

PSYCHICAL AND DEMOGRAPHIC FACTORS THAT INFLUENCE TRADING ON THE STOCK EXCHANGE

Nikolett Mihály¹, Imre Madarász², Gabriella Bánréti³

¹Assistant Professor, ²Associate Professor, ³MSc Student
Faculty for Economics and Social Sciences, Szent István University
E-mail: ¹mihaly.nikolett@gtk.szie.hu, ²madarasz.imre@gtk.szie.hu,
³gabriella.banreti@gmail.com

Abstract

The need of self-care for the elderly has also appeared in Central and Eastern Europe in the changing political and economic conditions of today. The emerging responsibility of self-support directs attention to the opportunities provided by higher-yield investments, among others, the stock exchange. By avoiding the typical "investment mistakes" we can provide ourselves higher returns, living standards and a more relaxed age. In our study, we present the research results on the influences of the most important factors and a research with Hungarian university students, which focuses on the relationship between the demographic factors in the background and the stock exchange attitude.

Keywords: stock exchange, financial risk, risk attitude

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Introduction

The old population is growing while the ratio of those compelled to pay a contribution is shrinking continuously. Public social security systems manage this situation with more and more difficulties and the real value of payments as well as pensions is decreasing. In this way, it is becoming more and more important to understand what psychological and sociological specialities influence the selection of different forms of stock exchange investment in addition to some objective factors. Age, beliefs, preferences, the locus of control, willingness to save and risk-taking attitude make up the most frequently examined group of factors that influence stock exchange behaviour. In the next section, we show some interesting and important achievements connecting with those phenomena.

Preliminary research, theoretical review

Age

There is more often analysed how much risk is taken by the old and what factors influence their decision mostly in connection with stock exchange investments. The research around this topic is especially justified by the fact that the pensioners possess a great part of household income so their decisions make a significant impact on the market. For example, it is not the same if this group invests the great amount of money they possess in gilt-edged securities or on the stock exchange. Several researches prove that the investors tend to select the portfolios where less risk is involved as they grow older due to the reduction of the investment horizon (Bakshi and Chen, 1994; Bodie et al, 1991.)

A research carried out between 1991 and 1996 in which 62.387 traditional financial investments were introduced and the investors' portfolio was worth approximately 2.18 billion USD in the sample pointed out that during the six years of taking samples about 1.9 million traditional stocks were exchanged. In line with the previous proof the general size of the portfolio is related to age as the elder investors had greater investment either considering their total assets or the ratio of their annual income. At the same time, the elderly possess less risky portfolio, show greater willingness to diversification although they perform weaker and rarely trade (Korniotis & Kumar, 2011). The authors also conclude that between those less educated and with lower income the negative effects of growing old are also more intense; the willingness to invest is much greater for the investors with good cognitive abilities who are socially active.

Financial and risk attitude

Investment on the stock exchange promises the opportunity of financial profit. However, most people are unwilling to invest in securities quoted on the stock exchange, rather, they invest their money in a savings account or buy an estate (Gunnarsson & Wahlund, 1997). The 'Prospect-Theory' (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992) gives an explanation by the fact that we have aversion to risk even if the chances are for gains. The chances of profit generally seem to be too uncertain due to the unpredictable nature of the stock exchange and market processes in the future.

Several empirical researches prove that those willing to undertake higher risks are more likely to buy stock and shares than the risk averse (Clark-Murphy & Soutar, 2004; Tigges et al., 2000; Wärneryd, 2001; Wood & Zaichkowsky, 2004). While there is no or only weak correlation between the general risk taking ability and risky forms of investment from the part of private investors (Morse, 1998; Wärneryd, 1996) the correlation is more significant between the attitude of taking more risks in more special investments and the really risky investment and taking the risk of investment portfolio (Wärneryd, 1996). It is in line with the supposition that risk has special 'territories' (Weber, Blais, & Betz, 2002). Usually people with high risk taking and higher income buy stocks and shares; men take more risks than women and those with a lower level of income (Clark-Murphy & Soutar, 2004; Tigges et al., 2000; Wärneryd, 2001; Wood & Zaichkowsky, 2004; Cicchetti & Dubin, 1994; Grable, Lytton, & O'Neill, 2004).

