Technical analysis of selected stock time series based on stock value screening

Jiří Sulek[1]

[1]Institute of Technology and Business in České Budějovice, Faculty of Corporate Strategy

Abstract

The paper deals with using stock value screening in order to identify companies suitable for long-term investments. The paper includes technical analysis of the company Intel Corporation (INTC), which was evaluated as a suitable company for long-term shareholding on the basis of stock value screening. The paper provides a theoretical background necessary for understanding and performance of stock value screening and technical analysis. The next chapter presents and specifies the individual parameters of screening and indicators of technical analysis as well as a systematic and logical description of the whole paper elaboration. Another part of the paper summarizes and presents the individual results of the stock value screening based on which two companies are evaluated as suitable, with detailed comments. Furthermore, it explains why the technical analysis is performed on Intel corporation. The performed technical analysis shows the growing trend of the share price growth; therefore, a recommendation is made for the investors not to postpone the purchase of the shares. All results of the technical analysis are summarized in a table with a relevant comments and explanations. A very interesting signal is created based on a long-term, specifically three-year support line, and on the creation of the so-called double bottom pattern. In the conclusion, general recommendations are made for investors.

Keywords: stock value screening, data analysis, technical analysis, financial markets, investment

Introduction

Given the current situation in the global market, financial markets show large profit potential. Due to the Covid-19 pandemic, the global market shows a certain decrease. This

is the right time for both large and small investors, who can appreciate their capital by units or even tens of percent in the current situation. The appreciation may be caused by long or short position. The paper submitted deals with the stock growth strategies, so the profit through long position. Stocks can be acquired by means of direct purchase, ETF or some trading option strategies. Currently, a lot of information is available for free and within a short period of time, which makes investors´ work much easier. Quality stocks protect investors against inflation and generate profit passively. Stocks represent historically the best investment tool (except for active business). Stock market surpasses bonds, gold or even currency. To choose the correct stock, an investment strategy must be selected, which is different for each investor. The selection of a specific stock is a time-consuming process; therefore, there are several methods to narrow down the choice. One of them is screening, which is the main issue of this paper. After screening, each stock needs to be subject to both fundamental and technical analysis. The advantage of stock market investing and trading is the unlimited potential of selecting a strategy. There is theoretically an unlimited profit, which goes hand in hand with the theoretical loss of capital, which may occur within a few minutes in an extreme case. The advantage of this type of business is that the result is not directly influenced by any colleague, employer, or supervisor. The entire result depends on the analytical skills of the investor or speculator, if not taking into account the decisions of companies, the state and other institutions that the investor cannot influence.

Literature Research

Nowadays, there are many was to invest. This paper focuses mainly on equity investment. Currently, a stock can be purchased on the Internet within a few minutes. Information necessary for analyses are relatively easy and quick to find compared to the situation in the past when stocks were bought directly in the stock market (brick-and-mortar) or at the presence of a stockbroker, who intermediated trade to the clients, most often over the phone. Back then, information necessary for analysing were not as easy to obtain as today and most people made investments on the basis their trust in their broker. If an individual decides to invest through stocks, they may choose from several options of how to make the investment. The first option is a direct purchase of stocks, when the investor chooses interesting stocks in accordance with his/her requirements. Another option is to invest through equity fund, which is often described by equity index or it has its own portfolio (Kohout 2010). The third option is to purchase stocks through option strategies (Štýbr, Klepetko and Odráčková, 2011; Rejnuš, 2016). This paper focuses on direct investment, where the investors themselves choose specific stocks. There are more ways to choose stocks. The best known, most widely used and globally most accepted are the value-based and growth-based approaches. When investing in value stocks, the investor chooses the stocks with their intrinsic value higher than their current market price. Such stocks are generally referred to as cheap. The investor´s goal is to purchase such a stock whose price will increase to fair value in time. In the case of growth-based approach, the investor aims

