

# Analysis of the Value Investing of Payment Industry in the Context of COVID-19 -- Visa, PayPal, and MasterCard as Examples

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**Abstract:** In the global COVID-19 context, digital payment and mobile payment have become a global topic of widespread concern. Despite the overall economic downturn in the United States and the serious bubble in the stock market, the payment industry has developed well. Investors favor the blue chips and stocks in the US stock market due to their favorable returns and moderate risks. This paper will select visa Inc. (V), PayPal Holdings Inc. (PYPL), and MasterCard Inc. (MA), which are the three strong companies in the payment industry. Based on the financial statement data from Q3 in 2019 to Q1 in 2020 and the stock price change data within 30 days, this research will analyze the financial statements data of visa Inc. (V), PayPal Holdings Inc. (PYPL), MasterCard Inc. (MA). According to Buffett's value investing theory and Lasse Heje Pedersen's innovation of value investing theory, this paper discusses those three companies' investment value from three dimensions: safety, cheapness, and quality. The analysis process is presented in the form of comparison. Finally, the three stocks' investment suggestions and the stock investment strategy during the epidemic period are proposed based on the analysis results.

## 1. Introduction

The payment industry's digital payment business has grown rapidly in the past five years, with the increase in global smartphone usage and the Internet's high penetration. Especially affected by the expansion of the contactless payment concept in 2020, mobile payment is expanding rapidly in North America and Europe, where the transaction volume is low in the past. In 2018, the global digital payment market size was 43.5 billion US dollars, and the compound annual growth rate from 2019 to 2025 is expected to be 17.6%. In 2019, the global mobile payment market's transaction volume was 3714.5 billion US dollars, which is expected to reach 1,240.75 billion US dollars in 2025, and the compound annual growth rate from 2020-2025 is forecast to be 23.8%. The global payment and transaction landscape are changing rapidly as more businesses and consumers embrace the digital transition and popularity of smartphones, with rapid market growth driven by technological advances such as smartphones, digital payment cards, and retail terminals, POS. Visa Inc., PayPal Holdings Inc., and Mastercard Inc. The shares of these three companies' investment value can be seen after a preliminary industry analysis, but the specific situation of the stock needs further analysis.

Buffett is a well-known master of value investing. Between 1976 and 2011, Berkshire Hathaway Inc., which he is in charge of, achieved an annualized Sharpe ratio of 0.76, nearly twice the Sharpe ratio of the whole market. If investors bought a dollar of the company's stock in the 1970s, the market value would exceed \$5000 in 40 years [1]. Frazzini and Pedersen's research on the excess return of Buffett's investment strategy concluded that Buffett's success is largely related to his investment style [2]. Buffett tends to choose cheap, low risk, and high-quality stocks, a sound value investing strategy. This investment strategy applies to any market, especially when the stock market bubble is serious. To

a certain extent, it can correct the excessive speculation of retail investors [2]. Lev, Baruch, and Anup Srivastava explained the recent failure of value investing. They declare that, “The reasons for this putative failure of value investing elude investors and academics, making it a challenge to assess the likelihood of the return of value investing to its days of glory. Based on extensive data analysis we show that value investing has generally been unprofitable for almost 30 years, barring a brief resurrection following the dotcom bust [3].” However, Israel, Ronen, Kristoffer Laursen, and Scott A. Richardson discussed that, “While undoubtedly many systematic approaches to value investing have suffered recently, we find the suggestion that value investing is dead to be premature. Both from a theoretical and empirical perspective, expectations of fundamental information have been and continue to be an important driver of security returns [4].” Thus, we think that as an investor, we can still retain a decent profit through value investing.

Therefore, in the case of US stock market and sharp increase of moral hazard, it is essential to choose companies with stable operation, high-profit quality, and good development prospect as the direction of stock investment that is, choosing value investing theory to analyze an individual stock investment. This paper takes the three leading companies in the payment industry as the research objects and analyzes how to invest in these companies’ stocks, from the perspective of value investing theory.

## 2. Summary of Data Sources and Research Methods

### 2.1 Data Sources

The raw data for this study is derived from two parts. First, the transaction data such as the closing price of the day, transaction volume, turnover rate, and earnings per share (EPS) and sales per share (SPS) of each quarter, come from the data published daily by Yahoo Finance. Second, the financial data related to the market value, liabilities, cash, main business income, main business cost, and other financial data are from the enterprise's quarterly financial report data in the 2020. The main analysis indicators are calculated based on the raw data.

