Analysis and Evaluation of Firm Performance before and during COVID-19 Pandemic: A Case Study of Ocean Bio-Chem INC, Based on 2016-2020 Data

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Abstract—The COVID-19 pandemic has had a significant impact on the manufacturing industry and the stock market in the United States. However, Ocean Bio-Chem, Inc., a US-listed company, does not perform as negatively as most companies in the market after the outbreak of the COVID-19. This study evaluates the performance of Ocean Bio-Chem, Inc. in terms of 4 aspects: growth, profitability, valuation, and dividend payout. Based on the data from 2016 to 2020, this study analyzes Ocean Bio-Chem, Inc.'s performance over the five years and compares it with the entire U.S. stock market and six competitors from the same industry. According to the results, it performs well in all these aspects compared to the entire U.S. stock market. While comparing Ocean Bio-Chem, Inc. with competitors, in addition to the poor performance of dividend payout, the other three aspects belong to its competitive advantage. This research offers a guideline for selecting investment objects in the U.S. stock market after the pandemic outbreak. In the future, researchers can further control variables by choosing companies in the same industry with similar firm sizes for comparison.

Index Terms—Firm performance, COVID-19, growth rate, profitability, valuation, dividend payout.

I. INTRODUCTION

Ocean Bio-Chem, Inc. (OBCI) is a leading manufacturer and distributor of maintenance and appearance products for the marine, automotive, recreational vehicle, and home care markets throughout North America, founded in 1973 and conducted an IPO in 1981. With various innovative and significantly improved products, it is well-received by its core customer base and new customers and has become an ideal investment choice for investors [1].

The US manufacturing industry where Ocean Bio-Chem, Inc. is located suffered a historically unprecedented decline in employment before the outbreak of the COVID-19 pandemic. The main reason for the decline is the surge in imports, weak growth in export, and the high automation in manufacturing. However, generally, America's production value was still maintained at a relatively high level during the Pre-epidemic era [2]. The COVID-19 pandemic affects not only the manufacturing industry in the US but also the global manufacturing industry [3]. Since the outbreak of the COVID-19 pandemic, manufacturing has been one of the industries most affected. Interruption of raw material and spare parts and the demand fluctuation caused by the pandemic are gradually intensified [4].

The COVID-19 pandemic also has a significant impact on the stock market in the United States. Referring to a study of Collins C. Ngwakwe, the stock value of the S&P 500 in the United States suffered a reduction within the first fifty days of the COVID-19 pandemic [5].

However, from the perspective of corporate performance, Ocean Bio-Chem, Inc. has not been negatively affected by the epidemic. Although the pandemic has had a significant impact on the manufacturing industry, Ocean Bio-Chem, Inc. showed incredible responsiveness in facing the challenge of the pandemic. Before the pandemic, the 5-year average earnings growth of Ocean Bio-Chem (34.8%) is much higher than the market average of 12.3% and the industry average of 12%. Then in 2020, after the outbreak of the COVID-19 pandemic, the earning growth of the U.S. market decreased to -0.4%, while the earnings growth of Ocean Bio-Chem, Inc. soared to 243.1% [6]. In addition, several financial report data of Ocean Bio-Chem, Inc. in 2020 have significantly improved compared to 2019. Peter Dornau, the CEO and President of Ocean Bio-Chem, Inc., announced that 2020 is the best financial performance year of the company. The annual net sales in 2020 reached a record 55.6 million U.S. dollars, an increase of 32% over 2019. Moreover, the net income of \$9.6 million in 2020 exceeded the combination of the previous three years [7].

Ocean Bio-Chem, Inc. does not perform as negatively as most companies in the market after the outbreak of the COVID-19 pandemic. Therefore, this paper takes Ocean Bio-Chem, Inc. as the research object to investigate its performance before and after a pandemic outbreak. Some investment guidance will be given based on the results.

The growth and profitability performances are proved to be essential dimensions to measure firm performance. The subjective measurement model for firm performance was proposed in a review article, which suggests nine dimensions of a company to evaluate its all-around performance, including growth and profitability [8]. Meanwhile, J. B. Santos and L. A. L. Brito test this measurement model, and the results show that using profitability and growth to measure firm performance is justified [9].

