Investment Strategy for Novice Investors During Covid-19

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Abstract: According to Dolbenva Deniza V's [1] research, the main impacts of the COVID-19 to the global economy include but not limited to a decline in exchange indices a sharp drop in oil prices, a slowdown of the development of the mental market a reduction in output a significant decrease in revenue of airlines and maritime transport, shopping and entertainment centers, the tourism industry, a decrease in the population's incomes a growth in revenues of the pharmaceutical industry and the global industry of gaming, educational and other online applications, and an increased investor demand for less risky assets. This paper aims to help novices who want to make a stock investment during COVID-19 develop a suitable investment strategy. This article mainly researches three healthcare companies: Abbott Laboratories, Boston Scientific Corp, and Intuitive Surgical Inc. We then conduct further calculations, comparison, and analysis to explore which company is more worthwhile to invest. We also include these three companies' financial statements. There are two methods- the relative valuation method and absolute valuation- that are used to compare data collected from financial statements of three companies and develop a simple and accessible investment method for stocks. We find that Intuitive Surgical Inc. is more worthwhile to invest by using this method system as for radical investors. The results suggest that the novices should choose the P/E, P/S, and P/B ratio to analyze and identify which is value stock and which is growth stock. Then they should select the best value stock during the value stocks and the same for growth stocks by using the relative valuation method. In the meanwhile, novice investors should analyze the highest value of all stocks according to DuPont analysis. Finally, we offer suggestions for investors based on the different inclinations. If the growth stocks analyzed by DuPont analysis are ranked above the value stocks, and the growth stocks will rise in the future according to the general environment, then, it is recommended that activists invest in the growth stocks. Conversely, if the value stocks are ranked above the growth stocks or the growth stocks will fall in the future, then it is recommended that radicals reconsider. As for conservative investors, it is suggested to invest in the best stock in value stocks.

1. Introduction

During COVID-19, many people instinctively consider its impact as being completely negative and destructive. However, there is also explosive growth in many industries due to the pandemic, such as the medical industry's masks, medical alcohol, and protective clothing, and more professional equipment, such as ventilators, monitors, CRRT, ECMO, the clinical analyzer and so on is also needed. What happened in 2019? Biotech and healthcare stocks soared. Moreover, both the NASDAQ Biotechnology Index (NBI), and the XBI S&P Biotech ETF are rising, which were generally consistent with the S&P, meaning the healthcare industry has been rising since the previous year. Furthermore, in this epidemic, the shortage of medical equipment such as masks and ventilators has caused some countries to start to pay attention to establish their own complete industrial supply

chain, especially the core industry. Therefore, the healthcare industry is a good chance for investors. The focus of this study is on how to use the two well-known methods to pick a valuable stock for investment. As mentioned before, this study will use the relative valuation method and the absolute valuation method. For the relative valuation method, this paper uses equity values to compare three companies' stock value, such as price-to-earnings (P/E), price-to-sales (P/S), price-to-book (P/B), Market leverage ratio, Enterprise Value, and so on. Then, for the absolute valuation method, this study uses DuPont analysis for return on equity (ROE) as a standard for stock investment. Thus, an accessible and straightforward method will be proposed and concluded for stock investment to solve what should novices pay more attention to when they want to invest in stocks.