### 2.2 Research Methods

According to Frazzini's value investing theory, this paper divides the analysis of individual stocks into the analysis of cheapness, quality, and safety [2, 5].

First, cheapness refers to the comparison of companies in the same industry. The current stock value is relatively undervalued, called relatively cheap stock. A stock's cheapness is judged by Trailing price-to-earnings (P/E), Forward P/E, Trailing price-to-sales P/S, Forward P/S, Trailing Enterprise value-to-sales (EV/S), one-year Price/Earnings-to-Growth (PEG), five-year PEG, etc. The lower the value of the above indicators is, the cheaper and more valuable the stock can be. Trailing P/E, Trailing P/S, Trailing EV/S are used to make a basic judgment. Forward P/E, Forward P/S, and Forward EV/S are used to investigate market confidence, and one-year and five-year Trailing PEG are mainly used to judge stock growth. The calculation process of basic judgment is as follows:

$$\text{Trailing P/E} = \frac{\text{the closing price of the day}}{\text{the sum of EPS over the past 12 months}} \quad (1)$$

$$\text{Trailing P/S} = \frac{\text{the closing price of the day}}{\text{the sum of SPS over the past 12 months}} \quad (2)$$

$$\text{Trailing EV/S} = \frac{\text{the closing price of the day}}{\text{the company's market value} + \text{debt} - \text{cash}} \quad (3)$$

Second, quality judgment is mainly to judge the profitability, expense level, and financial ability to resist risks. The Net Income Margin (NI Margin), Gross Profit Margin, Earnings before Interest and Taxes Margin (EBIT Margin), financial leverage ratio, and other business growth ability are adopted to judge an enterprise's stock quality comprehensively [6].

Finally, this paper will judge the stock risk through BETA (the slope of the monthly excess return of individual stocks in the past 36 months returns to the market's excess return) [5]. We use the turnover

rate to judge its liquidity and add the reciprocal of the five-year beta value of the stock and the average turnover rate in two weeks to get the intermediary index Z. The larger Z is, the higher the security is, and the stock is more worthy of investment. One can refer to [7-15] and references therein for more details.

Besides, Buffett's value investing theory emphasizes the selection of high-quality stocks in high-quality industries, so this paper will also conduct a simple analysis of the industry background before data analysis.

### 3. Comparative Analysis of Stock Value Between Enterprises

#### 3.1 Comparative Analysis of Stock Price Fluctuations

In order to get a clear understanding of the changes in the stock price of the payment industry in the past two years, this paper makes an overlapping comparison of the stock price trends of the three companies, and the research on the stock price fluctuation only starts from the closing price of a single day, ignoring the trading volume, dividend distribution, and other factors [16]. As can be seen from the below figure, before the fourth U.S. stock circuit breaker, the stock prices of the three companies had basically the same range of changes, but after the fourth circuit breaker, especially since May, the share prices of PayPal rose sharply, far more than those of visa and MasterCard. The visa and MasterCard changes were basically the same, but the changes of MasterCard were significantly greater after June. During the epidemic period, the share prices of the three stocks will rise by 10-15% in total, and after 2021, the profit growth will be more in line with the historical trend and the management prospect before the epidemic, that is, an annual growth of 10-15%. On the whole, Visa's share price was least affected by the epidemic, and PayPal has obviously become a relatively strong stock under the crisis.

#### 3.2 Comparative Analysis of the Investment Values of Visa and PayPal

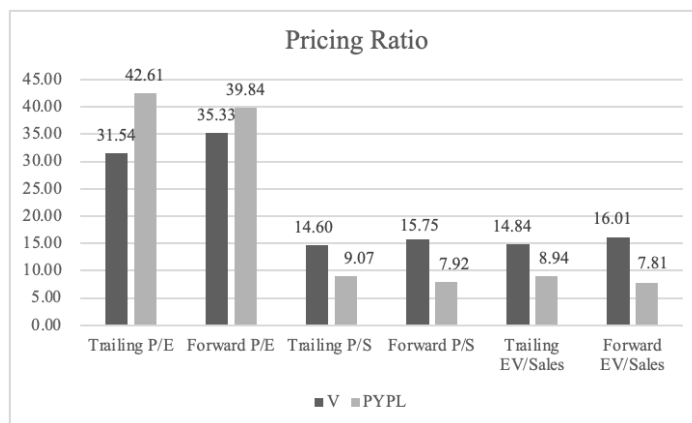


Fig 1. Indicators of Visa and PayPal's Cheapness.