Kahneman and Tversky (1979) proved that in profitable situations (range) people tend to averse risks while in losses they prefer taking risks. In risky situations instead of the 'utility' of their disposable income they are engaged in checking the changes in their assets and their actions can be characterised by risk aversion. It means that we have fear in realising our disadvantageous situations (at least till chances are low for the exchange rates to return) while in a profitable situation we tend to take on the first advantage of selling. ('A bird in the hand is worth two in the bush'). In general, investors on the stock exchange have their disadvantageous situation far too long and realise their advantageous stances too early, which, on the whole, can decrease the performance of investments (Joó & Ormos, 2012). To sum up, people by nature 'prefer' taking risks when it comes to losses and they are risk averse in terms of profit so they can often become generous if they have to put up with losses. This is also proven by the fact that the stocks and shares sold by the investors perform better in the future than those purchased later (Odean (1999) and Chen et al. (2007) in Joó & Ormos, 2012).

Attitude to money

We usually invest money in the securities quoted on the stock exchange with the hope of financial profit and increasing capital. At the same time, however, the most important goal in

the life of the people who are tightly related to money is increasing their assets further. The accumulation of money is interpreted by them as intelligence, performance and power. It is proved that being overwhelmed and 'obsessed' by money can influence willingness to invest on the stock exchange positively (Keller & Siegrist, 2006). Financial gains mean one of the ways of realising their goals and values in connection with money.

The wide range of –sometimes contradictory- results published in literature also emphasizes the impacts of demographic variables. Men are more obsessed by money than women (Furnham, 1984) and more likely to see it as an instrument of influencing or pressurising others (Lim & Teo, 1997; Lim, Teo, & Loo, 2003; Tang & Gilbert, 1995) while women are more engaged in financial planning (Lim et al., 2001; Tang, 1993). People with lower income are more obsessed with money and more likely to regard money as a value of power, authority and influence than those with higher income (Furnham, 1984).

Internal and external locus of control

According to the well-known trader Birger Schäfermeier (2008) being successful on the stock exchange is not defined by either luck or trading system, it is only and exclusively 'internal locus of control' and 'risk control' that count. He identifies internal locus of control as a 'state control' which can also be called discipline in everyday life. In his mind it is the key to infinite gains. Discipline is not about the ability to observe and obey all the rules, it is much more like that. 'Discipline is the ability for someone to get into the optimal productive mood necessary for the task to be solved'. (In psychology, on the contrary, a person with internal locus of control is someone who perceives certain positive or negative events as the controllable consequence of their own behaviour. In contrast, the person with external locus of control sees the events with a positive or negative turn as if they were not related to patterns of behaviour and expressions of personality.)

Under the term 'risk control' Schäfermeier means managing risks, i.e. the art of how we can manage and allocate our money on the stock exchange and when to sell our stocks and shares that would otherwise be turning into losses.

Ethics

The examination of ethical attitude has been gaining more and more ground in economics. Examinations reflect the growing significance of mutuality, fairness, trust and cooperation in economic behaviour (Fehr & Gächter, 1998). Our attitude to money is decisively influenced by the moral meaning attached to the notion of money. An important basic issue is, for example, whether people regard money as 'good' or 'bad' (deriving from devil) (Tang, 1993). The concept of its 'good' nature correlates with protestant labour ethics (Tang & Gilbert, 1995) according to which money is good if earned by working conscientiously but it has a negative connotation if the excessive love of it leads to unethical behaviour or excessive consumption (Tang & Chiu, 2003). According to an interesting research in areas where the ratio of the Catholic inhabitants is greater than the Protestants the willingness to take a risk is higher on the stock exchange (Kumar et al, 2011). Those who think that gaining profit from the market is not ethical (as money is not earned by working hard) typically do not invest money on the stock exchange. If so, only little amounts as they prefer other forms of investment.

In the decisions on investment in addition to the ethical dimension there is also willingness to make 'socially responsible investments'. This latter one can be assessed by 'ethical investment'. 'Ethical investment' is the possession of such portfolio with which we can surely

reduce 'bad' things such as environment pollution and support 'good' cases (Winnett & Lewis, 2000). Empirical researches prove that 'ethical investors' put their money in such businesses that are identified with ethically acceptable forms of behaviour even if the expected gains are lower than that of the competitors (Webley et al., 2001). Such investors assess ethical issues in addition to the expected risks and profit when they make a decision on investment. Taking environmental and social responsibility is prioritised of the other considerations.

A Swiss representative examination of huge sample (N=1569) (Keller & Siegrist, 2006) wanted to find out how risk taking, stock exchange attitude (e.g. negative ethical attitude) and attitude to money (performance, power, obsession, budget-consciousness) ethical considerations and certain demographic factor influence investments on the stock exchange. According to the results the amount of income, risk taking and the negative ethical attitude towards the stock exchange are good predictors to decide whether someone would go to the stock exchange or not. (The extent of risk taking was the best indicator!) The negative ethical attitude to the stock exchange negatively influences the willingness to invest on the stock exchange but it is not significant. The people who did not invest on the stock exchange would rather consider it unethical. (They think that this money is earned without work/efforts and in this way it is a non-ethical source). The 'obsession' oriented attitude to money can positively influence investing on the stock exchange. The amount of income will only go together with taking risks on the stock exchange significantly in the case of men.