to find stocks of companies which show a great growth potential in the future. Such companies are usually small or have a specific competitive or technological advantage over their competitors but their potential as not been revealed yet (Kohout, 2010). At the same time, the investors must be able to rationally assess their own attitude to risk, i.e. whether they want to make cautious rather than aggressive investments, or whether they want to have a diversified portfolio that will contain stocks with their risk rate. In general, more aggressive stocks show a potentially higher profit but also loss and vice versa (Graham and Zweig, 2007, Shiller, 2010). To reduce the risk of losing the capital, it is necessary to diversify the portfolio, either across the industries, in which the companies whose stocks the investor wants to buy operate, or to invest a part of the portfolio outside the stock market (Shiller, 2010). After selecting the investment strategy, the investor starts to choose stocks to buy. Currently, it is not possible for the investor to have an overview of all listed companies. For this purpose, there are screening applications available, such as Finviz (FINVIZ, 2021) or xtb screener. Using these portals, screening can be easily performed, compared to the situation in the past when the process was manual and time-consuming. Stock value screening is a quantitative method to easily and quickly find a cheap stock to buy. The goal of screening is not to determine the intrinsic value of stock but to find potentially undervalued stocks in accordance with specified criteria. Therefore, the prerequisite is that the investor has adequate knowledge and skills to meaningfully define the screening criteria (Gladiš, 2015). These criteria include the size of company´s capitalization, the field of business, and various financial ratios. The most commonly used criterion is the P/E ratio, which represents the ratio of the market price of stocks and net profit per stock. In other words, P/E shows how much the investor is willing to pay for one dollar of profit. Another criterion can be looking only for companies which generate an average profit increase of 4 % over a certain time horizon (so that the company is able to overcome low inflation and equates nominal economic growth). The investor may also look for companies with low indebtedness, high liquidity, reasonable stock price with respect to sales, good return on assets, etc. (Fotr and Souček, 2015, Gladiš, 2005). After finding several stocks, fundamental and technical analyses are performed on specific stocks. Generally, it can be said that screening is a discipline of fundamental analysis. After screening, the individual stocks need to be analysed in more detail. Fundamental analysis serves to examine the financial health of a company, where the information is obtained from the balance sheet, income statement, and various other statements. Moreover, the industry in which the company operates is analysed. Investors should also consider the political situation in the world or the scope of business activities of the company (Sojka and Dostál, 2008). This paper emphasizes screening and subsequent technical analysis. Technical analysis considers the fact that the stock price changes depending on certain models, rules, and over certain periods of time. Technical analysis works with the historical development of price and volume of trade only. It is a study of supply and demand over time (Stibor et al., 2011). For the purposes of this paper, technical indicators of moving average, relative strength index (RSI), volume of trade, support and resistance and graphic patterns of Japanese candlestick over time. The basic indicator of the price development is a trend. Its advantage consists in the simplicity of

determination even without having to use complex mathematical apparatus. Trends can be divided into rising (bull) or falling (bear) (Hong, Yu and Yuxiang, 2016). Moreover, the trends can be divided into short-term and long-term trends. It is common, for example, that a short-term trend is bullish, while long-term trend is bearish and vice versa (Kolkova, 2018). Trend recognition is a basic skill of any investor or speculator. Trends are often repeated, more often and more regularly for some types of assets. Such a trend can be repeated seasonally or cyclically (Stratimirovic et al., 2018). The seasonal component usually repeats within one year; cyclical, within a period of more than one year. Analysts must be aware of the fact that trends are not infinite, they can slow down, stop or turn. The end of the trend can be anticipated and determined on the basis of basic composition of a combination of Japanese candlesticks on the price graph of a given asset (Chmielewski, Janowicz and Orłowski, 2016). Japanese candlestick is globally the most commonly used type of illustrating the price level graphically. It contains four basic pieces of information about the price. The first one is the opening price, closing price, the minimum and the maximum price between the opening and closing. Japanese candlestick usually has two colours in order to clearly distinguish whether the asset price increased or decreased in the monitored period (Hong, Yu and Yuxiang, 2016). One of the most commonly used technical indicators is Moving Average. There is a wide range of MA – simple MA, weighted MA, linear or exponential MA and many others. MA has its own period which can be adapted to the analyst´s needs; the most commonly used one is 50-day and 200-day period (Shalini, Pranav and Utkarsh, 2019). Moving average is used for an easier and clearer identification of trend even with a high volatility (Sobreiro et al., 2016). By combining two identical types of MA with a different period, a trading signal for opening a short or long position can be created. If a shorter-term moving average crosses below a longer-term moving average, a long signal is created and vice versa (Frömmel and Lampaert, 2016). Relative Strength Index (RSI) is the most widely used oscillator used as a technical oscillator. RSI shows the internal strength of assets and based on RSI value, the signal of whether the asset is oversold or overbought is generated (Marek and Šedivá, 2017). RSI works with the recent data on the price development of a given asset and is one of the short-term to medium-term indicators (García et al., 2018). RSI´s period can be adapted to the analyst´s need; the most commonly used one is a 14-day RSI with 30/70 levels (Crowell, Bock and Liu, 2016). Investors of speculators must also consider volatility, which determines the "mood" of the market. The higher volatility, the higher risk but also potential profit. Volatility is a fragmentation of the market, which is directly influenced by the number of open trading positions (Moreira and Muir, 2017). High volatility is not good for small investors and speculators, since large asset movements can drain their trading account in a very short time (Basak and Pavlova, 2016). High market volatility occurs mainly in the times of crises and recession. Moreover, it is increased by political uncertainty at the global and local level. This occurs mainly in the case of assets directly dependent on the behaviour and decisions of the state (Baker, Bloom and Davis, 2016). The objective of the paper is to set a screening filter that selects stocks suitable for a buy-and-hold strategy, which are then subjected to technical analysis. This enables us to enter the trading position more effectively.

