Czech University of Life Sciences Prague

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Diploma Thesis

Analysis of Apple Stocks

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DIPLOMA THESIS ASSIGNMENT

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Economics and Management

Thesis title

Analysis of Apple Stocks

Objectives of thesis

The ultimate goal of the final thesis is to assess the perspectivity of investing in Apple stocks based on the technical and market analysis conducted by the author. In addition, the author comes up with a relevant decision of whether it is worth buying the following stocks or not following the analysis.

Methodology

The author splits the work into two equally important parts – the theoretical and practical ones. In the theoretical part, the author takes an insight into recently published reports and research related to Apple stocks and financial markets in general. In his practical part, the author focuses on two approaches – the financial analysis that will shed a brighter light on the financial situation of Apple. In the technical analysis, the author focuses on finding relevant ratios including P/E ratio, Net Present Value, and Future Value. Also, the author investigates the volatility of the stocks and creates a growth model.

The proposed extent of the thesis

60 – 80

Keywords

Apple, financial analysis, ratios, net present value, volatility, NASDAQ

Recommended information sources

BOROVSKY, P. 2019. Financial Statements and Financial Ratios: Defined, Discussed, and Calculated (5 Years). 1st edition. 129 p. ISBN 9781655560934.

Di Lorenzo, R. 1999. Basic Technical Analysis of Financial Markets: A Modern Approach (Perspectives in Business Culture). 1st edition. Springer. 286 p. ISBN 9780626210611.

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Declaration

I declare that I have worked on my diploma thesis titled "Analysis of Apple Stocks" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the diploma thesis, I declare that the thesis does not break any copyrights.

In Prague on 31.03.2023 ______________________________

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Analysis of Apple Stocks

Abstract

The main objective of this thesis is the financial position of Apple Inc., calculate the degree of the company's liquidity, profitability and solvency. In addition to that, the author identifies the most important factors influencing financial position of the company and breaks down the company's operations by taking an insight into recently published financial statements. Ultimately, the author answers the question of whether Apple stocks are undervalued, or they are worth their current market value. In order to reach objectives specified in the previous chapter, the author uses horizontal analysis to assess the development of the company's financial performance and financial position over the course of five years – from 2017 until 2021 of balance Sheet, income Statement, cash flow statement. The author calculates relevant financial ratios reflecting the company's profitability, liquidity, and solvency and in addition to that, the author analysis the current business environment by following the trend of NASDAQ index. The conclusion that the author draws from all of this is that Apple has established itself as a very prominent and successful company from a financial standpoint. In other words, the financial status of the firm, as well as its solvency, profitability, and liquidity, are not subject to any kind of scrutiny. In addition to this, the firm's response throughout the epidemic, both strategically and operationally, earned the corporation even more praise and goodwill in the marketplace. When seen from this angle, Apple is an organization that deserves serious consideration as a possible investment.

Keywords: Apple, financial analysis, ratios, net present value, volatility, NASDAQ

Analýza akcií Apple

Abstrakt

Hlavním cílem této práce je finanční situace společnosti Apple Inc., vypočítat míru likvidity, ziskovosti a solventnosti společnosti. Kromě toho autor identifikuje nejdůležitější faktory ovlivňující finanční situaci společnosti a rozděluje činnost společnosti nahlédnutím do nedávno zveřejněných finančních výkazů. Nakonec autor odpovídá na otázku, zda jsou akcie Apple podhodnoceny, nebo stojí za svou současnou tržní hodnotu. Za účelem dosažení cílů uvedených v předchozí kapitole autor používá horizontální analýzu k posouzení vývoje finanční výkonnosti a finanční situace společnosti v průběhu pěti let – od roku 2017 do roku 2021 rozvahy, výkazu zisku a ztráty, výkazu peněžních toků. Autor vypočítává relevantní finanční ukazatele odrážející ziskovost, likviditu a solventnost společnosti, a kromě toho autor analyzuje současné podnikatelské prostředí podle trendu indexu NASDAQ. Závěr, který autor čerpá z toho všeho, je, že Apple se etabloval jako velmi prominentní a úspěšná společnost z finančního hlediska. Jinými slovy, finanční stav firmy, stejně jako její solventnost, ziskovost a likvidita nepodléhají žádné kontrole. Kromě toho si reakce firmy po celou dobu epidemie, strategicky i provozně, vysloužila korporaci ještě větší chválu a dobrou vůli na trhu. Při pohledu z tohoto úhlu je Apple organizací, která si zaslouží vážnou úvahu jako možnou investici.

Klíčová slova: Apple, finanční analýza, poměry, čistá současná hodnota, volatilita, NASDAQ

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List of Abbreviations

- **IPO** Initial Public Offering
- **WACC** Weighted Average Cost of Capital
- **DDM** Dividend Discount Modul
- **NASDAQ** National Association of Securities Dealers Automated Quotations

1 Introduction

In today's world, there is a growing interest among the populace in business and financial matters. It is abundantly clear that as a result of the most recent information revolution and the growing significance of the Internet, individuals are offered an increasing number of possibilities to join the world of finance and large enterprises. In that regard, the author does not constitute an exception. The author's transition into maturity has been paralleled by the introduction of one rather little technological innovation that has had a profound effect on the world: Apple's iPhone. Because of his genuine interest in the company and the impact that it has had on the author's life, he wants to determine whether or not it is worthwhile to invest in Apple stocks in 2022 and 2023 based on the progression of the company's financial indicators. This will follow his genuine interest in the company and the significance that the company has had on the author's life.

Since the author is certain that he does not stand alone in his real interest in Apple, he intends for this work to serve as an all-encompassing guide that addresses the issue of whether or not Apple is a solid investment option. However, the author does take into account the fact that individuals have varying perspectives on risk, as well as the fact that individuals do have varying amounts of starting capital. As a result, the author provides a detailed breakdown related to his ultimate decision and underpins the final conclusion by relevant calculations that will shed more light on the current state of affairs in Apple.

The author is not attempting to convince anybody to put their wealth at risk in any way, shape, or form since it is common knowledge that the world of finance is a volatile environment in which everything can change in a matter of days or, in some instances, even hours. To put it another way, the ultimate judgment ought to be seen more as a suggestion than as counsel. In conclusion, it is important to point out that the rather precarious state of the economy around the world is causing people to invest less money. This is because, in times of such great unpredictability, people choose to avoid taking risks and instead put their money away in the event that the situation continues to deteriorate even further.

The author selects the time period between 2017 and 2021 as the main time frame for his analysis.

2 Objectives and Methodology

2.1 Objectives

The main objective of this thesis is the financial position of Apple Inc., calculate the degree of the company's liquidity, profitability and solvency.

In addition to that, the author identifies the most important factors influencing financial position of the company and breaks down the company's operations by taking an insight into recently published financial statements. Ultimately, the author answers the question of whether Apple stocks are undervalued, or they are worth their current market value.

2.2 Methodology

In order to reach objectives specified in the previous chapter, the author uses horizontal analysis to assess the development of the company's financial performance and financial position over the course of five years – from 2017 until 2021 of balance Sheet, income Statement, cash flow statement.

The author calculates relevant financial ratios reflecting the company's profitability, liquidity, and solvency and in addition to that, the author analysis the current business environment by following the trend of NASDAQ index. Formulas used by the author are:

Liquidity Ratio

The word "liquidity" refers to a company's capacity to swiftly convert its assets into liquid assets (cash) to meet either its immediate or its long-term financial commitments.

1. Current Ratio

$$Current\ Ratio = \frac{Current\ Assets}{Current\ Liabilities} \tag{1}$$

2. Quick Ratio

$$Quick\ Ratio = \frac{Cash+Receivables+Mark\qquad Securities}{Current\ Liabilities} \tag{2}$$

3. Cash Ratio

$$Cash\ Ratio = \frac{Cash+Market\qquad Securities}{Current\ Liabilities} \tag{3}$$

Profitability Ratio

The capacity of a firm to make profit, mostly from its assets, is directly correlated to that company's level of profitability.

1. Gross Profit Margin

$$Gross\ Profit\ Margin\ Ratio\ = \frac{Total\ Revenue-Cos\ \ of\ Goods\ Sold}{Revenue} \tag{4}$$

2. Net Profit Margin

$$Net\ Profit\ Margin\ Ratio\ = \frac{Gross\ Margin-Indirect\ Expenses}{Revenue} \tag{5}$$

3. Return on Assets

$$Return\ on\ Assets\ = \frac{Net\ Income}{Total\ Assets} \tag{6}$$

4. Return on Investment

$$Return\ on\ Investment\ = \frac{Net\ Income}{Cost\ of\ Investment} X\ 100 \tag{7}$$

Solvency Ratio

Because of their shared connection to a company's commitments, solvency and liquidity are often confused with one another. Solvency, in contrast to liquidity, does not refer to the degree to which assets may be converted into cash; rather, it refers to an organization's entire capability of effectively covering its debt and meeting its obligations when they come due.

1. Debts to Assets

$$Debt - to - Assets\ Ratio\ = \frac{\boldsymbol{Total\ Debts}}{\boldsymbol{Total\ Assets}} \tag{8}$$

2. Debts to Equity

$$Debt - to - Equity\ Ratio\ = \frac{\boldsymbol{Total\ Liability}}{\boldsymbol{Shareholder\ Equity}} \tag{9}$$

3. Equity Ratio

$$Equity\ Ratio = \frac{\boldsymbol{Shareholder's\ Equity}}{\boldsymbol{Total\ Asset}} \tag{10}$$

4. Price Earning Ratio

$$Price\ Eearing\ \ ratio\ (PE\ Ratio) = \frac{\boldsymbol{Stock\ Price}}{\boldsymbol{Earnings\ per\ Share}} \tag{11}$$

5. Price to Book Ratio

$$\boldsymbol{Price\ to\ Book\ Ratio\ (P/B\ ratio)} = \frac{\boldsymbol{Stock\ Price}}{\boldsymbol{Book\ Value\ per\ Share}} \tag{12}$$

Volatility

Standard Deviation Formula

$$\partial = \sqrt{\frac{\sum_{i=1}^{n}(X - Mea\ \ )^2}{n-1}} \tag{13}$$

Dividend Discount Model (DDM)

$$Stock\ Price = \frac{D}{r-g} \tag{14}$$

Weighted Average Cost of Capital (WACC)

$$WACC = \left(\frac{E}{V} * Re\right) + \left(\left(\frac{D}{V}\right) * Rd\right) * (1 - T)) \tag{15}$$

3 Literature Review

Apple Inc.'s corporate history, characteristics, rivals, and legal concerns.

