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The ethics of our future business leaders: an analysis of the perceptions of cheating in higher education[1]

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This paper aims at exploring the main causes and effects of cheating through a literature review and to compare them with the causes and effects of cheating perceived by students and lecturers at a Business School and a University in Hungary. Cheating is particularly relevant in Hungary and other CEE countries where student cheating seems to be more rampant compared to Scandinavian countries (Orosz–Farkas 2011) and people are more likely to believe that it is hard to get wealthy from 'honest' work (Csepeli–Prazsák 2011). The business world is plagued with unethical behaviour (Pitesa 2015); therefore, it is particularly relevant how future members of the business world see and justify unethical practices in achieving their goals. We collected data through semi-structured interviews with business students and lecturers and our results show that both groups agree on the fact that cheating in the academic field is widespread. We used causal loop diagrams to visualize the findings on the perceived causes and effects of cheating and formulated a number of recommendations that may help reduce this unwanted phenomenon.

Keywords: student, cheating, unethical behaviour, causal loop diagrams.

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Introduction

More and more students think cheating is a business-as-usual method to get through the years of university. Several surveys reveal astonishing statistics about cheating in the academic field. In a survey with more than 3600 respondents Wangaard and Stephens (2011) found that 95% of the students admitted to cheating in the previous year, while 57% of them agreed or strongly agreed that it is a morally wrong thing to cheat. Furthermore, 38% out of 63 700 polled undergraduate students admitted to paraphrasing or copying a few sentences from a written source without footnoting it (McCabe 2005). Only 12% of the students in the first-mentioned poll reported seeing others being caught cheating, which is a considerable distorting factor in the evaluating system. These stats show that cheating is not necessarily perceived as a blameworthy method, but rather a natural act, as students compete in the higher education system. But what is the case when we are raising future business leaders? Is cheating an acceptable way of reaching the higher levels of business jobs or is it connected only to academic work? In our study we examine and compare how business students and lecturers perceive cheating. Furthermore, by analysing the responses from these two samples, we seek to ascertain the primary features and key causes of cheating and what universities can or should do to reduce it.

In order to answer these questions, in July 2017 we collected data through semi-structured interviews with both students and lecturers from the Faculty of Economics at a university in Budapest, who were contacted through a purposive sampling strategy. We also compared these results with our previous interviews on the same topic conducted at a business school in December 2016. We use causal loop diagrams to visualize the findings on the perceived causes and effects of cheating.

The structure of this paper is as follows. First of all, the literature section addresses the topic of cheating and gives a summary of the most important studies dealing with this issue. Secondly, we provide a closer look at the methodology of our research. Then, the main findings section briefly sums up the key issues and tendencies identified by the interviewees related to the topic of academic cheating with the aid of causal loop diagrams as a means of illustrating the correlation between the found variables. In the following section we descriptively present the most important data and results from our research in the attempt to associate them with the main points of the literature review and fit them into the social context

of the issue of cheating in the higher levels of education. Finally, the conclusion section consists of key findings and future directions for research.

Literature review and theoretical/conceptual framework

The academic research into the problem of student cheating in higher education started with the studies of Bowers (1964). His surveys aimed to map out the extent of the practice of cheating, as well as the personal and social background of those who cheat. In the following decades, studies closely following his model have been carried out several times (McCabe et al. 2001; McCabe et al. 2003). One outstanding finding from these studies is the fact that the overall level of cheating – that is, the proportion of students who admit having practiced it at least once during their academic career – roughly stays constant throughout the decades. Bowers's finding was 75%, McCabe and his colleagues measured 82% in 1993, and 65% later in 2000-2010 (Bowers 1964; McCabe et al. 2001; McCabe et al. 2012). The proportion of the three-time cheaters was of 19% in the time of Bowers, and measured at 20-40% in the 1990s (Lang 2013). These data suggest that the problem is widespread, but the trends are not necessarily worrying.

In this short review, we will go through the possible causes of cheating behaviour in a fourfold structure. First, we take individual characteristics, mostly related to psychological factors, then take micro-social, organisational-level, and finally macro-social factors. Some of the key causes are situated at the intersection of these spheres, and therefore we will distinguish these elements.

Historically, during the decades of cheating research, great efforts have been made to map out the characteristics of the individual 'cheater'. After reviewing the results, Anderman and Murdock (2007) first discuss demographics. When it comes to gender, the conclusion is that while male students have been shown to cheat more than females, the difference is not as big in actual behaviour as it is in attitudes. Age or seniority (the number of years already spent in higher education) have a negative effect on cheating, although the exact causal mechanism here is problematic to untangle. (Is it simply because of age and lack of maturity? Is it perhaps because the students who spend a greater number of years in higher education are the ones taking their studies seriously?) Furthermore, it has been found that unmarried students (compared to married ones), the ones coming from higher socio-economic backgrounds (compared to lower), and less religious ones (compared to the more religious) tend to cheat more. Also, the number of hours

worked was found to be negatively correlated with cheating. Although these statistical associations could be shown, none of them constituted an especially big difference (Anderman–Murdock 2007).

Continuing with individual characteristics, ability was also found to be connected to cheating, in a negative way (the more able students cheat less), although this relationship is moderated by other factors as well, for example, at lower ability levels, male students tend to cheat much more than females than they do at higher ability levels. Also, those highly apt students who aim at high levels of success might succumb earlier to cheating in a competitive environment than others of average ability (Anderman–Murdock 2007). This is connected to the next very important factor, motivation, which should be approached as a multifaceted psychological concept. First, the nature of rewards that a student seeks can be intrinsic (whereby newly acquired knowledge and skills, or getting a good grade hold a value in themselves for the individual) or extrinsic (whereby all these serve only to get a degree as a gateway to some career, or to get financial rewards), where extrinsic motivation is being associated with higher levels of cheating (Jordan 2001; Anderman–Murdock 2007; Lang 2013). Another facet of motivation is learning orientation, the ideal-typical manifestations out of which one is oriented towards mastery (the deep, full learning of a skill, for its usefulness) and the other towards performance (being able to pass an exam-like occasion once, but not more), with the latter being positively associated with cheating (Lang 2013). It is also noteworthy that people who view intelligence as something that can be changed are more likely to be mastery oriented than those who view it as fixed (Anderman–Murdock 2007).

The next very important psychological characteristic is self-efficacy, defined as "people's task-specific beliefs in their ability to execute the actions required to bring about a desired performance accomplishment" (Anderman–Murdock 2007. 18). The stronger this belief, the less likely it is that someone will resort to cheating; the belief can be weakened by the fear of failure, worry and anxiety (Anderman–Murdock 2007). Sometimes simply being unsure about an answer will lead students to 'double-check' it with illicit help (Jones 2011; Kücüktepe 2014). Notably, Lang (2013) draws attention to the role that external circumstances can play in the individual's sense of self-efficacy: besides believing in one's abilities, they also have to be sure that the circumstances will not hinder them in showing their potential (e.g. not having enough time, not being evaluated fairly) – such

circumstances are a primary cause of (and excuse for) cheating (Lang 2013). The importance attributed to circumstances, in turn, will depend on the locus of control defining the person. Those who are generally inclined to believe that "their fate is in their hands" (internal locus of control) will tend to resort less often to cheating than those who attribute a great deal of importance to external factors, luck, and others, as external locus of control (Anderman–Murdock 2007).

Finally, we would like to highlight the finding that the 'morals' of the individual have been shown to have only a small effect on the cheating behaviour. Attitudes towards cheating (i.e. to what extent does one find it acceptable) are related to how the individual acts, but the measures of 'moral development' bear only a small effect. The main finding here is that students with a higher score on Kohlberg's (1981) moral reasoning scale are more likely to respond to stricter surveillance or reduced incentives, but are still likely to cheat in absence of these factors (Anderman–Murdock 2007).

The second sphere within which we identified causal inputs of cheating is that of 'micro-social' life, namely the immediate social relationships in which students are embedded. One such unit is the family, which can act as a source of external motivation, e.g. already in Bowers's research, it could be shown that those students whose parents find grades important are more likely to cheat than those who find these important themselves (Bowers 1964). The other important social influence comes from peers, upon which the literature is unequivocal: the higher the (perceived) level of cheating among peers, the more likely it is that the students will cheat themselves. This situation results from a twofold influence: one is that high cheating levels create a normative support for such behaviour, and the other is that no one wants to be at a disadvantage compared to others (Lang 2013).

The third important sphere is the organisation. Recently, academic research has moved away from individual factors to studying situational ones (Anderman–Murdock 2007; Lang 2013) – and since these situations take place inside higher education institutions (HEIs), this is the level at which the latter can intervene if they want to fight student cheating. One of the organisational aspects is related to the structure of assessment. Keeping in mind the observation that the type of exam largely determines the way students study (the exam is "the tail that wags the dog", as Mazur [1997] states), we can see that this factor ties back to the motivational ones discussed earlier. The grade is a form of extrinsic motivation

(and many times not a very strong one), and exams are high-stakes situations in which the emphasis is on performance, and no reward is given for trying – all the hallmarks of situations where cheating will be very likely (Lang 2013). Moreover, competitive exams (and competitive grading) are among the most 'toxic' contributors to student cheating (Anderman–Murdock 2007), especially if we consider the detrimental effect they can have of self-efficacy (belief in the 'fairness of circumstances'). Palazzo et al. (2010) also found that tight deadlines are a cause of students' engagement on plagiarism in home assignments. Both the exams and the classroom environment, including the style of teaching, should put more emphasis on fostering a mastery orientation in students (Umaru 2013).

Considering rules and policing, the literature offers contradictory results. While Ariely's (2012) experimental studies indicate that the risk of being caught bears no relationship to the proportion of participants cheating, and Anderman and Murdock (2007) also warn us that putting too much emphasis on policing risks creating an atmosphere of mistrust, others assert that an effective communication of ethical behaviour within the organisation can yield positive results (e.g. Gallant–Drinan 2006). Jordan (2001) found that the lack of a strict policy and a permissive system were the strongest predictors of cheating within a HEI. McCabe et al. (2003) also found that having an institutional honour code reduced the likelihood of cheating (as compared to having none).

The final sphere enclosing student cheating behaviour is that of macro-social life: cultural, economic and other settings of a given society. The role of a national culture in conditioning cheating in HE is ambiguous. While some studies found no differences in cheating levels between countries, or the ones they found could be explained by structural differences (e.g. competitive exam setting) (Anderman–Murdock 2007), others suggest that there are indeed some key aspects that can shape attitudes towards 'tricking the system'. One such thing is a general mistrust towards agents holding any kind of power (generally, state officials, but this is transferred to teachers in the HE setting), shown to be a characteristic of Russia (Magnus et al. 2002), and likely many other post-socialist countries as well, including Hungary and Romania (Orosz–Farkas 2011). Additionally, we might mention that uncertainty avoidance, one of the elements of Hofstede's cultural map (Hofstede–Hofstede 2005), might encourage cheating in terms of 'double-checking'. Although no study had so far shown a direct link between uncertainty avoidance and cheating, the former was

indeed linked to the practice of insider trading (Frijns et al. 2008). To provide an even more complete picture of the Hungarian value system in which the HEIs we studied are situated, it is useful to mention that the proportion of Hungarian people who identify their locus of control as external in work situations is one of the highest in Europe; moreover, Hungary is also the leader when it comes to agreeing with the notion that "one cannot get wealthy from honest work" – post-socialist and some Mediterranean countries show similar patterns, though not as strong (Csepeli–Prazsák 2011).

Based upon our literature review, we seek to find answers to the following research question: what are the differences in perceptions of cheating between business students and lecturers? Having examined the key areas found in the literature i.e. the perceived elements that encourage or discourage cheating in general, we have opted for an explorative approach in this study and the method to achieve this will be described in the following section.

Method

There are two key phases in our study in relation to our method: semi-structured interviews from purposive samples; and the construction of causal loop diagrams. For comparison, our first sample involved lecturers and students from a Hungarian business school. These interviews were conducted in December 2016. We then had a second round of interviews at a Faculty of Economics in July 2017. We applied a purposive sampling strategy to find interviewees for our research as our main aim was to select "information rich cases (…) that provide the greatest insight into the research question" (Devers–Frankel 2000. 264). We chose to focus on the cheating of business students, as Frank, Gilovich and Regan (1993) claim that business students have special perspectives on cheating. Although our sample only involves one faculty in each institution, we plan to extend our study to other similar business faculties within other Hungarian universities. As a final point regarding the sample, we selected lecturers with experience of different types of assessments and teaching forms, as well as a broad range of subjects. This sample of lecturers had no connection to the students involved in the research project.

For students, there were two anticipated problems. Firstly, students might not be comfortable reporting on the topic of cheating to teachers. Secondly, some of our interview questions required students to know about student life and

cheating in general. Therefore, we selected students who are embedded in the social network and so have many connections with other students. The student interviews were conducted by the student members of our research group, and they contacted student organisations operating within the faculty. Despite many students speaking about cheating practices quite openly in everyday conversations – even with teachers – prior to our study, it became clear after the first round of selecting interviewees that speaking about cheating in a seemingly "official" setting was quite frightening. This resulted in a number of rejections in the first round. In response to this, we started to utilise a diverse set of approaches to find willing participants, such as suggestions from student assistants within departments and selecting with whom we have personal relationships.

The second phase was to use the data from the interviews to map the causal connections identified by the interviewees and draw causal loop diagrams. The interpretations of the data were made by the research group consisting of researchers, lecturers and students. The net result of these interpretations is two causal loop diagrams: one for interviews at the business school in 2016 and one for our interviews at the university in 2017. This type of results' presentation has allowed us to get a broad view of the perceived causes and effects of cheating and search for similarities and differences between the two samples.

The use of causal loop diagrams (CLDs) originates from system dynamics, a school of systems modelling developed by Jay W. Forrester at MIT in the 1960s (see Forrester 1971). The diagrams show multiple-step causal chains, or, indeed, causal loops in which the chain returns to its point of origin. The properties of systems emerge from the outcome of several causal factors, and the high number of linkages helps us understand the dynamic nature of the systems (Sterman 2000; Sherwood 2002).

