

**Czech University of Life Sciences Prague Faculty of**

**Economics and Management**

**Department of Economics**



**Bachelor Thesis**

**Analysis of Berkshire Hathaway and ExxonMobil stocks**

**Islomiddin Boboyev**

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# CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

## BACHELOR THESIS ASSIGNMENT

Islomiddin Boboyev

Economics and Management

Thesis title

**Analysis of Berkshire Hathaway and ExxonMobil stocks**

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### **Objectives of thesis**

The main objective of the following thesis is to analyse the pattern of all changes occurring with two chosen stock bundles, which are Berkshire Hathaway and Exxonmobile. The ultimate goal of this research is to present a verdict whether those stocks merit to be considered as a serious investment and whether it is worth buying them at all.

### **Methodology**

This bachelor thesis is divided by 2 parts: theoretical and practical. Theoretical part includes generic information about stocks and stock market e.g. Stock exchange, Type of stocks. When it comes to the practical part, it is essential to understand that there is no universal way of predicting the outcome when holding stocks. However, it becomes quite possible to get to the understanding of whether there will be a bull market or a bear one by conducting an analysis involving techniques such as fundamental analysis, return on investment, net present value, and future value, maximum, minimum and other financial methods. All those techniques are bound to help me to analyse Berkshire Hathaway and ExxonMobil stocks.

## **The proposed extent of the thesis**

60 pages

## **Keywords**

Stocks, stock market, fundamental analysis, present value, future value, interest rate.

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## **Recommended information sources**

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## **Declaration**

I declare that I have worked on my bachelor thesis titled "Economic analysis of selected stocks" 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 copyrights of any their person.

In Prague on 14.03.2022

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Islomiddin Boboyev

# Ekonomická analýza vybraných akcií

## Souhrn

Cílem této bakalářské práce je pochopit, co je to akciový trh a jak to funguje, a také zjistit, jak fungují velké společnosti na tomto trhu.

V teoretické části se zaměříme na určité pojmy spojené s akciovým trhem a akciemi. Co jsou akcie, jak jsou uspořádány, jaká je jejich obecná myšlenka, jak a kde je lze koupit a prodat.

V praktické části se budeme zabývat analýzou společností jako Berkshire Hathaway a Exxonmobil. Porovnáme akcie těchto společností v letech 2011-2021 a shrneme výsledky za toto časové období a také se pokusíme zjistit, která investice by byla v budoucnu nejlepší.

**Klíčová slova:** akciový trh, akcie, současná hodnota, budoucí hodnota, analýza, úroková sazba.

# **Economic Analysis of selected stocks**

## **Summary**

The purpose of this thesis is to understand what the stock market is and how it works, as well as to find out how large companies work in this market.

In the theoretical part, we will focus on certain terms related to the stock market and stocks. What are stocks, how they work, what is their general idea, how and where they can be bought and sold.

In the practical part, we will analyze companies such as Berkshire Hathaway and ExxonMobil. We will compare the shares of these companies in the period from 2011-2021 and summarize the results for this period and try to find out which investment would be the best in the future.

**Keywords:** stock market, stocks, present value, future value, analysis, interest rate.

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## List of abbreviations

- **B.H** – Berkshire Hathaway
- **US** – United States
- **NYSE** – New York Stock Exchange
- **NASDAQ** – National Association of Securities Dealers Automated Quotation
- **LSE** – London Stock Exchange
- **TMX** – Toronto Montreal Stock Exchange
- **BSE** – Bombay Stock Exchange
- **EPS** – Earnings Per Share
- **INC** – Incorporation
- **NPV** – Net Present Value
- **MA** – Moving Average
- **SMA** – Simple Moving Average
- **EMA** – Exponential Moving Average



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# 1 Introduction

For many years now, the stock market has become an integral part of our lives. We may not notice it, but most of our life, whether it's vehicles, electronics, food, clothing brands, is also part of the stock market. The stock market is a set of economic relations concerning the issue and circulation of securities between its participants.

The stock exchange, where all securities and stock exchanges take place, is a very important element of a free market economy.

In this dissertation, we will analyze in detail the stock market, its history, modern realities, its integral parts, factors that affect the state of the stock market, we will analyze what a stock index is, examples of a stock index. Next, in the practical part, we will analyze the activities of two large companies: the well-known Bershir Hathaway and the giant in the oil and fuel industry ExxonMobil. We will analyze in detail the shares of these two companies in recent years, using various financial and trend methods to find out whether it is worth investing your capital in these companies, what will be the pros and cons so that the reader at the end has a clear idea about investing in these companies.

## **2 Objectives and Methodology**

### 2.1 Objectives

The main objective of the following thesis is to analyse the pattern of all changes occurring with two chosen stock bundles, which are Berkshire Hathaway and Exxonmobile. The ultimate goal of this research is to present a verdict whether those stocks merit to be considered as a serious investment and whether it is worth buying them at all.

### 2.2 Methodology

This bachelor thesis is divided by 2 parts: theoretical and practical. Theoretical part includes generic information about stocks and stock market e.g. Stock exchange, Type of stocks. When it comes to the practical part, it is essential to understand that there is no universal way of predicting the outcome when holding stocks. However, it becomes quite possible to get to the understanding of whether there will be a bull market or a bear one by conducting an analysis involving techniques such as fundamental analysis, return on investment, net present value, and future value, maximum, minimum and other financial methods. All those techniques are bound to help me to analyse Berkshire Hathaway and ExxonMobil stocks.

## 3 Literature Review

### 3.1 Stock Market

#### 3.1.1 Definition of stock market

The stock market is the relationship between its participants regarding the issue and circulation of securities. The stock market covers both credit relations and co-ownership relations expressed through the issuance of special documents (stocks) that have their own value and can be sold, bought and redeemed. Externally, the concept of the stock market differs from the definition of the market of any other commodity only by this commodity itself – a stock. Consequently, the securities market, on the one hand, is similar to the market of any other commodity, since a security is also a commodity, and on the other hand, it has specific features that stem from the specifics of its product – a stock. (DAVIS, Rod. 2013)

The difference between the stock market and the real goods market:

- the difference in object and volume. The compared markets have different objects: a stock or a tangible commodity; the volume of the stock market, since it has no material character, is much larger than the market of tangible goods and potentially has no limit;
- the way the market is formed. A commodity as a material object must be produced or mined in the course of a person's labor activity. The stock is put into circulation;
- the significance of the circulation process. The purpose of the production of any tangible good is its productive or personal consumption. The process of its circulation is necessary to deliver the thing from the manufacturer to the consumer. On the contrary, a stock exists only in the process of circulation. The number of its transitions from hand to hand is unlimited and potentially infinite. The end of the circulation process means "death" for the stock;

#### 3.1.2 History of Stock Market

It is difficult to specify when the stock market first appeared, but the first stock markets arose when the countries of the New World began mutual trade. In the 1100s, France introduced a system in which courtiers took care of agricultural debts across the country on behalf of

banks. Experts often see this as the first significant example of brokerage activity, since men effectively trade debts. (FRIDSON, Martin S. 1998)

The first stock markets in the world can be linked to Belgium. Ghent, Bruges, Flanders, and Rotterdam were the first cities in the Netherlands to establish their own "stock market" systems in the 1400s and 1500s. (TRACY, James. 1985)

In the 17<sup>th</sup> and 18<sup>th</sup> century Dutch came up with several financial innovations that helped in laying the foundation of the modern financial system. In this time Italian city-states produced the first transferable bonds. In the early 1600s Dutch East India Company became the first company in history to issue bonds and shares of stock to the public. The company released its shares on Amsterdam Stock Exchange. The first business was conducted in coffee shops. Investors used to trade stocks with other Investors in coffee shops. (PETRAM, Lodewijk, 2014)

However, all these early stock markets missed one thing - stocks. Infrastructure and institutions resembled today's stock markets. Markets used to deal with government affairs, personal debts, and various other businesses. Although the actual real estate being sold was different, the system and organization were similar. The London Stock Exchange officially appeared in 1801, despite the ban on the issue of shares. However, until 1825, no company received permission to issue shares. Thus, the exchange became minimal. In addition, it also prevented the London Stock Exchange from preventing the creation of a true global superpower. Consequently, the creation of the New York Stock Exchange (NYSE) in 1817 is considered such a critical moment NYSE has been trading stocks since time immemorial. Also, it's a lesser-known fact, but the NYSE was not the first stock exchange in the United States. This title is held by the Philadelphia Stock Exchange. Despite this, the NYSE has become the most powerful exchange in the country. This is due to its positioning in the center of the US trade and economy in New York and domestic competition. The New York Stock Exchange has become the leading stock exchange in America and the world. At the same time, the London Stock Exchange was the main stock market for Europe. (BROOKS, John, 1968)

### 3.1.3 Stocks

A stock is an equity security that secures the rights of its owner (stockholder) to receive part of the profit of a joint-stock company in the form of dividends, to participate in the management of a joint-stock company and to part of the property remaining after its liquidation. The process of issuing and distributing securities between the first owners is called an issue. Companies place shares on the stock exchange to raise capital. When issuing securities, the joint-stock company announces the price at which investors will be able to purchase their shares on the stock exchange. At the same time, stock market participants buy the first shares from the company itself. After that, they will be able to resell these shares on the exchange to other participants. At this stage, the value of one share may be several times higher than the initial one, but first it all depends on the situation in the company.

