

Fundamental Utilization Value: Measured Based on Macro and Micro Analysis

Chao Sun

City University of Macau, Macau 999078, China

Abstract. Certain market practitioners, for instance, technical analyst and amateur investor have less attention to the results of fundamental but follow the choice of the public. Lack of theoretical basis and understanding of data, resulting in intangible loss. The purpose of this paper is an attempt to introduce fundamental analysis, taking Apple as an example, to assist novice investors in evaluating a company's securities products. The method based on fundamental analysis measures the investment value and future prospects of a company by analyzing the macroeconomic situation, which focuses on the international situation, national economic policies, and industry conditions, and the corporate financial situation, which focuses on the ratios related to cash flow, profitability, operating ability, and solvency. By integrating macro and micro, corporate value can be explored better.

Keywords: Fundamentals; Macroeconomic situation; Financial situation.

1. Introduction

Fundamental analysis is a method of assessing the value of a stock by calculating its intrinsic value. Based on the intrinsic value of securities, analyze various factors that affect the price of securities and their trends, and provide valuable reference for which securities to buy and when to buy. In the process of academic use, the method of fundamental analysis can separate price from value, from both qualitative and quantitative perspectives, to measure whether the price at this time matches the value, whether it is overestimated or underestimated.

Alfred Rappaport once proposed a discounted cash flow model, which combines the company's fundamental factors(RAPPAPORT, 2005), development prospects and the ability to create cash flow for long-term development to estimate stock value through current cash flow. Asness (2014) comprehensively consider the company profitability, growth, security and payout ratio, constructing the QMJ that measures the quality of the company comprehensive indicators, and found that QMJ can significantly predict future stock returns. Market prices do not adequately include information from fundamental indicators. This is where the use of fundamentals can be explained when the line between price and value is blurred.

Due to its own unique acuity and adaptability as an advantage, fundamental analysis became a popular method of measuring contending securities. This paper tries to explain from macroeconomic conditions such as international situation, national economic policies, and industry conditions, to microscopic to specific financial values of enterprises, for instance cash flow, profitability, etc., that fundamentals are the reference value of a company. This paper contributes to the existing literature by providing concrete sights of fundamental analysis.

2. Macro analysis

2.1 International situation

In the long run, the epidemic has spread rapidly around the world, the uncertainty of the external environment has increased significantly. According to the economic forecast of the World Economic Outlook Report released by the IMF on June 25, 2020, it is expected that the global economy will shrink by 4.9% in 2020, the developed economies will shrink by 8% in 2020, and emerging market and developing economies will shrink by 3%. The world economy has entered a recession.

So far, the COVID-19 pandemic has been circulating for three years. At the beginning of the pandemic, companies had to shut down facing the epidemic, service industries stagnated, manufacturers caused supply chain disruption, and the result of this situation was a recession. Under the outbreak of the global economy and financial markets showed complexity and vulnerability. Mainly in the enterprise to stable cash flow lead to reduce prices to sell asset prices, market panic caused by the government to respond to the epidemic, industry leading enterprises signs of bankruptcy, the global economic recession significantly most of the population unemployment. The overall socio-economic situation is not optimistic.

As for the corresponding financial institutions, in the first quarter of 2020, the market value of 21 global systemic important banks significantly shrank by nearly 5.6 trillion yuan, while Barclays, flowering period and rich countries even fell by nearly 50%. On April 8, the century-year-old First State Bank declared bankruptcy, becoming the first bank in the country to fail under the impact of the epidemic in 2020. The impact is so bad that the government and businesses have taken measures to face the epidemic to revive the economy. As indicated in Figure 1, In 2019 and 2020, the total market value of the world's top 100 companies affected by the epidemic showed a growth rate of 1.879%, and the growth rate was quite different from that in 2020 and 2021.

