Czech University of Life Sciences Prague

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Bachelor Thesis

Fundamental analysis of Meta Platforms Inc.

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BACHELOR THESIS ASSIGNMENT

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Thesis title

Fundamental analysis of *Meta Platforms Inc.*

Objectives of thesis

This thesis aims to determine the intrinsic value of Meta Platforms Inc. shares and, based on the results of fundamental analysis, provide investment recommendations.

Methodology

The thesis will be divided into 3 parts, the first part will provide a review of the company and tools of fundamental analysis. The second part will consist of finding the intrinsic value of the company and the last part will compare the results of fundamental analysis outcomes and recommendations for short-term and long-term investment opportunities.

The proposed extent of the thesis

40-60

Keywords

Fundamental Analysis, Meta Platforms Inc, Intrinsic value, Stock, Investment

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Declaration

      I declare that I have worked on my bachelor thesis titled "Fundamental Analysis of Meta Platforms Inc." by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

In Prague on 07.03.2024   _____

Fundamental analysis of Meta Platforms Inc.

Abstract

This thesis explores the potential of investing in Meta Platforms Inc., a leading social media giant traded on the NASDAQ stock exchange through the lens of fundamental analysis. The thesis is divided into three main chapters. The first chapter introduces the tools of fundamental analysis, in a top-down fashion, starting at the macroeconomic level, moving down to the industry, and ending with the examination of the company itself. The second chapter consists of models and calculations introduced in the literature review, these models and calculations help to determine the effects of the US economy on the stock market, to find Meta's position in the social media industry, and lastly to calculate the intrinsic value of Meta Platforms Inc.. The third and last part summarizes results from all three layers and provides an investment recommendation for short-term and long-term investments.

Keywords: Fundamental Analysis, Meta Platforms Inc., Intrinsic value, Stock, Investment

Fundamentální analýza společnosti Meta Platforms Inc.

Abstrakt

Tato práce zkoumá potenciál investice do společnosti Meta Platforms Inc., giganta v oblasti sociálních médií obchodovaného na burze NASDAQ, skrze fundamentální analýzu. Práce je rozdělena do tří hlavních kapitol. První kapitola představuje nástroje fundamentální analýzy, a to způsobem Top-down (Shora dolů), počínaje makroekonomickou úrovní, přecházejíc na úroveň odvětví a končíc zkoumáním samotného podniku. Druhá část se skládá z výpočtů představených v první kapitole, kdy začíná určením vlivu americké ekonomiky na akciový trh, pokračuje zjištěním pozice společnosti Meta v odvětví sociálních médií a končí výpočtem vnitřní hodnoty společnosti Meta Platforms Inc. pomocí vhodných metod a modelů. Třetí a poslední část shrnuje výsledky ze všech tří vrstev a poskytuje investiční doporučení pro krátkodobé a dlouhodobé investice.

Klíčová slova: Fundamentální analýza, Meta Platforms Inc., Vnitřní hodnota, Akcie, Investice

Table of content

1 Introduction

In the modern world, which offers a vast range of investment options and opportunities, investing in stocks on the stock market is one such option that is growing in popularity and becoming a useful tool for evaluating personal savings and accumulating wealth.

Stocks are shares of ownership in a company that can be bought and sold on a stock exchange. By investing in stocks, investors can benefit from the growth and profitability of the company, as well as receive dividends or capital gains. However, investing in stocks also involves risks, such as market volatility, negative impacts of the economy, or company-specific problems. Therefore, investors need to conduct proper research and analysis before buying or selling stocks to reduce the probability of financial losses and make informed investment decisions that align with their risk tolerance and financial goals.

One of the most popular methods of estimating the real value of stocks, or any security in general, is with the use of fundamental analysis, a technique that evaluates the true value of an asset by examining various economic and financial factors that could affect its value in the future. This technique is based on external events and influences, as well as financial statements and industry trends. The main objective of fundamental analysis is to calculate the intrinsic value of a security and compare it with its current market price to see if the stock is trading above or below its current value.

This thesis will introduce and show the tools and methods used by fundamentalists on a social media platform Meta Platforms Inc., a strong leader in the social networking industry.

2 Objectives and Methodology

This chapter contains the main objective of the thesis and the information about the methods used to achieve it.

2.1 Objectives

The objective of the thesis is to find an intrinsic value of Meta Platforms Inc. with the tools of fundamental analysis. Compare the result with the market price and provide an investment recommendation for both the short-term and long-term.

2.2 Methodology

To get a better understanding of how the objectives of the thesis were obtained, it is important to mention all methods and formulas used throughout the thesis.

This thesis was divided into 3 main parts. The first part consists of a literature review, introducing the reader to the topic of fundamental analysis and the tools used by investors to understand and evaluate the state of the global economy, the industry in which the firm operates, and the state of the business itself. After the introduction of all important tools and methods, the thesis then proceeds to the second part, calculations of each segment in a top-down fashion, starting at the global economy level, moving down to the analysis of the industry and at the end the business, with mostly quantitative data attained by document research.

In the global economy segment, the analysis focused on finding and addressing a relationship between the index S&P500 and the impacts of changes in gross domestic product, interest rates, inflation, and the change in the money supply on the stock market price. For the analysis including the change in interest rates, an effective federal funds rate was used instead, as it is an interest rate that banks charge each other to borrow reserves overnight. Inflation was substituted with the CPI index, as it is the main measurement for the overall inflation level and lastly, the money supply was depicted with the M2, a measurement of the nation's money supply. The results of Global analysis were then compared to the theoretical assumptions mentioned in the first chapter.

The methods used in the industry analysis focused on determining Meta's value by finding its position on the market with the market structure analysis and then comparing Meta's performance with the social media industry using the comparable company analysis, with the examination of profit indicators such as P/E, P/BV, and P/S ratio.

Lastly, in the business analysis, several models and formulas were used to find the intrinsic value of Meta Platforms Inc. To calculate the intrinsic value, the Required rate of return (RRR) was calculated using the capital asset pricing model (CAPM), and an additional 2,5% was added, to compensate for the volatility of the market and as a small premium, which is usually associated with the trading of high growth - high expectation companies. The next step consisted of the calculation of the Sustainable growth rate (SGR), using two different models. In the end, an analyst's forecast value for SGR had to be sourced out, as both models proved to be inconsistent. With the result of these inputs, several models were used to calculate the real value of Meta's stock, including models based on historical values of P/BV and P/S, a revised model first introduced by Benjamin Graham and a discounted cash flow model based on discounting future cash flows to a present value to estimate the intrinsic value of a business, this value was then divided by the number of shares outstanding, to discover the real stock value of Meta Platforms Inc.

Based on the results from the economy, industry, and business analysis, a recommendation was provided in the third and last part of the thesis, for both short-term and long-term investment opportunities, with reasoning based on the result of each segment of the analysis, and forecasts from the FED and several other US financial institutions.

2.2.1 List of formulas

Ratio of companies in the S&P 500 index

$$Company's\ share\ in\ S\&P500 = \frac{Company\ market\ Cap.}{Total\ of\ all\ market\ Cap.} \qquad (1)$$

This formula explains the ratio of companies included in the S&P500 index (SPGlobal, 2024).

Capital asset pricing model (CAPM)

$$ER_i = R_f + \beta_i(ER_m - R_f) \tag{2}$$

ER_i=   expected return on investment

R_f=   risk-free rate

B_i=   Beta of an investment

ER_m-R_f= market risk premium

The CAPM formula aims to determine whether a stock's valuation is adequate to its risk profile and the time value of money, giving investors insights into whether the stock is attractively priced or not (Veselá, 2019).

Return on equity (ROE)

$$ROE = \frac{Net\ Income}{average\ shareholder's\ equity} \tag{3}$$

Investors typically use return on equity (ROE) as an essential ratio for evaluating a company's profit from investor funds (Krantz, 2010).

Sustainable growth rate

$$g = \sqrt[t]{\frac{D_m}{D_s}} - 1 \tag{4}$$

g =   growth rate

t =   number of years between newer and older earnings

DM =   current profit (current period profit)

DS =   recent profit

A useful formula for calculating the growth rate based on historical values of 2 different earning periods, rooted by the number of years separating the two. To lower the deviation. To reduce sensitivity, the calculation of the profit growth rate assumes annual growth rates that are averaged using arithmetic, weighted arithmetic, or geometric mean (Veselá, 2019).

$$g = b \times ROE \tag{5}$$

g =   Growth rate

b =   Retention ratio or the ratio of retained earnings at the company level to total net earnings

ROE =   Return on equity

This model is based on a calculation using the company's financial ratios such as profit margin, return on equity, debt, return on assets, etc. The model is based on a fairly strict rule, namely that corporate financial ratios must remain constant over time (Krantz, 2010).

Earnings per Share (EPS)

$$EPS = \frac{Net\ Income}{Shares\ outstanding} \tag{6}$$

EPS is a key financial metric that measures a company's profitability on a per-share basis. It is also a frequent needy component of other, more complicated formulas (Krantz, 2010).

Price-to-Earnings Ratio (P/E)

$$Price/Earnings = \frac{Market\ Value\ per\ Share}{Earnings\ per\ Share} \tag{7}$$

The price-to-earnings (P/E) ratio compares a company's share price to its earnings per share (EPS) (Krantz, 2010).

Price-to-Earnings-to-Growth Ratio (PEG)

$$PEG = \frac{Price/EPS}{EPS_{growth}} \tag{8}$$

$$EPS_{growth} = Growth\ rate\ of\ earnings$$

The PEG ratio is considered to be an indicator of a stock's true value, a lower PEG may indicate that a stock is undervalued. Results may differ a lot depending on the growth rate (Veselá, 2019).

Price-to-Book Ratio (P/BV)

$$Price/Books = \frac{Market\ Price\ per\ Share}{Book\ Value\ per\ Share} \tag{9}$$

The price-to-book (P/B) ratio compares the market valuation of a company to its book value. Any investor can use the price-to-book ratio (P/B ratio) to compare a company's market capitalization to its book value and identify undervalued stocks (Veselá, 2019).

Historical model based on P/BV

$$\left(\frac{P}{BV}\right)_h = \frac{P_a}{BV_a} \tag{10}$$

         $P_a =$ *Average Price*

         $BV_a =$ *Average Book Value*

$$V_0 = \left(\frac{P}{BV}\right)_h \times BV_1 \tag{11}$$

         $BV_1 =$ *Expected future Book Value per Share*

Both formulas are used for the calculation of the intrinsic value based on historical values of Share price and Book Values

Formulas mentioned by (Veselá, 2019).

Price-to-Sales Ratio

$$Price/Sales = \frac{Market\ Value\ per\ Share}{Sales\ per\ Share} \tag{12}$$

The price-to-sales (P/S) ratio is a valuation tool that compares a company's stock price to its revenue. It represents the value that financial markets place on each dollar of a company's sales or revenues (Veselá, 2019).

Historical model based on P/S

$$\left(\frac{P}{S}\right)_h = \frac{P_a}{S_a} \tag{13}$$

         $P_a = Average\ Price$

         $S_a = Average\ Sales$

$$V_0 = \left(\frac{P}{S}\right)_h \times S_1 \qquad\qquad (14)$$

S_1 = Expected future Sales per Share

Both formulas are used for the calculation of the intrinsic value based on historical values of Stock price and Sales.

Formulas mentioned by (Veselá, 2019).

Benjamin Graham formula

$$V = EPS \times (8{,}5 + 2g) \qquad\qquad (15)$$

EPS =   Earnings per share

8,5 =   P/E of company with no growth

2g =   Projected growth rate × 2

The formula created by Benjamin Graham was used for estimating the value of growth stocks (Graham, 2003).

Revised formula

$$V^* = \frac{EPS*(7+g)*4{,}4}{Y} \qquad\qquad (16)$$

EPS =   Earnings per share

7 =   P/E of company with no growth

g =   Projected growth rate

Graham Formula revised by Jae Jun used for more accurate estimates of today's stocks (Jun, 2017).

Free-Cash Flow-to-Equity Model (FCFE)

$$FCFE = Net\ Income + D\&A - \Delta NWC - Capex + Net\ Debt \qquad\qquad (17)$$

D&A =   Depreciation and Amortization

ΔNWC = Change in Net Working Capital

Capex = Capital Expenses

FCFE is a useful tool in calculating the cash remaining that belongs to equity holders. It can be calculated from the balance sheet and income statement from 2 consecutive years.

Formula mentioned by (Veselá, 2019).

Discounted Cash Flow model (DCF)

$$DCF = \left(\frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3} + \cdots + \frac{CF_n}{(1+r)^n}\right) + \frac{TV}{(1+r)^n} \qquad (18)$$

CF =   *Cash flow*

r =   *Discount rate*

n =   *Number of periods*

TV =   *Terminal value*

Discounted cash flow analysis is used to assess the value of an investment based on its future cash flow. The terminal value represents the value of a business beyond the projection period. It is the present value of all subsequent cash flows (Fernando, 2023).

