HAS FUNDAMENTAL ANALYSIS REALLY GONE OUT OF FASHION?

Iván Bélyácz – Alexandra Posza

ABSTRACT

Our study seeks to find out whether fundamental analysis, a security valuation method that was prevalent for a long time, has really lost its predominance due to the appearance of modern portfolio theory. On the basis of *Benjamin Graham*'s investment theory, our reasoning clarifies the complicated interrelations between fundamental analysis, intrinsic value and value-based investment. In the centre of Graham' theory is the estimation of intrinsic value, which plays a key role in triggering the volatility of security prices. In the first chapter of the work, we emphasise the fact that intrinsic value has become a crucial indicator for asset valuation due to *Williams*'s important work. The spread of modern portfolio theory brought about radical changes in the pricing and valuation of assets. According to the pioneering work by *Markowitz*, pricing is based on the risk-return relation, which resulted in the (not expressly advantageous) devaluation of the role of the intrinsic value and led to the disappearance of the value-based centre of movement from the process of pricing. The study devotes great attention to the doubts expressed by the representatives of behavioural finance. The above-mentioned theories present the mainstream pricing process as an unbalanced system, criticising it at the same time. The study seeks to prove that fundamental analysis may not have gone out of fashion, by providing a critical analysis of *Warren Buffett*'s investment theory and praxis. Through the example of the BlackRock asset management giant, our reasoning proves the possibility of the survival of the fundamental analysis.

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1. FUNDAMENTAL ANALYSIS, INTRINSIC VALUE AND VALUE-BASED INVESTMENT

Fundamental analysis is a process in which information on the future performance of a security, which fundamentally determines prospects, is collected and analysed. The use of macroeconomic, sectoral and company-specific data is of-

ten required for the estimation of future prices (*Grimm*, 2003). In the light of the above, fundamental analysis means a method for security valuation, which attempts to measure its intrinsic value, examining the related economic, financial and other qualitative and quantitative factors. A fundamental analyst studies what can influence the value of security, including macroeconomic factors, such as economic and sectoral requirements, as well as microeconomic factors, such as financial terms and corporate management. The ultimate goal of fundamental analysis is to generate a quantitative value that indicates whether a security is undervalued or overvalued when compared with the current price of the security by the investor.

Fundamental analysis uses existing, publicly available data for the valuation of shares. The same applies to the valuation of bonds, where economic factors, such as interest rates and the overall situation of the economy are used. Information on the issuer of the bond, such as potential changes in its credit rating, may also be considered. Concerning shares and bonds, this method uses incomes, yields, future gains, return on equity, profit rates and other data to determine the fundamental value and potential future growth of the company. In the case of shares, fundamental analysis focuses on the financial report of the company that is being evaluated.[1]

Graham and *Dodd* (1934) defined the principles of "value-based investment" in the late 1920s[2]. They supported investment into shares, where the price of the shares was significantly lower that the intrinsic value. The difference was called "buffer strip". The strategy developed by Graham was called value-oriented funds as well as value-based investments. Value-oriented managers select investment funds which are based on the fundamental features related to the intrinsic value of the share. Value-oriented funds include long-term investments with significant growth potential.

According to *Hagstrom* (2005), Graham identified the concept of value-based investment with buffer strip, extending it to all types of securities (shares, bonds). Practicably, the buffer strip becomes important when securities are sold for any

1 Fundamental analysis helps investors/analysts identify the improperly priced securities, thus supporting investment decisions. The process of identification includes the calculation of the intrinsic value of the relevant security, as well as the collection of information on the market price of the same security, comparing the two prices so as to decide whether the security is undervalued or not. Based on the above, the success of the process is highly dependent on the appropriate quantification of the intrinsic value of the security on the quantitative and qualitative basis of the information collected in the economy – sector – company context (Bhattacharyya, S., 2012–2013).

2 One of the most important books on investment that has ever been written is *Security Analysis* by Benjamin Graham and David Dodd. The influence of the classic work on the modern investment world is impossible to overrate.

3 The term "buying undervalued shares", irrespective of market levels, was a new idea in the 1930s and 1940s. Graham intended to outline such a strategy.

reason below their intrinsic value[3]. Graham proved that if the gap between the price of the share and the intrinsic value of the company is wide enough, the buffer strip can be the basis for the selection of shares. In order to implement the aforementioned strategy systematically, investors needed a method for the identification of undervalued shares, i.e. a technique for determining the intrinsic value of the company. In his work entitled *"Security Analysis"*, Graham states that the intrinsic value is determined by facts. Such facts include the company's assets, interest, dividend and any future prospects.

According to Graham, intrinsic value is hard to define, but it is certainly different from the market price. Originally, intrinsic value was identified with the book value of the company or the value of the fixed assets of the company minus the liabilities of the company. Consequently, intrinsic value was considered to be a specified amount. Nevertheless, it was realised that the value of the company does not equal the company's net fixed assets, but rather the value of yields generated by such assets. According to Graham, determining the accurate intrinsic value of the company was not important. Instead, an approximate measure should be accepted as the interval of values. Graham believed that the aforementioned approximate measure was enough to estimate the buffer strip when compared with the selling price.

He thought that inexplicably underpriced shares were attractive for buyers. His conviction was based on certain assumptions. He believed that *shares are often wrongly priced by the market, usually due to the human emotions of fear and greed.* At the peak of optimism, the share exceeds its own intrinsic value owing to greed, creating an overvalued market. Another assumption of Graham is based on a well-known statistical phenomenon called "mean reversion", however, he did not use this term.

As we have already mentioned, value-based investment is an investment strategy according to which shares traded at a value lower than their intrinsic value are selected for purchase. Valued-based investors actively strive to acquire shares which are believed to be undervalued by the market. Investors who choose this strategy feel that *the market overreacts to good and bad news, which leads to movements in share prices that do not comply with the long-term fundamentals of the company, creating an opportunity for profitmaking when prices are inflated.*

Nevertheless, the problem with value-based investment is that it is difficult to estimate the intrinsic value of shares. Despite receiving exactly the same information, two investors may estimate different values for the company. Consequently, the other key term of value-based investment is "buffer strip". In order to leave sufficient margin for valuation errors, value-based investors should buy shares at a fairly high discount. Value-oriented shares are usually traded at a lower price than the price that the performance of the company would justify. Investment in

value-oriented shares is an attempt to capitalise market inefficiencies when the price of the share on which the investment is based is not in line with the performance of the company (*Szramiak*, 2016).

Hagstrom (2005) draws attention to an important circumstance, stating that Graham did not take into account the specific features of business units, nor did he consider the abilities of the company's management when valuing the shares. Graham's investigations were restricted to company documents and annual reports. If there was a mathematical chance of a profitable purchase, as the share price was lower than the value of the company's assets, Graham bought the company, regardless of its business and management.[3]

Graham and his followers realised that they might be a considerable difference between intrinsic value and market value. As indicated above, intrinsic value is the estimate of the current fair value of the company. By contrast, market value is the current value of the company, which is reflected in the price of the shares of the company. Therefore, market value can be significantly higher or lower than intrinsic value. The estimation of the intrinsic value of the company has an inherent difficulty. Due to all possible variables it includes and the value of intangible assets, analysts may estimate significantly different fair values. A further difficulty is caused by the fact that the basic financial account, as an internal company document, may not be a fully accurate representation of assets and liabilities. Market value is a corporate value calculated on the basis of current share prices, which rarely represents the current fair value of the company. The reason for this is that the market value reflects the supply and demand of the investment market and how actively (or passively) investors take part in shaping the future of the company. If the demand for investment is strong, the market value tends to be higher than the intrinsic value. The opposite situation (low demand for investment) may lead to the undervaluation of the company.

According to Hagstrom (2005), investors looked for a simple way of determining the intrinsic value of companies for a long time. For example, Graham's first method was the low P/E ratio. At the same time, investors were also aware of the fact that a decision based on the P/E ratio was not enough to guarantee the profitability of the investment. The definition of "value" by Williams (1938), i.e. the

3 In many respects, Phil Fisher was the opposite of Ben Graham. Fisher believed that investors should become fully familiar with the company's business matters so that they can make solid decisions, which means that all aspects of the company should be considered. According to Fisher, they needed to look behind the figures to get familiar with the business itself, as such information is of great importance. They also needed to study the characteristics of the company's management, as the abilities of the management may affect the value of the business on which the investment is based. They should learn as much as they can about the sector in which the company operates, get to know the competitors and exploit all sources of information (Hagstrom, 2005:26).

value of an investment equals the discounted value of its future cash flows, helped to solve this problem.

