Stock Selection Based on Valuation, Growth, Profitability and Payout Ratio Analysis

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Abstract. Stock selection is one of the most popular topics among both inexperienced and sophisticated investors. However, it is always difficult to make a decision from various kinds of stocks with limited purchasing power. Therefore, this study focuses on stock selection among seven particular stocks. The selection was be based on comparisons of indices of valuation, profitability, growth, and payout. Domino's Pizza Inc stood out from the first part of the comparison in light of its stability and constant growth. MV Oil Trust stood out from the second part of the comparison on account of its high dividend yield. Both Domino's Pizza Inc's and MV Oil Trust's stocks will be the recommendations for investors. The significance of this study is to help investors understand the indices and process of stock comparison under a complicated modern stock market and to help investors with their investment decisions. These results shed light on guiding further exploration for stock selection.

Keywords: Stock Stability, P/E Ratio, Gross Margin, Earnings Per Share, Dividend Yield.

1. Introduction

The modern stock market that investors are entering today has hundreds of years of history. Previously, when stock market first stepped into the public eye, investors made phone calls with stockbrokers to acquire suggestions and complete their stock transactions. As the stock market became mature and more established, the ways people make investments have become more and more convenient through internet. With a rising number of investors and an ever-increasing quantity of companies entering the market, the world stock market has shown its unprecedentedly high level of activity. "World stock markets are booming, and emerging markets compose a disproportionately large amount of this boom" [1]. As the global stock markets developed, a great quantity of companies have expanded their stock status across nations. Dramatic changes have occurred to the stock markets [2, 3]. While a lot of investors were immersed in the joy of the massive benefits stock markets bring, some people described stock market as a relentless animal swallowing investors' money. Mastering the stock market requires a lot of practices. With vast stores of knowledges and skills, the manipulation of stock market might even seem possible [4, 5]. This idea underlines the importance of appropriate stock selections. Moreover, Surachai Chancharat pointed out that: "a number of studies have shown that global stock markets have become increasingly integrated and co-movements among stock markets have been on the rise through time" [6]. The modern global stock market is a complicated system. Subtle patterns, however, could appear among a series of stocks. Understanding the patterns and trends among stocks conduces to investors' deep comprehension on the whole stock market, which determines whether individuals are making profits or not.

Investigations have demonstrated the relationship between price ratios and a stock's return. A stock with higher P/B ratio may likely to generate dramatic excess return. This correlation, however, was not always robust. In addition, P/E ratio cannot be used solely to predict the future performance of a company. Prediction of a company's future trendy requires sufficient data and enough effective indices [7,8]. Hence, this study aimed at analyzing indices from all aspects, by which method the study error can be minimized. Moreover, the impact of COVID-19 on stock market cannot be ignored. The COVID-19 pandemic has changed people's daily routines. Industries' productivity and profitability are affected. Government's adjustments on the interest rate have made the stock market more turbulent than ever. Investors are facing a hard time making decisions under those chain reactions. Studies have illustrated that COVID-19 pandemic has greater impact on small firms compared to large firms. Small firms are still likely to go bankrupt even with the help of government's programs. Furthermore, data has shown that companies usually underwent a sharp drop in stock price at the beginning of the pandemic, but the stock price started to increase afterwards [9,10]. This evidence emphasized the high volatility in stock market under the ravage of COVID-19.

The modern global stock market obviously contains a lot of attractions and risks. It is vital for individuals to comprehend the numbers and indices indicating the overall performances of a company and acquire the ability to compare various stocks before entering the stock market. The goal of this study is to help investors establish a basic concept of effective stock selection and provide advice for investing among the seven particular stocks. This study breaks down the process of stock selection into intelligible comparison procedures. Not only can investors take the final recommendation as a reference when making investing decisions, but they also can adopt the methodology in this study and apply it on further stock investments.