Intrinsic value based on the DCF model

$$V_0 = \frac{\sum PV \ of \ FFCF + Cash \ \& \ Cash \ Eq. - Total \ debt}{Shares \ outstanding} \qquad (19)$$

∑PV of FFCF =   *sum of discounted free future cash flows to a present value*

The formula used for finding intrinsic value by dividing the value of equity (nominator) by the number of shares outstanding (denominator) (Fernando, 2023).

3   Literature Review

Navigating the stock market can be a complex and sensitive task. This literature review will provide an insight into the methods and tools of fundamental analysis and a helpful guide to making smart decisions.

The literature review will contain important information about the fundamental analysis and its tools, that help to evaluate the state and performance of all of the three layers of the analysis, which means the analysis of the global sector, industry, and lastly the firm.

3.1   Importance of Fundamental Analysis

The fundamental analysis of a stock is a way of finding and predicting a stock's real or intrinsic value. It is also used for determining the overall health and performance of the company using macroeconomic and microeconomic indicators and the company's financials. Many successful investors believe that using fundamental analysis to find the intrinsic value of selected stock is crucial for making good decisions for mid to long-term investments (Lynch, et al., 2000).

It is a great and quite straight forward way of determining the real value of a company with relatively accurate forecasts for the future, so the investors know whether the stock is undervalued, and they should invest, or overvalued and they should remove it from their investment portfolio (Boulíková, 2014). Fundamental analysis can be done in many different ways, but there are two generally recognized types, that will be introduced in the following paragraphs.

3.1.1   Types of Fundamental Analysis

(Graham, 2003) divided fundamental analysis into two types, quantitative and qualitative analysis. The purpose of both types is to evaluate a company's performance and its position on the market by estimating the real value of the stock, but both streams use different methods of doing so.

Quantitative analysis or quantitative approach is a more statistical approach that works with numerical data and aims to indicate a measurable relationship for example

between the market price and earnings (P/E) or the market price and sales (P/S) and other numerical (statistical) information about a company's historical performance such as factors about its return on equity (ROE) and others (GRAHAM, et. al., 2009).

Qualitative analysis is the evaluation of non-financial factors like a company's competitive advantage, management quality, industry positioning, or brand reputation. It can also be called a "predictive approach" because it is supposed to be a predictive factor in determining the stock market value (Rejnuš, 2008).

Graham emphasized the importance of qualitative factors as an important part of the analysis because even though these factors do not apply the same for every stock as numbers do, they still have a very important role in the price of a stock or its popularity. Graham also pointed out the importance of identifying companies with long-term competitive advantages, also known as moats. These advantages may take the form of strong brands, patents, economies of scale, or proprietary technology that provide a company with a long-term competitive advantage. The same could be said about the brand reputation, where Graham recognized the importance of a strong brand and reputation in driving customer loyalty and long-term earnings. A corporation with a well-known and reputable brand may have an advantage over competitors and command market pricing power (Graham, 2003).

Qualitative analysis complements quantitative analysis by providing a deeper understanding of the qualitative factors that can influence a company's success and long-term value. It requires judgment, research, and industry knowledge to make informed assessments about these subjective aspects of an investment (Graham, 2003).

No matter how good the qualitative factors are, Buffett wrote that in his eyes, a company with just strong qualitative factors is never a good investment, because, without strong foundations, the company does not have anything to build on (Buffet, 2012).

3.1.2 Main Approaches

Regardless of the type used when conducting the analysis, investors must choose between two main approaches, those are the top-down approach and the bottom-up approach. Both approaches have the same goal of finding the true worth of the analyzed

company, but both achieve their goal using different and quite opposite methods of doing so (Baresa, et al., 2013).

The top-down approach focuses first on the macro environment - the overall economic state of a country, continent, or world, then on the state of the industry in which a firm operates, and finally on the firm within the industry and analyzing its performance and sustainability.

The bottom-up approach begins with various businesses of interest that are thoroughly analyzed. Following examination, the investor progresses through the industrial environment and finally analyzes the macro environment but only very broadly. This method places a greater emphasis on evaluating the individual company (Baresa, et al., 2013).

3.1.3 Top-down approach

One of the main reasons, why the top-down approach is generally more appreciated is the fact that it places the highest focus on the macro-economic factors because it is almost always the overall economic situation, that has the highest impact on the stock market prices (Graham, 2003).

There is no doubt the state of an analyzed company has an impact on its stock price, but the author believes that the global economic situation has a greater impact on the stock market and its prices than purely the situation of the company, and since the top-down approach is generally recognized as better and more accurate, the following paragraphs will be focused on the introduction of individual parts of the analysis, starting from top to bottom (Boulíková, 2014).

3.2 Global economic analysis

The primary goal of global fundamental analysis is to identify, investigate, and then evaluate the impact of the entire economy on the value of the analyzed stock or a stock market in general (Baresa, et al., 2013). A variety of global factors influence the development of stock markets, with the most significant ones being considered in the following few lines.

The most influential factors according to (Veselá, 2019) are:

- Real output of the economy,

- Interest rates,

- Inflation,

- Money supply.

When working with these factors, an investor must chose a comparative index to compare it with the performance of the macroeconomic sector, this thesis will work with The Standard and Poor's Index, better known as S&P 500, because it is The Index to choose when looking for a strong reflection of the US economy (Veselá, 2019).

S&P500

The index was launched in 1957 by Standard and Poor's credit ranking agency, which is where the name originally comes from, and thanks to its wide range of listed stocks, the S&P500 offers quite an accurate and diversified look at the actual state of the US economy.

It consists of the 500 biggest companies in the US stock market such as Apple Inc., Microsoft Corp, Amazon.com Inc., and Alphabet Inc. (better known as Google). All these companies are ranked by market capitalization (the number of total shares issued multiplied by the market price of one share) and the proportion of each company in the index can be calculated by formula 1 (SPGlobal, 2024).

3.2.1 Real output of the economy

The real output of the economy or gross domestic product (GDP) can be defined as the total value of all goods and services produced in a given period (usually one year), that is adjusted for inflation. When conducting the analysis, it is generally understood that working with the real output of the economy is better than working with the nominal one, because inflation has a big role in value investing, as it is the bar that investors try to beat to evaluate their assets and savings (Graham, 2003).

The relationship between the GDP and the stock market, in the long term, the long term relationship between the two will be always positive, but it can vary in the short to mid-term because the changes in the stock market are influenced mainly by the investors, that make decisions based on the expectations of the future, so in case the economic predictions,

indicators and models suggest a positive outcome for the economy, investors tend to buy more stocks, that then perform ahead of the real economy and vice versa, when investors expect bad times, they sell more to get ahead of the rest of the market and the stock value decreases. The average length it takes the economy to reflect the change in stock markets is three to nine months (Veselá, 2019).

3.2.2 Interest Rates

One of many operations of FED, that influences the economy is to buy and sell government securities, which influences the number of reserves in the banking system. Banks have an active market for these reserves, with billions of dollars traded every day. This market is known as the federal funds market, and the interest rate at which these funds are borrowed, and lent is known as the federal funds rate (New York FED, 2023).

Even though it is called federal, the federal funds market is not controlled by the government and does not involve trading government securities like treasury bonds or notes. It is a private market among banks where interest rates are determined by supply and demand. However, the Federal Reserve has a significant impact on this market because when the Fed buys securities, it increases the supply of reserves and lowers the interest rate on federal funds, and vice versa, when the Fed sells securities, it reduces the supply of reserves and causes the federal funds rate to increase as banks compete for the remaining reserves (Curry, 2023).

Interest rates have a significant impact on stock prices because interest rates discount the future cash flows from stocks. When interest rates rise, bond returns become more attractive, so investors tend to sell stocks until stock returns become attractive again compared to bond returns and vice versa. When interest rates fall, stock returns become more attractive than bonds with low yield rates (Siegel, 2014).

According to many economists, the most influential factor in the exchange rate is the change in short-term interest rates. This opinion is partially proved by Bernstein's study of the long-term relationship between stock prices and interest rates. Bernstein argues that there is a strong negative correlation between the two (-0,85), meaning that when interest rates increase, stock prices decrease, and vice versa. He attributes this to the fact that investors are

more likely to buy stocks when interest rates are low, as they can earn a higher return on their investment (Bernstein, 1979).

3.2.3 Inflation

Inflation is a measure of the decline in the purchasing power of money over time. Money can be used as a medium of exchange between individuals and entities. It also serves as a store of value and a unit of account that can measure the value of other goods. The ability of money to purchase goods and services and the ability to store value depreciates as price levels rise. Each unit of money becomes less valuable as prices rise regardless of the currency (Joubert, 2023).

Inflation can have different impacts on the stock market in the short term and long term. In the short run, there is a common inverse correlation between inflation and stock prices, as the inflation rate rises, stock prices fall, and vice versa. This can be caused by a variety of factors, including stock valuation techniques that use the inflation rate to increase the nominal required rate of return (discount rate) to value stock prices or simply by the decisions of investors to transfer their funds into bonds or other securities with higher yield (Veselá, 2019).

In the long run, businesses pass on increased input costs to consumers. Given sufficient time, this means that real incomes and profit rates can return to normal levels, making a diversified, unleveraged portfolio a possible hedge against inflation (Graham, et al., 2009).

3.2.4 Money Supply

Another very important indicator that determines stock prices is the money supply and its fluctuations. (Musílek, 1997) explained the reasoning behind the impacts of money supply on the stock market as a liquidity effect.

If the FED lets the money supply increase while the demand for money stays constant, the additional funds are then inter alia pumped by investors to financial markets, including the stock market. Since the supply of shares in secondary markets is almost fixed

in the short term, share prices will rise. The direct effect of money on stock prices is referred to as the liquidity effect (Musílek, 1997).

Explaining the effect of money supply on stock prices through the Monetary transmission mechanism is more complicated, but the results are the same. A rise in money supply first causes investors to buy more bonds, which leads to a rise in their prices. The rise in bond prices leads to a fall in yield rates on debt instruments, an increase in the attractiveness of investing in equity markets, and a rise in stock prices (Rejnuš, 2008).

Finally, the explanation of the effect of money supply on stock prices can be demonstrated by the indirect effect on the real output of the economy. An increase in the money supply can cause interest rates to fall. Lower interest rates lead to higher investment activity by firms and boost their profits. Higher corporate profits then have a positive effect on stock prices (Musílek, 1997).

In all cases, the result is identical. A rise in the money supply to a higher-than-normal level increases demand for equities, which causes stock prices to rise and vice versa. A change in the money supply to a lower-than-normal level to meet transaction needs causes a shortage of money. This is reflected in a fall in the prices of equity instruments.

The next chapter will introduce the second segment of the fundamental analysis, that is the analysis of industry.

3.3 Industry analysis

The main purpose of Industry analysis is to analyze the market or industry in which the company operates to understand its competitive dynamics and reactions to certain economic and sociological factors. It also helps investors to visualize companies' performance or position related to their competitors (Veselá, 2019).

When shifting from the Macroeconomic sector down to the industry one, there is an increase in qualitative factors that start to be relative and are useful for the investors to. As mentioned before, the qualitative factors are more subjective for each investor, and the outcomes can differ from analysis to analysis based on the opinions or nature of each investor (Lynch, et al., 2000).

It is advised for the investor to look mainly for industries that are growing at a faster rate than the overall economy, because these industries are more likely to have a profit for the investors and more growth potential, in addition, these industries often experience higher demand for their products and services, that could increase the production as well as the revenue and profits gained (Buffet, 1999).

Another factor to consider is the competitiveness of the industry. The more the industry is competitive, the higher the chance there is room for more companies to enter the market and take away the profits from our desired company (Graham, 2003).

Major quantitative factors used to determine the state, future, and profitability of the industry are market structure, comparable company analysis, industry life cycle, sensitivity to the economic cycle, and the role of regulatory bodies. Qualitative options for investors to use are SWOT analysis, PESTLE analysis, or Porter's Five Forces (Veselá, 2019).

3.3.1 Market Structure

In economics, market structures or market forms describe markets and their components, defining the ability and possibility of operating in or out of competition in a market. The study of market forms assesses the size and ability of a firm to hold market power and set the price of a homogeneous product. Sometimes the conditions for holding market power are limited and there are very few markets with full market power. Therefore, some structures can only serve as a reference point for assessing other markets in the real world (Krugman, et al., 2017).

(Sharma, 2024) Identifies market structure as a place of conflict for many economists, including Adam Smith and Karl Marx, who both have opposing views on how the market functions in the face of governmental control. In his writings on economics, Adam Smith emphasized the importance of laissez-faire principles outlining the operation of the market in the absence of dominant political mechanisms of control, whereas Karl Marx discussed the operation of the market in the presence of a controlled economy, sometimes referred to in the literature as a command economy.

