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**CRITICAL ASSESSMENT OF THE ABILITY OF TECHNICAL
ANALYSIS IN GENERATING EXCESS RETURNS WITH THE HELP
OF THE EMPIRICAL EVIDENCE AVAILABLE IN THE
LITERATURE**

Abstract. The purpose of this paper is to review the empirical evidences on the profitability of technical analysis, and determine whether the technical strategies contribute to generating of excess returns.

Keywords: technical analysis, excess returns, investment decisions.

Technical analysis is a method used to predict price movements of financial assets, followed by investment decisions. The method is primarily based on calculations of market activity, such as past prices and volume, but

ignoring the company's value and economical circumstances. Therefore, an important remark might be derived from the statement above: technical analysis does not make an attempt to measure the intrinsic value of a financial asset (Jensen et al. n.d.). Indeed, the analysis strives to determine what direction will continue in the future by estimating overall market sentiment, constructing prediction models in regard with the supply and demand equilibrium, i.e. it is not necessary to understand the causes of price shifts. In theory, the core idea of classical technical analysis, developed by Charles Dow in the turn of XX century, is revealed as summative concept of three assumptions: the market discounts everything, the price moves in trends, and the history tends to repeat itself (Jensen et al. n.d.). The technical analysis is widely used by practitioners, operated not only on security, but also on commodity and foreign exchange markets. Fundamentally, the technical strategies are based on the use of a large number of rules in particular fashion, which are primarily established to explain practical consequences of Dow's assumptions. Specifically, those rules are implemented in accordance with the use of patterns, moving averages, indicators and oscillators. However, having investigated the profitability of technical analysis for the last 60 years, academics had came up with the conclusion that moving average, channels, momentum oscillators, and filters are the most sufficient technical instruments that define an idea of the asset's overall trend (Irwin & Park, 2004). All of them have a very long history, especially, moving average found its origin in anti-aircraft forces, was firstly introduced to market as a technical analysis instrument by Donchian and Hurst (Elder, 2007). More recent references to this instrument can be found in Fong and Yong (2005) and others. Filter rules as a system, was firstly proposed by Alexander in 1961, since this period it has been widely tested by academics, such as Fama and Blume in 1966, Jensen in 1967, Sweeney in 1986, etc. Finally, channels or support and resistance levels were investigated by Brock et al. in 1992, Sullivan and Timmermann in 1999, Osler in 2000, Qi and We in 2002, and others (Irwin & Park, 2004). In practice, many analysts advocate of technical strategies, particularly, Ralph Elliot, William Gann, and George Lane; they proved that the trading styles based on technical analysis gave them an advantage over other bidders (Elder, 2007). Nevertheless, not all market participants share this point of view. In fact, some traders claim that the technical analysis "is a form of black magic" (Jensen et al. n. d.). Peculiarly, the chart analysis does not give a hint about the pivotal point of trend in the future. When prices are already developing in a certain direction, technical analysis gives a signal to buy-and-hold strategy; that is quite apparent without sophisticate analysis. In confirmation of the given statement, several well-known investors expressed negative views about technical analysis. For instance, Warren Buffett said, "I realized that technical analysis did not work when turned "upside down" price charts revealed the same results". Moreover, Peter Lynch made even harsher conten-

tion: "Price charts are great to predict the past" (Meladze n. d.). As a result, it triggers a reasonable question whether the technical analysis is as beneficial as it is portrayed by its adherents. Therefore, the purpose of this paper is to review the empirical evidences on the profitability of technical analysis, and determine whether the technical strategies contribute to generating of excess returns.

The recent studies on testing technical analysis's predictive power were performed by Brock et al. in 1992. In particular, the academics had investigated simple technical trading rules applied for DJIA index ranging from 1897 to 1986 with its mean of about 6,5. They explored that predicted returns varied significantly depending on trading signals, indicated by the technical instruments. For instance, "following a buy signal, stock returns are substantially less volatile than following a sell signal" (Brock et al., 1992). According to Brock et al., moving average would have allowed an investor continuously be in the market and generate overall return of 12 %, regarding positive sentiments. Unlike positive trends, the model revealed net loss for the same period in terms of -7 % during the downward trends. As a result, they suggested that technical analysis has a predictive power, only at the time of upward trend. However, the scientists failed in testing the generated returns on statistical significance, thus the finding remained unprovable. Therefore, it is hard to judge whether technical analysis, in respect with Brock et al., factually contributed to excess returns, or the given outcome is nothing more, than statistical error.

In contrast to the findings of Brock et al. (1992), Fong and Yong in 2005 were successful in explaining of the most trading profits generated by technical signals. Specifically, the research had been dedicated to examination of whether technical trading rules based on moving averages could contribute to daily returns in the period of market expansion, such as it appeared in the Internet sector at the late 1990s. Unlike previous investigations that were basically relied on ex post data, the academics performed the analysis in real time fashion, executing trading orders in regard with available information. In accordance with Fong and Yong, the exploitation of simple moving average trading rules for the sake of prediction daily returns is pointless, because the stock prices conducted a "walk random" behavior in conjunction with high volatility (Fong & Yong, 2005). Potentially, Fong and Yong considered the Internet stock market as weakly efficient due to the lack of available information for traders in that period. Moreover, they explained the high level of volatility by behavioral aspects of traders who tended to be overconfident about their forecasting abilities. As a result, the technical rules led to incorrect predictions caused by unpredictable volatility, which, in turn, resulted in zero or negative returns.