2. Data & Method

The data was collected from 5145 companies throughout the whole world from 2015 to 2021. The first part of the study focused on the comparison among 5 typical restaurants (Domino's Pizza Inc, Darden Restaurants Inc, Papa John's International, The Wendy's Company, Chipotle Mexican Grill). In the second part, a comparison was made among the winner of the 5 restaurants and 2 typical companies in other fields (Medifast Inc, MV Oil Trust). Final results will be drawn based on the analysis.

The data will be analyzed from 4 aspects: valuation, growth, profitability, and payout. For valuation, the index used is the P/E ratio (stock price divided by earnings per share). It tells whether the stock of a company is currently undervalued or overvalued by the market. GP/A (gross profit divided by assets), Asset turnover rate (sales divided by assets), and gross margin (gross profits divided by sales) are the indices used to assess the profitability of a company. They measure the ability that company generates profits. For growth, stock price, growth in revenue, and growth in earnings per share are used in the analysis. Those 3 indices estimate the development of a company throughout each year. Furthermore, the index used to analyze the payout of a company is the dividend yield (dividend per share divided by stock price), which estimates how much money a company is paying for its investors.

The goal is to find the stock that is the most stable and generates the greatest profits for its investors. In the first comparison part, the P/E ratio among Domino's Pizza Inc, Darden Restaurants Inc, Papa John's International, The Wendy's Company, Chipotle Mexican Grill will be calculated to determine which companies are less risky. Aftewards, growth rate in revenue will be compared to analyze whether the companies were making progress in operation since 2015. Finally, the GP/A, asset turnover rate, and the gross margin will be generated and compared with the median level of all 5145 companies. The results will help determine the 5 companies' ability of assets to generate sales. The company who is outstanding according to the analysis will be joined in the second comparison part of the study. In the second comparison part, the first step is to compare the P/E ratio of the winner company in part 1 along with Medifast Inc and MV Oil Trust. In addition, the variation in stock price will be a direct tool to reflect public investors' expectations for the companies. The rate in the change of earnings per share and dividend yield will then be calculated to measure the stableness and the ability of the 3 companies to pay for investors. The median dividend yield of all 5145 companies will also be generated to help analyzing. All evidence and analysis will contribute to the final investing decision.

3. Results & Discussion

3.1 Comparions of the five catering companies

The P/E ratios of the 5 companies from 2015 to 2021 are shown in Fig. 1. Domino's Pizza Inc and the Wendy's Company has a more stable curve. The P/E ratios for other 3 companies fluctuated in a wide range through the 6 years. Especially, Fig.2 describes the difference in the P/E ratio of Domino's Pizza Inc and the Wendy's Company from 2015 to 2021. As depicted in Fig. 2, the P/E ratio of Wendy's Company experienced a drop in both 2018 and 2021, while the P/E ratio for Domino's Pizza Inc hardly had a dramatic change. Fig. 3 illustrates the growth in revenue among the 5 companies from 2015 to 2021. Although all 5 curves experienced a significant change throughout the 6 years, it is obvious that Domino's Pizza Inc was the only company who never had a negative growth in revenue. Fig. 4 demonstrates the GP/A, asset turnover ratio, and gross margin among the 5 companies in 2021. Seen from the results, Domino's Pizza Inc and Papa John's International Inc are the two companies that stood out.

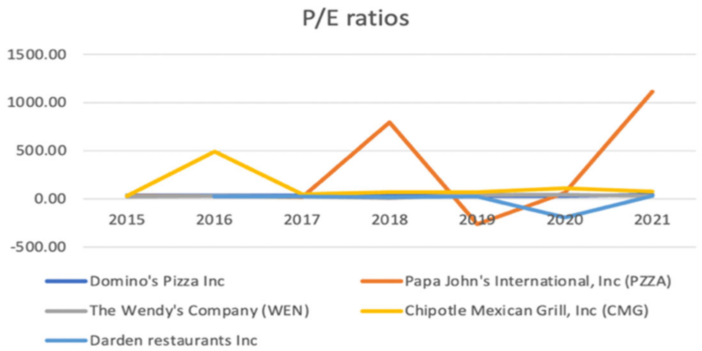

Fig. 1. Changes in P/E Ratio of Five Catering Companies From 2015 to 2021.