(HAMILTON, William Peter. 1998)

### 3.1.4 Types of stocks

The stocks are divided into two types:

- **Common stock**
- **Preferred stock**
- **Share class**

#### **Common**

Give the investor the right to vote at the shareholders' meeting. Such shares do not guarantee the payment of dividends but given the opportunity to claim them. It is important to know that ordinary shares are one of the riskiest securities. This is because in case of liquidation of the business, the owners of ordinary shares will be able to claim a refund after payments to holders of preferred shares and bonds. (BODIE, Zvi, KANE, Alex, MARCUS, Alan J. 2012)

#### **Preferred**

Preferred shares usually pay more dividends, but their owners do not have the right to vote. At the same time, holders of preferred shares have priority in case of bankruptcy of the issuer. Additionally, if a company goes bankrupt or liquidates its assets, preferred shareholders get paid out before holders of common shares. Thus, preferred stock tends to be less volatile than common stock. (BODIE, Zvi, KANE, Alex, MARCUS, Alan J. 2012)

## **Share class**

Stocks can be broken down further into classes, typically Class A and Class B. Both have the same right to a company's profits. The main difference is in voting rights.

Voting rights can be structured in many ways. In some companies, one class (typically Class A) carries more voting rights than the other. In other instances, one class holds all the voting rights for the company. In these cases, the company founders may own all the shares with voting rights, guaranteeing their power. The non-voting class shareholders are there to go along for the ride and whatever the Class A shares decide. Other companies designate certain votes for Class A only, like filling the board of directors or changing the strategic direction of the company. (MAHANTI, Pk. 2001)

Berkshire Hathaway is one example of a company using share classes to consolidate voting power. B.H has Class A and Class B shares, but Class A shareholders hold all voting. Warren Buffet and a few insiders maintain control of the company through their Class A shares, while Class B is used mostly for raising capital.

### **3.1.5 Types of Stock Market**

The Stock Market is divided into 2 types:

- 1. Primary market.**
- 2. Secondary market.**

1. The primary market is the market of new and repeated issues (issues) of securities, where their initial placement among the first investors takes place. As a result of the sale of securities on the primary market, the person who issued them (the issuer) receives the necessary funds, and the securities enter the hands of their first holders (investors). This function of the primary securities market is to mobilize new capital. After the first investor has bought a security, he has the right to resell it to other persons, and those in turn can sell it to the next buyers. The first and all subsequent resales of securities will be carried out on the secondary securities market.

2. The secondary securities market is the market where securities are traded. In this market, there is no accumulation of new financial resources for the issuer, but only a redistribution of resources among subsequent investors is observed.

Thus, the secondary market is a mechanism for the resale of securities, allows investors to freely buy and sell securities, to fulfill their goals in the market (income generation, risk reduction, increased ownership).

The absence of a secondary securities market or its weak organization would make it impossible for investors to resell securities later, which would reduce the activity of their participation in the investment process, and enterprises in need of new capital would be left without financial support.

For example, if you want to buy ExxonMobil stocks, you will deal with another investor who already owns shares in ExxonMobil. ExxonMobil is not involved with the transaction.

**There are two main types of secondary markets: auction and dealer markets:**

- 1. Auction market**
- 2. Dealer market**

1. Auction markets differ from dealer markets in two ways. First, an auction market or exchange has a physical location (like Wall Street). Secondly, in the dealer market, most



purchases and sales are carried out by the dealer himself. On the other hand, the main purpose of the auction market is to match those who want to sell with those who want to buy. Dealers play a limited role.

2. Dealer markets. In these markets, sellers publicly announce the offer prices and the order of access to the places of purchase of securities. Buyers who agree with the price offers and in other terms of investment, declare their intentions and acquire securities. Sellers are obliged to make transactions with any person at the prices they have announced. (TEWELES, Richard J. 1998)

### 3.1.6 Stock exchange

The stock exchange is a securities market: stocks, bonds, investment units.

The exchange has professional participants — intermediaries between buyers and sellers. These are banks, brokers, investment companies. It is intermediaries who provide private investors with access to the stock market. Many imagine the stock exchange as a noisy place where people with three handsets in their hand shout out their bets, but those times are long gone. Now almost all the activity of the exchange is conducted electronically. In terms of market capitalization, the two biggest stocks in the United States of America are the New York Stock Exchange (NYSE) and NASDAQ\* stock exchange. (STRINGHAM, Edward Peter, 2015)

### 3.1.7 Role of Stock Exchange

Currently, the role of the stock exchange is quite high, the stock market still occupies an important place in the system of market relations. They are considered a barometer of the economic and political life of countries, and exchange information is among the most objective and valuable data.

The exchange allows companies to raise capital by giving them access to private and institutional investors. The stock exchange has a huge impact on the economy. The role of the stock exchange for the stock market is great. It is a part of the securities market organized in a certain way, within which purchase and sale transactions are carried out through the mediation of exchange members. The peculiarity of exchange trading is that transactions are always made in the same place, at a strictly defined time and according to clearly established rules that are mandatory for all participants. In fact, the exchange creates a clear organizational structure and a mechanism for concluding and executing transactions with exchange values. (SCHWARTZ, Robert A. 2015)

### 3.1.8 Modern Stock Exchange

Today, almost every country in the world has its own stock market. The largest economic powers around the world have powerful stock markets. The largest stock exchanges in the world by market capitalization in 2020 were:

#### 1. NYSE

**Figure No. 1: “New York Stock Exchange” building**



The New York Stock Exchange, located on Wall Street and founded in 1792. It is at the top of stock exchanges with a market capitalization of \$25.53 trillion.

## 2. NASDAQ

**Figure No. 2: “NASDAQ” building**



Based in New York. It was founded in 1971 and has a market capitalization of \$11.23 trillion.

## 3. Japanese Exchange Group

**Figure No. 3: “Japanese Exchange Group” building**



Manages several securities exchanges, including the Tokyo Stock Exchange and the Osaka Stock Exchange. The company emerged as a result of the merger of several firms in 2013 and has a market capitalization of \$ 5.1 trillion.

#### 4. Shanghai Stock Exchange

**Figure No. 4: “Shanghai Stock Exchange” building**



The largest of the two independently operating exchanges in mainland China (the second exchange is Shenzhen). It is not fully open to foreign investors and is subject to government influence. The market capitalization is \$4.67 trillion.

## 5. Hong Kong Stock Exchange

**Figure No. 5: “Hong Kong Stock Exchange” building**



Manages the stock and futures market in Hong Kong through two subsidiaries. The Hong Kong government is the company's sole largest shareholder. The market capitalization is \$4.23 trillion.

## 6. Euronext

**Figure No. 6: “Euronext” building**



Manages markets in a wide variety of countries, including Amsterdam, Brussels, London, Lisbon, Dublin, Oslo and Paris. The largest European stock exchange with a market capitalization of \$3.67 trillion.

## 7. Shenzhen Stock Exchange

**Figure No. 7: “Shenzhen Stock Exchange” building**



The Shenzhen Stock Exchange was founded in 1990 and has a market capitalization of \$3.28 trillion. The controlling stake in most of the serviced companies belongs to the government.

## 8. LSE Group

**Figure No. 8: “London Stock Exchange” building**



Also known as the London Stock Exchange. Owns several exchanges around the world, including the Italian Borza. It was founded in 1801 and has a market capitalization of \$2.92 trillion.

## 9. TMX Group

**Figure No. 9: “Toronto Stock Exchange” building**



A Canadian company that manages, among others, the Toronto Stock Exchange and the TSX Venture Exchange. The market capitalization is \$1.75 trillion.

## 10. BSE India Limited

**Figure No. 10: “Bombay Stock Exchange” building**





Asia's oldest stock exchange, formerly known as the Bombay Stock Exchange. The market capitalization is \$1.51 trillion.

### 3.1.9 Factors influencing Stock Market

- 1. Supply and demand**
- 2. output of statistical data**
- 3. Economic growth**
- 4. forecast of profitability in the future**
- 5. Interest rate**
- 6. Stability**

- 1. Supply and demand**

The main factor in the formation of the stock price is the availability of supply and demand. If demand exceeds supply, the stock will rise in price. Conversely, if supply exceeds demand, the stock will fall.

## **2. Output of statistical data**

Companies' financial results reports have an impact on investor sentiment. If a firm shows an increase in profits, then its securities become more expensive, and this in turn creates incentives for investment.

## **3. Economic growth**

This is quite simple, because the higher the economic growth, the more likely firms are to become profitable as demand for goods and services increases. This has a direct impact on the company's share prices and the amount of dividends paid.