3.1.1 History

Before going into the characteristics of the company and analyzing the financial situation of Apple Inc., it is downright essential to look at the most important occurrences that were taking place in the company, so that even an inexperienced potential investor will be aware of the background of the company and the most notable events related to the enterprise. This will allow the potential investor to make an informed decision about whether to invest in the company. Without a question, events in the past have a propensity to repeat themselves, and as a result, it is essential, at the very least, to be familiar with the past of the organization in which an individual may one day invest their whole wealth.

To begin, it is only natural to mention the day that everything started. On April 1st, 1976, three young men who were also young engineers at the same time, Steve Jobs, Steve Wozniak, and Ronald Wayne established the company that was soon due to develop and sell their first computer – Apple I. To begin, it is only natural to mention the day that everything started.

Figure 1, Apple I, the first computer of the company

Source: BBC News, 2021

It should not come as a surprise that the first computer was not a commercial success since the technological industry in the United States was already controlled by another notable company called IBM, which was far more experienced and popular among regular users. However, the story of Bill Gates and Microsoft in general, who were ahead of Apple by only one year and started his business in 1975 by introducing the first brand-new Microsoft computer, motivated three friends, and they continue their ascent to the summit of the industry. Apple was founded in 1976 (Linzmayer, 2004).

Apple saw its first phenomenal achievement in the year 1977, when the firm introduced its second personal computer, known as the Apple II. This product was a huge hit, and it enabled Apple to build a positive reputation and cultivate a following of devoted customers for the business (Johnson, 2012).

Figure 2, Apple II

Source: Apple2history, 2022

The corporation did not stop there and kept creating an increasing number of high-tech products for customers, all while simultaneously working on the creation of their brand-new operating system, which was called Macintosh.

The initial public offering (IPO) that took place in 1980 was, all things considered, the most significant event for the analysis that will be undertaken by the author in the practical part of the thesis. This will be because the IPO was when Apple first began selling its shares to the general public. Apple ultimately went public on the 12th of December and began selling its shares at a price of 22 dollars per share when it launched its first public offering. Since that time, the corporation has seen a variety of transitions, including changes in management, board of directors' composition, and other areas. The development of high-tech products has been the firm's primary focus throughout its entire history, right up to the present day. This has remained mostly unchanged from the time the company was founded (Marrero, 2018).

The first public offering is without a doubt one of the most significant events in the history of the firm; nevertheless, it is essential to be aware that the purchasing power of twenty-two dollars in 1980 was much lower than that of twenty-two dollars in the present day. People who are interested in investing their money in Apple may find that the price of 22 dollars, which is actually equivalent to around 80 dollars today, is out of their price range. This is due to the fact that both the United States and the rest of the world's society has become significantly wealthier since 1980.

It is very clear that Apple was aware of this fact, as shown by the fact that the business has divided its shares of stock five times throughout the course of its forty-year existence. The rationale for dividing the value of the stock is obvious: it makes stocks more accessible to investors who may not otherwise be able to purchase them, and it may likely result in an upsurge in stock prices after a sharp decline that occurs immediately after the split. As a result, Apple divided their stocks in 1987 (on a basis of two for one at 79 dollars), in 2000 at 101.25 dollars, and in 2005 at 89 dollars, again on a basis of two for one. As a result of the ever-increasing popularity of new iPhone models and their near-universal acclaim, the stock of the firm has reached 645.57 dollars a share, and the management has made the decision to split the company's shares for the fourth time using a seven-to-one ratio. The most recent stock split that the firm has undergone was in the year 2020, when Apple made the decision to divide the stocks on a four-to-one ratio at a price of roughly 500 dollars per share. When it comes to Apple, it is quite evident that the firm has been and continues to be always striving to maintain the affordability of their stocks at the same level by doing splits from time to time. This is something that the company has been doing for quite some time (Marrero, 2018).

The following figure contain the chart that shows the development of Apple stock prices over the course of the company's history prior to the split that occurred in 2020.

Figure 3, development of Apple's stock price

Source: IG Analyst, 2019

Clearly, it becomes obvious after looking at Figure 3 that the main purpose behind the split was the concern about the company's affordability for smaller investors.

Even though the firm has had a number of different CEOs throughout the course of its lengthy existence, Steve Jobs is widely regarded as being the leader who has had the most impact on the company as well as the greatest popularity. Steve Jobs served as Apple's CEO from 1997 until his death in 2011, and most the company's success is often attributed to his person. Jobs passed away in 2011. It is essential to understand that Apple has never been about one person being behind everything; the company built its name thanks to a cohesive and responsible management system, extremely successful strategic management, and the impeccable nature of the operational management. Although it is impossible to underestimate his efforts and contribution to the company, it is also essential to understand that Apple has never been about one person being behind everything. The passing of Steve Jobs, one of the founders of the company, did not prevent the company from growing and expanding to new heights. Tim Cook, the current CEO of Apple, made the decision to continue along the same path of development for the company and expanded on the ideas that Jobs had originally conceived.

Figure 4, Steve Jobs during Apple conference

Source: Tweney, 2008

3.1.2 Characteristics of the Company

After briefly describing the history of the company and the most significant events that led to its economic development, it is essential to focus on the primary characteristics of the company as it exists today. These primary characteristics include the number of employees, the current price of the share, the number of shares outstanding, market capitalization (as it is one of the most important factors that reflect the current state of the company), and the number of branches and active users.

Apple decided to expand its reach by setting their foot into less developed environments that had been primarily dominated by other producers of electronics, such as Samsung, Nokia, and so on. The author would like to begin by mentioning the slight change that took place in Apple's strategy in the 2010s and 2020s, in comparison to the 2000s. Instead of focusing on the domestic (American) and European markets, or the markets of the most developed countries in the world, Apple decided to expand its reach by setting their foot into less developed environments.

Apple has made the decision not to open branches in certain countries to save money on costs related to maintenance. Instead, they have contracted out the management of the reseller license to specific companies that are already active in those countries. This decision was made due to the fact that the pricing of Apple products cannot be adjusted to the price levels of developing economies. To name a few, RE: Store is the largest Apple reseller operating in the post-Soviet environment, which includes nations like Russia, Kazakhstan, Armenia, and so on and so forth. This environment comprises the following countries: In other words, Apple is indisputably present in such groups, but out of an abundance of caution, they do not manage them on their own. The following map provides information about the nations that are presently served by an Apple retail store or an Apple authorized service provider in their respective countries.

Figure 5, Apple branches

Source: Dunn, 2017

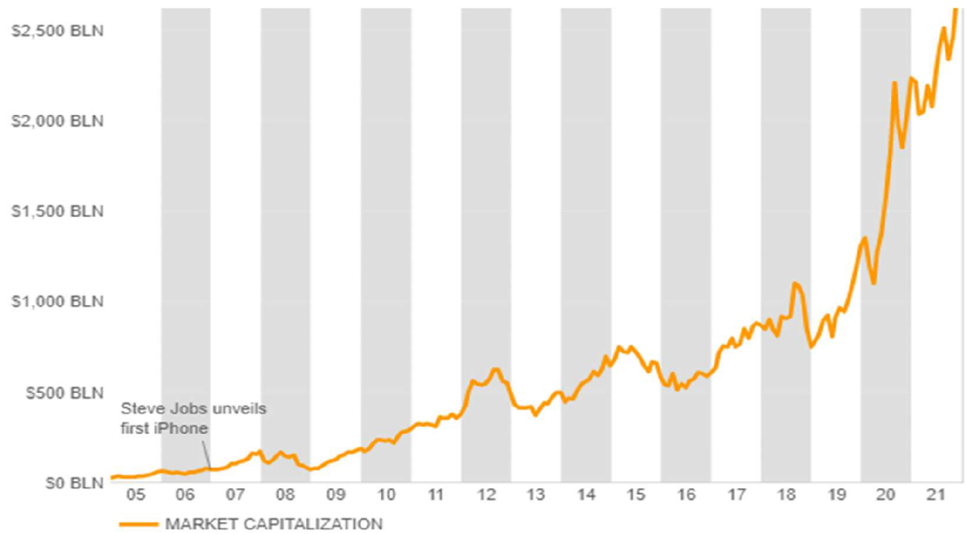
Apple has quite a limited reach in terms of official branches at the moment, as the map demonstrates, but as was stated earlier, the reason for that is purely economic; the presence of the company can be felt all over the world regardless of whether or not there is an official store or a retailer company in a particular community.

The number of workers is a further factor that must be discussed in the context of the study since it is an important consideration. As of present, the corporation gives employment to 154 000 individuals all around the globe (Apple, 2022). However, it is reasonable to assume that the actual number is much higher than the one that is officially stated, as large companies whose production lines are located in China (Apple is not an exception in this regard; in fact, it is even a pioneer), have a tendency to outsource the management of those fabrics to domestic Chinese companies that offer employment to locals. Apple is not an exception in this regard; in fact, it is a pioneer. According to some sources, employees of Apple who deal with textiles are subjected to backbreaking and inhumane labor, thus it stands to reason that this might provide significant challenges in terms of health and safety regulations in the workplace (Eckert, 2013).

Apple was able to surpass the sum of 100 million active users of Macs all over the globe and 118 million iPhone users in the United States with only 154 000 official workers. This was a significant accomplishment for Apple. Even though at one point in time, electronic gadgets were regarded as a genuine luxury good, the general development of the global economy has made it possible for an increasing number of people to get their hands on brand-new iPhones and other devices that are given by the corporation.

Apple's market value has hit 2.5 trillion dollars as of the 5th of September 2022, which is unquestionably a major financial accomplishment for the corporation and the administrators of the company. In fact, it is the best result ever achieved by the firm, and there is a good chance that the total will be much higher in the future. On the chart that follows, you can see how Apple's market capitalization has changed over time.

Figure 6, Apple market capitalization



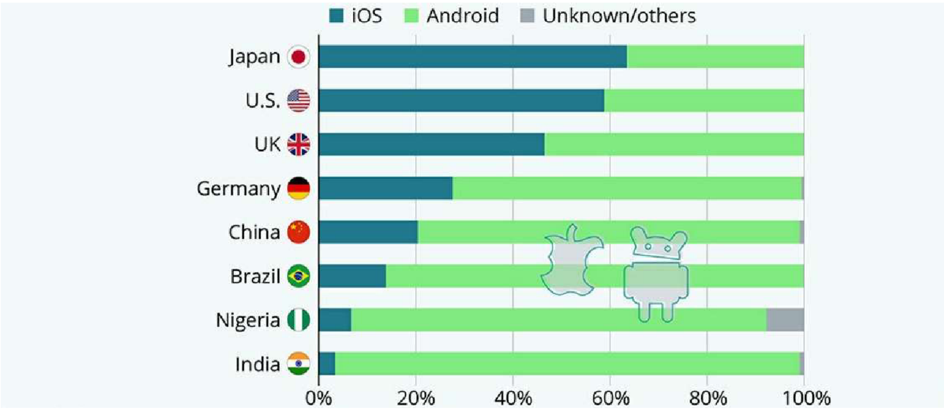
Source: Balu, 2022

It should come as no surprise that the company's market capitalization skyrocketed after the unveiling of the iPhone because it was not just a cellphone but a generation-shaping device that changed the phone market once and for all and forced some companies to leave the market forever, most notably Blackberry, Motorola, and Nokia. Of course, it is not surprising that the market capitalization of the company skyrocketed after the unveiling of the iPhone because it was not just a cellphone but a device that changed the

As of the 5th of September, the current price per Apple share is equivalent to 155.81 dollars, which indicates that the five stock splits that took place over a period of forty years did not allow the price of Apple's stock to explode along with the company's market capitalization. Apple's stock price, like the stock price of any other technical behemoth, is heavily impacted by the conferences that typically take place in September. These conferences are where the corporation introduces new products and offers important upgrades to the operating systems. The price of Apple stock is modified to reflect the reactions of consumers all over the globe as quickly as possible following the conclusion of the conference, considering the content of the conference as well as the general consensus of the public about its significance.

