THE IMPACT OF THE INTERNET ON TRADING – A THEORETICAL APPROACH ON THE INVESTOR

Voicu-Dorobanțu Roxana

Bucharest University of Economics, Faculty of International Business and Economics, Piața Romană, 6, Bucharest, rovodo@gmail.com, 0733014657

Marinoiu Ana Maria

Bucharest University of Economics, Faculty of International Business and Economics, Piața Romană, 6, Bucharest, anamarinoiu@yahoo.com, 0722701525

The paper presents the theories behind the impact of the Internet on financial trading from a theoretical approach of the attitude of the investor. The paper answersm by referring to international literature on the subject to questions such as: Why are the investors switching to online trading? Why is the volume of trading so much larger after the implementation of the online means of communication?

Keywords: financial trading, Internet, theories

JEL: D03, D53, D83

The Internet alters the way information reaches an investor, especially the quantity of information an investor may obtain at any moment in time, an extraordinary effect of it being the important reduction of fixed and marginal costs of the production of financial services. In the same train of thought, a series of important online brokerage companies are small sized and relatively new on the market, and the investors are more and more beginners, a fact caused by the generalization of trading in the masses, more so with the emergence of Internet, than in the past, when the access to the markets was limited for the trained, informed investor. The direct placing of orders may lead to a false feeling of security and control over the result of the transaction; the huge amount of information available online allowing either the confirmation or the infirmation of expectations, the real-time feedback and the fast selection of available actions. Assuming that the intermediaries eliminated by online trading have the only function of facilitating trading, one may conclude that the investor has an obvious and quantifiable gain by reducing trading and execution costs. This conclusion has a downfall, the case in which the intermediary provides more than facilitation that is the intermediary has an advisory role in the trading process¹¹⁹.

The Internet provides the investor with an immense amount of financial advice; however the quality of these pieces of advice has an extraordinary volatility, without taking into consideration the number of frauds and manipulation attempts. The main problem that arises is the fact that the beginner investor, overwhelmed by the amount of information, incapable of discerning between correct and useful information and a manipulation attempt, shall hesitate to pay for financial advisory services from a broker, hence causing a reduction in the sources of income for the company offering this type of services. These "virtual losses" of income may be recovered by the introduction of an advisory tax in priced packages of services, such as the case of a client of an online brokerage house paying an annual fee proportional with the size of the account, to which the commission fees for each transaction shall be added.

As stated previously, based on the research of Barber & Odean (2000) and Glaser & Weber (2004), Internet has altered the way people invest by increasing the level of trust of the investor, by providing a false sense of knowledge and an illusion of control, but also by modifying the fundaments of investment decision making. It has been proven that, more and more the information received by an individual in order for him to make prediction based on and take decisions, the confidence of the individual in the accuracy of the predictions made shall increase

¹¹⁹ Barber, Odean (2002).

faster than the precision of the predictions¹²⁰. Actually, the precision of the predictions starts to decrease when the level of information saturation is reached, from that point on being created just the illusion of knowledge.¹²¹

