PARADOXES OF MODERN STOCK EXCHANGE MARKETS

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Abstract: *In this article we propose an easy approach of stock exchanges and their impact on the real economy. The paradoxes of modern stock exchanges are commonly understood as opinions that contradict the generally accepted truth and therefore are considered absurdities or huge enormity by the majority of the population.*
The paradoxes are essentially based on logical arguments that sometimes can lead to contrary or contradictory conclusions (depends on the situation) of a truth already known and accepted. In connection with capital market, through this approach we try to highlight a few aspects that come out from everyday life, breaking the monotony of theoretical resolutions.
We can associate anomalies in trading financial instruments with prove that financial markets are inefficient. They can be highlighted best on the developed financial markets. Through their specific, there are anomalies in a stock market that demonstrates either that the market is inefficient or that there are some discrepancies regarding certain asset price formation. If we talk about market inefficiency hypothesis, it is demonstrated that in that market, the efficiency of the market is not verified or partially verified. It has been shown that such anomalies tend to diminish or even disappear in time, thereby reducing or even eliminating the profit opportunities of the investors who speculate on them (Schwert, 2003, p 940). The stock exchange anomalies, especially those with a direct impact on the financial instruments price which are traded on stock exchanges, are likely to offer investors the opportunity to obtain above-average market gains, in term of a proper management.
To assess whether or not the phenomenon can be considered as a stock market anomaly, it must be compared with a normal behavior or with a normal model. In addition to the main categories of stock market anomalies that we identified (calendar, technical or fundamental) a paradox of recent years in the investment in stock market is the high-frequency trading (HFT - high-frequency trading), this requires a ultra-fast trading of the securities, using special algorithms but also highly advanced technologies. The effects of very rapid extension of these practices are reaping huge profits in fractions of time increasing fraction of time here, and more than that the pronounced weakening of the link between the stock market and the real economy.

Keywords: *stock market paradox; high-frecquency trading, january effect, weekend effect.*

JEL classification: *G02; G12; G23;*

1. Abnormalities in the financial instruments trading through stock exchanges.

Although that in the history it can be identified moments when stock exchange abnormalities seen in terms of inefficiencies in financial markets, it does not mean that they are repetitive or that the frequency of their event follows a certain logic. Thus, investors should be aware of this aspect when they are setting their goals and hopes of winning.

Stock market anomalies and the moments when they occur are identified primarily by investors who closely follow the market and its evolution and also by the researchers in this field. They can see more easily the moments when the evolution of stock prices emerges from what is "normal" and thus creates opportunities for those who observe them. When identifying these situations, they have basically two options to proceed: either they warn that market actors about the findings or take the advantage of market inefficiencies and speculate marking the additional profits into their accounts. In most of the cases their choice is obvious, namely to speculate and take advantage from the opportunities of the market, but whatever their option is, the result is always the same: mitigation and disappearance of the market anomalies.

From our point of view, the anomalies encountered in the financial markets or stock exchanges, can be viewed in terms of time (calendar anomalies), in terms of technical analysis interpretation (technical anomalies), in terms of assessment relating to fundamental analysis (fundamental anomalies) or abnormalities related to other issues. This article addresses only calendar anomalies and high-frequency traders practice. Technical anomalies and fundamental anomalies will be addressed in another article.

2. Calendar anomalies.

Calendar anomalies as apparent from their name, refers to the situation of financial markets inefficiency that can be seen at certain points in time and broadly in line with a temporal logic. The best known such anomalies are weekend effect and January effect. But besides these anomalies we can talk about vacation days anomalies occurring after Halloween, quarterly anomalies, effects in the same calendar month, the Monday effect which is often seen in connection with weekend effect, the effect of intraday trading (in one trading day) or anomalies seen in years ending with the digit "5".

2.1. The January effect.

January effect means that most stock of the world and especially those of smaller capitalization generated high yields (unusually large) in January.

According to Robert Haugen and Philippe Jorion: "January effect is probably the best known example of aberrant behavior encountered in financial markets, around the world" (Haugen & Jorion, 1996). Those two concluded that small cap stock markets have generated higher returns than large capitalization stock markets, the difference between the two categories of stocks being given by the January effect. The smaller capitalization stock exchanges recorded substantial increases of prices of securities listed, in the first 10 trading days of January.

January effect creates great opportunities for speculators, who will buy listed securities before the month of January, and who are expected to sell in this month

with the added value determined precisely by this effect. January effect means therefore initiating long positions before the end of the year at lower prices, and selling them in January at a higher price, the difference between the two prices is the investor's profit.

Like any financial market anomaly, the January effect is seen as a form of financial market inefficiency. But according to the theory of efficient markets, it should go away with the passing of the time. At least so far that has not happened, although some researchers argue that the effect diminished over time (Haugen & Jorion, 1996).

