Financial Literacy of University Students: Methodology and Results of an Online Survey

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Abstract

Financial literacy is very important element of everybody's life. Papers and studies usually focus on general public or lower-educated group of people but we think that university educated people should not be out of scope of work done in the field of financial literacy. Our hypothesis in this article is that citizens with university education or university students may be a source of finance knowledge for their community in a similar way how medical doctors provide advice in their community. First, we define a standard in financial literacy for university students and then we test our hypothesis that university students provide advice on consumer / personnel finance matters in their community using an online survey. We also compare our results to previous studies and derive interesting findings from the survey which are further discussed in this paper.

Keywords: Financial literacy, OECD, university students, consumer finance, online survey

1. Introduction

Everybody knows how important it is to be financially literate – not only when using or buying more sophisticated financial products or services such as mortgages, pension or investment funds, shares, bonds or even financial derivatives, exchange-traded funds, private equity investments and others but also when doing simple financial calculations as making the household budget, considering ability to pay interest, paying by credit or debit card or assessing more complicated price offers such as joint deliveries of utilities (electricity, gas, water).Thanks to fast development of financial services all around the world in recent years, requirements on financial literacy has increased dramatically. Not only the financial products get more complicated but the whole financial industry is spreading around the world. If we consider that e.g. post-communistic countries did not have much relevant experience with financial markets and that financial products and financial markets are developing quite fast also in less developed countries, requirements on financial literacy do not only increase in depth meaning higher or more detailed knowledge is required but also more and more people need to be familiar with financial products and financial markets.

Financial literacy has also several side effects. E.g. Lusardiand Mitchell(2008) and Lusardiand Mitchell (2011) provide evidence that there is a relation between level of financial capability on one side and savings and investment behavior on the other. Lusardi and Mitchell(2011) also show a clear relation between financial literacy and personal wealth.

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Financial education and financial literacy became very important for Organization for Economic Co-operation and Development (OECD)recently which developed guidelines and methodology of financial literacy measurement in 2009 (OECD, 2009).For 2012, the OECD decided to include financial literacy measurement option in the Program for International Student Assessment, so called PISA – (OECD, 2012a) and presented its results in OECD (2012b).

There has been also a lot of work done on financial literacy, out of which work Ministry of Finance of the Czech Republic (MoF CZ) is very important for this paper. OECD (2009) also lists several surveys focusing on financial literacy. MoF CZ (2007) came up with a proposal on standards in financial literacy and in 2010 a measurement exercise was conducted (MoFCZ, 2010) in cooperation with the Czech National Bank, following the OECD guidelines set out in OECD (2009). In this paper, we would like to build on all the above mentioned expertise and propose a more detailed and enhanced standard in financial literacy for university students. The main idea is that university students (both from economic and non-economic faculties) should have higher financial knowledge and therefore also higher financial literacy than socio-demographic groups with lower education. Our hypothesis is also that the focus group could provide financial information to their relatives, friends or other people around them in their community in the same way as medical doctors are very often asked for advice by people in their community.

After setting a financial literacy standard for university students, we test empirically whether it is appropriate or not. Too high score would indicate very low requirements whereas low score would indicate too high expectations from the university students. The research has been conducted using an online survey on more than 2,000 respondents (more than 3500 respondents out of which 2120 fully completed the survey). We confirmed our hypothesis that the university students or university educated people in general very often provide advice on financial matters. Since we had a significant number of respondents, we were able also to derive several conclusions and compare them to results of previous surveys as OECD (2012b)and MoFCZ(2010).

The aim of our research and this paper is threefold:

a) To set a standard in financial literacy for university students and validate it empirically;
b) To confirm or reject a hypothesis that university students / graduates serve as a source of financial knowledge and advice for others and therefore their financial literacy should be higher than of lower-educated socio-demographic groups;
c) To derive conclusions from the empirical evidence and compare it to the findings of previous research works on financial literacy by OECD (2012b)and MoFCZ (2010).