Hypotheses

H1: The screening filter will evaluate a maximum of 5 companies as suitable for the Buy & Hold strategy (in the order of decades).

H2: The screening filter does not evaluate any company as suitable for the Buy & Hold (in the order of decades) and it will be necessary to adjust the parameters of filters.

H3: The technical analysis will not show any coming decrease in the stock price; therefore, it will be recommendable to buy the stocks of the surveyed company soon.

Methods and Data

The dataset includes stocks traded on three United States stock exchange. The largest and the best-known stock exchange is the NYSE (New York Stock Exchange), which currently trades almost 4,000 stocks. The second largest US stock exchange is NASDAQ (National Association of Securities Dealers Automated Quotations), which currently trades more than 3,000 stocks. The third largest stock exchange is AMAX (American Stock Exchange), trading over 500 stocks. In total, 7,638 stocks from more than 50 countries all over the world can be traded. Each stock comes with the following information: Ticker (stock symbol), Sector (business sector), Industry (more detailed specification of the sector), Country (the country where the company operates), Market Cap, P/E (ratio of market price to the profit per stock; this is relevant for the companies that report profit), Price (current stock price), Change (percentage change in the stock value per 1 day), Volume (volume of trades) and Chart (development of stock price in the form of graph). There can also be more detailed information about the company, such as ROE, ROA, SMA, P/B and others. These are key parameters for creating a screening model. For subsequent technical analysis, only the historical data on the development of a given stock price, volume, are needed. The data can be downloaded to excel, where they are arranged as follows: date, opening price, closing price, the maximum price per interval, minimum price per interval, and volume of trades. Excel-compatible data can be downloaded for free from finance.yahoo.com, separately for each stock. For the needs of technical analysis of the stock time series, a data model from 1.1.2020 to 31.11.2020 is used. One Japanese candle represents the price movement in one day.

Parameters of stock value screening and their reasoning

For the purposes of stock value screening, 8 parameters will be used in order to filter stocks with high potential and stability for future in the order of decades. These parameters are arranged so that it is possible to find companies with higher reliability, which may be at the expense of the overall profit. The selected company is subject to technical analysis to determine the short-term development of stock price and thus predict the price level of the optimal entering in trading position. Stock value screening is

performed on finviz.com (https://finviz.com/screener.ashx). The individual parameters and their meaning are presented in the Table 1 (arranged according to finviz.com).

Tab. 1: Parameters and their meaning in stock value screening

Parameter	Parameter value	Meaning
Market capitalisation	+Large (over $10bln)	Financially stable company able to overcome various crises
EPS growth past 5 years	Over 10 %	Company which increases its profit in the long run
Dividend Yield	Positive (>0 %)	Dividend company (paid dividends can be reinvested)
P/E ratio	Under 25	Generally recognised value as rational (it can be understood as return on investment in years)
Sector	Technology	Information about technological companies is easy to obtain even without deeper knowledge
Sales growth past 5 years	Over 5 %	Company which increases its profit in the long run
ROE	Over 20 %	High efficiency of using equity
Average volume	Over 1M	Higher volumes eliminate the risk of large fluctuations of stock price, if a large trader/fund etc. enters in trading position

Source: Author based on finviz.com.

