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Financial Market Knowledge of the Young Generation: An Empirical Analysis of European Students*

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Abstract: *In the recent survey of 262 European students, we try to assess the level of financial market knowledge of the young generation around the age of 23 years. We can identify the following highlights in the first out of three parts: 54.3% out of 256 people, who answered the question, purchased at least once shares, bonds, mutual funds or made comparable investments in the past and the experience made by 179 out of 262 (68.3%) people was perceived to be very positive. Similarly, the attitude of 230 out of 262 (87.8%) European students towards buying shares, bonds, mutual funds, or making comparable investments is very positive. However, the attitude of 247 and 249 people out of 262 attendees, respectively, towards the general economic situation driven by inflation and the observable increase in prices of everyday goods are rated rather low. In the main part of our survey, we analyze the level of competence of our European students to deal with calculus-related exercises (e.g. impact of the time value of money, interest or/and inflation, functioning of financial markets and instruments). We observe the following tendencies: 86.3% of people correctly stated that investments in shares offer the highest risk, which shows that European students understand the basic finance relationship between higher risk potentially leading to high returns or high losses. 82.8% of participants correctly stated that the possibility of losing money decreases with a higher degree of diversification. The third set of questions focuses on the knowledge related to investment possibilities and potential preferences for investments. For example, 45.4% of people signalized their willingness to invest their money into real estate investment funds, 43.9% chose shares, 28.2% mentioned ETFs, 20.2% would decide on bonds and 11.8% for cryptocurrencies. European students seem to be financially knowledgeable on an average level and the majority can choose instruments that fit their preferences.*

1. INTRODUCTION

A high level of financial knowledge is relevant in today's world in various life-related situations, because the world has become much more complex than it was 20 years ago. Especially, in times of low interest rates (or high inflation phases) bank account interest rates are low and do not allow one to save money for an own home (e.g. house or flat) or future pension time, etc. In addition, there are still not too many studies analyzing the level of financial literacy in the EU. A wide range of studies documents the relevance of financial literacy in society because it can achieve financial well-being (Bae et al., 2023; Bongini & Zia, 2018; Finke & Huston, 2014) and contribute to the soundness and efficiency of the financial system (Widdowson & Hailwood, 2007). However,

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the reality evaluated by research shows that there is a deficit in financial literacy worldwide (e.g. Abreu & Mendes, 2010; Beal & Delpachitra, 2003; Lusardi & Mitchell, 2011) with mainly women having significantly lower financial literacy than men (Dewi, 2022; Erner et al., 2016). Hence, there is still a need for sufficient exploration in academia to answer open questions in this research field.

This study analyzes the status quo of the level of financial literacy through a survey conducted among 262 Austrian and German students (from Generations Y & Z) to find out what experience and knowledge they have of selected capital market products. For example, the literature shows a "gender gap" in knowledge with men having a higher general financial knowledge (Arellano et al., 2018; Bianchi, 2018; Gerrans & Heaney, 2019). Nevertheless, research shows that deficits in this area and general within society should be counteracted within the framework of higher education (Bae et al., 2023; Bucher-Koenen et al., 2017). There are essentially hardly any differences in knowledge between the Y and Z generations, so it cannot be directly deduced that financial literacy increases with age. Given the changes in the economic environment and the lack of knowledge about certain capital market products, it seems relevant to integrate financial knowledge into curricula. The majority of empirical studies confirm that this is the greatest lever for increasing financial literacy (Baglioni et al., 2018; Bianchi, 2018; Ergün, 2018) and also for closing the gender gap (Bae et al., 2023). Thus, with proper didactic implementation, not only content, but also the development of skills in general (e.g. savings behavior, retirement planning, etc.), and for the acquisition and processing of relevant information (Santini et al., 2019; Warmath & Zimmermann, 2019) can be taught. In the end, students should be able to make sound financial decisions after completing the content (Lusardi, 2019). Thus, our analysis aims to promote the implementation of best practices developed for education into curricula to strengthen the financial background of the students and the whole society.

In the following, section 2 provides the background on financial literacy literature, while the next section 3 describes the data. The discussion of the methodological approach and empirical results follows in section 4, while section 5 concludes the paper.

