$ 4	\$ 4
Short-term finance lease liabilities	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Other ST Liabilities	\$ 3	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Stock warrant liability	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Wages Payable	\$ 3	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Total Non-current Liabilities	\$ 12	\$ 1,153	\$ 1,156	\$ 1,835	\$ 2,741	\$ 3,285	\$ 3,937	\$ 4,720	\$ 5,660	\$ 6,787	\$ 8,140	\$ 9,763	\$ 11,711	\$ 14,049
LT Debt	\$ 12	\$ 1,152	\$ 1,155	\$ 1,835	\$ 2,741	\$ 3,285	\$ 3,937	\$ 4,720	\$ 5,659	\$ 6,787	\$ 8,139	\$ 9,763	\$ 11,711	\$ 14,048
Convertible senior notes, net	\$ -	\$ 1,130	\$ 1,133	\$ 1,812	\$ 2,718	\$ 3,262	\$ 3,914	\$ 4,697	\$ 5,637	\$ 6,764	\$ 8,117	\$ 9,740	\$ 11,688	\$ 14,026
Revolving Credit Line	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Long-term portion of bank term loan, net	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Operating lease liabilities, net of current p	\$ 12	\$ 23	\$ 23	\$ 23	\$ 23	\$ 23	\$ 23	\$ 23	\$ 23	\$ 23	\$ 23	\$ 23	\$ 23	\$ 23
Other LT Liabilities	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Equipment loan, net	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Capital lease obligations and other long-te	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Total Liabilities	\$ 101	\$ 1,247	\$ 1,268	\$ 1,949	\$ 2,888	\$ 3,468	\$ 4,172	\$ 5,024	\$ 6,061	\$ 7,314	\$ 8,784	\$ 10,552	\$ 12,675	\$ 15,175
Preferred stock	\$ -	\$ -	\$ 0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Common Stock	\$ 0	\$ 0	\$ 0,006	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Additional paid in Capital	\$ 560	\$ 510	\$ 510,014	\$ 510	\$ 510	\$ 510	\$ 510	\$ 510	\$ 510	\$ 510	\$ 510	\$ 510	\$ 510	\$ 510
retained Earnings	\$ -195	\$ -377	\$ -756,587	\$ -925	\$ -1,116	\$ -1,186	\$ -1,357	\$ -1,503	\$ -1,589	\$ -1,599	\$ -1,525	\$ -1,458	\$ -1,315	\$ -1,106
Accumulated other comprehensive income	\$ 2	\$ -1	\$ -0,553	\$ -1	\$ -1	\$ -1	\$ -1	\$ -1	\$ -1	\$ -1	\$ -1	\$ -1	\$ -1	\$ -1
Total Shareholders' equity	\$ 367	\$ 132	\$ -247	\$ -415	\$ -607	\$ -677	\$ -847	\$ -994	\$ -1,079	\$ -1,089	\$ -1,015	\$ -949	\$ -806	\$ -597

CapEx and Change in Net Working Capital

(In Millions) Year	2020	2021	2022E	2023F	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F
CapEx	\$ -58	\$ -136	\$ -136	\$ -221	\$ -332	\$ -398	\$ -418	\$ -453	\$ -453	\$ -408	\$ -313	\$ -172	\$ -181	\$ -190
Current Assets	\$ 332	\$ 1,052	\$ 719	\$ 1,043	\$ 1,508	\$ 1,669	\$ 1,827	\$ 2,149	\$ 2,753	\$ 3,728	\$ 5,132	\$ 6,966	\$ 9,246	\$ 11,978
Cash	\$ 159	\$ 733	\$ 390	\$ 666	\$ 1,054	\$ 1,112	\$ 1,121	\$ 1,284	\$ 1,611	\$ 2,213	\$ 3,265	\$ 4,670	\$ 6,434	\$ 8,685
Current Liabilities	\$ 89	\$ 94	\$ 112	\$ 114	\$ 146	\$ 183	\$ 234	\$ 303	\$ 401	\$ 527	\$ 644	\$ 788	\$ 964	\$ 1,126
STDebt	\$ 28	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5	\$ 5
NWC	\$ 112	\$ 229	\$ 221	\$ 268	\$ 312	\$ 379	\$ 477	\$ 567	\$ 746	\$ 993	\$ 1,228	\$ 1,513	\$ 1,852	\$ 2,171
Change in NWC	\$ 21	\$ 117	\$ -8	\$ 47	\$ 44	\$ 68	\$ 98	\$ 90	\$ 179	\$ 248	\$ 235	\$ 284	\$ 339	\$ 319

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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.

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