Williams's theory, which has become famous as the dividend discount model or the discounted net cash flow analysis, is a method for allocating value to shares and bonds. Similarly to other important ideas, it can also be expressed as a very simple instruction: investors should know the current market value of a security, estimate the total cash it realises in its life and discount the total amount to present value. According to Williams (1938), the assessment of investment value requires the estimation of future payments. After that the annuity of payments adjusted by the change in the value of money can be discounted at the net interest rate required by the investor.[4]

Williams's model is a two-stage process. First, cash flows are measured to determine the current and future value of the company. How are cash flows estimated? One of the fast measurement techniques is the dividend paid to shareholders. Williams believed that theoretically, in the case of companies which do not pay any dividend, the total amount of the retained profit can be converted into dividend as occasion serves. As soon as the company reaches the phase of maturity, the yield should not be invested for the purpose of growth; therefore the management could start paying the yields in the form of dividend. As Williams (1938) wrote, *"... if yields are not paid as dividend, but are successfully reinvested instead, they will generate dividends later. If they are not reinvested, the money will be lost."* In short, the value of a share depends on the dividend it produces. The second step is to discount the estimated cash flows, allowing some uncertainty. We can never be sure about how the company will act, how it will be able to sell its products or what the management will or will not do in order to improve business performance. Especially, in the case of shares, a risk element is always present. However, Williams's theory can just as well be applied in the case of bonds.[5]

Although the renaissance of ideas such as value-based investment, intrinsic value and fundamental analysis was in the 1930s and 1940s, taking a giant leap in time we can follow which ideas thinkers and analysts have preserved over the past few decades. Investors and analysts resort to fundamental analysis to be able to identify the improperly priced securities, thus supporting their investment decisions. Whether a security is improperly priced or not depends on the relative position

4 *"The Theory of Investment Value"*, a book written by John Burr Williams and published in 1938, claims that each business has intrinsic value. The intrinsic value of a company is determined by inflows and outflows discounted at the appropriate interest rate which are expected to occur during the remaining lifespan of a company.

5 Williams (1938) quotes the following very early definition of value from page 5 of Robert F. Wiese: Investing for True Values Barron's, September 8, 1930: "The appropriate price of any security, whether it be share or bond, is the aggregate of all future paid earnings discounted at the current interest rate in order to reach the present value.

of the market price and the intrinsic value. At the same time, the market price depends on the forces of demand and supply in the security market, while the intrinsic value is affected by the information available to investors and analysts. In the light of the above, Bhattacharyya (2012–2013) concludes that the success of fundamental analysis depends on the reliability of intrinsic value. Based on Black's Law Dictionary, *he defined intrinsic value of something as a real, inherent and essential value, which does not depend on incidents, places or persons, and is the same for everyone, everywhere.* According to *Hampton*'s (1979) statement, when proving the price of a share, the primary factors of value should be considered. In other words, intrinsic value is the fair value of a share, which is different from its current market price. It is a subjective value in a sense that investors and/or analysts have to take into account their own individual background and knowledge when estimating it, therefore each analyst will calculate a different intrinsic value.

According to *Damodaran* (2012), when estimating the intrinsic value, the investor/analyst evaluates an asset based on the internal characteristics of the company. Based on fundamentals, this value is linked to an asset, e.g. cash flows, expected growth and risk. Damodaran thinks that the most important feature of intrinsic value is that it can be estimated for a specific asset separately, even without any information on how the market evaluates/prices other assets. According to the Chartered Financial Analyst Institute (2018), intrinsic value is a value defined by the investor on the basis of the evaluation of the available facts. It is a real or fair value that becomes market value if other investors come to the same conclusion. Based on the above-mentioned calculation method, this value specifically applies to the individual who calculates it. Buffett (1987) said the following about this topic: *"regarding the same set of facts, two individuals will inevitably calculate different intrinsic values, which is due to their different opinion about future cash flows. As some investors are more careful than others, their estimates related to the increase in the book value or the payment of dividends may be lower, which immediately changes the intrinsic value."* Buffett defines intrinsic value as the discounted value of the cash that can be gained from the business during its remaining lifespan. According to Buffet's interpretation, the intrinsic value of a business is its fair value instead of its accounting value.

In Bhattacharyya's (2012–2013) view, the most important question is whether the price of the security faithfully reflects the intrinsic value. His view is based on the fact that an asset can be considered as a promise to gain a flow of future payments. The demand for a specific asset depends on the flow of the expected payments deriving from a similar asset. Acquisition of a financial asset involves giving up current consumption for the sake of future payments. The asset with the highest value provides the highest level of future consumption to offset renouncement.

Consequently, the selection of the appropriate asset depends on its intrinsic value. The fundamental premise of intrinsic value is that the prices quoted in the stock market not necessarily reflect the fair values of the companies. *The intrinsic value of a share, as the centre of the movement of prices, reflects the current (actual) value of the share.* While the price of a share fluctuates within a very short period of time, its intrinsic value can be considered as fixed even within a very short period.

The estimation of intrinsic value is in the centre of value-based investment practice, allowing value-driven investors to buy quoted assets at a lower price than their supposed fair value. Investment based on intrinsic value conveys critical risk management to the process of share selection. At the same time, the principle of buying undervalued securities means generating return and limiting risk. Buying cheap shares provides protection against losing a large amount of money. The intrinsic value is moved by factors related to the growth of the company, the realised yields and/or capital costs of the investment; as such factors move the intrinsic value (*Koller* et al. 2005). When we talk about shares, we make assumptions on the future development of these intrinsic value factors and estimate the future cash flows of the company concerned. In this way, we can calculate the intrinsic value of the share.

A security is in balance if its market price equals its intrinsic value. Consequently, the investor becomes indifferent to buying or selling shares. If a share is *in balance, there is no fundamental imbalance, as there is no pressure to change the share price.* At any given point in time, the majority of the shares are reliably close to their own intrinsic values. Therefore they are in balance or close to balance. Nevertheless, share prices and balanced (intrinsic) values may be different. In this case, shares are temporarily undervalued or overvalued.

The argumentation about fundamental analysis, intrinsic value and value-based investment leaves no doubt about the fact that Graham–Williams's asset valuation theory is *based on balance. Price fluctuation is centred on the intrinsic value, which is the most important factor of price setting in the market.* The intrinsic value as an invisible point of attraction ensures the establishment of equilibrium. The theory of balanced asset valuation was seriously challenged in the middle of the 20th century, the effects of which can still be felt today.

2. RADICAL CHANGE IN THE PRICING OF ASSETS – THE APPEARANCE OF MODERN PORTFOLIO THEORY

As the pricing theory of Graham–Williams already indicated, both the representatives of the theory and those who practiced financial decision-making were interested in creating a numerical model for the calculation of intrinsic value.

Prior to the publication of the work *"Portfolio Selection"* by Markowitz (1952), in the world of securities market speculation, decisions were often based on fundamental or technical analysis in order to calculate the value of individual securities and to decide whether they were worth investing into. As Grimm (2003) alluded to it, the modern portfolio theory of Markowitz and the ensuing asset pricing models tried to replace fundamental analysis, the only known scientific approach in investment theory at the time, dismissing the valuation of individual securities. Of course, those who accepted and followed the modern portfolio theory considered this theory to be an important stage of the process during which independent financial economics became a "real science". Markowitz (1990) referred to in his Nobel Prize Acceptance Speech as follows:

> *"The principles of the portfolio theory came to my mind while I was reading The Theory of Investment Value by John Burr Williams. Williams suggested that the value of a share should equal the current value of its future dividend stream. (...) It became apparent that investors deal with risk and return, therefore these factors should be measured for the portfolio as a whole. Variance (or its equivalent: standard deviation) came to mind as the measure of portfolio risk. These were the fundamental elements of portfolio theory which came upon me while I was reading Williams's work…"* (op. cit. p. 280)

Boyer (2003) is right when he raises concerned about the risk definition by Markowitz. Markowitz derives the risk of an asset from the behaviour of its price in the market. Therefore risk is based on the movement of the asset's market price, which he calls volatility. *Regarding the variance of the movement of prices as a measure of risk does not only oversimplify the term, but it also promotes model development.* The risk of an asset is a definitely more versatile phenomenon. Therefore it cannot be described by means of a single statistical index. The short- and long-term unpredictability inherent in the income-generating ability of the asset, the relative market position and perspective of the asset, as well as the viability and competitiveness of the enterprise behind the security symbolising the asset can all affect the riskiness of the asset. The variance of price volatility does certainly not fully reflect the depth and complexity of these factors. As opposed to other economic categories (growth, profit, inflation etc.), risk does not have any objective criteria. (Due to its subjective character, it cannot have.) As investors do not like frequent, unpredictable price movement, Markowitz equated price volatility with risk. However, at this point, we must realise the following: In Markowitz's work, the principles of free market economics do not apply to financial economics (a discipline whose independence he - among others - helped to establish). Instead, his financial theory has a highly emotional and subjective basis. In such a situation, the question might arise: do security markets have unquestionable operational principles and structure? Or the implications of the investors' behaviour

are indicated only by unpredictable twitches and irrational emotions. Ultimately, we face the dilemma: can economic operation be separated from financial markets?

Since the middle of the past century, it has been a widespread view that the economy "has nothing to do" with the real economy in particular, as the economy and the financial markets were considered to be mechanisms moving on different paths. The origin of this view is related to *Keynes*'s (1965) approach to finances. He compared the movement of financial markets to a gigantic casino that randomly reacts to the "spontaneous animal spirits" of human beings, the main characteristic of which is supposed to be having an inclination for speculation on the reduction of exchange rates. *Skousen* (2009) wrote the following about Keynes's view on irrational fluctuation:

> *"Keynes criticised the short-term, irrational »spontaneous animal spirits« of speculators who sell their shares at a low price so as to favour liquidity (...) Such fluctuation of irrational psychology can do great harm to long-term expectations," stated Keynes. The maxims of orthodox finance are not as antisocial as the liquidity fetish, a doctrine that is regarded as a virtue on the side of investment institutions and focuses on resources which ensure the possession of liquid securities. According to Keynes, the stock market does not simply provide an effective way to increase capital and a means for increasing the standard of living, but it can also be compared to a casino or a game of chance."* (Keynes, 1965:183–184)

Presumably, the separation of the economy from the financial markets goes back to the fact that Keynes's (1965:180) financial theory was not based on economics, but rather on psychology. The modern portfolio theory and, as a result, modern financial theory rest on Markowitz's unorthodox approach based on the conclusions of Keynesianism. *Classical economics was about the harmony of production, supply, demand, balance, saving and investment. At the same time, all this was rejected by Markowitz.* The following quotation is from his Nobel Prize Acceptance Speech.