If the screening application evaluates more companies as suitable, the one with the highest market capitalization will be selected due to its highest financial stability and strength. Subsequently, the given company is subjected to technical analysis.

Indicators of technical analysis and their use

The purpose of technical analysis is to predict a short-term price development of a given stock and thus determine the time of entering in trading position. The graph of the selected stock, which consists of Japanese candlesticks, will represent simple 200-day, 100-day and 50-day moving average. There will be examined the difference between the current stock price and the SMA value and how the individual parameters intersect. Simple moving average can be calculated as follows:

$$SMAn_p = \frac{1}{n} \sum_{i=p-n+1}^{n} c_i \qquad (1)$$

Where:
SMA – simple moving average
n – length of moving average calculation period
p – current position of the monitored period
c_i – closing price of stock on trading day

Other information on the given stock is provided by the Relative Strength Index (RSI). For the purposes of the technical analysis in this paper, 14-day RSI is used, which is the most

commonly used and recognised period. RSI is one of the leading indicators. This does not mean its importance but its ability to provide signal on the movement of the price even before the market moves up or down. RSI indicates whether the asset is overbought or oversold. Under normal conditions, RSI has a similar demographic development as the price level of the analysed asset. RSI is calculated using the formula below:

$$RSI = 100 - \left(\frac{100}{1 + RS}\right) \tag{2}$$

Where:

RSI – relative strength index
RS – relative strength ratio

$$RS = \frac{AVG\ gain}{AVG\ loss} \tag{3}$$

Where:
AVG gain – average increase in the asset price in the monitored period
AVG loss – average decrease in the asset price in the monitored period

The movement of the stock price development trend can be indicated also by the volume of trades on a given asset. According to the Dow Theory, the trend is confirmed or refuted by the volume of trades. The relationship of the asset price and the volume of trades can be described by one of the situations presented in Table 2. The subject of the analysis is searching for one of those situations.

Tab. 1: Relationship between stock price and volume of trade over time

Current trend	**Volume of trade**	**Predicted future trend**
Bear (falling) trend	Rising	Bear (falling) trend
Bear (falling) trend	Falling	Bull (rising) trend
Bull (rising) trend	Rising	Bull (rising) trend
Bull (rising) trend	Falling	Bear (falling) trend

Source: Author based on DJ theory.

Another way to predict price movement is based on the size and combination of Japanese candlesticks in relation to the trend line referred to as resistance and support. Resistance does not allow asset price to get above this level, while support does not allow it to fall below this level. It is an imaginary boundary of the trend. These two levels can be parallel or their direction can be towards each other or away from each other. Based on these levels, certain graphic pattern can be found and determine when the price development can change rapidly or slow down. Such patterns enable speculators to set stop loss.

After applying those indicators, the results are graphically presented in a price graph with an RSI graph. All graphs are prepared in excel based on the data from finance.yahoo.com.

Afterwards, the results and their prediction are summarized in a table. This is the basis for the recommendation of whether to buy the stock immediately or wait for a possible decrease in price. The final stock should be suitable for the Buy & Hold strategy. It shall also me mentioned that for higher reliability of the analysis, fundamental analysis should be performed as well.

Econometric analysis

The issue is solved using econometric analysis, which means that mathematical statistic is applied to analyse the economic data, i.e. values of HDI (Human Development Index), GDP (Gross Domestic Product), economic development, economic growth, unemployment rate, import and export, international trade, education, industry and the associated extraction of raw materials, agriculture, etc…

This method enables the identification and evaluation of the main key factors of the economic growth and economic development of third world countries over a specific period. The data for the analysis are secondary data from the database of UNDP (United Nations Development Programme), which is a special organization established in 1966.