##### 3.2.1 Cheapness:

As can be seen from Figure 1, the Trailing P/E ratio of Visa and PayPal is 31.54 and 42.61. It can be seen that both visa and PayPal are relatively cheap stocks, and the stock value is obviously undervalued. The stock price has a large growth space and can be roughly classified as growth stocks. From the Trailing Twelve Months Earnings per Share (TTM EPS) of the two companies estimated by Wall Street from Q3 in 2020 to Q1 in 2021, we can see that the P/E ratio of Visa will increase to 35.33 in the future while that of PayPal will decrease to 39.84. The market is optimistic about the growth ability of PayPal's share price. According to the change of P/E ratio, during the outbreak of the epidemic, that is, at the current stage, Visa is a cheaper stock compared with PayPal. It is more likely that the stock price will rise in the future, and it is more likely to benefit from the purchase of Visa stock. However, with the market changes, the stock price of PayPal will have more room to grow and change faster in the future.

Table 1. PEG Ratio of Visa and PayPal.

	One-year PEG	Five-year PEG
Visa	-2.94	2.79
PayPal	-2.67	2.91

Trailing P/S, Trailing P/S, Trailing EV/S, Forward EV/S, and Forward EV/S are also introduced into the research and analysis in this paper to better judge whether the stock market value of an enterprise is overvalued or undervalued and to compare which company is cheaper. The lower the index value is, the more undervalued the stock is; the cheaper the stock is, and the more worth buying. Visa's P/S and EV/S are significantly higher than those of PayPal, which indicates that PayPal is undervalued to a certain extent after considering the operating cost and enterprise value.

After considering the change rate of the two companies' EPS growth, the PEG ratio is calculated to make up for the drawback of the P/E ratio. However, as shown in Table 1, since the PEG ratio calculated by Visa and PayPal from the EPS growth rate of the past 12 months is less than zero, it is not of research significance, so the forecast data for the next five years is selected to calculate the PEG ratio of the next five years as the analysis data. According to the above data, Visa and PayPal's PEG ratio over the next five years is 2.79 and 2.91, respectively. Both of them are well above 1. Therefore, enterprises' stock value of two companies is likely to be overvalued, and it is necessary to be cautious in investment selection.

The two enterprises are equal after careful consideration from the above analysis, so it is difficult to get specific investment selection results, and further analysis is needed later.

### 3.2.2 Quality:

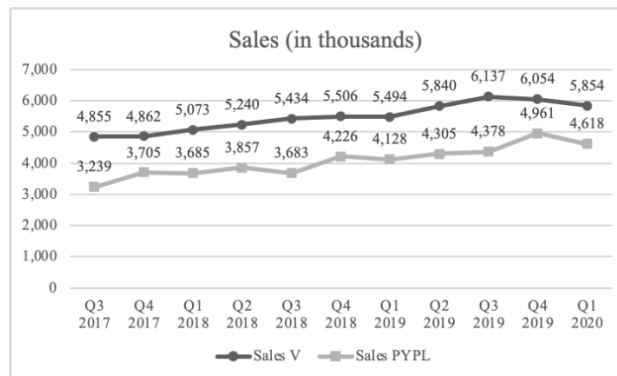


Fig 2. Sales (\$ in thousands) of Visa and PayPal.

a) Sales: Despite the impact of the outbreak, from Figure 2, we can see that Visa and PayPal have achieved significant sales with their unique brands, and their sales are expected over the next four quarters. However, at the end of April, they experienced a recent drop in sales due largely to the vertical industries (such as tourism and entertainment) that have been hardest hit by COVID-19. After the second quarter of 2020, the market estimates that the two companies' sales volume will increase, which will be weakened by the impact of the epidemic.