Causal loop diagrams create the first step towards a quantitative simulation model, and therefore have to conform to a number of 'rules of the genre'. First, variables have to be named in such a way that both an increase and decrease in their levels are intelligible. Causal arrows point from the cause towards the effect and have a single sign. A positive sign (+) means that – provided that everything else in the system is constant – the effect changes in the same direction as the cause, i.e. if the amount of the cause increases, that of the effect also does; while if the amount of the cause decreases, that of the effect will do so as well (compared to what it would have been in the absence of any change). A negative

connection (-) means that the cause and the effect go "in opposite directions": when the cause increases, the effect will decrease; when the cause decreases, the effect will increase. These relationships can form two types of causal loops: self-reinforcing ones, in which the initial change runs through the system so that it returns to reinforce its initial impulse (similar to 'vicious' and 'virtuous' circles); and balancing ones, where the initial change runs through the system and returns to 'mitigate' itself (Sterman 2000).

When drawing up our CLDs on student cheating, we noted comments made by the interviewees concerning factors influencing cheating and we created a variable and a causal connection to represent it. Thus, a statement such as "if there are more people taking the exam together, it is easier to hide and cheat" was transcribed with the help of the variable "number of people taking the exam", in a positive relationship with "perceived level of cheating", the arrow itself representing the mechanism of 'it being easy to hide'. (We could have created a variable for "difficulty of hiding", but this level of detail was not necessary this time. Also, we would like to emphasise that we did indeed operate with perceived levels of cheating, since the systems we described involved the perceptions of students and lecturers. We took the 'true' level of cheating to be practically unknowable).

From an ethical standpoint, our research was authorised by the appropriate authorities at each higher education institution. The procedures for the interviews were clearly explained to the interviewees beforehand and the researchers asked each participant for permission to record the interviews. Confidentiality was assured, and all the results are presented anonymously.

Main findings

Our first sample included nine lecturers (six female and three male) from finance, entrepreneurship and human resources, language, and economics departments, as well as six students (four female and two male) from the business school. The second sample involved six lecturers (two female and four male) from finance, entrepreneurship and human resources, language, and economics departments, as well as six students (one female and five male) from the Faculty of Economics of a university. From these samples two CLDs were created, one for the lecturers and another for the students. We will examine each in turn and compare the differences and similarities for both samples.

Lecturers' map: comparison

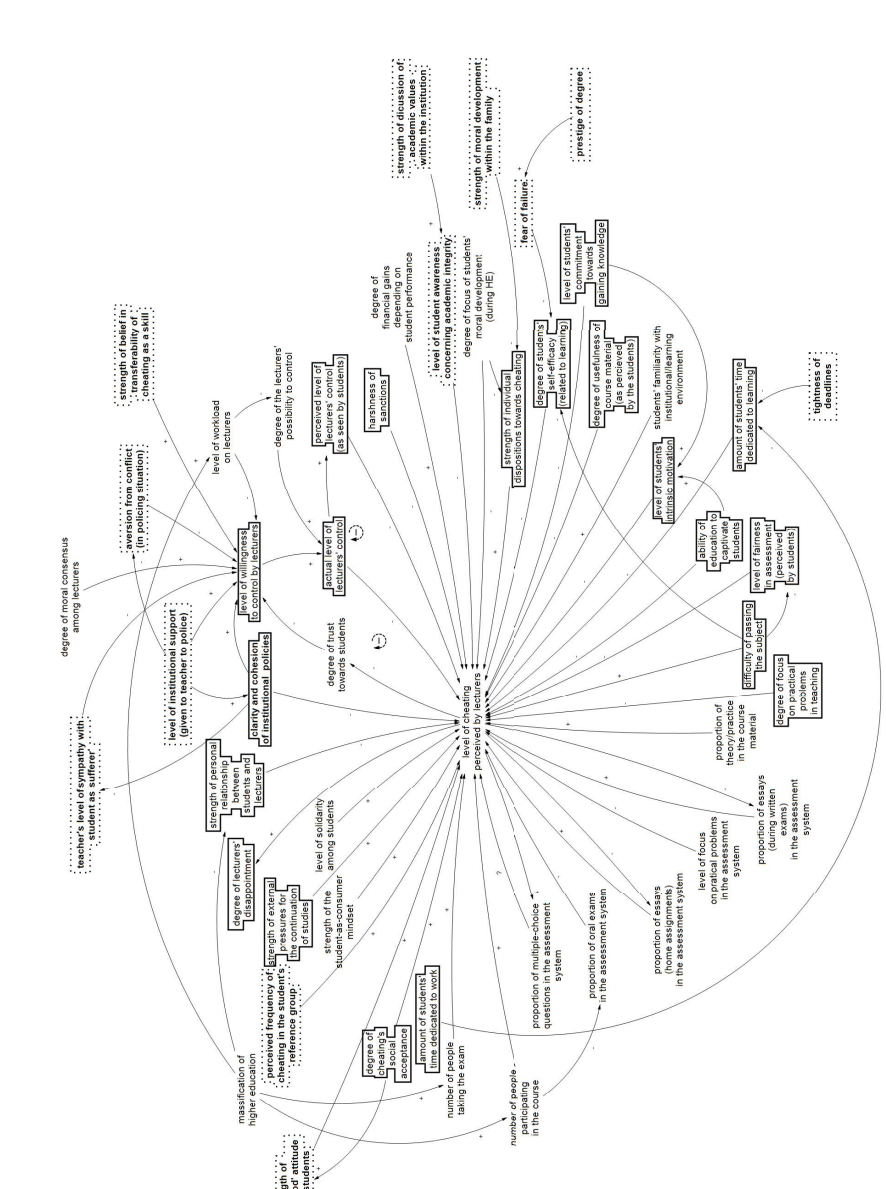
In our first sample, we could identify 38 items connected to the perceived level of cheating by lecturers. In our second sample we found a number of new items. In Figure 1, variables surrounded by solid lines indicate an overlap (mentioned by both samples), and new items (mentioned only by the second sample) are shown in bold typeface, surrounded by dotted lines.

Some elements relate to the working conditions of the given higher educational institution, such as 'harshness of sanctions', 'clarity of the institutional regulations' and 'degree of the lecturer's possibility to control'. Others are more general characteristics of the institution, which nonetheless affect the (perceived) level of cheating, like 'degree of financial gains depending on student performances', 'level of workload on lecturers' and 'degree of focus on students' moral development'.

There are some notable differences in the business school-sample, compared to the university-sample. Some lecturers tried to avoid conflict when seeing someone cheating, as it might question their authority and they were insecure in this, which might, in turn, relate to how at least three lecturers felt that the system in place was either unsuitable or would not support them in the long term (e.g. consequences were minimal, punishments should be more constructive, using students' abilities). They saw that the situation of catching a cheater as demeaning. The respondents also echoed views from the first sample about the necessity of a clear institutional regulation – a variable we renamed to 'clarity and cohesion of institutional policies', because such policies, in the view of newly interviewed lecturers, should not only pertain to regulation, but to general expectations towards honest work, and clear procedures of dealing with cheating. Conflict avoidance may be seen as a lack of confrontation, resulting in less control over students and thus fewer consequences for cheating, as in the following:

> *"…You asked me earlier about what I would do if I spotted someone cheating and I said that I would just warn them. The reason for this is not just that I'm that kind of person not to make a big deal of it, but also because I am not being backed up by the institution. If cheating happens, the institution will not stand by me. So, there are no clear rules. Some institutions do have ethical codes, but they are not really respected…" (lecturer3).*

The above quote appears in the CLD under the category of 'level of willingness to control'. Many respondents agreed that given how things are



Source: authors' own design

Figure 1. Causal loop diagram based on lecturer interviews

currently happening, students see little risk in cheating, either because the chances of being caught are low, and/or because punishment is insignificant or non-existent – these views, we believe, are well represented in the meaning of the 'perceived level of lecturers' control (as seen by students)' variable.

Another institutional element that was found in the second sample, but not in the first, is that in such a complex institution there is a certain degree of sympathy for students cheating as a survival technique. This understanding or sympathy with the 'suffering student' has led to the respective participants admitting that they are less active in attempting to detect cheating than others, i.e. less willing to control. This, in turn, leads to less control over students (during exams) and fewer consequences for cheating. One of the respondents in the second sample put this in the context of the lack of transparency when it came to the operation of the university as an organisation. Finally, it is important to mention that one lecturer mentioned that they believed that cheating was transferable to other areas of life, and this realization has made them more willing to control cheating by students at the university in the future.

Interestingly, the same lecturers in sample two that admitted a reduced vigilance during exams in trying to detect cheating, also had a respect for the more active lecturers, who were seen as 'hunters' that were courageous and clever at devising new techniques and methods for uncovering cheating. In one particular case, the lecturer claimed that there is a periodical award (or at least recognition) for the lecturer most successful or inventive in discovering cheating. This respect for their peers was coupled with the acknowledgement that this approach was 'not for them'.

Both samples of lecturers considered the social context as a cause of student cheating. The 'degree of cheating's social acceptance' is an illustrative example. The 'strength of external pressures for the continuation of studies' was seen as a social norm or practice to get a degree. In the first sample:

> *"There are too many students here who are not interested in what they are studying. They are studying because their parents asked them to do [it], and so they don't feel motivated to learn. They do not feel that they need what they learn here in the future because they do not want to work in this field" (lecturer5).*
>
> *"...I really don't want to generalise here, because this does not apply to all of them, but with many of the regular [i.e. 'daytime', as opposed*

to distance learning] students I see that this is just how it goes. So they finished high school and then either because this is what they saw at home or because this is what the parents expect or anything, they have to come and graduate this school [i.e. the university]" (lecturer8).

In the second sample, there was a common opinion amongst lecturers that the university had a good and strong reputation in Hungary and beyond. Lecturers saw this as a form of pressure on students to get a diploma from this institution; this being perceived as the key to a successful career. Thus, the high prestige of the degree given by the particular institution increased the fear of failure. This aspect was not held in the first sample amongst lecturers. The fear of failure was connected to the degree of students' self-efficacy (related to learning) as a negative input.

In both samples, lecturers perceived students as consumers, therefore, we categorised 'the strength of the student-as-consumer mind-set' variable as an external effect, because it reflects a changing attitude in the higher educational sector in Hungary in general. There is another overlap for the 'massification of higher education'. Although the general topic of massification is beyond the scope of this study, it affects the institutions from both samples. This particular variable was found as some kind of 'contextual' item that exerts its influence through other intermediate variables.

Both samples highlighted aspects of the assessment and teaching practices. As Figure 2 shows, all the different assessment types (multiple-choice questions, oral exams, home assignments, and essays) were addressed by the lecturers, but with different and sometimes ambiguous effects. Only the oral exams have a clear role: if their proportion would be higher in the overall assessment system, then, according to the lecturers, the level of cheating would be lower. One teacher in the first sample saw the utilisation of multiple-choice questions as something which leads to higher levels of cheating – especially if the questions can be accessed:

"Actually, an all-multiple-choice too, while we are at examinations, I think the type with only multiple choice questions leads rather to how you can cheat, that is… in that case, the thinking goes, how could we obtain the questions… [laughs] complete with answers" (lecturer8).

In contrast, a lecturer from the second sample saw this dilemma from the students' point of view and reflected on the different techniques used for memorising the answers to tests in secondary school. This respondent also saw this activity

as provoking the need for fresh new tests for every examination regardless of the level of the HEI. Furthermore, many of the participants in our second sample rejected the notion of multiple-choice tests and expressed that courses were designed to involve assignments and essays, not to reduce cheating per se, but to equip the student with the necessary skills and abilities for their future careers, as well as to increase interest through practical work and encourage teamwork. However, one particular aspect of the assessment system stood out in the second sample as different from the first, and that was the need for transparency of the marking system, as can be seen in the following excerpt:

> *"[I want] to make the whole grading and other essays quite transparent. Of course, this requires a lot of effort from the teacher as well because if I publicize all the answers and the grading system then my grading should be very transparent and my written feedback should be very clear. ...[By] having a very transparent grading technique and they can read each other's essays, then they might be more aware of what they are doing. And that might raise questions as to why I mark one way or the other. I think if the teachers are just providing a mechanical feedback then it might just increase the possibility of cheating. If I give them real or authentic feedback that really evaluates their performance, and they feel that I actually do read all their essays and I do it for them, then they are more likely to pay attention to their own work than just borrow from others" (lecturer4).*

This aspect of assessment also relates to the level of 'practicality', both in the case of exams and of teaching. In both samples, the higher 'the level of focus on practical problems', the lower the level of cheating will be, according to the lecturers. It is the same with the 'ability of education to captivate students' and the 'level of fairness in assessment (perceived by students)', as we can see in the previous except. In contrast with this, the 'difficulty of passing the subject' and 'the proportion of theory/practice in the course material' raise the level of cheating.

It should be mentioned that there are two variables which have a direct (and positive) effect on cheating: the 'number of people taking the exam' and the 'number of people participating in the course'. Both were mentioned by the lecturers among the dominant causes of the high level of student cheating. The reason for this is that the intake of a high number of students result from

the decisions and the strategy of the given institution, yet at the same time, this practice has the potential to negatively affect teaching and assessment practices.

Certain variables were grouped together as personal and group characteristics of students, such as in the example of greater 'strength of individual disposition towards cheating' and higher 'students' familiarity with institutional/learning environment' being perceived as leading to a higher level of cheating. In contrast with this, raising the variable 'degree of students' self-efficacy', or 'degree of students' intrinsic motivation' is perceived to cause a lower level of cheating, just as a higher 'amount of students' time dedicated to learning' or the 'degree of students' commitment towards gaining knowledge' (these two are connected, too). The 'level of solidarity between students' was classified as a group characteristic, and has a positive effect on the level of cheating, as seen in the following excerpt:

> *"I notice that some people don't cheat themselves but they feel awkward if they don't help others. Perhaps it is a good student and I can see how they arrange themselves for a ZH [midterm written exam] that this person should sit in the middle. (...) This person is a kind of disseminator of information. A nice person and when they ask them I am sure that they could not say no. Because then they are a bad sport. And nobody can afford to be a bad sport" (lecturer6).*

The personal characteristics of the lecturers themselves revealed in the first sample the emotional effects of students' cheating ('degree of lecturers' disappointment' and 'degree of trust towards students'). Earlier in this section, we found that the second sample expressed some insecurity in confronting cheating. Another emotional effect that was mentioned by most of the interviewees in both samples, was that of disappointment in cheating when it occurs, regardless of the perpetrator. One of the interviewees in the first sample puts it this way:

> *"I find [cheating] outrageous at an emotional level, that is for sure. The emotional involvement is more intense in this case. And it is also a bit of a disappointment that (...) the student did not understand why it would be better for her/him if s/he didn't do it that way and would invest some energy instead. Evidently, I also prepare for my classes and I would like to see the result of my investment, namely to see that the student prepares and understands [the material], and not that s/he attempts to gain advantage by cheating" (lecturer2).*

In stark contrast with the majority of the participants from both samples, two participants from the second sample saw some of the cheating students as simply

too clever, or bored with the course, or both. The participants felt a certain degree of understanding that some courses simply provoked cheating – in a similar way to the first sample, where the perceived usefulness of the course related inversely to the level of cheating. Although it is a tall order to satisfy all students with all courses all of the time, we can see again the sympathy and siding with the students in the second sample, as we saw earlier when referring to the complexity of the institution and the notion of the 'suffering student'. Thus, the student is seen more as a victim than a malicious perpetrator that has breached the trust relationship between lecturer and student.