In theoretical models, the over-confident investors have a higher trading frequency, as well as a higher speculation level than the investors with a lower confidence in their own assumptions. Moreover, the over-confident investors have less diversified portfolios (thus with a higher risk), lower expected utility rates and contribute to a higher volatility of the market in which they act.¹²² Empirical studies, such as the one conducted by Barber & Odean in 2000, have emphasized the fact that, after the switch to an online brokerage trading account from a phone brokerage trading account, the investors have acted more frequently an more speculatively. Balasubramanian, Konana & Menon list in 1999, the perception of power" as one of the seven basic reasons that cause the switch to online brokerage by an individual investor. Frequently, in literature, the discussion about the increase in the confidence level of the investor while online appears as an answer to the question related to the increase in trading volume. In like situations, a two-pronged approach may be encountered: the "over-confident" investor, previously described and the "opinion differences". The former has already been discussed, while the latter is motivated, at least at a theoretical level, by the research from 1985 and 1989 of Hal Varian. Varian generalizes the paradigm average value - volatility in order to allow the use of different previous probabilities. Each investor has his own probability distribution, previously created and subjective, for the value of a risky asset. It is assumed that the values are normally distributed and have different average values. In his research, Varian (1989) has proven the fact that the trading volume is essentially determined by the differences in opinion. The net equilibrium volume for an investor depends exclusively and directly on his deviation in opinion from the average values. Harris & Raviv (1993) assume the fact that the investors starts from the same assumptions, they receive public information, which they interpret in different ways (for example, by using different actualization functions for the probabilities), hence causing differences in opinion. Kandel & Pearson (1995) model the differences in opinion as it follows: the investors receive a public signal that is the sum of two variables: the liquidity of a risky asset and a random error factor, whose average value is the difference in opinion. Morris (1995) and van den Steen (2001) have shown in their research that the differences in opinion depend on rationality. Shiller (1999), Barberis & Thaler (2003), Hong & Stein (2003), and Diether, Malloy & Scherbina (2002) consider the differences in opinion to be yet another form of over-confidence: the investors assume that their information and their valuation abilities are better that the others.¹²³

The literature on overconfidence assumes the fact that the investors over-estimate the precision the information, therefore the models take into consideration the research in psychology known as "calibration literature" (Lichtenstein, Fischhoff, Phillips (1982)). In a study from 2002, Dorn & Huberman analyze through an online questionnaire the link between the psychological variables (over-confidence) and economic variables (the portfolio return). The questionnaire was applied to a set of investors – clients of an brokerage house, and the results of the empirical research have underlined the fact that over-confidence does not explain the additional variation in the trading volume. The results have been contradicted by the research made in 2004 by Glaser & Weber, whom have worked with the *à la lettre* psychological definitions.

The present paper shall not go into detail about the psychological aspects of the research on overconfidence, the issue being on the one hand explained briefly in the psychology literature, as

¹²⁰ Oskamp (1965), Slovic (1973), Peterson & Ritz (1988).

¹²¹ Stewart, Heideman, Moniger & Reagan-Cirincione (1992), Keller & Staelin (1987, 1989).

¹²² Odean (1998).

¹²³ See Odean (1998) underlining the fact that the investor is more over-confident in his own ability to interpret an information, than in the information per se.

related to economics issues, and on the other not the aim of the literature review presented hereby.

In practice, in the models considering the investors' over-confidence start from the assumption that this is an ingrown trait and, therefore, constant and consistent in time.¹²⁴ Still, there are models¹²⁵ that assume the level of over-confidence changes drastically overtime, being a function of the previous successes and/or failures. For example, the investors are overconfident at the beginning of the period of time (for instance, at the introduction of a new trading technology); if they are successful in their assumptions / predictions, the level of confidence increases, thus causing an increase in the volume an frequency of the trading. The research of Glaser & Weber, as well as those of lui Dorn & Huberman, previously considered, reveals the fact that there is no intrinsic link between the level of over-confidence and the trading volume. Therefore, the variation in the trading volume observed after the introduction of a new technology for connecting the investors and the brokers and markets has different causes.

Coming back to the impact of the Internet on the investor, one must mention the fact that the type of information received by the investor is also altered. By facilitating real-time comparisons and by enhancing the need for fast information, the Internet leads to daily or short term trading, more than on short and medium term trading from the past, when the investor was checking the status of his investments once a day with the help of the financial newspapers.

All these considerations, with the results of the experimental research regarding speculation bubbles¹²⁶, have confirmed the fact that the implementation of the new trading technologies has facilitated (being still under discussion the percentage of cause versus facilitator) the speculation dot.com bubble of 2000 and the influence of today's economic and financial crisis.

Moreover, it is extremely important to consider the theoretical assumptions of a like situation, with the increase in the need for efficiency on the Romanian market, the implementation of direct-to-market technologies in the Romanian brokerage houses and the accession to European markets.