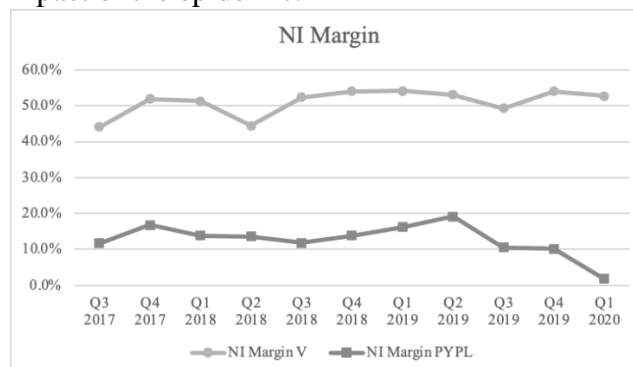


Fig 3. Net Income Margin of Visa and PayPal.

b) Margins: As shown in Figure 3, regardless of its size, Visa's Net income margin has steadily increased by at least 3%. Its performance is significantly better than PayPal's, indicating the rationality of its current cash flow and the correctness of its decision and strategy. In contrast, PayPal's Net income margin has dropped sharply (almost hit zero) from the third quarter of 2019 to the first quarter of 2020.

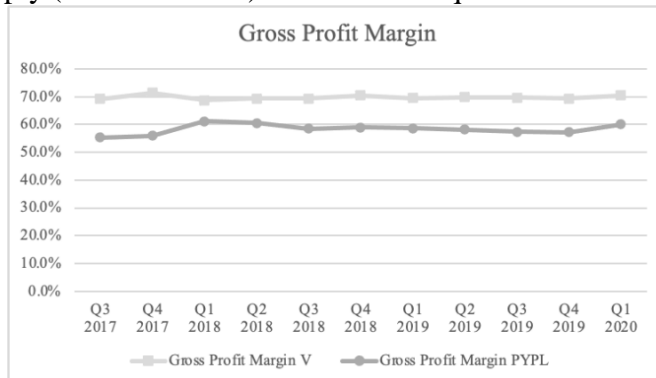


Fig 4. Gross Profit Margin of Visa and PayPal.

The higher the gross margin, the more capital a company retains from every dollar of sales, which it can use to pay other costs or pay down debt. As shown in Figure 4, Visa and PayPal's high gross margin shows that they have effectively controlled costs and expenses and that their capital structures are relatively sound. In the pursuit of a high gross margin, we must look at the quality of the relevant products and sales level. It is worth noting that both companies derive their high margins from online innovation and fintech, rather than overpricing and market fraud, so the quality of their profits is reliable.

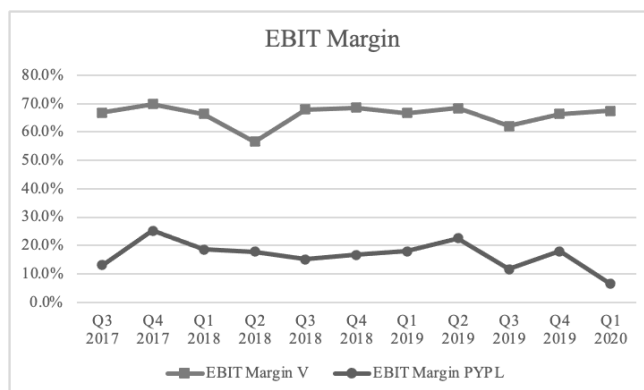


Fig 5. EBIT Margin of Visa and PayPal.

As shown in Figure 5, there is a big difference in the EBIT margin between Visa and PayPal, which reflects their different ability to reduce expenses. PayPal's EBIT margin was down due to a 21.2 percent increase in transaction fees but actually increased by 5 percentage points due to multi-channel fee transfers under COVID-19. Nevertheless, there is no need to overestimate the severity of EBIT margin declines in times of epidemic.

c) Analysis of Enterprise Risk Coping Ability: High leverage means that financial institutions can get a higher return on equity in boom times, but they will face the risk of a sharp drop in return when the market reverses. As shown in Table 2, Visa and PayPal's leverage ratios are low, which indicates that they are less affected by debt during the epidemic period. They have a strong ability to resist risks, the fluctuation range of stock value will not be too large, and they can adapt to the current macroeconomic environment.

### 3.2.3 Safety:

As shown in Table 3, Visa has the highest Z value, so security is relatively high, mainly due to its low Beta value and high liquidity. The low liquidity of PayPal is related to the continued bullish stock price after the circuit breaker. Based on the conservatism principle, Visa is still the better choice.