The output of the econometric analysis are data for a given period in the form of line graphs divided into given groups, which are subsequently compared with each other, i.e. the data of the individual states are compared. The comparison provides findings and responses to the hypotheses formulated, which enables identification of possible key factors with the highest effect on the economic growth and economic development in the selected third world countries over a given period.

Four pillars are created based on the selected factors. The economic and social pillars analyse the data concerning e.g. GDP, import and export, unemployment rate. The demographic pillar analyses factors related to HDI and education. The environmental pillar is focused in the effect of industry, extraction of raw materials and agriculture on the areas under review over a given period.

The selected period for analysing the data of the selected third world countries is 1990 – 2018, i.e. the period for which the data are available in the aforementioned UNDP database.

Results

Stock value screening was performed on the aforementioned web finviz.com, which contains a database of all companies listed on US stock exchanges (almost 8,000 companies). All screening parameters can be easily entered in the web application, which means that the investor does need to calculate anything. After entering these parameters, the application evaluated two companies as suitable, namely Intel Corporation and Applied Materials, Inc. The comparison of both companies is presented in Table 3.

Tab. 3: Comparison of INTC and AMAT parameters

Parameter	**Intel Corporation (INTC)**	**Applied Material, Inc (AMAT)**
Market capitalisation	USD 195.55 billion	USD 76.01 billion
EPS growth past 5 years	15.20 %	26.70 %
Dividend Yield	2.78 %	1.06 %
P/E ratio	9.30	21.09
Sector	Technology	Technology
Sales growth past 5 years	5.20 %	10.00 %
ROE	28.30 %	32.90 %
Average volume	33.35 mil	8.19 mil

Source: Author.

The performed screening evaluated and compared the two above companies. As for market capitalization, the amount is nearly three times for Intel than for AMAT, which indicates that this company is better able to survive economic recessions or longer crises. It is currently threatened by more problems that its competitor; however, this company is able to cover loses in the long run and thus reduce the risk of bankruptcy. The percentage of EPS growth past 5 years means that in the given company, the profit per one stock has been growing for the past 5 years. This indicates a better position of AMAT; however, 15.20 % in the case of INTC is also a very good result (comparable with its largest competitor in the field of manufacturing computer processors, AMD, whose result is 20 %). Dividend Yield means the amount of dividend per stock; in this case, the table shows INTC is in better position. With a long-term holding, the higher amount can be reinvested. P/E ratio is probably the best-known parameter, whose value is extremely low in the case of INTC. P/E below the value of 10 is not usual; it indicates the undervaluation of the stock or the whole company. Another row in the table contains sector; the selected sector is strictly technological. The value of Sales growth past 5 years is higher in the case of AMAT; however, for long-term holding (decades), increasing sales by "only" 5 – 10 % is not such a big problem in the short run. The resulting value of ROE is nearly identical and expresses the efficiency of using equity of the company. The last row in the table contains Average volume, which represents the average volume of trade per one day for the last 3 months (the long-term graph shows even a longer period) based on the underlying asset. A higher value of INTC shows higher volatility but also higher resistance in the case of large investor, fund, etc. entering the trading position. Such a large trader does not move the price very much either up or down.

Subsequent technical analysis will be performed on the company Intel Corporation (INTC) based on the market capitalisation, which is three times higher than in the case of AMAT. Therefore, it was Intel Corporation, which was subjected to further analysis.

Data for technical analysis were obtained from the web finance.yahoo in the format *.csv. The dataset was converted into the format *.xlsx and individual columns and rows were

modified so that excel was able to plot a stock graph – Figure 1. Technical indicators were calculated using mathematical tools described in the methodology chapter.

Figure 1: Development of INTC stock price and technical indicators

Source: Author.

First, 50-day, 100-day and 200-day moving averages were calculated (based on the Close values). For an easier presentation of their results, SMA values are included in the price graph of the INTC stocks. All these averages are calculated per day for the whole monitored period, i.e. from 1 January 2020 to 30 November 2020. The resulting values change dynamically over time. As seen from the stock price graph, SMA with a shorter period responds faster to the changes in the underlying asset price. The values of all three SMA are falling; SMA with the shortest period shows the lowest value.