"Portfolio theory differs from corporate theory and consumer theory in three main ways... Firstly, it applies to investors, rather than companies in the processing industry, or to consumers. Secondly, we should keep an eye on those economic operators that work amongst uncertainty. Thirdly, this theory can be used for controlling practice, at least in the case of large (usually institutional) investors ... The fact that this theory deals with investors, rather than producers and consumers, does not require any further comments." (op. cit. p. 279)

Markowitz used Keynes's fundamental concept. As a result, his modern portfolio theory neglected demand and supply. Market demand and supply, as well as the equilibrium price did not constitute a framework for selling and buying securi-

ties in the market anymore, because the fundamental relation of portfolio theory had become the risk-return relationship. *As the spread of the portfolio theory went hand in hand with the rejection of the role of fundamental analysis and intrinsic value, it became possible that the capital market balance valuation might ignore intrinsic value as the centre of the volatility of security prices.*

According to *Shiller* (1981), the changes in prices in the stock market reflect constantly changing opinions. Shiller thinks that such changes were called "spontaneous animal spirits" by Keynes, and contaminate thinking. According to Keynes, probabilities are not measurable in the sense which decision theory assumes them to be. He claims that transactions in the financial market include an "element of caprice". In the light of this, critical decisions are based on impressions, rather than calculation. Probability can be calculated, but there are investors who do not completely believe their own calculations and act intuitively.

Shiller (1981) believes that Keynes's ideology, according to which the evaluation of long-term speculative assets basically depends on convention, is highly important. In collective conscience, this will indicate fair value for a long time, even if current return values fail to meet expectations for a certain period. The price level of long-term assets – i.e. the price of shares, bonds, real estates, commodities on the commodity exchange, as well as that of derivative products, such as futures and options – are affected by expectations about the distant and usually uncertain future. It is generally accepted that any time, the market prices of speculative assets reflect the style and technology of those times. On the other hand, they also reflect the expected style and technology of the future, as well as the probability of developing a new technology.

Grimm's (2003) warning is reasonable: due to the appearance of the modern portfolio theory and beyond the separation of economic operation and the financial markets, methodological collectivism and methodological individualism confront each other. When the systems based on human behaviour were represented by means of quantitative models and the fundamental analysis was replaced, almost insurmountable methodological problems were encountered due to the variability and complexity of the past, present and future environment. *The quantitative trend based on modern portfolio theory completely dismisses methodical individualism. In asset pricing, there are no references to the role of the company's fundamentals or to the activity of the individual.* Financial thinkers who rely on econometric methods tend to refuse to study individual cases. In their view, all important information is hidden in collective or aggregated parameters.

As Hagstrom (2005:164) notes, modern portfolio theory is the combination of three epoch-making ideas of financial economics, which has reached its full potential gradually. Markowitz (1952) was the first who quantified the relationship between return and risk. By means of covariance, a mathematical tool, he meas-

ured the combined movement of the composition of shares, which he used for determining the riskiness of the whole portfolio. Markowitz concluded that investment risk does not depend on the degree of the price change of an individual share, but rather on *whether the price and return of the composition of shares move in the same direction*.

A decade later, the search for a fundamental asset pricing model was successful. *Sharpe* (1964) developed a mathematical procedure called Capital Asset Pricing Model for the measurement of volatility, which simplified Markowitz's approach. The currently known form of the model was developed on the basis of *Mossin* (1966) and *Lintner*'s work (1965). This refined version rested on the assumptions of modern portfolio theory. The resulting capital asset pricing model expresses the relationship between the return of the security and the risk of the market portfolio measured with covariance. The novelty of the CAPM model was that, in addition to determining the market price of the risk, *it was suitable for the determination of the appropriate market cleaning (equilibrium) price.* According to the CAPM model, the required return of a security has weak relationship with corporate or sector-specific events (or there is no relationship between them at all), as the supposedly rational investors, who possess Markowitz efficient portfolios, can easily make these risk sources disappear by means of diversification.

The third component of the modern portfolio theory is the efficient-market hypothesis invented by *Fama* (1965b). Having studied the change in share prices since the early 1960s, Fama concluded that share prices were unpredictable, as the market was too efficient. According to Fama, in an efficient market, as soon as some information becomes available, a host of smart individuals use it in an aggressive way that leads to the continuous adjustment prices before anyone could benefit from it. At any moment in time, share prices reflect the available information, therefore prediction is unnecessary in an efficient market, as the adjustment of share prices takes place too fast.[6]

Evidently, the stock market works in a way that it allows the incorporation of all the information reflected by past prices into current prices. Fama defined efficient market as follows:

> *"It is a market in which a large number of rational, profit-maximising economic operations compete against each other. Each of them seeks to predict the future value of individual securities. In such a market, important current information is freely available to all participants"...* (p. 4)

6 The name "efficient market" is attributed to Fama. In his article "*Random Walks in Stock Market Prices*" published in the *Financial Analysts Journal* in 1965, he cites - among others - one of his previous articles on the serial correlation of the daily price changes of 30 shares (the shares covered the Dow Jones Industrial Average Index); this earlier article was entitled *"The Behavior of Stock Market Prices"*. Fama stated that the daily changes showed very low, practically nearly zero, positive correlation (Chuvakin, 2002).

The empirical foundation of the random walk theory, which is also attributed to Fama (1965a), is in strict accordance with the efficient market hypothesis. According to Fama, the efficient market, which is the stage of random walk, can be defined as follows: it is a market where a large number of profit-maximising participants actively compete against each other. Each participant seeks to predict the future value of individual shares. In such a market, important current information is freely available to all participants.

Fama (1965a) thinks that the competition between a large number of well-informed participants in an efficient market creates a situation in which, at any time, the current prices of individual securities reflect the effects of information based on past events and those future events which are likely to occur according to the market. In other words: in an efficient market, the current price of a security is a good estimate of its intrinsic value at any time. Amid uncertainty, the intrinsic value of securities can never be accurately determined. Consequently, disagreement on the actual intrinsic value of an individual security can always occur among market participants, which can lead to a discrepancy between the current prices and the intrinsic value. At the same time, in an efficient market, the acts of the large number of competing participants lead to the random fluctuation of the current price of a security around the intrinsic value. *At this point, intrinsic value-centred stock market price behaviour by Graham-Williams is contiguous to the asset pricing based on risk-return exchange relation by Markowitz-Sharpe-Fama. The modern portfolio theory became a balanced system due to the efficient market hypothesis, in the centre of which is information related to fundamentals.* In this system, the movement of prices is controlled by the integration of the information into prices. If the discrepancies between current prices and intrinsic values are systematic rather than random, being aware of this fact helps the informed market participants to predict the path on which current prices move towards intrinsic values. Fama affirms that, when a lot of informed traders attempt to benefit from this knowledge, they may be able to neutralise the aforementioned systematic behaviour of price series. Although the uncertainty surrounding the intrinsic value remains, the current price of securities will fluctuate around their own intrinsic values at all times.

Of course, intrinsic values themselves change as a result of learning the new information. In an efficient market, averagely, due to the effect of the competition, the content of new information is immediately reflected by the current prices. However, in reality, the eventuality and uncertainty of the "instantaneous adjustment" of new information has two consequences. Firstly, the current prices overcorrect the change in the intrinsic value as frequently as they undercorrect it. Secondly, the delay of the full correction of the current prices, following the new intrinsic value, is an independent random variable itself. By correcting the

current prices in a way that the correction sometimes precedes the occurrence of the event the change of the intrinsic value is based on (i.e. when the market anticipates the event prior to its occurrence), while, at other times, it follows the event. The feature of the efficient market to carry out "instantaneous correction" also implies that the successive price changes are independent of each other in the case of individual securities. According to the definition, the market in which the successive changes in the price of individual shares are independent of each other is a random walk market. *The random walk theory means that the series of share price changes has no memory, which means that the history of the price series is not suitable for the acceptably accurate prediction of the future.*

According to *Malkiel* (2003), the logic of random walk is the following: if the influx of information is unobstructed and the information is immediately reflected by the share prices, the price change that will occur tomorrow will reflect only tomorrow's news and be independent of today's price change. Malkiel also believes that new information is unpredictable. Therefore the occurring price changes must be unpredictable and random, as well. Ultimately, prices completely reflect all known information, and only uninformed investors buy a diversified portfolio (based on a price table) offered by the market and gain a rate of return that is as high as the one realised by professional investors. Malkiel emphasises that markets can be efficient despite occasional valuation errors. He considers markets efficient, even if a lot of market participants behave quite irrationally. In the light of the above, markets can be efficient even when the volatility of share prices is higher than it should be based on the fundamentals (profit, dividend). Those who believe in the efficiency of the market do so, because they believe that the market is very successful in reflecting information fast and accurately.