Table 2. Indicators of Visa and PayPal's Risk Coping Ability

	Market value of equity		Debt		Market leverage Ratio (D/E)
Visa	\$	348,799.53	\$	17,892.00	5.13%
PayPal	\$	165,566.63	\$	7,967.00	4.81%

Table 3. Indicators of Visa and PayPal's Safety.

	Beta(Five-year monthly)	Turnover rate	Z
Visa	0.92	0.0043	1.0912
PayPal	1.19	0.0041	0.8444

### 3.3 Comparative Analysis of the Investment Values of Visa and Mastercard

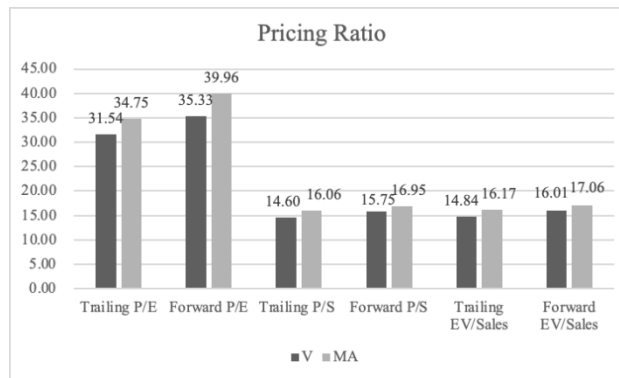


Fig 6. Indicators of Visa and MasterCard's Cheapness.

#### 3.2.1 Cheapness

As shown in Figure 6, the difference in the stock price indicator between Visa and Mastercard is significantly smaller than the difference between Visa and PayPal. Simultaneously, it can be found that Visa and Mastercard also have small differences by comparing the ratios, and their business models and market scopes are basically the same. Therefore, it is easier to make an investment choice between Visa and Mastercard. All the above Visa's indicators are lower than Mastercard, which means that Visa's stock is undervalued compared with Mastercard, and Visa is a relatively cheap stock with higher investment value during and even after the epidemic.

#### 3.2.2 Quality

a) Sales: As shown in Figure 7 and Figure 8, both companies have similar steady revenue growth trends, but Mastercard has a really unstable net income trend. MasterCard's net income dropped sharply in quarter 4 of 2017 and 2018. This indicates that Mastercard seems to have a high operating expense during that period as its revenue remains stable growth. Also, Visa's net income and revenue are constantly higher than Mastercard through all periods, which means Visa has better business performance than Mastercard. Thus, Visa might be a better selection.

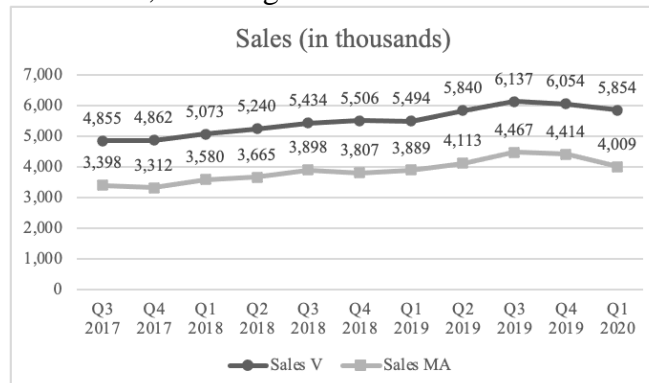


Fig 7. Sales (\$ in thousands) of Visa and Mastercard.

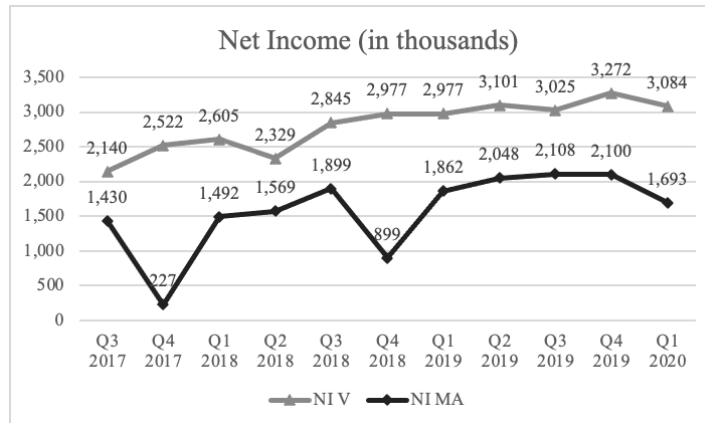


Fig 8. Net Income (\$ in thousands) of Visa and Mastercard.