The turnaround in 2021 stems from the government took a series of measures for economic recovery that vigorously support businesses to ensure continued economic stability and positive household balance sheets. The specific fiscal policy will be described in the policy section. At a time when smartphone growth is already slowing, a global recession will stop Apple's expansion. Apple posted strong growth last quarter. However, the stock price doesn't reflect the inherent threat facing the company. With geopolitics, growing legislation, and a global recession leading to slowing product demand, Apple faces ongoing challenges.

Total Market Capitalisation of Global Top 100 companies as at 31 March

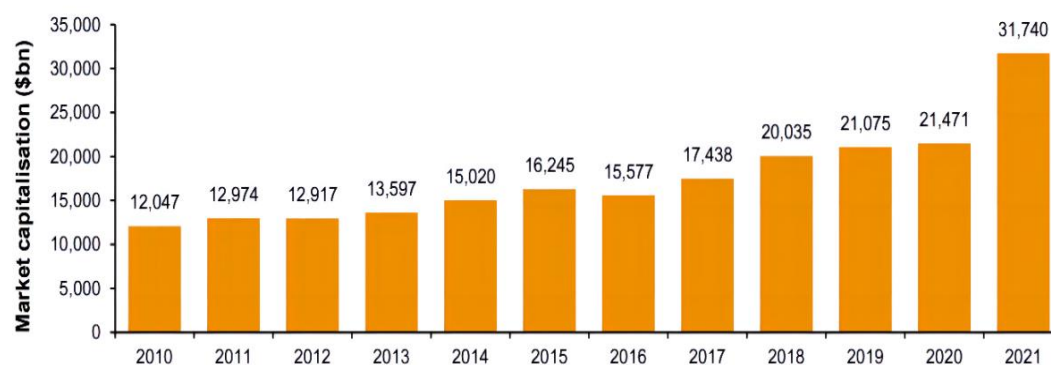


Figure 1. Total Market Capitalisation of Global Top 100 companies.

The subsequent Russian-Ukrainian war on February 24, 2022, also affected the entire global economy by slowing growth and accelerating inflation. Russia and Ukraine are important exporters of industrial raw materials such as oil, natural gas, and rare gases in the world. Due to the outbreak of the war, the price of energy has risen, which has increased the pressure on the industry. In the production process of chips, neon, krypton and xenon are the most important raw materials. However, Ukraine supplies 70% of the world's neon, 40% of krypton and 30% of xenon. Under the influence of the conflict, chip manufacturers will face higher The price of raw materials, although other ways can be found in the short term, due to the impact of the epidemic and economic recovery, the demand for semiconductor chips from high-tech enterprises has surged. In the long run, chip manufacturers will be in trouble, while the mobile phone industry will face supply chains shortage crisis. Although the West has not imposed comprehensive restrictions on Russia's energy and food exports, the panic and financial sanctions caused by the military conflict, as well as Russia's export restrictions on unfriendly countries and measures taken in response to financial sanctions by Western countries, multinational companies are in politically unfavorable conditions. In the IMF's forecast for the

growth rate of global trade in 2022, it was 6% in January, and it was lowered to 5% in April. The growth rate of exports to countries was revised down by 1 percentage point, and the growth rate of exports to emerging market countries was revised down by 1.7 percentage points. The international situation is not optimistic, especially in cross-border trade, there are certain obstacles. The recession has also caused Apple's largest market, China, to experience a stagnant population and underperform debt, leading to a prolonged period of low-to-no growth. Also, if the economy is hit by other shocks like the coronavirus, it will take more time for the Federal Reserve, European Central Bank or International Monetary Fund to adjust. While there are ways to do it, low growth and loss of revenue are inevitable, and companies like Apple need people to have as much disposable income as possible, as smartphones have risen to become an everyday necessity, now as important as the Internet, but the iPhone is positioned in the high-end category and relies on a large middle class and a lot of disposable income to buy iPhone. Its growth prospects also depend on the size of foreign participation in the upper-middle class. Not just for Apple, but for every business facing challenges.

