

# USE OF TECHNICAL ANALYSIS INDICATORS AT TRADING SHARES OF STEEL COMPANIES

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When trading on capital markets, used are multitude of methods. The intention set out in the present paper is to analyse probability of profit of the businessman using selected technical analysis indicators whilst trading with shares of the globally largest steel companies. Selected for analysing were 21 steel companies, and selected as the technical analysis tool was the relative strength index (RSI) indicator. Analysed have been the period of one year commencing in May 2012 and ending in May 2013, based on daily closing prices of the shares of steel companies.

*Key words:* steel companies, technical analysis, steelmaker, capital market, RSI

## INTRODUCTION

Existence of production means market is obstructed by the fact, that due to the sufficient effectiveness it is necessary to be participating on international markets, since capacity of domestic markets is not sufficient, therefore information about international market are also very important [1].

In different countries, used for assessing companies are a variety of methods. Obviously, each of the method has its advantages and disadvantages, and hence selection of the most proper for the given company method is extremely important [2].

At evaluating companies, most frequently used are methods of the technical and fundamental analyses. Technical analysis does not consider the factors that are of influence on the price and value of financial assets. Traders try to foresee demand and supply for a financial asset purely based on the data that embody past fluctuations of prices and volumes of deals. To identify trends in behaviour of the market they use computers and various graphs, simulations and a range of models.

Based on these they attempt to estimate the future development. The technical analysis utilising traders often employ also various indicators, such as moving averages and other statistical methods [3].

Objective of the present paper is to analyse successfulness of the trader using the RSI indicator whilst trading with shares of the globally largest steel companies.

## METHODOLOGY

Due to the prediction it is very important to use available models for prediction of financial situation de-

velopment with consideration of specifics in area of business [4].

In general, methods of evaluating financial instruments can be divided into the technical analysis method and the fundamental analysis one, respectively. Within the technical analysis, oftentimes used are the technical indicators trading tools. The intention set out in the present paper is to analyse probability of profit using RSI indicator.

For analysing successfulness of the RSI indicator selected were 21 biggest steel companies in terms of the revenue they generated in 2012. The RSI indicator was calculated based on daily closing prices of individual companies. Duration of the period for its calculation was determined to be 14 days.

## Relative strength index - RSI

RSI is the expression of inner strength of individual security. The indicator has been developed to make up for three major deficiencies of those technical analysis indicators that fall into the oscillator group:

- Values of the rest of oscillators are often erroneously influenced by development of the past data that present an integral part of their calculating. In this way determined values of indicators can be often obfuscating.
- The problem with oscillators is a proper selection of the upper and lower limits, overrunning of which is a signal for either purchase or sale.
- To be calculated, oscillators necessitate use of prolonged and “dense” time series [5].

Calculation:

$$RSI = 100 - 100 / (1 + RS)$$

RS – proportion of average positive changes in the rate and average negative changes in the rate seen during the set period of time.

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RSI can be interpreted as an analysis of divergences, which consists in comparing the course of development of the rate and the course of RSI. If the indicator develops contrary to the rate of the share a change in the trend is getting closer [5].

The RSI basis is to reveal the moments when the under-laying asset is too expensive or too cheap, and to make advantage of them. For extreme limits, recommended are limits 70 and 30, though used can be also limits of 80 and 20, possibly 75 and 25. Used at analysing presented in the paper were limits 80 and 20.

### Analysis results

Recorded within the analysed period of one year were 94 occasions on which was, based on the RSI indicator, the market was overbought and 238 times RSI showed that the market was oversold.

The moment the stock market is overbought, the RSI indicator points to downward turn in price of the supporting asset. For trader with share this should signal the need to sell the stock. Analysed were all 94 moments when the RSI indicator attained the value above 80. Subsequently, close attention was paid to analysing development in daily closing prices during 10 days following the moment at which should the investor, as based on the RSI, effect sale of shares of the given steel company. The analysis results are shown in Table 1.

Table 1 Development of share prices, 10 days after RSI > 80

|                | min. -1<br>close | average -1<br>close |
|----------------|------------------|---------------------|
| average        | -0,047367171     | -0,007776160        |
| min            | -0,277777778     | -0,252962963        |
| max            | 0,040082930      | 0,083068417         |
| median         | -0,030872782     | -0,003023032        |
| lower quartile | -0,060440054     | -0,029753695        |
| upper quartile | -0,013329009     | 0,024169209         |

In analysed 94 moments, the RSI indicator predicted overbought of the market and its turnover. For traders with shares this was supposed to signal decline of price of shares. They were advised to sell shares of a specific steel company. Therefore, attention is drawn to the minimum share price during the 10 days of the date when the RSI indicator value was higher than 80 points. This means that the trader was extremely money-making in the given period of time. Analysed during the period is the maximum decline as compared with the closing price in the moment, i. e. when the RSI most meets up its intended function. The values fluctuated within the range of -27,78 % and 4 %. In 11,7 % of cases, the minimum price after the analysed moment never dropped under closing price recorded on that day.

Distribution of quantities of the maximum profitability is illustrated in Figure 1.