The paper continues as follows – first, a methodology for setting the standard in financial literacy is described, second a methodology for creation of the survey is suggested and last, findings from three areas will be discussed: the standard in financial literacy, the role of university educated people in providing financial advice within their community and comparison of the survey results to previous surveys.

2. Method

2.1 Setting standard in financial literacy for university students

OECD (2012b) defines financial literacy as: […] a combination of awareness, knowledge, skill, attitude and behavior necessary to make sound financial decisions and ultimately achieve individual financial well being. The paper further suggests that basic financial literacy consists of three elements – financial knowledge, financial behavior and financial attitude and focuses on budgeting and money management, short and long term financial plans, and financial product choice. Financial literacy is thus combination of these three elements and areas.
MoF CZ (2007) is slightly more detailed in its definitions of financial literacy for high school graduates and it provides for particular areas of financial literacy – money, household budget, financial products – surpluses, financial products – financial deficits, financial products – insurance, and consumer protection. For our standard we decided to follow the more detailed logic of MoF CZ (2007) and keep their segmentation. Should the assumption that university students provide financial advices to others (not as a matter of their professional job but as a matter of community service), their financial knowledge should be deeper.

Therefore in the first step we took the standard in financial literacy for high school graduates, suggested requirements that would be useful for their local community and derived more detailed content for standard in financial literacy for university students / graduates. The derived requirements supplemented the more detailed content of the original standard for high-school students – see Table 1.

The requirements on university educated people who provide advice on consumer / personnel finance matters were identified as follows:

a. Knowledge, how to handle various situations and protect oneself in financial matters – handling notice on late payment, blocking a payment card and its protection against misuse, protection of internet banking account against misuse;
b. Advanced knowledge of tax / public finance issues – income, VAT, social insurance, social security benefits (income side of household);
c. Advanced knowledge of political and international economics – to understand the overall economic situation (domestic as well as international)and its impact on consumer / personnel finance;
d. Assessment of more sophisticated credit and insurance products (expenditure side);
e. Ability to build an investment plan and a diversified investment portfolio considering various macroeconomic scenarios (savings, investments);
f. Overall knowledge of development of macro-economic indicators;
g. Awareness onrole of financial intermediaries when distributing savings and providing insurance or investment plans;
h. Awareness on financial crimes.

When describing the requirements in more detail, we derived a table of the standard which is shown as a Table 1. Requirements highlighted with an asterisk are original requirements on high-school graduate from the standard set out in MoF CZ (2007).

Another step was to derive even more detailed requirements, based on which the particular questions for the empirical research could be derived. For this step we also did a thorough research of legislation. The second level of requirements is also shown in Table 1 and is differentiated by another level of numbering. Questions used in our questionnaire are not in relation of n:n with the second level of requirements due to limitations as to the possible extent of the survey and time necessary for respondents to finish it. The most relevant requirements were chosen and transferred into questions for the survey.

Most of the requirements (both first and second level) encompass mainly requirements on knowledge since behavioral and attitude elements of financial literacy can be in our focus group assumed and what is more relevant, attitude and behavior is a more personnel issue that cannot be really transferred on somebody requesting a financial advice. After considering all these fact, we focused the standard in financial literacy for university students mainly on knowledge of finance matters.

When considering university educated people, the main assumption is that after graduation the graduates should be already able to provide advice on most of the financial issues. Therefore our research focuses mainly on university students and graduates within 3 years of graduation and not on university educated population in general because such a group could acquire their financial knowledge elsewhere other than at the university.

2.2 Validation of the standard in financial literacy for university students

In order to validate the standard in financial literacy, it was necessary to conduct an empirical research on whether the standard is neither too demanding nor too easy. Since the aim of the non-economic faculties is not a financial education of their students, the standard must not be too demanding because it would not be practically possible to increase students' financial knowledge to the desired level by means that would not hinder their education in the core areas of their degree. On the other hand, if the standard is set too low, the university students would not be a priori able to provide reliable financial advice or they would be able to provide only advice on a level of high-school graduate. If the standard is set at a proper level, it may serve as guidance for university lecturers what to focus on during their lectures.