Finally, another interesting piece of statistics is available in Figure 6, shedding the light on some countries' preferences regarding the cellphones.

Figure 7, Preferences of Countries



Source: Buchholz, 2020

3.1.3 Competitors

Competitors are without a doubt one more crucial issue that has a substantial impact on the financial status of a firm that has historically specialized in the technology sector. As was said earlier, Apple was responsible for the exit of a few of its rivals from the market since those competitors were unable to conform to the pattern that Apple established for everyone else in the industry who manufactured smartphones. Apple's success is dependent on the current tendencies and steps taken by other companies to dominate the market and become the best. Of course, the current success of the company is not a definitive indicator that the company will not shut down in just a matter of a few years, so the success of Apple is dependent on the actions taken by other companies.

To begin, Apple's most significant rival is Samsung, which produces electronic goods. When Apple sued their competitor, Samsung Electronics Company., Ltd., for infringing on Apple's patents, the two businesses were frequent visitors to the courts just a few short years ago. Eventually, Apple was awarded 400 million US dollars in damages from Samsung Electronics Company., Ltd. for patent infringement (Samuelson, 2016). However, the competition did not end there, and two companies are going head-to-head with each other when releasing brand-new devices. This is being done to ensure that neither of the companies will fall behind the primary tendencies that are still prevalent in the market for electronic devices. However, the degree of rivalry between Samsung and Apple is still constrained, for the simple reason that Apple does not provide the same breadth of products that Samsung offers. The Korean giant does not restrict himself by concentrating in the creation of gadgets that are used daily; rather, it produces practically all types of technical equipment connected to households, productions, and other areas of business. However, it appears that the competition in the mobile phone industry is quite fierce, as the gap between these two and other companies (such as Huawei, for example) appears to be quite large, and it is unlikely that a new huge player will emerge that will force those two companies to forego a particular portion of the market (Carpenter, 2010).

Overall, Apple did diversify its supply of products by continuing research and development of an operating system tailored exclusively for Macs and iMacs. This was one of the ways that Apple diversified its supply of goods. Apple has a number of rivals in the personal computer industry, including companies from all over the world such as Lenovo, HP, Asus, and others; however, it is essential to note that Apple's positions in that market appear to be out of danger due to the fact that the personal computer industry is a very specific field, in which consumers have a tendency to select something that is similar to what they have already become accustomed to (Belk, 2005). Individuals who use computers with Windows operating systems are not likely to move to Macintosh due to the personal reasons they have for doing so as well as the positive experiences they have had with the computer they are now using. Apple users are believed to be even less willing to switch to Windows or Linux computers, especially because Macintosh starts offering more options that could had never been imagined on Macs, such as playing videogames and streaming, to name just a few examples. This kind of logic is also applicable vice versa, as Apple users are believed to be even less willing to switch operating systems.

Finally, the market for audio accessories is another significant sector in which Apple confronts competition to a certain extent. Steve Jobs, the CEO of Apple, has always shown a real interest in music players and the accessories that go along with them. This fascination dates to the very beginning of the firm. After some time, Apple came out with its first ever music player, which was called the iPod, and began selling it. However, the company quickly realized that it did not need to develop another device because the iPhone was designed to incorporate the capabilities of computers, music players, and regular cellphones simultaneously. Nevertheless, beginning in the middle of the 2010s, Apple began manufacturing headphones and other associated accessories that were meant to be used with their own products such as iPhones, iPads, and Macs (Marrero, 2018). Despite this, the market showed itself to be quite competitive, as other major companies such as Beats by Dr. Dre, Sennheiser, and Pioneer were able to dominate the space. Undoubtedly, it is thought that Apple is not as successful in that market in comparison to other markets, and the primary reason for this is due to the company's failure to deliver a distinctive answer that would be superior in terms of the quality of the sound. As a result, Apple made the decision to avoid wasting their time researching and developing a new solution that will boil down to the situation in which they will rule the market. Instead, they decided to entirely buy the company of their biggest competitor, Beats by Dr. Dre, and the company that produces headphones and related apparel is now wholly owned by Apple (Sisario, 2014). This specific instance demonstrates that Apple is aware of how to do business, and what is even more crucial for a company that is participating in a number of incredibly competitive areas, they undoubtedly are aware of how to maintain its buoyancy and eliminate their rivals.

In addition to all of this, it is important to point out that Apple has only relatively recently entered the streaming sector, and that the corporation is now even specialized in the creation of films and series with the assistance of the service invested by them and given the name Apple TV. Because of this, it is also vital to point out that the corporation is now a rival of Netflix, Amazon, and HBO, all of whom opted to explore the streaming market alongside Apple. Due to the fact that just a short amount of time has gone since the event in question, it is still too soon to determine whether or not the company's foray into streaming has been fruitful (Addison, 2022).

Figure 8, Apple main competitors

Source: Ogedengbe, 2021

A glance at Figure 7 should make it quite clear that Apple's market is now filled with plenty of rivals, and PayPal is one of the most significant of them. Apple Pay is Apple's very own proprietary payment system, so the company can legitimately position itself as a rival to PayPal.

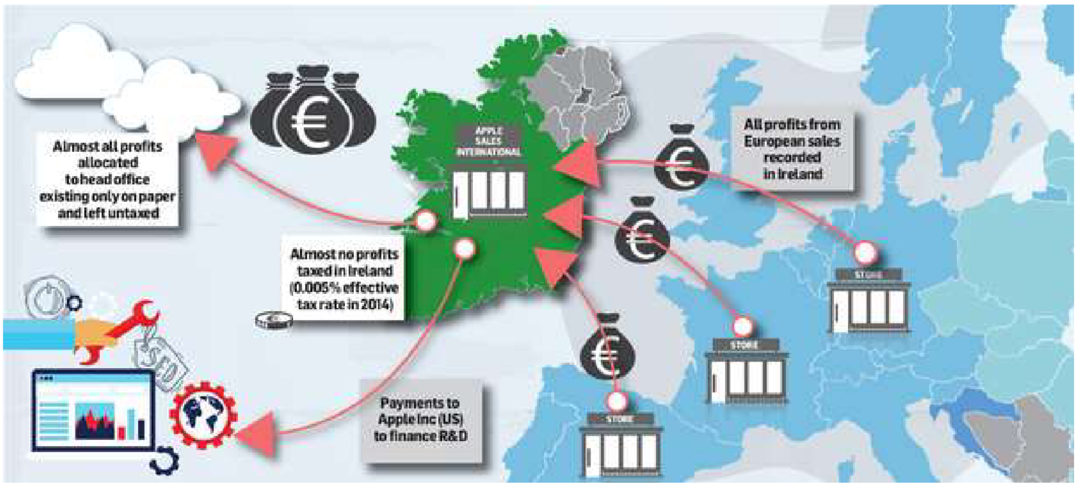
As has been abundantly clear, the enormous number of rivals does not seem to be a cause for concern among investors all over the globe, and the primary reason for this is the reputation that Apple has been able to develop for themselves. Having said that, this is a very significant factor that one must always take into account when making a decision about whether or not to give the go-ahead to a certain investment choice.

3.1.4 Legal Issues

For a corporation of Apple's size and scope, it is highly possible that it would have become pretty obvious that there would have been absolutely no way for the firm to avoid severe legal difficulties and disputes relating to the organization. Since legal issues and court hearings are something that influences potential investors and a lost court case might simply lead to the imminent damage to the public image of the company, various issues related to legal questions and controversies are something that directly affect the price of a stock. In fact, various issues related to legal questions and controversies are something that directly affect the price of a stock.

As was said previously, one of the most significant challenges that Apple faced was the legal battle that had been going on against Samsung for the previous ten years. However, this was not the first legal dispute that Apple faced and was forced to defend itself in court. Another significant event that took place in relation to Apple in 2014 was the initiation of an inquiry into the business by the European Union in response to a possible instance of tax avoidance. The EU commission presumptively believed that Apple took advantage of the flaws in the EU tax system by centralizing the majority of its activities in Ireland. As a direct result of this, Apple was required to make a payment of 15 billion dollars to the government of Ireland because the corporation was found guilty and lost the lawsuit (Perera, 2021).

Figure 9, Apple tax evasion scheme



Source: Collins, 2016

A further significant topic that continues cropping up every so often is the widespread belief that Apple purposefully slows down older versions of their products in order to coerce customers into upgrading their electronics and getting rid of the older ones. The most recent incident that has occurred with Apple has resulted in the business agreeing to pay 113 million dollars to resolve the so-called "Batterygate" lawsuit. Additionally, the company has admitted that they have been intentionally slowing down their older devices. However, the corporation was conscious of the possible damage to their reputation, and so they stated that by acting in this manner, they were extending the life of gadgets because older ones were unable to comply with the software used in current times (Weiss-Blatt, 2021).

Apple's problems are not in any way considered to be serious or extremely damaging to the company's impeccable reputation. This is because, all things considered, when compared to other major companies and the legal complications that were taking place in some of them, such as Huawei and the problem with the US government, Apple's problems are not in any way comparable.

3.2 Financial Analysis

The financial statement of Apple Inc. will be explained by the author in this chapter.

3.2.1 Financial statement analysis

The comprehensive dissection and inspection of the financial accounts of the organization are necessary steps that must be taken before any kind of financial analysis can be performed. Financial statements are things that immediately represent the internal position of any business and enable investors to make a judgment as to whether or not the situation is pleasant and whether or not it is rational to invest in the firm. It should come as no surprise that the world of finance is a very intricate environment, and that numerous disparities exist between the ways things are done in each nation. However, when we are talking about such enormous international corporations as Apple, it is reasonable to state that they prepare their financial statements in accordance with the international law and international standards. This ensures that anyone who is knowledgeable and experienced enough in Finance is able to analyze them and come to a conclusion about what they mean.