As Fama (1965a) stressed, the criterion for stock market traders or investors is obvious: the independence hypothesis of the random walk model is true until the knowledge about the past behaviour of the series of price changes cannot be used for making extra profit. More specifically, if the successive price changes of a given security are independent of each other, there is no problem with the timing of the steps of selling/buying of that security. Regarding the timing of buying and selling, a simple solution for the buying and possessing practice of the security can be as good as any other more complicated procedural mechanism. Based on the above, the independence hypothesis of the random walk model is an adequate description of reality as long as the dependence level of the series of price changes is not enough to generate higher profit due to a rule of some kind of more "complicated" trading mechanism or by means of technical analysis, compared to the expected profit of the "buy and hold" trading policy.

If the random walk theory applies and the stock markets are efficient, share prices are a good estimate of intrinsic or fundamental values at any moment in time.

In the light of the above, additional fundamental analysis is worth only if analysts have new information that was completely ignored when the current market prices were being formed, or they have made new observations about the effect of the information they usually possess, which have not been impliedly included in current prices yet.

3. THE DOUBTS OF THE REPRESENTATIVES OF BEHAVIOURAL FINANCE

By the mid-1970s, in most cases, experience had proven that markets were efficient. Market results increasingly showed that the rules of share selection can be based on publicly available information. For example, shares with low P/E ratio and high dividend yield may outsoar the market. Furthermore, shares with low capitalization are riskier than shares with high capitalization, and the return premium is apparently too high compared to the additionally assumed risk. These and other similar "market anomalies" called the uninterrupted prevalence of equilibrium pricing into question.[7]

The representatives of behavioural finance started warning about certain stock market disturbances in the early 1980s. Shiller (1981) concluded that the stock market sometimes overreacts to certain announcements. He called this phenomenon "excessive volatility". In one of his other works, Shiller (1985) clarified the content of the "speculative bubble". According to Shiller, the speculative bubble is a special version of a fad or social infection, which is recognisable in speculative markets; it is not the wild orgy of delusion or cheating, but the natural consequence of the principles of social psychology, associated with imperfect media news and information channels. In his work on irrational exuberance, Shiller (2000) defines a bubble as follows:

> *"In a situation where the news about price increase inspires the empathy of investors, the inspiration spreads from one individual to the other due to psychological infection. The actions proving the price increase are strengthened in the process which involves more and more investors into trading; these investors start trading partly due to the envy generated by other traders' success, partly due to the market participants' agitation, despite doubts about the value of the investment."* (p. 8)

7 In 1980, authors Grossman and Stiglitz unexpectedly attacked the efficient market hypothesis in their article entitled *"On the Impossibility of Informationally Efficient Markets"* published in the *American Economic Review*. They claimed that, if all relevant information is reflected by market prices, market participants are not motivated to obtain the information on which the prices are based. This line of reasoning is called Grossman-Stiglitz paradox.

Shiller's definition focuses on the bubble, emphasises its epidemic-like character, the emotions of investors and the special nature of the news and the information media. In his view, bubbles are not created by the madness of investors, but rather by the fact that the investors march together with the crowd and, regarding conventional valuation, exchange one plausible theory for another.

De Bondt–Thaler (1985) concluded that the stock market tends to overreact to a long series of bad news. In the light of the above, by the mid-1980s, quite a lot of anomalies which could raise doubts about the unconditional validity of the efficient market hypothesis had been discovered. The two authors quoted above claimed that investors were exposed to the waves of optimism and pessimism, which could result in prices systematically diverging from their own fundamental values and later showing mean reversion. They state that this kind of overreaction to past events is consistent with the behavioural decision-making theory by *Kahneman–Tversky* (1979), according to which investors systematically and excessively rely on their ability to predict future share prices as well as the future profit of the company. In the capital market, share prices also tend to underreact to certain events, and this provides extra return for those investors who exploit the lack of full instantaneous adjustment. Subsequently, investment managers applying quantitative methods invent trading strategies to exploit the opportunity.

Hagstrom (2005) believes that it was *Munger* who first considered and talked about the psychological aspects of financial market behaviour; it was much earlier than professional investors realised such aspects or took them seriously. Later, thinkers of behavioural finance observed that market participants often commit serious mistakes and make illogical assumptions when substantiating their own decisions. Thaler and others started delving further into psychological concepts so that they could explain the irrationality of market participants. Thinkers of behavioural finance explain that the reason why so many investors buy wrong shares is their excessive confidence. Such investors rely too much on the information they collect and believe that make better decisions than in reality. It leads to intense sale in the market if all market participants believe the information they possess is correct and others do not know it.

Thaler (1985; 1990; 2009) dedicated several studies to the demonstration of distortion due to overreaction. He proved that people put too much emphasis on chance events, believing that they might indicate a trend. Investors especially tend to record any recent information they receive and extrapolate it; consequently, they think that the recent income statement can predict future income. As a result of this, quick decisions are made with superficial justification. Exaggerated confidence is effective: people believe that they understand and interpret information better than others. But it is more than that: overreaction enhances excessive overconfidence. According to Hagstrom (2005:184), behavioural scientists real-

ised that people tend to overreact to bad news, and tend to react only slowly to good news. Psychologists call this phenomenon distortion caused by overreaction. Based on the above, if a short-term income statement is not suitable for the objective evaluation of a situation, a typical investor's reaction will be hasty and unwholesome with an inevitable effect on share prices. Thaler (2009) thinks that the reason for the investors' short-sightedness is overemphasising the short-term feature. He believes that it is more advantageous for most investors if they do not receive a short-term statement.

According to behavioural scientists, pain caused by loss is more intense that the happiness caused by gain. The experiments conducted by Thaler and others demonstrated that people need twice as many positive feelings to counterbalance negative results. It is called asymmetric loss aversion: a downward consequence (negative result) has higher impact than an upward consequence (positive result). When applied to the stock market, based on this concept, investors feel that losing money is twice as bad as acquiring a profitable share. In the light of the above, Hagstrom (2005) stresses that aversion to loss makes investors too careful at higher costs. Everyone wants to believe that their decisions are good, therefore people tend to retain bad option too long in the uncertain hope that things will change. If we do not sell our loss-making investments, we will never face our mistakes. If we do not sell the subject of a wrong decision, we give up potential gains that could be achieved by smart reinvestment (Thaler, 2008).

Hagstrom (2005) emphasises the role of risk tolerance. According to Hagstrom, the implications of behavioural finance are clear to investors: they show how we make investment decisions. The method with which we manage the selected investments plays an important role in how we think about money. A further reason why people do not sell their poorly performing shares is considered to be mental accounting: in their mind and sense, loss does not become reality until it does not get activated. The other strong connection is with risk, as we are more likely to take risk for the sake of windfall. In broader sense, mental accounting emphasises one of the weaknesses of the efficient market hypothesis: it demonstrates that market values are not only determined by aggregated information, but also by how human behaviour processes this information. Chuvakin (2002) stresses that the consideration of the investors' heterogeneity is inevitable, as investors do not behave in the same way. Even if exactly the same information is available to them, they will probably interpret it in a different way. What is more important: investors tend to act differently based on the available information. Thaler (2009) states that the quasi rational investors' feelings about certain undervalued assets can lead to the development of an asset bubble, which will break as soon as the opinion of quasi rational investors changes.

Thaler (2009) and other thinkers in behavioural finance, such as Shiller (1985), are very critical of the efficient market hypothesis; their analysis is based on two components, such as the "right price" and the "invincibility of the market". The principle of right price means, as Fama puts it, that the asset prices "fully reflect" the available information, therefore provide "accurate indications for the allocation of resources". Based on the invincibility of the market principle, the prediction of accurate market price is impossible. Therefore it is difficult, almost impossible for investors to conquer the market. Thaler (2009) believes that the "right price" component of the efficient market hypothesis is hard to apply, because we face serious difficulties when modelling price behaviour.

Over the past decades, economists considered the efficient market hypothesis as "the fact of life", though it was not easy to prove that the price was right. Many of them have used the unpredictability of prices for proving that the prices were actually right. By contrast, Shiller (1984) called the efficient market hypothesis one of the most significant mistakes of the history of economic thinking. The relevance of the "right price" principle was seriously corroded by the capital market bubbles of the 1990s and the crisis phenomena of the late 2000s. According to *Black*'s (1986) definition, the prices of an efficient market "are in an interval between two values". Based on this (vague) definition, he believed that almost all markets were efficient anytime.[8] Black did not have a chance to see the technological bubble, as well as housing market and mortgage bubbles, which evolved due to the fact that most investors could not resist the high return. Price distortion leads to improper allocation of resources, which can be measured in billions and is clearly visible in the evolving bubbles. The evolvement of such bubbles could be prevented by a foundation that always ensures "right" asset prices.

