TRADING STOCK MARKET INDICES. A SIMPLE APPROACH

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Abstract

In this article we will present a simple model that can be used by the people that don't have profound financial knowledge and, despite that, could be tempted to try to obtain gains on different financial markets without paying a professional. In fact, the model presented here is developed on some ideas that we presented before in an article on the sports betting industry, adapted to the financial markets. The general ideea that we will present in detail in this article is that someone can start and stop trading market indices looking at just one indicator that can be found everywhere: the trading volume. The position that should be taken is, in our opinion, in the opposite way of the last trend that that was ended by the high market volume. In the end, the following article represents just a case study made on the general principles presented here taking into consideration a concrete market. We will try to present the model that we developed on a very well-known and highly traded index, the DJIA (Dow Jones Industrial Average) even if the origin of this index is, as almost every trader knows, american. The reason we will do that is the fact that the traders from the whole world can obtain gains (or losses) on transactions made on DJIA even if they trade from the European Union or other countries that exist in our world so, the gains or losses obtained by the trades we mentioned before can contribute to the value of the traders economy (in our case to the value of EU's economy).

Keywords: *financial markets, earnings, statistics, DJIA, trading volume*

JEL classification: *G11, G12, G13*

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1. Introduction

The Dow Jones Industrial Average (DJIA) (Yahoo Finance, 2020) was the second stock market index used and, in our opinion, the first one that was considered as a proxy for the health of the US economy, the first one being used on a narrow domain of the economy (the transportation domain). We agree with other researchers that affirm that in our times DJIA "does a fairly good job of reflecting the performance of large companies" (Fortune P., 1998). The index is also known between people as Dow 30, its value being price weighted (Wikipedia, 2020) because of the fact that it takes into consideration 30 stable and reliable stocks traded on the New York Stock Exchange (NYSE) and the NASDAQ. In this paper we will present a simple model that can be used by the traders on DJIA or on other indices, that we obtained by adapting a model that we presented before for another industry (Moroșan A., 2018).

2. Our strategy

One of our ideas used also, as we mentioned before, in another article that was adressed to the bettors from the sports betting industry was that if we have at our disposition 10.000 monetary units that we can bet and if we don't need that sum for something else, we should start betting with one monetary unit (or the smallest value permitted by the bet industry firms if this value is smaller than one). We will consider the start value for the strategy we will present here equal vith 1 futures contract on DJIA, but the start value could be adjusted in both directions (up or down) depending on the maximal sum of money we could use to trade sometimes (Moser J., 1992). Very important for the trading strategy we will present is the period of time taken into consideration for the investment. For our study the period taken into consideration for the investment will be a day, but it can be also an hour, a week, a month, etc. In the strategy that we presented for the industry of sports betting we used a sequence, inspired as idea from the Fibonacci sequence (Goetzmann W., 2003). Our sequence had the following form:

Fig. 1 Our sequence with the numbers that can be used for the futures contracts opened on DJIA

1
6
20
56
144
352
832
1920
4352
9728
…

Source: own source

and was defined by the following relation:

$M(n) = 2^{n-1} \times (2n-1)$ where $n \geq 1$ (1)

If the last month's trend is, for example, downwards, we will start opening long contracts (in the opposite case we will start opening short contracts) according to the M sequence presented before.

We will start buying or selling contracts after the close of the stock market that shows a volume of transactions on DJIA for three consecutive days that is at least equal (in every of these days) with the average of the highest days volumes realised in the months situated in the middle of the interval from the point of view of the biggest volume per day for the period taken into consideration before trading.

So, if the market registered a volume for DJIA for three consecutive days equal or bigger than the average determined according to the idea stated before and the trend from the last month of the period taken into consideration was, for example, downwards, we will try to buy a long contract at the closing price from the day before.

If we will succeed, we will put on sale the contract bought with a price bigger with 5 %. If, in the following day we will not obtain the price wanted for our contract and the volume from the day before stays above the average we determined, we will try to buy another six long contracts at the closing price established a day before. And so on with 20, 56. 144, etc. contracts. The price requested for the contracts bought will be, always, bigger with 5% than their average cost.