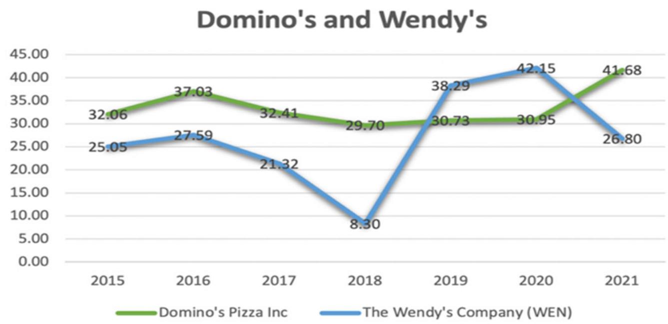

Fig. 2. Changes in P/E Ratio of Domino's Pizza Inc and the Wendy's Company From 2015 to 2021.

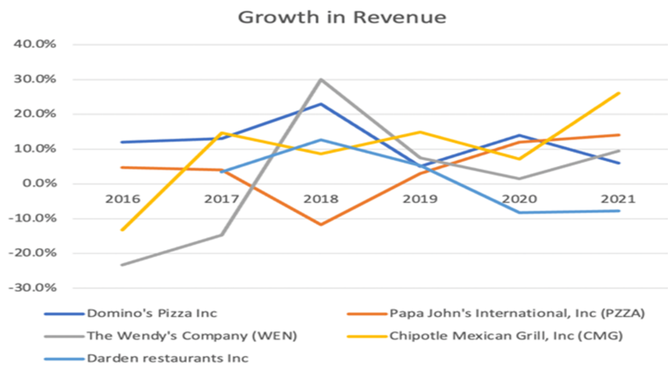

Fig. 3. Changes in the Growth in Revenue of Five Catering Companies From 2015 to 2021.

According to the analysis, the P/E ratio of Domino's Pizza Inc didn't have any dramatic change compared to other 4 companies. This means Domino's Pizza Inc had a more stable operation since year 2015. Although the average P/E ratio of the Wendy's Company was around 27, which was slightly lower than that of the Domino's Pizza Inc, the two drop points on the curve of Wendy's Company has proved that its operation was less stable than Domino's Pizza Inc. Moreover, when studying the growth in revenue, unlike Domino's Pizza Inc, other 4 companies all experienced at least once when their revenue was lower than last year. This evidence again proves that Domino's Pizza Inc had a more stable operation. Furthermore, the median GP/A, asset turnover, and gross margin of all 5145 companies were 14.24%, 41.58%, 41.96% respectively. Despite that all 5 companies' profitability was better than half of the selected 5145 companies, Domino's Pizza Inc had the highest

GP/A and asset turnover, and its gross margin lay in the third place. This data shows Domino's Pizza Inc was making the greatest profit per product sold among its competitors. In addition, the analysis of payout was not included in this part of comparison since catering companies don't usually pay its investors a lot of dividends. The data for payout won't be significant. In conclusion, Domino's Pizza Inc was the most stable company and the best one to invest in compared to its competitors.

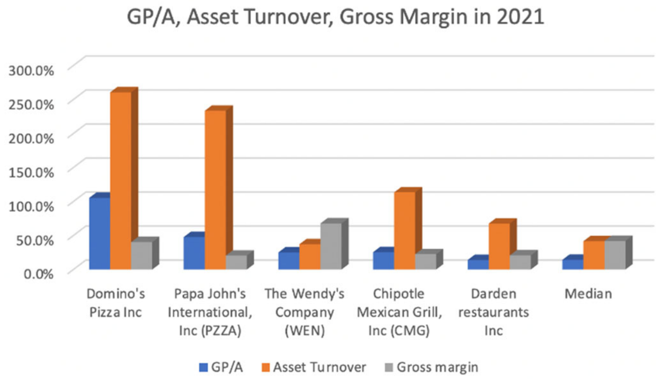

Fig. 4. Changes in GP/A, Asset Turnover, Gross Margin of Five Catering Companies in 2021.