(Øverby, et al., 2018) define 4 main types of market structures. These types will be briefly introduced in Table 1, and then more deeply explained in the following paragraphs.

Table 1 Types of Market structure

Type of Market structure	N. of businesses in the industry	Type of product/service	Barriers to entry
Monopoly	one	one product/service	very high to absolute
Oligopoly	a few	Identical/ very similar	high barriers
Monopolistic competition	many	differentiated, with substitutes	medium barriers
Perfect Competition	many	homogeneous	no barriers

Source: Own creation based on theory from (Øverby, et al., 2018)

Monopoly

In a monopoly market, there is only one or one major seller of the product or service, and buyers have no substitutes to choose from. According to classic microeconomic theory, the monopoly can then determine its pricing to maximize income.

This definition becomes a bit problematic in the digital economy because companies like Meta or Alphabet offer their services to customers for free, making almost no revenue from them. This fact challenges the first definition and proves it impossible to chart markets like these on supply-demand graphs (Øverby, et al., 2018).

Oligopoly

In an oligopoly market, there are just a few sellers offering the same product. A single competitor's action, for example, cutting the price or offering complementary goods, may affect the market composition, redistributing market shares.

Companies in an oligopoly market must pay close attention to their competition and respond quickly and accordingly to their actions, like changes in price or marketing, because actions taken by each company might have a direct effect on the prices, competitive strength, or just the customer behavior (Øverby, et al., 2018).

Monopolistic competition

In markets with monopolistic competition, buyers can choose from many sellers of the same or similar product or service, monopolistic competition is the most frequent type of market structure, because the barriers of entry are fairly low, but there are still some regulatory bodies, like government or an international agreement, and each company has a small share of influence on the product or price (Øverby, et al., 2018).

Perfect competition

Perfect competition is a theoretical model that represents markets with multiple sellers and buyers who have full knowledge about prices and customer preferences. In contrast to an oligopoly, the activities of a single competitor will not affect the composition of the market. Perfect competition is unfortunately only a theoretical construct and does not exist in any of the current markets (Øverby, et al., 2018).

3.3.2 Comparable company analysis

Comparable company analysis or profit analysis estimates the company's value to other similar-sized businesses in related industries. Professionals in finance and investment banking use comparable company analysis to guide their decisions regarding investments mergers and acquisitions (Girardin, 2024).

In comparable company analysis, the most used valuation ratios are the price-to-earnings ratio (P/E), price-to-book ratio (P/B), and price-to-sales ratio (P/S). If a company's valuation ratio exceeds the peer average, it is overvalued. If the valuation ratio is less than the peer average, the company is undervalued (Veselá, 2019).

3.4 Company analysis

In the third stage of stock analysis, analysts focus on understanding the underlying factors and characteristics of a specific company that affects its true worth, also known as intrinsic value. Using various analytical tools and techniques, they try to estimate this value numerically. This value is then compared to the market price, and based on this comparison, it is possible to decide whether the stock is underpriced, overpriced, or fairly priced (Veselá,

2019). Before the thesis moves to the introduction of methods and models used for the calculation of the intrinsic value, it is important to introduce the subject of the analysis, the technological giant Meta Platforms Inc.

3.4.1 Meta Platforms Inc.

The origin of Meta Platforms Inc., formerly known as Facebook Inc., dates to 2004 when it was created as a social platform connecting college students. Founded by Mark Zuckerberg, the company swiftly transcended its initial boundaries, evolving into a global social networking giant, gaining a million monthly active people at the end of 2005 and the first billion at the end of 2012. In 2021, Meta rebranded itself, signaling a broader vision beyond conventional social media (Meta, 2024).

As a leader in the social media networking industry, Meta held a very important role in shaping the industry into the form it has today. Meta introduced revolutionary features such as the News Feed and Messenger, fundamentally altering online communication. These innovations revolutionized the social media landscape, leaving its watermark on every product made by the competition (Meta, 2024).

The company has a clear vision for the future of the interaction between online users and the form of social media in general, investing heavily in the last 10 years into virtual and augmented reality (VR & AR) accomplishing the development by the smart acquisition of Oculus VR in 2014, which opened the door to a new potential future markets (Meta, 2024).

According to the most recent data (sourced on 1/2/2024), Meta has a remarkable market capitalization of just over $1 trillion. This value only confirms Meta's influence and position on the market. Meta's strategic investments in cutting-edge technologies such as AI, blockchain, and VR/AR contribute to its strong financial position for the years to come (Meta, 2024).
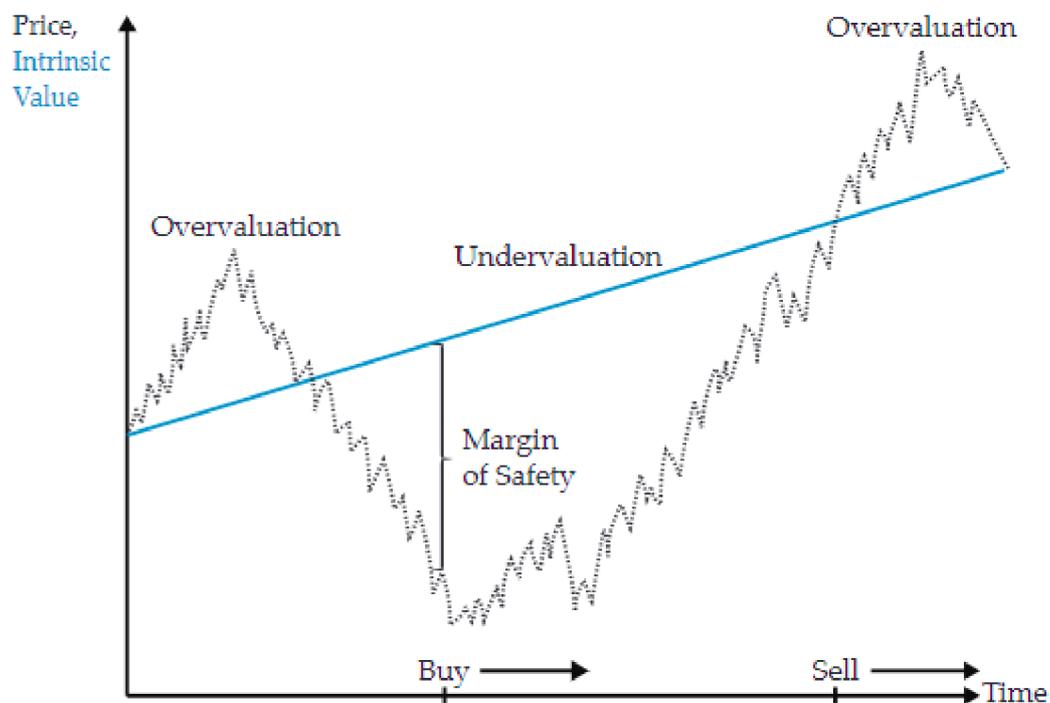
3.4.2 Intrinsic value

The foundation of value investing is in the concept of intrinsic value, made famous by well-known economist & investor Benjamin Graham. A stock's intrinsic value is its real value, which is independent of the volatile fluctuations in the market price. While short-term

trends and investor emotions influence the market price, intrinsic value is based on objective factors that represent company's fundamentals. These factors include earnings, assets, and dividends. Together, they determine the real or true value of stocks on the market (Graham, et al., 2009).

The relationship between the price of the security and its intrinsic value is described in Figure 1 by (Rapp, 2017), he also mentioned that an investor should only sell the security when it exceeds the blue line of intrinsic value, mentioned on the X axis. The margin of Safety refers to the difference between the intrinsic value of an investment and its current price.

Figure 1 Relation between price and intrinsic value

Source: Value investing's compatibility with Austrian economics by David Rapp et al.

Graham believes that focusing on the intrinsic value rather than the market price is more important for value investing, because this approach mitigates the potential risks of buying overpriced stocks or selling them under their true value. Graham's theory of intrinsic value is still one of the most popular value investing principles in the world today. It continues to serve as a valuable guide for *"sophisticated investors who want to navigate the intricate world of stock pricing and make informed investment decisions."* (Graham, et al., 2009).

With the main concept of firm analysis and the intrinsic value, the thesis can now introduce a few important values needed for the future calculations of the intrinsic value, these values or factors are the Required Rate of Return and Sustainable Growth Rate, both introduced in following paragraphs of 3.4.3 and 3.4.4 and after that, models used for calculations will be introduced, to complete the chapter of Literature review.

3.4.3 Required Rate of Return

The Required Rate of Return (RRR) is an important factor for evaluation models, that consider the time value of money when estimating the intrinsic value. It serves mainly as a tool for discounting future cash into present value, which also considers inflation, opportunity cost, or liquidity. An increase in the required rate of return occurs when risk increases and liquidity decreases, as investors demand more reward from the instrument for the risk taken (Veselá, 2019).

The RRR can be set in multiple ways, but the 2 most frequently used options are the Capital Asset Pricing Model (CAPM) and Weighted Average Cost of Capital (WACC) Both are used for a similar purpose but are quite different.

While both CAPM and WACC are valuable tools for financial analysis, CAPM is specifically designed to assess the expected return on investment, whereas WACC is aimed at determining a company's overall cost of capital. Investors utilize CAPM to estimate the potential return of an investment, while companies employ WACC to determine the minimum acceptable rate of return from their investments. CAPM estimates expected returns by considering the risk-free rate and a risk premium, while WACC factors in the company's debt-to-equity ratio and the associated costs of these financing sources (Moreira, 2022).

3.4.4 Sustainable Growth Rate

A company's Sustainable Growth Rate (SGR) represents the upper limit of growth achievable only through internal financing, without resorting to external means like debt or equity issuance. This self-sustaining growth strategy ensures financial prudence and mitigates the risk of excessive debt burden (Murphy, 2022).

3.4.5 Models and methods for determining the intrinsic value.

To calculate the intrinsic value of shares, several methods and models have been developed over the years. Some of them, like dividend discount models or earning models, are based on the expected future income that shareholders could receive from shares under certain conditions and treat this income according to its time value (Veselá, 2019).

Other models derive the intrinsic value of the shares from the company's financial statements, from which they obtain the information they use for their operations without changing the calculation of book value (Rejnuš, 2008).

From a theoretical and analytical point of view, it is worth looking at models that consider the time value of money. These are the discounted dividend models, cash flow models, and profit models. These models will be introduced in the following paragraphs. When calculating the growth rate using the sustainable growth ratio model, analysts generally use data from the most recently published financial statements. If the input data is too volatile, they then smooth the data using an average, usually over the last 3 years (Veselá, 2019).

Profit models

The usage of Profit models is an important method for estimating a stock's intrinsic value that does not consider the time value of money but rather the historical values and performances (Rejnuš, 2008).

Profit models can be used to represent a variety of prominent capital market ratios, including the P/E ratio, the P/BV ratio, and the P/S ratio, with minor mathematical tweaks. Profit models can also show the position of the company to its competitors in an industry (Veselá, 2019).

Usage of P/E ratio

The P/E (price/earnings) ratio is a common indicator used in the capital market. It represents the ratio between a stock's share price and its net earnings per share. Investors use

the P/E ratio to determine how much they are willing to pay for a company's earnings (Krantz, 2010).

It can be used to compare the attractiveness and future earnings potential of different stocks, calculate a stock's intrinsic value, and assess the historical attractiveness of a stock. The P/E ratio can also explain important factors such as risk, growth, profitability, leverage, and future expectations (Lynch, et al., 2000).

Its popularity is due to its accessibility and comprehensibility. However, the P/E ratio has limitations. It cannot be calculated for a firm that is experiencing losses, and it can be inaccurate by the accounting methodology used to calculate net profit. Despite these limitations, the P/E ratio remains a widely used and valuable tool in stock market analysis (Rejnuš, 2008).

PEG Ratio

In recent years, the PEG (price-to-earnings-to-growth) ratio has emerged as a valuable complement to the conventional P/E ratio. This ratio, calculated by dividing the P/E ratio by the projected growth rate of net income per share, provides a more accurate estimate of a company's valuation by considering its growth potential (Curry, 2021).

Many growth companies, such as Meta Platforms Inc., often exhibit high P/E ratios, which can lead to speculations about their overvaluation. The PEG ratio helps to explain these concerns by adding growth expectations into the valuation assessment (Curry, 2021).

A PEG ratio of 1 indicates that the company's current valuation aligns with its expected growth rate, while a PEG ratio significantly less than 1 suggests that the company is undervalued and presents an attractive investment opportunity. Conversely, a PEG ratio greater than 1 signal that the company may be overvalued and suggests further examinations (Berger, 2021).

Usage of P/BV Ratio

The P/BV (price-to-book value) ratio is widely used in financial analysis and measures a company's share price relative to its book value per share, representing the equity available to shareholders. This ratio primarily reflects how investors value one unit of a

firm's equity based on its asset value. Unlike ratios such as P/E (price/earnings), which gauge market expectations of future earnings, the P/BV ratio is more focused on assessing a company's financial health and the market's perception of its asset value (Krugman, et al., 2017).