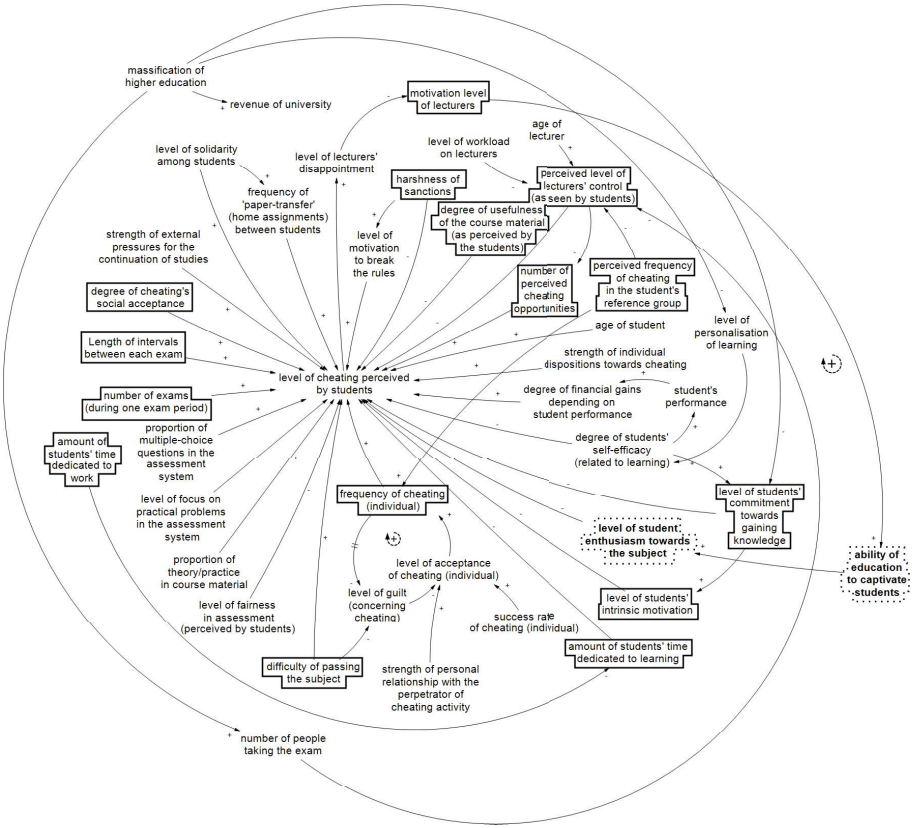
The role of the family was emphasised in new ways in the second sample. Lecturers in sample two agreed that the family might strengthen the external pressure for the continuation of studies, but additionally, more than one of them voiced the opinion that upbringing played a part in how 'morally strong' a student ended up being. We indicated this opinion by adding a new input variable (strength of moral development within the family) to the one concerning the strength of individual dispositions towards cheating.

As for the micro-social causes of cheating, lecturers in sample 2 agreed that the higher the degree of cheating's social acceptance, the more likely it was that a student ended up cheating. They fleshed out this causal mechanism with new elements, though. Some of them explicitly referred to the (perceived) number of peers around a student who cheat (a variable that had existed in the first sample student CLD, and was now added to the lecturer map as well), which stands in a mutually reinforcing relationship with the degree of acceptance, and acts as an exacerbating factor on the level of cheating in itself. One lecturer also talked about a certain 'Robin Hood attitude', that is, the view that disobeying the authority is in fact a morally virtuous thing to do.

Many of the factors discovered before were echoed by respondents in sample 2, although sometimes with new wording. A focus on practical problems (mentioned earlier), the need for students to see the usefulness of learning material, and the need for education to captivate students all received support as important determinants. The importance of personal relationships in education also recurred (with references to its difficulties in the face of mass student bodies). The 'difficulty of passing the subject' was also echoed as a cheating cause, notably not as something that is only perceived by students, but as something that seemingly the lecturers viewed as objectively measurable (i.e. 'the material is

too much', 'the subject is too hard'). Following their suggestions, we made new connections from this variable to the 'level of fairness in assessment (perceived by students)', and to the 'degree of students' self-efficacy (related to learning)'. More respondents mentioned 'laziness' as a cause of cheating, but we did not include this as a new variable, since we believe that it is represented in the CLD by intrinsic motivation and commitment towards gaining knowledge.

A new variable named 'level of student awareness concerning academic integrity' was added to the diagram, since more than one sample 2 respondent voiced the opinion that plagiarism sometimes occurred because students (and even officials) were unsure about its boundaries. This awareness, they



Source: authors' own design

Figure 2. Causal loop diagram based on student interviews

said, could be raised via open discussions about university values (involving students).

As mentioned in the methodology section, the use of CLDs may lead to the emergence of feedback loops. It was found that an increased 'level of cheating' leads to a lower 'degree of trust towards students'. This moves the 'level of willingness to control by lecturers' in the reverse direction, i.e. it will rise (further). This, in turn, leads to a higher 'actual level of lecturers' control', with the consequence of a lower 'level of cheating'. Hence, this is a self-restraining loop, which will mitigate the effect of the starting variable (here, the level of cheating). Another self-restraining loop was found: the 'actual level of lecturers' control' has a positive effect on the 'perceived level of lecturers' control' (as seen by students), which will decrease the 'level of cheating'.

Students' map: comparison

Student interviewees from sample 2, if investigated alone, would have produced a less rich causal map than the students from sample 1. However, their opinions overlapped on many important areas. As in the previous figure, the variables boxed by solid lines are overlaps (mentioned by both samples), and the variables shown in bold, surrounded by dotted lines, are new additions (mentioned only by members of the second sample).

Similar to the teachers, students from sample 2 did not concern themselves as seriously with exam details (e.g. theory/practice, essay/multiple-choice) as those from sample 1; instead, they focused on the workload level. Many of them mentioned the high 'number of exams (during one exam period)' as an exacerbating factor, which, along with the 'difficulty of passing the subject', also cited frequently, was a primary perceived cause of student cheating.

While not being too concerned with exams, students from sample 2 voiced expectations towards the style of education. They thought that boring and uninteresting subjects, which they simply did not like, will induce a higher level of cheating. The importance of seeing the usefulness of learning material was also echoed from sample 1 responses. Clearly, sample 2 respondents expected their teachers to provide them a good learning experience, which we represented with the variable that had previously existed on the lecturers' map ('ability of education to captivate students'). One respondent also linked this to the motivation level of lecturers (which needed to increase in order to cater for the aforementioned expectations).

Interestingly, work as a causal factor was again mentioned by only one respondent, as was the role that individual disposition could play. As with teachers, we again considered 'laziness' to be incorporated in the level of intrinsic motivation, and therefore did not include it as a new variable.

In turn, cheating simply being "easy" was a cause that all sample 2 respondents mentioned. We believed that this was sufficiently represented on the chart by the variable 'perceived level of lecturers' control (as seen by students)'. Many of the sample 2 interviewees also explicitly mentioned that sanctions were negligible, and that they expected cheating to decline if these became harsher.

Social factors also received support from sample 2 students. Many of them agreed that the perceived frequency of cheating in the student's reference group will increase the likelihood of the individual cheating. The variable 'degree of cheating's social acceptance' received support in the form of references to the macro-social environment and Hungarian culture. Some students said that cheating's social acceptance was in fact high, and some referred to corruption in politics.

Discussion

As one could read in the literature review section, it is undecided whether rules and policing could help to deal with student cheating at an organisational level. Ariely's experimental studies demonstrated that the possibility of getting caught has no clear connection to the cheating behaviour (Ariely 2012), while an effective communication of ethical behaviour might lead to positive outcomes (e.g. Gallant–Drinan 2006). Nevertheless, in our research, interviewees emphasised the issue of control and supervision. On the students' causal loop diagram, we could see that there is a perceived connection between lecturers' control and the cheating opportunities. In a similar fashion, students assumed that there is a causal connection between the number of people taking the exam and the incidents of cheating since invigilating is more difficult under these circumstances, which again leads to opportunities for cheating.

Another important aspect was the element of trust. As it was mentioned in the literature review section of this paper, too much emphasis on control and policing might create an atmosphere of mistrust. On the diagram based on teacher interviews, this connection is actually reversed, that is, the teachers' willingness to control is connected to the degree of trust towards students.

However, there are two other factors on the diagram related to cheating: the actual level of (lecturers') control as a consequence of the willingness to control and the students' perceived level of lecturers' control. This distinction provides an interesting twist to the whole situation since, according to the lecturers, it is not the actual level of control which urges students to cheat but the level of control perceived by the students. This means that lecturers have to keep a precarious balance between playing the role of the bad cop while maintaining good relationships with the students. That is why aversion to conflict in policing situations might have a mitigation effect on the willingness to control. Apart from these aspects and attributions, it is worth mentioning that while according to our literature review the rules and policing aspects are relatively under-researched and the related findings are inconclusive, it seems that the issue of control is highly important for Hungarian lecturers.

Studies such as Gallant and Drinan (2006) and Jordan (2001) also indicated that permissive systems and a lack of strict rules and sanctions were reasons for student cheating. Our findings confirm this institutional aspect of controlling cheating, but also on the personal level, the level of control is a particularly thought-provoking issue. Our lecturers' CLD indicated a complex attribution relating to lecturers' control. It seems that it is not enough to have strict rules, policies and sanctions alone, as this also puts the burden on the lecturer to prove that the student is guilty of cheating. Our findings indicate that this burden may push lecturers to shy away from detecting cheating in exams. Furthermore, the lecturers' perception of support by the institution when cheating is detected affects their willingness to detect cheating (willingness to control). On an institutional level, this indicates a need not only for communication of policies, but also that full support must be clearly communicated to the lecturers.

The literature found that there were two controversial characteristics for students who engaged in cheating behaviour: age and gender. In our first sample we found that lecturers did not mention age as affecting the level of cheating, whereas the students did. In the second sample, no mention of age was made. This may be due to our sample being based upon accessibility and likely openness rather than a pure cross-sectional sample of students. Had we targeted a wide range of younger and older students then the differences in cheating at different ages might have been more apparent. Gender in relation to cheating was not raised as an issue in either groups (students and lecturers) from the two samples.

Our literature review found three categories behind the reasons for cheating: personal, situational and cultural. The latter indicates differences across cultures in the literature. This begs the question of whether our findings merely confirm the norms, values and beliefs that are characteristic of Hungarian culture and, for lecturers, there may be aspects of both organisational and national culture at play. In our second sample, the students specifically referred to aspects of Hungarian life that relate to cheating. They seemed to have a greater awareness of the goings-on relating to scandals involving dishonesty in various forms. We could not attribute this as a causal factor for cheating, but it certainly indicated a distinction between the two institutions in our samples, as well as potentially affecting the respondents' perception of the 'social acceptability of cheating'.

The papers of Orosz and Farkas (2011) and of Orosz, Farkas and Roland-Lévy (2013) emphasise that the perceived level of corruption of a given country and the level of collaboration in cheating are strongly related. This connection is even more worrying if we consider that norm-breaking behaviours seem to be tolerated among Hungarians, at least at attitude level. According to the survey results, an overwhelming majority agree with statements such as ''honest work cannot lead to material wealth'' (82%) or that ''if one wants to thrive s/he has to break certain rules'' (75%) (Tóth 2009). International data also support this grim outlook. Both active and passive forms of corruption are more widely accepted as part of life in Hungary (and in other CEE states) than in the rest of Europe (Tóth 2009). Moreover, in an international comparison (World Value Survey) Hungarians are especially prone to seeing economic life as a zero-sum game and being sceptical that economic cooperation can lead to mutual benefits (Tóth 2009). In line with these phenomena, one striking aspect in the interviews was the students' underdeveloped sense of responsibility towards their actions. It was a dominant theme that they depicted themselves as 'victims of circumstances' shifting the blame on situational and organisational aspects (see situational factors on the students' CLD) and refusing to see cheating as serious offence.

It might be argued that this is an attribute of a particular generation, as for example Black et al. (2013) emphasise that millennials can be characterised by a lack of personal accountability. In a similar fashion, Ságvári (2010) pointed to the fact that youth in Hungary accepts norm-breaking behaviour more readily than other parts of the society in general. Simultaneously, they also perceive Hungarian life more immoral than the rest of the society does. Nevertheless,

Csepeli and Prazsák (2011) do not relate this inability to take responsibility to one segment of the Hungarian society. According to them, the proportion of those who only passively suffer what happens to them and feel unable to shape their lives (hence their label 'passives' in contrast to 'actives' or 'rebels') is one of the highest in Europe. So, it is still inconclusive whether the lack of responsibility can be attributed to a cohort effect or to cultural and historical factors, or maybe to their interaction.

One particular aspect of our CLDs that came across in both samples, but to differing extents, was the willingness to control. From an organisational cultural perspective, control and stability relate to the hierarchical culture type (Cameron–Quinn 2011), which is characteristic of higher education institutions in general (Trivellas–Dargenidou 2009), and the organisation of the first sample in particular was found to have a hierarchical culture (Heidrich–Chandler 2015). This seems to indicate a need for tight control, and conversely, the absence thereof may be perceived as a certain degree of weakness, leading to the perceived opportunity to cheat by the students and a correspondingly perceived lack of sufficient support by the lecturers.