Valuation in this paper refers to the cheapness of companies' stock. In other words, whether the stock is overvalued or undervalued. From investors' perspective, assessing stock value is crucial before making an investment

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decision [10]. Besides, dividend payout is one of the critical sources of income for investing in stocks, so dividend payout has a significant and positive correlation with investment willingness [11].

Therefore, this study evaluates companies' performance in four aspects (growth rate, profitability, valuation, and dividend payout) to analyze the comprehensive firm performance and offer investment advice.

The following sections will analyze the advantages of investing in Ocean Bio-Chem, Inc. from four aspects and compare it to six manufacturers and distributors of household care maintenance products from the U.S. manufacturing industry. The six companies are Oil-Dri Corporation of America (ODC), Central Garden & Pet Co (CENT), WD-40 Co (WDFC), Spectrum Brands Holdings Inc (SPB), Clorox Co (CLX), and CHURCH & DWIGHT INC (CHD). Specifically, the remainder of this paper is organized as follows. Section II introduces ratios utilized in this paper and declares the evaluation based on previous literature. Subsequently, Section III discusses and analyzes the performance of Ocean Bio-Chem, Inc. and compares it with other six competitors. Then, the last section would comprehensively compare Ocean Bio-Chem, Inc. with its competitors, conclude the firm performance of Ocean Bio-Chem, Inc., and purpose the significance of this study.

II. DATA & METHOD

A. Data & Calculation Ratio

All data utilized in this paper is collected from annual reports of each companies' official website from 2016 to 2020. To evaluate the status of the listed companies, four types of indicators are chosen: growth rate, profitability, valuation, dividend payout.

1) Growth rate

Growth rate refers to the percentage change of a numerical indicator in a specific period. Generally, the growth rate of revenue, Earnings Before Interests, Tax, Depreciation, and Amortization (EBITDA) and, Earnings Per Share (EPS) are usually regarded as essential evaluation indicators to analyze a company's performance [12]-[14]. The formulae of the revenue, EBITDA, and EPS growth rate are given in Eqs. (1)-(3):

Revenue Growth Rate =
$$\frac{Revenue Year 2 - Revenue Year 1}{Revenue Year 1}$$
 (1)

$$EBITDA Growth Rate = \frac{EBITDA Year 2 - EBITDA Year 1}{EBITDA Year 1}$$
(2)

$$EPS Growth Rate = \frac{EPS Year 2 - EPS Year 1}{EPS Year 1}$$
(3)

2) Profitability

The profitability can be measured by the gross profits-toassets, which predicts the cross-section of average returns effectively, as same as book-to-market [15]. Firms with a high gross profits-to-assets ratio tend to generate higher returns than unprofitable ones [15]. By calculating the GP/A, investors find out whether the company is profitable or not. Profitable companies have a higher return than unprofitable ones. However, the profitability makes sense when the company's nature has "an inherent permanence of earning power" [16]. The calculation expression is written as:

$$GPA = \frac{Gross \, Profits}{Assets} \tag{4}$$

where, the GP/A is gross profits-to-assets ratio.

3) Valuation

The P/E ratio is a basic metric for determining whether a stock is overvalued or undervalued with the expression of:

$$P/E \text{ Ratio} = \frac{Share Price}{Earning per Share}$$
(5)

It is based on the notion that a stock's value should be proportionate to the amount of profit it can create for its owners [17]. According to Ref/ [18], P/E ratios have long been used by investors and stock analysts to assess whether specific stocks are correctly valued.

EV/Sales, one type of relative valuation, can be excellently applied to the analysis of a company's stock price and performance. Specifically, EV/Sales is used to measure Bulgarian SOFIX Levels in 2017 by Dimiter Nenkov [19]-[21]. In the formula to calculate EV/Sales, enterprise value is the value of the core operations' less non-operating assets, e.g., excess cash and nonconsolidated subsidiaries.