January effect was first observed in 1942 by a banker - Sidney B. Wachtel (Haugen & Jorion, 1996), and the explanations that have been made over time were mainly on the willingness of investors to avoid additional pay taxes on gains from the stock market. Thus, in case of relative losses on financial titles, investors will sell those securities and will assume the loss, for reducing the taxable amount at end of the year. Massive sales of financial titles determine the decrease of securities quotations and also the decrease of prices in the market. However, the same investors will proceed to purchase even of the same titles, in early January, resulting in an increase of prices. The fiscal aspect is discussed by others (Jacquillat & Solnik, 1997, p 70) with the same meaning. Of course, we can find explanations also in the willingness of investors to liquidity their portfolios before the end of the year, so before the winter holidays (for expenses incurred by them). We believe, however, that sales resulting from this last reason do not influence the stock market prices in a very high level, this is because the amounts are insignificant.

Regarding the aspect of taxation, the January effect has been demonstrated by empirical studies on markets in the UK and Australia, countries with fiscal year not ending on 31 December. Therefore, the explanation of "tax-loss-selling" is not credible in this case, which makes us believe that there are other factors influencing the investment process, which causes this effect.

Jason Fink, Kristin Fink and Godbey Janathan analyzed the existence of January effect from the perspective of the size of the company issuing the securities listed and which achieves an improved performance in the months of January (Fink, Fink, & Godbey, 2008). They concluded that smaller companies recorded higher performance in January than the other. Also, in the same study was included another variable - the age of the company (the period since its shares were listed on stock exchange) which seems to have a major importance in the existence of this anomaly.

The January effect has been studied by Rozeff and Kinney in 1976, Roll and Keim in 1983 or Lakonishok and Smidt in 1988 (Fink, Fink, & Godbey, 2008), which was tested on many of the world's financial markets. Investors around the world are aware of this anomaly and try as much as possible to take advantage of the opportunities that it creates. Among brokers say that a particular market performance in January predicts a good performance for the rest of the year.

2.2. The effect of the end of the month.

Empirical studies show that it can be observed an increase in yields of listed securities at the end of any calendar month. This aspect was studied by Lakonishok and Smidt in 1988. Their analysis included daily values of the Dow Jones Industrial Average over a period of 90 years, the purpose being to test the existence of seasonal patterns in the rates of obtained return (Lakonishok & Smidt, 1988). Those

two concluded that anomalies can be observed in terms of profitability obtained at the end of weeks, at the end of month, end of the year and around the holidays.
In 1996, Chris Hansel and William Ziemba showed that the effect of the end of the month can be determined by paying of the wages or interest (Hensel & Ziemba, 1996). With extensive study on the analysis of the daily values of the S & P 500 over 65 years (from 1928 until 1993), they concluded that the returns generated by the increasing quotations at the end of the month are significantly higher than their annual average. Their demonstration suggests that investors can take advantage of this anomaly and buy securities before the beginning of a new month, with a few days earlier and then sell them a few days after its beginning.
In 2006, in Xu and McConnell's article, which was awarded with the Graham Prize- "Equity Returns at the Turn of the Month", the authors studied the phenomenon for a period of 80 years (from 1926 to 2005) for the Dow Jones Industrial Average (Xu & McConnell, 2006). The conclusion they reached is that the last trading day of a calendar month and the first three trading days of the next month offers higher returns for listed shares than the average annual yield. Those two have demonstrated that the effect of the end of the month seems to be more pronounced in the years after 1986.
From our perspective, the effect of the end of the month is a challenge for what means the rational behavior of investors in the financial market.

2.3. The weekend effect.

The weekend effect was first studied by Fields in 1931 when transactions could be concluded on Saturdays (Fields, 1931). The same Fields showed in 1934 that the Dow Jones Industrial Average shows a tendency to increase the day before holidays. The weekend effect has been studied by many researchers, and the first to correlate this effect with the schedule as it was manifested was Lawrence Harris in 1986. He showed that the weekend effect tends to occur in a significant extent in the first 45 minutes of trading on the day of Monday. Besides, Monday morning seems to be one of the days of the week in which the quotations recorded decreases in value (Harris, 1986).
The weekend effect is often treated in the literature with the Monday effect. The two effects basically relate to the same thing. Hamon and Jacquillat demonstrated in 1988 that Monday seems to be the worst day for investment in shares (Jacquillat & Solnik, 1997). The study realized by them, was based on daily historical values of AFFI SBF index for the period 1977-1987. They found that the average return achieved on Monday was negative and in all other days of the week in which it can be concluded transactions on the stock exchange, the return was positive. For data series, the authors considered the daily opening value of the index.