25 % of the values declined by more than 6,044 %, half of the values declined in the reported period by more than 3,09 %, and 75 % of all analysed moments

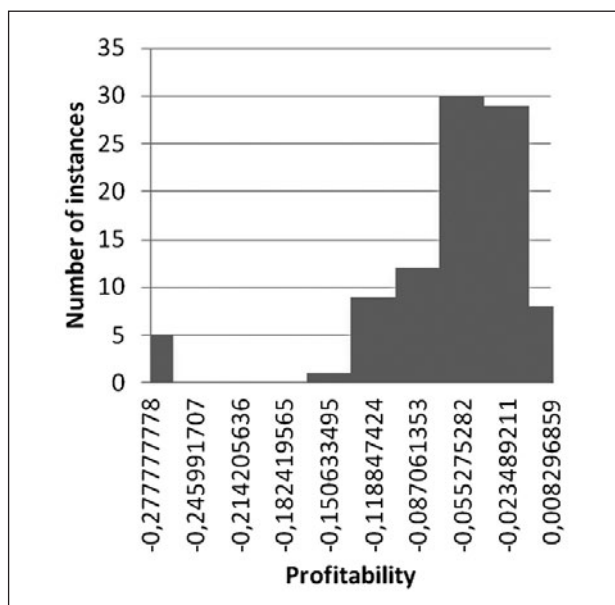


Figure 1 Distribution of quantities of the maximum profitability - overbought market

declined on stock markets by more than 1,33 %. The average maximum decrease in the share price was 4,74 %. Attention was paid also to the relation of the average rate of steel companies as related to the closing price. With this indicator, the average change reached the value of -0,78 %. In half of the cases analysed the average rate fell by more than 0,3 %.

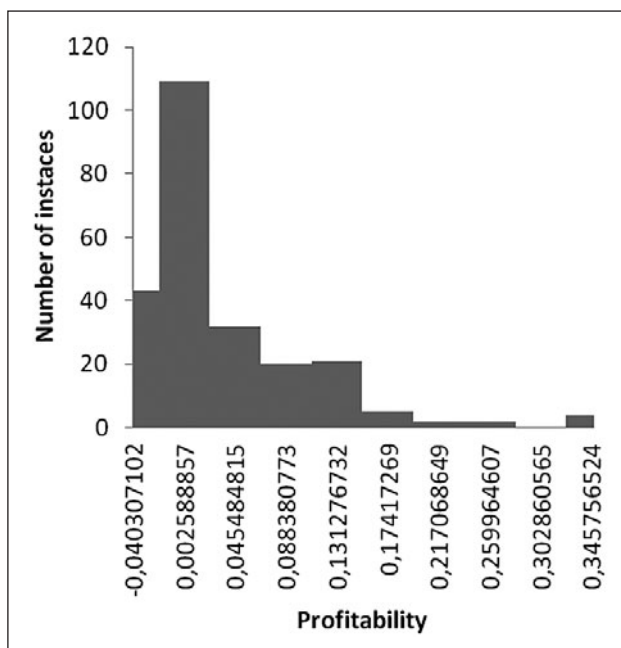
Beside the moment when RSI indicates that the market is overbought, analysed is also the opposite case, when the market is oversold. The case occurs when the RSI indicators attains the value lower than 20 points. For the trader with shares this was supposed to signal turn in the market and the possibility to make profit through purchase of shares. Since May 2012 till May 2013, 238 such instances occurred with 21 largest companies, and these were analysed in more detail. A summary of the analysis results is presented in Table 2.

Table 2 Development of share prices, 10 days after RSI < 20

|                | max. -1<br>close | average -1<br>close |
|----------------|------------------|---------------------|
| average        | 0,053356311      | 0,006581847         |
| min            | -0,040307100     | -0,116304850        |
| max            | 0,388652482      | 0,271904762         |
| median         | 0,029016947      | -0,005543750        |
| lower quartile | 0,006589415      | -0,028916166        |
| upper quartile | 0,077663962      | 0,027516144         |

If, in the given moment of time, the indicator were successful, recorded in the coming 10 days would be increase in the rate of individual steel companies. For this reason, attention is drawn to the maximum positive change in the rate. This stands for the fact, when the trader is during the period analysed, the most profitable.

In 86,86 % of cases the price of shares, during ten days from arrival of the signal that the market is oversold,



**Figure 2** Distribution of quantities of the maximum profitability - oversold market

made it if only for one day above the closing price of the day when the RSI value dropped under 20 points.

Maximum profitability of a potential trader that bought a specific share at the moment the RSI value was below 20 points fluctuated between - 4,03 % and 38,87 %.

25 % of all cases analysed achieved maximum profitability for 10 days higher than 7,77 %, half of the cases analysed achieved maximum profitability of 2,9 % and in three-quarters of all events where the RSI indicated a good opportunity to buy shares recorded was maximum yield for 10 days of more than 0,66 %.

On the average, maximum profitability was when compared with the closing price higher by 5,34 %.

Distribution of quantities of the maximum profitability in this case is illustrated in Figure 2.

Another indicator was the ratio of the average price during the 10 days from recording the oversold market and the daily closing prices at the given moment of time. The average price during the next ten days was on average higher by 0,66 %. The values of this indicator ranged from - 11,63 % to 27,19 %.

Based on the analysed data it can be deduced that in majority of cases the RSI indicator is suitable when trading stocks of steel companies.

## CONCLUSION

The aim of this paper was to analyse successfulness of using the RSI indicator in trading on capital markets with shares of the largest steel companies. Of the overall number of 332 analysed events was the opportunity to attain profit over the next 10 seen in 216 cases. From this perspective, the RSI indicator is well applicable at trading with steel companies. Nonetheless, from the perspective of a trader, it is important to fix its position on the market at the time s/he is attaining profits.

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**Note:** The responsible translator for English language is P. Skala MA, Košice, Slovakia