For EV/EBITDA, the enterprise value calculation is the same as that of EV/Sales. EBITDA equals operating profit (earnings before interest and taxes, or EBIT) plus depreciation and amortization expenses. It does not reflect the interest expense, taxes, or investments required to maintain or grow the business, including changes in net working capital, capital expenditures, and acquisitions. The EV/EBITDA multiple is one of the most often used methods for valuing firms, which can be a powerful tool. Nevertheless, the usage of EV/EBITDA should be adjusted in different circumstances [22].

4) Dividend payout

The dividend is the rewards that shareholders receive from the stock they invest in, generally in the form of cash. Paying a dividend is not a requirement for companies' issued stocks, but it is regarded as a usual form of rewarding shareholders [23]. This study uses dividend per share and dividend yield to evaluate the performance of listed companies in terms of dividend payout.

Dividend per share (DPS) evaluates the dividend that shareholders would receive for every ordinary share. The formulation of dividend per share is as follows.

$$DPS = \frac{Total Dividend}{Number of ordinary share outstanding}$$
(6)

Dividend per share is regarded as an important metric to investors because it is the most precise figure to evaluate dividend income from owning ordinary shares.

The total return of a stock can be divided into two forms: dividend yields and capital gains. The dividend yield measures the percentage return that investors expect to gain from the dividend paid by the stock [17]. The calculation of dividend yield is as follows.

$$Dividend \ yield = \frac{Price \ per \ share}{Dividend \ per \ share}$$
(7)

The dividend yield is regarded as a pivotal index to evaluate a company's performance. Vincent Okoth Ongore organized an empirical study in 2011, using dividend yield as one of the benchmarks to measure firm performance [24]. Moreover, analysts and investors usually use the dividend yield as a standard to evaluate financial performance. It can also be used as a performance benchmark for comparing a company history [25].

B. Evaluation Method

1) Growth rate

Pendersen suggests that the remarkable growth in corporate financial values refers to those that will bring sufficient and stable cash inflow as the value increases [26]. Meanwhile, the growth in revenue, EBITDA, and EPS are regarded as good signs in firm performance [12]-[14], which is utilized as a criterion to evaluate the performance of a firm.

2) Profitability

A high GP/A ratio indicates the company makes more profit effectively based on its assets. A profitable company enables to cope with higher risk than an unprofitable company fluctuates because it can afford a more loss in the short term by implementing a less-profit plan to maintain its market position and expand market share when unprofitable companies cannot suffer the loss and decide to exit [27].

3) Valuation

A high P/E ratio indicates high investment risk, which is an alarm for risk-aversion investors to be cautious when deciding whether to invest the stock. Sometimes, however, it shows high expectations of investors for the stock. It is its popularity that leads to a high P/E ratio. In addition, a low P/E ratio means not only under-valuated stock price, low risk but also low expectations of investors [28].

A high EV/Sales ratio means a high relative value overvalued; low EV/Sales indicates a low relative price that is undervalued. The indicator can only be compared to companies in the same industry [20].

Similar to EV/Sales, EV/EBITDA is also a type of relative valuation but based on EBITDA. Compared to historical data and companies in the same industry, we can conclude a company is overvalued if its number is higher or undervalued if its number is lower [22].

4) Dividend payout

According to the dividend signaling theory proposed by Bhattacharya, increasing the dividend per share would send a positive signal to the market that the company has brilliant performance in the future [29]. Imas and Heraenitanuatmodjo tested the dividend signaling theory in 2018, finding a significant correlation between the change in dividend per share and the value of the company [30]. Hence, this paper regards increasing dividend per share as a sign of good firm performance. Conversely, a declining dividend represents a company's poor performance.

Based on the definition of dividend yield, the higher the dividend yields, the higher the stock return [17]. However, several previous studies argue another point of view, that lower dividends do not necessarily mean poor corporate performance.

The firm performance that dividend yield can reflect is limited. Foong et al. investigate the relationship between dividend-related factors and the value of a firm and argue that the dividends yield of companies in the growth stage are obviously lower than other companies since firms tend to retain more earnings for company development in the growth stage [31]. Meanwhile, another study organized by Black and Scholes also came with similar conclusions [32]. It suggests that dividend yield does not necessarily reflect a company's performance. On the one hand, paying a low dividend is an inexpensive method to provide more capital for a company's financial needs. On the other hand, Black and Scholes mentioned that some shareholders believe higher dividend results in higher tax. Thus, to help shareholders to avoid tax disadvantages, companies may reduce dividend payout. The above two actions will lead to a lower dividend yield, but it does not mean that the company is performing poorly [32].