## **4. forecast of profitability in the future**

It is no secret that any organization strives to increase profits, and for this it needs to work effectively. To assess the effectiveness of the organization's activities, a profitability analysis is carried out. The better the forecasts, the more positively it will affect the stock price.

## **5. Interest rate**

Most often, the key interest rate of the central bank of a certain country is very closely related to stock prices. When the interest rate rises, the stock price begins to decline, when the interest rate falls, stock prices rise.

The reason why this connection is so strong lies in the fact that low interest rates encourage the company to lend more, buy more equipment, hire new employees, attracting cheap money from banks. This creates more activity in the economy and the production of new goods and services, which revives production and labor, along with an increase in orders, the revenue and profits of companies grow, which has a positive effect on the prices of their shares.

## **6. Stability**

The stock market reacts very quickly to any situation that may threaten economic stability and potential growth in the future. Consequently, in cases such as a pandemic, a terrorist attack, or a sudden spike in oil prices, the stock market tends to fall. In addition, stock prices may be affected by a situation like political instability or civil unrest, which may make it difficult to implement a strong economic policy.

## 3.2 Stock Indexes

### 3.2.1 Definition of a Stock Index

An exchange index (stock index) is an indicator of the state of the securities market calculated in a certain way based on a basket of the most liquid ordinary shares or bonds. Stock indexes allow you to assess the state of the stock market as a whole, to determine the current moment in the economic cycle. (CAPLINGER, Dan. 2020)

The first widely distributed index was the index created by Charles Dow in 1884. His calculation was based on the quotes of 11 of the largest (and with the largest turnover of shares on the stock exchange) at that time, US transportation companies - the index was called the Dow Jones Transportation Average. In 1896, an index appeared, which today is known as the Dow Jones Industrial Average, which united the main industrial companies of America.

The word "Industrial" in today's realities is nothing more than a tribute to tradition, since the indicator itself has long included companies that are not directly related to this industry.

Another famous index, the S&P 500, traces its history back to the first Standard & Poor's index, which was introduced in 1923. In its current form, the S&P 500 began life in March 1957 — by that time, technology made it possible to calculate the index in real time.

(VALETKEVITCH, Caroline. 2013)

There are hundreds of thousands of companies in the world whose securities are traded on stock exchanges. It is impossible to track changes in the prices of all securities. To understand the main market sentiment, financiers came up with stock indexes. They reflect how much the value of a certain group of securities has changed on average.

Investors use stock indexes both to assess the situation on trading platforms and to predict the results of future trades. Indicators are calculated for different countries, industries or for a certain group of securities - stocks, bonds and other assets.

The stock index of the exchange is usually not the average value of shares of all companies on the trading floor. Most often, stock indicators are calculated by a certain number of shares. These are mainly securities of the most expensive companies or stocks with the largest trading volumes.

### 3.2.2 Major stock indexes

There are many stock indexes all over the world. Here are a few of the major ones:

- S&P 500
- Nasdaq Composite Index
- Dow Jones Industrial Average

S&P 500 Index

The main indicator of the most important stock market for investors around the world is the American one. It includes 505 shares of the 500 largest American companies, which together account for about 80% of the capitalization of the entire US market. The biggest weight in the index, as of September 8, 2020, belongs to IT giants Microsoft, Apple, as well as retailer Amazon, whose business is built on IT solutions. Companies from the IT sector account for 28.7% of the index, although at the beginning of 2020 this figure was only 23.2%. These companies suffered relatively less due to the crisis caused by the coronavirus, and their shares recovered faster. The dynamics of the S&P500 index depends on the situation not only in the US, but also in the global economy. According to 2018 data, 43% of the companies' revenue from the index came from foreign markets. There is a separate index that tracks the dynamics of companies for which this indicator is above average. (BRZENK, Phillip. 2018)

#### NASDAQ Composite Index

The index of more than 2.5 thousand companies traded on the NASDAQ exchange. These are mainly high-tech and rapidly developing companies. IT companies account for more than 50% of the index. NASDAQ-100 is less often mentioned — the index of the 100 largest companies of the exchange. As in the broad market index, Apple (13%), Microsoft and Amazon (10% each) have the largest shares. Rebalancing of indexes occurs once every 3 months. At the end of April 2020, Zoom Video Communications, whose video communication program became incredibly popular during the pandemic, entered the NASDAQ-100 index for the first time. (FRANKEL, Matthew. 2022)

#### Dow Jones Industrial Average (Down)

An index of 30 large companies listed on stock exchanges in the United States, weighted by prices: the value of each share is considered and divided by the number of companies from the index. The higher the value of one stock, the more the relative change in its value affects the index. Historically, industrial companies have occupied a significant part of the Dow Jones index, but now its industry structure is like the S&P 500. On the 1st place - the IT sector, on the 2nd and 3rd - healthcare and consumer sector. The largest share in the index

due to the high value of shares, as of September 2020, is occupied by the medical company UnitedHealth Group, The Home Depot retail chain and the developer of CRM systems Salesforce.com. Due to the dependence on stock prices and a small number of companies, many investors believe that the Dow index is unrepresentative for the American market. (DZOMBAK, Dan. 2014)

## 4 Practical part

### 4.1 Performance of Berkshire Hathaway INC and ExxonMobil 2011-2021

Before we start analyzing Berkshire Hathaway and ExxonMobil shares, we should get to know these companies better, because before you analyze a stock, you first need to analyze the company that issues these very shares.

#### 4.1.1 Berkshire Hathaway INC

Berkshire Hathaway is an investment or management company that buys shares of other well-known companies in various industries. The holding manages assets worth more than \$586 billion and, until recently, showed double-digit growth in profit indicators.

The investment corporation unites more than 60 companies of various directions, united by sectors of the economy. There are four players in the insurance block - Geico, Gen Re, NRG and BHA. There is a powerful Berkshire Hathaway energy block, an active conglomerate to produce sportswear and footwear, the lion's share in capital construction belongs to Acme Building Group. Berkshire Hathaway also has shares of Pepsi, Russell Corporation, Wrigley, Goldman Sachs, General Electric, Bank of America, Heinz, IBM, ABC Capital, Solomon, Coca-Cola, and in May 2016, Apple shares were acquired in the amount of \$ 1 billion.

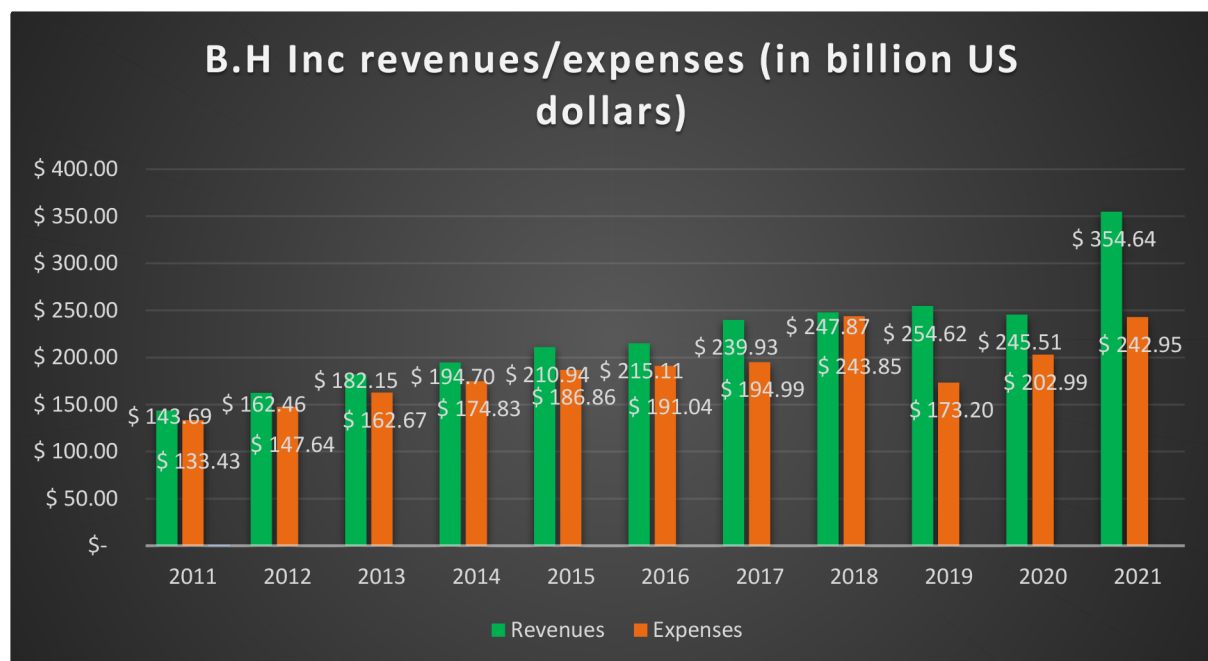
Under the management of the holding are large business representatives of various fields of activity:

1. Insurance
2. Production
3. Transportation by rail and road
4. Retail chains
5. Financial organizations
6. Media groups.