2.2 Policy

A Fed rate hike is a tightening monetary policy that the Fed will raise in response to the current economy. Generally speaking, U.S. interest rate hikes generally refer to the appreciation of the U.S. dollar. If the Federal Reserve makes the interest rate level lower in the market, it will buy U.S. Treasuries through primary dealers at the same time put U.S. dollars into the market. When there are more U.S. dollars in the market, the interest rate level will drop. In turn, if the Federal Reserve wants to enter the interest rate hike cycle, it will sell a large number of treasury bonds to the market and recover the US dollars in the market, and the market liquidity of US dollars will decrease. US dollars will become scarce that affect the market interest rate level rise. To sum up, raising interest rates will cause a series of reactions in the world. First, it will affect the exchange rates of countries around the world. Changes in exchange rates will affect the debts of various countries, which will then affect the economies of various countries, then affect the stock markets of various countries, and finally transfer to US stocks. As indicated in Figure 2, the rate hike process that started in 2015 showed that the first rate hike had less effect on inflation, while the economy continued to rise. Inflation was restrained to a certain extent after raising interest rates three times in a row, and the economy continued to rise after a brief downturn. At this stage, the Fed is expected to start three interest rate hikes in 2022 and another three in 2023. The reason behind the rate hike, Zou Deli believes that the Fed's quantitative easing in previous years has led to excess domestic liquidity in the United States. Secondly, the Russian-Ukrainian war has dragged on, and oil and natural gas prices have remained at high levels. With the increase in European demand, financial sanctions have reversed, and natural gas prices have repeatedly hit new highs. The price impact is finally transmitted back to the United States. Also because of the ongoing China-U.S. trade war, the U.S. has increased tariffs on goods exported from China, and the final pressure has returned to U.S. consumers and businesses. These factors make this rate hike inevitable.



Figure 2. CPI

In the short term, the federal interest rate hike will reduce the public's trust. Before that, the Federal Reserve had been guiding interest rate hikes by 50bp, superimposing the lag in the start of the previous interest rate hike. However, the 75bp rise under the public's expectations was in line with the market trend. Misjudgments and actions based on instant decision-making have led to a decrease in the public's trust in the federation and increased difficulty in advancing the resolution of inflation. In the medium and long term, from the perspective of interest rate hike itself, it will increase the interest rate of fixed-income securities, thereby reducing the attractiveness of stocks, which is bad for stocks. The previous Federal Reserve Chairman Ben Bernanke has a study, showing that the Federal Reserve is unexpected every time. Raising interest rates by 25 basis points sent stocks down an average of 1%. But the market's prospects for the economy are moving in a positive direction, and the negative effects of higher interest rates are often overshadowed by the positive effects of better earnings prospects, so the final performance is a rise in the stock market. The operating conditions of enterprises will also change with the changes in economic conditions.

3. Financial situation

3.1 Company stock price changes

First, observe the stock price trend of Apple held by graphing the basic data stock price. As indicated in Figure 3, in the short term, Apple's stock price fluctuates due to macroeconomic and internal changes. The trend is a "good trend" but the returns vary so much from month to month and it can also be seen that Apple's internal development is not always stable as imagined. In the overall price change, that is, long-term price changes, the stock price is more than 3 times higher than in 2019. From this point of view, Apple's development good these years.