Therefore, this paper regards high dividend yield as a feature of good corporate performance, but for lower dividend yield, it will analyze whether it represents poor performance based on the life cycle stage of the enterprise.

III. RESULTS & DISCUSSION

A. Growth Rate

TABLE I: REVENUE GROWTH RATE OF OCEAN BIO-CHEM, INC. AND IT	S
COMPETITORS FROM 2016 TO 2020	

	2016-	2017-	2018-	2019-
Company Name	2017	2018	2019	2020
Church & Dwight Inc.	-0.91	11.87	0.05	0.12
Ocean Bio-Chem, Inc.	-0.88	8.32	0.01	0.31
Central Garden & Pet				
Co.	0.03	0.18	0.08	0.13
WD-40 Co.	8.08	-0.88	0.04	-0.04
Spectrum Brnd Hldg				
Inc.	-0.94	9.63	0.21	0.04
Clorox Co./De.	-0.91	10.31	0.01	0.08

TABLE II: EBITDA GROWTH RATE OF OCEAN BIO-CHEM, INC. AND ITS COMPETITORS FROM 2016 TO 2020

	G OP	G OP	G OP	G OP
Company name	16-17	17-18	18-19	19-20
Church & Dwight Inc.	0.07	0.03	0.09	0.09
Ocean Bio-Chem, Inc.	0.18	0.02	0.20	1.30
Central Garden & Pet				
Co.	0.18	0.08	-0.06	0.25
WD-40 Co.	0.06	0.05	0.04	-0.06
Spectrum Brnd Hldg Inc.	-0.03	-0.39	-0.05	0.09
Clorox Co./De.	0.05	0.01	0.00	0.12

TABLE III: EPS GROWTH RATE OF OCEAN BIO-CHEM, INC. AND ITS COMPETITORS FROM 2016 TO 2020

	G EPS	G EPS	G EPS	G EPS
Company Name	16-17	17-18	18-19	19-20
Church & Dwight Inc.	0.66	-0.22	0.07	0.28
Ocean Bio-Chem, Inc.	0.22	0.07	0.23	1.76
Central Garden & Pet				
Co.	0.75	0.53	-0.31	0.37
WD-40 Co.	0.02	0.25	-0.13	0.09
Spectrum Brnd Hldg				
Inc.	-1.45	-63.10	-1.60	-1.50
Clorox Co./De.	0.09	0.17	0.01	0.16

This essay will focus on three parts of growth. Unlike other giant firms, Ocean Bio-Chem, Inc. is a small company, so that the revenue growth was rather high (as listed in Table I), and the average growth rate of Ocean Bio-Chem, Inc. was 1.94, almost doubled, and its rank was at the 651st place out of 5169 companies in the US. As for its EBITDA growth, it is clearly shown in the Table. II that the EBITDA growth was larger than the other five companies, and during 2019 and 2020, the EBITDA growth was also the highest, about 129%. Besides, the average growth was also the highest among other companies, ranking 321st out of 5169 companies (in the top 10 %).

With regard to EPS growth, Ocean Bio-Chem, Inc. was better than other companies in EPS growth, e.g., the average growth rate of Ocean Bio-Chem, Inc. was 56%, and that ratio was above all other ratios, also in the top 10%. Therefore, Ocean Bio-Chem, Inc. was the top-class company in all the data. Compared with the other four companies, the revenue growth was not high because it was just a newly started company, i.e., the revenue did not sound bad. Moreover, its EBITDA and EPS growth was tremendous. Although Ocean Bio-Chem, Inc. looks good in Tables I-III, it is a company that is still developing. Therefore, unlike other big firms, it may not be able to overcome some substantial financial tragedy, e.g., the one in 2009, which we know as the finical storm. However, the performance of a stock can not only be determined by the growth rate, and the other analysis is demonstrated as follow.