2. BACKGROUND ON FINANCIAL LITERACY

The relevance of financial literacy for society's well-being and the efficiency of the financial system was shown by previous literature (Bae et al., 2023; Bongini & Zia, 2018; Finke & Huston, 2014; Widdowson & Hailwood, 2007). There are still deficits observable worldwide, e.g. Abreu and Mendes (2010), Beal and Delpachitra (2003), and Lusardi and Mitchell (2011), that need to be addressed by further research. For example, there is no one definition of financial literacy in the literature (Finke & Huston, 2014) and we still lack good measures of the level of financial literacy as suggested by Knoll and Houts (2012). Usually, a higher level of financial literacy is comparable to more financial knowledge enabling the actors to make better financial decisions (Farrell, 2014; Warmath & Zimmermann, 2019). Several studies show that people with a higher level of financial knowledge are more aware of the necessity to save money for the future/pension time and save more (e.g. Lusardi & Mitchell, 2011; Bucher-Koenen et al., 2017). This is according to Baglioni et al. (2018) especially important for longer-living women who need to fix a longer „financial-wellbeing"-period. This group of financially knowledgeable people can also better deal with their debt, e.g. interest payments, down payments, future payments, and reducing leverage (Breitbach & Walstad, 2016; Fung & Durand, 2014; Lusardi, 2019). Moreover, Xiao et al. (2014) show that the basis for better behavior can be laid down during study time as knowledgeable students are more risk-averse when dealing with debt-related issues.

Furthermore, one can say that financially knowledgeable people are better able to search for mutual fund investments based on fundamental analysis. They also can better diversify their savings to minimize risks and obtain higher returns (e. g. Bucher-Koenen et al., 2017). Through this channel, a higher level of financial literacy impacts the resilience and efficiency of the financial system. Those knowledgeable people make better financial and investment decisions, recognize the relationship between risk and return, and generally ask more questions concerning financial products (Widdowson & Hailwood, 2007).

3. DATA

In the recent survey of 262 European students, we try to assess the level of financial market knowledge of the young generation. In particular, we investigate the students' background and basic financial experience, their understanding of interest effects, inflation, and diversification besides the knowledge of and interest in various investment alternatives (students' preferences).

Out of 262 Austrian and German interviewed students 60.7% were women, 38.2% were men and 0.4% were diverse people with a median age of 23. In addition, 38.9% of attendees have obtained an A-level from a business college type of school, while 47.0% have an A-level degree from a general focus college. An apprenticeship was finished by 12.2% of the participants and 25.2% stated to have finished a Bachelor in Business, while 14.5% chose any other type of education. A fraction of 65.7% of participants states to study and 27.9% of the interviewers are employed by someone, while a small group of 3.8% of attendees is self-employed (the remaining categories are with 1.2% apprenticeship, 0.4% school, and 0.8% others). Only 17.6% of people have a leadership position there, which is traceable given the young age of all attendees, but 41.6% have some rights to make decisions in the firms they are working for.

4. RESULTS AND METHODOLOGICAL APPROACH

In the first part of the survey, questions regarding the experience with trading shares and the attitude towards that were asked. Interestingly, 54.3% out of 256 people, who answered the question, purchased at least once shares, bonds, mutual funds or made comparable investments in the past and the experience made by 179 people was perceived to be very positive and scaled 5 in mean and median on a 7-points Likert scale. Similarly, the attitude of 230 European students towards buying shares, bonds, mutual funds, or making comparable investments is very positive and scaled 5 in mean and median on a 7-point Likert scale. In contrast, the attitudes of 247 and 249 people out of 262 attendees, respectively, towards the general economic situation driven by inflation and the observable increase in prices of everyday goods are rated 3 and 2, respectively on a 7-point Likert scale, which is rather low. The wealth situation of the attendees is the following: 33% of them earn less than 500 EUR net, 30% between 500 and 1500 EUR net, and 34% more than 1500 EUR net (where 3% did not respond to this question).

In the main part of our survey, we analyze the level of competence of our European students to deal with calculus-related exercises. Particularly interesting is how survey participants can deal with the time value of money and whether they understand bank account development in the presence of low-interest rates and high-inflation environments. Question 1 in the main part asked: "How much money was in a bank account after 5 years, if 100 EUR were initially invested and 2% p.a. were promised?" 91.6% of people correctly stated that this would be more than 102 EUR. Question 2 asked: "How much money was in a bank account after 5 years if 100 EUR were initially invested and 20% p.a. were promised (future value)?" 70.6% of people correctly stated that this would be more than 200 EUR. Question 3 asked: "How much money was in a bank account after one year if 100 EUR were initially invested and 1% p.a. are promised, while the inflation rate equals 2% per year (inflation)?" and 90.5% people correctly stated that this will be less than today. Question 4 asked: "Imagine that your friend is inheriting 10,000 EUR and a brother of him is inheriting 3 years later a similar amount of money – who gets richer (time value of money)?" and 69.5% of people correctly stated that this will be the friend. Question 5 asked: "Imagine that your income in 2025 doubles and the prices for goods are also two times higher – how much can you purchase with your income?" and 79.0% of people correctly stated that this will be equally as much as today.