The P/BV ratio is popular because it is easy to calculate and does not require complex input data. It can be used to value a share even when the company does not pay dividends or incur losses, which affects the meaningful calculation of other ratios like the P/E ratio. While the predictive power of the P/BV ratio can be a subject of dispute among analysts, it is considered to provide accurate insights into investor expectations and important factors influencing share prices (Veselá, 2019).

Usage of P/S Ratio

The P/S ratio, or price-to-sales ratio, is a tool used to assess the value of a stock about its sales. It reveals the price investors are willing to pay for each unit of sales. The P/S ratio offers certain benefits compared to other ratios like P/E and P/BV. It remains meaningful even when a company is facing short-term struggles and is not generating significant profits. Additionally, the P/S ratio is not easily influenced by accounting methodologies and practices, making it a more reliable indicator. The key advantage of the P/S ratio lies in its ability to provide useful information regardless of a company's profitability. By evaluating a stock's P/S ratio, investors can gain insight into how it is valued based on its sales performance (Rejnuš, 2008).

Benjamin Graham formula

Another model used to calculate the intrinsic value is the Benjamin Graham formula (formula 15) , and its main purpose is to estimate the approximate value of growth stocks but also to point out how unreliable market forecasts and earnings forecasts were. It was first mentioned in his book, The Intelligent Investor from 1962. The original formula stated that "the Intrinsic Value = Current (Normal) Earnings x (8.5 plus twice the expected annual growth rate)" (Graham, 2003).

The formula was later revised by many economists, because as the market dynamics change, so has to the P/E ratio of a company with no growth and the expected annual growth rate.

Dividend Discount Model

The dividend discount model is regarded as a sensible and accurate valuation method, operating under the assumption that a share's intrinsic value is determined by the present value and future returns of that share. It includes the dividend premium and, under specific conditions, the purchase price of the stock. While the dividend discount model (DDM) consistently factors in cash flows in the form of dividends, it can also consider the initial purchase price of the stock when contemplating the potential early sale of the stock (Veselá, 2019).

The model has a few downsides as well, the first downside is that this model can only be used for evaluating stocks issuing dividends. The DDM is built on the assumption that the only value of stock is the return on investment (ROI) it provides through dividends. This brings us to the second downside, which is the ability to only evaluate stocks with steadily rising dividends at a constant rate, which makes it impossible to use for a large portion of the dividend-issuing stocks. These downsides make this model useful for a rather "small" portion of companies with relatively mature history with a long record of dividend payments (Veselá, 2019).

Cash Flow models

If the aim of the analysis is the intention to value the company and the share from a somewhat broader perspective, i.e. to include more factors directly in the value of the company and the share than dividend discount models allow, the best option is to use a cash flow model (Rejnuš, 2008).

Cash flow is the net cash and cash equivalents transferred in and out of a company. Cash received represents inflows, while cash spent represents outflows. A company creates value for shareholders through its ability to generate positive cash flows and maximize long-term free cash flow. Free cash flow is the cash from normal business operations after subtracting any money spent on capital expenditures (Veselá, 2019).

Free Cash Flow to Equity Model (FCFE model)

The FCFE model is used to determine the intrinsic value of a share from the perspective of the shareholder or owner of the company. It is similar to other models such as earnings and dividend discount models in predicting the intrinsic value, accounting for time value of money. The FCFE model calculates the value based on the free cash flow of the company or owner. This includes subtracting expenses like interest, loan repayments, and bond payments, as well as capital expenditures needed to maintain and grow the company's assets. It also includes the value of depreciation and new debt, or loans issued to the company. The resulting free cash flow represents the potential dividends that could be paid out to shareholders or used to buy back the individual stocks, to increase their value. Overall, the FCFE model provides a useful tool for shareholders to assess the value of their shares (Veselá, 2019).

Free Cash Flow to Firm Model (FCFF model)

The FCFF model calculates the overall value of a firm for both shareholders and creditors, which sets it apart from previous models. The FCFF variable represents the total amount of free cash available to shareholders and bondholders, creditors, and preferred stockholders. It is determined by the value of the shareholders' free cash before any liabilities resulting from foreign funds usage in the firm, as well as the value of the shareholders' free cash before obtaining additional foreign funds in the current period. Additionally, the FCFF model takes into account the time value of money, ensuring that future cash flows, represented by the FCFF variable, are adjusted to their present value. Overall, the FCFF model provides a comprehensive view of the firm's value and considers the interests of both shareholders and creditors (Veselá, 2019).

Discounted Cash Flow model

The objective of Discounted cash flow (DCF) analysis is to estimate the money an investor would receive from an investment after adjusting for the time value of money. The time value of money assumes that a dollar you have today is more valuable than a dollar you will receive tomorrow because it can be invested. As such, a DCF analysis is useful in any situation in which a person invests money now with the expectation of receiving more money in the future (Farré, 2021).

According to Mr. Farré, the five key steps of creating a discounted cash flow model (DCF) are as follows:

- The first step is to forecast the free cash flow, usually for the period of five to ten years from the past values and other factors.
- The second step is to set the required rate of return, in other words, the discount rate, that is going to be used to bring all the future cashflows back to the present (year 0).
- The second step is the crucial part of the analysis because it considers the time value of money, which was emphasized by Jitka Veselá in her research as well.
- The third step consists of calculating the terminal value (TV), which is an estimate of a company's value, after the forecasted period.
- In the fourth step, it is time to discount the free cash flow and the terminal value.
- The fifth and last step is to calculate the implied share price by calculating the enterprise value as well as the equity value. Dividing the equity value by the number of shares outstanding will lead to a real value of the company's stock. (Farré, 2021)

Introduction of the discounted cash flow model was the last part of the first chapter of this bachelor's thesis, the following chapter will consist of calculations and analyses, conducted with the aim of finding the intrinsic value of Meta Platforms Inc, the main objective of the thesis.

4 Practical Part

The practical part of the thesis contains calculations based on the formulas and ideas mentioned in the literature review with the purpose of finding the intrinsic value of Meta Platforms Inc., a subject of the study. The analysis will be concluded in a top-down fashion starting from the global economic sector as it is based on the theory the most influential sector in creating market value. From the global economy, the analysis will move to the industry analysis, focusing on the market structure and the calculation and then the comparison of profit indicators of Meta with the performance of its industry. The analysis will end with the examination of the business, examining the financial state and performance of the company and focus on calculating the intrinsic value using various methods introduced in the literature review.

4.1 Global analysis

In macroeconomics or the overall economic sector, fundamentalists focus mainly on a few crucial economic indicators. These indicators were mentioned in the theoretical part and will be calculated in the following paragraphs.

Before the calculations of these indicators that affect the stock market and stock prices, it is important to show the correlation of an index that was chosen at the beginning of the thesis, the S&P500. For the comparison of performance, the author used the correlation analysis of the mean of monthly price of both Meta and S&P500 in the period from 18/5

2012 until 22/10 2023, The starting date is the date Meta Platforms Inc. entered the stock market.
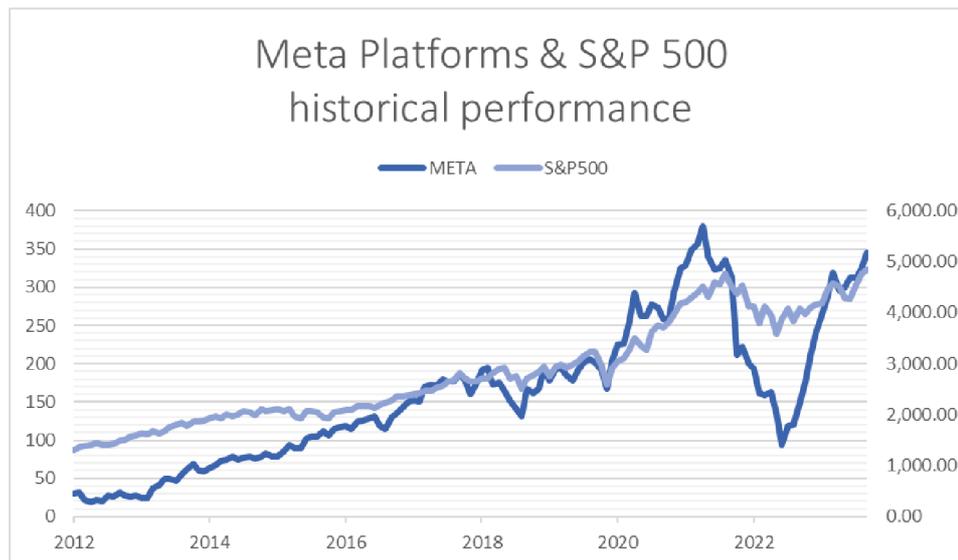
Meta Platforms & S&P 500
historical performance

It is visible that both Meta and the index S&P500 have had a similar development of market value from the time Meta entered the market, the only slight difference is the dip in market value of Meta Platforms Inc. This drop in value was caused mainly by poor management decisions, rather than by the poor economic situation, which is the main reason the dip is not reflected in the change of value of the index.

The correlation coefficient is 0,89, which indicates a strong relationship between the two. Since there is a strong correlation coefficient, The thesis will be using this index as a comparison tool for the other calculations in the global economy analysis.

4.1.1 Real Output of the Economy

For the significance of the real output of the economy (GDP), again a quarterly average of the index S&P 500, will be compared with the average of US GDP at the same frequency. The data used for the analysis range from 11/2013 till 12/2023

The correlation between the S&P500 and the real output of the US economy is 0.95, which suggests a very strong positive relationship between the two. This means that an increase in GDP will most likely cause an increase in the Index value.

Figure 3 Quartile performance of S&P500 & US GDP in billions
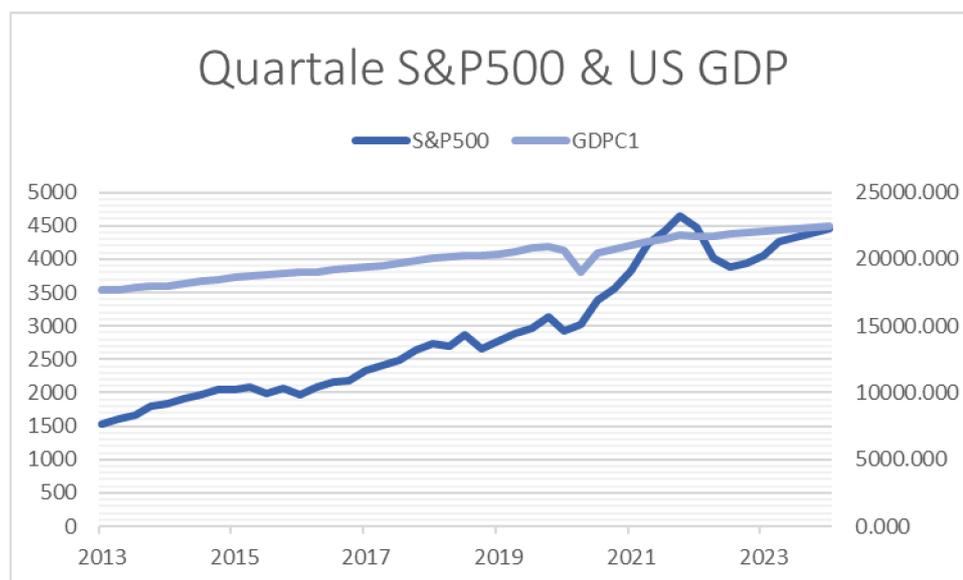
Source: Own creation based on data from Macrotrends.net, available at: /countries/USA/united-states/gdp-gross-domestic-product

The Index S&P500 has been named by many as the best indicator of the performance of the US economy, therefore this result was very expected. The unexpected result came after a small alteration of the dat. In theory, the index serves as a leading indicator for the GDP, but after economic analysis the correlation coefficient between the value of the S&P500 index in year t and GDP in year t + 1, the level of correlation came to be 0,93, a slightly weaker relationship, not proving the theory of leading indicator, but since the difference is quite small, it does not contradict it either, because the result can be affected by small sample size or by a different, more significant indicator than the real output of economy.

4.1.2 Interest rates

Given the negative relationship between stock prices and interest rates, with a correlation coefficient of -0,85 mentioned in the theoretical part, a negative outcome can be expected as well, however the practical application of the theory does not have to be as accurate as the theoretical expectations, because the market is also lead by the economic

expectations, along the actual values and factual data, which only makes the analysis harder and more complicated to execute accurately (Veselá, 2019).

For the calculations, the daily closing values of the index S&P 500 with the Effective Federal Funds Rate (EFFR) were used, EFFR is a weighted average of interest rates, that depository institutions lend overnight between each other. The EFFR is therefore determined by the market, but is partly influenced by the Federal Reserve, which, through open market operations, tries to maintain the target federal funds rate.