Bernstein (1998) thinks that the main reason for price distortions in the asset market is the spread of liquidity fetish. According to him, the liquidity of the stock market, which is only strengthened by transaction costs, allows investors to shorten their time horizon for decision-making. As a result, the great uncertainty inevitably inherent in long-term assets is transformed into reduced uncertainty due to the shortened time horizon. The stock market liquidity fetish is stronger than ever, especially after the liberation of transaction fees due to the deregulation of the financial market, the spread of the system of transactions outside the organised and regulated markets, a dramatic increase in the volume of online trading, the boom in derivative trading and the dramatic decrease of the costs of the sale of financial assets. According to Bernstein, as a result of this, the annual market turnover rate of listed shares exceeded 50%; therefore the average possession period is shorter than two years, which does not even include the high

8 Black (1986): Noise. *Journal of Finance*, Vol XLI No 3. July, pp. 529-543

turnover rate of the derivative market. The short-term willingness to trade has also spread to such calm markets as the market of fixed-income securities and the foreign currency market.[9][10]

In the light of the ideas of behavioural finance, the absolutisation of the efficient market hypothesis leads to the inveteracy of a belief that liberalised financial markets set asset prices – almost perfectly – based on their fair fundamental values. This has led to repeatedly reviving waves of deregulation in the capital market over the past few decades. *Representatives of behavioural finance emphasise that asset prices are always subject to fluctuation, as participants have to cope with their always imperfect knowledge about fundamentals which move prices in the first place.* Sometimes, as our painful experience gained during the crisis a decade ago shows, there are excessive price fluctuations. As long as such fluctuations remain within reasonable limits, state regulation can be restricted to ensuring transparency and the elimination of market failures. However, the global financial crisis weakened the belief that financial markets serve as an automatic stabilizator called the "invisible hand", correcting all imbalances.[11]

Malkiel (2003) refers to a stock market event that the thinkers of behavioural finance call clear evidence of irrationality and was the internet bubble of the late 1990s. He is quite certain that the extremely high share values linked to online businesses and the related high-tech companies were inconsistent with rational valuation. Malkiel agrees with the definition of irrational exuberance published in Shiller's (2000) work, as the same exuberance characterises the high-tech sector of the market, as well. *However, unfortunately, in this case when the significant market distortions were revealed after the occurrence of the facts, arbitrage was not available for rational investors prior to the break of the bubble.*

In connection with the efficient market hypothesis, in professional jargon, the term "fully reflects" usually means that none of the professional investors can

9 Bernstein (1998) raises the question whether low transaction costs and the high market turnover rate have not definitely led to the unacceptably high level of volatility. According to Bernstein, market data do not prove this: stock market volatility, measured by the 12-month average of monthly standard deviation, was only 2.5% in the period between 1993-1997, compared to the 3.5% average of the previous 45-year-long period.

10 According to Davidson (1997), the higher the transaction costs are, the longer investors have to hold the asset in order to recover the price of the purchase. The longer the required holding period is, the higher is the uncertainty of the current rate of return that can be realised by the investor.

11 Representatives of behavioural finance rightly refer to the flock-like behaviour of investors and the lack of effective reaction to new information. In relation to case studies, Fama's (1998) comprehensive overview of empirical works aimed to analyse whether share prices respond to new information efficiently. "Events" include announcements related to profit surprises, stock split, actions involving dividends, fusions, new listings on the stock market and initial public offers. Fama found that underreaction to new information is as frequent as overreaction to it, and the chance of continuation after an extra return event equals the chance of return after the event.

conquer the market. According to *Bachelier* (1900), capital markets are efficient if they behave as fair games and where the expected mathematical value of speculation is zero. Despite this very early discovery, as Shiller's (2013) stated, the history of thinking about financial markets shows the conspicuous lack of consensus concerning a very fundamental question: ultimately, what causes price fluctuation in connection with speculation tools, such as company shares, commodities and real properties? We might think that a satisfactory answer could have been given to such a fundamental question a long time ago, but this question is not so easy to answer.

During the early statistical analysis of the stock market, most questions focused on whether security prices serially correlate. Do security prices follow the random walk model? Are prices as likely to go up as down on a given day? Based on a series of analyses, consecutive daily security price changes are independent of each other. In the prices, there was no observable pattern that could predict the future trend of price movements. In the 1930s, *Cowles* (1933) provided empirical evidence to support the "fair game" hypothesis: randomly selected portfolios or managed indices perform just as well as (or even better than) professionally managed portfolios. One of the most interesting statements of the early era, which is still relevant, is attributed to *Roberts* (1959), who wrote the following: "if the stock market behaves like a mechanically imperfect roulette wheel, people notice its deficiency and eliminate it". The evidence described by Malkiel (2003) mainly confirmed the invincible market hypothesis. In this article, he explains that "according to the definition of efficient financial markets, such markets do not let investors realise above-average return without accepting the assumption of above-average risk".

It was due to *Samuelson*'s (1965) epochal work that the efficient market hypothesis had a real driving force, intensifying the effect of Fama's (1965) work. It is also true that Samuelson proclaimed the absolute randomness of the operation of markets. *Mallaby* (2011) acknowledges the fact that, at the moment of its birth, the efficient market hypothesis marked its presence as an incontestable scientific dogma. Based on the cited work, we know that, despite defending this dogma, Samuelson, together with Warren Buffett, invested his own money in a company called Commodities Corp., and betted on a large sum with major investors and capital market traders of the time. Samuelson wanted to convince the whole world that

nobody can conquer the market. At the same time, he invested his own money, believing that the market is vincible.[12] [13]

In the credit market analysis of *Stiglitz* (1989), according to the author, the observed volatility of asset price change, which shows divergence from the values determined by fundamentals, is primarily attributable to the activity of "noise traders": those speculators who wrongly believe that they know how the stock market works, and, as a result, they do not have to obtain correct information on the future output of fundamentals (Stiglitz, 1989:64). Those rational traders who foster noise traders ultimately return the market to the fundamental value of investments. Stiglitz explains the significant volatility in the most current part of investments which is caused by speculators who wrongly believe that they can manage security investments better than the market, ignoring fundamentals. Stiglitz's analysis assumes that there is a crowd of short-term security traders who bet in the market as if they performed better than the market. The traders' way of thinking is based on the false belief that (all!) speculators can perform better than the average (Stiglitz, 1989:65).

If financial markets are efficient and market fundamentals determine future return, those irrational participants who constantly commit trading mistakes either disappear or survive due to some kind of selective process, by learning how

12 At his congressional hearing in 1967, Samuelson passed judgement on the money management sector. He quoted from a recent doctoral thesis (It could have been Michael Jensen's treatise, which was published by the author to the general public in 1968. Jensen believed that mutual fund managers as a group cannot conquer the market. He thought in spite of certain pricing anomalies, the market was difficult to conquer. However, this could not hold people back from trying it.) Based on Jensen's treatise, Samuelson stated that portfolios consisting of randomly selected shares tend to perform better and professionally managed mutual investment funds. When he was awarded the Nobel Prize in 1970, Samuelson went a step further, claiming that most portfolio managers had to leave the business arena owing to lack of work. In the same year, Samuelson became the founding patron of an investment company called Commodities Corp., and diversified his portfolio. On the other hand, he joined Warren Buffett's investment. The legal structure of the enterprise was a corporation rather than simple partnership. At the same time, in reality, it was a typical hedge fund. It took both long and short positions, and applied leverage funding. The exorbitant profit of the company was divided among managers and the few owners.

13 At the 50th anniversary of Graham-Dodd's (1934) work, at a seminar organised by the Columbia Business School, Warren Buffett, one of the most well-known alumni of the school and the most famous proponent of Graham's value-based approach of the modern age, appraised the performance of "*Graham and Doddsville's super investors*". He started with the reappraisal of the central argument of the modern portfolio theory, i.e. if the stock market is efficient, shares are correctly priced, therefore those who can conquer the market are simply lucky. According to Buffett, it is possible, but he knows some people who acted like this and their success cannot be attributed to mere accidental chance. (The famous investors mentioned by Buffett who all followed Graham included *Tom Knapp*, *Bill Ruave*, *Charlie Munger*, *Rick Guerin* and *Stan Perlmeter*). The examples he presented were about people who had managed to conquer the market consistently in course of time. Instead of being lucky, the followed the principles from the same source: Benjamin Graham. According to Buffett, all of these people came from "the intellectual village of Graham and Doddsville (Buffett, 1984).

they can avoid successive mistakes. Nevertheless, the pragmatic Stiglitz acknowledges that despite the fact that a considerable daily trading took place in financial markets, its volume has dramatically increased since the 1980s. As a part of this, intense speculation continues, and even escalates.

The ideology of behavioural finance is the criticism of all equilibrium theories at the same time: intrinsic value-oriented valuation/pricing and the components of modern portfolio theory (portfolio theory, pricing based on risk-return exchange and the efficient market hypothesis). The representatives of behavioural finance warn that theoretical approaches and their models which can be regarded as balanced approaches individually continuously struggle with imbalances. Behavioural science can be regarded as the theory of imbalance. If we seek to answer the question whether traditional financial theories are incompatible with the ideology of behavioural finance, we should be careful. We are inclined to accept the compromise provided by *Statman* (1999):

> *"Market efficiency has two meanings. On the one hand, it means that there is no systematic way to conquer the market. On the other hand, it refers to the fact that security prices are rational, that is they reflect only "fundamental" or utilitarian" characteristics, such as risk, but they fail to reflect "psychological" or value-expressive characteristics, such as feelings. In my opinion, representatives of financial theory and practical professional investors act appropriately if they accept market efficiency based on the invincibility of the market, but refuse it based on rational pricing."* (i. e. p. 26)

Statman's alludes to the agreement on the invincibility of the market (despite sporadic and non-systematic exceptions), and states that behavioural finance argues about the causes of problems arising from equilibrium pricing in the market. Based on the above, we believe that the disorders in market operation are caused by deficiencies in risk assessment and risk management. In the following part of our study, we will examine types of investor behaviour which belong to or differ from the courses of action of the mainstream through the example of Warren Buffett, an iconic participant of the investment world.