Next, we analyze the level of competence of our European students to deal with financial markets and instrument-related questions. Question 6 asked: "What is the major task of the equity market?" and 87.4% of people correctly stated that this will be matching demand with supply for shares. Question 7 asked: "Which statement is correct – if someone purchases shares of company B on the financial market, she or he is?" and 84.4% of attendees correctly stated that they are then partial owners of firm B. Question 8 asked: "Which statement is correct?" and 78.6% of participants correctly stated that mutual funds may invest in various asset classes, i.e. equities and bonds. Question 9 asked: "Which statement is correct – if someone purchases bonds of a company?" and 68.7% of participants correctly stated that she or he is lending money to the firm. Question 10 asked: "Which investments, e.g. bank deposits, bonds, or shares, provide the highest return over 10 or 20 years (investment horizon)?" and 50.0% of attendees correctly stated that shares potentially offer the highest returns (another 28.2% chose bonds). Question 11 asked: "Which investments, e.g. bank deposits, bonds, or shares, show the highest volatility over time?" 86.3% of people correctly stated that investments into shares offer the highest risk, which shows that European students understand the basic finance relationship between higher risk potentially leading to high returns or high losses. Nowadays, in times of fake news and fake labeling applied to investments (e.g. sustainability-related, if a particular firm is not engaged in a brown industry it is often perceived to be sustainable), it is essential to understand that there is no upside potential without facing additional risk. Question 12 finally asked: "What effect on the risk of losing money can be expected once a person simultaneously invests money into different asset classes?" 82.8% of participants correctly stated that the possibility of losing money decreases, which implies that they understand the concept of Markowitz's diversification theory/effect (Markowitz, 1952).

What follows are more detailed questions regarding the functioning of various financial instruments. Question 13 asked: "When you buy a 10-year bond, then you cannot sell this bond without suffering from financial penalties?" 37.0% of attendees stated that they did not know, 29.0% said yes, and 32.4% no. It depends on the bond contract type (indenture) and whether a particular bond is being traded on the market versus being privately held (if traded, the price for the bond may be higher and no suffering would occur). Thus, the answer "do not know" was the best choice under the given circumstances. Question 14 stated: "Shares are usually riskier than bonds." 72.5% of participants correctly said yes, 13.7% responded no and 11.8% stated that they do not know the answer. Question 15 asked: "Purchasing a share usually offers a more certain return than an investment into an equity mutual fund?" and 72.1% of participants correctly said no, 8.0% responded yes and 18.3% stated that they did not know the answer. This further confirms that survey participants understand the concept of diversification very well. The last question 16 in this part asked: "When interest rates fall – what happens to the bond prices?" 42.8% of participants correctly said that bond prices rise versus 22.5% who chose falling bond prices, while 27.1% stated that they did not know the answer (6.5% had the opinion that bond prices remain stable). Hence, the knowledge about the relationship between bond prices and interest rates is in the case of more than 50% of the survey participants limited.

The third and final set of questions focuses on the knowledge related to investment possibilities and potential preferences for investments. Question 1 asked: “Which of the following financial instruments/investments – shares, bonds, real estate funds, Exchange Traded Funds (ETFs), and cryptocurrencies – do you know?” and 90.8% of attendees know shares, 59.5% of bonds, 69.5% real estate funds, 45.4% ETFs and 75.2% cryptocurrencies. In contrast, question 2 asked: “Imagine you have to invest 10000 EUR – in which asset categories would you invest your money most probably?” and 45.4% of people signalized their willingness to invest their money into real estate investment funds, 43.9% chose shares, 28.2% mentioned ETFs, 20.2% would decide for bonds and 11.8% for cryptocurrencies. This is a striking result as the performance of real estate funds was rather bad in the past, but this is the product, for which bankers get the highest fees. In case a medium-risk alternative is looked for, the ETFs would provide the highest return, e.g. the ETF on the S&P index offered on average a return of ca. 10% p.a. in the last thirty years. As high-risk alternatives individual shares and cryptocurrencies would be perceived where the upside potential is theoretically infinite and the probability to lose the fully invested amount the highest.

In sum, the majority of the survey participants have an average understanding of various financial instruments and can make investment choices that fit their preferences. Overall, the level of financial literacy of the majority of the young generation ranges between average and good, which is an optimistic sign. Educational programs should further strengthen this result in the future through regularly updated curricula that describe in detail the functioning of financial markets and a broad range of financial instruments including the newest on the market.

5. CONCLUSION

This study aims to show the level of financial market knowledge of the young generation after evaluating the results of a recent survey from 2023 under 262 European students. Generally, the answers to calculus-related questions were oftentimes in more than 70% of the cases correct further implying an average to a good level of financial competence of the survey participants. Some deficits in financial literacy could be observed when more detailed questions were asked about the functioning of individual financial instruments like bonds. European students seem to be financially knowledgeable and can choose instruments that fit their preferences quite well. More focus should be put in the future on analyzing the performance of various financial instruments like mutual funds and ETFs to bring some of them more into the public focus or the other way around.

The rather optimistic results of the study are relevant for creating adequate educational programs at the university level or science-oriented institutions, for employers and politicians. Further research should focus on surveying large groups of students from other European countries than Austria and Germany to obtain a broad range of representative results.

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