From a national cultural perspective, Varga (2008) highlights Hungary's uncertainty avoidance. This need for a sense of security may be the cause behind the sympathy shown by lecturers in the second sample for 'the suffering student', lost in a complex network of rules and requirements that may vary from one department to another. Thus, lecturers empathise with the lack of security felt by students and are thereby less willing to control cheating. From a students' perspective, cheating may be seen as satisfying a need for a sense of security or a crutch when feeling the pressure of potentially losing the diploma and all the consequences that follow that failure. Some recent studies have already started to examine the link between aspects of national culture and cheating (Frijns et al. 2008).

Conclusions, limitations and future research directions

By comparing the perceived causes and effects of cheating in two higher education institutions in Hungary, we have found a number of common causal factors. However, despite having similar samples from similar organisations, differences were found. It could be argued that each sample from each institution may uncover a range of differing variables and therefore, a case study approach is the best option here, in the same way that many studies of organisational culture are also undertaken. Certainly, the commonalities will be considered for the

development of a quantitative instrument by which our study can be undertaken on a much larger scale.

If HEIs sincerely wish to reduce cheating, then we have found a number of recommendations that may help in fulfilling this desire, based upon our two samples. Firstly, support for lecturers in cases of cheating should be clearly communicated and credible. Otherwise a HEI may have all the rules and policies it wishes, but the lecturers seem unlikely to act without clear and substantial support. Secondly, many business students reported the difficulties with imposed deadlines that may have provoked the need to cheat. This does not concern one particular course, but rather several courses from different departments which have deadlines that coincide. Liaising between departments or even a shared online system for setting deadlines for assignments might be a means to reducing the lack of coordination between courses and thereby reducing the pressure upon students. In relation to this, further co-ordination between departments to have general rules for students rather than each department having its own set of rules may reduce the likelihood of the student 'getting lost in the big institution' as well as reduce the lecturer's perceptions of the 'suffering student'. This, in turn, may lead to students feeling less insecure (lower uncertainty) and lecturers feeling more willing to control for cheating in exams. Thus, from both the lecturers' and teachers' perspectives, there is a potential reduction in cheating.

For our samples, we did not specifically target a certain age range of students, but since age was a controversial factor in previous studies regarding whether it had an impact upon the level of cheating or not, a possible future direction may be to compare the perceptions of first and final year students. Furthermore, bearing in mind the national cultural characteristics, and the emergence of studies relating dishonesty to national culture, there is the potential for a cross cultural comparison on cheating habits involving students and lecturers from other countries.

Our use of the CLDs acts as a visual aid for seeing all the causal factors relating to cheating and their apparent relations to one another. The method could be embellished with weightings for each factor in relation to others, based upon the number of responses received for each variable, and this may be a future direction for our study once a quantitative instrument is developed.

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What's next? In search of monetary policy objectives and toolset after the crisis

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The 2008 crisis forced central bankers and the representatives of academia to reassess the prevailing consensus on the theory and practice of monetary policy. In an effort to mitigate the financial market and macroeconomic impacts of the crisis the central bank measures provided an additional incentive. This paper summarises opinions on core questions regarding the objectives and unconventional tools of monetary policy and offers our own conclusions. We first examine the opportunities and the necessity of altering the objectives of monetary policy. We conclude that there is no recommendable alternative to the current inflation targeting regime that could more effectively foster growth and social welfare. We also look at the unconventional monetary tools applied in recent years and their potential impact. Taking into consideration their degree of success in managing the crisis, the fact that quantitative easing has determined central bank balance sheets in the long term, and that a low interest rate environment is likely to persist, we believe that applying them when needed, will not rule out the efficient use of traditional tools in normal times, so their consecutive use is a realistic opportunity going forward.

Keywords: monetary policy, unconventional monetary tools, price stability, financial stability.

JEL codes: E52, E58, E61.

Introduction

Prior to the 2008 crisis, monetary policy in the developed world was simple in the sense that its role, basic objective and toolset were based on broad consensus spanning academia, markets and economic policymakers. The macroeconomic results justified all of the above: price stability and more stable business cycles confirmed the adequacy of monetary policy thinking. However, the crisis created such challenges for monetary policy that theoretical researchers, central bankers and economic policymakers were forced to revise the earlier comfortable consensus.

The aim of this article is to summarise the questions regarding the objectives and the applied tools that may be decisive in terms of the future of monetary

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policy. We present the often conflicting views and opinions on the main issues along three topics.

We first summarise the initiatives to revise monetary policy objectives. Some of these, such as Blanchard et al. (2010), address the advantages and drawbacks of raising the current 2 percent price stability objective. Other researches offer recommendations for amending the policy rule or the introduction of alternative objectives such as price level or nominal GDP level or path. Theoretically, these would allow for more efficient monetary policy for the central bank at the zero lower bound (ZLB); however, they are fairly uncertain in shaping and anchoring expectations. As neither theory has clearly shown that alternative objectives perform better in the longer term than the current mainstream regime, nor is there sufficient practical experience, central bankers are understandably reluctant to bring about such a change in objectives.

After revising the objectives, we address the use of unconventional tools, the related debates and their long-term consequences on the central bank's operation. When categorising the different tools, our premise was that restoring financial market stability was the priority for central banks at the beginning of the crisis, while creating macroeconomic stability, avoiding deflation and recovering from recession became priorities later on. We analysed emergency liquidity providing programmes in the context of the former and looked at quantitative easing (QE), negative interest rates and forward guidance in the context of the latter. As the latter tools were essentially applied simultaneously, leveraging their mutually reinforcing effect, it is difficult to gauge their individual success and they should rather be assessed collectively.

Despite some scepticism, a broad consensus has emerged that unconventional tools have proven successful at the ZLB and have been successfully applied by central banks to reduce long-term interest rates, ease financing constraints and have a positive impact on the real economy, resulting in faster and more robust recovery from the shock of the crisis. The success does not, however, mean that unconventional tools can serve as adequate additions or perhaps alternatives to traditional tools under normal circumstances, since their long-term impact is surrounded by many unanswered questions. The degree to which unconventional tools distort markets is uncertain, and whether market instability or potential bubbles emerge during the normalisation is questioned. The costs and effectiveness of preserving price stability alongside a largely increased monetary

base, the horizon required for implementing the exit from QE and the apparent central bank losses during the exit also will entail risks. But given that they have formed an important part of the central bank practice for nearly a decade now and that their phasing out will presumably be a long process, while the low interest rate environment remains, we have concluded that the long-term use of unconventional tools is warranted based on a comparison of opinions for and against their use.

Consensus on monetary policy objectives prior to the crisis

Goodfriend and King (1997) and Woodford (2009) summarised the theoretical synthesis achieved before the financial crisis of the monetary policy objective, and of its main institutional issues. Based on these papers, the primary objective of monetary policy is to stabilise inflation at a level close to zero, but still in the positive range. Monetary policy is able to foster growth and welfare in a sustainable manner by guaranteeing price stability in this sense. Although monetary policy is capable of influencing aggregate demand and is therefore an effective economic policy tool, it is only capable of achieving trade-off between output and inflation meaningfully in the short run. Monetary policy is able to indirectly offset demand side shocks and thus to keep the economy close to optimal output levels while also stabilising prices. In case of supply-side changes, it smoothes adjustment to shocks. Therefore, it is only in this strict sense that the monetary policy proposed by the synthesis is an activist policy, its objective is strictly limited in line with the above: the reduction of the volatility of output while ensuring price stability.

Mishkin (2011) and Stark (2010) analysed, amongst others, the consensus on central bank operation. In line with the theory, the proper forming of expectations is pivotal to achieving the inflation target, so achieving and maintaining central bank credibility is a crucial element of modern monetary policy. This has several consequences: the monetary policy fundamentally follows rules and allows only for constrained discretion, and the independent and broadly transparent central bank operation has become the norm, which builds largely on the use of macroeconomic models. The term “constrained discretion” is introduced by Mishkin and Bernanke (1997) and it means that the central bank has some flexibility to pursue objectives other than price stability such as reduce unemployment in the short term.

In the context of the institutional development of monetary policy, inflation targeting became the predominant regime by the 2000s, and there are currently 28 national central banks conducting inflation targeting-based monetary policies (Felcser et al. 2016). At the same time, not all major central banks defined an explicit quantified nominal anchor or used inflation targeting exclusively. In fact, the Federal Reserve (Fed) did not define an explicit quantified inflation target until early 2012. However, under the chairmanship of Alan Greenspan, the Fed successfully held inflation at low for a long time. The central bank prevented a rise in inflation by using a broad macrodata-based analysis, and by applying forward-looking measures (Goodfriend 2004). Although the European Central Bank's (ECB) monetary policy does have an explicit target, it is not inflation targeting either. Issing (2008), the ECB's former chief economist, mentioned two main explanatory reasons. First, due to the heterogeneity of the Member States, there is no macroeconomic model to forecast an inflation rate applicable to the entire euro area that would be required for inflation targeting. Second, alongside the macroeconomic analysis that shapes inflation in the short to medium-term, the ECB – inspired by the German example – also takes into account trends in monetary aggregates. As the correlation between the latter and the long-term inflation trends can be considered obvious, they form another pillar of the ECB's monetary policy.

Although advanced central bank regimes differ in practice, they nevertheless converged towards some form (explicit or implicit) of flexible inflation targeting, in line with the advice derived from the theory.

Reformulating the monetary policy objectives

The magnitude of the crisis fundamentally shook the traditional framework of monetary policy. Although central banks successfully alleviated the panic that ensued after the crisis by using emergency liquidity-providing instruments, their usual toolset proved insufficient to implement further easing, offset deflationary pressure and stimulate demand. Once the zero lower bound was reached, the monetary policy lost its traditional room for manoeuvre.

Two factors formed the basis of the debate on monetary policy objectives that emerged. First, the likelihood of monetary policy ending up in the liquidity trap of the ZLB should be reduced. Second, the revision of the objectives is not impossible either, in order to ensure that monetary policy remains an effective

economic policy tool even in the case of a liquidity trap. The impact of the crisis on the real economy was so strong that it even called into question the reconsideration of the earlier consensus. Central banks thus have to face social and political expectations that require effective action and support from monetary policy to the government's economic policy. It is natural and legitimate for central banks to regard this issue while keeping their independence unquestionable as a basic principle, but this cannot be an argument for refusing the debate on a possible alteration of the objectives.

Recalibrating the price stability objective is one possibility in terms of objectives. The central banks of advanced economies have consensually agreed to 2% as the medium-term inflation target. This target, on the one hand, takes into consideration the fact that the indicators used for measuring inflation slightly overstate actual inflation, and on the other hand, it also appears to provide a sufficient buffer for monetary policy to avert the risk of deflation. With regard to the former, price stability is associated with an inflation rate of around 1% as measured by the consumer price index (CPI) (Billi–Kahn 2008). With regard to the latter, the question is how often, to what degree and for how long does monetary policy using various targets comes up against the limits of the ZLB, in other words, how often, to what extent and for how long does the Taylor rule imply a negative central bank interest rate.

Empirical analyses are sensitive to input parameters, such as the period under review, the equilibrium real interest rate and the policy rule. Williams (2009) demonstrated that with a 2% inflation target, the ZLB presents constraints to monetary policy more frequently than previously assumed in the broadly accepted Reifschneider and Williams (2000) paper, where the ZLB constraint only seemed significant if inflation was 1% or lower. Based on this new result, a higher macroeconomic cost might be estimated due to greater output volatility and more frequent severe economic downturns. The current crisis confirmed that the ZLB remains a constraint for far longer than assumed earlier, the downturn may be severe and the threat of deflation may persist enduringly. This is why the IMF's chief economist speculated whether raising the inflation target to 4% yielded greater benefits than the cost of higher inflation (Blanchard et al. 2010), and in particular, whether the frequency of periods entailing severe downturns could be reduced by increasing the inflation target.

Krugman (2014) also stressed that euro area countries facing a debt problem were compelled to carry out a significant internal devaluation in an effort to

realign their balance of payments, which resulted in persistent depression in these countries. This will be a long process given the current inflation target and will exert a lasting negative effect not only on countries compelled to perform stabilization, but also on the entire Eurozone economy via spillover effects. However, the necessary adjustment in external balances currently and in potential future cases may be faster and easier alongside a higher inflation target: a higher, 3-4 percent inflation target would have a smoothing effect on the entire euro area economy.

However, the issue of raising the inflation target has divided economists. A 4% inflation target cannot be regarded as price stability; therefore, inevitable costs – such as growing losses from relative price distortions or losses stemming from the depreciation of money holdings – must be acknowledged even in the case of firmly anchored expectations. Amongst others, Mishkin (2011) claims that the greatest risk is that raising the inflation target will render the anchoring of expectations more difficult and increase the costs of keeping inflation under control. In the comment on Williams' results, Woodford stresses (see Williams 2009. 38–45) that changing the policy rule[3] may be a better option instead of raising the inflation target, because the stabilisation outcome of the latter is uncertain, depending on the input parameters mentioned in the previous paragraph.

This suggestion, however, is an even more sensitive area than modifying the inflation target. As mentioned earlier, the credible monetary decision-making, that fundamentally follows rules and allows only for constrained discretion, is supported by general consensus. Obviously, this does not mean mechanical and slavish compliance with a specific rule. The rule provides an information element for decision-making, a sort of reference for economic agents on the current stance of monetary policy. As shaping expectations is pivotal for the success of monetary policy, central banker discretion, that is, the room for diverging from the rule, is constrained in order to preserve credibility. For this reason, the rule must be simple and stable because of its role in shaping expectations. Any potential alternative rules must both comply with all of these criteria and meet the aforementioned requirements: they have to decrease the likelihood of a ZLB trap, while providing greater opportunity for taking into consideration economic growth at the ZLB

[3] The Taylor rule is the most widely known form of the classical rule, which defines the applicable interest rate as a function of the deviation of inflation from the target and the output gap.

compared to the inflation targeting framework. Meanwhile, we must not forget that monetary policy is incapable of increasing economic growth in the long run.