Many people have conducted the stock analysis, and they have many different theories and research directions. Seung-Woog (Austin), Kwang, and Sang [2] found out that understanding the linkage of the contraction risk to value investing would help investors and financial planners optimally allocate funds across investment assets. Chan, Haomo, and Lakonishok [3] studied the relationship between returns on Japanese stocks and E/P, B/P, and C/P. They concluded that stocks with high valuation ratios emerged higher returns than stocks with low valuation ratios. Chin, Prevost, and Gottesman [4] proved the usefulness of New Zealand's estimated ratios while evaluating various value investment strategies. Truong, Cameron [5] also found that value investing, which used a price-earnings ratio, is not feasible in New Zealand. Professor Benjamin, who was at Columbia University and his protégé, LeFevre Dodd [6], found that value investing was a kind of investing research for securities with prices that are unwarranted lower than their intrinsic value, which was also successfully assumed later by Charles Brandes, John Templeton, and Martin J. Whitman, among others. Basu, S [7] developed a test of the efficient market hypothesis to study the investment performance of common stocks in relation to the price earnings ratios. DeBondt, Werner F. M. and Richard H. Thaler [8] also came up with that whether there is market overreaction or not. They [9] also provided evidence and studied Stock Market Seasonality. Chan, Louis K,C., Narasimhan Jegadeesh, and Josef Lakonishok [10] researched in the influence of selection bias when evaluating the performance of value and glamour stocks. Fama and French, Chen and Zhang [11], considered that price multiplies could not observe some common risk factors or simply control for dimensions of risk, which is not captured by market risk. La Porta, Lakonishok, Shleifer, and Vishny [12] argued that the outstanding performance of value investing was expectation errors made by irrational market participants. Chan, Louis K.C., and Lakonishok [13] recommended that the value strategies improved the returns by defining value and growth rate instead of the familiar ratio of book value to market value. Piotroski, Joseph D. [14] examined a simple accounting-based fundamental analysis strategy that can be used to an extensive portfolio of high book-to-market firms. Roland, Rousseau, and Paul van Rensburg [15] found that when the investors' holding period was extended, the return on value investment became more extensive and more reliable.

2. Data and Method

2.1 Data

The data used in this article are mainly from the financial statements of three companies: Abbott Laboratories, Boston Scientific Corp, Intuitive Surgical Inc. The form of their financial reports is 10-Q, and they are quarterly reported. These data were obtained from U.S. SECURITIES AND EXCHANGE COMMISSION[16][17][18], Yahoo Finance [19] and Estimize [20]. The filing date of these financial documents is 2020-04-29, and the period of the report is 2020-03-31.

The following are the financial statement data (Table 1) that are mainly used.

Table 1. Data from financial statements for ABT, BSX, and ISRG.

Data from financial	3 Months Ended	Mar. 31, 2020	\$ in Millions
documents	ABBOTT	BOSTON	INTUITIVE
	LABORATORIES(ABT)	SCIENTIFIC	SURGICAL
		CORP(BSX)	INC(ISRG)
Price	\$92.16	\$36.98	\$522.86
Shares Outstanding	1,768,845,326	1,399,350,122	116,617,784
Sales	\$7,726	\$2,543	\$1,099.5
Cost	\$3,281	\$806	\$1,100
Net Income	\$564	\$11	\$316
Cash and cash equivalents	\$3,377	\$370	\$1,224
Total Assets	\$66,777	\$30,113	\$9,891
Long-term debt	\$16,804	\$9,331	-
Short-term debt	\$1264	\$1,004	-
EBIT	\$758	\$110	\$283
Total Liabilities	\$36,350	\$16,309	\$1,361
Total Equity	\$30,427	\$13,804	\$8,531
TTM EPS	\$3.26	\$24.33	\$12.85
Forward EPS	\$2.98	\$33.93	\$9
TTM Sales	\$32,095	\$10,786	\$4605
Forward Sales	\$31,949	\$10,053	\$4040.43

2.2 Method

The following are the methods that are mainly used.

2.2.1 Relative valuation method (The precondition: Different enterprises in the same industry and the same period.)

Equity value is a value only to the shareholders. Its multiples include P/E, P/S, P/B, etc. Comparisons of those values can help determine which enterprise is more suitable for prudent investors. If the values are low, then it indicates low risk. However, sometimes low P/E, P/S, P/B can mean two things: maybe this stock is undervalued by the market or just it has low investment valuation. If these indexes are much higher than other stocks, then the stock is a growth stock, more suitable for radical investors because it has higher risk meaning that one can gain a lot or lost a lot. And high figure means this stock is overvalued by the market or it has a huge investment potential.

P/E ratio:

$$P/E \text{ ratio} = \frac{Price}{EPS} \tag{1}$$

P/E ratio =
$$\frac{Price}{EPS}$$
 (1)
EPS = $\frac{Net \, Income}{SHO}$ (2)

Only when the P/E ratio is greater than 0 can it be meaningful. While comparing their P/E ratios and when the data are greater than 0, the lower one is the better one, which means this stock is a value stock.