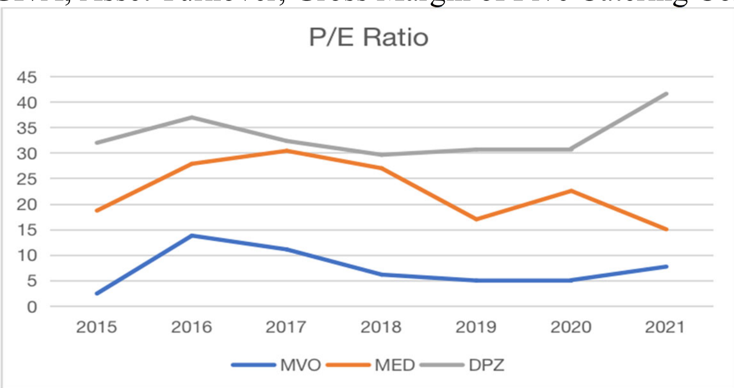

Fig. 5. Changes in P/E Ratio of the Three Companies From 2015 to 2021.

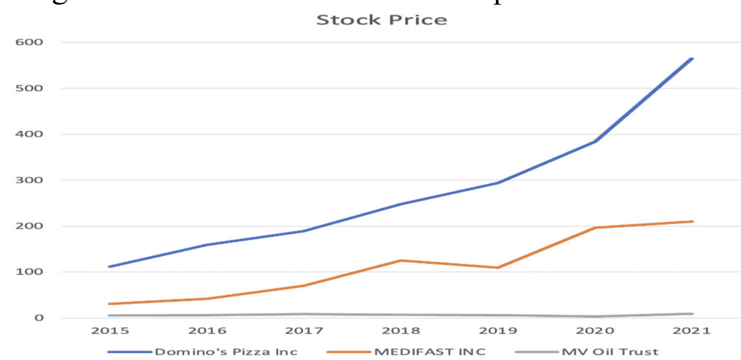

Fig. 6. Changes in the Stock Price of the Three Companies From 2015 to 2021.

3.2 Comparions of Domino's Pizza Inc and other two companies

The comparison of P/E ratio among Domino's Pizza Inc, Medifast Inc, and MV Oil Trust are shown in Fig. 5. All 3 curves show relatively equal stableness. MV Oil Trust had a lowest average P/E ratio, and Domino's Pizza Inc had the highest. The average P/E ratio of Medifast Inc lay in between. Figs. 7 and 8 exhibit the change in stock price among the 3 companies throughout the 6 years. According to the results, the stock price of Domino's Pizza Inc was increasing constantly while Medifast Inc's stock price experienced one drop in 2020. The stock price of MV Oil Trust had the greatest fluctuation. Fig. 8 demonstrates the growth in earnings per share of the 3 companies from 2015 to 2021. These results indicate that Medifast Inc and MV Oil Trust's earnings per share was unstable and both experienced a negative growth. Domino's Pizza Inc, however, never had a time when the growth drop below zero. The comparison of dividend yield of the 3 companies is presented in Fig. 9. Apparently, MV Oil Trust had the highest dividend yield.