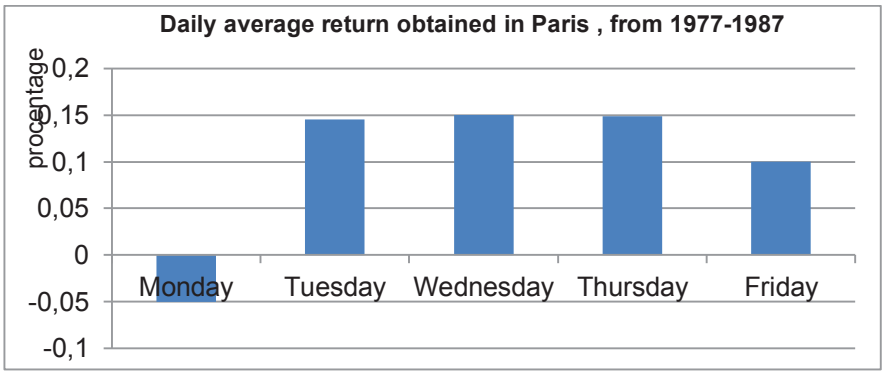

Figure 1. Daily average return obtained at Paris Stock Exchange, from 1977-1987
Surce: processed after (Jacquillat & Solnik, 1997, p. 72)

This anomaly involves at least an interesting explanation. The weekend effect appears to be the result of the tendency to publish negative news on Saturday or Sunday. Bad news about the market likely to influence its development, mainly occur on weekends. Another possible explanation of this phenomenon is based on the general state of the market participants. It was found that the mood of the people is better, more optimistic on Fridays and on days preceding holidays. On Mondays, the mood of the people in general tend to be more pessimistic, morose. Rendered in the investment area, these states generates reactions as: increasing quotations when the market is dominated by optimism (due to boost buying transactions) and decreasing quotations when market participants are dominated by pessimism (in this case they sell more).

2.4. Another calendar anomalies.

Besides already exposed calendar anomalies, there were also identified other effects, but at least for now those are remaining in the study of researchers in this field. Thus, according to an analysis company of stock market trends it seems that there is a anomaly on the returns obtained from investments on the stock market in the years ending with the digit "5" (http://bigcharts.marketwatch.com/, 2012) . At least apparently, the Dow Jones Industrial Average level seems that the years ending with the digit "5" bring positive returns to investors. For example: 2005, 1995, 1985. This notice is not valid for years divisible by 5. The yields include in the company analysis both the DJIA index value at the beginning and at the end of the year and also the dividends of listed companies which are taken in the calculation the DJIA.
A brokers adage vis-a-vis investment on stock exchanges, which is already famous, says: "Sell in May and go away". Like any saying,this was basically the result of many experiences from brokers, which showed that the period between November and April is characterized by significantly stronger increaseis than in other months of the year. November usually brings gains for stock market quotations, its beggining is often associated with Halloween (which takes place in late October). Investors can use this effect to achieve higher returns than the market average, so they will buy listed shares in November and will sell, according with the hypothesis, in May. Bouman and Jacobsen have studied this phenomenon which they called the effect of Halloween (Halloween Indicator) and showed that their hypothesis is confirmed for 36 of the 37 countries surveyed, and the market in which this phenomenon can

be observed best is the London market (Bouman & Jacobsen, 2002). This anomaly has been studied also by Maberly and Pierce in 2004, and the conclusion they reached was that the returns obtained from investments on the stock market in many states were mostly negative or smaller in any case, in the months between May and October comparing with the short-term interest rate (Maberly & Pierce, 2004). So the conclusion reached by Bouman and Jacobson's and also the conclusion of Maberly and Pierce, is in fact a contradiction of the theory of efficient markets, and till now the reasons for determining this phenomen are unclear. Therefore remains space for further research in this area.
An interesting anomaly is at least that of Mark Twain, which bears his name - "Mark Twain Effect". He noted that the yields obtained in October, from the stock market investments are lower than in any other month, and thats why he said: "October is one of the most dangerous to speculate. The other are July, January, September, April, November, May, March, June, December, August and February". Mark Twain not only draws attention to the low yields that can be obtained in October, but from his conclusion, he draw attention to speculation in general - it is extremely risky at any time when is initiated. A proof that the above is true is that the biggest crisis of the world began in or around October: 1929, 1987 or 2008.

3. High-frecquency traders

Trading with so-called high-frequency traders involves the use of sophisticated technological tools and of trading algorithms for trading the financial securities, in an extremely fast way. This type of transaction is made using advanced computer programs, and that's why the open positions are held only for a few seconds or in some cases even less (a few milliseconds). With this method it can be made a lot of transactions in a short period of time. High-frequency traders do not keep open positions from one day to another, therefore all the transactions are intra-day. A huge focus in this type of trading is put on transaction processing speed.
The analysts of Advanced Trading have estimated that approximately 60-73% of the total value of transactions made on the stock exchanges in the United States was conducted by high-frequency traders (www.advancedtrading.com) in 2009-2010, this percentage reached at about 50% in 2012.
In essence, the activity of high-frequency traders involves trading in bid and ask of a large volumes of contracts or securities, the profit which they rely on from a single transaction is very small. But the multiplier effect makes this activity to be very profitable, given that they may terminate thousands or even tens of thousands of transactions in seconds. Of course, the profitability of this activity depends primarily on trading algorithm used. Those who use these mechanisms are very careful about the optimization parameters of the trading program, many times the distance between the issuing server and the stock market server, is take into consideration. This is because, as the two are more physically closer, the cross-reactive response time is also smaller. Every second and millisecond in this system is very important.