If, sometimes, the contracts put for sale in the market are bought we will look for the next day where the daily volume is at least equal with the one established as we mentioned and, in the following trading day we will start from the beginning with 1 long contract as I described before. We have chosen a profit of 5% because of the fact that this percentage is bigger than the margin solicited for the trades made on DJIA futures, so, if we win 5% we will win, in fact, a sum that is equal or bigger than the sum we invested.

3. Case study

To start trading, fist, we have to statistically study the period taken into consideration in order to establish the average daily volume from the biggest volumes realised in the months situated in the middle of the period taken into consideration. If the period taken into consideration is formed from an even number of months we will determine the average as we mentioned before. If the period is formed from an odd number of months we will consider the biggest volume of the month from the middle of the interval. In our case we looked at the daily biggest volumes realised in six months to determine the average mentioned:

Table 1 The highest daily volume for the months taken into consideration

Period (a day from the month)	Biggest volume on DJIA (dolars)
October 2019	309.640.000
November 2019	324.050.000
December 2019	603.780.000
January 2020	403.890.000
February 2020	915.990.000
March 2020	908.260.000

Source: own source

The middle monthly biggest daily volumes appear for the months December 2019 and Januay 2020 and are 603.780.000 and 403.890.000 so, their average is

(603.780.000 + 403.890.000)/2 (2)

and the result of the average biggest daily volume is, in our case, 503.835.000.

In April, we started doing a day after the daily volume was bigger than 503.835.000 the opposite action than the monthly trend indicated. That day was 01.04.2020 when the volume traded for DJIA was 506.680.000. Before, for the whole month of March, the direction of the trend was downwards and the daily volume was huge (bigger for almost every day than the one we established before as an average to take into consideration), only in two days being a little lower than the average mentioned. The trend for March was downwards so, from 02.04.2020 we ordered to buy 1 unit according to the start of our M sequence at the closing price from the day before which was 20.943,51. After the moment our buy position mentioned before was bought, in the day of 02.04.2020, we also opened a selling order to close our bought position with a profit of 5% meaning a higher quotation of 21.990,69. Because in 03.04.2020 that quotation wasn't reached and the volume of the day before was bigger than the one established by us as a signal we bought the following number of 6 contracts for DJIA at the closing price reached a day before, meaning 21.413,44. So, in 03.04.2020 we had 7 contracts bought with the average price of 21.346,31 and we opened a selling position in the same day of seven contracts at a price higher with 5% than the average price mentioned before (meaning 22.413,62). That level was touched in 06.04.2020 so our opened positions mentioned before were closed then. That day we didn't opened new positions because of the fact that the signal (the volume from the day before) was smaller than the one established by us, We had to buy another contract in 07.04.2020 according to the beginning of our M sequence at the closing price from the day before which was 22.679,99 and that quotation was touched that day so, we also gave the order to sell that contract with a price higher with 5% meaning 23.813,99. In the following day (08.04.2020) we gave another buy order of 6 contracts at the closing price from the day before which was of 22.653,86. This order wasn't bought in 08.04.2020 because the price wasn't touched so, after that moment, we had 1 contract bought at the