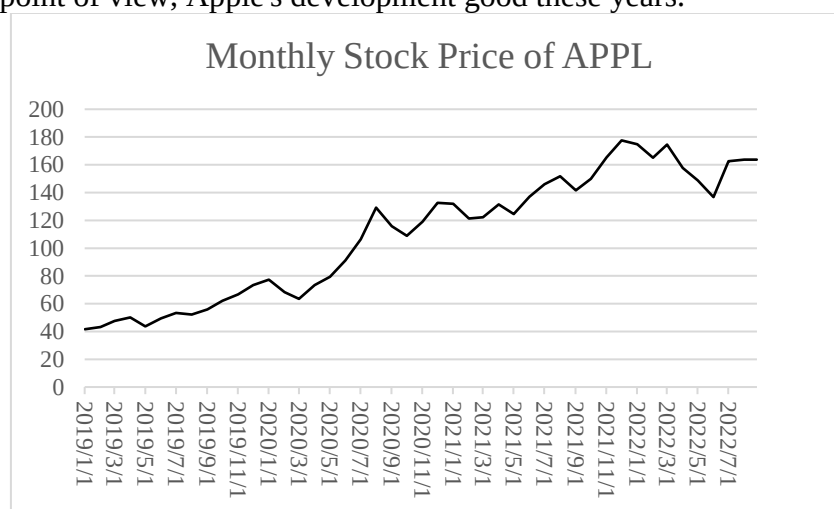


Figure 3. Apple's stock price chart from 2019/1/1 to 2022/7/1

3.2 Measure ratio

Financial ratio analysis is to use a series of calculated data to measure the business status, profitability, and repayment ability of the enterprise, and through comprehensive quality evaluation, it can predict the future development prospects of the enterprise, investment value, and the core purpose is to predict the future surplus. Future surplus, there have been literatures that use quarterly financial statements to construct fundamental indicators to prove that fundamental data can effectively predict future surplus, which is more convenient for analysts and investors to use. According to the measurement angle of investment, it can be divided into three types of ratios, liquidity, management and profitability.

3.2.1 Liquidity

When measuring liquidity, the current ratio and quick ratio are more used. The current ratio is an important indicator of the realization level of the enterprise, according to which the ability of the enterprise to repay short-term debt and maintain the stable operation of the enterprise can be understood. As indicated in Figure 4, From the analysis of the current ratio, the current ratio will decrease year by year from 2019 to 2021. The lower this indicator is, the worse the ability of Apple to repay its current liabilities, there will be certain financial risks in the short term, and the company's claims cannot be guaranteed. As Quick ratio is the balance after deducting inventory with poor liquidity, accounts received in advance, and non-current assets due within one year from current assets. This ratio reflects a key indicator for companies to quickly repay current liabilities. It can be observed that the quick ratio is also decreasing year by year, and Apple's ability to repay its debts has decreased, but if the company's accounts receivable can be recovered on time, the company can still pay all current liabilities without selling inventory.

3.2.2 Management

The management ability is usually reflected by the operation situation. The good operation situation indicates the high management ability of the enterprise. Therefore, it can be analyzed by using the indicators of operation ability. The main ratios are inventory turnover rate, current asset turnover rate, and total asset turnover rate. The inventory turnover ratio tells a lot about a business's sales and whether it is doing a good job selecting and marketing products. The larger the inventory turnover rate is, it can indicate that its liquidity is in a strong state and company's sale condition is good. The observation table shows that from 2019 to 2021, the inventory turnover rate has increased significantly, which means that Apple's sales are in good condition. In 2021, the sales of iPhone exceeded 300 million units and broke a new record, which is also a better confirmation of the change in this data. The fixed asset turnover ratio and the total asset turnover ratio reflect the management level and operating efficiency level of the company. The higher the corresponding index, the better. From the chart, it can be observed that these two ratios have obvious fluctuations, rising year by year. Apple's internal management capable and fully utilized asset value.

3.2.3 Profitability

Category	Financial indicator	2019	2020	2021
Liquidity	Current ratio	1.54	1.36	1.07
	Quick ratio	1.50	1.33	1.02
Management	Inventory turnover rate	39.40	41.75	55.60
	Fixed assets turnover ratio	1.48	1.52	1.69
	Total assets turnover ratio	0.77	0.85	1.04
Profitability	Return on equity	1.78	1.83	1.61
	Operating on total asset	0.29	0.32	0.44
	Operating margin rate	0.27	0.25	0.31