B. Profitability

The profitability of Ocean Bio-Chem, Inc. is stable. From 2016 to 2019, Ocean Bio-Chem, Inc.'s GP/A ratios are around 50% but downward. In 2020, Ocean Bio-Chem, Inc. had a substantial increase in the GP/A ratio. Besides, the average GP/A ratio is 49.1%, which is more reliable because of the volatility.

TABLE IV: GROSS	PROFITS-TO-ASSETS	RATIO FROM	2016 то 2	2020
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	2016	2017	2018	2019	2020	Average
WDFC	64.1%	58.9%	72.6%	78.4%	62.8%	67.4%
CLX	61.0%	61.8%	55.9%	56.5%	52.0%	57.4%
OBCI	57.8%	48.3%	43.7%	43.8%	51.7%	49.1%
CENTA	58.9%	51.7%	37.9%	37.3%	35.8%	42.3%
ODC	43.6%	40.7%	43.5%	38.5%	38.0%	40.9%
CHD	39.1%	30.8%	32.6%	32.1%	32.1%	33.3%
SPB	2.46%	5.94%	17.0%	28.5%	30.0%	16.8%





Fig. 1. The profitability of 7 companies from 2016-2020.

Compared to Ocean Bio-Chem, Inc. with other competitors in a similar field, Table VI and Fig. 1 show that most manufacturing suffered fluctuations in that period. The reliable ways to analyze Ocean Bio-Chem, Inc. and its competitors are visualization and the average GP/A ratio.

Based on the profitability strategy advocated by Novy-Marx [15], Ocean Bio-Chem, Inc. does not perform exceptionally well among those companies. It ranks the third one out of six companies, with an average 49.1% GP/A ratio, which is not profitable compared to WDFC and CLX. However, the median GPA ratio is 21% in the American stock market, showing Ocean Bio-Chem, Inc. is a profitable company.

Therefore, if investors only choose to invest stock in the chemical manufacturing industry, Ocean Bio-Chem, Inc. is not the best choice. Among all stocks, however, investors should consider other dimensions of Ocean Bio-Chem, Inc. and try to find out the intrinsic value behind data showed by GP/A ratio, then decide whether purchasing, holding, or selling.

C. Valuation

For EV/SALES, between 2017 and 2019, EV/Sales ratios of Ocean Bio-Chem, Inc. kept being the lowest, while in 2019, it edged ahead of SPECTRUM BRND HLDG INC and CHURCH & DWIGHT INC a little bit. On average, however, its EV/SALES is still the lowest one. According to Table V, Ocean Bio-Chem, Inc.'s EV/Sales value keeps in a low standard throughout the four years.

For EV/EBITDA (shown in Table VI), Ocean Bio-Chem, Inc. remained the lowest during the four years, except for 2020, it was 0.5 higher than SPECTRUM. On average, the EV/EBITDA of the Ocean Bio-Chem, Inc. is the lowest again. Its EV/EBITDA value is the most stable one among the three.

TABLE V: EV/SALES OF OCEAN BIO-CHEM, INC. AND ITS COMPETITORS EROM 2016 TO 2020

	110	0111 2010 10			
Company Name	2017	2018	2019	2020	Average
CHURCH & DWIGHT INC.	3.87	4.37	4.44	4.82	4.20
Ocean Bio-Chem, Inc.	1.01	0.76	0.67	2.15	1.09
Central Garden & Pet Co.	1.11	0.95	0.73	0.79	0.89
WD-40 Co.	4.10	6.11	6.04	7.00	5.54
SPECTRUM BRND HLDG INC.	1.72	2.58	1.13	1.14	1.62
Clorox Co./De.	3.18	3.21	3.51	4.46	3.56
Oil Dri Corp. America	1.07	1.13	7.61	18.90	7.18

TABLE VI: EV/EBITDA OF OCEAN BIO-CHEM, INC. AND ITS COMPETITORS FROM 2016 TO 2020

Company Name	2017	2018	2019	2020	Average
CHURCH & DWIGHT INC	16.28	19.61	19.24	21.46	18.25
Ocean Bio- Chem, Inc.	8.16	6.49	4.80	8.85	7.17
Central Garden & Pet Co.	11.44	9.85	8.60	8.40	9.50
WD-40 Co.	18.87	28.88	28.40	33.90	26.37
Spectrum Brnd Hldg Inc.	10.15	15.62	8.72	8.39	10.42
Clorox Co./De.	14.82	15.23	16.96	20.78	16.81
Oil Dri Corp. America	1.07	1.13	7.61	18.90	7.18