We suggest to test the relevancy of the standard as a whole and in all particular areas; if the percentage of respondents with score of more than 80% will not be higher than 10%(like with university exams), if percentage of respondents with score lower than 30% will not be higher than 10% (the distribution is expected to lean towards the high end of the score axis as with university exams) and if number of respondents which answered correctly particular set of questions will not be higher than 84% (similar to cumulative 1 standard deviation), the standard is set properly. If the percentage of correct answers is higher, the standard is not motivating enough and on the other hand if the percentage of correct answers is lower, requirements of the standard are too high and it would be impossible for the universities to bring financial knowledge of their students to the desired level.

2.3 Testing the hypothesis

We tested the hypothesis that the university students provide financial advice in their community using the online survey that will be described further.

The hypothesis is tested using the following questions:

- Dou you think you have a good knowledge in the area of consumer / personnel finance? (answers: *definitely yes; rather yes; rather no; definitely no; do not know/not able to answer*)
- Has anybody asked you for advice on consumer / personnel finance matters? (answers: *yes but just once; yes – more times; yes but only in relation to my professional work e.g. as an employee of a financial institution or as a financial advisor; no; do not know / not able to answer*)
- If somebody from your community asked you for advice on consumer / personnel finance matters do you think you would be able to help? (answers: *definitely yes; rather yes; rather no; definitely no; do not know/not able to answer*)

Since the respondents completed the survey online without any further support of the research team, we preferred closed-end questions with only one possible answer. A do-not-know answer was always allowed in order to facilitate completion of the whole questionnaire.

We suggest considering our hypothesis valid if majority of respondents choose *yes just once* or *yes – many times* as an answer to the second question above. The answer *yes but only in relation to my professional work* does not support our hypothesis because of the professional nature of the advice; professionals should a priori have sufficient financial knowledge. The first and the third questions serve as a check of attitude as suggested by OECD (2009). All three questions are compared to the results of the questionnaire (total score achieved / success rate) and we derive a conclusion afterwards on whether the university students are asked for advice, if they think that they have the necessary knowledge (knowledge to help), if they think they are able to help (skill to help), and if they can really help based on objective empirical evidence – score from the survey.

2.4 Methodology of the empirical research – online survey

As we already discussed above, both the validity of the standard in financial literacy for university students and the hypothesis that the university-educated people are asked for financial advice on consumer / personnel finance matters were tested using an online survey. The survey was divided into six parts and followed the logic suggested by MoF CZ(2010):

a) Introductory questions – self assessment as suggested in part 2.3. (3 questions)
b) OECD core questions for comparability of results with OECD (2012b) and MoF CZ(2010) which also used the OECD core questions(7 questions)
c) Money – payments in domestic and foreign currency (6 questions)
d) Money – prices (5 questions)
e) Money – inflation – macroeconomic situation (4 questions)
f) Personnel finance – household budget (5 questions)
g) Personnel finance – debt and debtors (4 questions)
h) Financial products – surpluses and investments (4 questions)
i) Financial products – deficits and borrowings: annual percentage rate – APR (3 questions)
j) Financial products – deficits and borrowings: interest rates (3 questions)
k) Financial products – deficits and borrowings: payment cards (2 questions)

l) Financial products – deficits and borrowings: mortgages (2 questions)
m) Financial products – insurance (4 questions)
n) Consumer protection – deposit protection (3 questions)
o) Consumer protection – complaints (3 questions)
p) Consumer protection – contracts (2 questions)
q) Socio-demographic questions (5 questions)

All of the questions were closed-ended mainly with one possible answer but some of the questions had more possible correct answers. In one question the respondents had to enter one number which they calculated. The type of the questions was clearly described and respondents were not allowed to choose more than one answer if not requested to. Only fully completed questionnaires were accepted for evaluation. Because the survey comprised of 61 questions and in the testing phased the estimated time necessary for completion was between 30 and 60 minutes, we added also the *do-not-know* possibility in order to speed up the process for the respondent. The target respondents were from universities across the Czech Republic. The survey was tested on a sample of respondents and adjusted accordingly; these were not included in the final results.