The financial statements that are usually taken into the consideration are:

1. **Balance Sheet.** This statement reflects the company's financial position and sheds light on assets (current and non-current), liabilities (short and long-term obligations of the company) and equity (capital). Assets are equal to liabilities plus equity, as the last two are believed to be the main sources of funding the purchase of assets.

2. **Income Statement.** This statement reflects the financial performance of the company, the total amount of revenues, expenses. Ultimately, the statement highlights if the company has a net profit or loss and what are the earnings per share.

3. **Cash-flow Statement.** This statement indicates the change in the company's cash, and it is split into 3 equally important parts – Operating segment, Investing segment and Financial segment.

4. **Statement of Changes in Equity.** This statement indicates the breakdown of the equity and the changes that had been occurring in the segment over a given time period.

5. **Notes.** This statement describes the methods used by the company to create the financial statements.

Companies are required to submit all of their financial statements by the end of their fiscal year, which begins on the first of January and ends on the 31st of December. This is another essential component that has to be brought up since it is so significant (White, 2002).

When it comes to the specific approach of assessing financial statements, the examination of a financial statement may either be horizontal (comparison of the values of separate components throughout the years) or vertical (analyzing the relative importance of each element per year). When talking about investments in general, it would be a fair bet to say that a major number of the people investing are regular people who utilize their own cash and savings. This would be a safe bet to make when talking about investments in general. Horizontal analysis is something that is something that is encountered much more often as a consequence of this as a consequence of the fact that ordinary and amateur investors do not possess essential skills that will assist them in drawing conclusions from the analysis, which is believed to be somewhat more complex. When it comes to the horizontal one, the fundamental concept behind this sort of analysis is to conduct a straightforward comparison of the performance, financial condition, and change in cash flow of the organization in the current year with the statistics from the years that came before it. In addition to this, the statements that are regarded to be the most powerful and thorough are the balance sheet, income statement, and cash flow, and these are the ones that get the most scrutiny.

Figure 10, most important financial statement

Source: White, 2002

However, analyzing a financial statement does not only include doing a thorough study of the statistics that are shown in the financial statements itself. In addition to the horizontal and vertical analyses, there is another essential field connected to the financial analysis that deserves to be brought up, and that field is the ratio analysis.

3.2.2 Ratio Analysis

The term "ratio analysis" suggests a series of basic manipulations with the figures from a financial statement. These manipulations would allow the person doing the analysis to find the values of a few indicators that will provide additional information about the current state of affairs of the company in three specific domains. Ratio analysis, as it might become obvious after looking at the very name of the concept, implies a series of basic manipulations with the figures.

These domains are:

1. **Liquidity.** The word "liquidity" refers to a company's capacity to swiftly convert its assets into liquid assets (cash) to meet either its immediate or its long-term financial commitments. Cash is, without a doubt, the most liquid asset that the firm has; thus, the presence of a large amount of liquid assets is an excellent sign of the company's liquidity.
2. **Solvency.** Because of their shared connection to a company's commitments, solvency and liquidity are often confused with one another. Solvency, in contrast to liquidity, does not refer to the degree to which assets may be converted into cash; rather, it refers to an organization's entire capability of effectively covering its debt and meeting its obligations when they come due. Companies that have poor solvency are more likely to fail because they either have a very little financial buffer or none at all.
3. **Profitability.** The capacity of a firm to make profit, mostly from its assets, is directly correlated to that company's level of profitability. The capacity of a business to turn a profit is an essential factor, however this factor is more strongly associated with the commercial success of the firm than it is with its continued existence.

Unsurprisingly, these three domains are split themselves into smaller groups and ratios. When it comes to the liquidity ratios, it is possible to distinguish a few extremely important ones, which are: current ratio, quick ratio and cash ratio, whose formulas are available on the following figure (Borovsky, 2019).

Figure 11, liquidity ratios

$$Current\ Ratio = \frac{Current\ Assets}{Current\ Liabilities} \tag{1}$$

$$Quick\ Ratio = \frac{Cash + Receivables + Marketable\ Securities}{Current\ Liabilities} \tag{2}$$

$$Cash\ Ratio = \frac{Cash + Marketa\quad Securities}{Current\ Liabilities} \tag{3}$$

Source: Jewell, n.d.

After a brief discussion of the various kinds of financial ratios, we will now turn our attention to the solvency ratios, which are of the utmost significance for investors. These individuals want to be absolutely certain that the company in which they have invested a sizeable amount of money will not fail in a few short years, after they have already committed a substantial amount of capital. The debt-to-equity ratio, the debt-to-assets ratio, and the equity ratio are the ones that investors should focus their attention on the most when it comes to the most crucial ratios connected to the solvency of the firm (WallStreetPrep, 2022; Addison, 2022).

Figure 12, solvency ratios

1. $Debt\ to\ Equity\ Ratio = \frac{Total\ Debt}{Total\ Equity}$

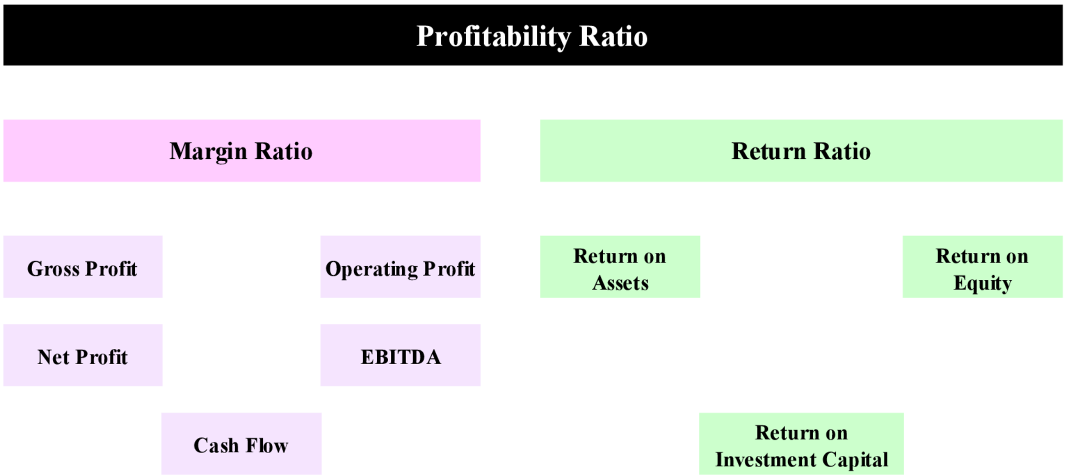
2. $Debt\ to\ Assets\ Ratio = \frac{Total\ Debt}{Total\ Assets}$

3. $Equity\ Ratio = \frac{Total\ Equity}{Total\ Assets}$

Source: Wallstreetprep, 2022

Last but not least, the very last category of financial measures, called profitability ratios, also offers a great deal of instances. Nevertheless, there is a significant facet of them that should also be discussed since it is necessary to do so: those ratios are divided into two distinct types. The first category consists of margin ratios, which compare the percentage of profit to several other metrics. The second concept is known as return ratios, and it describes how the company's profits relate to other aspects of its balance sheet. Figure 11 displays the most essential profitability ratios that are accessible.

Figure 13, profitability ratios



Source: Ahern, 2020

In general, the examination of financial ratios is an essential component of any financial analysis, and this study will not be an exception in that respect, as will become clearer later on in the section of the next work that is devoted to the application of the material learned.

3.3 Technical Analysis

Will talk about and explain Apple Inc.'s more technical performance in the market.

3.3.1 NASDAQ Index

Apple is a firm based in the United States, and as such, its prosperity is influenced, to some extent, not only by the state of the economy in the United States, but also by the state of the economy across the world. It is possible to claim that whenever the NASDAQ Index, which is the index composed of all stocks listed on the same stock market as Apple, goes down by a significant percentage, it necessarily leads to the fact that Apple is quite likely to lose their market capitalization as the price per share is expected to go down. This is a consequence of the fact that it is quite likely that Apple will lose their market capitalization because the price per share is expected to go down. Naturally, insignificant shifts in the index are not sufficient evidence to conclude that large corporations such as Apple would enter a period of economic contraction. However, the development of the following index is an essential tool that might help investors to understand the situation in the context of the American economy and decide for himself if it is a bull market (a very appealing situation) or a bear market. This tool was developed to help investors understand the situation in the context of the American economy (situation not appealing for investment).

Figure 14, NASDAQ stock exchange market

Source: Forex Academy, 2021

3.3.2 Price/Earnings Ratio

Technical analysis is yet another significant instrument that will be of use to the author in evaluating the potential returns of investing in Apple. The term "technical analysis" refers to the process of doing a detailed examination of the current stock price in order to make further projections and assessments about the investment. This kind of study, in contrast to the financial analysis, is mainly concerned with the price of the company's shares. The stock price is something that is something that is more often related to the external factors, because the stock price is quite likely to be promptly affected by any external shock or event that is related to the company. This is because the stock price is something that is something that is more often related to the external factors.

There are numerous tools that are associated with technical analysis, but the author would like to begin with the P/E ratio since it is considered to be one of the best instruments that directly represent the investing perspective. There are many tools that are associated with technical analysis. The price of a share of stock is divided by the earnings per share to arrive at the P/E ratio, also known as the price-earnings ratio. The following ratio illustrates the precise amount that an investor must spend per share in order to get one dollar's worth of profits (Gottwald, 2012). There is no one correct response to the question of the ideal values for this ratio since determining such values relies, first and foremost, on the sector in which a particular business works. When calculating the value and drawing conclusions based on it, it is also essential to understand the context and compare the calculated value with the values for other companies operating in the same segment. This is because some business domains have a higher average price-to-earnings ratio than others, and some business domains also have a higher price-to-earnings ratio than others (Shen, 2000).

Figure 15, Price-to-earnings ratio

$$PE\ ratio = \frac{Stock\ Price}{Earnings\ per\ Share} \tag{4}$$

Source: Gottwald, 20212

3.3.3 Price/Book Ratio

The price-to-book ratio is yet another key ratio that is typically taken into consideration when determining whether or not a particular firm is one in which it is worthwhile to spend money. This ratio provides a clearer picture of whether or not the stock of the firm is now cheap (when the value is less than one) or overpriced (when the value is more than one) (Fairfield, 1994). Undervalued stocks are preferable over overvalued stocks because they provide a good deal to investors who may grasp the opportunity to invest in stocks that are being less appreciated by the general public. Overvalued stocks, on the other hand, do not offer investors a good deal.

This ratio is related to the book value of the company, which is why it is a good indicator that suggests whether the company is overestimated or underestimated based on the current financial position of the entity. Net assets are the value of the company's assets that are not included in its book value. However, there is no guarantee that an extraordinarily high P/B figure would result in unfavourable outcomes for investors.