P/S ratio:

$$P/S \text{ ratio} = \frac{Price}{SPS}$$
 (3)

$$SPS = \frac{Sales}{SHO} \tag{4}$$

A company with virtually no debt will be more attractive than that with the same P/S ratio, and sales are measured in Millions of dollars.

P/B ratio: It is also known as the M/B ratio.

$$P/B \text{ ratio} = \frac{SHO \times Market \ price \ per \ share}{Book \ value \ of \ equity}$$
 (5)

Comparing their P/B ratios, the lower is the better.

Market leverage ratio is also known as D/E ratio.

D/E ratio =
$$\frac{Debt}{Market \ value \ of \ equity}$$
 (6)

Comparing their D/E ratios, the lower is the better.

Growth multiples are PEG and PSG. When comparing both, the lower is the better. PEG ratio:

PEG ratio: PEG ratio =
$$\frac{TTM \ P/E \ ratio}{Earnings \ growth \ rate}$$
 (7)

Earnings growth=
$$\frac{Forward EPS-TTM EPS}{TTM EPS}$$
=EPS growth rate (8)

Comparing the PEG ratios, the lower is the better. Besides, when PEG is greater than 0 and lower than 1, it's meaningful.

PSG ratio:

PSG ratio: PSG ratio=
$$\frac{TTM P/S \ ratio}{Sales \ growth \ rate}$$
 (9)

Sales growth rate=
$$\frac{Forward SPS - TTM SPS}{TTM SPS}$$
 =SPS growth rate (10)

The PSG ratio enhances the P/S ratio by adding in expected sales growth. And, the same as the PEG ratio, whose PSG is lower, the company is more valuable.

Margins multiples are: Gross Profit Margin, Net Profit Margin, EBIT margin. The higher is the better.

Gross Profit Margin=
$$\frac{Revenue-Cost}{Revenue} \times 100\%$$
 (11)

Net Profit Margin=
$$\frac{Net Income}{Revenue} \times 100\%$$
 (12)

EBIT margin=
$$\frac{EBIT}{Revenue} \times 100\%$$
 (13)

Enterprise value is a value of a company's outstanding equity. Its multiples include EV/S, EV/S/G, EV/EBIT, and so on.

Enterprise value = Equity + Debt – Cash
$$(14)$$

$$TTM EV/Sales = \frac{EV}{TTM Sales}$$
 (15)

The lower is the better.

Forward EV/Sales=
$$\frac{EV}{Forward Sales}$$
 (16)

The same as the TTM EV/Sales.

$$EV/Sales-to-growth = \frac{TTM EV/S}{Sales growth rate \times 100}$$
 (17)

The lower is the better.

$$EV/EBIT = \frac{EV}{EBIT}$$
 (18)

The lower is the better.

2.2.2 Absolute valuation method (DuPont analysis for ROE)

According to DuPont analysis for ROE, which firm has a higher ROE, it's more worth investing in. The following is the way how we calculate.

$$\frac{Net \ income}{Net \ Sales} \times \frac{Net \ Sales}{Total \ Assets} \times \frac{Total \ Assets}{Total \ equity} = Return \ on \ Equity \ (ROE)$$
 (19.1)

$$(\frac{\textit{Net income}}{\textit{Net Sales}} = \textit{Profit Margin}, \ \frac{\textit{Net Sales}}{\textit{Total Assets}} = \textit{Total Asset Turnover}, \ \frac{\textit{Total Assets}}{\textit{Total equity}} = \textit{Financial Leverage})$$

Net profit on total assets
$$\times$$
 Equity Multiplier=ROE (19.2)

(Net profit on total assets = Net Profit Margin \times Total Asset Turnover)

Total Asset Turnover=
$$\frac{Sales}{Total \ Assets}$$
 (20)

Equity Multiplier=
$$\frac{Total \ assets}{Average \ net \ assets} = \frac{1}{1-Debt \ to \ Asset \ ratio}$$
 (21)

Debt to Asset ratio=
$$\frac{Total\ Liabilities}{Total\ Assets}$$
 (22)

The third formula is the formula that is used.