Material and method

Taking international results into account our examination analysed factors influencing willingness to invest that could be good predictors of the success/failure of trading on the stock exchange. They are:

- demographic characteristics
- risk and financial attitude
- internal-external locus of control
- ethical attitude
- beliefs (e.g. fear of trading on the stock exchange)

Exploration was made but concrete hypotheses were not drawn up as we were primarily interested to what extent our patterns in the examination are similar to the international ones (see above).

Our analysis relies on the questionnaires filled in by 165 students studying at the faculty of Economics of Szent István University (Table 1-2). The printed questionnaire was anonymous and the participants were not given any incentives or bonuses. Regarding the gender ratio of the population the sample was not representative but taking the ratio of the gender of the university students, and especially the students of Arts, into account it was a bit closer to the ratio of Hungarian students. Three-quarters (63%) of the respondents were female and males (37%) made up one-quarter of the sample. The number of those graduated from a secondary school reached 99 (61.9%) while those with college degree (BA/BSC) was 50 (31.1%) in contrast with those with a university degree (MA/MSc) of 11 (6.9%). (6 students did not answer this question.) Most of the respondents were economists (54) but also students of communication (40) and engineering/mechanical engineering/IT (19) also responded. Fourteen of the respondents came from other social sciences. e.g. 3 students of law.

Table 1. Breakdown of the sample by age

Age	Full time	Correspondent	Total
19-23	73 (86.9%)	14 (20.9%)	87 (57.6%)
24-29	11 (13.1%)	29 (43.3%)	40 (26.5%)
30 or older	0 (0.0%)	24 (35.8%)	24 (15.9%)
	84 (100.0%)	67 (100.0%)	151 * (100.0%)

* 10 people did not answer the question on age.

Source:author's own edition

Table 2. The sources of the respondents' income by family status

exclusively dependent on parents	dependent on parents and also work	lives on casual and/or permanent work	lives on benefit/contribution/student grants	Total
12 (7.4%)	22(17.7%)	103 (63.9%)	8 (%)	145* (100.0%)

* 20 people did not answer the question on income.

Source:author's own edition

The young people asked did not have any savings at all or only of slight amount (6 students did not have savings at all while 125 had ranging from some thousand forints to one million forint, 30 people had even more). Of the 161 respondents the question of whether they invested on the stock exchange currently or wanted to trade on the stock exchange in the future was answered by 16 saying that they had investments there, 56 regarded it possible to have one in the future but 78 totally rejected the idea of investing money on the stock exchange. Results are starting to become surprising at this point as one of our most important questions was what could be in the background of total rejection.

Who could opt for investments on the stock exchange?

The following frequency of responses was created based on the answers of the sample to the question of what came into their mind about trading on the stock exchange. The first five are risk, speculation, investment strategy, profit, "a game that can be learnt". The least mentioned factors are swindle, future guaranteed, failure, gambling, wealth. (Altogether there were 16 alternatives.)

Interestingly different responses were given to the question of why they were not engaged in the stock exchange (those who rejected it, did not reject it, possible investors). Those who think it is possible for them to trade on the stock exchange in the future very rarely mentioned their lack of knowledge and hardly ever blamed lack of money. In contrast, those who totally rejected it said they did not have money and the second most frequent reply was lack of money, and finally, it 'was not a world for them'. The results are significant (Sig.0.049). Table 3. reflects that those who would possibly trade on the stock exchange (did not reject it) and would rather think it can be learnt than those who rejected it or who currently hold some investment there. It can serve as a kind of self-justification. If a stock exchange would like to attract more and more people to invest there, it is worth concentrating marketing messages on its 'learnability'. It would have a derived, secondary benefit that both the investor and the stock exchange would reap more profit from the investment.

Table 3. The responses of those rejecting and not rejecting trading on the stock exchange to the question of whether the stock market rules can be learned?

	cannot be learnt	can be learnt	Total
Do you reject trading on the stock exchange?	70 89,7%	8 10,3%	78 100,0%
do not reject	31 55,4%	25 44,6%	56 100,0%
have investment currently	14 87,5%	2 12,5%	16 100,0%
Total	115 76,7%	35 23,3%	150 100,0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22,721 ^a	2	,000
Likelihood Ratio	22,351	2	,000
Linear-by-Linear Association	5,822	1	,016
N of Valid Cases	150		

a. 1 cells (16, 7%) have expected count less than 5. The minimum expected count is 3,73.