Figure 4 Daily comparison of S&P500 & Effective federal funds rate (EFFR)
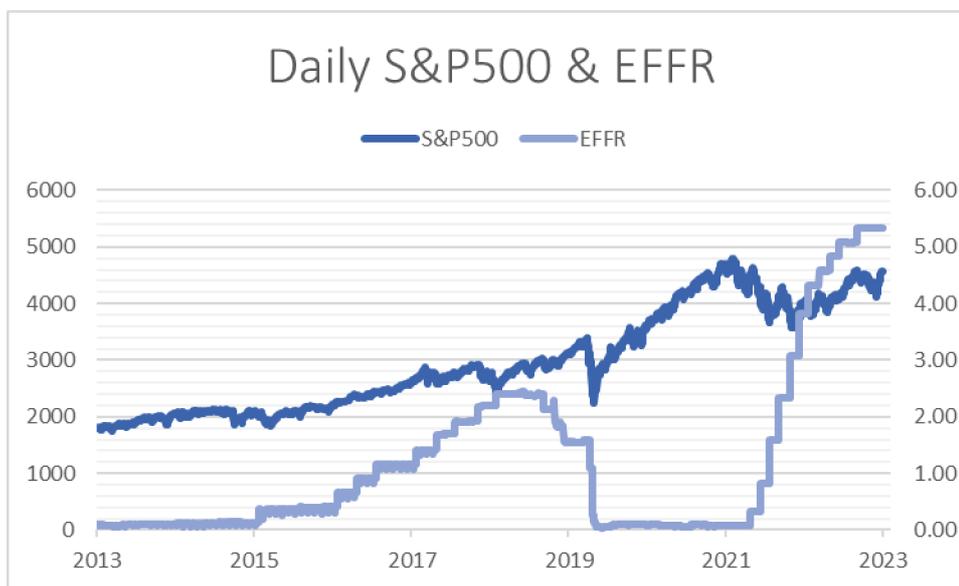
The correlation analysis between the Effective Federal Funds Rate and the S&P500 is 0,43 which contradicts the theory of negative correlation mentioned in previous paragraphs and in the theoretical part and suggests a moderate positive correlation rather than a strong negative one. There can be a few reasons that explain this result.

The first reason is the lack of bigger sample size, even though the data is recorded daily and therefore contains over 2500 data points, it is still very possible that with bigger samples, there could be a different, more predictable result.

The second reason for this result was the very low, in fact almost zero interest rates recorded from the start of the chosen sample (from 11/2013). The interest rates were very low from the end of 2008, to help the economy after the great recession. The interest rates

then started to rise a bit by the end of 2015 but were lowered by the FED again at the end of 2019 and more in 2020 as a reaction to the economic recession caused by the COVID-19 pandemic. The big spike in the interest rate at the start of 2022 was then carried out by FED to fight the rise in inflation, which was at first predicted only as a transitional. After trying again excluding the dates after May of 2022, the correlation is equal to -0,02 suggesting a very weak negative correlation, getting close to the theory, which might indicate the inconsistency of recent years.

The interest rates are planned to lower down to 4,4 - 4,9% in the third quarter of 2024 and to continue lowering down in the following years (Ciccomascolo, 2024).

4.1.3 Inflation

The data used for determining the importance of inflation on stock prices are the S&P500 and the CPI index, both from the years 2013 to 2023 as a yearly average.

Figure 5 Annual average performance of S&P500 and Consumer Price Index (CPI)
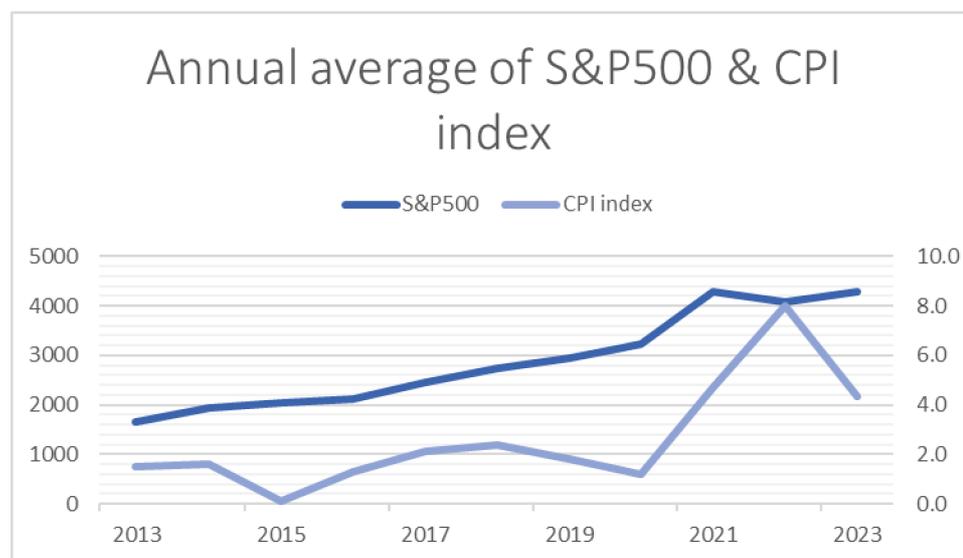
Source: Own creation based on data from Macrotrends.net, available at: countries/ranking/inflation-rate-cpi

Unlike the predicted result of weak negative correlation, results between the S&P 500 and CPI index are a correlation of 0,75 suggesting a strong positive relationship, meaning that high inflation has a positive effect on the rise of stock prices, which by theory is incorrect. Some of the reasons might be high investor expectations, possible lag effect, or the small sample size.

Another possible explanation for the unexpected positive correlation is the situation that started in 2021. The Federal Reserve believed that the rising inflation was only temporary. As a result, stock markets expected inflation to quickly return to the 2% target and continue to rise in value along with inflation. However, in 2022, the Fed changed its view and began to raise interest rates quickly. As a result, stock markets fell, followed by a slight delay in inflation.

After excluding years 2022 and 2023, which were affected by unprecedented FED policy, the correlation index is equal to 0,29, a more reasonable result, but still far away from the weak negative correlation expected based on the theoretical research from (Veselá, 2019).

4.1.4 Money Supply

As for the analysis of the significance of the money supply on the stock market, the author chose to analyze the relationship between the S&P500 and the M2 aggregate which is an estimate of the total money supply provided by the U.S. Federal Reserve, which takes into account both the amount of cash in circulation and the total amount of money placed in savings accounts, checking accounts, and other short-term savings instruments like certificates of deposit.

Figure 6 Monthly average of S&P500 & M2 reserve in millions
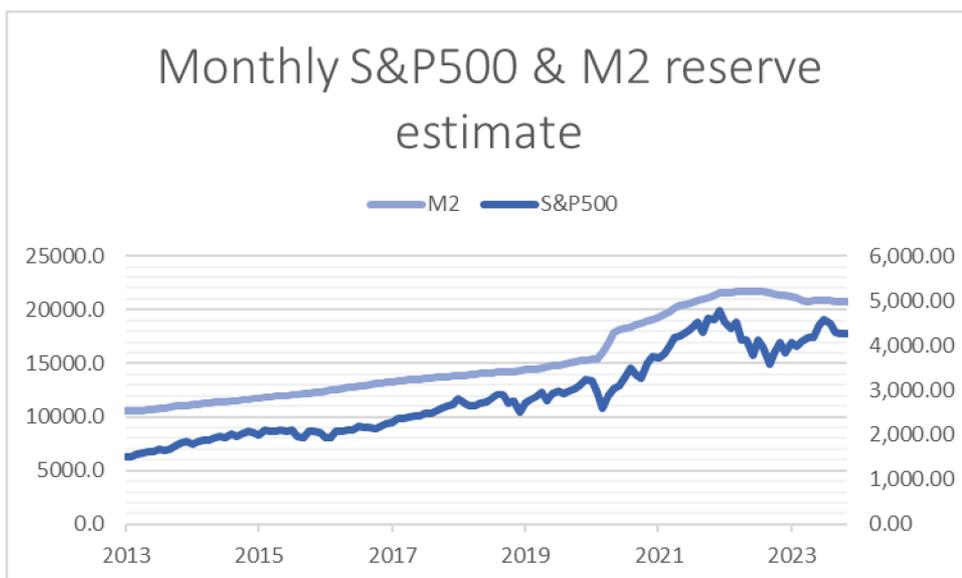
Source: Own creation based on data from Macrotrends.net, available at:/countries/ranking/M2SL

Correlation analysis came to the result of 0,97 suggesting a strong positive relationship. Based on the result of the Market trend analysis, which suggested a weak positive relationship, my findings exceeded expectations and proved that a higher money supply leads to higher values in the S&P500 and the stock market in general.

At present time, there can be seen as a decrease in the money supply with an increase in the value of the S&P500 which might look differently from the results from the analysis, but that might be most likely caused by the graduate decrease of currency pumped into the US economy during covid-19 pandemic to support it. If we look at the historical data, between the years 2000 – 2020, the M2 increased approximately by $10 trillion while during the covid pandemic (2020-2022), it increased by roughly $7 trillion in only 2 years and even though there can be seen a decreasing trend from the mid of 2022, the money supply is still up by 35% above its pre-pandemic values (Vanjani, 2023).

4.2 Industry analysis

Industry analysis is very important for getting a better understanding of the company's environment and for gaining knowledge about the company's position and its competitors. META is certainly the leader in the Social Media industry, owning not only Facebook & Messenger but also Instagram and WhatsApp, given the fact that these products make up the majority of the market, there is no place for other social media giants to take Meta's place, at least not at the moment.

The data shows that the global digital population grows and so does the reach and popularity of social media. These online platforms which offer a vast array of information, have become an integral part of daily life, revolutionizing how people interact worldwide. While social media was initially perceived as a niche for younger generations, it has transcended age barriers, becoming an essential tool for various purposes, including business, socializing, dating, political engagement, and everyday communication (Statista, 2024).

4.2.1 Market structure

Meta Platforms Inc. dominates the market and certainly holds a monopoly position in its industry. Its significant and unmatched market share and superiority over its

competitors make it a key player dominating the whole segment. Meta achieved this position through many acquisitions, buying the competition and either shutting it down like Friendster in 2011 or growing it separately like Instagram or WhatsApp. All the acquisitions that Meta made not only increased its position in the market but also reduced its competition (Meta, 2024).

In figure 7, the average number of daily users of Meta products and their competitors can be seen. The daily average is from the whole year of 2023 and companies owned by Meta have * before their company name.

Figure 7 Average number of MAP in 2023 in millions
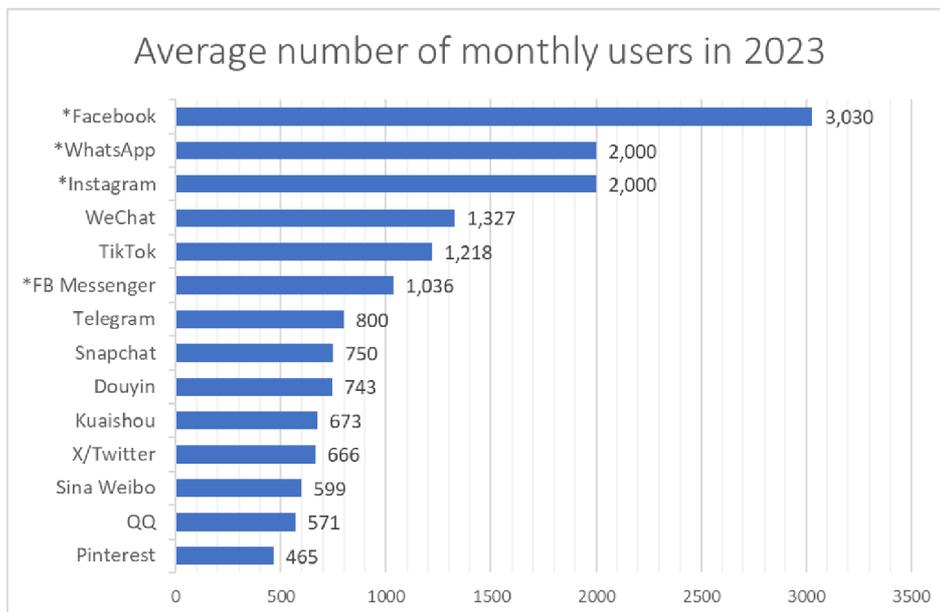
Source: Own creation based on data from statista.com, available at: /statistics/272014/global-social-networks-ranked-by-number-of-users/

Based on the graph., it is easy to see that Meta Platforms is the clear leader in terms of active users, this position makes Meta the company to work with when planning a target marketing campaign or just a regular online advertisement with 89% of global marketers reporting using Facebook (Statista, 2024).