4. IS WARREN BUFFETT A CONVENTIONAL OR AN ECCENTRIC INVESTOR?

It is a fact in investment history that Buffett learned a lot from Graham's investment concept. The basic lesson Buffett learned from Graham is that successful investment involves buying shares at a time when their market price is significantly discounted compared to the value of the business on which they are based. According to *Feloni* (2015), Buffett learnt three basic principles from the method

on which Graham founded his investment decisions. According to the *first principle*, a share is a right to possess a small part of the business. The *second principle* was the use of the buffer strip. The use of the buffer strip is a fundamental aspect of value-based investment. It calls the investor's attention to buy securities when their market price is significantly lower than their intrinsic value. The determination of the intrinsic value of a company is acutely subjective: each investor has different intrinsic value estimates, which can be accurate or inaccurate. It is hard to predict the yields of a company accurately all the time, therefore is worth using a wide buffer strip of 10-20%. According to the *third principle*: the market is the investor's servant and not his/her "master". The market can be imagined as a business partner who offers opportunities to sell and buy shares every day. The prices set by the market are often emotional and irrational. Nevertheless, each market participant has a chance to realise profit by buying at a low price and selling at a high price.

Buffett's principles concerning investment in shares also reflect Graham's influence. Based on the *first principle*, we should buy a business we understand, that is our investments should fit into our own circle of competence. An investor needs to have the ability to assess the selected business(es) correctly. The investor, as an individual, does not have to be an expert of each company, but should be able to assess the companies belonging to his/her circle of competence. The *second principle* favours long-term prospects. As Buffett put it: *"our favoured holding period lasts forever"*. In the light of the above, he thinks that *"time is a friend of wonderful companies, but the enemy of mediocre ones"*. If we want to find out what Buffett means by favouring long-term prospects and when we can talk about the fulfilment of a criterion, we should take a look at whether the company is surrounded by a *"strong moat"* that *"protects the fortress"*. In other words: does the company have any competitive advantage that allows the realisation of continuously high return on capital? The *third principle* prescribes that the investor's company has to have competent and reliable management. Buffett considers reputation to be the most important value. It takes decades to build it up, while it can be destroyed in minutes. Based on the *fourth principle*, the desired business should have an attractive selling price. As Graham taught, the price is what we pay, and the value is what we get, therefore, we should buy quality at a lower price than the intrinsic value (Buffett, 1987).

Beyond the buffer strip theory, which became the intellectual framework of Buffett's thinking, Graham helped Buffet assess the irrationality of market fluctuations. According to Graham, shares have an investment profile and a specula-

tive profile[14]; he considered that the speculative features were the consequence of people's fear and greed. These emotions are present in all investors, and result in share prices far exceeding the intrinsic value, and more importantly, share prices can also get far below the intrinsic value, representing the buffer strip. Graham taught Buffett the following: if he could isolate himself from the "emotional whirlwind of the stock market", he would have the opportunity to take advantage of the irrational behaviour of other investors who buy shares based on their emotions, rather than on the basis of the analysis of fundamentals. Buffett learnt from Graham how he could think independently. According to Graham's advice, having reached a logical conclusion based on a solid judgement, Buffett should not dissuade himself from the planned transactions just because others do not agree with him. Graham wrote the following: *"you can be neither good, nor bad just because the crowd does not agree with you; you may be right, as your data are correct and your reasons are right"* (Hagstrom quotes Graham's teaching, 2005).

The most distinctive feature of Buffett's investment philosophy is that it makes us understand that by holding a share, we become the owners of the business and not only the holders of a piece of paper. According to Buffett, the idea of buying shares without understanding the functions of the company, that is without understanding the company's products, services, employment relationships, raw material costs, production equipment, capital reinvestment requirements, inventories, receivables and working capital requirements refers to an unscrupulous act (Hagstrom, 2015:58 quotes Buffett's opinion). Buffer thinks that this mentality reflects the business owner's attitude, as opposed to the one-sided attitude of the shareholder. This mentality should be the primary characteristic of the investor. One of the most successful investors of the world was a very efficient selector of shares, as well. The way how Buffett selected the companies is very purposeful in two respects: on the one hand, in addition to his famous share portfolio, his renowned company (Berkshire Hathaway) holds several companies directly; on the other hand, when Buffett considers buying new shares, he looks at the business on which the shares are based as a whole, as if he wanted to buy the whole company. He claims that while he is investing, he considers himself to be a business analyst, rather than a market analyst or a macro-economic analyst.

14 Graham's influence on the capital market is shown by the fact that Oppenheimer (1981) tested the share selection criteria developed by Graham, based on Graham's work entitled *The Intelligent Investor* (1940). In the newer and newer editions of the book, Graham updated the investment advice given to his readers, who he called defensive investors. Oppenheimer tested the advice retroactively, supposing that the investors had acted according to the information provided by the *Intelligent Investor after having read the book*. It turned out that Graham's advice was very valuable, even more valuable than Graham thought (quotes: Chuvakin, op. cit. p. 8).

Warren Buffett's approach to investment is definitely in contrast with the mainstream of the investment world; this attitude manifests itself in his views on risks, his diversification management and his opinion about the efficient market hypothesis.

As far as Buffet's opinion about risk is concerned, it is fairly far from the prevailing approach. In modern portfolio theory, risk is measured by the volatility of share prices. During his whole career as an investor, Buffett considered the fall of share prices as a potential opportunity to earn money. In his mind, the decline in prices automatically decreases risk. He dismissed the approach according to which risk was identical with the volatility of share prices and the possibility of damage. According to Buffet, risk is a factor of the intrinsic value, rather than that of the behaviour of the share price. In finance, damage derives from the incorrect judgement of the business's future profit, as well as from the effect of uncontrolled and unpredictable inflation. Furthermore, Buffett believes that risk is connected to the investor's time horizon in an inextricable manner. As Buffett explains, if we buy a share today, with the intention of selling it tomorrow, we have already entered a risky transaction. The predictive bet on whether share prices will go up or down within a short period of time is the same as betting on the outcome of a coin toss. At the same time, as Buffett put it, if we extend our time horizon by a few years (always supposing that our purchases were rational), bets will change in our favour.

Buffett's view on risk determines his diversification strategy, as well. In this respect, his thinking is exactly the opposite of the modern portfolio theory. Based on the latter theory, the main advantage of a widely diversified portfolio is that it reduces the price volatility of single shares. If we think, similarly to Buffet, that price volatility is not important, portfolio diversification will seem to be different, as well. Of course, there are a lot of investors who regard exactly Buffett's share concentration strategy as risky. Buffett declared the following on this topic: *"We believe that portfolio concentration policy effectively decreases arising risks, regarding both intensity, as investors think about business, as well as the comfort level, which should be felt when they consider the economic features of the company prior to buying the shares. If investors focus on some selected companies appropriately, they can study them more closely and deeply, and understand their intrinsic value, as well. The more investors know about their companies, the less risk they probably take."* As Buffett explains, diversification protects against the lack of information. If we want to say that nothing bad will happen to us relative to the market, we have to possess everything. It is a perfectly solid approach for someone who does not know how to analyse a business (cf: Hagstrom, 2015).

Buffett is definitely critical of the efficient market theory, as well. According to him, the main problem with this theory is that it does not deal with the investors

who possess all the available information, because it would provide a competitive advantage for them.

When describing Buffett's investor profile, we cannot omit the examination of the role of the investor's temper. Graham (1940) thought that it was important that his followers understand the fundamental difference between investor and speculator. According to Graham, a speculator tries to anticipate price changes and profit from them, while an investor only tries to acquire the company at a reasonable price. He went further: a successful investor is a person who has a well-balanced temper, and is characterised by calmness, patience and rationality. By contrast, speculators have the opposite temper: they are worried, impatient and irrational. Their main enemy is not the capital market, but themselves. Although thy have outstanding mathematical, financial and accounting skills, if they cannot handle their emotions, they may strive to make profit at all price.

Graham Buffett, as a real master, could understand the emotional feature of the market ahead of modern psychologists in time. As he remarked, a real investor is recognisable based on his/her temper, preparedness. This is as true today as it was at the time when he first said it (quotes: Hagstrom, 2005). According to Buffett, an investor has the following characteristics: an investor is calm; he/she knows that share prices, including the prices of his own shares, may go up and down, affected by all kinds of (rational and irrational) power. *An investor is patient; without running after the crowd and being imbued with their enthusiasm, a real investor looks for the appropriate occasion. Real investors are rational; their approach to the market and the world is based on clear thinking; they are neither too pessimistic, nor irrationally optimistic; they are logical and rational instead.*

An important factor in Buffett's investment success is that he has always been able to dissociate himself from the emotional forces of the stock market. He gave credit to Graham's words, suggesting that he should isolate himself from the follies of the market. Several decades ago, Graham started writing about irrationality in the market. Hagstrom (2005) reckons that there have not been any obvious changes in investor behaviour since then. A significant part of the investors still act irrationally in the market. Foolish mistakes are part of the daily routine.