Figure 4. Ratio table

Profitability refers to the ability of an enterprise to obtain profits. It is an indicator that can reflect the quality of business operations within a period of time. This indicator is particularly important and is the one that attracts the most attention from analysts. Mainly calculate the return on equity, return on total assets, operating margin rate, etc. The higher all the ratios, the stronger the ability of the company to obtain profits, and the more favored by investors. The return on equity is more valued by

shareholders. The higher the value, the more attractive the stock can bring to shareholders, the greater the benefit to shareholders. Apple's ratio within three years first rose and then fell. It may be due to market fluctuations that affect investors' investment sentiment. Such as wars in macro analysis, trade wars and other factors. Combined with Operating margin rate and Operating margin rate as a whole, the proportion of net profit is gradually increasing every year. Apple has made improvements in products, the results of investment in research and development will be better, and the rate of return on total assets is also increasing. , Apple's profitability is strong.

4. Conclusion

Fundamental analysis can well measure the intrinsic value of securities through macroeconomic situation and micro to data, so as to separate price and value. By analyzing the fundamentals, investors can better understand and know clearly about the economic situation of the country, and the intrinsic value of the company, and then can reasonably judge the value center of the stock market and whether the value of the stock deviates from the price. From the perspective of macroeconomic conditions, Apple is facing geopolitical risks. The epidemic has led to insufficient production capacity in global factories and supply chain difficulties. New product releases have fallen short of market expectations. Consumers' purchasing power has declined due to poor macroeconomic conditions. However, based on specific data analysis, Apple's operating conditions have become better, which shows that the company's resilience is strong, and the way it handles the crisis is effective, which has strengthened the trend of good future development. Such an investment is worthwhile. Finally, based on the fundamentals, it can be used for a preview analysis of its own decision-making and can be used as the basis for the use of other valuation models, but it is also faced with the confounding factors of complex variables and market misleading. For this, the quantitative and technical progress needs to be explored.

Acknowledgements

I am very grateful to the professor for taking me into the financial world, getting a preliminary understanding of relevant financial knowledge, and enthusiastically solving my questions. I am grateful to the friends we study together. During the process of studying together, I have experienced the enthusiasm for exploring new knowledge. The immersive atmosphere has increased my learning efficiency. Secondly, I would like to thank my good friend MoHan, who helped me collect information and helped me and the university in mathematical problems, so that I could better understand the mathematical model and master it. Last but not least. I would like to express my gratitude to my family and friends, and wish to My parents, grandparents and My economics teammates.

References

- [1] Chen Ya & Lin Ying. (2017). Analysis of the application of ratio analysis in corporate financial analysis. *Times Finance* (11), 210-211.
- [2] Chengxiang. (2021). The role and impact of quantitative easing monetary policy in the United States under the impact of the epidemic. *Economics* (04), 76-85.
- [3] Dehnad, K. (1989). A Geometric Interpretation of Taguchi's Signal to Noise Ratio.
- [4] Gunady F Pasaribu and Dwi Kartikasari. FUNDAMENTAL ANALYSIS IN ASSESSING THE FAIRNESS OF STOCK PRICE AND INVESTMENT DECISIONS IN THE CAPITAL MARKET USING THE APPROACH OF PRICE EARNING RATIO (Study On The Company's Property Sector, Real Estate, And Building Construction)[C]. Batam, Indonesia, 2019.
- [5] Mike, Rayworth. How to drown out hysterical media hype[J]. *New civil engineer*, 2014(Mar.6):13-13.

- [6] Ma Xiushan. Intellectual Property and Venture Capital? From Apple Computer Company's Entrepreneurship [J], Anhui Science and Technology; 2003-11.
- [7] Wang Rongfei & Zhang Ran. (2018). Is fundamental analysis useful in China's A-share market? - Evidence from quarterly financial statements. Finance Quarterly (01), 81-105.
- [8] Wang Zhan, Li Yongquan, Jiang Feng, Yu Yunquan, Xu Mingqi & Feng Shaolei. (2022). The conflict between Russia and Ukraine, the global political and economic transformation and its impact on China. Russian Studies (03), 20-54.
- [9] Zhang Xiuyun. Guo Shu. The application of stock fundamental analysis in actual combat, "China Securities Futures", 2011(5X).