Advantages of Berkshire Hathaway shares:

1. One of the most popular and liquid stocks in the world
2. Do not have negative pressure factors
3. They are in the portfolios of all major investment companies
4. They show if not the best profitability, then stable.

**Figure No. 11: Berkshire Hathaway Inc revenues/expenses (2011-2021)**



Source: Macrotrends.net 2011-2021

One of the most important elements is the profit and loss statement, in order to see how much the company earns. We see that the company earns, its revenues exceed expenses, and over the past few years, revenues have begun to noticeably exceed expenses, this is a very good sign. Only in 2018 the expenses were close to revenues, which means the net income was low (**Appendix A**).



### 4.1.2 ExxonMobil

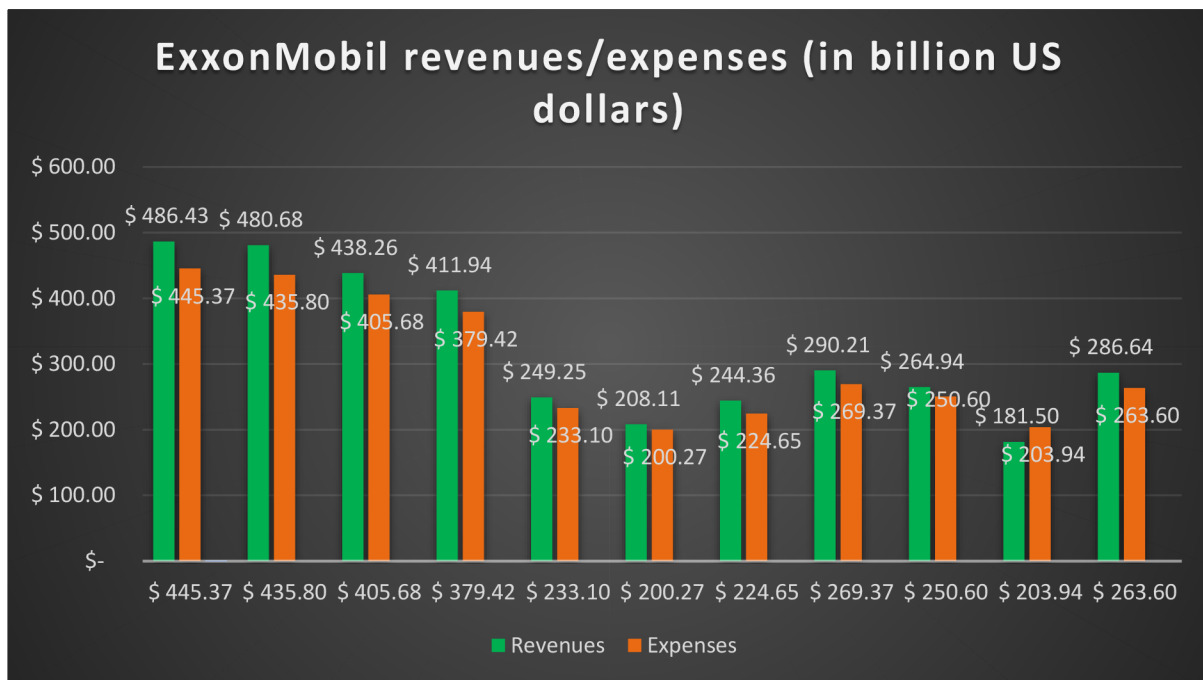
ExxonMobil is the largest public oil and gas company. It was formed in 1999 as a result of the merger of two major oil companies Exxon and Mobil. Both Exxon and Mobil were direct "descendants" of the American oil monopoly Standard Oil Co., created by John D. Rockefeller and partners in 1870. Thus, without considering historical collaborations, ExxonMobil can be considered a company with almost 1.5 centuries of history.

Directly or indirectly owns shares in refineries in 25 countries of the world, a network of gas stations in more than 100 countries of the world. The daily production volume of oil, gas condensate and other hydrocarbons is about 2.4 million barrels of oil equivalent. The company's revenue structure is 35%/65% of the domestic and international markets, respectively. Significant sources of income outside the United States include: 8% Canada, 7% United Kingdom, 6% Belgium, 5% Singapore, 5% France, 5% Italy, 3% Germany.

Main divisions:

1. Oil and gas production
2. Oil refining and sales
3. Chemical industry
4. Corporate Center and Finance

**Figure No. 12: ExxonMobil revenues/expenses (2011-2021)**



Source: Macrotrends.net 2011-2021

Although ExxonMobil earns less than Berkshire Hathaway over the past few years, it still shows pretty good reporting. But it is worth noting one very important point: in 2020, the company's expenses exceeded revenues, which is a very bad sign for an investor, it suggests that the company largely depends on external factors, such as the price of oil (**Appendix B**). As we know, in 2020, the price of oil fell very much, due to covid restrictions and lack of agreement between OPEC countries.

#### 4.1.3 Berkshire Hathaway and ExxonMobil stocks analysis

Berkshire Hathaway shares are divided into two classes - A and B.

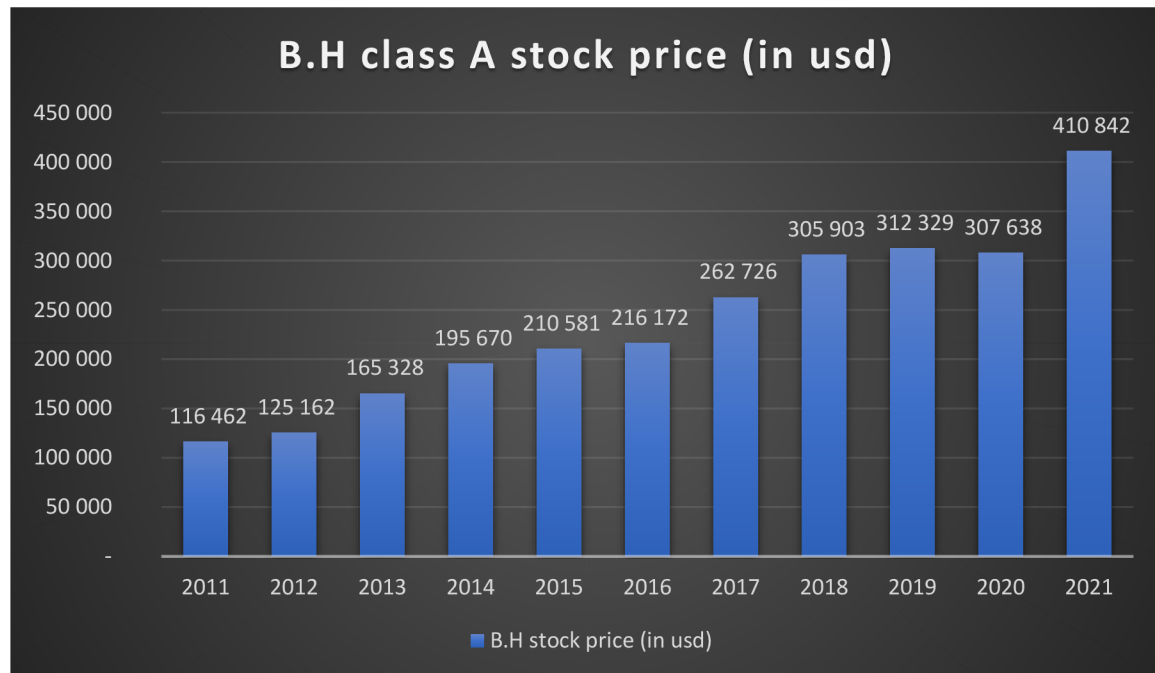
They differ in price — Class B shares are 1500 times cheaper than Class A shares and the number of votes - Class A shares have 200 times more. That is, if you use the same money to buy the corresponding number of shares of both classes — if you have Class A shares - your vote is 200 times more significant than the holder of Class B shares.

In 1965, Warren Buffett gained control of Berkshire Hathaway (became CEO and chairman of the board of directors) — that year its shares were worth about \$ 18 per share.

Today, the price of one share exceeds \$410 842!

These tables vary annually from 2011 to 2021, we will analyze the shares of both companies over the past 10 years.