3. Results

3.1 Based on relative valuation method (Table 2)

Table 2. Results of relative analysis

Compa

	Company			
Index	Abbott	Boston Scientific	Intuitive Surgical	
	Laboratories	Corp	Inc	
Current P/E ratio	28.27	24.33	40.69	
Forward P/E ratio	30.93	33.93	59.08	
Current P/S ratio	5.08	4.80	13.24	
Forward P/S ratio	5.10	5.15	15.09	
P/B ratio	5.36	3.75	7.15	
Market leverage ratio	11.08%	19.97%	-	
PEG ratio	(3.29)	(86.00)	(1.31)	
PSG ratio	(11.17)	(0.71)	(1.08)	
Gross Profit Margin	58%	68.31%	67.14%	
Net Profit Margin	7.30%	0.43%	28.76%	
EBIT margin	10%	4.33%	25.74%	
Enterprise Value	\$177,416.79	\$61,713	\$57,721.37	
TTM EV/Sales	\$5.53	\$5.72	\$12.53	
Forward EV/Sales	\$5.55	\$6.14	\$14.29	
EV/Sales-to-growth	(12.15)	(0.84)	(1.02)	
EV/EBIT	234.44	561.03	41.07	

3.1.1 Based on P/E, P/S, and P/B

P/E and P/S: When it comes to current, Abbott Laboratories is higher than Boston Scientific Corp, but when it comes to forward, Abbott Laboratories is lower than Boston Scientific Corp, so it's hard to decide between Abbott Laboratories and Boston Scientific Corp according to P/E and P/S. But we can certain that Intuitive Surgical Inc is a growth stock completely.

P/B: Boston Scientific Corp's P/B is lowest, we should buy it, and Abbott Laboratories is the second choice.

To sum it up, according to the first part of comparison, sound investors can buy Boston Scientific Corp and Abbott Laboratories. Between those two, Abbott Laboratories is slightly better. However, Intuitive Surgical Inc is a growth stock with high risk.

3.1.2 Based on D/E ratio

D/E ratio is also known as Market leverage ratio, due to the lack of debt data of Intuitive Surgical Inc, it doesn't have D/E ratio, so we can not decide between three firms. But we can see that, Abbott Laboratories has a lower D/E ratio, so we can buy Abbott Laboratories if we considering between Abbott Laboratories and Boston Scientific Corp.

3.1.3 Based on PEG and PSG ratio

PEG and PSG, we can find these three companies all have negative ratio, these negative ratios are meaningless, all of them are experiencing negative growth rates because of the COVID-19. Therefore, these companies cannot be evaluated according to these indexes.

3.1.4 Based on Margins

Gross Profit Margin: Boston Scientific Corp is the highest, but Intuitive Surgical Inc is close to Boston Scientific Corp.

Intuitive Surgical Inc has the highest Net Profit Margin and EBIT margin, and Net Profit Margin and EBIT margin of Abbott Laboratories are higher than Boston Scientific Corp.

Through this comparison, we can know that if investors prefer to be prudent, we recommend Abbott Laboratories. If not, we think Intuitive Surgical Inc is a good choice. Because Intuitive Surgical Inc is a growth stock, and it has high margins, which means valuable.

3.1.5 Based on enterprise value

EV/S, EV/S/G, EV/EBIT: According to the results data, Abbott Laboratories are all lower than Boston Scientific Corp, so Abbott Laboratories is a better choice. And because Intuitive Surgical Inc is a growth stock, so it has higher results in this part.

3.1.6 Summary

In this article, stocks are divided into value stocks and growth stocks. Investor behavior is divided into conservative investors and radical investors.

For sound investors, choosing Abbott Laboratories, because this company is a value stock, its stock value is more stable and there is less risk of falling, and we can find that Abbott Laboratories is better than Boston Scientific Corp through comparison.

For radical investors, choosing Intuitive Surgical Inc. Although it has high risk, during the period of COVID-19, the high-tech medical company is more optimistic about developing vaccines or medical devices, its stock price is more likely to surge than to slump, so it's a good choice, and it has a good performance in data.