For P/E, Ocean Bio-Chem, Inc. was ranked second. SPECTRUM keeps abnormally low stock prices. There was one exception that it was ranked the cheapest one in 2020. The price of it is still favorable. It is ranked 398th among the firms on the list, seen from Table VII), the P/E value of Ocean Bio-Chem, Inc. performs steadily. It is the lowest one compared to the other four competitors with SPECTRUM excluded.

TABLE VII: P/E OF OCEAN BIO-CHEM, INC. AND ITS COMPETITORS FROM 2016 TO 2020

Company Name	2017	2018	2019	2020	Average
CHURCH & DWIGHT INC	17.30	28.97	28.83	27.96	25.66
Ocean Bio- Chem, Inc.	15.50	10.93	8.95	13.10	12.97
Central Garden & Pet Co.	24.47	14.28	17.22	16.43	20.18
WD-40 Co.	29.29	38.24	45.35	46.45	38.37
Spectrum Brnd Hldg Inc.	- 156.10	12.03	-14.21	30.57	-11.27
Clorox Co./De.	24.90	21.61	24.23	29.81	25.73
Oil Dri Corp. America	28.14	38.16	21.22	14.13	25.41

To conclude, for EV/SALES, EV/EBITDA, and P/E value, Ocean Bio-Chem, Inc. performs steadily. It requires a low cost for investors. Thus, low price is Ocean Bio-Chem, Inc.'s comparative advantage over its four competitors. It is also the main reason why we choose to recommend this stock.

D. Dividend Payout



As shown in Fig. 2, the dividend per share was maintained at 0.06 dollars from 2016 to 2018, with a slight decrease to 0.05 dollars in 2019. Then in 2020, even if Ocean Bio-Chem, Inc. mentions in its annual report that its cash flow was affected by the increase in raw material prices caused by the COVID-19 pandemic, the dividend per share still raised by 61.09% to 0.08 dollars.

The dividend per share of Ocean Bio-Chem, Inc. has shown an overall upward over this 5-year period, which indicates the excellent performance of Ocean Bio-Chem, Inc.

The following Table VIII compares the dividend yield of Ocean Bio-Chem, Inc. and the 65-percentile dividend yield of U.S. stocks from 2016 to 2020. The dividend yields from 2016 to 2019 were all higher than 65% of U.S. stocks. However, its dividend yield declined to 0.60% in 2020, which is mainly ascribed to the increasing stock price, which means that investors can still obtain ideal capital gain in 2020.

TABLE VIII: RATE DIVIDEND YIELD OF OCEAN BIO-CHEM, INC. AND 65-PERCENTILE DIVIDEND YIELD OF U.S. STOCKS FROM 2016 TO 2020

TERCENTIEE DIVIDEND TIEED OF C.S. STOCKSTROM 2010 10 2020						
	2016	2017	2018	2019	2020	
Dividend yield	1.57%	1.37%	1.81%	1.50%	0.60%	
65-percentile	1.27%	1.17%	1.36%	1.29%	0.92%	
dividend yield						
of U.S. stocks						

Dividend per share

5.00 4.50 4.00 3.50 3.00 2.50 2 00 1.50 1.00 0.50 2016 2017 2018 2019 2020 OCEAN BIO-CHEM INC CHURCH & DWIGHT INC CLOROX CO/DE SPECTRUM BRND HLDG INC -CENTRAL GARDEN & PET CO -WD-40 CO OIL DRI CORP AMERICA

Fig. 3. Dividend per share of Ocean Bio-Chem, Inc. and its competitors from 2016 to 2020.



Fig. 4. Dividend yield of Ocean Bio-Chem, Inc. and its competitors from 2016 to 2020.