Buffett expressly criticises wide diversification; he believes that it is needed only when investors are not familiar with the fair value of securities. Based on his advice, when "ignorant" investors want to hold common shares, they should invest their money in index funds. On the other hand, conventional diversification, with the involvement of dozens of shares, is less expedient for "well-informed" investors. According to Buffett, the following should be considered: *if the best business we hold bears the lowest financial risk and the best long-term prospect, why do we invest our money in the 20th business instead of the best option?* Firstly, it is less likely that we will sell the best business, which provides high return, from our

portfolio; secondly, the selection of new businesses for buying should be carried out carefully. We should resist the temptation of buying a marginal company just because we have cash reserve. We should be patient and wait for good business. The approach according to which if we do not buy or sell in the stock market, we will prevent progress is wrong (Hagstrom, 2015:196). Buffett's investment philosophy can be summarised concisely as follows: when he buys shares, he focuses only on two variables: the price and the value of the business. The price of the business can be recognised based on its subscription in the stock market, while the determination of the value requires calculation, the estimation of its intrinsic value.

Those who criticise his concept state it justly that Warren Buffett's investment philosophy and practice have downsides, as well. Undeniably, as an investor, the advantage of his attitude is that he protected his followers from the risks of derivatives and suggested that they should direct their investments into long-term, low-cost index funds. Its most disadvantageous features are the avoidance of competition and the minimisation of investments into the real economy. Buffett's legitimate wish is to reduce competition. As he put it simply, *"the moat has to be widened"*. He did not want to hold a business that is an easy rival for other competitors. He wanted to hold a business that was surrounded by a "moat" and had a very valuable castle in the middle (Berkshire Hathaway, 2007). He encouraged his managers to widen the moat every year. Buffett's statement according to which an ideal business can grow even without capital refers to his unusual approach. His statement is undoubtedly right from the point of view of an investor, but regarding the economy as a whole, the low level of investment is confronted with higher profit.[15] Due to his exceptional way of thinking, Buffett managed to find some really uncommon companies and bought them cheaply. All this did not attract too much attention, but his followers extended the application of this method to the whole economy. Buffett has been outstandingly successful in buying shares in companies making monopoly profit. At the same time, he does not start businesses or have any intention to establish companies (*Harding*, 2017).

Based on Buffett's approach and his daily routine as an investor, he considers fundamental analysis as a method to follow, believes that risk is an immanent feature of the asset, does not support the widening of investment portfolios beyond measure and does not believe in the efficient self-correction ability of the stock market. His whole career as an investor can be regarded as consistent progress against the all-time mainstream. A decade ago, the devastating global crisis verified Buf-

15 According to Williams's (1938) definition, a investor is a buyer of securities who is interested in dividends or nominal interest or invested capital. On the other hand, a speculator is a buyer who is interested in the increase of the resale price. A common buyer is hybrid: he/she is partly an investor, partly a speculator. Supposing that market participants follow their own intentions, those who seek to invest only hold securities for a long time, while those who are only speculators have to sell them quickly.

fett's approach as an investor clearer than ever before. When the careful, certified risk analysis of individual companies, projects, assets and loans etc. did not take place, highly risky portfolios, which were said to be risk-free, were compiled from a lot of risky securities, the most fundamental rule of fundamental analysis was infringed. Instead of assessing risks objectively, investors tended to strive to take excessive risks. The financial crisis would not have been so devastating if investors had been interested in the background of the issuers of the securities and the intrinsic value of the assets. In connection with investment and speculation, *Skidelsky* (2009) draws his readers' attention to Keynes's edificatory opinion:

> *"It is not always true that speculation is superior to the enterprise. Due to the fact that the organisation of investment markets is getting more perfect, the risk of speculation's superiority is increasing.... As long as business is taking place in calmness, speculators cannot cause more trouble than bubbles. However, the situation is more serious if the business becomes a bubble in the whirl of speculation. If the development of a country's capital becomes the by-product of casino activity, they are not working well in that country."* (Keynes, 1965:180-181)

5. CAN BLACKROCK AS AN ASSET MANAGER EXEMPLIFY THE SURVIVAL OF FUNDAMENTAL ANALYSIS?

BlackRock, an asset management company and investment fund founded three decades ago in the United States, established a business model that is significantly different from conventional solutions in asset management. Since then, it has grown so huge that it alone has as much capital as all the private capital and hedge funds of the world.[16] The BlackRock investment management company is hardly known outside the financial world, though it is the shareholder of the largest global investment banks. It mainly holds shares – it is a shareholder in half of the world's 30 biggest companies –, but it also possesses bonds, government debt securities, investment units of hedge funds and almost anything in which funds can be invested (Economist, 2013).[17]

16 BlackRock Inc. is the world's largest investment asset management company based on the fact that it manages holdings of assets worth USD 6280 billion directly, as well as capital of USD 15 thousand billion indirectly. The market capitalization of the company is USD 86.25 billion (the data are from the annual report of BlackRock, January 2018).

17 BlackRock operates at 70 places of business in 30 countries worldwide. It has clients in 100 countries. Due to its huge size, economic power, a wide range of financial assets and activities, asset management company BlackRock is also called the largest shadow bank of the world. In 2014, *The Economist* wrote about BlackRock that it managed assets worth USD 4 thousand billion in those days, which made it the world largest asset manager. BlackRock was bigger than the Industrial and Commercial Bank of China, the world's largest bank and financial enterprise holding assets worth USD 3 thousand billion.

The establishment, rise and growth of BlackRock into a huge asset management company can also be considered as the criticism of conventional investment funds. At the most critical points of operation, BlackRock tried to outperform investment companies, therefore it was not by chance that the severe financial crisis a decade ago did not damage BlackRock at all. Moreover, in the most critical periods, it provided analytical support for the American government. *One of the most serious problems of the investment world is if companies, individual or institutional investors are not familiar with the degree of risk arising from investment. If there are big errors and the degree of leverage is significant in this respect, problems spill over.* According to BlackRock, not the ownership of assets is of primary importance, but rather influencing buying and selling decisions in the security market. Assuming responsibility for the money of its clients, the company believes that risk-taking is not the most import task, but the company should rather provide support for risk-taking, maintaining a large and diversified clientele. BlackRock helps its clients understand the risks threatening their money.

BlackRock invests the money on behalf of its clients. As the results indicate, BlackRock is a safer source of funding than banks, which may even go bankrupt if they do not have enough money available for payment. A financial company does not become the investor of its own fund. In the case of BlackRock, there have been no such signs so far. At the same time, it can offer low systematic risk or even the total avoidance of systematic risk in a credible way. In the case of banks, deposits and loans are recognised as asset and liability items in their own balance sheets, while BlackRock focuses much more on the management of other investors' money. It controls the investments they hold, but bears neither their profit, nor their loss. While banks are shaken if they lose only a part of the value of their assets, BlackRock survives the losses of its clients and even more considerable shocks, as well (*The Economist*, 2013a).

The system is based on a large historical database that is subject to continuous quality control. Based on such information, Monte Carlo simulation is applied. A large sample is randomly generated about possible future outputs in order to create a statistically interpretable picture about the perspectives of bonds and shares, under possible future conditions. The simulation takes into particular consideration not only very likely events, but also those which are less likely, but can theoretically happen.

If we investigate why BlackRock is permanently attractive to investors, we must conclude that the company has a significant position in the field of passive investment products as well as in the area of active management. For example, the company works with much lower fees in the index-investment line of business than other hedge funds. In the case of actively managed portfolios, the other source of success is risk management.

BlackRock has direct investments worth more than USD 6 thousand billion, and manages the risks of assets worth USD 15 thousand billion on behalf of its clients. The fact that professional investors who believe in the same assets manage so much money also means that they probably commit the same investment mistakes. In connection with risk counselling, two concerns might arise. On the one hand, those financial institutions which employ a third party to conduct risk analysis do not use their capacities to develop these skills within the company. *The Economist* (2013b) wrote about this topic as follows: *"You cannot interpret or understand risk in the same way if you develop this skill within the company or just take it down from the shelf. By not conducting their own risk analysis, they risk not fully understanding the analysis prepared about their company"*.

If companies do not understand the risk they bear, it is difficult primarily for them. On the other hand, the other concern is much more at system-level. BlackRock considers it to be a success that more and more market participants think in the same manner. As participants, they all start dealing with similar things. Sellers, buyers and regulators all have the same considerations and decide on the basis of the same assumptions, as all of them receive advice from BlackRock. In the event of panic, all participants have to face increased risk, because, if all of them move into the same direction, the position of their investments will deteriorate.[18]

According to the decision makers of BlackRock, their models should be used for verifying/certifying the investment ideas of clients, instead of generating them as risk managers. The clients claim that BlackRock's risk assessment complements and not substitutes their own risk analysis. BlackRock distinguishes oneself from other asset management companies by claiming that their own risk management is not separated, and their risk management has been organised to be the foundation and cornerstone of the whole platform of the company. BlackRock's important product is the Aladdin risk indicator and management system. Aladdin is described as the "central nervous system" of the company, but it is a lesser-known fact that this operative platform also works as the "brain" of other 60 financial companies, which manage assets of a huge value (USD 15 thousand billion).[19] Despite the fact that Aladdin gives investment advice to clients without making decisions, it influences the clients' opinion on market risk. All over the world, at banks, investment management companies and security selling institutions, Aladdin

18 A portfolio may undergo a stress test, for example, by simulating the market turmoil that evolved after the bankruptcy of Lehman Brothers.