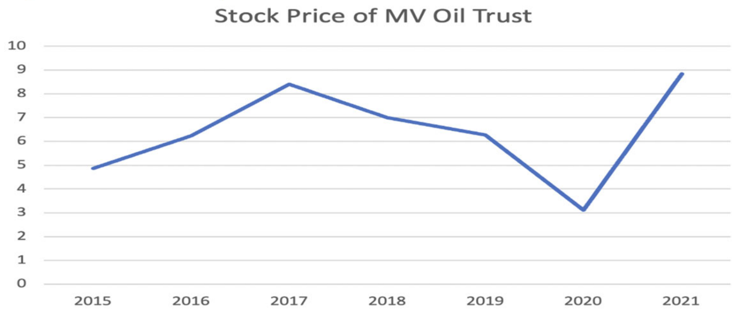

Fig. 7. Changes in the Stock Price of MV Oil Trust From 2015 to 2021.

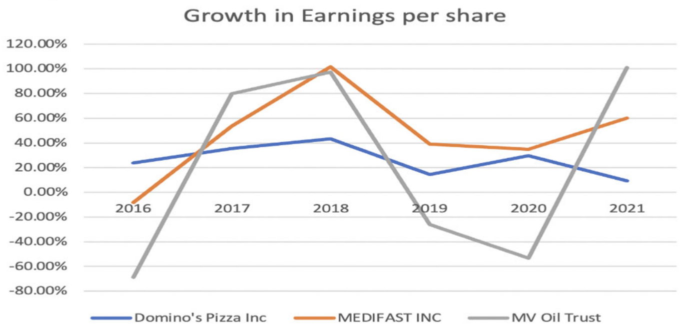

Fig. 8. Changes in the Growth in Earning Per Share of the Three Companies From 2015 to 2021.

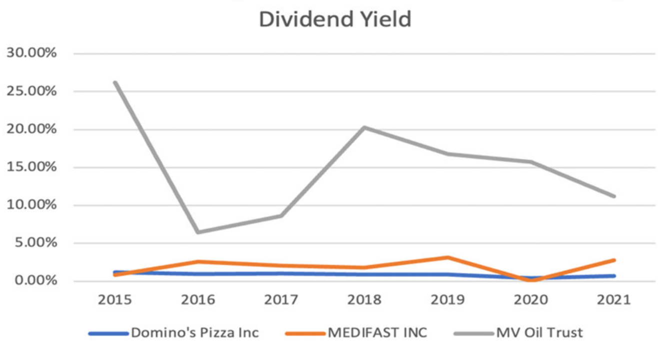

Fig. 9. Changes in Dividend Yield of the Three Companies From 2015 to 2021.

In this part, the analysis of this study was more complicated than the first part since all 3 companies had its advantages. Usually, a company with higher P/E ratio is considered to be overvalued, and less stable accordingly. Surprisingly, evidence of the constantly rising stock price and the positive growth in earnings per share have proved that Domino's Pizza Inc had the most stable operation in spite of its highest P/E ratio. One fact worth considering is that the stock price of Domino's Pizza Inc has reached a local maximum, investors will encounter a loss in earnings if the stock price starts to decrease. However, based on the analysis of Domino's Pizza Inc, there is a very high chance for its stock price to keep increasing. Moreover, although MV Oil Trust had the lowest stableness because of its fluctuating rate in the change of earnings per share, the company paid its investors the highest dividend on a share price basis. The 99 percentile of dividend yield predicated on all 5145 companies in 2021 was 13.36%. Clearly, MV Oil Trust stood in top 1% of all companies in accordance with the level of dividend yield. This proves that MV Oil Trust had the ability to continue operating and paying its investors under risky environments. In addition, the analysis of profitability of the 3 companies was not included in the study. Companies in different fields are likely to have a dramatic distinction in indices like GP/A and asset turnover account of the products they sell. Analyzing the profitability of the 3 different companies will be meaningless. As a result of all the evidence and the analysis, Domino's Pizza Inc and MV Oil Trust are the 2 companies for investing recommendation.