Subsequently, RSI indicator was calculated, specifically, a 14-day RSI, which, as already mentioned, is the most widely used and considered the most relevant. As in the case of SMA, the values of RSI are counted for every day of the monitored period. The resulting RSI values are illustrated over time in a separate graph. The graph also shows the limits for indicating overbought and oversold asset, which is 70 for overbought asset and 30 for oversold asset. These levels are used in the majority of cases for a 14-day RSI.

Other values reflected in the stock price graph are the total volumes of transactions per each interval of the monitored period, specifically every single trading day. These values

were included in the dataset downloaded from the web finance.yahoo. The values for volume are marked "Volume" in the graph; in the last month, they are slightly above their average but showing a decreasing trend.

In the next step, support was included in the price graph, which has been respected by the marked since the beginning of November 2017. Support keeps the price level above its value and does not allow it to fall unless there is a strong foundation. Moreover, a graphical pattern was included in the graph, specifically a double bottom. This means that the stock price fell twice to nearly the same lower limit or area in a short time. After such a pattern, the price usually rises.

Discussion

Within this paper, the results are divided into two parts, with the first one presenting the suitable companies positively evaluated by the stock value screening, namely Intel Corporation (INTC) and Applied Material, Inc (AMAT). INTC was chosen for subsequent technical analysis. The company was established in 1968 and it is known primarily for the production of computer processors. The company also produces PDA processors, chipsets, flash memory, various types of chips or equipment for multimedia households, etc. Intel has been the largest producer of processors for many years. Currently, its major competitor AMD is gradually stealing Intel´s market share, with the ratio of their production being 60/40 in favour of Intel. From the results of the stock value screening, especially P/E ratio shall be pointed out, with its value achieving 9.30, which is the lowest value for the last 7 years. This means two things: first, the stock is very cheap, the company generates large profit in relation to the stock price. A stock price increase or decrease in profit can be expected (due to some fundamental reason). The company loses its market share to AMD; however, the company is strong enough to be able to make profit in the future. The P/E ratio is expected to grow in the future, mainly due to the stock price increase required by the investor. INTC is constantly increasing its sales and profits and the dividend paid is nearly 3 %.

The second part of the results concerns the technical analysis. The values of all three moving averages are above the current stock price and decrease slightly. They last crossed at the turn of July and August. Currently, it seems that the short-term averages cross below the long-term averages. If this happened and the averages would show a growing trend, a longer bull trend could be expected. Another indicator is a 14-day RSI, whose current value is 50 but shows a growing trend. This indicates the market "mood", where the investors believe in the future growth of the stock price and therefore buy it. Subsequently, the relationship between the stock price and the volume trend was examined. The volumes are now relatively high and show a decreasing trend. In the short term, it is a sideway trend. This indicates no significant movement of the stock price; moreover, due to a significant dropdown on 22 October 2020, which was caused by publishing the results of the third quarter, the indication on the basis of price and volume trends is not relevant. What is interesting is a long-term support at the amount of USD

43,50 USD/stock. This support has been respected by the market since 25 October 2020 and can be considered an extremely strong support, which does not allow the price to fall below this level and rather pushes it upwards. Therefore, an increase in stock price and the subsequent bull trend can be expected. Finally, a graphical pattern was sought. Double bottom was found, after which the price is usually in the bull trend. The list of indications and recommendations formulated on the basis of the above is presented in Table 4 below.

Tab. 4: Results of technical analysis

Results of technical analysis of Intel Corporation (INTC)			
Indicator	*Development*	*Signal*	*Investment timing*
Simple Moving Average SMA 200 – SMA 100	Averages move apart from each other and both are falling	None	Cannot be determined
Simple Moving Average SMA 100 – SMA 50	Averages moving closer to each other, both are falling	Future bull trend	Buy now
Relative Strength Index RSI 14	Neutral value of about 50, but growing trend	Short-term bull trend	Buy now
Price trend vs Volume trend	Price moving sideways, decreasing volumes	None	Cannot be determined
Support and resistance	Strong support about USD 43,50	Bull trend or sideways trend	Buy now
Graphical pattern	Double bottom	Short-term bull trend	Buy now

Source: Author.

