

# Stock Analysis on Retail Industries under the COVID-19 Epidemic

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**Abstract.** In 2020, The COVID-19 pandemic is sweeping the globe. Covid-19 has had a major impact on the economies of various countries. The researchers found that the retail industry is one of the industries that have been greatly affected by the epidemic. However, there is still a research gap on retail stock selection in the context of the COVID-19 pandemic. Therefore, this paper analyzes the specific method of stock selection, introduces the meaning of various data and collects the stock prices of Yonghui Supermarket, Sun Art Retail and Walmart. Conducted a presentation study on equity investments in three retail sectors under COVID-19. The study found that after 2020, all the operating data of the three companies have undergone significant changes, and different companies have different measures to cope with the pandemic, and the change of stock prices is also different. It can be seen that different types of investors have different stock selection methods, and the impact of the pandemic on different companies is also relatively different.

**Keywords:** COVID-19; Retail Industry; Stock.

## 1. Introduction

"As of September 9, 2022, COVID-19 has hit 607,362,097 lives."

"The number of COVID-19 deaths in the United States has increased to 1,045,832."

"Japanese Prime Minister Fumio Kishida made it official in an online press conference on Tuesday that he will not count the total number of COVID-19 cases nationwide, but will leave it to local governments to report only the number of elderly patients or those at high risk of infection."

The bright red numbers struck fear into the hearts of people around the world. The global economic slowdown has become a reality due to the outbreak of COVID-19, which has greatly affected all industries. Xue (2020) believes that from December 2019, when the COVID-19 outbreak emerged to today, it can be said that all walks of life have been affected to varying degrees. The Chinese New Year is supposed to be the peak season for the restaurant industry, but the COVID-19 pandemic has hit the restaurant industry with a sharp drop in passenger traffic, closures and rent pressures. Srivastava (2022) pointed out that 120 Mn of Chinese students got access to learning materials via live television broadcasts while a large number of students in Hong Kong have started learning at home via interactive apps. Moreover, Zhang (2020) believes that the outbreak of COVID-19 has brought a huge impact on the tourism industry. The COVID-19 control measures have not only stalled or even regressed the development of global tourism, but also dealt a huge blow to the global financial industry. Zafar (2020) documented that The Coronavirus, popularly known as COVID-19 has rattled all industries causing a huge slump to many economies all around the world. While a lot of attention has been given to the impact of COVID-19 on Tourism and air travel, there is also a significant impact in the Fintech marketplace. This is evident from the drastic reduction of revenue in businesses, a halt in establishing new Fintech firms in the market as well as a slowdown in funding. Shen and Li (2022) pointed out that the COVID-19 pandemic has a significant horizontal effect on systemic financial risk in all sectors, and the trend effect on the securities industry and insurance industry is larger and more significant. Zheng and Xu (2021) wrote that with the normalization of COVID-19 prevention and control, the financial industry has pressed the "fast forward button" of digital transformation, and financial network security will face new risks and severe challenges. Of course, the global retail industry has also been greatly impacted by the uncertainty caused by the pandemic on the logistics industry. Retail giants in various countries have taken measures to deal with the impact of the

pandemic. Wang (2020) pointed out that During the Spring Festival, road closure, community closure and market consumption downturn have brought unprecedented tests to the transportation and terminal distribution of the logistics industry. In the post-epidemic era, how to develop the logistics industry to get rid of the predicament has become a topic of widespread concern in the society. Fauber & Patzke (2020) pointed out that on a corporate level, marketing professions are whittling down thousands of SKUs and offering a curated list of items, tailored toward customer preferences. Other planners are recognizing that 2019's foot traffic patterns will not return in the near future and are reinforcing the online shopping experience; In a time when life feels uncertain, one thing is evident: retailers are becoming more attuned to using analytics to respond to the demands of consumers. And in China, Guan (2021) documented that in recent years, under the growing trend of e-commerce industry, the development prospect of traditional brick-and-mortar retail industry is fuzzy and its revenue is declining. But now the development of the e-commerce industry has encountered a bottleneck, and the traffic dividend that has been held before is gradually disappearing. With the emergence of the new retail system, the retail industry sees new prospects for development. Similarly, Kang (2017) believes that if e-commerce is a product of the pre-Internet era, then new retail is a sign of the post-Internet era [10]. Therefore, this paper mainly studies the impact of COVID-19 epidemic on three retail companies and analyzes the enterprise value and investment of these companies, so as to help investors further understand how to choose stocks and whether to invest in these three companies.