A high P/B value, on the other hand, is an indication that a company is capable of trading at a value that is many times higher than its book value; the situation with a high P/B value is traditionally encountered in companies that specialize primarily in the production of modern commodities and electronics.

Figure 16, P/B ratio formula

$$\boldsymbol{P/B\ ratio} = \frac{\boldsymbol{Stock\ Price}}{\boldsymbol{Book\ Value\ per\ Share}} \qquad \textbf{(5)}$$

Source: Fairfield, 1994

3.3.4 Volatility

When compared to the previous two indicators, volatility is an indicator that does not shed light on the affordability and value of potential investments; rather, volatility measures the range in which the price of stock may increase or decrease.

This is in contrast to the previous two indicators, which did shed light on these aspects of potential investments. In other words, volatility is a metric that directly represents the stability of a particular company, and it is a measure that is used to evaluate stocks. In accordance with the line of reasoning, the risk associated with the financial asset increases while its volatility is high, and vice versa. The standard deviation, the formula for which may be seen in the figure below, is the most accurate indicator of volatility.

Figure 17, standard deviation formula

$$\partial = \sqrt{\frac{\sum_{i=1}^{n}(X-Mean)^2}{n-1}} \quad (5)$$

Source : Baillie, 1990

The calculation of the standard deviation is comprised of two primary steps: finding the square root of the differences between the observed price and the mean price for the selected time interval, and then dividing that result by the total number of observations minus one. These steps are repeated until the standard deviation has been determined (Baillie, 1990).

When calculating the standard deviation, a period of one year is typically used as the timeframe. When it comes to the values of the standard deviation, high volatility typically indicates higher risk, but at the same time, investments with such high volatility can provide the investor with a higher return. It is impossible to declare with absolute certainty whether a certain level of volatility is undesirable or desirable; rather, this judgment must be based on the risk tolerance of the investor as well as the goals he has set for his investment strategy.

Those investors who are focused on the short term and want to swiftly enhance their wealth are more likely to engage in riskier ventures than those investors who are focused on the long-term investment. When the standard deviation is less than 10% of the range, it is seen as being low; on the other hand, a value of the standard deviation that is larger than 10% of the range is regarded as having a high level of dispersion.

3.3.5 Dividend Discount Model

The dividend discount model may be used to determine how much the actual value of the company is on a per-share basis. To put it another way, the price of stock that is often computed has a tendency to deviate from the real price per share that the firm would have to provide for its shares. The value that is computed in the dividend discount value is known as the intrinsic stock value. This value takes into consideration the assets, profits, and dividend distributions of the firm, all of which might vary from one business to the next. The intrinsic value of a particular stock is the primary factor that determines whether or not the stock price is considered to be overpriced or undervalued. This fact cannot be denied (Gottwald, 2012).

It is absolutely necessary to have information on the typical annual growth rate of dividends at hand in order to do the calculation that determines the intrinsic value of a company. Because companies traditionally have a fixed dividend yield per year, the annual dividend pay-out is contingent on two factors: the price of the stock and the dividend yield that has been established by the company. Dividends are sure to increase in proportion to the price of the stock as the price of the stock continues to rise. Historically speaking, dividends have a tendency to increase as a company's size and level of performance increases over time (Redding, 1997).

The weighted average cost of capital, also known as WACC, is an additional important factor that is considered when determining the intrinsic value of a stock. This factor represents a company's average after-tax cost of capital from all sources, including stocks, and it is taken into account in the calculation of the stock's intrinsic value (Gottwald, 2012). After the intrinsic value has been calculated, it is customarily compared to the current price. If the intrinsic value is lower than the current price, this is a sign that the current stock price is exaggerated, which is unfavourable for a possible investment in the company.

Figure 18, Dividend Discount Model formula

$$Stock\ Price = \frac{D}{r-g} \qquad (6)$$

Source: Gottwald, 2012

As it can be seen, the main part of the formula has three components – the expected next year's dividend, the average growth rate of dividends and r, which is the average weighted cost of the company's capital. WACC's formula is presented in the following figure.

Figure 19, WACC formula

$$WACC = \left(\frac{E}{V} * Re\right) + \left(\left(\frac{D}{V}\right) * Rd\right) * (1 - T)) \qquad (7)$$

Source: Farber, 2006

4 Practical Part

4.1 Financial Analysis

In this chapter, the author will discuss Apple Inc.'s financial statement using actual figures from sources.

4.1.1 Horizontal Analysis

Will conduct a horizontal analysis of historical financial data covering the reporting years FY 2016 through FY 2021. The author applies this procedure for a base year and a comparison year to determine a company's growth.

4.1.1.1 Balance Sheet

In order to perform the horizontal and vertical analysis of financial statements, it is essential to set the time period for the analysis. The author selects the period from 2016 to 2021 covering three consecutive fiscal years. First, the author starts from the balance sheet and the horizontal analysis of the financial statement. The assets are available on Table 1 below. All figures represent. Millions of US dollars.

Table 1, horizontal analysis of assets

Amount in Million (USD)

Element/Year	2017	2018	2019	2020	2021
Cash/Short-term investments	74,181	66,301	100,580	90,979	62,639
Receivables	35,673	48,995	45,804	37,445	51,506
Inventories	4,855	3,956	4,106	4,061	6,580
Other current	13,936	12,087	12,329	11,228	14,111
Total current assets	***128,645***	***131,339***	***162,819***	***143,713***	***134,836***
Property, plant and equipment GROSS	75,076	90,403	95,957	112,096	119,810
Accumulated depreciation	41,293	49,099	58,579	66,760	70,283
Total investments	194,714	170,799	106,698	102,624	127,877
Long-term note receivable	-	-	-	-	-
Intangible Assets	-	-	-	-	-
Other non-current	10,161	22,293	31,621	32,215	38,762
Total non-current assets	***238,658***	***234,396***	***175,697***	***180,175***	***216,166***
Total Assets	***375,319***	***365,725***	***338,516***	***323,888***	***351,002***

Year-on-Year Change

Element/Year	2018	2019	2020	2021
Cash/Short-term investments	-11%	52%	-10%	-31%
Receivables	37%	-7%	-18%	38%
Inventories	-19%	4%	-1%	62%
Other current	-13%	2%	-9%	26%
Total current assets	**2%**	**24%**	**-12%**	**-6%**
Property, plant and equipment GROSS	20%	6%	17%	7%
Accumulated depreciation	19%	19%	14%	5%
Total investments	-12%	-38%	-4%	25%
Other non-current	119%	42%	2%	20%
Total non-current assets	**-2%**	**-25%**	**3%**	**20%**
Total Assets	**-3%**	**-7%**	**-4%**	**8%**

Source: own processing based on financial statements

The horizontal examination makes it clear that one cannot say that Apple's condition throughout the specified time period can be described as being without any clouds. From 2017 through 2021, there was a consistent decline in the amount of cash (the most liquid asset) held by the corporation. It's likely that the epidemic and the need to meet financial commitments as rapidly as possible were to blame for this. Then, in 2020, there was a slight decrease in receivable, which is a good thing; however, in 2021, the number of receivables increased by 38%, which is also a consequence of the pandemic – some businesses were simply unable to comply with their obligations in time. This is an unsurprising result of the pandemic. The number of inventories climbed substantially by 62%, which may be a signal that between 2020 and 2021, Apple was working on the manufacturing of a new gadget. As it turns out, in 2022, Apple did indeed introduce their new MacBook's that were based on their own CPUs – M1. The total quantity of the company's current assets was expected to see a slow but steady decline between 2019 and 2021, which would have an immediate impact on the liquidity of the business. However, it is wise to say that when it comes to current assets, the company slightly increased the value of current assets at the end of the selected period compared to the first year selected for the analysis – 2017 (128,645 compared to 134,836)

At the same time, it is not hard to see that the total value of the company's non-current assets was progressively growing throughout the course of the time period being discussed here. However, while considering the property, plant, and equipment factor, it is crucial not to be misled by the one just below it, which is known as cumulative depreciation. There is no denying that accumulated depreciation was going up, but the pace at which the gross value of equipment, plant, and property was going up was somewhat larger than the growth rate of the depreciation (apart from the year 2019 when the accumulated depreciation grew at the rate 13% percent higher than the plant), which is a positive development. Overall, the issue with the non-current assets seems to be pretty straightforward, since their numbers were gradually growing during the period of time in question. Overall, the value of the company's long-term assets has grown, but at the same time, part of the company's liquidity has been reduced. At this point, it is vital to have a look at the source of funding the company's assets, which may be broken down into two categories: liabilities and equity. Yet, the company's total assets decreased over 5 years – from 375,319 in 2017 to 351,002 in 2021.

Table 2, Horizontal Analysis of Liabilities

Amount in Million (USD)

Element/Year	2017	2018	2019	2020	2021
Short-term debt	18,473	20,748	16,240	15,229	17,141
Payables	49,049	55,888	46,236	42,296	54,763
Other current liabilities	33,292	40,230	43,242	47,867	53,577
Total current liabilities	***100,814***	***116,866***	***105,718***	***105,392***	***125,481***
Long-term debt	97,207	93,735	91,807	107,049	119,381
Provisions for Risks and Charges	-	33,589	29,545	28,170	24,689
Deferred taxes	39,911	11,520	16,919	-	-
Other liabilities	3,340	2,868	4,039	17,938	18,361
Total non-current liabilities	***140,458***	***141,712***	***142,310***	***153,157***	***162,431***
Total liabilities	***241,272***	***258,578***	***248,028***	***258,549***	***287,912***

Year-on-Year Change

Element/Year	2018	2019	2020	2021
Short-term debt	12%	-22%	-6%	13%
Payables	14%	-17%	-9%	29%
Other current liabilities	21%	7%	11%	12%
Total current liabilities	**16%**	**-10%**	**0%**	**19%**
Long-term debt	-4%	-2%	17%	12%
Provisions for Risks and Charges	-	-12%	-5%	-12%
Other liabilities	-14%	41%	344%	2%
Total non-current liabilities	**1%**	**0%**	**8%**	**6%**
Total liabilities	**7%**	**-4%**	**4%**	**11%**

Source: own processing based on financial statements

When it comes to the business's obligations, it is quite important to recognize the pattern of the changes that were taking place with them. This is because the firm will either be concentrating on equity financing or debt financing. The growth in the value of the company's current or short-term obligations from 2020 to 2021 is equivalent to 19%, which may become apparent after taking a look at the table that is located above. Clearly, this may become apparent after taking a look at the table. The growth rate of the firm's long-term obligations was slower than the growth rate of its current liabilities, despite the fact that the corporation was increasing the amount of money it borrowed. Therefore, at this point, it is feasible to argue that the firm was actively borrowing during the time period, and it may be a logical result of the epidemic that the company faced in 2020-2021. Therefore, it is conceivable to claim that the company was actively borrowing over the time period. The corporation favored short-term borrowing over long-term borrowing wherever possible. In addition to that, it is wise saying that the amount of liabilities increases from 2017 to 2021 – from 241,272 to 287,912. This suggests that the company is practicing debt financing.