After evaluating 6 indicators of technical analysis, the impulse for the stock price increase in a short time was evaluated 4 times. For a long time, fundamental analysis needs to be used. It can thus be said that the investment in INTC should not be postponed and the stocks should be bought as soon as possible, since it is currently at a very low price level and its increase is expected.

Stock value screening confirmed the first hypothesis, according to which screening finds a maximum of 5 companies which are potentially suitable for long-term holding, since the screening evaluated only two as suitable. This is due to relatively strict parameters. The result thus rejects the second hypothesis, according to which the screening will not find any company suitable for long-term holding. The last hypothesis concerned technical analysis. According to the hypothesis, technical analysis will not generate a signal for the price decrease in the short term. This hypothesis was confirmed, since 4 out of 6 indicators predict a short-term stock price increase, while the remaining two do not generate any signal for either price rise or fall.

Prior to buying stocks, potential investors need to think about the strategy, whether they want to make a one-time purchase - in such a case, technical analysis is important for the proper timing of the purchase, or whether they want to buy a certain amount of stocks regularly – in such a case, technical analysis does not play an important role, while emphasis is placed on the fundamental analysis only. A prudent investor does not buy

stocks only on the basis of screening and technical analysis. For long-term investment, fundamental analysis is essential and should always be performed. Moreover, each investor needs to think about which type of stocks they want to buy, for which purpose, and what risk they want to take. When selecting a stock to buy, the method of stock purchase shall be considered, i.e. whether to buy directly, by means of CFD with leverage, ETFs, or through options where they can fix the price.

Conclusion

The objective of the paper was to identify the parameters of stock value screening, based on which a company was selected, whose stocks were subjected to technical analysis in order to help determine the proper timing of purchasing the stocks of the company for a long-term investment. The screening evaluated two companies as suitable for long-term investment, namely Intel corporation and Applied material. Due to the lower value of P/E ratio and higher market capitalization, Intel was subjected to technical analysis. The results of the technical analysis performed are summarized and explained in the chapter Discussion of results. In total, the signal for bull trend in a short time was generated 4 times, while 2 indicators did not generate any signal. Therefore, stock price increase is assumed and it is thus not recommended to postpone the investment. The relevance of the indicators used is confirmed by their high popularity in the case of investment or hedge funds, large speculators and investors for decades. The credibility of the indicators is enhanced by a large number of studies which confirm their effectiveness. The indicators are also suitable for other types of underlying assets, such as commodities, currency pairs, precious metals, or cryptocurrencies.

In conclusion, it can be stated that the objective of the paper was achieved. The objective of the paper was to create a screening filter to find stocks suitable for long-term holding and based on the screening, to find a company, which would be subjected to technical analysis. 4 out of 6 indicators assume price growth; therefore, the immediate purchasing of stocks is recommended.

References

BAKER, S. R., N. BLOOM, and S. J. DAVIS, 2016. Measuring economic policy uncertainty. *Quarterly Journal of Economics*. **131**, 1593–1636. DOI:10.1093/qje/qjw024.

BASAK, S. and A. PAVLOVA, 2016. Model of financialization of commodities. *Journal of Finance*. **71**, 1511–1556. DOI:10.1111/jofi.12408.

CROWELL, B. W., Y. BOCK, and Z. LIU, 2016. Single-station automated detection of transient deformation in GPS time series with the relative strength index: A case study of Cascadian slow slip. *Journal of Geophysical Research: Solid Earth*. **121**, 9077–9094. DOI:10.1002/2016JB013542.

FINVIZ, 2021. *Financial visualisation*. [online]. [2021-03-12]. Available at: https://finviz.com/screener.ashx?v=111&f=cap_largeover,fa_div_pos,fa_eps5years_o10,fa_pe_u25,fa_roe_o20,fa_sales5years_o5,sec_technology,sh_avgvol_o1000&ft=4

FOTR, J. and I. SOUČEK, 2015. *Tvorba a řízení portfolia projektů: jak optimalizovat, řídit a implementovat investiční a výzkumný program*. Praha: Grada Publishing a. s. ISBN 9788024752754.

FRÖMMEL, M. and K. LAMPAERT, 2016. Does frequency matter for intraday technical trading? *Finance Research Letters*. **18**, 177–183.