3.1. Flash Crash

The day of 6 May 2010 is also known as "Flash Crash" or crash at 2:45 pm, when an incident has made the New York Stock Exchange and the Dow Jones Industrial Average to fall by nearly 1,000 points representing at the while about 9% of its value. This decline was the largest ever recorded in the evolution of DJIA during a single trading day.

Due to the debt crisis in Greece, 6 May was a day destined to massive decreases for most of the world stock markets. If until 2:30 DJIA fell by about 300 points, at 2:32 makes its presence felt in the market a high frequency trader (an algorithm programmed) which was scheduled to sell certain contracts. Due to its involvement and other such algorithms, the downward trend is increasing, so that at 2:41 DJIA had fallen 600 points. At 02:45:28 stock suspended from trading for five seconds the contracts covered by the first algorithm, so after 20 minutes of the resumption of trading, the 600 points were recovered.

Figure 2. Flash Crash

High-frequency traders can cause enormous risks for the financial system. The consequences of such treadings have been observed in 6 May, when the Dow volatility has been excessive. This was the reason for that, many European countries have resisted approval of such practices. Angela Merkel, the German Chancellor has proposed a new legislation with clear control for high-frequency traders. The limitations were clearly exposed to german traders in the market, any infringements involving penalties and fines. The aim of the initiative was to limit the risks associated with the high-frequency trading.

4. Conclusion

The existence of anomalies in financial instruments trading shows that financial markets are often inefficient or that those markets are some inconsistencies in the method of determining securities prices. The literature shows that such anomalies are attenuated over time or even disappear, also disappearing with them the profit opportunities of those who speculate trading financial securities based on those anomalies. By their nature, anomalies identified in the trading of financial instruments have a direct influence on prices, thus they are creating clear gain opportunities for speculators.

Anomalies in trading financial instruments are associated with the moments when the security prices deviates from the normal meaning, creating opportunities for those who identify them. These can be viewed from the perspective of time, in which case we can talk about calendar anomalies, in terms of interpretations of technical analysis, when we talk about technical anomalies, and in terms of performances given by the fundamental analysis, when we talk about fundamental anomalies.

Regarding the high frequency traders, we believe that it is required a special control for this type of automated trading because the destabilizing effects it generates in the market may be from the most serious.

References

Books

Academia Română și Institutul de Lingvistică ”Iorgu Iordan”. (2009). *Dicționarul explicativ al limbii române.* București: Editura Univers Enciclopedic Gold.
Jacquillat, B., & Solnik, B. (1997). *Marches financiers. Gestion de portefeuille et des risques.* Paris: Dunod.
Schwert, W. G. (2003). *Anomalies and Market Efficiency.* University of Rochester: G.M. Constantinides, M.Harris and R. Stulz.

Articles

Bouman, S., & Jacobsen, B. (2002). The Halloween Indicator ”Sell in May and Go Away”- Another puzzle. *The American Economic Review, Vol 92, Number 5*, 1618.
Brown, E. (2010). Computerized Front-Running. *Counter Punch.*
Fink, J. D., Fink, K. E., & Godbey, J. M. (2008). The January Effect - A new Piece for an Old Puzzle. *Eastern Finance Association meetings*.
Haugen, R., & Jorion, P. (1996). The January Effect: Still There after These Years. *Financial Analysts Journal*, 27.
Hensel, C. R., & Ziemba, W. T. (1996). Investment results from exploiting turn-of-the-month effects. *Journal of Portofolio Management, Vol 22, No 3*, 17-23.
Lakonishok, J., & Smidt, S. (1988). Are seasonal anomalies real? A ninety-year perspective. *The Review of Financial Studies, Vol 1, No 4*, 403-425.
Maberly, E. D., & Pierce, R. M. (2004). Stock Market Efficiency Withstands another Challenge: Solving the ”Sell in May/Buy after Halloween” Puzzle. *Econ Journal Watch*, 29-46.
Xu, W., & McConnell, J. (2006). Equity returns at the turn of the month.

Web sites

http://bigcharts.marketwatch.com/. (2012). *BigCharts - A Service of Market Watch* . Preluat pe 2012, de pe http://bigcharts.marketwatch.com/
www.advancedtrading.com. (2013).