In view of all this, history dependent strategies have been proposed for formulating possible alternative rules. While the inflation targeting framework has a forward-looking manner and defines the central bank policy based on macroeconomic models and knowledge that forecast expected inflation trends, the history dependent rules also consider the deviation of current and recent inflation trends from the target. One such possible rule is price level targeting, which defines the inflation target dynamically. For example, a 2% inflation target is a long-term reference target (to be achieved as a long-term average) in the context of price level targeting. This means that in the event of a shock such as the one triggered by the current crisis, when the economy is facing a period of deflation or near-deflation, the price level targeting rule requires the central bank to achieve a period of temporarily higher inflation. The average above-target inflation can be allowed until the price level returns to the value corresponding to the 2 percent long-term inflation trend through a temporarily higher rate. Such a rule offers far greater room for monetary policy at the ZLB, as it will not be restrained prematurely by rising inflation. As a result of this, the central bank can maintain an accommodating monetary policy stance for a provisionally longer period despite growing inflation. This, in turn, increases the effectiveness of the tools applied through the expectation channel and for this reason, allows for faster recovery from a situation threatened by deflation.

However, besides the advantage at the ZLB, the extent to which such a rule can anchor inflation expectations is generally questionable. Applying the rule in the short run allows for greater inflation volatility, which not only contradicts the original macroeconomic objective, i.e. taking advantage of the benefits of smoother cycles, but also may lead to some uncertainty of expectations. Although the benefits of the regime over inflation targeting would stem precisely from the long-term stabilisation of inflation (i.e. Svensson 1999), the essence of this, whether it is able to anchor expectations accordingly, is uncertain. However, in the event of negative supply shocks, the drawbacks of the regime are clear. In such scenarios, the rule would require stronger tightening compared to inflation targeting, resulting in greater macroeconomic loss. The pace of returning to the long-term inflation trend in the case of a major inflation shock would also be a

general issue. Defining temporary deflation or protracted close to zero inflation as a target would obviously come up against serious obstacles.

Another history dependent rule, the nominal GDP targeting, would partially offset such drawbacks. In essence, this would consist of using the deviation from the economy's long-term growth path and from a nominal GDP level associated with low inflation as guidance for monetary policy decision-making. If the nominal GDP surpasses the value associated with the potential path as a result of growth, monetary policy will remain tight as long as the overheating persists. The reverse would hold true for values below the benchmark. Similarly to the history dependent rule discussed earlier, in the context of recovering from the ZLB trap, the inflation rising above the target does not, in and of itself, restrict the central bank; in other words, it can maintain accommodative conditions without any credibility loss until the economy recovers. Contrary to price level targeting, the paradox caused by supply shocks does not apply. The central bank is not constrained to tighten the monetary conditions since inflation and the GDP develop in opposite direction of each other in such a case; in other words, neither tightening nor applying an escape clause – the exception of diverging from the rule and its explanation – by central bank is required.

At the same time, many counter-arguments can be brought against the nominal GDP target rule. The first thing to mention is the higher uncertainty of anchoring expectations. The HM Treasury (2013) paper identifies several causes in this respect. First, the rule does not explicitly state anything separately about the quantified value of inflation and growth. As developments in nominal GDP depend on real GDP and inflation, the distribution between the two may vary during any given period; i.e. it can fluctuate from time to time. In addition, developments in nominal GDP depend on the GDP deflator instead of headline consumer price inflation that economic agents are used to, and these two indicators are quite different even if their values tend to move in the same direction. All of this results in uncertain developments in expectations.

Another issue is that the GDP data are published later in time, at a lower frequency and with greater inaccuracy than inflation figures, so monitoring them is also more difficult and would increase the reaction time of monetary policy even further; in other words, increase the inside lag. Csermely and Tóth (2013) stress that the estimation of potential output is, in and of itself, more inaccurate, so its direct implication in the target variable creates further uncertainty. The

flawed estimation of equilibrium growth leads to either more accommodative or tighter monetary policy based on the direction of the error, and accordingly, to the overheating of long-term inflation or its excessively low value, and risk of ZLB. This may be further exacerbated if the long-term growth rate changed in the wake of a permanent supply shock, because in this case, the central bank should change the nominal GDP target or, in its absence, the benchmark inflation rate would adjust automatically. For instance, if the potential growth rate slows in the wake of such a shock, the implicit inflation rate will increase by the same degree in the absence of any amendment to the rule.

The IMF paper (2013) considers forward guidance as more promising compared to history dependent strategies. The forward guidance ties maintaining an accommodating monetary policy or the central bank commitment to such a monetary policy to a specific time horizon or until a certain economic threshold value (such as the unemployment rate) is achieved, and thus guiding expectations. At the same time, Woodford (2013) demonstrates that the right history dependent strategy (i.e. targeting a nominal GDP level) does not contradict the medium-term inflation target, nor does it require any significant change in central banks' current post-crisis strategy. According to Woodford, applying the nominal GDP rule while maintaining the long term inflation target value would underpin more credibly and effectively the central bank's short-term decisions than the practice of forward guidance during a post-crisis period. The credibility risk would be a real risk for central banks if they tied the current developments in monetary policy to a real economic variable that cannot be influenced in the long run. We address the questions of forward guidance in detail in the section on tools.

We may conclude that the revival of debates surrounding alternative objectives was basically generated by the experiences drawn from the ZLB. The monetary policy frameworks applied by leading central banks conducting explicit or implicit inflation targeting policies and their efforts to avoid losing credibility restricts a more efficient management of the crisis consequences. The situation is essentially characterised by a paradox: if the central bank is credible, the market believes that the central bank will increase interest rates in accordance with the framework when there is inflation, whereas the central bank's interest would be for the market to believe that this will not take place for a while.

The circumstances required and continued to require the persistent maintenance of easy monetary policy while inflation expectations are kept low by

the monetary regime and its fundamental element, the central bank commitment to low inflation. Meanwhile, there is great pressure on central banks to contribute as much as they can to improving growth prospects.

Monetary policy can set off aggregate demand shocks in the short term, but it is unable to hasten growth in the long term. On the one hand, the unconventional measures applied by central banks after the crisis open room for manoeuvre for fiscal policy by reducing financing costs and relaxing budget constraints of the government. However, governments should use this support coming from monetary policy to carry out necessary structural reforms, which can promote economic growth in the long term. On the other hand, the fiscal stance influences the effectiveness of monetary policy, as well. An early fiscal consolidation after the crises may weaken the accommodative measures of the central bank.

History dependent alternative objectives would indeed assist central banks in conducting more effective monetary policies at the ZLB. By weighing their benefits and drawbacks, these objectives would provide in such situations a better monetary policy framework than inflation targeting. Nevertheless, the greatest weakness of history dependent strategies is that they are uncertain in terms of how well they shape expectations; that is, specifically in the area where the current regime has been particularly successful, namely in having anchored inflation expectations at a persistently low level.

As neither theory has shown clearly that alternative objectives perform better in the longer term than the current mainstream regime, nor is there sufficient practical experience, central bankers are understandably reluctant to bring about such a change in objectives. For example, with regard to price level targeting, the Bank of Canada arrived at the conclusion that a change in regime could be beneficial in terms of long-term price stability and short-term macroeconomic stability compared to inflation targeting, but the risks stemming from the uncertain impact on expectations and potential credibility losses by the central bank would be too high compared to the potential benefits (Bank of Canada 2011).

Finally, the changing role of central bank in financial stability also may alter the consensus on objectives. It is widely agreed that financial stability must be treated as a priority; but questions about the form in which this should be achieved remain open: integrated directly into or separately from the monetary policy decision-making. The first approach is the so-called "leaning against the wind"

(LATW). The essence of this policy is that the central bank plays an active role in preventing and managing market turmoil by taking into account the financial cycles in decision-making, which often consists of leaning against the wind of markets.[4] The latter approach, in the form of the so-called "modified Jackson Hole consensus" seems to be gaining more ground now.

Before the crisis, the central banks' views on asset price bubbles as a cause of financial instability were based on the Jackson Hole consensus reflecting the American approach that emerged during the Greenspan era. According to this approach, while asset price developments serve as an important indicator for monetary policy, central banks only intervene in market processes if these affect the inflation target. Accordingly, the main task of central banks was limited to restoring order after asset price bubbles burst, in the course of which they provided the liquidity necessary for market clean-up.

Within the framework of the modified Jackson Hole consensus, the price stability objective is the mandate of monetary policy while financial stability is the mandate of macroprudential policy. At present, the financial stability mandate is predominantly within the competence of supervisory authorities, managed independently from monetary policy, and it is not explicitly integrated into the central bank's decision-making process (even if these authorities themselves have been recently integrated into central banks in many countries). In this context, macroprudential supervision emerged alongside the reinforcement of traditional supervision, between monetary policy and microprudential supervision. The implementation of the modified Jackson Hole consensus also means that in terms of financial stability, the role of monetary authorities remains broadly unchanged while the supervisory and regulatory frameworks are to be radically transformed.

Although the implementation of this framework has already been under way, questions abound regarding the use of macroprudential tools. Practical experience in the future regarding the success of macroprudential regulation and its proper cooperation with monetary policy and the theoretical development of the LATW may finally answer the question on how the financial stability will be secured. As a result, the objectives of monetary policy may be amended.

[4] For instance, in case of an excessive credit outflow and asset price increase, the central bank keeps the interest rate higher than required by the conventional objective.

Changes in central bank instruments

Traditional central bank instruments include open market operations, the standing facility and minimum required reserves. According to the conventional practice that emerged prior to the crisis, central banks influenced the short term, typically between O/N and two-week maturity yields on the money market – in particular, the interbank market – mainly through deals with commercial banks, that are institutions subject to minimum reserve requirements through open market operations. The central bank's operative objective was to influence short-term money market yields through the key policy rate. The focus on a short term horizon stems from two factors. For one, influencing such short-term yields leaves far less room for speculation in the money market before interest rate decisions. In addition, the response of short-term interest rates to the central bank action exerts an impact on the entire yield curve. Assuming that the central bank's step is consistent with the inflation target, movements in nominal long term rates alters the forward-looking long-term real interest rates, and thus the central bank has an impact on the real economy through the monetary policy transmission.

Central banks also smooth money market volatility in a passive manner by using the standing facility, alongside open market operations. One form would be the overnight interest rate corridor, while another classic type is the solely credit-side, marginal lending facility. The O/N corridor borders serve as mitigating limits on the money market rates, because banks may deposit their excess reserves in the central bank at the rate of the lower edge and borrow reserves from the central bank – providing eligible assets as collateral – at the rate of the higher edge of the corridor. However, the latter type of standing facility (such as the discount window lending of the FED) allows the bank only to borrow reserves at the rate above the main rate. Thus, this kind of instrument sets up only an upper limit on the money market rates.

The reserve requirement is the third element within the traditional central bank toolset. Changing the rate, however, is rare in the developed monetary systems. The role of the reserve requirement, similarly to the standing facility, is to foster financial stability and boost the efficiency of the central bank's interest rate policy.

The central bank action that does not fit into the above conventional practice is broadly referred to as unconventional (Pál 2013). This includes cases where the central bank implements radical changes in its traditional tools and/or uses

them to an extraordinary extent, or applies non-operative tools in an operative manner; applies innovative tools with an effect that departs from conventional logic; extends its corresponding operations beyond conventional market agents and markets; defines unconventional operative or intermediate objectives; and substantially alters its communication.

Bernanke and Reinhart (2004) identify the grounds for and the nature of using unconventional tools as a possible alternative to a monetary policy framework when, hitting the ZLB, the central bank cannot take action against deflation by cutting the current short-term interest rate. Smaghi (2009) considers the use of unconventional tools warranted even above zero interest rates if the monetary policy transmission is not functioning correctly due to market turmoil. The IMF (2013) paper adds the restoration of the financial market operation when faced with a severe crisis as another scenario would be to warrant the unconventional central bank action, in the context of which the central bank provides sufficient liquidity for market players as lender of last resort and also intervenes directly on distressed markets.

If we add to this the experience during the crisis, two factors warranting the unconventional monetary measures can be identified. The first is the financial market crisis, which carries the threat of undermining financial intermediation and/or causing sustained or serious damage to monetary policy transmission, jeopardising the objectives of monetary policy. The second is the shock affecting the real economy (not exclusively, but in this case specifically in the wake of the financial market crisis) which is of such an extent that the central bank comes up against the ZLB. Addressing the shock requires further monetary easing, but the ZLB prevents any further central bank rate cuts. While the possibility and limits of negative interest rates are addressed later in this paper, they should be considered as an unconventional measure in any event, and the ZLB is mentioned here as a common reason for applying unconventional tools.

Under financial stress, central banks mop up turmoil in the role of lender of last resort by extending the conventional tools; in other words, by providing abundant liquidity and maintaining accommodative conditions. However, the financial crisis that first signed in 2007 jeopardised financial stability and central bank objectives to an unprecedented degree. It quickly became clear that the collapse of financial intermediation could not be averted by merely extending the conventional tools at an early stage. In their unconventional role, central banks focused on the market

segments, whose functioning was critical for financial intermediation. First, they expanded their role of lender of last resort beyond the traditional banking system to also a part of the shadow banking system. In addition, central banks temporarily replaced the market through direct intervention until poorly functioning segments recovered. In some cases, this took on the form of purchasing – or accepting as collateral – toxic or less liquid assets, which in the past were not regarded to be eligible assets. In addition, they also encouraged market players to purchase such assets through dedicated refinancing and the partial takeover of risk.

Central banks initially attempted to make an impact by cutting interest rates and adjusting conventional tools in terms of their conditions and volume. In the US these measures included a significant expansion of the standing facility in late 2007 with the introduction of the Term Auction Facility (TAF), which provided direct and abundant liquidity to the banking system. Contrary to the traditional facility of Discount Window Lending, the TAF auctioned liquidity to banks without charging a premium and without having a punitive mark; and the volume of this liquidity operation exceeded by far the amount drawn down by the banks under the DWL during the crisis. The ECB provided additional liquidity to banks through its fine-tuning operations in an effort to appease the money market turmoil while also increasing the proportion of its longer-term facilities within its total allotment of liquidity and increasing the amount of liquidity provided during the first half of the reserve maintenance period, thereby reducing the likelihood of tensions emerging at the end of the period.

Until the collapse of Lehmann Brothers, these tools did not entail any substantial increase in the central bank balance sheet. After the collapse however, the additional liquidity supplied by central banks spiked and so did their balance sheet total, and tools targeted at non-bank market segments and agents stepped into the focus of the central banks' operations.