GARCÍA, F. D., F. GUIJARRO, J. OLIVER and R. TAMOŠIUNIENÉ 2018. Hybrid fuzzy neural network to predict price direction in the German DAX-30 index. *Technological and Economic Development of Economy*. **24**(6), 2161–2178. DOI: 10.3846/tede.2018.6394.

GLADIŠ, D., 2005. *Naučte se investovat*. Praha: Grada Publishing a. s. ISBN 9788024712055.

GLADIŠ, D., 2015. *Akciové investice*. Praha: Grada Publishing a. s. ISBN 9788024753751.

GRAHAM, B. and J. ZWEIG, 2007. *Inteligentní investor*. Praha: Grada Publishing a. s. ISBN 9788024717920.

HONG, Z., H. YU, and J. YUXIANG, 2016. Modelling for forecasting of pattern recoqnition – based on comparison and analysis between U.S. stock market and Chinese stock markets. *Proceedings of the 2016 International Conference on Applied Mathematics, Simulation and Modelling.* ISSN: 2352-538X10.

CHMIELEWSKI, L. J., M. JANOWICZ, and A. ORŁOWSKI, 2016. A Study on directionality in the Ulam square with the use of the Hough Transform. *Conference: International Multi-Conference on Advances in Intelligent Systems and Computing*. **403**, pp. 641–647. DOI:10.1007/978-3-319-26227-7_60.

KOHOUT, P., 2010. *Investiční strategie pro třetí tisíciletí*. Praha: Grada Publishing a. s. ISBN 9788024733159.

KOLKOVA, A., 2018. Indicators of technical analysis on the basis of moving averages as prognostic methods in the food industry. *Journal of Competitiveness*. **10**, 102–119.

MAREK, P. and B. ŠEDIVÁ, 2017*. Optimization and Testing of RSI. Financial management of firms and financial institutions.* Ostrava: VŠB-Technical University of Ostrava, Czech Republic. 530-537.

MOREIRA, A. and T. MUIR, 2017. Volatility-Managed Portfolios. *Journal of Finance*. **72**, 1611–1644. DOI: 10.1111/jofi.12513.

REJNUŠ, O., 2016*. Finanční trhy: učebnice s programem na generování cvičných testů*. Praha: Grada Publishing a. s. ISBN 9788024758718.

SHALINI, T., S. PRANAV, and S. UTKARSH, 2019. Picking buy-sell signals: A practitioner's perspective on key technical indicators for selected Indian firms. *Studies in Business and Economics*. **14**, 205–219. DOI:10.2478/sbe-2019-0054.

SHILLER, R. J., 2010 *Investiční horečka: iracionální nadšení na kapitálových trzích*. Praha: Grada Publishing a. s. ISBN 9788024724829.

SOBREIRO, V. A., T.R. COSTA., R. NAZÁRIO, J. SILVA, E. MOREIRA, M. FILHO, M. KIMURA and A. Z. J. HERBERT, 2016. The profitability of moving average trading rules in BRICS and emerging stock

markets. *North American Journal of Economics and Finance*. **38**, 86–101. DOI:10.1016/j.najef.2016.08.003.

SOJKA, Z. and P. DOSTÁL, 2008*. Elliottovy vlny*. Brno: Tribun EU. ISBN 9788073996307.

STIBOR, M. et al., 2011. *FOREX - jak zbohatnout a nekrást: obchodování na měnových trzích*. Praha: Grada Publishing a. s. ISBN 9788024737393.

STRATIMIROVIC, D., D. SARVAN, V. MILJKOVIĆ and S. BLESIĆ, 2018. Analysis of cyclical behavior in time series of stock market returns. *Communications in Nonlinear Science and Numerical Simulation*. **54**, 21-33. DOI:10.1016/j.cnsns.2017.05.009.

ŠTÝBR, D., P. KLEPETKO, P. ONDRÁČKOVÁ, 2011. *Začínáme investovat a obchodovat na kapitálových trzích*. Praha: Grada Publishing a. s. ISBN 9788024736488

Contact address of the author(s):

Ing. Jiří Sulek, Institute of Technology and Business in České Budějovice, Faculty of Corporate Strategy, Okružní 517/10, 370 01 České Budějovice, Czech Republic, e-mail: 20003@mail.vstecb.cz