**Figure No. 13: Berkshire Hathaway Inc stock prices (2011-2021)**



Source: Yahoo Finance 2011-2021

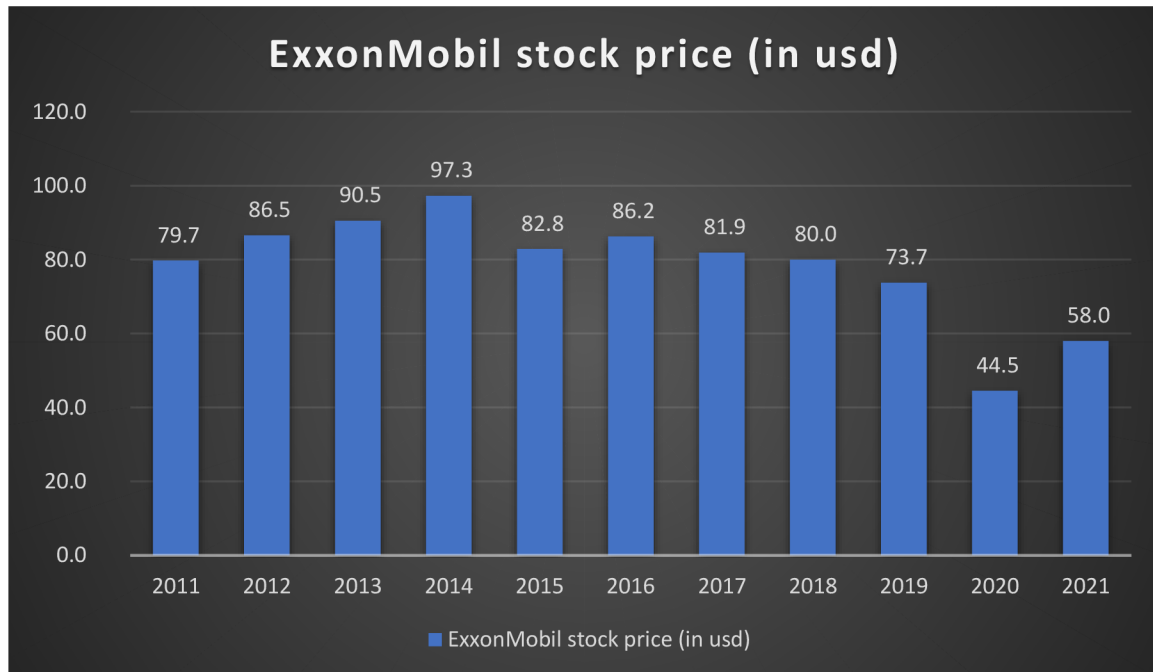
In general, as we can see from this chart, the price of B.H shares has been growing quite steadily every year. If we look at the stock price at the beginning of our analyzed period in 2011, and then look at 2021, we will see that the stock price increased by 352%. During this period of time, the stock price fell only once in 2020, due to the pandemic, as we all know, but the falling price was not high. But the next year the stock increased by 33% again **(Appendix C)**.

## ExxonMobil

ExxonMobil is a public oil and gas company in the world. It traces its history back to 1859. Directly or indirectly owns shares in refineries in 25 countries of the world, a network of gas

stations in more than 100 countries of the world. The daily production volume of oil, gas condensate and other hydrocarbons is about 2.4 million barrels of oil equivalent.

**Figure No. 14: ExxonMobil stock prices (2011-2021)**



Source: Yahoo Finance 2011-2021

In general, as we can see, the share price is quite unstable, until 2014 the price gradually and steadily grew, the fall in oil prices in 2014-2015 had a strong enough impact and since that period the price has become very unstable. In March 2020, due to the collapse of the OPEC deal and the beginning of the coronavirus pandemic, the price of oil fell sharply, which had a direct impact on the share price: a drop from \$73.7 to \$44.5 per share. But it is worth noting that this year the price has been rehabilitated and now trading at \$ 79.25 per share (**Appendix D**).

#### 4.1.4 Descriptive Analysis of B.H and ExxonMobil

Analyzing the data of both companies combined, it can be noted that B.H Inc has made more progress than ExxonMobil. We should keep in mind that the company's share price is

influenced by its profit, cash flow, margin and many other financial indicators of this company.

The market capitalization is \$650 billion, while ExxonMobil has a market capitalization of only \$329.7 billion.

**Table No.1: B.H (2011–2021) and ExxonMobil (2011–2021) Descriptive Analysis**

	Berkshire Hathaway		ExxonMobil
Mean	270406,0909	Mean	78,2818
Standard Error	30922,308	Standard Error	4,52592
Median	216172	Median	86,2
Std. Deviation	102557,694	Std. Deviation	15,01078
Variance	1.052e+10	Variance	225,324
Range	336954	Range	52,80
Maximum	462116	Maximum	97,3
Minimum	125162	Minimum	44,5
Sum	2974467	Sum	861,1
Skewness	0,563	Skewness	-1,340
Kurtosis	-0,246	Kurtosis	1,734
Largest	462116	Largest	97,3
Smallest	125162	Smallest	44,5

**Note: 1.052e+10 = 10520000000**

We use the descriptive data we have received to analyze these two companies.

**Mean.** The average share price of these two companies for our analyzed period (2011-2021) is much higher for B.H and equals to \$270406,0909. The average share price for ExxonMobil is \$78,2818. But the average share price does not straightly mean that one company is better than other. To do this, we will calculate the Price-Earnings ratio for these two companies.

**Standard Deviation.** The standard deviation for B.H is 102557,694 and for ExxonMobil it was 15,01078. The standard deviation determines the frequency of oscillation (deviation) from the average value. The standard deviation of the B.H is much larger than that of the ExxonMobil, which means more volatility, and this in turn indicates more risk. From the standard deviations of the two companies, in the period from 2011 to 2021, B.H was exposed to a significantly higher risk of declining profits compared to ExxonMobil. There are high and low volatility. Usually low-volatility papers are the most reliable, because they give the investor confidence in the future and in the planned income. However, such securities often bring a stable, but small income. On the contrary, highly volatile securities involve more risk, but also more income.

**Range.** Regarding the range, the situation is as follows: for B.H this indicator is 336954, while for ExxonMobil this indicator is 52.80. The range tells us about the difference between the maximum and minimum stock price. This also indicates volatility. At B.H, this indicator is much higher, which means that the shares are at risk of a sharp increase in price and profitability, or vice versa. At ExxonMobil, this indicator is lower, which indicates a lower risk of volatility.

**Skewness** is a numerical representation of the degree of deviation of the distribution graph of indicators from the symmetric distribution graph.

B.H has a skewness of 0,563, which means a positive skewness. The distribution of returns with a positive bias (positively Skewness) often brings small losses and several extreme returns.

ExxonMobil has a skewness of -1,340, which means a negative skewness. The distribution of returns with negative skewness (negatively Skewness) often brings small returns and several extreme losses.

**Kurtosis** is a statistical measure that is used to describe a distribution.

For investors, a high kurtosis of the yield distribution means that the investor will from time to time receive an extreme profit (positive or negative), more extreme than the usual + or – three standard deviations from the average value predicted by the normal yield distribution.

If the kurtosis value is greater than 0, then the shape of the distribution is more pointed than the normal curve. In the case of negative kurtosis, the distribution curve is flatter compared to the normal curve.

In our case, B.H has a negative kurtosis equal to -0,246, which indicates a flatter peak, while ExxonMobil has a kurtosis greater than 0, equal to 1,734, which indicates that the tails have a more peak shape.

## 4.2 Financial Methods

### 4.2.1 PE ratio

The PE ratio is a simple way to assess whether a stock is over or undervalued and is the most widely used valuation measure.

PE ratio formula:

**Figure No. 15: PE Ratio formula**

## PE Ratio (Price-to-Earnings)

$$PE = \frac{\text{Stock Price}}{\text{Earnings Per Share}}$$

In the beginning of 2022 earnings per share (EPS) for B.H is \$59459,80. Therefore, the PE coefficient is 8,2. ExxonMobil's earnings per share is \$5,39, resulting in a PE ratio of 15,01. It means that ExxonMobil's stocks currently are more valuable.

Source: Yahoo Finance 2021

#### 4.2.2 Net Present Value (NPV)

NPV is the net value of cash flows given at the time of calculation of the project. Thanks to the NPV calculation formula, it is possible to evaluate the own economic efficiency of the project and compare several investment objects with each other.

NPV represents the level of profit that the participants of the investment project expect. Mathematically, this indicator is determined by discounting the values of net cash flow, while it does not matter which flow is in question: negative or positive.

To simplify the definition as much as possible, NPV is the income that the project owner will receive during the planning period, having paid all current costs and settled with the tax authorities, staff, lender (investor), including paying interest (or taking into account discounting).

The formula of NPV:

**Figure No. 16: Net Present Value formula**

$$NPV = -C_0 + \frac{C_1}{1+r} + \frac{C_2}{(1+r)^2} + \dots + \frac{C_T}{(1+r)^T}$$

$-C_0 = \text{Initial Investment}$

$C = \text{Cash Flow}$

$r = \text{Discount Rate}$

$T = \text{Time}$

**Table No.2: B.H (2011–2021) Net Present Value calculation**

No of period	year	cash flow value	discount rate
--------------	------	-----------------	---------------



1	2011	\$	116 462,00	10%
2	2012	\$	125 162,00	
3	2013	\$	165 328,00	
4	2014	\$	195 670,00	
5	2015	\$	210 581,00	
6	2016	\$	216 172,00	
7	2017	\$	262 726,00	
8	2018	\$	305 903,00	
9	2019	\$	312 329,00	
10	2020	\$	307 638,00	
11	2021	\$	410 842,00	

NPV = \$ 1 392 539,88

Net Present Value for Berkshire Hathaway Stock Prices from (2011-2021) data is \$1 392 539,88. (**Appendix C**).