The general crisis of confidence dries out liquidity and prevents market players from accessing funding. The flight to quality places pressure on risky assets, leads to outflow of funds, and limits refinancing opportunities at the intermediaries and investors. This spurs market players to make fire sales, triggering further price falls and the freezing up of markets. The halt in market lending due to the need to cover losses and due to counterparty and asset quality uncertainty leads to liquidity hoarding. The process becomes self-reinforcing, with the depletion of market agents' liquidity due to investor panic, which pushes them to the brink of

bankruptcy and leads to the emergence of irrational risk and liquidity premiums on markets.

From September 2008, central banks supplied ample liquidity to markets in order to meet increased demands and extended targeted funds to specific segments in an effort to normalise market processes and prices. The IMF (2013) features a classification of central banks steps according to which they attempted to prevent investor panic and the meltdown of trust by aggressively providing targeted liquidity while attempting to stop negative market spirals in the wake of fire sales using targeted asset purchases. Partially building on this approach, there is also an objective to incentivise or restore active market activity by key market players and to cushion the impact on the real economy. Accordingly, we have a different assessment of the specific role of various measures.

The tools used, particularly in the US, were highly diverse. The Fed's targeted liquidity programmes, such as its standing facility announced for primary dealers (Primary Dealer Credit Facility – PDCF) and the securities lending programme (Term Securities Lending Facilities – TSLF, under which liquid securities collateralised by less liquid securities are borrowed by primary dealers) enabled leading market players to maintain their active market activity.

Other tools relieved the pressure on markets backstopping self-generating price falls and outflows of funds from key markets. At the same time, the impact of these tools spill over beyond financial markets, preventing an unexpected credit crunch affecting the relevant sectors of the real economy (i.e. those sectors that access credit through these markets). These include the Fed's facilities aimed at bringing liquidity to the commercial paper and asset-backed securities market and to money market funds, such as the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF), the Commercial Paper Funding Facility (CPFF), the Term Asset-Backed Securities Loan Facility (TALF) and the Money Market Investor Funding Facility (MMIFF) – however, no actual transactions materialised in the context of the latter.

Likewise, the individual loan agreements intended to prevent disorderly default among systemically important financial institutions are also examples of emergency liquidity providing instruments.[5] These include also the currency swap

[5] Only in the case of the Bear Sterns' acquisition and of the bailout of AIG benefited from actual lending, and a credit agreement was concluded with two banking giants, Citigroup and Bank of America; but eventually, there was no drawdown in their case.

agreements open to other central banks (mainly the ECB), which enabled partner central banks to provide dollar liquidity to financial institutions in their own monetary systems.

In Europe, the emergency liquidity provision was concentrated in the banking sector. The ECB measures were aimed at meeting the increased banking liquidity needs and at alleviating the disturbances in monetary policy transmission. In other words, ECB aims to handle the significant divergence of short-term interbank and money market yields from central bank interest rates, leading to the conditions in the market that were in conflict with the central bank's intention. The main tools were the changes to the tender rules of the main refinancing instrument (full allotment at fixed rate), the use of longer-term (6 and 12-months) refinancing facilities, the provision of dollar liquidity to Eurozone banks and the narrowing of the overnight interest rate corridor. This also included the first Covered Bond Purchase Programme, which was primarily aimed at improving the fundraising of European banks rather than intervening in a specific market segment. Indeed, this market played an important role in refinancing.

In sum, three factors could be named, which have arisen from the emergency liquidity provision applied during the crisis, and which have sustained impact on monetary policy for the future. Firstly, it became clear that the role of central banks as lenders of last resort cannot be interpreted exclusively in terms of the banking sector in the future. Due to mutual interconnections, the condition of the key players and segments of the shadow banking system has a decisive impact on the liquidity of monetary institutions, on the banks' access to funding and on the monetary policy transmission mechanism in times of crisis. The latter not only requires the expansion of eligible counterparties, but also calls for changes in the relevant central bank instruments (such as the standing facility) and the rules thereof. Moreover, the global interconnectedness of markets and participants requires cooperation and harmonised action by central banks when faced with the task of emergency crisis management. However, the relevant conceptual and institutional frameworks of this cooperation are not in place. Last but not least, the question of what additional tools and powers – mainly microprudential and macroprudential supervision and instruments – should be granted to central banks for them to fulfil their role in financial stability is unavoidable.

As the financial crisis eased, market demand for the central bank's emergency liquidity providing tools also waned. The decline in loan-type central bank refinancing was accompanied by a simultaneous contraction of the central bank

balance sheet. At the same time, the severity of the impacts on the real economy became clear at this point. After the rapid downturn, economic recovery was uncertain, with the looming threat of a credit crunch and deflation. Given the severity of the crisis, leading central banks had already cut nominal interest rates to or close to zero. This meant that they had to find tools beyond traditional interest-rate policy in order to provide additional monetary stimulus. Bernanke and Reinhart (2004) had already mentioned three potential tools earlier that central banks could use as monetary stimulus at ZLB:

1. Influencing expectations through central bank communication that signal the prolonged maintenance of accommodative monetary conditions. As long-term interest rates can be generated as multiples of short-term interest rates, a credible central bank can impact the long end of the yield curve by influencing and altering market expectations on the future short-term interest rates.

2. In the context of classic quantitative easing (QE), the central bank provides additional liquidity to the economy and the banking system. This entails an expansion of the central bank's balance sheet, but the composition of the assets side of the balance sheet remains essentially unchanged, namely consisting of short term government papers. It is a different case when borrowed reserves are predominant on the assets side of the central bank balance sheet, as is the case with the ECB. In this case, the central bank's assets side also changes, with a rise in the ratio of non-borrowed items. Classic QE exerts its impact through several channels. The portfolio-rebalancing effect should be mentioned first and foremost. Money holders invest a portion of the increased holdings of money resulting from the QE into other financial instruments, increasing their price and thereby decreasing yields, including term and risk premiums. The greater the size of QE, the stronger this effect, as the central bank partially crowds out investors from short-term government bonds through its purchases. Obviously, the impact of QE is not independent of expectations. QE itself reinforces the credibility of the central bank's commitment to maintaining the accommodative monetary conditions for a prolonged period in the eyes of market participants and hence, it may play a pivotal role in shaping expectations. Finally, it makes government financing cheaper, which not only creates greater room for fiscal policy, but also mitigates expectations about future tax burdens.

3. The central bank may alter the assets side of its balance sheet. By purchasing longer-term assets, it can directly reduce term and risk premiums.

By purchasing longer-term government bonds, it can lower term premiums, which can be expected to have a spillover effect on additional markets as a result of portfolio rebalancing. Clearly, compared to traditional QE, this bolsters the perception of the central bank's commitment to maintaining accommodative conditions for a long time, as the prices which react sensitively to interest rate decisions accumulate in the central bank's balance sheet. Meanwhile, the purchase of non-government securities (such as mortgage bonds) by the central bank directly affects the risk premium on those instruments. At the same time, the purchase of securities other than government bonds leads to the area of direct credit market intervention, i.e. credit easing as a potential element thereof.

Based on the central bank practice of recent years, the possibility of negative interest rates must also be mentioned as a fourth factor supplementing those mentioned above.

Although the central bank may realign the assets side of the balance sheet by replacing the assets held in its portfolio, this may entail significant balance sheet expansion, as was actually the case in 2009. For this reason, is has become known both in common use and market jargon as QE, and will thus be referred to as such in the remainder of this paper. However, because both quantitative and qualitative changes actually occurred in the central banks' balance sheets, it should be noted that this goes beyond classic quantitative easing.

In recent years, each of the leading central banks – the Fed, the ECB, the Bank of England (BoE) and the Bank of Japan (BoJ) alike – has implemented QE programs. The common characteristics of their QE schemes were:

- Large volume: central banks significantly increased their balance sheet total (some of them multiple times compared to the earlier figure), which came to account for a large portion of the GDP and also relative to the size of the affected securities markets;
- QE was conducted at ZLB;
- Government bonds were either predominant within the purchased assets (ECB, BoE and BoJ) or in majority (Fed);
- The asset purchases also extended beyond government securities markets, and included GSE bonds and mortgage-backed securities[6] (Fed), corporate bonds

[6] Bonds and mortgage-backed securities issued by government-sponsored enterprises, which account for the majority of the US mortgage bond market and are commonly referred to as Fannie Mae, Freddie Mac and Ginnie Mae.

(ECB, BoE and BoJ), asset-backed bonds (ECB), ETF and property fund shares (BoJ); and bonds issued by local and regional governments and supranational institutions (ECB).

- They purchased long-term instruments with a broad maturity spectrum;
- The efficiency of the programmes was bolstered by forward guidance;
- In the context of the transactions, the central banks purchased securities not only from banks but from a wider range of counterparties.

Each globally important central bank mentioned above conducted a complex QE programme which, alongside substantial quantitative easing, comprised government bond purchases aiming at reducing long-term interest rates and credit easing measures. While the fundamental objectives were the same, the differences between the programmes stemmed from the difference of the financial intermediation systems involved. In the Fed's case, bonds of major mortgage refinancing institutions accounted for nearly the same portion of the Fed's purchases as of government bonds. The reason behind this can be found in the size and importance of the given segment. In terms of size, in other countries the relative degree of central bank purchases of privately issued securities did not reach the US level, but was nevertheless significant. At the same time, contrary to the US, the banking system plays a more prominent or dominant role in financial intermediation elsewhere. For this reason, the other three central banks mentioned above launched credit stimulating schemes that provided cheap and long-term refinancing for commercial banks in an effort to maintain or boost their corporate lending.

The QE programmes were accompanied by negative key policy rates in the case of the ECB and the BoJ.[7] Negative interest rates were applied to commercial bank reserves above the reserve requirement. One of the main expected impacts is that the cost of holding reserves will motivate banks to engage in more money market activity and to increase lending, as passing on negative interest rates to depositors is less of an option for them. The higher this burden on commercial banks, the more it can help counter liquidity hoarding. At the same time, a negative interest rate may also exert an impact through traditional channels. A negative deposit rate not only reprices the interest rates on short-term and safer assets, but also lowers term and risk premiums through portfolio rebalancing, and indirectly increases investments and consumption.

[7] The Danish, Swedish, Swiss and Hungarian central banks have also introduced negative interest rates recently, with various objectives.

The question of the actual applicability and success of negative interest rates remains open. Although every single bank may reduce its excess reserves by either increasing its lending or reducing other funds on its liabilities side, the entire banking system can only reduce its reserves to the extent that it decreases its other borrowed funding originated from the central bank. However, as a result of the QE programmes, with the exception of loan refinancing programmes, the reserve holdings of commercial banks increase through non-borrowed central bank funding. As the whole banking system was unable to rid itself of its negative interest-bearing free reserves, they broadly act as a tax levied on the entire banking system: they decrease the banking system's profitability and thus its lending capacity.

Anyhow, the negative interest rate environment puts pressure on bank profitability. Combined with negative central bank interest rates, the QE programmes have pushed bond yields into negative territory, primarily those on government securities of the highest credit rating, regarded as safe havens. As banks are required to hold such bonds despite negative yields due to regulatory compliance and for liquidity management, they may incur losses on them. On the other hand, because banks are unable to pass negative interest rates on to customers on the deposit side, the decline in bond yields and lending rates lowers the interest margin. Shrinking interest margins not only dampen profitability, but also the willingness to lend. Besides pricing, other factors also play a role in lending trends. The weakness of economy, the worsening credit portfolio, the increasing risks of lending and the low credit demand may all contribute to the decline in lending. The regulatory changes of recent years – those that require higher and better quality capital and impose new liquidity requirements on banks – have also held back banks' lending capacity. In other words, the weakness stems not only from liquidity hoarding, but also from factors on which negative central bank interest rates have minimal impact. Furthermore, they may even inadvertently have an adverse impact on the banking system and lending.

Constâncio (2016) demonstrates through the example of the ECB, that the adverse side effects of negative interest rates should not be assessed alone, but in conjunction with other QE programme measures. In the Eurozone, negative central bank interest rates contributed to a rise both in the lending and the holdings of foreign government bonds by the banks of more stable Member States. Overall, it enhanced the portfolio rebalancing effect of QE.

Even if we accept this claim, the materialised impact is far more attributable to the fragmentation of the Eurozone's financial intermediation than to the overall positive outcome of negative interest rates. The safety created by the ECB's QE programme may have decreased the fragmentation of government securities markets within the Eurozone, however, the imbalance measured by the diverging positions of national central banks within the TARGET 2 system has increased since the start of the programme. In other words, the divergence in banks' excess reserves and in borrowed funding from central banks among the member states' banking systems started to increase again. This, however, shows that the ECB's purchases were not accompanied by an improvement in the fragmentation of the banking system; in other words, despite the incentive of negative interest rates, free reserves not only did not flow into countries with weaker macroeconomic positions and banking systems, but banks' reliance on central bank funding increased even further in these countries. Meanwhile, the rise in lending in stable countries materialised alongside a robust increase in free reserves.

Each of the aforementioned central banks used forward guidance to enhance their QE programmes. Viewed from above, forward guidance is essentially a reinforcement of central bank transparency achieved by the central bank through more detailed and open communication than in the past, in an effort to improve the efficiency of central bank measures by shaping expectations. Communication was assigned an even greater role within central bank policies after the crisis, mainly because it represented a possible and important tool in further necessary monetary easing in a ZLB environment.

Although in such an environment, it is an alternative that can be chosen independently by the monetary policy, as described above, it has nevertheless been closely connected with large-scale asset purchases by central banks in recent years. The two tools mutually reinforce each other's effect and exert their impact through not exactly the same channels. Forward guidance basically provides signalling about the future conduct of the central bank to market participants, shaping expectations on future short-term interest rates, and as such, it mainly exerts its influence through this channel. When applying them, central banks adjusted expectations suggesting that accommodative monetary conditions would be maintained over the long term. This plays a dual role. By lowering expectations on forward-looking short-term interest rates, the term premium decreases; i.e. it contributes to lowering the long-term interest rates. This signal also helps break

the liquidity trap by substantially alleviating fears about a central bank interest rate hike, which keeps investors away from longer-term investments or from lending, thereby increasing demand for these assets. It also increases the costs of the wait and see strategy if the expected period is extended alongside negative real yields, as opposed to the yields attainable with longer-term investments or lending, which are not only higher but will only be adjusted by a future interest rate hike at a distant point in time. In most cases, the core communication of forward guidance was linked to announcements on large-scale asset purchases or pertained not only to keeping interest rates low, but also to the maintenance period of the asset purchase programme or the conditions thereof.