Source: author's own edition

It is interesting that those who rejected are on the same opinion than the 'stock exchange investors'. Half of the people having an opinion of 'may be trading on the stock exchange some time' think they will if they have the time, money etc., i.e. it would be worth making efforts to learn the rules and regulations of the operation of the stock exchange. (Until then they will not have a try but do not reject the idea of investing on the stock exchange, either). However, 80-80 % of the other two groups are convinced that the stock exchange is operated without sensible rules (Sig. 0.000).

The strategy of investment can be and in real, it is based on such decisions that rather describe rules of behaviour to be followed and do not call for the knowledge about the stock exchange mechanism. Such an 'investment strategy' can be to be consistent and brave to keep up certain investments even if their rate is declining and also, we should also be brave enough to get rid of our rocketing investments and do not wait till the tendency dramatically turns over. Of course, the basis of such categories can be beliefs in regulations (e.g. in the long run prices will come back so decline will be increase after a while and vice versa). The point is good timing that can be based on premonition or exact calculation or on the basis of the strategies learned. All in all, we think that even those who do not believe in predictable regularities do believe in investment strategies. And in real, those who are currently active on the stock exchange associated stock exchange with investment strategy the best and those who rejected the stock

exchange the least (Sig. 0.030). At the same time, the expression 'conscious planning' is mostly associated with the idea of the stock exchange in their case (Sig. 0.031).

Our results show that there is a significant difference (Sig. 0.001) between those who reject the stock exchange and those who do not concerning the question of how 'unpredictable they think the stock exchange is and whether they invest there. Forty-one point two percent of those rejected the stock exchange mentioned first that trading on the stock exchange is unpredictable and they would never invest there, so it is the losses that come into their mind most about trading. It was them who declared earlier that they did not trade on the stock exchange either due to either lack of money or lack of knowledge. It is also interesting that the amount of income does not correlate with the fact whether someone belongs to the group who rejects or not. If somebody declares that 'they have no money for stock exchange investment' it is just a subjective attitude and does not correlate with the real amount of income. That is why we supposed that they belong to the risk averse. At the same time, the members of the group who rejected the stock exchange on grounds of lack of money happen to have the lowest income in real. (Another interesting result is that 91.7% of those who associate the stock exchange with losses also belong to the lowest income category.)

Interestingly, such a logical chain is emerged according to which those who reject the stock exchange blame in on lack of money and they really have low income, so it is not likely to encourage them to part in the stock exchange by none of the marketing paraphernalia. Moreover, those of the lowest income category also justify the belief of their inability to trade on the stock exchange ('I have no money') that the usually judge stock exchange investments to be failure.

Age and qualification

Interestingly, the more important increasing wealth for someone is, the lower their educational level is (-0.581**, Sig. 0.000). In addition, the more one think it is unethical to earn money by trading on the stock exchange, the lower their educational level is (-0.443**, Sig. 0.000.). This negative tendency consequently correlates with age (-0.337**, Sig. 0.003) i.e. the younger someone is, the more unethical they think stock exchange trading is. The young and/or the underqualified would rather agree with the statement according to which 'it is unethical to earn money without working for it' (-0.367**, 0.001; -0.531** Sig. 0.000). These two groups typically think that 'money gives freedom and independence' (-0.267, 0.022;-0.618, Sig. 0.000). And one more interesting result is that the younger one is, or the lower their qualification is, the higher the chances are that the associate 'stocks and shares' with losses (-0.369, 0.002; -0.587, Sig. 0.000).

Who takes risks?

Based on our results willingness to take risks does not correlate with the amount of income but the higher the qualification is the more willingness the person has to take risks by investing capital in the hope of big profit (Sig.0.028). In line with the international results our research justifies that men usually take more risks than women do (in our sample especially males of economics and engineering); the older they are, the riskier they regard the stock exchange (-0.212** Pearson's covariance analysis Sig. 0.008). Our research also proves that the people who have also invested on the stock exchange have greater amounts of savings (0.209, Sig. 0.008); the more income derives from investments, the greater the savings are (which is, obviously, not surprising). (0.3017, Sig. 0.003). It is mostly the investors who agree with the statement according to which 'I would not risk my own capital not even in the hope of a bigger

profit so I prefer lower but fixed returns' (0.289, Sig. 0.008). When questioned whether to trade on the stock exchange in the future, those who typically think the stock exchange is predictable and easy to see through gave an affirmative response (0.271, Sig. 0.001; 0.259, Sig. 0.002).