The survey was split into the parts described above and after completion of each particular part the respondent could not correct already submitted responses in order to prevent from applying knowledge acquired during the process backwards to previously submitted answers. Since the OECD core questions were open-ended we transferred them into comparable close-ended questions. We also added 5 socio-demographic questions on the gender, student/graduate status, and year of study / number of years since graduation, economic / non-economic degree, and a self-assessing question if the respondents had some relevant class focusing on consumer / personnel finance at the university which helped them to answer the survey.

3. Results

3.1 General results of the survey

The questionnaire was run online from October 8th till October 22nd and we collected 3,324 responses out of which 2,120 qualified as fully-completed. The high rate of unfinished responses can be explained by length of the questionnaire. On the other hand, those who completed the questionnaire spent some time on that and the recorded answers can be considered as relevant because we did not find any exceptional pattern of *random* clicking. Looking at the distribution of total score (max score possible SP_{max}= 59 points) in Table 2 there are only several respondents at the low end of the total score with total score achieved (SA) and therefore also the responses recorded can be considered as relevant and not biased by random clicking of respondents which can always be a problem in case of online researches.

SA_{max}=58 points which equals SP_{max}-X whereSP_{max}=59 and X=1 point; this indicates that the questions were clear for the respondents and without any mistakes because the best respondents answered correctly all questions but one. In total the distribution of the results indicated in Table 2slightly leans toward the high end on the score axis which could indicate two results – the questionnaire was too easy or the respondents have high financial knowledge. Since we do not have any other comparable set of data (e.g. from a different country), we cannot comment on the total level of financial knowledge. The comparison of our sample will be compared to previous researches in following parts of this paper.

3.2 The standard in financial literacy for university students

In the previous parts we set a condition that less than 10% of respondents must score more than 75% of points, i.e. less than 212 respondents must score more than 44 points. The total number of respondents which scored more than 44 points was 172 which is below the set threshold and therefore the difficulty of rather knowledge required from university students is difficult enough. On the other hand, the number of respondents who scored less than 30% (18 points) is 80 respondents, which is lower than the threshold of 10% (212 respondents). The standard can be also considered achievable. The average score achieved (SA_{av}) is SA_{av}=33.15 points, the percentiles (SA_P) are SA_{P25}=28, SA_{P50}=33.5 and SA_{P75}=39, standard deviation (SD) SD=8.33 and 68.9% of respondents are within one SD from the mean score. Since $SA_{av}\approx SA_{P50}\approx SP_{max}/2+X$ where X=4 the distribution of the results can be considered normal with shifted mean by X=4 points to the high-score end of the score axis. This indicates that the questionnaire and the whole standard is either probably bit too easy for the respondents or the respondents have a good financial literacy.

As already discussed above, it would be a matter of comparison with another sample to decide what case it is. When further referring to scores achieved, a percentage indicator of success rate (SR) will be used instead of point scored; SR shall be calculated as $SR=SA/SP_{max}$ where $SP_{max}=59$; i.e. $SA_{av}=33.15 \approx SR_{av}=33.15/59=56.2\%$.

3.3 Socio-demographic questions

The total number of respondents was 2,120 evenly divided into males and females (51% males and 49% females). Most of the respondents were students at which the research was focused (95%, the rest 5% graduates) and most of the respondents (90%) had background in economics, the rest being students and graduates from non-economic faculties. See Table 3 for more details.

A clear pattern from the evaluation is that males score higher than females. Surprisingly, for the OECD Core Questions (Quiz questions) this contradicts with the MoFCZ (2010) measurement where females performed better than males. But on the other hand, a better score among males is in line with most of the countries participating in OECD (2012b) survey. Another pattern discovered was that graduates score higher than students and respondents with economic background score higher than those with education in other areas. All these rules were valid in call cases and therefore also the group that scored highest was male graduates from economic faculties and a group that had the worst score was female students of non-economic faculties. More details are provided in Table 4.