Figs. 3 & 4 show the comparison of dividend per share and dividend yield between Ocean Bio-Chem, Inc. and its other six competitors. The dividends per share of CLOROX CO/DE, WD-40 CO, and SPECTRUM BRND HLDG INC have shown a more significant upward trend than Ocean Bio-Chem, Inc. over these five years. Besides, CLOROX CO/DE and WD-40 CO also have dividend yields much higher than Ocean Bio-Chem, Inc. from 2016 to 2020. In 2020, except for CENTRAL GARDEN & PET CO, which does not pay dividends, the dividend yield of Ocean Bio-Chem, Inc. was lower than that of the other five competitors.

Therefore, Ocean Bio-Chem, Inc.'s dividend payout is at the upper-middle level of the entire US stock market, but it is slightly inferior to its competitors.

IV. CONCLUSION

In summary, we analyze the performance of Ocean Bio-Chem, Inc. in terms of growth, profitability, valuation, and dividend payout. Based on the analysis, Ocean Bio-Chem, Inc. performs well in all these aspects compared to the entire U.S. stock market. While comparing Ocean Bio-Chem, Inc. with its competitors, it does not pay a high dividend, but the other three aspects show the competitive advantage of Ocean Bio-Chem, Inc. In general, stable and fast growth, high profitability, and the cheapness of stock are Ocean Bio-Chem, Inc.'s most outstanding advantages. Therefore, we draw the conclusion that Ocean Bio-Chem, Inc. is an ideal investment choice whether it is compared with its key competitors or by looking at its performance relative to the entire stock market. Meanwhile, according to the difference between Ocean Bio-Chem, Inc.'s dividend payout and the other three aspects, the level of dividend is not a very effective corporate performance evaluation standard.

There are also some limitations to this study. When selecting competitor companies for comparison, this study chooses companies in the same industry without considering the corporation size. Future research can further control variables to select companies in the same industry and comparable in size (similar number of employees, asset value, Etc.). Overall, these results shed light on selecting investment objects in the U.S. stock market.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

These authors contributed equally.

References

- [1] Ocean Bio-Chem. Inc. [Online]. Available: http://www.oceanbiochem.com/
- [2] S. E. Houseman, "Understanding the decline of U.S. manufacturing employment," *Upjohn Institute Working Papers*, pp. 18-287, 2018.
- [3] O. Analytica, "COVID-19 will worsen the global manufacturing downturn," *Emerald Expert Briefings*, March 13, 2020.
- [4] M. Cai and J. Luo, "Influence of COVID-19 on manufacturing industry and corresponding countermeasures from supply chain perspective," *Journal of Shanghai Jiaotong University (Science)*, vol. 25, no. 4, pp. 409–416, August 2020.
- [5] C. C. Ngwakwe, "Effect of COVID-19 pandemic on global stock market values: A differential analysis," *Acta. Universitatis Danubius. Economica*, vol. 16, no. 2, pp. 255–269, 2020.
- [6] St. S. Wall. (2021). Ocean bio-chem, Inc.'s (NASDAQ: OBCI) stock has been sliding but fundamentals look strong: Is the market wrong? [Online]. Available: https://finance.yahoo.com/news/ocean-bio-cheminc-nasdaq-110209625.html
- [7] Cision. (2021). Ocean bio-chem, Inc. reports record 2020 year net sales, income, and earnings per share. [Online]. Available: https://finance.yahoo.com/news/ocean-bio-chem-inc-reports-130000368.html
- [8] M. Selvam, J. Gayathri, V. Vasanth, K. Lingaraja, and S. M. Oli, "Determinants of firm performance: A subjective model," *International Journal of Social Science Studies*, vol. 4, no. 7, 2016.
- [9] J. B. Santos and L. A. L. Brito, "Toward a subjective measurement model for firm performance," *BAR, Braz. Adm. Rev.*, vol. 9, pp. 95– 117, 2012.
- [10] A. I. L. Wibowo, A. D. Putra, M. S. Dewi, and D. O. Radianto, "Differences in intrinsic value with stock market prices using the price earning ratio (per) approach as an investment decision making indicator (case study of manufacturing companies in Indonesia period 2016 -2017)," *Aptisi Transactions on Technopreneurship (ATT)*, vol. 1, no. 1, pp. 82–92, 2019.
- [11] S. Saleh and S. K. Nasution, "Analysis net profit, dividend, debt, cash flow, and capital net working that influence investment decisions on manufacturing companies," *International Journal of Research and Review*, vol. 7, no. 3, 2020.
- [12] T. Stewart, "Knowledge, innovation and firm performance in high- and low-technology regimes," *Journal of Business Venturing*, vol. 21, no. 5, pp. 687–703, 2006.
- [13] J. Bouwens, T. Kok, and A. Verriest, "The prevalence and validity of EBITDA as a performance measure," *Comptabilité-Contrôle-Audit*, vol. 25, no. 1, pp. 55–105, 2019.
- [14] K. A. Farrell and D. A. Whidbee, "Impact of firm performance expectations on CEO turnover and replacement decisions," *Journal of Accounting and Economics*, vol. 36, no. 1–3, pp. 165–196, 2003.
- [15] R. Novy-Marx, "The other side of value: The gross profitability premium," *Journal of Financial Economics*, vol. 108, no. 1, pp. 1–28, 2013.