Meta also published its Family Monthly Active People (MAP) statistics for the year 2023 in their earnings presentation report. A Family product user is defined as someone who is registered and logged in to one or more Family products and has used a mobile app or accessed the products through a web or mobile browser within the past 30 days. This means that the user has engaged with the Family products recently and is actively using them on their mobile devices. The measurements are based on the user's activity and ensure that they are still actively using the Family products (Meta, 2024).

Figure 8 Family Monthly Active People (MAP) META apps
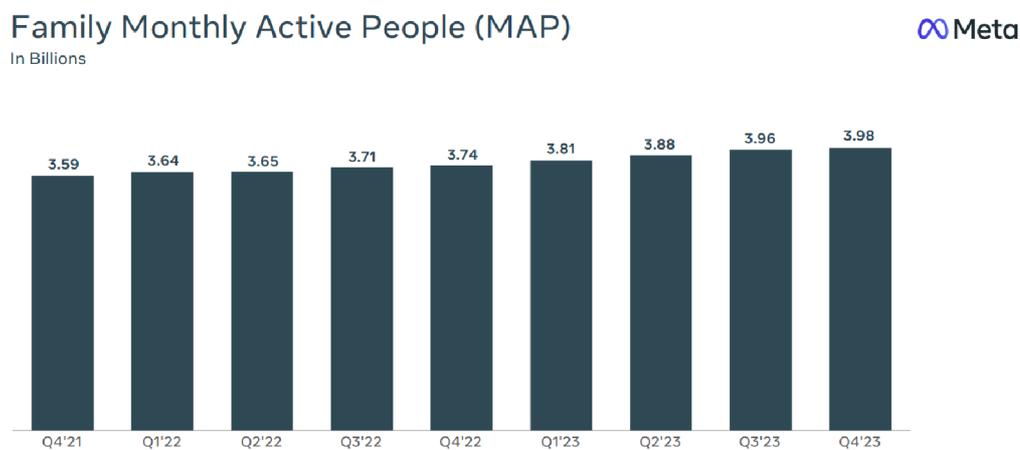
Based on the data from their Q4 2023 earnings release, Meta states that in the last quartile of 2023, it averaged an incredible 3.98 billion MAP on at least one of their family products. This means that roughly half of the world's population uses Meta's products on at least a monthly basis. The ratio gets even higher, when we take into account, that Facebook and other family products are not allowed in countries like China, Iran, North Korea, or Turkmenistan, and Russia banned Facebook and Instagram after the invasion of Ukraine in early 2022. The sum of all inhabitants of those countries is well over 1,5 billion. Given the fact that there are around 4,9 billion monthly active users around the globe (Wong, 2024), over 80% of them are using at least one platform, under the Meta umbrella on a monthly basis.

Now that we know what to expect from the Social Media Industry in the near future, it is important to focus on Meta's performance and compare it with the rest of the industry. The performance can be measured by many metrics and indicators. It is important to measure

its financial strength and its profitability. To do that it is necessary to calculate several ratios, margins, and metrics, that will then be compared to the performance of the industry to get a view of Meta's position in the Business analysis part.

4.3 Business Analysis

Business analysis is the last part of the fundamental analysis where the financial statements, balance sheets, and cash flows are examined leading to an estimate of the intrinsic value of Meta Platforms Inc.

In the business analysis, the calculations of the intrinsic value will be done using different models and methods including the revised Graham Formula, historical models based on profit indicators, and a calculation using the discounted cash flow model as it is one of the most accurate models for finding the real value, since Meta has no history of paying dividends to its shareholders, and therefore a dividend discount model or any of its derivatives cannot be used.

4.3.1 META stock

Meta's stocks are traded on the Nasdaq Global Select Market (NasdaqGS) under the ticker symbol META (before June 9th traded under the ticker symbol FB). The company went public in May 2012, with a stock price of $38 per share, and from that on, the stock price has been growing at a constant rate until the end of 2022 (Nasdaq, 2024).

The year 2022 had been quite a rough year for Meta because during that year, Meta had lost almost 75% of its market cap. mainly because of the third quarter earnings disappointment after Meta's earnings halved, thanks to a decrease in spending of advertising companies, as well as the skepticism about the metaverse and the losses of Reality Labs, a department of Meta Platforms, which reported over $3,7 billion in loss, with more loss expected in the following years. Meta reacted correctly with, as Mark Zuckerberg said, the year of efficiency, reducing costs, and the operating margin, a difficult, but crucial for Meta's long-term vision. Cutting in costs led to approximately 10,000 layoffs and the closing of more than 5,000 new positions, that were not filled by new employees yet (Zuckerberg, 2023).

Meta had seen a steep increase in stock share price in 2023, reaching a $358 price per share at the end of 2023, gaining back around 65% of its original value before the decrease in 2022. And as of 1/2 2024, the stock is trading at around $395 per share (Nasdaq, 2024).

Now that the rest of the company info has been introduced, the thesis can now focus on the analysis itself, to find the intrinsic value of Meta Platoforms Inc. To find the intrinsic value of a stock with the fundamental analysis, it is important to calculate a few indicators that will be needed for the valuation models. These indicators are the Required Rate of Return and the Sustainable Growth Rate. All data sourced for the following calculations were taken from the NASDAQ stock market database, Morningstar, and Meta financial reports available to investors. fb.

4.3.2 Required Rate of Return

The Required Rate of Return is by no means a very important factor to calculate because it gives the minimal return an investor is willing to accept for owning the stock about a given risk. The RRR will be calculated using the CAPM method, as it is more convenient for calculations from the investor's point of view. Market return has been set at 9,5%, a number frequently used by many analysts and a number that has been consistent over the past decade or so. A percentage of the risk-free rate has been substituted by the return of a US 10-year treasury bond and the Merket Beta has been taken from gurufocus.com/META and can be calculated by dividing the product of the covariance of the individual stock's returns and the market's returns by the variance of the market's returns over a specified period. GuruFocus uses the returns calculated over a three-year period. (gurufocus, 2024)

The result of calculations based on the formula 2 and data gathered on 1/2/2024 are equal to 8,49%, a value that is regarded by theory as very likely and usual, it will therefore be used for other calculations of the intrinsic value later in the following paragraphs.

Table 2 Result of Required rate of return

Company:	Risk-free RATE	Market return	BETA	CAPM
META	4.17%	9.50%	0.81	**8.49%**

Source: Own creation based on previous calculations

4.3.3 Sustainable Growth Rate

To calculate the Sustainable Growth Rate (SGR), it is possible to use two formulas, more precisely formulas 4 and 5. Both formulas achieve similar results, and both formulas are designed mainly for the calculations with stocks that pay out dividends, which META does not, but they can also be used with earnings instead, an option that is in Meta's case highly appreciated.

When calculating the growth rate using the sustainable growth ratio model, analysts generally use data from the most recently published financial statements (in this scenario Q4 2023). If the data is too volatile, they then smooth the data using an average, usually over the last 3 years (Veselá, 2019).

The first formula used for the calculation of SGR is formula 4, the current profit was selected as the average between the years 2021 and 2023, and the recent profit as an average between the years 2018 to 2021, the result of the expected growth rate is equal to 28,4%.

The problem with the result is the fact that META's earnings are not consistent, and after 12 years of rising started to fall in the years 2021 and 2022. Therefore, a second formula will be used, with the aim of better and more stable results.

Table 3 Result of SGR calculated by formula 4, in millions

D_m	D_s	t	g
33023.3	23247.3	4	**28.4%**

Source: Own creation based on previous calculations

An important thing to mention is that the retention rate will always be equal to 1 since Meta has not been paying dividends to its shareholders, therefore b must be 100%. The results from formula 5 are very similar, but because of the change of financial indicators, mainly ROE, that need to stay constant for this formula to be consistent, it also cannot be used.

b	1	1	1	1	1
ROE	21.0%	23.2%	29.4%	24.3%	19.1%
g	**21.0%**	**23.2%**	**29.4%**	**24.3%**	**19.1%**

The third and last option is to use forecasts created by other analysts. These forecasts are often not based only on mathematical models, but also on other qualitative factors, which makes them more of a subjective opinion, compared to mathematical models, that rely purely on raw historical data. Mathematical models tend to be more accurate in the mid to long term, with analysts' forecasts proving to be more accurate in the short term (Veselá, 2019).

Based on the current analysis taken from Yahoo-finance on 1/2/2024, the next 5-year growth rate is estimated at 30,01% (Yahoo Finance, 2024). This estimate is taken from I/B/E/S database a a location for all current analyst estimates for stocks. It also includes company guidance, which is an estimate of expected future earnings that companies publish quarterly and annually, and update as needed. The database contains summary information and detailed projections gathered from analysts and brokers at major international brokerages, as well as local independent analysts. It is based on analyst estimates of more than 216 performance measures for companies from all industries. These include estimates of revenue, earnings per share, price targets, net debt, enterprise value, and net income, among other things (LSEG).

4.3.4 Examination of Profit Indicators

Profit indicators like the P/E ratio indicate the price of one share divided by the earnings per share. As mentioned in the theoretical part, P/E, P/BV, or P/S Ratios are useful tools for estimating a company's performance about its competitors or its historical values. For the comparison of META with its competitors in the industry, these ratios can be used to estimate the position of the company in the industry, because the result alone does not tell us that much, but compared to the industry, it can give an overall state of the company's position to its competitors.

For the following calculations and estimates a PEG ratio will be used as well because it considers the growth rate, which the P/E ratio does not. The PEG ratio becomes even more important when looking at the growth rate forecasted in the previous chapter.

4.3.4.1 P/E and PEG Ratio

For the calculation of PEG, it is required to find the P/E ratio first, it is possible to calculate it using the formula 7, the result is quite high at 34,84, meaning that shareholders pay $34,8 for each dollar generated by META. The average P/E ratio from the social media industry is, according to gurufocus.com at 27,01

The EPS_{growth} for META, is according to the Gurufocus analysis equal to 25,7%, for the social media industry, it is a lower value equal to 16,78%. This means that META's earnings per share are expected to grow at a faster rate than its industry.

After plugging everything into the formula 8, META's PEG is equal to 1,36, which based on theory indicates that the stock is a bit overvalued, and compared to the industry that has a PEG of 0,96, it is even more apparent. It is important to note that the P/E and PEG ratio values might be inflated a bit at the time of calculation because there has been a recent increase in the price of META's stock ahead of its upcoming financial earnings reports. This fact might have an impact on the results of not only earnings ratios but on other ratios that include price in their nominator as well.

4.3.4.2 P/BV Ratio

P/BV or simply P/B is another very important ratio, that calculates the proportion of the price of one share compared with its book value (total assets-total liabilities). If the ratio is smaller than 1, it tells us that the stock is undervalued, meaning that even if the company would go bankrupt, it would still be able to pay off its Shareholders, after selling all its assets and paying them oven more than they invested.

The P/B ratio is calculated by formula 9, and after the input of all data gathered from the 2023 annual report, the result equals 6,6. The result of the P/BV of Meta's industry is 7,44, suggesting that Meta has a healthier ratio between stock price and the value of books. For the calculation of the intrinsic value, a derivative from the P/BV model can be used, a

model that compares the average historical market price per share with the average historical book value per share (Veselá, 2019).

Calculations estimating the real value of Meta will be done with formulas 10 and 11, it is important to follow a few steps. First, it is important to calculate P_a, the average price of META, for this calculation, the average was taken from the last 5 years, then, it is important to calculate BV_a, the average value of books. The ratio of these 2 indicators $(P/BV)_h$ then must be multiplied by BV_1, the average growth rate per share. The result of this calculation is a value of $376,8, suggesting the stock is overpriced.

Table 5 Calculation of Intrinsic value based on historic values of the P/BV ratio

P_a	BV_a	$(P/BV)_h$	BV_1	V_0
$239.25	43.81	5.46	68.99	**$376.8**

Source: Own creation based on previous calculations

4.3.4.3 P/S ratio

For the calculations of the intrinsic value of META using the Price/Sales indicator, a similar historical model just as with P/BV can be used. The only difference between formulas 12 and 13 is the change of values regarding META's book value to its Sales, therefore, even the process of calculating is almost identical with the use of formulas 13 and 14. As for the results, the intrinsic value calculated by this historical model equals $411.60, an increase of 8,5% compared to the result of the historical P/BV model.

Table 6 Calculation of Intrinsic value based on historic values of P/S ratio

P_a	S_a	$(P/S)_h$	S_1	V_0
$239.25	35.32	6.77	60.76	**$411.60**

Source: Own creation based on previous calculations

The results of P/BV & P/S historical models can be averaged out to $394,2 giving the almost identical value of META's stock recorded on 1/2/2024 at $394,78, suggesting that META is, according to the average of these 2 models, priced fairly.

4.3.5 The Graham Formula

As mentioned in the theoretical part, and by Graham himself, his original formula should not serve as a tool for assessing the true value of any Company or fund, but rather as a formula that produces figures fairly close to those resulting from the more refined mathematical calculations.