3.4 Self-assessing questions

Based on the results of the questionnaire, 59.5% of respondents replied that they were asked for advice once or more times, 7.0% were asked for advice only in relation with their work and 40.5% has never been asked for advice or do not know / cannot answer. Since the threshold to approve or reject the hypothesis that university students or university educated people provide advice on consumer and personnel finance matters within their community was set at 50%, the hypothesis can be confirmed. The success rate of respondents who replied positively is 59.3% which is only slightly above $SR_{av}=56.2\%$.

In the other two self-assessing questions, the results were very similar – 62.5% of respondents think that they have a good knowledge of consumer / personnel finance matters (*definitely yes* and *rather yes* answers) and they scored SR=60.1% whereas slightly less respondents (61.7%) think that they would also be able to give appropriate advice (*definitely yes* and *rather yes* answers) when asked to by somebody in their community and they had also slightly lower success rate of SR=59.8%. The correlation coefficient between the self-assessment on respondents' financial knowledge which was rated from 4 (*definitely yes*) to 1 (*definitely no*) and their SR was 0.996 and 0.995 in case of assessment of respondents' ability to give financial advice; both correlation coefficients are significant enough and a conclusion that the self-assessment of the respondents is reliable can be derived. From those who replied that they would not be able to provide advice on consumer / personnel finance matters (38.2%) more than one third has already been asked for advice (34.9% from those who replied *definitely no, rather no* or *do not know*) which is 13.3% from the total sample.

Surprisingly enough, also several respondents (17 which is 0.8% from the total sample) claim that they would not be able to provide advice but have already asked for it within course of their professional work. This forced us to check the SR of finance professionals(i.e. those who claim they were asked for advice as a matter of their work) which is 61.6% and it is more than any other group of responses from question on whether the respondents have already been asked for advice (group *more times* scored 61.2%, group *just once* scored 53.9%, group *no* 51.3% and group *do not know* 54.2%).Those financial professional who responded that they would that they think they do not have good knowledge of consumer / personnel finance matters scored 52.9% which is slightly below the total average. Again, it proves reliability of self-assessment but indicates that the finance professionals / financial advisors are not necessarily knowledgeable enough.

3.5 The OECD core questions and MoF CZ questions

From the 8 OECD core questions, we took 3 with exactly the same wording, 1 question was slightly modified to match the wording of MoFCZ(2010) and we also added 2 questions that were in MoFCZ(2010) but were not included in OECD (2012b).For more details and results comparison see Table 6. In order to discuss similar results, we chose to compare our results to those of MoFCZ(2010) and OECD (2012b) coming from the Czech Republic because also most of our respondents were from the Czech Republic.

When discussing the results we also demerged one question (split it into three individual questions) to be comparable with the other two surveys. It is obvious that the university students scored higher than the respondents in OECD (2012b) and MoFCZ(2010)both of which had different educational background. The result is ambiguous only in case of those questions that were modified or merged and demerged (time-value of money compared to OECD (2010) but with higher score compared to MoFCZ(2010), risk and return, definition of inflation, and diversification). Attention is to be paid to the inflation question where respondents were asked to agree or disagree with the following statement: High inflation means that the cost of living is increasing rapidly. Compared to the general public in the Czech Republic (MoFCZ, 2010), university students performed significantly worse when scoring 20 b.p. lower.

3.6 Evaluation of financial knowledge of respondents

As already mentioned, the average score rate of respondents was 56.2%. Success rates in individual groups of questions as suggested in part 2.4. are summarized in Table 6. The areas in which the respondents scored the best were payment cards (83.2%), mortgages (73.6%), and contracts (72.9%). On the other side the worst areas were problem solving (27.8%) and deposit guarantee schemes (32.6%). The success rates in particular areas suggest where the respondents relatively do not meet the set requirements of the standard in financial literacy for university educated people and where the knowledge is more or less sufficient. The results can serve as a background for university lecturers what to focus on during their lectures.