**Table No.3: ExxonMobil (2011–2021) Net Present Value calculation**

No of period	year	cash flow value	discount rate
1	2011	\$ 79,70	10%
2	2012	\$ 86,50	
3	2013	\$ 90,50	
4	2014	\$ 97,30	
5	2015	\$ 82,80	
6	2016	\$ 86,20	
7	2017	\$ 81,90	
8	2018	\$ 80,00	
9	2019	\$ 73,70	

10	2020	\$	44,50
11	2021	\$	58,00

NPV = \$ 526,55

Net Present Value for ExxonMobil Stock Prices from (2011-2021) data is \$526,55.

**(Appendix D).**

The Net Present Value of all investments in the shares of both companies was positive. A positive value of the net present value shows that during the billing period discounted cash receipts will exceed the discounted amount of capital investments and thereby ensure an increase in the value of the company.

It is worth noting that any investor who invests in any of these companies will make a profit, since the net present value of both companies is positive. But it is also worth noting that any good investor will undoubtedly invest his money in the company that will bring the greatest profit. In this case, Berkshire Hathaway is undoubtedly better, since the net present value is many times greater, it is \$1,392,539.88. While ExxonMobil has this figure equal to \$526.55. Based on the results, any investor would prefer Berkshire Hathaway rather than ExxonMobil.

#### 4.2.3 Correlation analysis

When choosing securities for a portfolio, investors often face a situation when, for example, the price movements of several stocks turn out to be identical. In fact, the dynamics of such assets demonstrates a close relationship (correlation) between them. The inclusion of a set of such connected instruments in the investment portfolio can lead to both a significant increase in profitability and an increase in risks. The correlation coefficient helps to assess the depth of this relationship.

Correlation is a concept from statistics that shows the relationship (mutual influence) of two random variables. Since the movements of securities quotations on the stock market are in many ways like the behavior of random variables (although they are not 100% such), many patterns of statistical analysis work well with them. In fact, correlation when working with

securities allows you to estimate the probability of synchronous price movement of two assets, for example, stocks, or stocks and an index. This means that if there is a strong correlation with the growth of the price of one stock, the other will also become more expensive. Or, at the same time as the index falls, the shares of companies that correlate with it will also fall in price.

The degree of interdependence of values (in the case of the stock market - securities quotations, index values, etc.) displays the correlation coefficient. It can take any values in the range from -1 to 1. The Chaddock R.E scale for coefficient values interprets the relationship between the observed values as follows:

0 – complete lack of communication

0 - 0.3 – very weak

0.3 - 0.5 - weak

0.5 - 0.7 - average

0.7 - 0.9 - high

0.9 - 1 is very high

1 - absolute interdependence (Chaddock R.E.: „Principles and Methods of Statistics” (1st Edition)- Houghton Mifflin Company, The Riverside Press Cambridge, 1925).

If the coefficient values are less than 0, they speak of an inverse (negative) correlation. For the stock market, this means that the quotes of the assets under study move in different directions: when the price of one increase, the second becomes cheaper, and vice versa. To do this we will use “CORREL” function in excel.

**Table No.4 Correlation between B.H and ExxonMobil stock prices (2011 - 2021)**

	Column 1	Column 2
Column 1	1	
Column 2	-0,6711474	1

The data for these two companies from year 2011 to year 2021 shows negative correlation. The correlation from Excel is -0,6711474 (**Appendix C and D**). This means that B.H and ExxonMobil's shares are practically not connected to each other. If Berkshire's shares are growing, it does not mean that Exxon's shares are also growing and vice versa.

## 4.3 Trends

### 4.3.1 Moving Average

The moving average (MA) is one of the oldest and most widely used indicators of technical analysis. This is a trending tool, of which several types have been developed. Traders and investors use it both to analyze the securities market and to develop trading systems. A moving average is the average price of a stock or any other instrument over a certain period. It is applied directly to the graph itself and has the form of a curved line. Its main task is to indicate to the trader the main direction of the trend, ignoring minor price fluctuations up and down. (BURNS, Holly. 2015)

We will analyze the shares from 2021 to March 2022. When trading stocks, there is an "opening" time when trading begins, as well as a "closing" time when the market closes, in this interval the shares reach their maximum and minimum prices, it can be for a day, a week or a month. To find the optimal value, we will take "closing" price (in every month), we will use this very value as the optimal one in our analysis interval.

### 4.3.2 Simple Moving Average

**Figure No. 17: Formula of Simple Moving Average**

$$SMA = \frac{A_1 + A_2 + \dots + A_n}{n}$$

Where “n” = time period

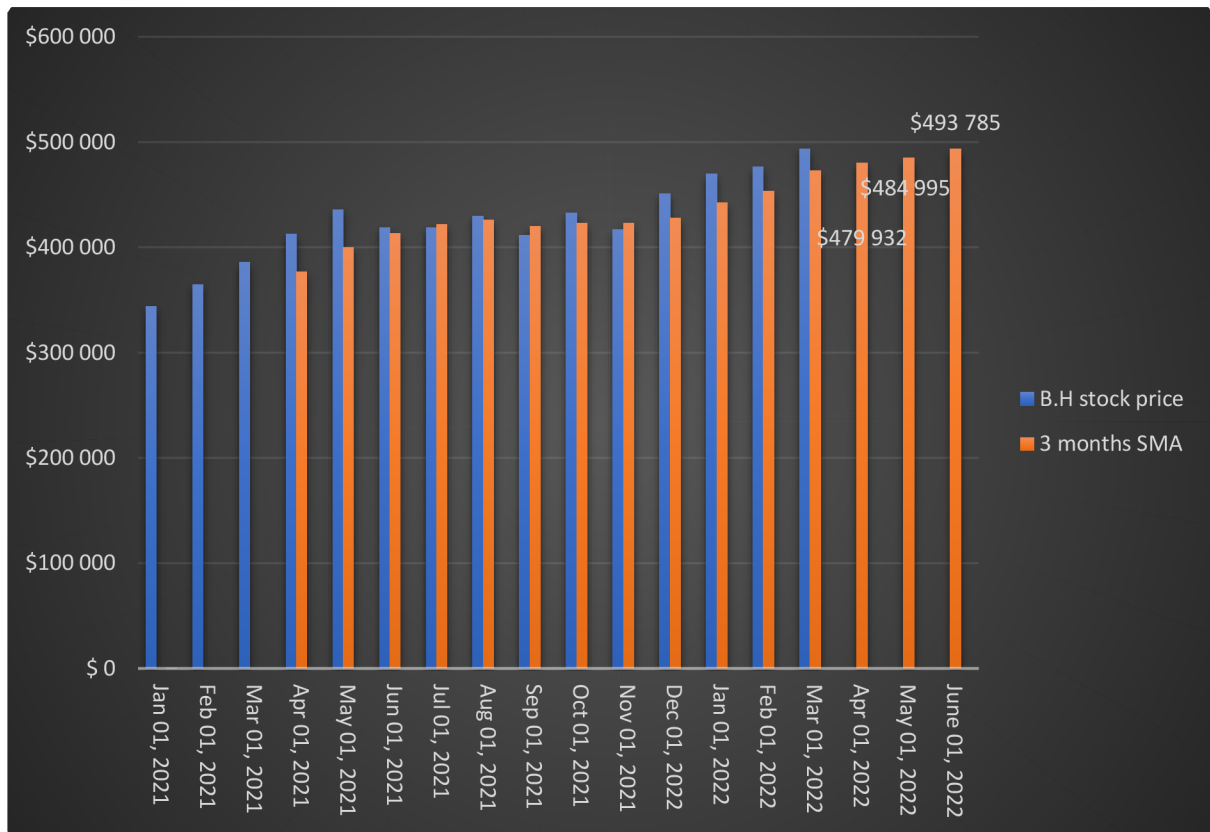
**Table No.5: Berkshire Hathaway SMA calculation (01.01.2021 - 01.03.2022)**

Date	Closing stock price	SMA
Jan 01, 2021	\$344 100	#H/A
Feb 01, 2021	\$364 580	#H/A
Mar 01, 2021	\$385 702	#H/A
Apr 01, 2020	\$412 500	\$376 721
May 01, 2021	\$436 000	\$399 696
Jun 01, 2021	\$418 601	\$413 201
Jul 01, 2021	\$418 900	\$421 500
Aug 01, 2021	\$429 900	\$425 850
Sep 01, 2021	\$411 379	\$419 695
Oct 01, 2021	\$432 902	\$423 270
Nov 01, 2021	\$416 876	\$422 764
Dec 01, 2022	\$450 662	\$427 955
Jan 01, 2022	\$469 805	\$442 561
Feb 01, 2022	\$476 205	\$453 387
Mar 01, 2022	\$493 785	\$472 614
Apr 01, 2022		\$479 932
May 01, 2022		\$484 995
June 01, 2022		\$493 785

Source: Yahoo Finance 2021-2022

Using the data from the table above, we will make a graph and calculate Simple Moving Average using Excel.