Table 3, Horizontal Analysis of Equity

Amount in Million (USD)

Element/Year	2017	2018	2019	2020	2021
Short-term debt	98,330	70,400	45,898	14,966	5,562
Total equity	***134,047***	***107,147***	***90,488***	***65,339***	***63,090***

Year-on-Year Change

Element/Year	2018	2019	2020	2021
Retained earnings	-28%	-35%	-67%	-63%
Total shareholders' equity	-20%	-16%	-28%	-3%

Source: own processing

As a result of conducting a horizontal analysis of the company's equity and retained earnings, it has come to light that the amount of equity that the company possesses has been decreasing. This trend may be an indication that the company is concentrating on using their equity as a source of funding for the acquisition of assets. Overall, the situation with the company's balance sheet appears to be quite clear: the company was making strenuous efforts to increase the number of assets it required, and for that purpose, it was presumably relying on both approaches to financing – debt and equity ones. In other words, the company was trying to increase the number of assets it required by any means necessary. On the other hand, the answer to the question of whether the corporation was concentrating on debt or equity will undoubtedly be known when the equity ratio has been calculated.

4.1.1.2 Income Statement

After analyzing the financial position of the company, it is vital to take a look at the financial performance that can be observed in the income statement of the company.

Table 4, Horizontal analysis of Income Statement

Amount in Million (USD)

Element/Year	2017	2018	2019	2020	2021
Sales	228,572	265,809	259,968	274,150	365,817
COGS	141,702	163,826	162,264	170,143	212,981
Gross Income	**86,870**	**101,983**	**97,704**	**104,007**	**152,836**
Research and development	11,581	14,236	16,217	18,752	21,914
Other SG expense	15,261	16,705	18,245	19,916	21,973
EBIT	**60,028**	**71,042**	**63,242**	**65,339**	**108,949**
Unusual expense	-	-	-	465	-
Non-operating income	1,183	(585)	1,110	397	60
Non-operating interest income	5,201	5,686	4,961	3,763	2,843
Interest expense	2,323	3,240	3,576	2,873	2,645
Pretax income	**64,089**	**72,903**	**65,737**	**67,091**	**109,207**
Income Tax	15,738	13,372	10,481	9,680	14,527
Net income	**48,351**	**59,531**	**55,256**	**57,411**	**94,680**
Number of shares outstanding	21,007	20,000	18,471	17,352	16,701
Eearning per Share (EPS)	**2.30**	**2.98**	**2.99**	**3.31**	**5.67**

Year-on-Year Change

Element/Year	2018	2019	2020	2021
Sales	16%	-2%	5%	33%
COGS	16%	-1%	5%	25%
Gross Income	**17%**	**-4%**	**6%**	**47%**
SG and A expense	23%	14%	16%	17%
Other operating expenses	9%	9%	9%	10%
EBIT	**18%**	**-11%**	**3%**	**67%**
Non-operating income	-149%	-290%	-64%	-85%
Non-operating interest income	9%	-13%	-24%	-24%
Interest expense	39%	10%	-20%	-8%
Pretax income	**14%**	**-10%**	**2%**	**63%**
Income Tax	-15%	-22%	-8%	50%
Net income	**23%**	**-7%**	**4%**	**65%**
Eearning per Share (EPS)	**29%**	**1%**	**11%**	**71%**

Source: own processing based on the financial statements

The first item that comes to the author's attention is the fact that the vast majority of the organization's expenditures are connected to the costs of products sold rather than any other running expenses. This is the very first thing that comes to the author's attention. In addition to this, it is also possible to say that the company's net income was growing throughout the entire period, despite the pandemic, with a consistent but slow increase in 2020 by 2% and a drastic increase in 2021% by 65%, which is a fairly good result. This is because the company's net income increased by 2% in 2020 and by 65% in 2021%, respectively. In addition to this, the value of profits per share was also growing, and the number more than doubled between the years 2019 and 2021. Nevertheless, six dollars a share is not a very significant outcome. Since the net and gross margins were not covered in this section, the remaining analysis of the following financial statement will be carried out in the ratio analysis. All in all, earnings per share almost tripled from 2017 to 2021. Those were quite successful 5 financial years from the financial performance point of view.

4.1.1.3 Cash-Flow Statement

Table 5, Horizontal analysis of cash-flow

Amount in Million (USD)

Element/Year	2017	2018	2019	2020	2021
Net operating cash flow	63,598	77,434	69,391	80,674	104,038
Net investing cash flow	46,446	16,066	(45,896)	(4,289)	(14,545)
Net financing cash flow	17,347	(87,876)	(90,976)	(86,820)	(93,353)
Cash flow	**127,391**	**5,624**	**(67,481)**	**(10,435)**	**(3,860)**

Year-on-Year Change

Element/Year	2018	2019	2020	2021
Net operating cash flow	22%	-10%	16%	29%
Net investing cash flow	-65%	-386%	-91%	239%
Net financing cash flow	-607%	4%	-5%	8%
Cash flow	**-96%**	**-1300%**	**-85%**	**-63%**

Source: own processing based on financial statements

When examining the statement of cash flows for a firm, it is of the utmost significance for the business to demonstrate that it has a positive operational cash flow. This indicates that the firm is able to maintain itself as well as continue doing its day-to-day activities. Apple's business had a positive operational cash flow during the whole of the time period in question. Then, when it comes to the second component of the cash-flow statement, which is the investment section, it was negative for Apple during the whole of the time. This is a positive sign since it indicates that the firm is actively investing in new projects. The third component, the financial cash flow, had a negative value largely because dividends were sent to stakeholders and investors. This is the reason why the cash flow was negative. This in particular is a strong indicator for prospective investors since it sheds light on the attitude that Apple has towards the investors - the firm is paying the dividends and does not abstain from its commitments.

Interestingly, Apple did not have a negative investing cash flow in 2018, which is surprising for a bigtech company.

4.1.2 Ratio analysis

Now, it is essential to take a closer look at the financial statements and calculate the important ratios that will shed a light on the company's liquidity, solvency and profitability. The following table contains the final results of the calculations made by the author.

Table 6, Financial Ratios of Apple

Liquidity ratios	Years				
	2021	2020	2019	2018	2017
Current ratio	1.07	1.36	1.54	1.12	*1.28*
Quick ratio	1.02	1.33	1.50	1.09	*1.23*
Cash ratio	0.50	0.86	0.95	0.57	*0.74*
Profitability					
Gross profit margin	42%	38%	38%	38%	38%
Net profit margin	26%	21%	21%	22%	21%
Return on assets	27%	18%	16%	16%	13%
Return on investment	74%	56%	52%	35%	25%
Solvency					
Debt to assets	0.82	0.80	0.73	0.71	*0.64*
Debt to equity	4.56	3.96	2.74	2.41	*1.80*
Equity ratio	0.47	0.45	0.56	0.82	*1.04*

Source: own processing based on financial statements

Formula from Methodology 1 Current, 2 Quick & 3 Cash Ratio, 4 Gross Profit Margin, 5 Net Profit Margin, 6 Return on Assets, 7 Return on Investment used from Figure 11 to calculate the financial ratio of Apple

The author begins by discussing liquidity ratios and then moves on to discussing the current ratio. Because the firm's current ratio remained above one during the whole of the time span under consideration, the author is able to draw the conclusion that the company is in a position to meet its short-term financial commitments. The fast ratio has a number that is greater than one, which indicates the same thing as before: the organization is in a position to meet its short-term commitments and maintain its financial health. In the case of the final liquidity ratio – cash ratio, the company has a ratio that is less than 1, which indicates that once the short-term obligations (current liabilities) are paid using the cash or cash-equivalents, the company will be left with a very small amount of cash, which is not at all a good thing.

After that, the author continues the financial ratio research by looking at the company's profitability as well as its capacity to make profits for themselves. While the gross margin did gradually improve over the course of the time period in question, it is still considered to be relatively low given that it is just a few percentage points higher than 40%. However, this should not come as a surprise given that the costs of products sold account for the majority of the company's operating expenditures. This is an acceptable circumstance for a corporation that manufactures electrical products. However, the net margin is an indication that is considerably more significant than the gross margin, and a figure that is only a few percentage points more than 20% is considered to be a successful outcome. The fact that the firm has a net margin of about 20% indicates that it manages to turn a profit from one out of every five dollars that it brings in, which is a very favorable outcome. The return on assets is an indicator of the profit that a firm makes from its assets, and the number that was calculated, which was about 19% during the period of time that was examined, is not a favorable outcome. Last but not least, when it comes to the return on investment, the business has an impressively high ROI that is more than 50%, and it is steadily increasing, with about 80% in 2021. In spite of the fact that the pandemic has disguised a hard timeline, it is obvious that the situation with the company's profitability is gradually getting better as all indications tend to climb. The company's ROI increases over 5 years from approximately 20% to figures close to 80%, which is quite good.

Another interesting point is that the company was close to equity financing, but over time shifted more to debt financing, as equity ratio indicates it.

In conclusion, a debt to assets ratio that is less than one implies that the corporation has more assets than commitments; in this sense, Apple is performing very well. Yet, when it comes to a different indicator of solvency – debt to equity, the situation is not so optimistic as the company will initially have as 2.75 times more debt than equity in 2019, then as 4 times more debt than equity in 2020, and finally as 4.5 times more debt than equity in 2021. This indicates that the company is not in a very good financial position. It should come as no surprise that the epidemic has led to this result. The firm was forced to take out loans, which resulted in a huge rise in the ratio. Last but not least, the fact that the equity ratio was lower than one led the author to the conclusion that borrowing was the primary source of funding for the organization. To put it another way, Apple is relying more on debt funding than equity financing at the moment.

4.2 Technical Analysis

4.2.1 NASDAQ Index

In order to understand the current market situation as a whole, the author will create a trend that will reflect the current development of the NASDAQ index based on the time series covering the time period from 01.10.2019 until 01.09.2022.