b) Margins: Gross profit margin is a measure of a company’s profitability. As can be seen in Figure 9 and Figure 10, there is not much difference between Visa and Mastercard, but Visa has a slightly higher gross profit margin and a more stable trend. NI margin measures all the money the company left after that company pays all its expenses. A Higher NI margin means the company has better control of its costs of providing goods and services and will generate more profit. Visa has a higher and stable NI margin as well.

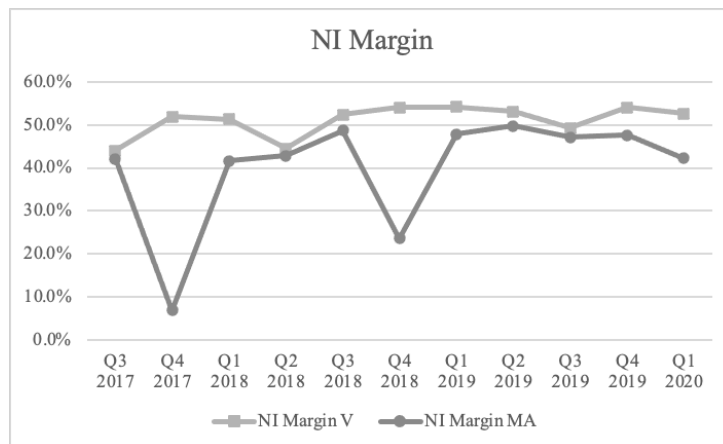


Fig 9. Net Income Margin of Visa and Mastercard.

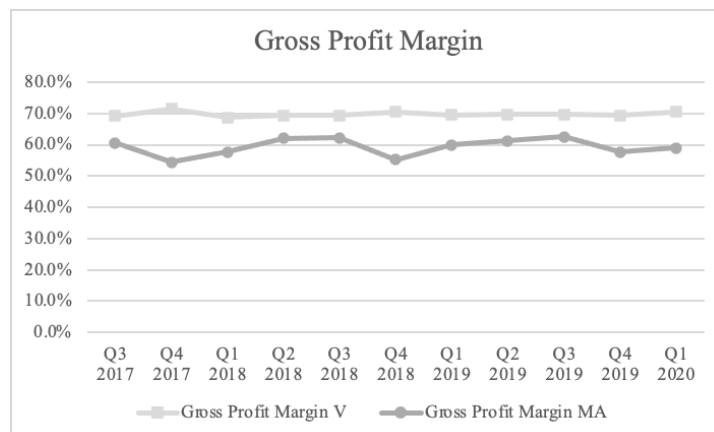


Fig 10. Gross Profit Margin of Visa and Mastercard.

EBIT margin is also a measure of a company's profitability. In Figure 11, Visa still has a relatively higher and stable EBIT margin than Mastercard. Therefore, combined with gross profit margin and EBIT margin, Visa has more advantages of stable performance compared with Mastercard. In

particular, Visa's gross profit margin has been maintained at 70% for a long time and has not been affected by the epidemic.

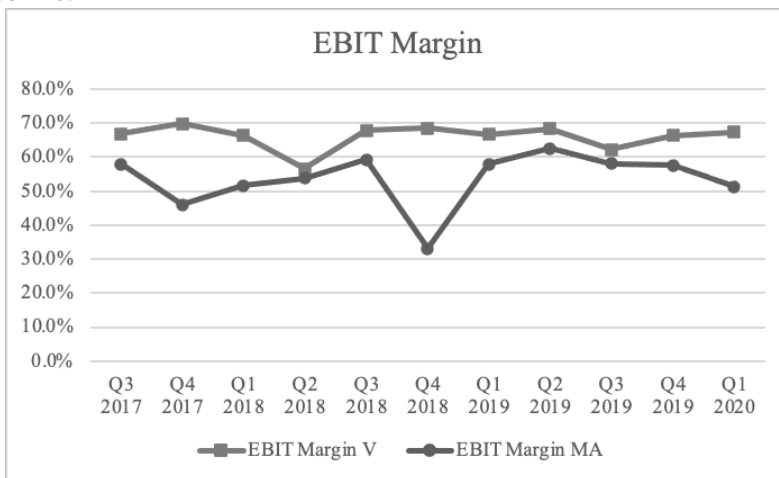


Fig 11. EBIT Margin of Visa and Mastercard.