Nevertheless, in defense of the fact that technical analysis might generate profits, in 2011, Han et al. had examined the moving average timing strat-

egy. In reference with the researches, this strategy contributed to abnormal returns compared to the buy-and-hold rule. The subject of investigation was the set of ten sorted by volatility cross-sectional portfolios, consisting of stocks traded on the US stock market, which were examined by the strategy. The results revealed various abnormal returns ranging from 9,34 % to almost 22 % per annum compared with 7,4 % for DJIA during the same period (Han et al., 2011). In turn, the academics described the evidence of abnormal return as a new anomaly. Having performed the analysis for ex post security prices from 1967 to 2009, Han et al concluded that “the moving average portfolios [brought] economically and statistically [significant] abnormal returns in both expansions and recession periods” (Han et al., 2011). Unlike the Brock et al (1992) findings, the portfolios generated higher excessive returns during bearish trends. Furthermore, moving average portfolios outperformed the buy-and-hold strategy substantially. The findings also revealed the confirmation that the presented strategy did not respond to market volatility threat as well as different kinds of risk. From this perspective, the moving average timing strategy appears as the manna from the heaven for the most shrewd traders, however, it would not benefited them too much, due to the market equilibrium. Nevertheless, the evidence of the excess return, generated with help of simple trading rule exists.

Although, the disputes of supporters and opponents in terms of technical analysis profitability could be proceeded an infinitely long period of time, Park and Irwin (2004) made an effort to critically analyze the general attitude to this issue. They evaluated the whopping amount of data (more than 130 works) dedicated to testing of trading technical rules. Having started to survey studies from Donchian’s Channels (1960), and finished with Olson’s examination of whether trading rule profits decline over time (2004), the majority of studies indicated that technical trading strategies had been widely utilized throughout the world by practitioners in money and foreign exchange markets (at least, 30–40 % of traders consider technical analysis as an important instrument in determining of price movements) (Irwin & Park 2004). In reference with the academics, early studies revealed that technical analysis benefited foreign exchange and futures traders most, but not stock traders before the 1980s. However, modern examinations testify the technical strategies generated profits on speculative markets at least until the early 1990s. In particular, among 92 modern works, 58 – indicated positive annual returns, in terms of 3–4 % with outliers as more than 25 %, conducted by the technical strategies, whereas buy-and-hold strategy for the last 100 years would have generated 7,35 % annually. 10 and 24 – revealed negative and mixed results, respectively. Though, the positive evidence prevail, the researchers claim that most of published empirical evidences until 2004 year failed to adequately cope with the estimation of risks and transaction costs. The omitted factors that affect considerably the profits are key variables that should have been

tested prior to suggesting conclusive evidence. As a result, Park and Irwin (2004) arrived to conclusion: even though, among positive evidences, which are appreciated by the scientific society, there few empirically proved works that suggest that technical analysis contributes to excess returns, but it might be more fewer if the problematic issues were counted into consideration.

In conclusion, trading strategies based on technical analysis are widely utilized throughout different kinds of financial asset markets. It has its supporters and detractors, the former group tends to being rewarded for implementing technical analysis to identify investable securities, the latter – usually does not succeed in it. For this reason, the technical analysis success in generating excess returns is debatable. Large amount of works were devoted to developing of flexible predictive models based on traditional technical instruments. Albeit, among 92 models, more than a half proved the profitability of technical analysis, yet many of them were subject to missed decisive factors, which downgraded the overall returns level generated by technical strategies (Irwin & Park 2004). However, at least there were very few statistically tested confirmations of excess returns produced by technical models, such as “A new anomaly” of Han et al. As a result, it might be said that with consideration for proper risk assessment and transaction costs, technical analysis strategies applied for security market are able to generate positive, but not excessive returns.

References

1. Brock W. Simple technical trading rules and the stochastic properties of stock returns / W. Brock, J. Lakonishok, B. LeBaron // *The Journal of Finance*. – 1992. – Vol. 47. – URL: <http://www.afajof.org/details/journalArticle/2913801/Simple-Technical-Trading-Rules-and-the-Stochastic-Properties-of-Stock>Returns.html>.
2. Elder A. *Trading for Living* / A. Elder. – N. Y. : Wiley, 2007
3. Fong W. Chasing trends: recursive moving average trading rules and internet stocks / W. Fong, L. Yong // *Journal of Empirical Finance*. – 2005. – Vol. 12. – P. 43–47.
4. Han Y. A new anomaly: the cross-sectional profitability of technical analysis / Y. Han, K. Yang, G. Zhou. – 2011– URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1656460.
5. Irwin S. The profitability of technical analysis: a review / S. Irwin, C-H. // Park AgMAS Project Research Report. – 2004. – N 4. – URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=603481.
6. Meladze V. Technical analysis, Global Economy, Finance and Investment [Electronic resource] / V. Meladze (n. d.) – URL: <http://www.globfin.ru/articles/invest/tanaliz.htm>.
7. URL: <http://www.investopedia.com/university/technical/>.