4. Limitations & Future Outlooks

This study included thorough analysis of the seven typical companies within the database of 5145 companies based on 8 indices (P/E ratio, GP/A, Asset turnover, Gross margin, Growth in revenue, Stock price, Growth in earnings per share, Dividend yield). However, it will be better if all 5145 companies are put into comparison, which certainly requires massive time and more complicated analysis. Secondly, all data collected were before year 2022. If the newest data for the first half year of 2022 can be included in this study, the statistics generated will be more accurate. Furthermore, the COVID-19 pandemic started in early 2020, which influenced almost all companies in the world to some extent. All the data selected was within the range of 2015 to 2021, in which the starting time of COVID-19 nearly sit at the end. The data after only one year of the outbreak of COVID-19 wasn't sufficient to estimate its impact on the companies analyzed or generate a future stock pattern of those companies under the circumstance of COVID-19.

Apart from the benefits this study offers to investors, the significant results will also be helpful for future investigation of stock selection using other methods and indices. In a turbulent stock market that the COVID-19 pandemic left behind, it is hopefully that every investor finds their effective way of stock investing. Beyond the confines of this study, a considerable number of people have invested in Bitcoin and NFT. The concept of virtual currency and intangible products are not familiar to some stock investors. Bitcoin and NFT are different from stocks, but they are somehow related to the stock market. The comprehension of the mechanism behind the stock market with the help of this study will be a valuable asset for investors who desire to invest in those virtual products.

5. Conclusion

In conclusion, this paper carried out two comparison processes among seven particular stocks based on eight indices indicating the performances of a company's valuation, profitability, growth, and payout. Specifically, Domino's Pizza won out with an increasing growth and a higher stability compared to other four catering companies. In the final comparison of Domino's Pizza Inc and other two companies, MV Oil Trust excelled in its high proportion of dividend paying to investors. According to the analysis, the constant growth in earning per share throughout the seven years has made Domino's Pizza Inc a trustable company, and the extraordinary ability to handle risks has made MV Oil Trust a potential company for investors. As a result, both Domino's Pizza Inc and MV Oil Trust were listed in the recommendation.

Although the analysis of this study shows rigorousness and objectivity, the results can be more accurate if statistics for stock market in 2022 can be considered and more competitors can take part in the comparison process. Overall, the results of this study offer a guideline for investors lacking the knowledge of stock comparison and for investigators who are interested in conducting further stock selection projects. Hopefully, with the help of the study, both current and future investors will have a better understanding of the stock market.

References

[1] Demirgüç-Kunt, Asli, and Ross Levine. Stock Markets, Corporate Finance, and Economic Growth: An Overview. The World Bank Economic Review, vol. 10, no. 2, 1996, pp: 223–239

[2] Dariusz Wójcik. The Global Stock Market: Issuers, Investors, and Intermediaries in an Uneven World. Oxford University Press, 2011.

[3] Robert J. Barro. The Stock Market and Investment. The Review of Financial Studies, Volume 3, Issue 1, January 1990, Pages 115–131.

[4] B. Mark Smith. A History of the Global Stock Market: From Ancient Rome to Silicon Valley. University of Chicago Press, 2004.

[5] Aggarwal, Rajesh K., and Guojun Wu. Stock Market Manipulations. The Journal of Business, vol. 79, no. 4, 2006, pp: 1915–53.

[6] Chancharat S. Stock market Integration: An Overview. Development Economic Review, 2010, 4(1): 23-23.

[7] Rostami V. Relationship between Going Concern Concept and P/E Ratio in Emerging Market: Case of Iran. Journal of Management Research, 2009, 1(1): E8

[8] Lucas A, van Dijk R, Kloek T. Stock selection, style rotation, and risk. Journal of Empirical Finance, 2002, 9(1): 1-34.

[9] Cox J, Greenwald D L, Ludvigson S C. What explains the COVID-19 stock market?. National Bureau of Economic Research, 2020.

[10] Harjoto M A, Rossi F, Paglia J K. COVID-19: Stock market reactions to the shock and the stimulus. Applied Economics Letters, 2021, 28(10): 795-801.