price of 22.679,99 and the order given before for another six contracts. At the end of that day that contract wasn't executed so we annulated it. In 09.04.2020 our order for 1 contract put for sale at 23.813,99 was sold. So in 9, after the close, seeing the volume made in that day we gave another buying order of 1 contract at the price of 23.719,34. This order was executed in 13.04.2020 making us own that bought contract at the opening price of 23.698,93. So, in 13 we also gave a selling order of 1 contract at a price with 5% higher meaning 24.883,88. In 20.04.2020, because the volume established as a signal was touched the day before we bought another 6 contracts with the opening price of that day (24.095,1) which was smaller than the one given by us (the closing price from the last trading day was 24.242,49). The selling order we gave for 7 orders was put at the price 25.240,42 (24.038,5 x 1,05). The order was closed in 27.05.2020 when the solicited price was offered. From 20.04.2020 until 29.05.2020 the volume signal wasn't touched so, the following day when we gave another long order for 1 contract was 01.06.2020 at the closing price from the last trading day mentioned before of 25.383,11. The contract was executed at the opening price from 01.06.2020 which was smaller (25.342,99) so, we also gave an order to sell the same contract with a profit of 5% at a quotation of 26.610,14. That contract was sold in 05.06.2020. In 08.06,2020 we gave the order to buy another long contract at the closing price from the day before because of the volume from that day, but the contract wasn't executed the day after and it has been withdrawn, In 12.06.2020 we bought a long contract with the closing price of 25.128,2 from the trading day before and we also gave an order to sell the same contract with a profit of 5% at a quotation of 26.384,61. The order was executed in 17.06.2020. In 22.06.2020 we bought a long contract with the closing price of 25.871,5 from the trading day before and we also gave an order to sell the same contract with a profit of 5% at a quotation of 27.165,08. In 29.06.2020 we had an order to buy 6 long contracts at the closing price from the day before (25.015,6) but this price was not touched so we have withdrawn the order. Our long contract sold at a price of 27.165,08 was executed in 05.08.2020. We bought a long contract in 01.09.2020 with the closing price of the day before which was 28.430,1 and we gave an order to sell the same contract with a profit of 5% with a quotation of 29.851,61. Three days in a row with a very big volume (higher than the average we established) and the order unexecuted indicated to us that the market is not going to touch that level at least for some months when, in my opinion, we will have a change of

trend with the direction downwards. So, the last rule that we use in our approach is that, if the trading volume is bigger for three days in a row than the limit established, we will close the orders opened with a loss of 5%. Therefore, in 08.09.2020 we sold the long contract we had 5% lower at 27.008,6. The order was executed at the opening price of 27.925,2. In September we stopped trading because of the fact that the volume was above the high level we established as an average for three days in a row.

In the following table we will try to summarize the strategy described before for the period taken into consideration by us:

Table 2 The strategy applied on our case study

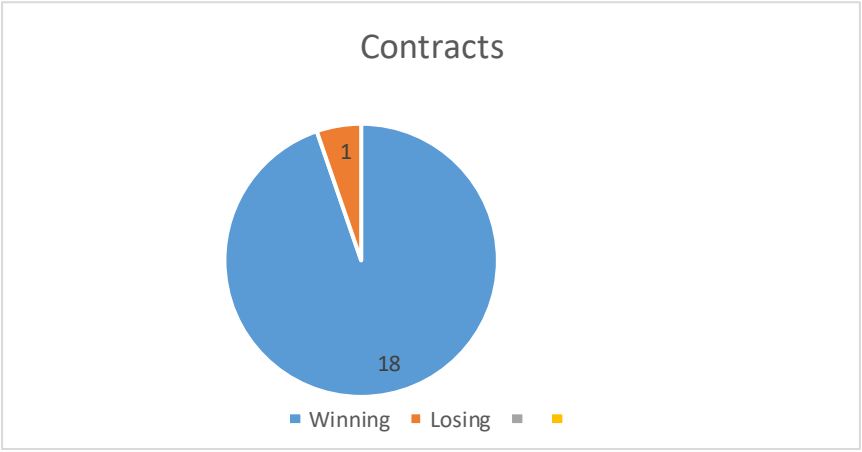
Date	**Opened long contracts (number/value for 1 contract)**	**Sold long contracts (number/total value)**	**Profit (+)/Loss (-)**
02.04.2020	1/20.943,51		
03.04.2020	6/21.413,44		
06.04.2020		7/22.413,62	+ 7.471,17
07.04.2020	1/22.679,99		
09.04.2020		1/23.813,99	+ 1.134
13.04.2020	1/23.698,93		
20.04.2020	6/24.095,1		
27.05.2020		7/25.240,42	+ 8.413,44
01.06.2020	1/25.342,99		
05.06.2020		1/26.610,14	+ 1.267,15
12.06.2020	1/25.128,2		
17.06.2020		1/26.384,61	+ 1.256,41
22.06.2020	1/25.871,5		
05.08.2020		1/27.165,08	+ 1293,58
01.09.2020	1/28.430,1		
08.09.2020		1/27.008,6	- 1.421,5
Total			**+20.835,75/-1.421,5**