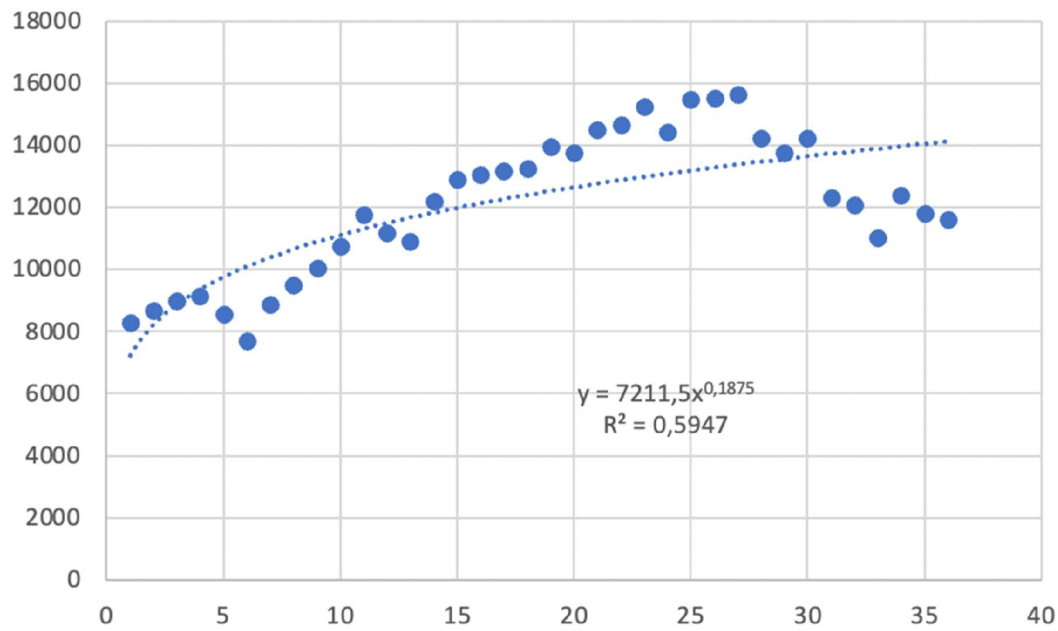
Table 7, dataset used for prognosis

Date	Time Vector	NASDAQ Close
10/1/2019	1	8292,360352
11/1/2019	2	8665,469727
12/1/2019	3	8972,599609
1/1/2020	4	9150,94043
2/1/2020	5	8567,370117
3/1/2020	6	7700,100098
4/1/2020	7	8889,549805
5/1/2020	8	9489,870117
6/1/2020	9	10058,76953
7/1/2020	10	10745,26953
8/1/2020	11	11775,45996
9/1/2020	12	11167,50977
10/1/2020	13	10911,58984
11/1/2020	14	12198,74023
12/1/2020	15	12888,28027
1/1/2021	16	13070,69043
2/1/2021	17	13192,34961
3/1/2021	18	13246,87012
4/1/2021	19	13962,67969
5/1/2021	20	13748,74023
6/1/2021	21	14503,9502
7/1/2021	22	14672,67969
8/1/2021	23	15259,24023
9/1/2021	24	14448,58008
10/1/2021	25	15498,38965
11/1/2021	26	15537,69043
01. 12.2021	27	15644,96973
1/1/2022	28	14239,87988
2/1/2022	29	13751,40039
3/1/2022	30	14220,51953
4/1/2022	31	12334,63965
5/1/2022	32	12081,38965
6/1/2022	33	11028,74023
7/1/2022	34	12390,69043
8/1/2022	35	11816,2002
9/1/2022	36	11630,0.86035

Source: own processing based on Yahoo Finance

Following the creation of the dataset, the author uses excel to create the chart and also to construct a trend reflecting the development of the NASDAQ index over the chosen time period.

Figure 20, scatterplot of NASDAQ index



Source: own processing based on Yahoo Finance

As it becomes quite obvious by looking at the scatterplot, the market now is definitely experiencing rather a complicated rime compared to the time period from 2019 until 2021. The ongoing recession of NASDAQ index and the unpredictability of the precise value of the index (R square is not so good, just 0.59), the author concludes that the market is going through the bear stage, and this is not the perfect timing for investing in general.

4.2.2 Price/Earnings Ratio

The author calculates the price per earnings ratio for Apple and the value of P/E ratio as of the 6th of September 2022 is equal to 154.5 / 5.67 = 27.24 USD. In order to understand if this value of P/E ratio is good or bad, it is essential to compare the following value of Apple with the P/E ratios of their competitors – other big companies operating in the same industry (electronics) – Huawei, Samsung, Lenovo, Dell, HP and Microsoft. The following table contains the information about P/E values for all companies mentioned earlier.

Table 8, P/E ratios of leading electronics companies as on 6 Sep. 2022

Company Name	Price of stock	Earnings per share	P/E Ratio
Apple	154.5	5.67	27.25
Huawei	not traded		
Dell	37.29	4.22	8.84
Microsoft	263.25	8.05	32.70
Samsung	41.42	5.55	7.46
Lenovo	15.69	5.33	2.94
HP	27.33	5.33	5.13

Source: own processing based on Yahoo Finance

Formula no. 7 Price Earnings Ratio used from Figure 15

P/E ratio of Apple is significantly high than the same ratio in the rest of companies, apart from Microsoft that has the value even higher than Apple. This, in other words, means that the stock price is relatively high and a bit overvalued relatively to the earnings per share that a potential investor can get from the company.

4.2.3 Price/Book Ratio

Then, another important ratio that will be calculated by the author is the price per book ratio. In order to calculate this ratio, it is essential first to calculate the book value of the company. When it comes to Apple in 2022, the book value is calculated as follows: (Total Assets – Total Liabilities).

351 002 – 287 912 = 63 090 USD.

Yet, the book value of the company needed for the calculation of Price/Book ratio is the book value per share, so the value found earlier has to be divided by the total number of shares outstanding. Hence, 63 090 / 16 701 = 3.7. Finally, this value is used for the final calculation:

154.5 / 3.7 = 41.75 USD

The value of price per book ratio is rather a high one but still, before making any conclusions, it is essential to compare the value to the same companies used for the P/E ratio
analysis in the previous chapter. The following table contains information about P/B ratio values for the companies.

Table 9, P/B value of leading electronics companies as on 6 Sep. 2022

Company Name	Price of stock	Book value	P/B Ratio
Apple	154.5	3.7	41.76
Huawei	not traded		
Dell	37.29	-2.09	(17.84)
Microsoft	263.25	21.33	12.34
Samsung	41.42	36.37	1.14
Lenovo	15.69	7.7	2.04
HP	27.33	-2.2	(12.42)

Source: own processing based on Yahoo Finance

Formula no. 8 Price Book Ratio used from Figure 16

P/B value in general indicates the relationship between the stock price and the book value. When it comes to Apple, Apple's stock is trading at 41 times more than its book value. Yet, this is also an indicator that Apple is significantly overvalued. At the same time, when comparing the P/B ratio of Apple to other companies, it is fair to say that Samsung and Lenovo are more attractive since they are quite close for being undervalued and a good investment. Yet, the situation with Dell and HP seems downright worrying as they both have a negative P/B ratio that is a consequence of their financial position – they have more liabilities than assets and it puts their solvency to the question.

4.2.4 Volatility

In order to calculate the stock's volatility, the author takes the same time period he used for the calculation of the prognosis for the NASDAQ index.

Table 10, adjusted dataset for volatility calculation

Date	Stock Price	Difference
10/1/2019	62.19	-62.8425
11/1/2019	66.81	-58.2225
12/1/2019	73.41	-51.6225
1/1/2020	77.38	-47.6525
2/1/2020	68.34	-56.6925
3/1/2020	63.57	-61.4625
4/1/2020	73.45	-51.5825
5/1/2020	79.49	-45.5425
6/1/2020	91.2	-33.8325
7/1/2020	106.26	-18.7725
8/1/2020	129.04	4.0075
9/1/2020	115.81	-9.2225
10/1/2020	108.86	-16.1725
11/1/2020	119.05	-5.9825
12/1/2020	132.69	7.6575
1/1/2021	131.96	6.9275
2/1/2021	121.26	-3.7725
3/1/2021	122.15	-2.8825
4/1/2021	131.56	6.5275
5/1/2021	124.61	-0.4225
6/1/2021	136.96	11.9275
7/1/2021	145.86	20.8275
8/1/2021	151.83	26.7975
9/1/2021	141.5	16.4675
10/1/2021	149.8	24.7675
11/1/2021	165.3	40.2675
12/1/2021	177.57	52.5375
1/1/2022	174.78	49.7475
2/1/2022	165.12	40.0875
3/1/2022	174.61	49.5775
4/1/2022	157.65	32.6175
5/1/2022	148.84	23.8075
6/1/2022	136.72	11.6875
7/1/2022	162.51	37.4775
8/1/2022	157.22	32.1875
9/1/2022	155.81	30.7775

Mean
125.0325

Standard Deviation
35.58651899
28%

Source: own processing based on Yahoo Finance

Formula no. 9 Standard Deviation used from Figure 17

The author, upon calculating the most frequent indicator of the standard deviation, obtains the value of 35.088 or 28% of the mean. This percentage leads to the conclusion that Apple stocks are not extremely volatile, but there is definitely some volatility, and the stocks are not considered entirely to be safe. Yet, this is a good indicator for investors wanting to gain quickly. As it was mentioned earlier, higher risk also means higher returns, so in that sense, Apple is a really good investment, given its profile and volatility.

4.2.5 Dividend Discount Model

Before proceeding to the fundamental calculation of the dividend discount model, it is first essential to calculate WACC of Apple. The following table contains the author's calculations for WACC.

Table 11, WACC calculation

Amount in Million (USD)

Cost of Debt	
Interest expense	2,645
Short-term debt	17,141
Long-term debt	119,381
Cost of debt	**1.94%**
Income tax expense	14,527
Income before tax	109,207
Effective tax	**13.30%**
Cost of debt*(1-T)	**1.68%**

Cost of Equity	
Risk-free rate	3.34%
Beta	1.23
Market return	8.51%
Cost of Equity	**9.70%**

Weight of Debt and Equity			
Total Debt	136,522	**4.49%**	**Weights**
Market Cap	2,901,000	**95.51%**	
Total	**3,037,522**		

WACC	**9.34%**

Source: own processing based on Yahoo Finance

Formula no. 11 Dividend Discount Model used from Figure 18

The company's WACC can be taken into consideration for the company's management, since this percentage is used for discounting the cash flows to the present value.

The main basis for the calculation were the financial statements of the company. As for individual values of Market cap and beta, these values were taken from Yahoo Finance. Yet, the risk-free rate was taken based on the current US 10-year treasury bond yield. Thus, the author concludes that Apple's WACC is equal to 9.61%. Now, the author can proceed to the calculation of the intrinsic value of Apple stock.