## **2. The main data of stock.**

### **2.1 General for stock**

What's so good about the daily stock price that's worth studying? I think the price of a stock traded by a group of participants. Short-term prices represent traders' perceptions of stock companies. It can be influenced by various factors, such as people's herd mentality. However, the long-term stock price represents the real operation of the company. According to *The Little Book of Common-Sense Investing*, the S&P 500 had an annualized return of 9.5% from 1900 to 2016. Among them, the return on improved fundamentals of companies is 9%, while the change in valuation due to fluctuations in market sentiment only affects the yield of 0.5%. Therefore, the price change of the stock is the most macroscopic display of the operation of the company.

Next is beta. A risk assessment tool that measures the volatility of a security or portfolio relative to the overall market. If the price of a stock is consistent with the price volatility of the market, then the beta value of the stock is 1. Securities with larger  $\beta$  coefficients are usually more speculative securities. The higher the  $\beta$ , the greater the volatility of the stock relative to the performance evaluation benchmark.  $\beta$  greater than 1, the volatility of the stock is greater than the volatility of the performance evaluation benchmark. But volatility below the overall market is not necessarily the reason for doing well. It is also possible that it is poorly operated in the long term.

### **2.2 Liquidity ratio**

Liquidity ratio includes current ratio and quick ratio. The quick ratio is primarily a measure of a company's ability to repay current liabilities with quick assets. The larger the value, the better, preferably greater than two. The current ratio is primarily a measure of a company's ability to use current assets to repay current liabilities. The larger the value, the better, preferably greater than one. But the retail industry studied in this paper has its peculiarities. In the retail industry, consumers generally make direct cash transactions or credit card payments. However, the settlement of supermarkets to suppliers is generally delayed for several months. The larger the scale of the supermarket, the stronger the ability to pressure suppliers. And the current ratio is calculated without considering the timeline. So they don't fully reflect the company's poor liquidity. Not only that, but to some extent, it also reflects the company's strong cash control ability. In simple words it is doing business with another people's money.

### 2.3 Profitability ratios

Profitability ratios are important measures of a company's profitability. It mainly consists of profit margin, ROA, ROE and net earnings/net income.

Profit margin is derived from dividing gross profit by net sales revenue and used to measure the profitability of a business. Warren Buffett argues that companies with a good long-term economy tend to have consistently higher profit margins. Usually gross profit margin takes 5 years to see together, because the key to gross margin is consistency. If the gross profit margin is too high, it will lead to more companies entering the industry. But in the case of the same cake, the more people who share the cake, the less cake each person gets. Therefore, if the gross profit margin is very high, it is observed whether the company can maintain such a high gross profit margin within 5 years. Conversely, if a business reduces its competitive advantage, its gross margin will go down before sales volume falls.

ROA (Return on assets) formula is  $\text{Net income} / \text{Total asset}$ . It is a measure of how much net profit is created per unit of asset and is a useful indicator for assessing a company's profitability relative to its total asset value. In short, ROA shows how well a company can use what it has to generate revenue. The higher the indicator, the better the utilization effect of enterprise assets, indicating that the enterprise has achieved good results in increasing income and saving the use of funds, otherwise it is the opposite. Because of differences in asset distribution and quantity, ROA varies greatly in different industries. And Its value is generally more appropriate in 7.5% to 13%.

ROE (Return on equity) is equal to  $\text{Net income} / \text{Total equity}$  and Its role is to measure the efficiency of the use of shareholders' funds. The higher the indicator value of ROE, the higher the return on investment. This study is wary of companies with ROE less than 15%. Most of the reason for this is that the company's management is ineffective and not very responsible for shareholders' money. But ROE also has limitations, blindly pursuing high ROE does not necessarily bring high returns. ROE needs to be combined with other data, especially liabilities, because THE ROE is calculated without considering liabilities. If a company borrows a lot of money, the ROE increases and the operational risk increases. It is also important to note whether the company's ROE increase was due to a sharp increase in profits in the year due to reasons such as the sale of assets, which is usually a one-time profit and lacks staying power.

### 2.4 Asset utilization ratio

Asset utilization ratio is mainly used to examine the operational capabilities of enterprises. It mainly includes Inventory turnover ratio, Days sales in Inventory, Receivable Turnover ratio, Days sales in receivable, Total Asset Turnover Ratio, Days sales in Total asset Turnover ratio.