The influence of attitude to money

Money attitude is assessed by one of the versions of 'MAS'. 'MAS' (Money Attitude Scale), developed by Yamauchi and Templer (1982), is one of the most frequent measures to assess financial attitude currently. The authors made a difference between these five financial attitudes that were assessed on an item list. The identified factors are as follows.

Power – Prestige: according to the content of the statements, concerned money interpreted as a measure of power and success. The individuals who reach high value in this factor regard money as an instrument of influencing/affecting others.

Keeping-Time: the items belonging here primarily focused on financial planning and careful management of money. Those who reached a high number of points here plan their future carefully and regularly check their current financial situation.

Mistrust: those who had high values in total in this factor are insecure, suspicious and have doubts about themselves concerning money-related situations and the world of money.

Anxiety: who had high points in this factor regard money as the source of anxiety/nervousness or something to give protection against it.

Quality: the statements belonging here are focused on buying good quality services/products. The individuals characterised by high values here can be described by the saying: 'You get what you have paid for'.

Our most important analyses embraced two areas: 1. the factor analysis of MAS items; 2. demographic variables (gender, age, qualification, income, work experience, selected study programme, willingness of risk taking) and compare them to the average values of the relevant MAS factors as well as analyse their correlation, i.e. in which cases the impact of the certain variables on different factors can be regarded significant. As a result of our factor analysis we also had a 5-factor model based on 20 variables whose fitting and explanatory power was acceptable and the factors gained were based on their own values. Primarily, significant results were gained from the correlations of the power and prestige dimension.

According to our results the more someone feels that money is the symbol of success (power and prestige dimension), the more willing they are to take risks on their investments for bigger yield (Sig. 0.003). Those who also have income deriving from investments think that they would trade on the stock exchange (0.305, Sig. 0.006) and they also have savings (0.304, Sig. 0.003): The more savings they have, the more they agree with the statement that 'people put too much emphasis on money' (0.259, Sig. 0.014). Furthermore, the more investment they have, the more they are interested in how much money others have. (Obviously, their minds are occupied by money) (0.272, Sig. 0.010). Usually it is them who boast how much they earn (0.331**, Sig. 0.001). Who are bargain hunters usually think that 'I have expensive things so that I could impress others' (0.314, Sig.0.003) but they are less willing to risk their existing capital (-0.413, Sig. 0.000).

Summary

Willingness to take risks correlates with investor behaviour. At the same time, however, investors do not think that trading on the stock exchange is irresponsible risk-taking. Most of them are on the opinion that 'I would not risk my existing capital not even in the hope of high profit, so I would prefer lower but fixed returns'. Usually it is those with 'surplus' or extra money (that may be at a risk) who go to the stock exchange. Results stating that there is a positive correlation between the savings rate of our respondents and their willingness to invest also have a similar message. The cause-reason correlations cannot be defined but those who regard the stock exchange as non-ethical are sure to stay away from it and even the term itself is associated with losses in their mind.

Thirty-seven percent of our respondents (56 people) do not reject the idea of trading on the stock exchange some time later. Unfortunately, we did not ask under what circumstances they would do so but some of their characteristics tell us a lot. For example, it is them who mostly believe in the rules governing the stock exchange and think that these rules can be learnt. Maybe this is the condition of their participating in the stock exchange but currently they are characterised by low income (they have no 'surplus' money to risk).

In the mind of the general public trading on the stock exchange is a kind of gambling. However, there are significant differences in the attitudes to these two options. The poorer, who are the big consumers of gambling, associate 'losses' with the stock exchange and describe its mechanism as being unethical. They think it must be about the hunting ground of some 'coony' machinators who roam freely where the man of the street with little money but with ethical behaviour can only lose due to their being unfamiliar with the stock exchange mechanism.

Usually, people invest in gambling on the principle of 'little investment, little chance but extremely huge profit'. They do not even question the issue of non-ethicalness as luck is an ethically neutral term, they may only suspect the manipulation of drawing the numbers. It is worth noting that it is the opinion of those with salary below the average while they make up the greatest layer of consumers in the market of gambling. In contrast with gambling where the maximum loss is the price of the tickets, the 'losses' on the stock exchange is usually associated with total failure. Lottery players of little money may lose small amounts week by week but they think it is acceptable. However, it is not acceptable for them to trade with these small amounts saved with difficulties on the stock exchange. In our opinion their beliefs of 'total loss' would be worth destroying by spreading proper information.

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