References

1. Barber B, Odean T, "Online Investors: Do the Slow Die First?", *The Review of Financial Studies*, 15, no 2, pg 455-487, 2002

2. Barber B, Odean T, "The Internet and the Investor", *The Journal of Economic Perspectives*, 15, no 1, pg 41-54, 2001

3. Claessens, S , Glaessner T, Klingebiel D, "E-Finance in Emerging Markets: Is Leapfrogging Possible?", The World Bank, 2001

4. Claessens, S , Glaessner T, Klingebiel D, "Electronic Finance: Reshaping the Financial Landscape Around the World", The World Bank, 2000

5. D'Avolio G, Gildor E, Shleifer A, "Technology, Information Production, and Market Efficiency", 2001

6. Demsetz H, "The Cost of Transacting", Quarterly Journal of Economics, pg 33-53, 1968

7. Domowitz I, Steil B, "Automation, trading costs, and the structure of the trading services industry", Brookings-Wharton papers on Financial Services, 1999

8. Gasparino, C., Buckman, R. "Big Brokers Plan Online Counterattack," *The Wall Street Journal*, aprilie 27, 1999.

¹²⁴ Jonsson & Allwood (2003) and Glaser, Langer & Weber (2004).

¹²⁵ Gervais &Odean (2001).

¹²⁶ According to the research of Smith, Suchanek, Willians(1988), Caginalp, Porter & Smith (2000) and Schiller (2000), there are various conditions that facilitate the apparition of a speculative bubble: the number of non-experienced investors is larger than the number of experienced investors, the uncertainty towards the future value of an asset as opposed to the risk (see the risk-uncertainty dihotomy), the more money to invest.

9. Glaser M, Weber M, "Overconfidence and Trading Volume", 2004

10. Kauffman RJ, Subramani M, Wood CA, "Analyzing Information Intermediaries in Electronic Brokerage", Proceedings of the 33rd Hawaii International Conference on System Sciences, 2000

11. Kauffman, R. J. "Valuing Adoption of Electronic Networks," *Journal of Strategic Performance Measurement*, Fall 1999.

12. Keller, K., Staelin, R., "Assessing biases in measuring decision effectiveness and information overload", *Journal of Consumer Research*, pp.504-8, 1989

13. Keller, K., Staelin, R., "Effects of quality and quality of information on decision effectiveness", *Journal of Consumer Research*, pp.200-13, 1987

14. Klein, A., "Wallstreet.Com -- Fat Cat Investing at the Click of a Mouse: How Andy Klein and the Internet Can Give Everyone a Seat on the Exchange", Henry Holt and Company, New York, NY, 1998.

15. Krishnan, MS, Ramaswamy V, Meyer M, Damien P, "Customer Satisfaction for Financial Services: The Role of Products, Services and Information Technology", *Management Science*, 45, no.9, Performance of Financial Institutions, pg 1194-1209, 1999

16. Oskamp, S, "Overconfidence in case-study judgments", *Journal of consulting psychology*. 01/07/196507/1965; 29:261-5.ISSN: 0095-8891, 1965

17. Slovic, P., "Behavioral problems of adhering to a decision policy". Paper presented at the Institute for Quantitative Research in Finance, Napa, CA. at http://www.decisionresearch.org/people/slovic/, 1973

18. Stewart, T.R., W.R. Moninger, K. F. Heideman, P. Reagan-Cirincione, "Effects of Improved Information on the Components of Skill in Weather Forecasting", Organizational Behavior and Human Decision Processes, 53: 107-134, 1992

19. Varian, Hal R, "Effect of the Internet on Financial Markets", School of Information Management and Systems, University of California, Berkeley, Septembrie 1998

20.Venkataraman K, "Automated versus Floor Trading: An Analysis of Execution Costs on the Paris and New York Exchanges", *Journal of Finance*, 56, No. 4, pg. 1445 – 1485, 2001