Inventory turnover ratio =  $\text{cost of goods sold} / \text{total inventory}$ . Days sales in inventory are equal to 365 divided by the inventory turnover rate, which is used to measure the average number of days it takes for a company's inventory from purchase to sale. Inventory turnover speed and number of days vary greatly between industries. But no matter what the industry, the faster the company turns over the better, the fewer days the better. Fewer days of inventory turnover means the product is more popular.

The Receivable Turnover ratio formula is  $\text{Sales} / \text{Accounts Receivables}$ . It is a measure of enterprise accounts receivable turnover speed and management efficiency indicators. Days sales in Receivable The formula is  $365 / \text{Receivable Turnover Ratio}$ . It measures the average number of days a business receivable takes from grant to collection. Similarly, the faster the turnover speed of the company, the better. The less turnover days, the faster the realization speed of receivables, the shorter the time for the funds to be occupied by foreign units, and the higher the efficiency of management work. If the average payout days of the company are less than 15 days, it can be considered that the company has the ability to repay debt quickly.

Total asset turnover ratio ( $\text{Sales} / \text{total assets}$ ) is an important index to measure the management quality and utilization efficiency of all assets of an enterprise. And it represents whether the total assets of a company are used efficiently in the actual operation. If the total asset turnover ratio is

between 1 and 2, it is a well-run company. There are huge differences between industries. Generally, the gross profit rate of the traditional manufacturing industry is not high, so the total assets invested by the company must be effectively used to create revenue, and the assets cannot be left idle in the warehouse of the company. Therefore, the "total assets turnover rate" of the manufacturing industry is  $>1$ . However, in the distribution and fast sales industries, products are sold fast and capital turnover is fast, which will naturally generate more profits. Their total asset turnover ratio is usually  $>2$ . If the total asset turnover ratio is less than 1, the company is capital intensive or in the luxury industry. The next step must be to determine whether the company has enough cash or the capacity to collect it. Generally speaking, a decline in a company's total asset turnover is a warning sign.

## 2.5 Solvency ratio

Solvency ratios are used to determine the safety of a company's debt and the solvency ratios of its short-term debt. To a large extent, the solvency reflects the risk degree of enterprise operation. It mainly includes Total debt ratio and debt /Equity ratio.

The Total debt ratio reflects the company's liabilities relative to its assets. The higher the number, the more leveraged and riskier the company. If the company's asset-liability ratio exceeds 100%, it indicates that the company is insolvent and should be considered carefully. It is generally considered that 70% is the warning line and 40-60 is the appropriate level. However, if the debt ratio is too low, it indicates that the company is conservative and should consider the need to expand financing, which is not suitable for aggressive investors.

Debt/Equity ratio reflects the relative proportion of capital provided by creditors and shareholders and whether the capital structure of the enterprise is reasonable and stable, and also indicates the degree to which the capital invested by creditors is protected by shareholders' Equity. A high equity ratio indicates that the company is a high-risk, high-reward business, which is suitable for Momentum investors. If the equity ratio is less than one, it is more suitable for sound investors, because the shareholders have enough capital to repay the debtors.

Investor ratios are financial ratios used by investors to assess a company's ability to generate a return on its investments. This figure is an important indicator to distinguish between different types of investors, who have different risk preferences. It is mainly composed of EPS, PE, PEG, PG and Dividend yield.

EPS (Earnings per share) equals  $\text{shareholders} / \text{Number of Ordinary shares in issue}$ . Earnings per share (EPS) this index is outstanding is apportioned to each share of the profit size of the stock, is a basic index to analyze the value of each share. So EPS is relative to the company's registered capital, how much net profit. As with profit margin and gross margin, the higher the better.

PE (Price/ Earnings ratio) is equal to  $\text{Price per share} / \text{Earnings per share}$ . P/E ratio. One of the indicators used to evaluate whether a stock price level is reasonable. It's colloquially defined as how many years it will take the company to earn back what you paid for the stock. So, the lower the P/E ratio, the better. Generally speaking, the price-earnings ratio is within 30 times, which is a reasonable valuation range. Value investor pays attention to price per share. If PE is less than 10, it means that the company may be undervalued, and value investor will prefer it.

PEG (Price/Earnings to Growth Ratio) makes up for the lack of PE in estimating the dynamic Growth of enterprises. The lower the PEG value, the more likely a stock is to be undervalued, similar to the price-to-earnings ratio. The PEG of a growth stock will be higher than 1 or even above 2. Investors are willing to give a high valuation to the stock, which indicates that the company is likely to maintain rapid growth in the future, and such a stock is prone to an unimagined price-to-earnings valuation. When the PEG is less than 1, either the market is undervaluing the stock, or the market thinks growth may be worse than expected. This is the company that growth investors prefer.