**Figure No. 18: Berkshire Hathaway SMA (2021-2022)**



The graph above indicates trends in the movement of B.H Inc. shares. We can use the moving average formula to predict stock trends for the next three months of 2022 (**Table No.5**), as shown in the second graph. Typically, in 2022, B.H Inc stock prices are likely to rise in the first three months, as shown in the chart.

**Table No.6: ExxonMobil SMA calculation (01.01.2021 - 01.06.2022)**

Date	Closing stock price	SMA
Jan 01, 2021	\$ 44,84	#H/A
Feb 01, 2021	\$ 54,37	#H/A
Mar 01, 2021	\$ 55,83	#H/A
Apr 01, 2020	\$ 57,24	\$ 53,07
May 01, 2021	\$ 58,37	\$ 56,45
Jun 01, 2021	\$ 63,08	\$ 58,63
Jul 01, 2021	\$ 57,57	\$ 59,07
Aug 01, 2021	\$ 54,52	\$ 58,39
Sep 01, 2021	\$ 58,82	\$ 58,50

Oct 01, 2021	\$ 64,47	\$ 58,85
Nov 01, 2021	\$ 59,84	\$ 59,41
Dec 01, 2022	\$ 61,19	\$ 61,08
Jan 01, 2022	\$ 75,96	\$ 65,37
Feb 01, 2022	\$ 78,42	\$ 68,85
Mar 01, 2022	\$ 81,88	\$ 74,36
Apr 01, 2022		\$ 78,75
May 01, 2022		\$ 80,15
June 01, 2022		\$ 81,88

Source: Yahoo Finance 2021-2022

Using the data from the table above, we will make a graph and calculate Simple Moving Average using Excel.

**Figure No. 19: ExxonMobil SMA (2021-2022)**



The graph above indicates trends in the movement of ExxonMobil stocks. We can use the moving average formula to predict stock trends for the next three months of 2022 (Table

No.6), as shown in the graph above. Typically, in 2022, ExxonMobil stock prices are likely to rise in the first three months, as shown in the chart.

### 4.3.3 Exponential Moving Average

The EMA indicator, exponential distributes more weight for the current period and less for the past. This causes the indicator to reflect a faster trend and price change, and therefore move much faster, so it is better suited for short-term trading. The EMA is calculated using a multiplier (multiplier) or coefficient. The multiplier is used to smooth the indicator and give more weight to the last periods. Sometimes the EMA reacts quickly, forcing the trader to exit the trade when the market “hiccups”, while the slower SMA keeps the person in the trade, which leads to more profit after the hiccup is completed. In other cases, the opposite could happen. A faster moving EMA signals problems faster than an SMA, and therefore an EMA trader is saved faster, saving that person time and money.

$$EMA = (P * \alpha) + \{Previous EMA * (1 - \alpha)\}$$

P= Current price

$\alpha$ = Smoothing Factor =2/1+N

N= Number of time periods. (KUEPPER, Justin. 2017)

The lower the  $\alpha$  value, the smoother the graph will be.

**Table No.7: Berkshire Hathaway EMA calculation (01.01.2021 - 01.03.2022)**

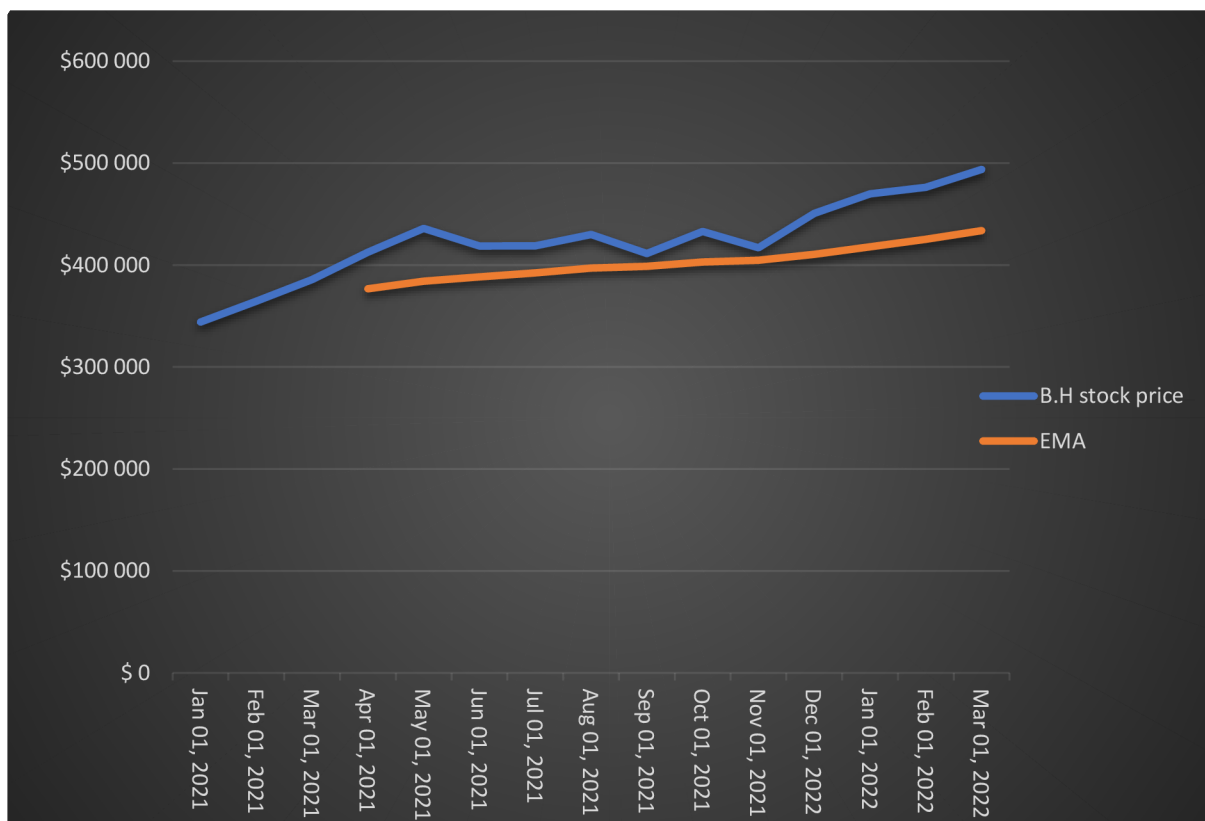
Date	Closing stock price	SMA	EMA	Alpha
Jan 01, 2021	\$344 100	#H/A		0,125
Feb 01, 2021	\$364 580	#H/A		
Mar 01, 2021	\$385 702	#H/A		
Apr 01, 2021	\$412 500	\$376 721	\$376 721	
May 01, 2021	\$436 000	\$399 696	\$384 130	
Jun 01, 2021	\$418 601	\$413 201	\$388 439	
Jul 01, 2021	\$418 900	\$421 500	\$392 247	
Aug 01, 2021	\$429 900	\$425 850	\$396 953	
Sep 01, 2021	\$411 379	\$419 695	\$398 757	
Oct 01, 2021	\$432 902	\$423 270	\$403 025	



Nov 01, 2021	\$416 876	\$422 764	\$404 756
Dec 01, 2022	\$450 662	\$427 955	\$410 494
Jan 01, 2022	\$469 805	\$442 561	\$417 908
Feb 01, 2022	\$476 205	\$453 387	\$425 195
Mar 01, 2022	\$493 785	\$472 614	\$433 769
Apr 01, 2022		\$479 932	
May 01, 2022		\$484 995	
June 01, 2022		\$493 785	