The practice of forward guidance grew more sophisticated progressively, with the initial forecast type guidance replaced by time and state-dependent commitment type guidance or combinations thereof. This is because the efficiency of central bank communication depends on how convincing it is in suggesting that the central bank will maintain accommodative conditions for a sufficiently long time, or for longer than otherwise assumed. This, however, is also the source of the limitations of applying forward guidance. For the sake of effectiveness, i.e. in order to generate a meaningful shift in expectations, the central bank must make promises regarding its future conduct that somewhat differs from the one that the markets previously assumed.

In addition, it must do so knowing that its forecast for the future is neither more accurate nor any less uncertain than the market's forecast. Issing (2014) pointed out the uncertainties in the critical variables (such as output gap, unemployment rate, and real neutral interest rate) of the forecasts, a result of which credible commitment becomes questionable. Even if the data in the forecast are correct, there is still the issue of credibility. Guidance is only truly effective if it differs from the normal central bank strategy (for example, the central bank temporarily tolerates higher inflation and delays its interest rate hike longer than it normally would). But this is not time consistent, as over time, raising the interest rate earlier would be the right step as inflation rises.

Woodford (2012) therefore considers central bank commitment diverging from traditional forward-looking logic and reaction function as an important factor in terms of effectiveness. Woodford also emphasises that guidance promising a longer maintenance of accommodative conditions may be counterproductive, as market agents may interpret it as a sign that the economy is weaker than they

assumed. The author therefore claims that the state-dependent guidance might be a better option. Bean (2013) mentions another issue of credibility: future commitments undertaken by current policymakers are not binding for future decision-makers.

In sum, unconventional tools have been applied without being backed by significant experience. Nevertheless, these tools have been part of the central banks' daily practice for nearly a decade now as a core element of monetary policy. The Centre for Macroeconomics[8] survey (CFM 2016) reveals that macroeconomists are divided on the topic of the need to use unconventional tools in the future under normal circumstances (nearly 50% of the respondents agree that unconventional tools must be used, exceeding the ratio of those fundamentally opposed to their use). The potential further expansion of unconventional tools is also on the agenda of policymakers and economists. This is why the question of whether the tools currently referred to as unconventional will turn out to be permanent central bank tools in the future still remains.

Ball et al. (2016) and Reza et al. (2015) presented summary papers by analysing the effectiveness of unconventional tools. According to their findings, broad consensus has emerged that unconventional tools have proven successful at the ZLB and enabled central banks to reduce long-term interest rates, ease financing constraints and have a positive impact on the real economy, resulting in faster and more robust recovery from the shock of the crisis. Some scepticism regarding the outcomes does remain. Thornton (2015) argues that it cannot be proven empirically, or only to a slight degree that the decline in the US yields during the period under review was the result of QE programmes. Central banks tend to use unconventional tools simultaneously, drawing on their mutually reinforcing effects; therefore, it is not possible to break down their individual level of success and assess their drawbacks accurately. This, however, does not mean that they must be handled together in terms of their future applicability. Ball et al. (2016) regard both asset purchases and negative interest rates as viable tools in a low inflation environment and during periods of recession and insufficient demand. The authors show that QE programmes were effective in practice, while their assumed negative impacts were in fact less significant than presumed, and

[8] The Centre for Macroeconomics (CFM) is a research centre funded by the Economic and Social Research Council (ESRC). Its surveys reflect the opinions of European prominent macroeconomists.

despite earlier beliefs on the strict zero lower bound, the use of negative interest rates is in fact possible up to a certain point (even -2%).

According to IMF (2014), both theoretical arguments and empirical evidence corroborate the success of unconventional measures over the past period. However, the paper points out that during normal periods, with the exception of forward guidance, their drawbacks exceed their benefits. In the questions reformulated by that paper in a more general sense, it compares the possibility of directly shaping long-term interest rates or the entire yield curve with conventional short-term rate policy under normal circumstances, alongside the option of credit easing. In the former case, it emphasises the volatility in short-term interest rates caused by the change in expectations on central bank movement regarding long term rates and its adverse impact on the financial sector. Furthermore, it notes the correlation of QE with the fiscal policy, particularly the risk of monetary financing. It also stresses the issue of market distortion caused by credit easing.

Borio and Zabai (2016) warn that the damages of unconventional monetary policy may exceed short-term advantages in the long term. They argue that on the one hand, the returns of the unconventional measures as they follow each other are diminishing. On the other hand, the stronger the measures and the longer they are in place, their risks and costs are higher. They draw the attention to the narrowing of the room for manoeuvre of monetary policy if and when the next recession hits and to the credibility cost for central banks arising from the uncertain cost-benefit balance of the applied unconventional tools.

It is generally true that the expected negative impact of unconventional tools has so far not been perceived to an extent that would warrant the initial concerns about their use. For instance, the QE programmes have not created any significant inflation so far, the risks to central bank profitability do not seem unmanageable and negative interest rates have so far not jeopardised bank profitability to a dangerous extent. However, nothing certain can be stated about the future based on experience so far. This is because we cannot accurately forecast the future materialisation of numerous counterarguments or negative impacts, mainly because the exit from unconventional tools, i.e. the normalisation of central bank policy, has not yet taken place. Besides those mentioned above, there are other questions that will fundamentally shape views on unconventional tools, primarily on QE:

- QE and the related measures distort markets, as they put downward pressure on term and risk premiums. This, in turn, impacts risk-taking and

may foster financial imbalances and the re-emergence of bubbles. This makes a return to normal particularly difficult, creating a contradiction between the fundamental objective of monetary policy and financial stability. A fundamental question is if the central bank has broadly set prices on financial markets by using unconventional tools, is it possible at all to return to a normal state for these markets without creating shocks that result in a negative impact that is potentially more severe than the one originally cured by the central bank with the unconventional tools.

• There is also a lack of experience on how to ensure and maintain the consistency between either the use of, or an exit from, unconventional tools and new macroprudential tools and objectives targeting financial stability.

• While QE created significant room for fiscal policy, the exit will have negative fiscal consequences, which may create growing political pressure on the central bank and may even impact statutory objectives and autonomy.

Firstly, the successful use of unconventional tools under exceptional circumstances does not mean that they are an adequate alternative or supplement to traditional measures in normal times, and secondly, final conclusions on these new tools cannot be drawn for the time being as their risks for the future are still uncertain.

However, viewed from a different angle, we can argue in favour of the long-term use of unconventional tools. As QE has permanently reshaped monetary policy, it cannot be regarded as temporary, because of the following:

• a short or medium-term exit is impossible. Central bank balance sheets have been restructured – filled up mainly with long-term government bonds – to such an extent that any rapid deleveraging is not feasible. For this reason, these assets will remain on central bank balance sheets for a long time;

• as it is suggested by more papers, i.e. Rachel and Smith (2015), we have to expect a permanently low interest rate environment, under which the fundamental tools of monetary easing may remain unconventional tools when monetary policy hits against the ZLB again. Thus, for instance, it is likely that during periods requiring monetary easing at the ZLB, the aforementioned balance sheet assets may increase temporarily within central bank balance sheets while slowly contracting during normal periods;

• if these assets remain persistently on the central bank balance sheet, sterilising the surplus liquidity created by them (if needed for monetary policy

reasons) is technically not a problem (through the interest paid on surplus liquidity held at the central bank, and using reverse repo transactions for fine-tuning), nor is it contrary to conventional monetary policy logic.

Conclusions

This paper analysed the main challenges facing monetary policy recently. We looked at the various opinions and continuously shifting practice that has emerged in the post-crisis period and on this basis, we tried to define the most probable future direction. In terms of the monetary objectives, in our opinion no meaningful change can be expected, and the regime that aims at price stability in a forward-looking and flexible manner is likely to remain in place. In terms of the quantified inflation target, although the debate is still open, the practical motives for moving away from the current 2 percent target will probably weaken as the risk of deflation dissipates.

The outcome of the issues regarding the future of policy tools is more uncertain, as there is no consensus on the phasing out of the currently broadly used unconventional tools and their long-term impact. For one, there is no alternative to unconventional tools in a persistently low interest rate environment; at this time, these tools represent possible and viable solution for achieving monetary policy objectives. Neither forward guidance nor QE are incompatible with the traditional tools. The former improves transparency and more accurate guidance of expectations during normal times also, and the latter, while boosting central bank balance sheets, does not rule out the efficiency of traditional interest rate policy even in normal times.

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The impact of user-generated content on Facebook on travel destination choices: A comparison of Austrian tourism students and non-tourism students

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This study compares the impact of user-generated content on Facebook on travel destination choices of tourism and non-tourism students. The aim of this research is to find differences regarding the influence of UGC on the destination choices of both groups. A written, standardized survey using an online questionnaire has been deployed at seven Austrian faculties. The empirical research is being supported by a structured literature research in online databases. We found that there is an impact of user generated content on Facebook on the destination choices of students. Students in the field of tourism are more aware of travel-related content on Facebook and are more likely to be influenced by this content than non-tourism students. By comparing the findings of the literature research with the findings of the empirical research, we came to the conclusion that face-to-face communication is still the most important source for finding travel-related inspiration, and information.

Keywords: tourism, destination choice, social media.
JEL codes: M31, Z32, Z33.

Introduction

Current tourism markets are highly competitive; therefore, destinations should know about the preferences of potential guests. Students, in general, travel a lot and most of them are on Facebook. This study describes the influence of user generated content (UGC) on Facebook on travel decisions amongst students. Destination Management Organizations (DMO) and tourism associations should be aware of the impacts of social networks and booking platforms. This research delivers results to get a better understanding of how tourism and non-tourism

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students make their travel decisions. Focusing on the differences between Austrian students of tourism programs and students from non-tourism programs, the article on hand provides a deeper understanding of how specific education influences the choice of a destination. Knowing this, more precise target-group oriented marketing campaigns become possible.

According to Opaschowski (2002) travelling means going to locations away from your residence for recreation, entertainment, sports, education, culture, pleasure, business or family-related reasons. As different as travel reasons are, also, the influencing factors for choosing a destination may differ a lot (Manolis 2011). Beside classical sources of inspiration and information like books, magazines, films or travel reports, the internet, especially social networks, gained more and more importance over the last decades (Gretzel et al. 2007). Given that on social networks, like Facebook, Twitter or Instagram, information can be easily shared with a large audience, this content may have influence on other people to a certain extend (Jacobsen–Munar 2012; Xiang–Gretzel 2010; Amersdorffer et al. 2010; Zeng–Gerritsen 2014).

According to Sparkler (2014), user generated content on Facebook plays a major role in terms of influencing travel decisions of its users and, moreover, travelling is the most shared topic on Facebook. If we consider that on Facebook about 350 million pictures are uploaded every day and every user has approximately 350 friends (Smith 2016; Edison Research 2014), one can derive its impact on the topic of travelling in general (Hodis et al. 2015). Before social networks appeared, travellers had to personally talk to others about their holidays. On Facebook, *one-to-one* communication becomes *one-to-many* without efforts and allows spreading news or travel experiences very fast (Kohli et al. 2015). Still, the personal exchange with friends and relatives in terms of choosing a destination is the most important factor (Schmeißer 2010). If we combine the personal approach, which is one of the characteristics of social networks and the fact that about 1.9 billion users are registered on Facebook, this network promises to have a huge impact on travel decisions. Taking into consideration that especially young people use social networks for planning travels, this study focuses on that special target group (Simms 2012).

So far, limited research was done to understand the influencing factors of Facebook on travel decisions amongst tourism and non-tourism students. This study closes that gap by using a fully standardized online questionnaire, which was

spread amongst both tourism and non-tourism students. The research is conducted at those Universities of Applied Sciences in Austria, which offer tourism related academic programs. The non-tourism students are reached via e-mail distribution at the FH JOANNEUM University of Applied Sciences, which offers more than 40 programs in the fields of Management, Health Sciences, Engineering, Construction, Design and Informatics. The questionnaire focuses on the main research topics: *social media use in general*, *Facebook use in particular*, *travel experiences*, *travel habits* and *Facebook use in relation to travelling*.

The article reflects current literature knowledge in the fields of travel decision making processes, social media usage and the importance of Facebook in terms of choosing a destination. After presenting the methodology, specific results are highlighted. An in-depth discussion is followed by concluding thoughts and a future outline.

Literature review and conceptualization

Choosing a destination

In the 12th century, very long time before internet and social media appeared, students already travelled to places of knowledge, like the universities of Oxford or Paris (Opaschowski 2002). In the 18th century aristocratic youths travelled through Europe to gather experiences. This so called Grand Tour originated in a bunch of travel reports, showing the influence on travel choices of the next generations (Pimlott 1947; Veselovská–Roebuck 2013). As current tourists have a certain vision of culture and experiences, one can note that they are still influenced by ancient travellers (Coletta 2015).

The influences of media, firstly books, then films, on travel choices arose during the decades by creating anticipation (Urry–Larson 2012). Videos and cinema productions show power to have positive impacts for destinations (Spears et al. 2013). Destination Management Organisations try to benefit from films, for example New Zealand, as the main location for *The Lord of the Rings* trilogy (Rewtrakunphaiboon 2008). But as Young and Young (2008) stated, those benefits cannot be generalized and depend on several influencing factors.

Positive or negative experiences influence consumers on their decision making process when buying products (East et al. 2008). This fact is also applicable when choosing a destination. According to Schmeißer (2010) this process consists of several phases: inspiration, information, booking, traveling and a wrap-up.

Before the internet appeared as an influencing factor for consumer decisions, direct communication with families and friends seemed to be the most important instrument for travel decisions, especially during the phases of inspiration and information (Beeske et al. 2008). Capella and Greco (1989) added past travel experiences, magazines and media as important reasons for choosing a destination. In terms of in-depth research about a destination, travel agencies and location-specific literature were used primarily (Gitelson–Crompton 1983). Decrop and Snelders (2004) used a different approach to explain how travel decisions are made. They found out that daydreaming, reminiscence or anticipation alternate and determine the process of choosing a destination. So, according to them, a distinction between different phases cannot be clearly done.