Table 4. Indicators of Visa and MasterCard’s Risk Coping Ability.

	Market value of equity	Debt	Market leverage Ratio (D/E)
Visa	\$ 348,799.53	\$ 17,892.00	5.13%
Mastercard	\$ 273,127.78	\$ 12,466.00	4.56%

Table 5. Indicators of Visa and MasterCard’s Safety.

	Beta (Five-year monthly)	Turnover rate	Z
Visa	0.92	0.0043	1.0912
Mastercard	1.07	0.0062	0.9408

c) Analysis of Enterprise Risk Coping Ability: We can see from Table 4, both companies have a low leverage ratio, and they are pretty similar, in which VISA is 5.13 and MA is 4.56. Both of them have low default risk and so to remain good credit. Mastercard has a slightly lower level of financial leverage, indicating that its financial health is less affected by the debt crisis. However, in terms of business, MasterCard’s brand influence is lower than that of Visa, and its important market in Europe is declining seriously. The growth rate of cross-border payment is negative, and there is a big gap between Mastercard and Visa. However, Mastercard shares, though not as good as Visa, are still of higher quality in the US stock market.

### 3.2.3 Safety:

Comparing the value of Z in Table 5, Visa and Mastercard have little difference in terms of security, which is mainly due to their similar Beta values and a similar degree of return regression to the market. However, Mastercard performs better in terms of liquidity, which can reduce investors' risk to some extent.

## 4. Conclusion

According to the data analysis results, three payment enterprises overall remains relatively strong during the outbreak. Other industry's return on assets and other indicators related to profitability is not optimistic. Three companies' net income in the first quarter of 2020 is still 6.5 percent higher than that in 2019. However, due to the impact of the epidemic, the three enterprises' cross-border growth rate continued to decline, leading to a significant downward trend in Sales, Gross Margin, EPS, and other indicators, which will be difficult to change before the epidemic completely subsides. Visa's scale performance is generally good. PayPal's performance was more outstanding during the epidemic, and MasterCard’s performance declined sharply, but the overall performance was fairly normal.



Compared with other companies in the payment industry, the three companies, Visa, have significantly lower P/E ratios, which remain 37.9 on average during the epidemic. The overall P/E ratio keeps decreasing in the future. The cheapness of the three stocks indicates their high growth space to a certain extent, among which Visa is the cheapest at present, that is, the worthiest of investment. Mastercard is close to Visa in cheapness. PayPal has a slightly higher P/E value and a lower P/S value, and future growth is relatively large. Overall, the market maintains a relatively good attitude towards the future stock price movement trend of PayPal and Mastercard, which is mainly due to the trend of P/S and PEG reduction.

## 5. Value Investment Strategies and Recommendations

For the stock market investment in a special period, the following suggestions can be put forward according to the research results.

Generally speaking, in the post epidemic era, the businesses of Visa, PayPal, and Mastercard are expected to rebound, and the investment value of the three companies are still promising. At present, although the three companies' business level has declined, and the stock market is falsely high, for investors, the bear market is not caused by the bad market. The three companies' stocks are the more stable stock investment choices under the overall economic downturn as the three strong blue chips. Mastercard is recommended in this paper.

Specifically, it is recommended to hold more shares of PayPal during the epidemic period, which can also be called the 2020 preferred stock. The stock has time-series power because it has risen sharply since it bottomed out in March. Its momentum is strong, and the increase exceeds that of the market and NASDAQ for the whole year.

Visa has a history of stable growth. Although the growth is not noticeable, it has been relatively strong and stable. This is mainly due to its high quality and safety as a cheap stock in the industry. In the past three years, earnings per share rose from \$2.49 to \$5.32. It will continue to rise in the future. When the global crisis is over, we can expect visa shares to return to the previous stable state and maintain investors' portfolios' stability.

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