For the estimation of Meta's value, instead of the original formula mentioned by Benjamin Graham, the calculations will be done using a newer, revised version of his formula, with a focus on today's fast-growing tendencies, because in his time, there were not any technological companies, that could achieve annual growth of plus 20% on a normal basis. The EPS was taken from Meta's Q4 earnings report, and the growth rate was set in the previous chapter of 3.4.3.

The calculation can be done with the formula 16, with the most up-to-date data available, taken on 1/2/2024, the intrinsic value of META came to be $404,7.A value slightly over the current market price, meaning the stock is according to this formula undervalued.

Table 7 Calculation of Intrinsic value based on the Benjamin Graham revised formula

Stock	EPS	P/E w/o growth	Growth rate (projection)	The average yield of AAA	The current yield of AAA	V_0
META	11.33	7	30%	4.4	4.57	**$404.7**

Source: Own creation based on previous calculations

4.3.6 FCFE

FCFE is a very important indicator for the calculation of the intrinsic value using a company's cash flows, it is used by many investors for estimating the amount of cash available to investors after all debts, expenses, and reinvestments are settled. The model can be calculated using the formula 17 and based on the values from Meta's financial statements of 2023, the FCFE of 2023 is equal to $36,736 million. (Meta, 2024)

Table 8 Result of Free cash flow to Equity from 2023, in millions of dollars

Net Income	D&A	ΔNWC	Capex	Net Debt	**FCFE**
39,098	11,178	3,830	28,100	18,390	**36,736**

Source: Own creation based on previous calculations

This result of free cash flow will be needed together with the required rate of return for calculating the intrinsic value of META with the DCF model.

4.3.7   DCF Model

The discounted cash flow model estimates the intrinsic value of a company based on its FCFE, the calculation can be done using formula 18, where instead of CF_1, we input the FCFE calculated with the FCFE model in section 3.3.5. Terminal value is calculated by multiplying the FCFE for the last projected year by the required rate of return, subtracted by the perpetual rate of return.

For calculating the DCF of META platforms, a 5-year projection will be used since it is very inaccurate and problematic to project values from years four/five onwards. The discount rate was rounded and increased by 2,5%, compensating for Meta's potential price fluctuations and serving as a small premium.

Based on the calculations done with formula 18, the total sum of the present value of future free cash flows is equal to $ 845 498,7 million. For the calculation of intrinsic value, all there is left to do is plug the sum of discounted free cash flow into formula 19.

Table 9 Result of Future free cash flows based on the DCF model, in millions of dollars

YEAR	2024	2025	2026	2027	2028	TERMINAL	SUM of FCFF
FUTURE FREE CF	47576.8	61616.7	79799.8	103348.7	133846.9	1723279.1	**2149468.0**
PV of FFCF	42862.0	50009.5	58348.9	68079.0	79431.6	546767.7	**845498.7**

Source: Own creation based on previous calculations

The intrinsic value of META based on the discounted cash flow model is $390,71. Compared to the price of $394,71 (1/2/2024), META can be considered slightly overvalued.

Table 10 Calculation of intrinsic value with the DCF model, in millions except for V$_0$

SUM OF FCF	CASH & CASH EQ	TOTAL DEBT	EQUITY VALUE	SHARES OUTSTANDING	V$_0$
845498.74	40738	26591	859645.74	2200	**$390.75**

Source: Own creation based on previous calculations

The following section of the thesis will summarize the results from practical part, compare them with theoretical expectations and provide an investment recommendation.

5 Results and Discussion

This chapter aims to summarize the results of each layer of the analysis, and to formulate the results, first of each chapter and then the overall results of the analysis, based on the calculations and theoretical assumptions introduced in the theoretical part and calculated in the practical part. The first layer from the analysis is the global layer, which will be summarized in the following paragraphs.

5.1 Summary of Global Analysis

As mentioned above the first part of the analysis was on the global sector. The individual factors affecting the performance of the "global" sector were compared to the index S&P500 *(later only as the index)*, where Meta occupies roughly 2,5% and is the fifth most represented company after Microsoft, Apple, Nvidia, and Amazon. The performance of the index was then examined by the most influential factors affecting market prices.

The first part of the analysis compared the performance of the US economy and the performance of the index. A very strong correlation of 0,948 was recorded, suggesting a strong relationship between the GDP growth and the performance of the index. Given the fact that the growth of the US economy is forecasted to slow down, from better-than-expected growth of 2,8% in 2023 to a bellow trend growth of 0,7% by (Chambless, 2023) from J.P. Morgan. Even though the stock market is a strong leading indicator of the US economic performance, in the short to mid-term, the stock market registered a growth of 1,32% in December and 1,68% in January, it is generally expected that the market will find a soft landing in 2024 to avoid recession, therefore the rise will probably not follow the performance of last year (Chambless, 2023) (SPGlobal, 2024).

A second analysis of the global sector has been made on the interest rates and their effects on the stock market and the index. The result of correlation analysis was equal to 0,43 with the years 2022 and 2023 included and the result of -0,02 after excluding the last two years. This result was closer to the theory and findings made by (Bernstein, 1979), but still came short, mainly, because the rise of interest rates did not reflect the rise of inflation.

Jerome H. Powell a member of the Board of Governors of the Federal Reserve System, mentioned in the FED press conference on the 31st of January, that FED is planning to lower the interest rates in the second quarter of 2023 to bring the Fed Funds to 4.00%-4.25% at the end of 2024 (Powell, 2024). Lowering the interest rates will have a positive effect on the stock market prices, but we will have to wait for that till at least June of 2024.

The third analysis compared the effects of inflation on the price evolution of the index at different inflation rates over the past 10 years. The result of the correlation analysis between the annual average of the S&P 500 and the CPI index is weakly positive, contradicting the theory of 0 to -0,15 mentioned in the analysis of market return and inflation by (Havlíček, 2011). The result of a weakly positive correlation was most likely caused by the events mentioned in the last paragraph when the FED did not raise the interest rates at the start of 2022 to fight the rising inflation, which would then most likely lead to the decline in stock prices as it is what almost always happened in the past. FED is aiming to reduce inflation from 3,4% (December 2023) to around 2,2-2,4% in 2024.

The fourth and last analysis was made on the relationship between the market and the money supply aggregate (M2). Correlation analysis equaled 0,97, a very strong positive correlation, and since the money supply has been on a decline since its peak in the summer of 2022. Another negative scenario recorded in the year 2023 was the decline in Commercial bank credit (USCBBC), which includes all loans, leases, and securities held by commercial banks at a rate of 2,07% from March 15 till November 17, 2023, (fred, 2024). The USCBBC has been, just like the M2, on a steady rise since the 1980s, but when the credit declined at more than the minimum rate, a recession usually follows, The dot-com bubble experienced a drop of 2,09% and the Great Recession experienced a peak of 6,94% drop shortly after in 2010 (Siegel, 2014).

This situation does not benefit short-term holders but opens a great investment opportunity for long-term value investors, only if it of course happens as well this year.

Table 11 Summary of Global Analysis

	Correlation coefficient	Forecast for 2024	Forecast for Short/Long term	Recommendation short/long term
GDP growth	0.94	Mild growth	Stagnation/growth	Hold/buy
Interest Rates	-0.02	Mild growth	Stagnation/decline	Hold/buy
Inflation	0.29	Decline	Stagnation/decline	Buy
Money Supply	0.97	Mild growth	Decline/growth	Sell/buy

Source: Own creation based on previous calculations in chapter 3.1

Based on the recapitulation summed in Table 10, the recommendation is to hold in the short term and buy in the long term.

5.2 Summary of Industry Analysis

The analysis of the industry environment and Meta's competitors in the social media networking industry was done through the analysis of the market structure and the comparison of Meta with its competition. Based on the data attained from (Statista, 2024) database and the 2023 annual earnings report from Meta, the company was portrayed as a monopoly, because it occupies a huge portion of the market with almost 4 billion monthly active users on at least one of Meta's family products, which means that roughly 80% of users use at least one platform owned by Meta. This position secures the company a stable and profitable environment in terms of its clientele and earnings from marketing and advertising options.

The second method used for finding Meta's value compared to the industry has been done through the comparable company analysis, where 3 of the major profit indicators were calculated and then compared with the industry average. From the data available (gurufocus, 2024), the results of the calculations and comparisons were the following.

Meta achieved a higher P/E ratio and P/S ratio, but lower P/BV ratio. A higher P/E ratio was expected, because companies with the size of Meta usually trade at a small

premium, thanks to their earnings and growth potential and probability. The fact that Meta's P/E for earnings from 2023 was calculated as 34,84 is not a terrible thing, because many famous investors like Peter Lynch state that "The P/E ratio of any company that's fairly priced will equal its growth rate" and Meta's growth rate for the following year is estimated just above 30%, the small difference between growth and P/E can be explained by the market premium explained above.

Meta's P/S after calculation was equal to 7,67 compared to the industry's 6,89, a slightly higher ratio can be associated with the market premium investors are paying and higher expectations for the following years. Meta is investing massively in Reality Labs, a hardware and software department focusing on virtual reality, which Meta believes is the future, with other companies like Apple following the trend. Many investors can be attracted to the same vision, and therefore "prebuy" the stock shares for a long-term hold.

The P/BV ratio of Meta was lower than the industry average, suggesting that Meta has more value in its assets than the stock price, compared to the industry average. This could be mainly because technological companies do have many intangible assets, that are not mentioned in the books, whereas Meta has a huge number of daily active users, they need a lot of servers, which is the biggest portion of Meta's books, the second largest portion are the buildings, mainly the Meta HQ in Menlo Park, California. All-important data and information about the state of Meta's book value and Sales were found in Meta's financial statements from the years 2023 and 2022 and for the industry average, the data was sourced from the financial portal Gurufocus (gurufocus, 2024) (Meta, 2024).

Based on all calculations and comparisons made in this part of the fundamental analysis, the nature of the social media industry, where Meta has a monopolistic position, it is recommended to invest in the company, because, as mentioned in the literature review by (Øverby, et al., 2018), monopolies, or companies very close to a monopoly, have very big advantages, that exist by their powerful and distinct position on the market.

When looking at the profit indicators and their comparison the author believes that none of them necessarily indicates that Meta is over or undervalued. At least compared to the industry, which was the aim of this part of the analysis. Therefore, the author cannot

make a clear decision and recommendation to issue a buy or sale order based solely on the comparable company analysis.

The only metric for the valuation of Meta in its industry is therefore the market structure, where the author recommends buying.

Table 12Summary of Industry Analysis

Indicator	Market Structure	P/E	P/BV	P/S
Meta	Monopoly (practically)	34.84	6.60	7.67
Industry	X	27.01	7.44	6.89
Recommendation short/long term	Buy/Buy	/	/	/

Source: Own creation based on analysis in chapter 3.2. and calculations in chapter 3.3.4

5.3 Summary of Business Analysis

Business analysis was the last part of the fundamental analysis of Meta Platforms Inc., where the intrinsic value of the company and the stock price were calculated based on Meta's financial performance and the forecasts for the future.

The analysis consisted of the introduction of Meta platforms, partially done in the industry analysis, its history, and some of the financial indicators. Then two key inputs were calculated, needed for the following calculations regarding the real value of Meta's stock.

These inputs were a Required Rate of Return (RRR) and a Sustainable growth rate (SGR). The RRR was calculated using the Capital Assessment Pricing Model (CAPM), measuring the systematic risk and the expected return based on the expected return on both the market and a risk-free asset, and the asset's correlation or sensitivity to the market (beta). SGR was calculated using the two models mentioned by (Veselá, 2019), but since both proved inconsistent, an analyst's forecast from the I/B/E/S database was used instead. The RRR or discount rate was rounded up in the hundreds, and a 2,5% was added to it, to compensate for the market volatility, and to serve as a potential premium.

From the profit indicators, the PEG ratio calculated based on the formula mentioned by (Curry, 2021) had been calculated using the P/E ratio and the EPS growth rate. The result

of the PEG ratio suggested that the stock of Meta is overvalued, suggesting a hold or sale, even when compared to the competition.

Following were the calculations of the intrinsic value using a revised Benjamin Graham formula, models based on the historical values of P/BV and P/S ratios, and lastly a real value of Meta Company and its stock were calculated using the Discounted cash flow model, discounting the future free cash flows to a net present value. A result and summary of all methods and models can be seen in Table 12, suggesting that the stock price is slightly overvalued.

Table 13 Summary of Business analysis & intrinsic values

	Stock Price	Intrinsic value	Result of analysis	Recommendation short/long term
PEG Ratio		X	Overvalued	HOLD/SELL
Historical P/BV		$376.8	Overvalued	HOLD/SELL
Historical P/S	$394.73	$411.6	Undervalued	HOLD/BUY
Benjamin Graham formula		$404.7	Undervalued	HOLD/BUY
DCF model		$390.8	Overvalued	HOLD/SELL

Source: Own creation based on calculations in chapter 3.3

6 Conclusion

This bachelor's thesis focused on the fundamental analysis of Meta Platforms Inc. and consisted of 3 main chapters, that will be summarized in the following paragraphs.