- [16] B. Graham and D. L. Dodd, Security Analysis: Principles and Technique, 6th ed. New York: Mcgraw-Hill, 2009.
- [17] J. B. Berk and P. M. Demarzo, *Corporate Finance*, New York, NY: Pearson, 2017.
- [18] P. Shen, "The P/E ratio and stock market performance," *Economic Review*, vol. 85, no. 16, pp. 23–26, 2000.
- [19] D. Nenkov, "The US stock market against the background of the 'price - to - sales' and the 'enterprise value - to - sales' rations," *Бизнес Ποсοκи*, vol. 23, no. 01, pp. 7-20, 2018.
- [20] N. Dimiter, "An analytical approach to comparing actual vs. 'fundamental price-to-sales' and 'enterprise value-to-sales' ratios on the European stock market," *International Journal of Economics and Business Administration*, no. 4, pp. 32–49, 2016.
- [21] D. Nenkov, "Bulgarian SOFIX levels in 2017 according to the 'priceto-sales' and 'enterprise value-to-sales' ratios," *Finance, Accounting and Business Analysis (FABA)*, vol. 1, no. 1, pp. 33–52, 2019.
- [22] M. J. Mauboussin, "What does an EV/EBITDA multiple mean," Bluemountain Investment Research, 2018.
- [23] The Economic Times. Definition of 'Dividend.' [Online]. Available: https://economictimes.indiatimes.com/definition/Dividend
- [24] V. O. Ongore, "The relationship between ownership structure and firm performance: An empirical analysis of listed companies in Kenya," *African Journal of Business Management*, vol. 5, no. 6, pp. 2120–2128, 2011.
- [25] G. Filbeck, H. M. Holzhauer, and X. Zhao, "Dividend-yield strategies: A new breed of dogs," *The Journal of Investing*, vol. 26, no. 2, pp. 26– 47, 2017.
- [26] L. H. Pedersen, Efficiently Inefficient: How Smart Money Invests and Market Prices Are Determined, Princeton: Princeton University Press, 2015.
- [27] A. Schroeder, The Snowball: Warren Buffett and the Business of Life, New York: Bantam Books, 2008.
- [28] Z. Li, "How to understand P/E rations correctly," *Economic Forum*, vol. 6, no. 2, 2003.
- [29] S. Bhattacharya, "Imperfect information, dividend policy, and 'the Bird in the hand' fallacy," *The Bell Journal of Economics*, vol. 10, no. 1, p. 259,1979.
- [30] I. Purnamasari and H. Heraenitanuatmodjo, "Testing of dividend signaling theory," in *Proc. the 1st International Conference on Economics, Business, Entrepreneurship, and Finance (ICEBEF 2018)*, vol. 65, 2018.
- [31] S. S. Foong, N. B. Zakaria, and H. B. Tan, "Firm performance and dividend-related factors: The case of Malaysia," *Labuan Bulletin of International Business and Finance (LBIBF)*, vol. 5, pp. 97–111, 2007.
- [32] F. Black and M. Scholes, "The effects of dividend yield and dividend policy on common stock prices and returns," *Journal of Financial Economics*, vol. 1, no. 1, pp. 1–22, 1974.

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