Source: Yahoo Finance 2021-2022

**Figure No. 20: Berkshire Hathaway EMA (2021 - 2022)**



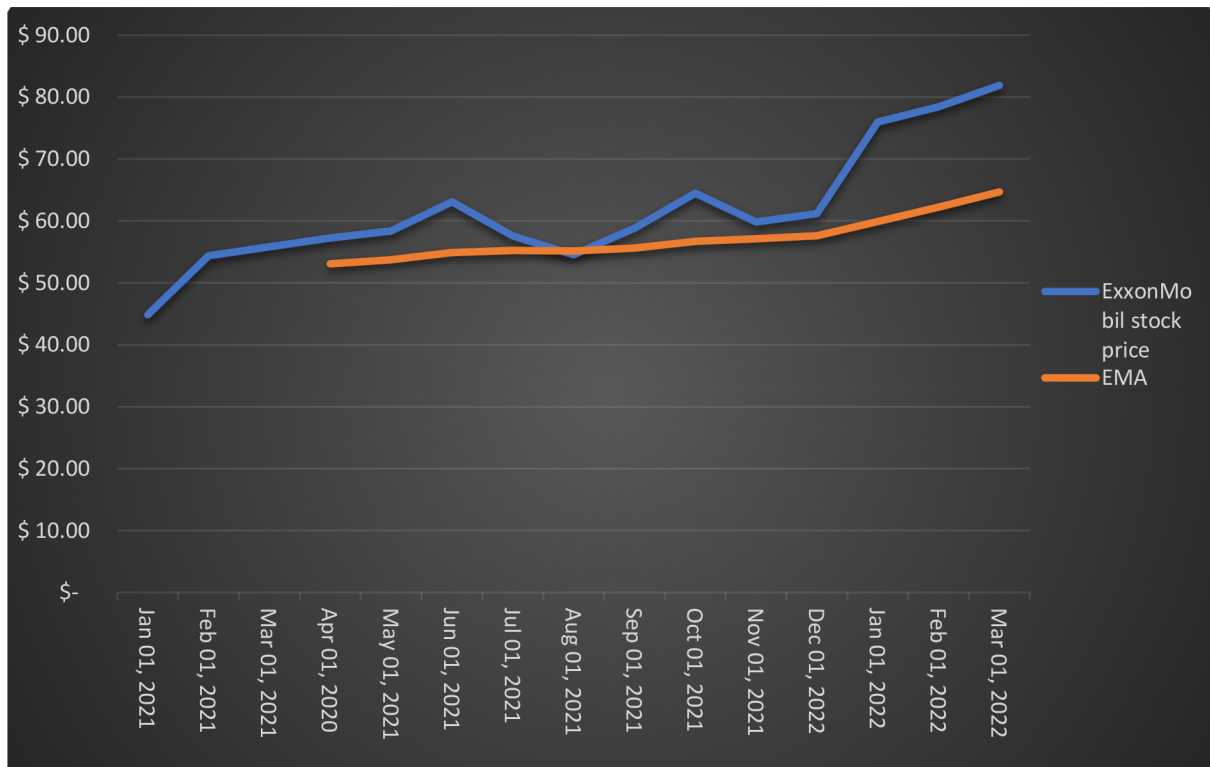
The exponential moving average for Berkshire Hathaway Inc is shown in the data and in the chart above. The data (Table No.7) shows an uptrend in stock prices. Prices are likely to rise in the coming months.

**Table No.8: ExxonMobil EMA calculation (01.01.2021 - 01.03.2022)**

Date	Closing stock price	SMA	EMA	Alpha
Jan 01, 2021	\$ 44,84	#H/A		0,125
Feb 01, 2021	\$ 54,37	#H/A		
Mar 01, 2021	\$ 55,83	#H/A		
Apr 01, 2020	\$ 57,24	\$ 53,07	\$53,07	
May 01, 2021	\$ 58,37	\$ 56,45	\$53,73	
Jun 01, 2021	\$ 63,08	\$ 58,63	\$54,90	
Jul 01, 2021	\$ 57,57	\$ 59,07	\$55,23	
Aug 01, 2021	\$ 54,52	\$ 58,39	\$55,15	
Sep 01, 2021	\$ 58,82	\$ 58,50	\$55,60	
Oct 01, 2021	\$ 64,47	\$ 58,85	\$56,71	
Nov 01, 2021	\$ 59,84	\$ 59,41	\$57,10	
Dec 01, 2022	\$ 61,19	\$ 61,08	\$57,61	
Jan 01, 2022	\$ 75,96	\$ 65,37	\$59,91	
Feb 01, 2022	\$ 78,42	\$ 68,85	\$62,22	
Mar 01, 2022	\$ 81,88	\$ 74,36	\$64,68	
Apr 01, 2022		\$ 78,75		
May 01, 2022		\$ 80,15		
June 01, 2022		\$ 81,88		

Source: Yahoo Finance 2021-2022

**Figure No. 21: ExxonMobil EMA (2021-2022)**



The exponential moving average for ExxonMobil is shown in the data and in the chart above. The data (**Table No.8**) shows an uptrend in stock prices. Prices are likely to rise in the coming months.

If we look at the graphs, in my opinion, the probability of price growth shown in ExxonMobil is slightly higher than that of Berkshire Hathaway. Both companies have shown a pretty good result. Berkshire Hathaway is a guarantor that succeeds more and more every year, the company shows very good resilience. ExxonMobil, in my opinion, also has a bright future.

## 5 Results and Discussion

The purpose of this dissertation is to study the stock market, to get a general idea of the stock market. We started the theoretical part with the stock market, we learned about its history, then we learned about what stocks are, what types of stocks there are. We continued with the types of the stock market, then we learned about the stock exchange, what role the stock exchange plays, got acquainted with modern stock exchanges where securities are traded, with the value of their capitalization, and most importantly, we learned about the factors that affect the stock market. Next, we learned about such a topic as the stock index, the main stock indexes. This is all what we focused on in the theoretical part.

In the practical part, we focused on companies such as Berkshire Hathaway and ExxonMobil, at the beginning we studied the general description of these companies, what they do, what they are known for, and so on. Then we moved on to analyzing their income and expenses to look at their net profit, because for an investor it is important how much the company earns. Next, we analyzed the shares of these companies in the period from 2011 to 2021, looked at whether the price of their shares was rising or falling on the contrary, and if it was falling, what affected it. In the next part, we tried to analyze stocks using descriptive statistics. Then we used financial methods such as NPV, PE Ratio, correlation analysis. In the end, we used methods such as SMA and EMA. The coronavirus pandemic, which continues to this day, has had a considerable impact on the shares of these companies, as well as on the economics of the whole world, but after analysis we found out that companies are recovering quite dynamically, which has a good effect on the price of their shares.

## 6 Conclusion

This thesis was supposed to show the reader what the last few years have been like for companies such as bch and Exxon, which are different in structure, are in different market sectors. Also get an idea of how different and consistent recent years have been for these companies. As we can see from the results of our analysis, both companies have a good trend and position for future growth. b h is always a reliable option for investing, as it is a holding company that owns shares of hundreds of other companies from different branches of the economy, including it owns shares of global companies. The investment corporation unites more than 60 companies of various directions, united by sectors of the economy. The high value of securities and their positive dynamics are supported by profitable and promising assets of the company. It's hard to believe that 60 years ago the business of a multidisciplinary holding consisted of one non-profitable weaving factory.

ExxonMobil also showed a pretty good result and in my opinion is a good investment. The company has been remarkably stable even in the face of various downturns in the oil and gas industry. ExxonMobil's dividends are quite safe, because even under conditions of a strong decline in oil prices, for example, as in March 2020, the company continued to increase and pay dividends to its shareholders. They are still betting on oil and gas. I think that the demand for oil and gas will not fall in the next 10 years. But they are also working to reduce emissions. Well, I also think that it is unlikely that they do not think at all that sooner or later they need to switch to renewable energy. But they're probably going to do it more smoothly. In my opinion, ExxonMobil has a bright future. The company has many new promising projects close to completion, and it generates more than enough cash to continue increasing dividends, so this is also a good investment.

## 7 References

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## 8 Appendix

Appendix A: Berkshire Hathaway Inc revenues/expenses 2011-2021 (in billion US dollars)

year	total revenues	total expenses
2011	\$ 143,69	\$ 133,43
2012	\$ 162,46	\$ 147,64
2013	\$ 182,15	\$ 162,67
2014	\$ 194,70	\$ 174,83
2015	\$ 210,94	\$ 186,86
2016	\$ 215,11	\$ 191,04
2017	\$ 239,93	\$ 194,99
2018	\$ 247,87	\$ 243,85
2019	\$ 254,62	\$ 173,20
2020	\$ 245,51	\$ 202,99

	\$	\$
2021	354,64	242,95

Source: Macrotrends 2011-2021

Appendix B: ExxonMobil revenues/expenses 2011-2021 (in billion US dollars)

year	total revenues	total expenses
2011	\$ 486,43	\$ 445,37
2012	\$ 480,68	\$ 435,80
2013	\$ 438,26	\$ 405,68
2014	\$ 411,94	\$ 379,42
2015	\$ 249,25	\$ 233,10
2016	\$ 208,11	\$ 200,27
2017	\$ 244,36	\$ 224,65
2018	\$ 290,21	\$ 269,37
2019	\$ 264,94	\$ 250,60
2020	\$ 181,50	\$ 203,94
2021	\$ 286,64	\$ 263,60

Source: Macrotrends 2011-2021



Appendix C: Berkshire Hathaway INC stock price (2011-2021)

Year	Stock Price \$
2011	116 462
2012	125 162
2013	165 328
2014	195 670
2015	210 581
2016	216 172
2017	262 726
2018	305 903
2019	312 329
2020	307 638
2021	410 842

Source: Yahoo Finance 2011-2021

Appendix D: ExxonMobil stock price (2011-2021)

Year	Stock Price \$
2011	79,7
2012	86,5
2013	90,5
2014	97,3
2015	82,8
2016	86,2
2017	81,9
2018	80,0
2019	73,7
2020	44,5
2021	58,0

Source: Yahoo Finance 2011-2021