The first chapter introduced the main goal of the thesis, with the methods needed, to obtain it, these were to calculate an intrinsic value of Meta Platforms Inc., the leading social media company in the world, with the tools and methods of fundamental analysis., and based on the results provide the reader with an investment recommendation for short-term and long-term investments. The thesis followed a top-down approach, which consisted of three levels of analysis: global, industry, and company.

The second chapter focused on the literature review, a broad and deep introduction to the world of value investing, comparing the views on this topic of many famous Czech and American economists like Oldřich Rejnuš, Jitka Veselá, Benjamin Graham or Peter Lynch, and many others. Based on the research made and the knowledge obtained, the thesis could then proceed to the third chapter, which examines the 3 layers of the fundamental analysis, starting from the top to bottom.

The global analysis examined the macroeconomic factors that affect the prices at the stock market, such as real output, interest rates, inflation, and money supply. The results showed that the global economy was recovering from the pandemic-induced recession and that the social media industry was benefiting from the increased demand for online communication, entertainment, and commerce. Calculations showed a strong positive correlation (0,95) between the S&P 500, substituting the stock market and the real output of the US economy, suggesting that the economy does well, and so should the stock market. Almost the same correlation (0,97) had been calculated between the S&P500 and the M2 money supply aggregate so that when the money supply grew, meaning the FED was adding money to the circulation, the index was increasing in value as well. Both calculations had results very similar to the theoretical forecasts and therefore were considered very seriously since both GDP growth and the supply of money are expected to stagnate or even decrease in 2024, the only possible recommendation for the short-term is to hold and for a longer term to buy, since it is very probable, that there will be growth again, in the following years.

Where the correlations did not meet the theoretical expectations were the calculations between the S&P500 and interest rates as well as the S&P500 with inflation. The correlation between the index and interest rates was equal to -0,02, suggesting that there is almost no correlation at all, which contradicts the study from Bernstein conducted in 1979, where his results of correlation between the stock market and the interest rates were strongly negative at -0,85. Since the research had been done and published in 1979 and the markets had evolved a lot since then, and therefore, his assumptions were taken with a grain of salt.

The correlation between the index and inflation, substituted with CPI was weakly positive, contradicting the theory by Havlíček as well, but since the inflation is forecasted to start decreasing in the summer of 2024, just like the interest rates. The recommendation based on these two factors is to hold or buy in the short-term, but a strong buy for the long-term investors. With the global sector completed, the thesis then moved on to the social media industry, determining the market structure and Meta's position among its competition based on profit indicators in the comparable company analysis.

The industry analysis evaluated the market structure and the competitive position of Meta Platforms Inc. in the social media industry. The results indicated that the social media industry was highly concentrated and even monopolistic, with Meta Platforms Inc. being the dominant player with over 80% of social media users. The industry analysis also revealed that Meta Platforms Inc. had a strong competitive advantage over its rivals, due to its diversified product portfolio, loyal user base, network effects, and innovation capabilities. The results of comparable company analysis (calculating Meta's profit indicators and comparing them to the industry average), where Meta came up slightly overvalued compared to the industry competition suggested that investors are not scared to buy Meta at a small premium. This fact can be taken negatively, as Meta can be currently traded above its true value, or positively, as the market is driven by investor expectations, meaning many people view Meta's big potential and want to secure their position with the company for the future.

The company analysis and the last segment of the third chapter assessed the financial performance, growth prospects, and intrinsic value of Meta Platforms Inc. The analysis consisted of calculating the required rate of return with the CAPM model, which based on the market data equaled 8,49%. A 2,5% had been added by the author, as a security measure, protecting the results from price fluctuations and volatility of the technological market. The

next step was calculating the growth rate, after two models proved inconsistent and unable to provide a reliable and trusted forecast, an analyst growth rate projection was taken instead. The projection was 30.01% and was needed with the required rate of return for the following calculation based on future cash flows.

Up next was the examination of profit indicators including the PEG ratio and calculating the intrinsic value with historical models of P/BV and P/S ratio. The PEG ratio portrayed Meta as a bit overpriced, with a PEG ratio over 1. The intrinsic value calculated by P/BV_h was equal to \$376,8 and by P/S_h equal to \$411,6. The average of these 2 historical models equals \$394,2, a value 50 cents below the market price. The third model used for calculating the real value of Meta is the revised formula, first introduced by Benjamin Graham in the book Intelligent Investor. The intrinsic value after the calculation equaled \$404,7, which had valued the stock above its market price by almost \$10. The fourth and last model used for finding the intrinsic value of Meta is the model based on the discounted future cash flows. The model had been built for a 5-year horizon and valued firstly the whole business and then, with the use of another formula calculated the intrinsic value of Meta, which equaled \$390,75 a value slightly below the market price.

The final investment recommendation, after considering all three layers of the analysis, is to hold in the short term and wait until there is a decreasing trend in the interest rates and an increasing tendency with the supply of the US dollar. One of the main goals of FED is to fight inflation in 2024 which should also help the market and businesses in general. Meta has had a very successful year, primarily due to significant cost reductions and increased revenue from, among other things, Reality Labs, which is no longer just a funding black hole but is starting to generate a decent profit, primarily from sales of virtual reality hardware and the society's overall increased enthusiasm for VR in the future. Based on this information and the calculations of the intrinsic value, suggesting that Meta is priced accordingly, the author thinks that Meta is a strong buy for the long-term investment because it will certainly play a huge role in the social media industry in the following years as well, and bring innovations in the VR & AI segments, that will have ever more focus of the population.

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8 List of pictures, tables, graphs, and abbreviations

8.1 List of figures

8.2 List of tables

8.3 List of abbreviations

GDP =   Gross domestic product

EFFR =   Effective federal funds rate

CPI =   Consumer price index

ROE =   Return on equity

MAP =   Monthly active people

RRR =   Required rate of return

CAPM =   Capital asset pricing model

WACC =   Weighted average cost of capital

SGR =   Sustainable growth rate

DDM =   Dividend discount model

ROI =   Return on investment

FCFE =   Free cash flow to equity

FCFF =   Free cash flow to the firm

DCF =   Discounted cash flow model

TV =   Terminal value

Appendix

Appendix A: Income statements

Appendix B: Balance sheets

Appendix C: Cash flow statements

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Appendix A: Income statements

META PLATFORMS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF INCOME
(In millions, except per share amounts)
(Unaudited)

	Three Months Ended December 31,		Twelve Months Ended December 31,	
	2023	**2022**	**2023**	**2022**
Revenue	$ 40,111	$ 32,165	$ 134,902	$ 116,609
Costs and expenses:				
Cost of revenue	7,695	8,336	25,959	25,249
Research and development	10,517	9,771	38,483	35,338
Marketing and sales	3,226	4,574	12,301	15,262
General and administrative	2,289	3,085	11,408	11,816
Total costs and expenses	23,727	25,766	88,151	87,665
Income from operations	16,384	6,399	46,751	28,944
Interest and other income (expense), net	424	(250)	677	(125)
Income before provision for income taxes	16,808	6,149	47,428	28,819
Provision for income taxes	2,791	1,497	8,330	5,619
Net income	$ 14,017	$ 4,652	$ 39,098	$ 23,200
Earnings per share attributable to Class A and Class B common stockholders:				
Basic	$ 5.46	$ 1.76	$ 15.19	$ 8.63
Diluted	$ 5.33	$ 1.76	$ 14.87	$ 8.59
Weighted-average shares used to compute earnings per share attributable to Class A and Class B common stockholders:				
Basic	2,566	2,638	2,574	2,687
Diluted	2,630	2,640	2,629	2,702

Source: Meta earnings report of 2023, available at: https://s21.q4cdn.com/399680738/files/doc_financials/2023/q4/Meta-12-31-2023-Exhibit-99-1-FINAL.pdf

Appendix B: Balance sheets

META PLATFORMS, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(In millions)
(Unaudited)

	December 31, 2023	December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	$ 41,862	$ 14,681
Marketable securities	23,541	26,057
Accounts receivable, net	16,169	13,466
Prepaid expenses and other current assets	3,793	5,345
Total current assets	85,365	59,549
Non-marketable equity securities	6,141	6,201
Property and equipment, net	96,587	79,518
Operating lease right-of-use assets	13,294	12,673
Intangible assets, net	788	897
Goodwill	20,654	20,306
Other assets	6,794	6,583
Total assets	$ 229,623	$ 185,727
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 4,849	$ 4,990
Partners payable	863	1,117
Operating lease liabilities, current	1,623	1,367
Accrued expenses and other current liabilities	24,625	19,552
Total current liabilities	31,960	27,026
Operating lease liabilities, non-current	17,226	15,301
Long-term debt	18,385	9,923
Other liabilities	8,884	7,764
Total liabilities	76,455	60,014
Commitments and contingencies		
Stockholders' equity:		
Common stock and additional paid-in capital	73,253	64,444
Accumulated other comprehensive loss	(2,155)	(3,530)
Retained earnings	82,070	64,799
Total stockholders' equity	153,168	125,713
Total liabilities and stockholders' equity	$ 229,623	$ 185,727

Source: Meta earnings report of 2023, available at: https://s21.q4cdn.com/399680738/files/doc_financials/2023/q4/Meta-12-31-2023-Exhibit-99-1-FINAL.pdf

Appendix C: Cash flow statements

META PLATFORMS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(In millions)
(Unaudited)

	Three Months Ended December 31,		Twelve Months Ended December 31,	
	2023	2022	2023	2022
Cash flows from operating activities				
Net income	$ 14,017	$ 4,652	$ 39,098	$ 23,200
Adjustments to reconcile net income to net cash provided by operating activities:				
Depreciation and amortization	3,172	2,376	11,178	8,686
Share-based compensation	3,424	3,008	14,027	11,992
Deferred income taxes	(1,161)	(1,173)	131	(3,286)
Impairment charges for facilities consolidation, net	1,091	1,805	2,432	2,218
Data center assets abandonment	7	1,341	(224)	1,341
Other	124	572	635	641
Changes in assets and liabilities:				
Accounts receivable	(2,843)	(1,698)	(2,399)	231
Prepaid expenses and other current assets	700	854	559	162
Other assets	(111)	54	(80)	(106)
Accounts payable	595	876	51	210
Partners payable	76	102	(271)	90
Accrued expenses and other current liabilities	(350)	1,303	5,352	4,210
Other liabilities	663	439	624	886
Net cash provided by operating activities	19,404	14,511	71,113	50,475
Cash flows from investing activities				
Purchases of property and equipment	(7,665)	(9,043)	(27,266)	(31,431)
Proceeds relating to property and equipment	73	55	221	245
Purchases of marketable debt securities	(1,171)	(741)	(2,982)	(9,626)
Sales and maturities of marketable debt securities	2,359	2,263	6,184	13,158
Acquisitions of businesses and intangible assets	(64)	(62)	(629)	(1,312)
Other investing activities	(4)	(3)	(23)	(4)
Net cash used in investing activities	(6,472)	(7,531)	(24,495)	(28,970)
Cash flows from financing activities				
Taxes paid related to net share settlement of equity awards	(2,223)	(656)	(7,012)	(3,595)
Repurchases of Class A common stock	(5,942)	(6,863)	(19,774)	(27,956)
Proceeds from issuance of long-term debt, net	—	—	8,455	9,921
Principal payments on finance leases	(307)	(235)	(1,058)	(850)
Other financing activities	71	695	(111)	344
Net cash used in financing activities	(8,401)	(7,059)	(19,500)	(22,136)
Effect of exchange rate changes on cash, cash equivalents, and restricted cash	396	424	113	(638)
Net increase (decrease) in cash, cash equivalents, and restricted cash	4,927	345	27,231	(1,269)
Cash, cash equivalents, and restricted cash at beginning of the period	37,900	15,251	15,596	16,865
Cash, cash equivalents, and restricted cash at end of the period	$ 42,827	$ 15,596	$ 42,827	$ 15,596
Reconciliation of cash, cash equivalents, and restricted cash to the consolidated balance sheets				
Cash and cash equivalents	$ 41,862	$ 14,681	$ 41,862	$ 14,681
Restricted cash, included in prepaid expenses and other current assets	99	294	99	294
Restricted cash, included in other assets	866	621	866	621
Total cash, cash equivalents, and restricted cash	$ 42,827	$ 15,596	$ 42,827	$ 15,596

Source: Meta earnings report of 2023, available at: https://s21.q4cdn.com/399680738/files/doc_financials/2023/q4/Meta-12-31-2023-Exhibit-99-1-FINAL.pdf