3.2 Based on DuPont analysis (Table 3)

Table 3. Results of DuPont analysis

Index	Company			
	Abbott Laboratories	Boston Scientific Corp	Intuitive Surgical Inc	
Net income	564.0	11.0	316.2	
Sales	7726.0	2543.0	1099.5	
Total Assets	66777.0	30113.0	9891.1	
Total Liabilities	36350.0	16309.0	1360.6	
Debt to Asset ratio	54.43%	54.16%	13.76%	
Net Profit Margin	7.30%	0.43%	28.76%	
Total Asset Turnover	11.57%	8.44%	11.12%	
Equity Multiplier	219.47%	218.15%	115.95%	
Net profit on total assets	0.84%	0.04%	3.20%	
Return on Equity (ROE)	1.85%	0.08%	3.71%	

Intuitive Surgical Inc has the highest ROE, and Abbott Laboratories has the second high, so Intuitive Surgical Inc is the best choice and Abbott Laboratories is the second choice if we according to DuPont analysis.

3.3 Summary

Combining the relative valuation method and DuPont analysis, we can know that for radical investors, Intuitive Surgical Inc is a good choice. It is a growth stock company with a strong technical support. Under the influence of COVID-19, high-tech medical company like Intuitive Surgical Inc has a great market prospect; also, we can see that the gross rate is very high hence the radical investors look for higher returns can choose Intuitive Surgical Inc.

For conservative investors, Abbott Laboratories is the best choice, because it is a value stock, it's steadier than growth stock, and it performs better than Boston Scientific Corp. What's more important is the circumstance, given that we are suffering from COVID-19, medical stocks are the best choice.

4. Conclusion

This article analyzes the stock market changes and financial conditions of three listed medical companies in the United States during the COVID-19. It is found that the stock market has greater expectations for medical companies, especially medical companies with high-tech, because such companies are more likely to develop a vaccine or medical equipment against COVID-19. Through above financial analysis models of these three medical companies, we can offer an investment strategy for novices to make a stock investment during Covid-19. That is, when choosing stocks, we suggest investors to combine the relative valuation method and the absolute valuation method.

The first method to utilize is the relative valuation method. First, investors need to choose the companies in the same industry. Second, they need to compare their P/E, P/S and P/B ratios to see if they are all value stocks or not. In general, low P/E, P/S and P/B indicate a value stock. And the value stock is suitable for novice investors as it has lower uncertainty and risk. But if this stock has higher P/E, P/S and P/B ratios, which indicate a growth stock. Generally, the growth stock always performs differently in the following indexes from the value stock. Third, we can calculate D/E ratio, PEG ratio, PSG ratio, Gross Profit Margin, Net Profit Margin, EBIT margin, Net Profit Margin, EBIT margin, EV/S, EV/S/G and EV/EBIT. And then we just need to follow the comparison method mentioned above, finally, we can draw an investment conclusion through the relative valuation method.

As for the DuPoint analysis method, it doesn't matter whether we choose the firms in the same industry or not. We only need to collect data from the firm's financial statements: net income, sales, total assets and total liabilities. After calculating net profit on total assets and equity multiplier, we then multiply the numbers together and get the value of ROE. The higher the ROE, the more the firm worths.

Furthermore, when deciding the value stock or the growth stock, we need to combine our personality, capital fund, willing, and the market environment. The results of value stock and market stock might be totally different.

A point worth mentioning is that the analysis is conducted during the pandemic, therefore when choosing stocks, medical companies have a great effect on people's lives. Thus, they most likely would gain more, which is why they are most recommended. Moreover, the growth stock has high risk, they may surge or slump, but because of COVID-19, if the growth stock is a medical stock, it will more likely surge.

Overall, we gather data, perform calculations and further analyze the results for the purpose of developing a method system to guide novices which stock should be chosen among firms. In order to test whether such method can be applied to other fields, we plan to collect and calculate more different data from different industries such as food, airlines, clothes, and education to demonstrate its generalizability in the future. In addition, although COVID-19 has great influence on the world, as time goes by, people all over the world need to restart producing and trading. The hot fields of the stock market may change, so it's meaningful to use a new perspective to do investment under

COVID-19. We believe that more research need to be conducted, starting from a corporate and stock market perspective, or analyzing the turnover, the long short capital flow, even the daily average lines. And maybe a math model with C language can be established to calculate companies' operating data, and to decide the best point to buy stocks.

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