Table 12, dividend discount model calculation

Year	2017	2018	2019	2020	2021
Dividend Payout	0.1575	0.1825	0.1925	0.205	0.22
Yearly Dividends	0.63	0.73	0.77	0.82	0.88
Growth Rate	**-**	**15.87%**	**5.48%**	**6.49%**	**7.32%**

WACC	9.34%
Growth Rate	8.79%
Intrinsic value	**174.73**
Current price (Dt. 15 Nov. 2022)	153.16
Difference	**12%**

Source: own processing based on Yahoo Finance

Formula no. 11 Dividend Discount Model used from Figure 18

The information about dividend payout was taken from Apple's financial statements. Following the given information by the company, it was possible to derive the average dividend growth rate of 8.79%. Following the calculation, the author found the intrinsic value of Apple stock and it is equal to 174.73, which is 12% higher than the current market price. Hence, the author concludes that the price is underpriced.

5 Results and Discussion

5.1 Financial Situation

The author has to draw conclusions from his research before he can provide a definitive response to the topic of whether or not it is a good idea to put money into Apple. Even though Apple was hit hard by the recent pandemic, the firm was nevertheless able to maintain a positive operational cash flow. This is something that can be inferred from the company's current financial state, which allows one to argue that the pandemic did, in fact, have an effect on Apple. In addition to this, the firm did not see a decline in the amount of net income that it generated, nor did it incur a net loss as a result of its operations. It's interesting to note that the corporation actually began making more money in 2020 than it did in 2019. It is an evident result of being confined to one's house for the better part of a year, as some writers have said it is. Due to the fact that the epidemic had less of an impact on their industry and there were less limitations placed on their products, electronic firms did not see a significant drop in their profits (Tashanova, 2020). In light of this, Apple has shown that they are a very safe investment, even in the face of the epidemic.

In light of the current price of Apple stock, the number behind profits per share seems to be fairly sufficient and reasonably practical for investing purposes.

Apple actively began borrowing money in order to increase their assets and ensure that the growth rate of accumulated depreciation did not outpace the growth rate of their long-term tangible assets. This was done so that Apple would not lose its profit and be able to continue operating at the same rate as it had before the pandemic. Despite the fact that some of the company's cash was utilized to satisfy liabilities, the fact that both the Quick and Current ratios had values that were more than one leads one to the conclusion that Apple had sufficient liquidity to fulfil their obligations. However, as it was discovered after examining the Cash ratio, the value of which is less than 1 for Apple, once the company pays off their obligations with cash or cash equivalents, the amount of cash that will be left will be insufficient for further complying with them. This conclusion was reached as a result of the fact that the

Cash ratio value is less than 1. The corporation favoured taking on debt with shorter terms rather than longer ones.

When it comes to the profitability of the business, Apple had a net margin of approximately 20%, and when compared to the net margins of other companies operating in the same sector, such as Dell, this margin is rather impressive, considering the fact that the company transforms every 5th dollar generated into net income (Heracleous, 2016). Nevertheless, the return on assets is relatively meagre, which is not at all a positive development in any way.

In lieu of concentrating on equity financing, the company opted to pursue debt financing; however, in spite of the increase in the overall figure of total debt, the company was still able to remain solvent, as was revealed after looking at the company's figure for solvency ratios. The company's solvency ratios figure can be found here. The author arrives to the same verdict as the other author, who came to the conclusion that despite the rise in the short-term debt, there was virtually no doubt as to whether or not Apple would continue to be financially viable (Zhang, 2019).

When taken as a whole, Apple's current financial status presents a picture that is, from an investing perspective, rather favourable.

5.2 Perspectivity of Investment

After that, it is really necessary to centre one's attention on the findings of the technical analysis. The author draws the conclusion that the market is presently in a negative condition, and it is quite unpredictable, based on the prediction that he developed for the NASDAQ index. This conclusion is based on the fact that the market is currently in a state in which the situation is rather volatile. As a result, this is not the best moment to make any kind of investment, and it is certainly not the best time to invest in something as highly volatile and reliant on external variables as stocks. His conclusions are supported by the analysis that was published in the Wall Street Journal. In that article, Karen Langley draws reader attention to the fact that the NASDAQ has been in a bear market for 108 days as of the 10th of August

(Langley, 2022). Investors who are risk averse, on the other hand, are in for a rough ride given the current circumstances. However, as was emphasized a few times throughout the author's narrative, bigger risk implies better return; thus, it is mostly dependent on the strategy of the investor and their overall attitude toward risk.

In terms of the volatility of Apple stock, the author came up with a figure of 35.088 USD, which corresponds to 28% of variance in comparison to the mean. Although this is a respectable score for volatility, the stocks are not fully thought of as being risk-free bets owing to the fact that their volatility is just slightly over average. However, a significant portion of this volatility may be attributed to the increase that occurred in 2017-2020; hence, the optimistic tendency rather than the pessimistic trend is responsible for explaining the volatility. A team of analysts got to the same understanding as the author after achieving the same outcome and arriving at the same conclusion (Lim, 2022). According to the author's findings from the examination of stock volatility, Apple shares do not have a particularly high degree of volatility.

The author was able to collect data for P/E and P/B ratios, which assisted him in reaching the conclusion that Apple stock is overpriced in comparison to the earnings that can be derived from a single share of stock. Another significant observation made by the author led to the arrival at the conclusion that Apple's stock price is presently trading at a level that is 41 times higher than its book value. While this is a positive sign for the firm, it is a less than ideal situation for investors. However, when the results are compared with those of other firms operating in the same market area, it is clear that Apple's condition is not worse than that of the other companies, and in fact, when compared to some of the other companies, Apple is doing even better than they are. Despite this, the author arrives to the same conclusion as a number of other writers, namely that the price of Apple shares is much higher than what they ought to be (Li, 2021).

In conclusion, the author calculates that Apple has an intrinsic value of 174.73 US dollars, which is 12% higher than the actual value of the company. Because of this, it provides additional support for the claim that the stocks of the company are relatively under-priced. Apple's intrinsic value is 12% higher than the actual value of the company.

6 Conclusion

The conclusion that the author draws from all of this is that Apple has established itself as a very prominent and successful company from a financial standpoint. In other words, the financial status of the firm, as well as its solvency, profitability, and liquidity, are not subject to any kind of scrutiny. In addition to this, the firm's response throughout the epidemic, both strategically and operationally, earned the corporation even more praise and goodwill in the marketplace. When seen from this angle, Apple is an organization that deserves serious consideration as a possible investment. Having said that, there is another side to this story that implies the complete opposite.

Apple is a fantastic technological business that is responsible for the creation of some of the very finest items available anywhere in the globe. They are able to develop goods that are not just attractive but also user-friendly and intuitive. Customers and industry experts alike have nothing but praise for the company's offerings. It is not difficult to see why their items are enjoyed by such a large number of customers and why their business is so successful. However, purchasing Apple stock is not as simple as it would first seem. Ones should be informed of the potential hazards that are associated with investing in Apple before one makes any choices on his or her financial future.

Investing in Apple has some risks, one of which is that the value of the stock may see significant shifts over the course of time. In the event that the stock price falls, it is possible that one may be unable to sell his or her shares for a profit. On the other side, if the price of the stock continues to rise, it will likely to be able to sell shares at a profit if it is decided to do so. Investing in Apple stock comes with a number of risks, one of which is the possibility that the market value of the firm could decrease in the years to come. If the firm is unable to successfully create new items or if they see a reduction in sales of its present products, then the market value of the company will decrease.

This might result in a drop in the share price of the firm, which could, in turn, cause to lose part of the money invested in the company. Before one decides to put any of his or her money into Apple, it is needed to be aware of these dangers since they are among the most significant ones connected to investing in the corporation. It should keep in mind that purchasing Apple stock is not a fool proof strategy, and there is always the potential that oneself might end up losing part or all of the money invested in the company.

In contrast to the scenario inside the firm, market trends do not seem to be positive for any investments since the market is now in a bear market. Furthermore, the timing of when the market will turn the tide is still too unpredictable to make any assumptions about at this point. In addition to this, the fact that economic specialists have already partly established that the United States is now experiencing a recession does not add much optimism to the present climate for investment.

After that, it is really essential to focus one's attention on the conclusions reached by the technical analysis. The author arrives at the conclusion that the market is currently in a negative condition, and it is quite unpredictable, based on the prediction that he developed for the NASDAQ index. His reasoning behind this conclusion is that the market is quite unpredictable, and it is currently in a negative condition. This judgment is supported by the observation that the market is now in a position in which the scenario is one that is characterized by a high degree of volatility. As a consequence of this, the current time is not the ideal time to make any type of investment, and it is most definitely not the best time to invest in something that is as highly volatile and dependent on external factors as stocks.

The findings of the investigation that was presented in the Wall Street Journal lend credence to the conclusions he drew from it. On the other hand, investors who are unwilling to take risks are going to have a difficult time given the present environment. However, as was stressed many times throughout the author's tale, more risk suggests a higher return. Because of this, it is mostly reliant on the strategy of the investor as well as their general attitude toward risk.

The author came up with a value of 35.088 USD to represent the volatility of Apple stock, which equates to 28% of variation in relation to the mean. In other words, this figure represents the standard deviation. Although this is a decent grade for volatility, the stocks are not considered to be completely risk-free investments due to the fact that their volatility is just slightly over average. This is because their volatility is only little above average. Therefore, the optimistic tendency rather than the pessimistic trend is accountable for explaining the volatility, since a large percentage of this volatility may be linked to the growth that happened in 2017-2020. After reaching the same result and coming to the same judgment as the author, a group of analysts eventually arrived at the same understanding (Lim, 2022). According to the results of the author's investigation on the degree to which stocks fluctuate in price, Apple shares do not have an unusually high level of volatility.

In addition to the facts that were mentioned above, the other arrives to the conclusion that the price of Apple's shares is excessively high. If you take into account the fact that Apple stock has a volatility of approximately 30%, it is clear that now is not the greatest moment to make an investment in Apple shares.

When it comes to answering the ultimate question of whether it is worthwhile to invest in Apple in 2022 or not, the author suggests that investors who are willing to embrace relatively high risk can think about investing in Apple now. This is the case when answering the question of whether it is worthwhile to invest in Apple in 2022 or not. Those investors who like to play it safe, on the other hand, would be wise to hold off on putting their money into Apple until the overall situation on the market has stabilized.

When compared to the potential profits that may be obtained from a single share of stock, the price of Apple stock is too high. Another key observation made by the author led to the arriving at the conclusion that the current price of Apple's stock is trading at a level that is 41 times greater than its book value. This conclusion was reached as a direct result of the author's research into the stock market. Although this is a good indicator for the company, investors are in a scenario that is not optimal for them at the moment. However, when the results are compared with those of other firms operating in the same market area, it is clear that Apple's condition is not worse than that of the other companies, and in fact, when compared to some of the other companies, Apple is doing even better than they are. It is clear that Apple's situation is not worse than that of the other companies because.

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