4. Discussion

We must stress that the standard in financial literacy we suggest in this article is designed for university students no matter what subject they study. Even though the results might suggest that the respondents scored quire well, most of the respondents had economics background. The success rate of students from non-economic faculties was 50% which does not seem too high considering the fact that 8 out of 59 questions came from OECD (2012b) and MoF CZ (2010) and were relatively easy to answer.

Standards of financial literacy are usually relatively broadly defined and therefore we think that more detailed content of the standard should be always derived. Even though the financial systems are very different across the world, we think that the standard and its content have been designed in a way that they would be applicable in various countries with different financial markets. The top-down approach we took proved to be very structured and useful: first, we set the requirements on the university students, then defined more in detail what the university students should know or be able to do, in another step we defined practical issues the students should be able to handle, and in the last step we designed the questions based on the very detailed requirement. We knew why each of the questions was in the survey and that we did not miss any important element of financial literacy of university students.

We think that the standard in financial literacy for university students has been set properly. Not only the approach was very structured but also the validation of the standard proves that it was not neither too demanding nor too easy. We have already test the standard during our lectures in Banking classes at the University of Economics, Prague and also the feedback from the students was very positive. The standard reflects those areas that the students need to know and which they are not very proficient at. Even though most of the questions were testing knowledge, several of them were also designed in a way that by inquiring about knowledge we were testing the actual attitude or behavior of the respondents. Therefore, when asking the respondents if they know how to do something we were able to test whether the respondents actual do it because if they would not do it, they would not be able to know how to do it.

Our hypothesis that university students provide advice on consumer and personnel finance matters has been successfully confirmed. It might be also interesting for the future, to test similar hypothesis on a different group of respondents, e.g. high-school students or rather people with secondary (high-school) education. As already mentioned above, because our focus group often provides advice in their community, the requirements on their knowledge increases and the attitude and behavior is not that important as with the groups with lower education. Attitude and behavior that might be considered undesirable from the financial literacy point of view might have more severe impact on lower-educated and thus also lower-income groups for which it is probably more complicated to create and keep a sustainable household budget.

Most of the findings are also in line with OECD (2012b) and MoF CZ (2010). In comparable questions the university students scored better than a general sample of people from these two surveys. Probably the only significant difference in results is higher score of males than females in our research as opposed to the result in MoF CZ (2010) but OECD (2012b) arrives at similar results as our research. Reasons for difference in this research and MoFCZ (2010) could be subject to further research.

Tables and Figures

Table 1 – Suggested standard in financial literacy for university students

A. Money	
Content	Results and detailed requirements
A.I. Payments (both in domestic and foreign currency)	*A.I.I. Uses the most frequent means of payment, exchanges currency using a table of foreign exchange rates
	A.I.II. Is able to securely and cost-effectively conduct international and electronic payments including online payments at eShops
	- A.I.II.I. Is aware of various modern means of payments – PayPal, contactless payments, virtual payment cards, etc.
	- A.I.II.II. Can roughly estimate costs of international and domestic payments including SEPA payments within the EU
	- A.I.II.III. Has a more detailed knowledge of the table of foreign exchange rates – differentiates between FX rates for cash and non-cash transactions, is able to discuss spread between bid and ask rates and is able to provide for a cost estimate when exchanging currencies
	- A.I.II.IV. Knows basic elements of security of means of payment – bank notes, payment cards, online banking and how to avoid misues and what to do in case of misuse
	- A.I.II.V. Knows roughly FX rates of main currencies
A.II. Pricing	*A.II.I. Sets the prices as a sum of costs, profit and VAT (sales tax)
	*A.II.II. Explains how price can differ according to customers, place, season, …
	*A.II.III. Recognizes basic price tricks (e.g. price excl. VAT) and misleading offers
	A.II.IV. Calculates total costs of purchases from abroad – shipping costs, customs duties, VAT, and other payments
	- A.II.IV.I. Is aware of fees relating to import of goods
	- A.II.IV.II. Explains main advantages and principles of the European Union with regards to import/export of goods
	- A.II.IV.III. Knows current rates of VAT and also approximately average customs duties
	- A.II.IV.IV. Can assess the costs when buying from a VAT registered or unregistered supplier on given examples
	A.II.V. Recognizes advanced price tricks
	- A.II.V.I. Uses web to compare prices
	- A.II.V.II. Is able to compare more difficult price offers (e.g. utilities)
A.III. Inflation – macroeconomic situation	*A.III.I. Explains the nature of inflation and its consequences on income of people and give examples how to protect against inflation
	A.III.II. Understands basic economics principles in economy and relation between economy and politics (both locally and internationally)
	- A.III.II.I. Explains the relation between basic macroeconomic indicators – GDP, inflation, interest rates, governments spending and unemployment
	- A.III.II.II. Explains relation between basic macroeconomic indicators and household income
	- A.III.II.III. Understands the link between fiscal policy (government spending, taxations), economics situations and short-, mid-, and long-term household income
	- A.III.II.IV. Understands government budget as s sum of government income and spending
	- A.III.II.V. Explains the role of central government institutions in the economcy – government, parliament, central bank
	- A.III.II.VI. Knows roughly the current development of basic macroeconomic indicators
B. Household Budget	
B.I. Household budget	*B.I.I. Differentiates regular and extraordinary income and expenses of household and based on that creates a household budget
	B.I.II. Suggests how to solve deficit budget as well as what to do with surpluses
	B.I.III.Has a good understanding of tax system and system of social and health insurance