19 In accordance with the principle of efficient and healthy markets, due to the "noise" caused by different participants, different conclusions are drawn regarding asset prices, based on company-based analyses. In order to determine the value of any asset, the opinions above should be summarised in a single figure. An economic system in which a single economic trend prevails is unhealthy. This rule applies even more to markets. In the financial system, such diversity and common thinking is the recipe of great market boom (when all market participants want to buy the same asset) and serious economic downturn (fast mass sale) (*The Economist*, 2013b).

analyses portfolios, conducts stress tests and applies BlackRock's "collective intelligence" according to strict norms, performing a range of financial functions.[20]

The role of the risk management models used earlier (Intex, Gaus-copulas, Value at Risk) has usually remained unnoticed, but such models have played a double role in generating financial crises. Firstly, they activated investors and security traders who had a potentially dangerous risk control concept in the system. Secondly, as soon as their use began spreading, they also strengthened the generation of one-way bets when investors increasingly relied on the same data and analyses. In connection with the latter, BlackRock alludes to the fact that Aladdin is especially applicable to individual cases, which means that the framework conditions of risk management can be tailored to the user's needs, fulfilling the various requirements of different investors (*Alloway*, 2014).

The permanent soaring of BlackRock indicates the unbroken confidence of investors. At the same time, it also expresses distrust in other asset managers owing to the unpredictability of market risk. The company is highly attractive in the market, as it has a flexible opinion about choosing active or passive management. In the past, individuals and big institutional investors used to invest their money in mutual investment funds, in which funds managers selected shares with the purpose of conquering the market. After the crisis that happened a decade ago, there was a significant shift towards index funds, which follow steady stock indices (S&P 500, Moody's etc.).[21] The considerable shift mentioned above is mainly due to the much lower costs of index funds. The actively managed funds analyse the market, but they are not able to beat the index consistently. However, there are huge differences in costs: the annual fee for the management of active funds amounts to 1-2%, while the fee of index funds is one-tenth of it for the same performance. This tectonic movement has risk-indicating effects, as well. One of the critical differences between the industry of actively managed funds and that of the index funds is that the first one is fragmented: it consists of hundreds of different small and large asset managers. On the other hand, the fast-growing index sector is more concentrated.[22]

20 Aladdin operates 30 thousand investment portfolios, including BlackRock's own portfolios as well as those of their competitors, banks, pension funds and insurance companies. In line with the report published by the *Economist*, BlackRock's platform monitors almost 7% of all global assets worth USD 225 thousand billion.

21 The magnitude of change was amazing: Between 2007 and 2016, actively-managed funds endured an outflow of about USD 1200 billion, while index funds increased by more than USD 1400 billion due to inflowing financial resources (*The Conversation*, 2017).

22 The field of index funds is dominated by three gigantic American asset managers: BlackRock, Vanguard and State Street. they are called the Big Three. In addition to lower fees, the rise of index funds also entailed the massive concentration of corporate property. BlackRock, Vanguard and State Street together manage an asset property worth USD 11 thousand billion. It is more valuable than all sovereign property funds combined, and three times more valuable than the global hedge fund industry (Fichtner et al. 2017).

Nowadays, debates about active-passive asset management focus not really on taking positions at each other's expense, but rather on experiencing the role of a shareholder or a share manager. Apparently, the role of the active owner associated with active management and the role of the passive shareholder associated with passive asset management are becoming obsolete. According to the textbook, corporate property is accompanied by shareholder's power. Even if BlackRock is not the legal owner of the shares it holds, it acts as some kind of mentor of those who invest in shares. On the other hand, BlackRock undeniably exercises the voting rights attached to the shares. More and more people think that the dominant passive management style means passivity in respect of corporate governance.[23]

If large companies, being part of a comprehensive index, know that a company belonging to the Big Three is the dominant shareholder of their company, they will consider this fact when making decisions. In this way, the Big Three can exercise a kind of evolving "structural" power over a large part of "corporate America". The Big Three have accumulated especially great power, and this trend will probably continue. Index funds constitute significant business power due to their large size, which means that at this point competitors find that it is very hard to acquire market share. In many respects, the upsurge in index funds is putting the companies BlackRock, Vanguard and State Street into a position that resembles the quasi-monopolistic position of low-cost public services.

Eric Posner (*Kelly*, 2017, interview), who is consistently against the concentration of ownership and the decline of competition, believes what institutional investors say: in the case of index funds, they want to remain passive investors, they do not wish to have a voting right. On the other hand, the government forces them to vote, and would not allow passive ownership. When huge institutional investors start buying up companies, the decision makers and employees of the target companies consider that being in the ownership of big and valuable institutional investors as shareholders is beneficial, as they exercise substantive control over the target companies.

The relative marginalisation of active asset management after the financial crisis and the date about active versus passive asset management has undoubtedly led to anarchy in the investment sector. If active investment is considered to be a form of investment in which single shares or bonds are bought or sold, money is allo-

23 When analysing the voting behaviour of the Big Three, it becomes clear that they coordinate by the help of the centralised corporate governance department. All this requires considerable effort, as technically, the shares are held by a lot of different individual funds. Consequently, only the three big asset management companies can exercise extremely strong potential power over "corporate America". At the same time, we believe it is interesting that in about 90% of the cases, the members of the Big Three voted for the management in the general meeting, while, in most cases, they voted against the proposals supported by those who hold a smaller proportion of the shares (*The Conversation*, 2017).

cated for investment purposes by the managers in favour of investors by making individual/case-by-case decisions. By contrast, passive investment makes indices, which consist of security groups and different components, compete. The market participant who buys an index fund or a fund distributed in the stock market, which for example, includes all the shares of a comprehensive index, makes passive investment. When assessing the difference between active and passive investment, *Stein* (2017) said that a passive investor managed the security in the same way as the market, neither better, nor worse. Malkiel (1973) did not contest that certain managers could sometimes outperform the market, but as a group, as Malkiel stated, they achieved the same result as the market.

In most cases, active investment managers underperform compared to their own goal. Over the past decade, active managers have explained that instead of indicating their on yield prospect, most securities have indicated uniform exchange rate movement after the great financial crisis. Active asset managers rightly state that, in the case of passive investment, the money poured into the index manages good and bad companies in the same way, which distorts prices. At the same time, it provides good opportunities for those who are ready for an immediate deal and the avoidance of overvalued shares. Finally, there is the important question: can a degree of convergence felt between active and passive asset management? In this context, Stein (2017) states that along with the increase in the number of stock market funds and index funds and due to the increased complexity of such funds, passive investors make more and more individual decisions, similarly to active investment managers.

BlackRock's active investment approach and its commitment to independent risk assessment reflect a significant shift towards the application of fundamental analysis. When the company gives advice on investment, risk management or portfolio formation, it exactly assesses the authenticity, quality and yield-producing ability of the relevant security. In order to give a formal opinion, they conduct the quantitative analysis of the capital structure of the company and its cash flow-generating ability, as well as the qualitative assessment of the company's management and positioning in the sector. BlackRock is able to provide customised investment strategies for different investors and companies after conducting a thorough fundamental analysis.

6. CONCLUSION

In conclusion of our study, we should answer the question raised in the title. According to mainstream financial economics, there is no real room for fundamental analysis, as based on its tenets, only the aggregated indicators of large secu-

rity portfolios are suitable for giving relevant investment guidance. Our train of thought sought to prove that in the security market, equilibrium pricing is unimaginable without the estimation of the intrinsic value or a similar value substance and individual risk analysis. The mass marketing of "financial products" which do not have sovereign yield-producing ability might generate a new extensive financial crisis. Security portfolios which are compiled artificially, in an unfiltered manner, do not have an intrinsic value at all in most cases, despite the fact that the supply of and the demand for such portfolios is huge in global markets.

Nowadays, we can often hear the argument that with the current transactions of huge volume that are taking place in financial markets, it is impossible to conduct a fundamental analysis. Warren Buffett's investment results unquestionably prove that it is possible to achieve success in the market by using the traditional toolkit. BlackRock's operation as an asset management company exemplifies that there is still room for the analysis of fundamentals and individual risk analysis while carrying out gigantic asset management activity. The three-decade-long soaring of this company proves that the exploration of risks in the most trustworthy and the deepest possible manner cannot be separated from correct investment counselling. If we do not simplify the definition of risk as the market volatility index of asset prices, but try to grasp as many of its attributes inherent in the asset as we can, we do our best to generate investments which might become trustworthy sources of yield.

The relation based on the risk-return exchange cannot be the exclusive centre of price volatility in the asset market if the picture of risks provided by analysts and advisors can be falsified and the real risk threats can be ex ante concealed. It may undermine the credibility of the efficient market hypothesis if all sets of "available information" contain false suppositions, assumptions, statements and news. If asset prices in the market do not have a solid centre of movement, the recurrent price distortion and the loss of pecuniary resources will be inevitable. The argumentation of behavioural finance presented as a non-equilibrium formation of asset markets supports the aforementioned idea.

Belief in fundamental analysis has not weakened, but increased over the decades since Graham and Williams's work. Fundamental analysis means more than a toolkit for security analysis. It means a mentality, an approach and the investors' conviction. In the light of the above, we believe that fundamental analysis has not gone, could not have gone out of fashion.

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