Source: own source

We will present in the following part of our paper, in some figures, the results that we obtained, as they were mentioned in the table with the number

2. In the figure with the number 2 we will present the distribution of the winning/losing contracts opened:

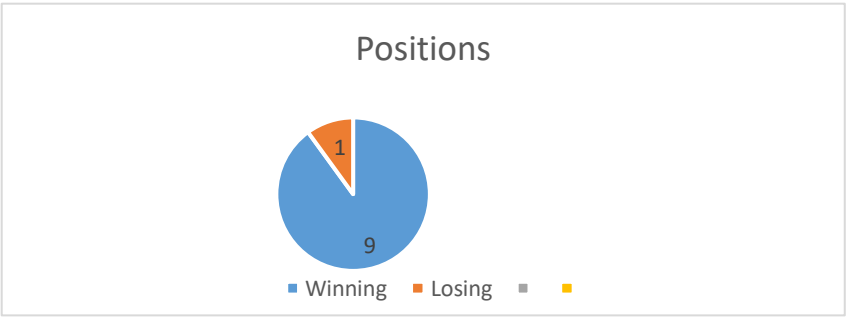
Fig. 2 The distribution of the winning and losing contracts opened



Source: own source

The following figure presents the winning/losing positions opened:

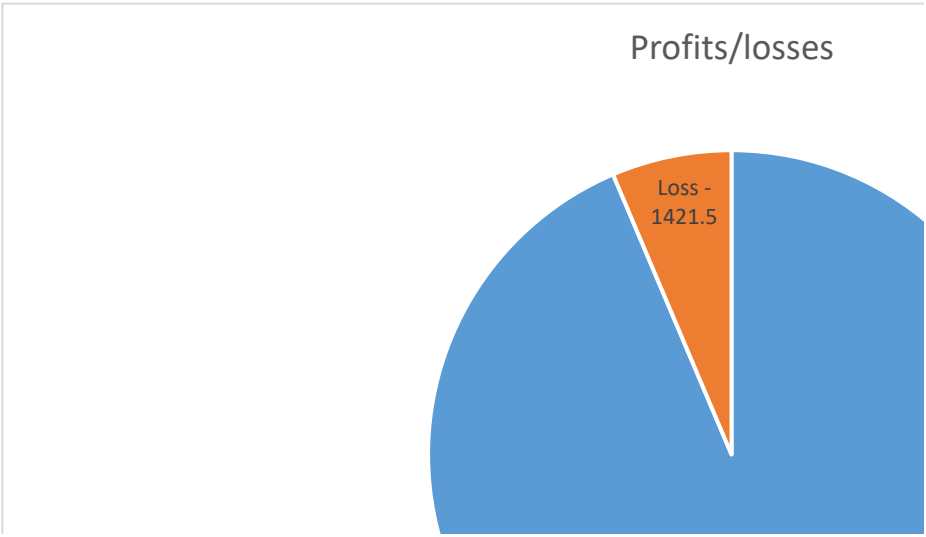
Fig. 3 The distribution of the winning and losing positions opened



Source: own source

In the figure with the number 4 we will present the distribution of the value of the profits/losses for the positions opened (in US dollars):

Fig. 4 The distribution of value of the profits/losses obtained the contracts opened



Source: own source

4. Conclusions and further research

The strategy that we have presented in our case study functioned perfectly until the moment that we think it revealed a return of the upwards trend that manifested for the whole period that we have taken into consideration so, our study shows that the strategy was confirmed by the market.

Even though, we have to extend our research for a longer period of time that had begun from October 2020 until, at least, by March 2022. The idea that we have presented in this paper was confirmed for the period of six months that we have analysed, but, for a higher degree of certitude we will have to confront our strategy with the realities that the market will have to take care of in the following, very uncertain, period. So, in the following years, we will try to keep informed the persons that are interested about the results that the strategy presented in this article will generate for at least one and a half years from now on.

In October we started opening short contracts taking into consideration the reversed trend that we think we identified. If we will have a

confirmation of that turn that manifests by high volumes accompanied with the same or lower prices this fact will be in line with the strategy described above, but October is not a month that we took into consideration for the case study presented in this paper.

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