	- B.I.III.I. Differentiates between various types of taxes (income tax, inheritance tax, gift tax, road tax, etc.) and other payments (social and health insurance payments, etc.
	- B.I.III.II. Has an overview about main social security benefits
	- B.I.III.III. Differentiates between income from employment and income from enterprise and know the difference in their taxation and can comment on advantages and disadvantages of such sources of income
	- B.I.III.IV. Suggests basic principles of tax optimization of a household
	- B.I.III.V. Knows roughly the current tax rates and social and health insurance rates
	B.I.IV.Is able to prevent financial crisis situations in the household and eventually to solve them
	- B.I.IV.I. Knows what is the consequence of late payments and is able to prevent a law suit but is also able to recover money from debtor
	- B.I.IV.II. Can tell a lawful behavior from illegal / criminal
C. Financial products - surpluses	
C.I. Surpluses	*C.I.I. Suggests was how to use free cash (savings, financial products with government support, securities, real estate, etc.)
	*C.I.II. Chooses the most suitable product for investment and explains the advantages and disadvantages
	C.I.III. Creates on his/her own or with a support of a financial advisor a suitable investment portfolio for a significant sum of money / higher regular or extraordinary income
	- C.I.III.I.Understands the necessity to diversify own investment portfolio
	- C.I.III.II. Knows more sophisticated financial instruments (investments)
	- C.I.III.III. Assesses risk associated with financial instruments
	- C.I.III.IV. When making an investment decisions, considers domestic and international economic situation; makes own opinion on financial advice or recommendation of someone else
	- C.I.III.V. Has a basic knowledge of principles of direct investment into financial instruments (how to directly buy shares, bonds, etc.)
D. Financial products - deficits	
D.I. Deficit	*D.I.I. Chooses the most suitable form of credit based on own needs and explains the choice
	*D.I.II. Assesses means of giving security and explains how to avoid heavy indebtedness
	*D.I.III. Explains how to set interest rates and a difference between a interest rate and APR
	D.I.IV. Understands more complicated forms of credit
	- D.I.IV.I. Differentiates between various types of credits (mortgages, consumer credits, non-purpose loans, revolving credits, etc.) and different interest rates – floating, fixed
	- D.I.IV.II. Is able to choose the most suitable credit product based on the expected income and expenditures
	- D.I.IV.III. Knows roughly the current interest rates
E. Financial products - insurance	
E.I. Insurance	*E.I.I. Chooses the best insurance product considering own needs
	E.I.II. Explains basic principles in insurance contracts and their regulation
	- E.I.II.I. Knows the main rights and duties of parties to the insurance contract
	- E.I.II.II. Explains possible reasons for which the insurance sum might not be paid out
F. Consumer protection	
F.I. Consumer protection regulation	*F.I.I. Discusses on an example how to enforce consumer rights (when buying goods and services including financial products)
	F.I.II. Knows various means of consumer protection
	- F.I.II.I. Knows how deposits are protected
	- F.I.II.II. Knows the role of financial ombudsman and other regulatory and oversight institutions
	- F.I.II.III. Can search for and apply basic legislation in the areas of consumer protection
F.II. Contracts	*F.II.I. Discusses on an example possible consequences of unfamiliarity with contract and it general terms and conditions
	F.II.II. Knows how to enter into contract, change it or terminate it and also how to enforce the contract
	- F.II.II.I. Knows the main principles of consumer protection in contractual law in the area of financial products
	- F.II.II.II. Explains the main principles of consumer contracts and distance selling regulation
	- F.II.II.III. Detects main danger when entering into contracts (penalties, arbitration clause, etc.)