PB (Price per share/ Book value per share) mainly measures the stock Price relative to the valuation of the company's underlying assets. In short, what multiple of the current net asset value per share is required to buy it. So generally, the lower the better. PB smaller stocks will also be noticed by Value investors.

Dividend yield equals dividend per share/ share price. Income investors prefer companies with high dividend yields (>3%). Investors looking for long-term returns are more than happy to receive a handsome annual dividend. After all, the ultimate goal of investment is to increase cash flow.

Instead of identifying patterns of continuation or reversal, Momentum Investor looks at trends created by the latest price falls. They buy stocks or other securities that have had high returns over the past three to twelve months.

### 3. Analysis on three selected firms in retail industries

#### 3.1 General for stock

As mentioned above, stock price changes are the most direct indicator of a company's performance. Through data comparison, it can be found that the stock prices of Sun Art Retail and Yonghui Supermarket have plummeted since 2020 and continue to decline, while the stock price of Walmart has shown a rising trend in the post-epidemic era. As showing in the chart, what is striking is Yonghui Supermarket, whose Beta value is 0.04, which means that the investment profitability is not good under comprehensive evaluation. Then what can be seen is that Walmart's market capitalization is much larger than the other two companies. So, its strength and scale are relatively large.

**Table 1.** General for stock

	SUN ART RETAIL	WALMART	YONGHUI SUPERMARKET
BETA	/	0.53	0.04
Stock price	2.25\$ (2022) 7.99\$(2019.8.1)	126.58\$(2022) 119.23\$(2019.8.1)	3.47 ¥ (2022) 9.91 ¥ (2019.8.1)
Market capitalization	21.5 billion	347 billion	31.5 billion

#### 3.2 Liquidity ratio

According to the statistics, the current ratios of Sun Art Retail, Walmart and Yonghui Supermarket are 0.99, 0.862 and 0.896 respectively, while the quick ratios are 0.704, 0.228 and 0.622 respectively. Obviously, the current ratio is less than 2, and the quick ratio is less than 1, so companies in the retail industry have their own characteristics. If a debt dispute occurs, they all lack certain immediate solvency. Even so, by comparison, Walmart's quick ratio is only 0.22, making it the least solvent. This study looks at its cash on hand, average days to cash and days to total asset turnover, which will be further analyzed in the following section.

**Table 2.** Liquidity ratio

	SUN ART RETAIL	WALMART
Current ratio	99%	86.2%
Quick ratio	70.4%	22.8

#### 3.3 Profitability ratio

For now, Sun Art Retail and Walmart have decent profit margins of 24.3% and 24.9%, respectively. The profit margin of Yonghui Supermarket is relatively poor, only 19%. The low profit margin of Yonghui Supermarket indicates that the business is very difficult and the profit is not much, which is reflected in the negative value of ROA and the -25% ROE, indicating that the shareholders have been losing money. However, in 2020, its ROE was 10. In just three years, the return to shareholders plummeted, also in line with the downward trend of the stock price mentioned above. Therefore, the pandemic had a huge negative impact on the company. The profit performance of Sun Art Retail is more regular, with relatively good profit margin. But like Yonghui Supermarket, the company isn't making much money, with ROE falling from 11.5% in 2019 to -3.1% now, and shareholders are losing money. The best performer is Walmart, whose ROE has rebounded from 8.3 in 2019 to 15% today. Even if its net income is mediocre, its 15% ROA represents a decent return. In a comprehensive

analysis, WALMART's profitability performance is better after the onset of the pandemic, and it is more likely to bring profits to shareholders.

**Table 3. 3 Profitability ratio**

	SUN ART RETAIL	WALMART	YONGHUI SUPERMARKET
Profit margin	24.3%	24.9%	19%
ROA	-1.1%	5.4%	-5.3%
ROE	-3.1%	15%	-25%

### 3.4 asset utilization ratio

Let's first look at Yonghui Supermarket. Although the profitability of this company is poor after the outbreak of the epidemic, its operation ability is excellent. Thanks to China's huge domestic market and national policies, the Days sales in inventory of Yonghui supermarket is only 40.7, and the faster turnover efficiency reflects the best-selling of its products. The Days sales in receivable of 2.5 Days shows that its working capital is better used efficiently, that its receivables are realized quickly, and that its management is more efficient. And then the Days sales in inventory of Walmart and SUN Art Retail are 45.5 and 54, and the Days sales in Receivable are 4.5 and 4.7, respectively. The operation is sound and the sales are good. In addition, Walmart's Total Asset Turnover ratio of 2.31 represents top-notch team operations that the other two companies do not have. To sum up, even if the outbreak has affected the global economy, but the goods retail sales are not under too big effect, good capacity is based on the basis of retail companies in the industry, in the three companies, the Yonghui supermarket sales ability and cash ability is more outstanding, and Walmart team operating asset ability is better.