Note: Original requirements (standard for high-school students) of MoF CZ (2007) are highlighted with an asterix (*)

Table 2 – Survey score distribution

Score	No of Respondents	Score	No of Respondents	Score	No of Respondents
5	2	23	35	39	87
6	1	24	48	40	81
8	1	25	63	41	64
9	4	26	67	42	64
10	5	27	73	43	61
11	3	28	86	44	57
12	10	29	99	45	34
13	10	30	91	46	36
14	9	31	105	47	27
15	12	32	82	48	28
16	13	33	89	49	20
17	10	34	102	50	13
18	17	35	98	51	10
19	26	36	117	52	2
20	21	37	79	53	1
21	37	38	78	58	1
22	41				

Table 3 – Number of respondents according to socio-demographic groups

	Male	Female	Grand Total
Economics	**976**	**932**	**1,908**
- Graduate	38	32	70
- Student	938	900	1,838
Non-Economics	**103**	**109**	**212**
- Graduate	12	19	31
- Student	91	90	181
Grand Total	**1,079**	**1,041**	**2,120**

Table 4 – Score rate by socio-demographic groups

	Male	Female	Total
Econ	**59%**	**54%**	**57%**
- Graduate	67%	57%	62%
- Student	59%	54%	57%
nonEcon	**54%**	**49%**	**51%**
- Graduate	62%	53%	56%
- Student	53%	48%	50%
Total	**59%**	**54%**	**56%**
- Graduate	66%	55%	61%
- Student	56%	54%	56%

Table 6 – Comparison of results to OECD (2012b)and MoF CZ(2010)for Czech respondents

Area / question	Note to our questions	OECD 2012b	MF CR 2010	Our results
Division	Included	93%	93%	99%
Time-value of money	Modified to MF CR 2010	80%	45%	49%
Interest paid on a loan	Not included	88%	88%	-
Calculation of interest+principle	Included	60%	60%	98%
Compound interest	Included	32%	40%	79%
Risk and return	Merged, (demerged result)	81%	81%	38% (93%)
Definition of inflation	Merged, (demerged result)	70%	70%	38% (50%)
Diversification	Merged, (demerged result)	54%	54%	38% (83%)
Interest paid on a loan	Non-OECD, included	-	67%	98%
Interest paid on a loan	Non-OECD, included	-	55%	94%
Total		70%	65%	79% (83%)

Table 7 – Success rates in different finance areas

Group	No. of questions	Success rate
OECD	7	79.2%
Payments	6	47.0%
Prices	5	40.2%
Macro	4	50.9%
Household budget	5	41.5%
Debt	4	65.2%
Investment	4	55.2%
RPSN	3	49.2%
IR	3	54.0%
Cards	4	83.2%
Mortgage	2	73.6%
Insurance	4	67.1%
Deposits protection	3	32.6%
Problem solving	3	27.8%
Contracts	2	72.9%
Total	59	56.2%

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