**Table 4. Asset utilization ratio**

	SUN ART RETAIL	WALMART	YONGHUI SUPERMARKET
Inventory turnover ratio	6.8	8	9
Days sales in inventory	54	45.5	40.7
Receivable turnover ratio	77.3	81.8	146.7
Days sales in receivable	4.7	4.5	2.5
Total asset turnover ratio	1.34	2.31	1.25
Days sales in total asset	272.4	158	292

### 3.5 Solvency ratio

as previously mentioned, In the retail industry, consumers generally make direct cash transactions or credit card payments. However, the settlement of supermarkets to suppliers is generally delayed for several months. As a result, retail companies have more debt and more leverage. Yonghui Supermarket has strong sales ability, which directly affects the same checkout cycle and the amount of accounts is larger. Therefore, among the three companies, Yonghui Supermarket has the highest leverage ratio, with a Total debt ratio of 82.8%. Sun Art and Walmart had similar Total debt ratios of 61.9 per cent and 65.1 per cent, respectively. Moreover, the Debt/Equity ratio of Walmart is 79.75%, which is more suitable for prudent investors and the company has sufficient ability to repay the Debt of debtors. The Debt/Equity ratio of Yonghui Supermarket is 321.49%, which is more suitable for aggressive investors. The Debt/Equity ratio of up to 321.49% represents the financial structure of this company with high risk and high reward. In terms of long-term capital sources, Yonghui Supermarket is the best, Sun Art Retail is the second, and Wal-Mart is relatively poor. But Yonghui supermarket leverage ratio is the highest, the risk is larger.

**Table 5. Solvency ratio**

	SUN ART RETAIL	WALMART	YONGHUI SUPERMARKET
Total debt ratio	61.9%	65.1%	82.8%
Debt/Equity ratio	/	79.75%	321.49%

### 3.6 investment ratio

Investment ratio is an important index to distinguish different types of investors. Different investors have different risk preferences. If you are a growth investor, all three stocks have PEG ratios greater than 1 and there is no suitable stock to choose from. If you're a value investor, Sun Art Retail is a better bet because it has a PB of 0.73. But on the whole, the new outbreak of retail industry a huge negative impact, lead to the retail industry itself is not high profit margins are lower, even the sun art retail and Yonghui supermarket because of the loss, PE value cannot be computed, so can only refer to the value of a few years ago, these values have contributed significantly to analyze the effect of the outbreak, but small significance to the current investment in stocks. If you care more about earnings per share, then I recommend you invest in Wal-Mart, which has a relatively high EPS of 5.01. The shareholders of Sun Art Retail and Yonghui Supermarket have lost money in the past year. It is possible that the company can improve its profits through operations, but you need to take a high risk. As a Chinese saying goes, "seek wealth in the risk of prosperity".

**Table 6.** Investment ratio

	SUN ART RETAIL	WALMART	YONGHUI SUPERMARKET
EPS	-0.1	5.01	-0.32
P/E	28.29(2019)	27.22	33.27(2020)
PEG	5.01(2019)	6.3	2.41(2020)
PB	0.73	4.52	2.82
Dividend yield	/	1.86	/
Momentum	/	/	/

## 4. Conclusions

The root of stock analysis is the study of the company, to find a suitable investment company must know the company inside out. Through research and comparison, it is found that the data of these three retail companies have changed to different degrees before and after the epidemic, which has both negative and positive effects. For the retail industry, the epidemic is both an opportunity and a challenge. Turning opportunities into challenges requires managers to make decisions that benefit the company. However, for us investors, the overall investment risk of retail industry is relatively high. Compared with other industries, the profit margin is low and the investment income is relatively small. But no matter whether the company is chosen or not, it is essential for investors to have a large amount of investment knowledge reserve, correct investment concept and good investment mentality. It needs to start with the basic data of a company to find those companies that are suitable for us and have development potential.

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