Tremendous changes in terms of travel decisions came along with the evolvement of the internet. Interestingly, Petterson (2007) stated in 2007, when the internet was already enjoying an increasing popularity, that the stories of friends and relatives still had a huge impact on travel decisions. Nowadays, we call this form of communication *Word of Mouth*, which shows tremendous impact on travel decisions (Schmeißer 2010). Even more, we know from Ye et al. (2011) that online user reviews can have significant influence on online hotel bookings. Before investigating the phenomena of Word of Mouth in detail it is important to point out that not every single trip needs the same preparation. Travels based on routines need lower scheduling than exploring a new destination (Bargeman–Van der Poel 2006). Fodness and Murray (1999) stated that every trip has a certain impact on the arrangements of the following one, especially when destinations are visited twice, as external information becomes less important. Talking about Word of Mouth as a source of inspiration and information for travelling, Murphy, Mascarado and Benckendorff (2007) found out that more research is needed on the origin of data. They stated that travellers, who said they got their inspiration from friends, often travelled with friends before. Those who said they got most of their information from other travellers, they often travelled alone and so, they had automatically more contact with other people (Murphy et al. 2007).

The role of social media

The current research shows the importance of the internet in terms of travel decisions. For example, a research amongst 7000 users of TripAdvisor stated that 96.1% of them use the internet to gather information. This result is not very impressive as TripAdvisor itself is an online platform, but the research also stated

that 68.3% use literature and 42.0% ask friends and families for advice. Even more, 82% answered that they use the internet for every trip they plan (Gretzel et al. 2007. 13). As the quality of tourism services is mostly unknown before the actual experience takes place, social networks became a welcome source of information (Wirtz–Chew 2002). Social networks empower people to gather inspiration but also allow users to share their experiences, write reports and post pictures and videos from their trips (Xiang–Gretzel 2010). The usage of such networks is mostly very easy, they offer access to a plurality of sources for additional information and connect travellers, travel agencies and all kind of travel related businesses with each other (Chung–Koo 2015). This type of User Generated Content (UGC) is expected to be trusted by users (Schmallegger–Carson 2008; Haralabopoulos et al. 2016). More than this, Ayeh, Au and Law (2013) stated that, travellers show higher rates of trust in UGC if their interests correspond with the interests of the travellers who published their reviews. This process of barrier free information gathering led to an independency of individuals in terms of travel planning (Kim et al. 2014).

Facebook with its 1.87 billion users is the largest social network worldwide (We are social 2017). A research, done by the Sparkler consulting agency with Facebook's support, showed that 42.4% of the Facebook users share travel related content regularly. So, pictures and videos of travel experiences have become the most frequent posts (Sparkler 2014. 6). The study also showed that 84.1% are following the travel experiences of friends and relatives on Facebook. More interesting is the fact that 64% of the interviewees indicated that they would not have known anything about the trips of their friends and families without Facebook postings (Sparkler 2014. 8). Simms (2012) stated that generations X and Y are very eager to share travel impressions on Facebook.

This so called electronic Word of Mouth (eWOM) describes every positive or negative statement of a former, current or potential customer about a certain product, service or company, which is spread by several people on the internet (Hennig-Thurau et al. 2004). Buhalis and Law (2008) stated that, in general, consumers rely more on the information they get from friends than on those from companies, through advertising. As Abubakar and Ilkan (2016) have shown, this influence also exists on social networks. They point out that eWOM could have a strong influence on the trust of potential visitors into a specific destination (Abubakar–Ilkan 2016; Christodoulides et al. 2012). The rising relevance of

eWOM on travel decisions was also highlighted by a study in the US, conducted amongst 2500 respondents: 57% have indicated that they were influenced by UGC during the planning phase of a trip. The study also stated that from 2009 to 2013 the percentage of UGC influenced travellers arose from about 50% to more than 57% (Simms 2012. 80). Yoo and Gretzel (2011. 617) came to similar results during a study which was conducted amongst 1700 travellers, again in the US: they found out that more than 50% of the respondents looked for information on social networks and they also relied on that online content. All these results indicate an existing influence of user generated content on travel decisions nowadays.

User Generated Content

User Generated Content can be separated into four different types, namely text, picture, video and audio content, which can be differentiated within their categories (Bauer 2011). This must be taken into consideration when thinking about the specific influence on users (Momeni et al. 2015). Postings based on texts can be reviews, evaluations and comments. On social networks, like Facebook, reviews or comments are given on products, services, companies, but also on destinations. Those postings can be liked and shared amongst other users (Xiang–Gretzel 2010). Such reviews can be positive or negative, of which negative ones spread quickly (Kelly et al. 2013). Gretzel, Yoo and Purifoy (2007) found out that reviews play an important role in terms of choosing a destination, but a minor one on other travel related decisions. In general, reading online reviews is quite common, as Xie, Zhang and Zhang found out in 2014. According to their results, 75.2% said that they read online reviews from other guests before they book a hotel (Xie et al. 2014. 3). Furthermore, the authors stated that the higher the amount of reviews of a certain destination is, the more likely the ratings are to be considered. In addition, it is a fact that the more reviews a destination has, the more often it is visible to people on a certain social network. This again leads to a higher impact of those reviews (Xie et al. 2014).

According to Simms (2012) pictures are some of the most shared postings on social networks, beside reviews. Haldrup and Larsen (2003) stated that travelling and photography are very closely related. As travellers are at the same time consumers but also producers of a certain image of a destination, Urry and Larsen (2012) argued that if guests take pictures and share them, they reproduce their own view of that destination. This could have an influence on future

travellers (Urry–Larsen 2012; Parra-Lopez et al. 2011). The tourism image of a destination can be seen as an amalgam of visions, meanings and experiences a single person has gathered (Cromption 1979). If guests take pictures of themes they find worth taking a picture of, one can state that they are filtering out the "unworthy" elements. Even more, postings on social networks shall reflect one's own personality, especially pictures from someone's holidays (Lo et al. 2011). All these issues create a specific, individual image of a destination, in general, but also on social networks (Munar 2011; Donaire et al. 2014). As the costs of holding a picture in hands were heavily reduced by digital photography, the amount of pictures taken during travels raised dramatically (Donaire–Gali 2011).

Also, videos are getting more and more important on social networks. Tim Peterson points out that, from 2014 to 2015, video uploads on Facebook have increased by approximately 75% and maybe they are now the most frequent type of posting (Peterson 2015). Priebe (2015) had analysed response rates of pictures and videos and found out that the response rates of videos were twice as high as those of pictures at a certain point. But as Facebook is based on an algorithm which changes and adapts itself in accordance with the user's profile and previous actions, also, response rates can be related to a certain type of posting (Ingram 2015). So, Facebook-based results have to be considered very carefully.

The possibility of connecting smart phones with social networks revolutionized the possibility of sharing travel experiences with friends or a public audience (Lo 2011). According to Smith (2016), 350 million pictures are uploaded on Facebook every single day. If we consider the results of Sparkler (2014), which states that "travelling" is the most shared topic on Facebook, one can assume that travel-related content represents a big part of all media. The influence of this media amongst students as a source of inspiration for destination choices leads us to the main topic of this article and the following research questions.

As students of academic tourism programs are confronted very often with tourism-related issues during their studies, it is assumed that they might have a higher sensitivity to travel related content, as well. As the authors of this study are based in Austria they also focused on that country. People between 18 and 29 years of age represent the majority of Facebook users in Austria, so it is assumed that students use that specific social network (Social Media Radar Austria 2017).

These facts lead to the main research question: "Is there a difference on the impact of user generated content on Facebook regarding the destination choice of tourism and non-tourism students?" The authors also want to find out which user generated content is important for students in terms of travels and which media influences them the most?

Methodology

As the main focus of this article targets the differences between Austrian tourism and non-tourism students, it was obvious to conduct the survey within universities. For organizational and cost reasons it was decided to conduct an online survey. As the response rates of online surveys are normally quite low, it was decided not to spread the questionnaire directly to the students, but via the course directors of the programs in questions (Weimiao–Zheng 2009).

The online questionnaire was fully standardized and spread via the software LimeSurvey. According to Kromrey (2009), it is important to formulate questions in an easy language, by avoiding loanwords and complex sentences. Questions are expressed neutrally and not in a suggestive manner. It is crucial to give the respondents the chance to answer all questions without having any technical background and, in the same way of thinking, to avoid misleading interpretations (Kromrey 2009; Biemer–Lyberg 2003). To eliminate biased answers, it is recommended to develop indicators instead of asking directly for a certain topic. These indicators build the basis of the asked questions within the questionnaire (Shukla 2008; Earl 2008; Brace 2008). The questions were summarized in categories. Finally, the questionnaire consisted of 26 questions in total, split into seven categories as follows: *General indicators* (three questions), *Social media usage in general* and *Facebook use in particular* (six multiple-response and dichotomous questions), *Travel experiences*, *Travel habits* and *Destinations* (seven multiple-response and dichotomous questions) and *Facebook use in relation to travelling* (ten questions). Dichotomous questions and several four-point Likert scales (e.g. completely agree, rather agree, rather don't agree, completely don't agree) were used to assess the relations between Facebook and destination choices.

A pre-test was done amongst eight people, chosen as follows: two male tourism students, two female tourism students, two male non-tourism students, and two female non-tourism students. The non-tourism students came from both

technical and managerial courses. The pre-testing included logical structure, comprehensibility and timing.

As tourism students of Austria represent one part of the target group of this study, the final questionnaire was sent to the course directors of the academic tourism programs in Austria. As one of the authors of this study is part of an informal network of these course directors, it was determined to ask them to give out the questionnaire amongst their students, to increase response rates. The questionnaires have been spread amongst tourism students of the following Universities of Applied Sciences (UAS): FH Wien der WKW, FH Kufstein Tirol, IMC Fachhochschule Krems, FH Salzburg, FH Kärnten, MCI Management Center Innsbruck and FH JOANNEUM.

Due to the fact that the authors aimed to identify differences between tourism students (TS) and non-tourism students (NTS) a judgment sampling methodology seemed to be the most promising method. In addition, due to limited resources, it was not possible to spread the questionnaire amongst all Austrian students at UAS. So, it was decided to target all TS in Austria and all other students at the FH JOANNEUM UAS, the home university of two of the authors. It was assumed that a close relation to the universities' own departments may help boost responding figures.

In winter term 2016 about 1990 students were studying at tourism related programs in Austria, which is about 4% of all students (app. 50 000) studying in Austrian Universities of Applied Sciences (Bmwfw 2017). The research was done completely anonymous.

The data analyses were done by using the IBM SPSS Statistics version 24. The correlation analysis was done according to Spearman. Where applicable, the Chi2-test was used to test the differences among variables. A level of significance of $P \leq 0.05$ was accepted.

Results

The empirical data are split in four parts and analysed separately. In the first chapter general data about the sample group are shown. The results of Facebook usage and social network affinity are being presented in the second part. The third chapter illustrates travel experiences and habits, followed by the fourth and last chapter, showing in-depth analyses of the relations between Facebook usage, travel decisions and differences between tourism and non-tourism students.

General sample data

The research was conducted from the 9th of April 2017 until the 21st of April 2017. The questionnaire was sent via e-mail and generated 453 responses. 82 forms have not been completed so they were rejected. Finally, a total of 371 completed questionnaires were used for data analysis (n=371). In relation to the population of 1990 students in total, a response rate of 18.6% was achieved. The age of respondents was distributed from 18 to 54 years old, with an average of 23.4 years (SD=4.6; MODE=22 years).

21.6% of the sample indicated to be enrolled in a tourism-oriented program. Therefore, the remaining 78.4% studied in a non-tourism program and consisted of 28.9% industrial engineering, 21.0% health sciences, 14.4% economics (tourism programs excluded), 7.6% design, 7.2% informatics, 6.5% cultural sciences, 6.5% social working, 2.4% natural sciences, 1% law and 4.5% miscellaneous studies.

70% (260 people) of the respondents were female and 30% (111 people) were male. The high number of female students in this research may be caused by the fact that within both tourism and health related programs the majority of students are women. In fact, 74.9% of all TS in Austria are female (Bmwfw 2017). At the institute of Health and Tourism Management of the FH JOANNEUM UAS the share of women is even higher, 89% (Fritz 2017).

Usage of Facebook and social networks

In terms of Facebook usage, the research showed that about 95.7% (355 answers) of the respondents use this platform at least once a month. The respondents indicated that Facebook is the most widespread of all social networks. Other social networks, which were named and at least used once a month, were Instagram (54.2%), YouTube (54.2%), Snapchat (52%), Pinterest (23.2%), Twitter (10.5%) and TripAdvisor (8.9%). TripAdvisor wasn't mentioned very often, but, since it is the world's biggest social network for travelling, its importance as an influencing factor on destination choices should not be neglected (TripAdvisor 2017).

"Are you registered on Facebook?" This question was positively answered by 358 persons. Those 13 datasets, which were not registered on Facebook, were excluded from further Facebook-related analyses (n=358). For the in-depth analysis of Facebook usage three categories were built, based on the intensity of use. The indicator of intensity of use was developed by taking into consideration both the (1) time spent on Facebook and the (2) frequency of checking Facebook for updates. It was determined by the authors that people who stay constantly for

less than five minutes on Facebook, when they check for updates, should belong to the indicator *(1a) less time spent*. More than five minutes for checking updates, should belong to *(1b) more time spent*. Up to ten times of checking for Facebook updates per day were identified as *(2a) low frequency* and more often than ten times, should be *(2b) high frequency*. The following main categories, which were used for further analysis, can be derived. Category 1: *(1a) less time spent* and *(2a) low frequency* means *weak Facebook use;* Category 2: *(1a) less time spent* and *(2b) high frequency* means *middle Facebook use;* Category 3: *(1b) more time spent* and *(2a) low frequency* means *middle Facebook use;* Category 4: *(1b) more time spent* and *(2b) high frequency* means *heavy Facebook use.* The distribution of the research sample shows that 25.7% (92 answers) belong to category 1 – *weak Facebook use*. As expected, the largest group with 55.9% (200 answers) consists of categories 2 and 3 – *middle Facebook use*. 18.4% (66 answers) were identified as *heavy Facebook users*. These categories are useful for examining the differences and relations between the use of Facebook and travel customs.

According to the answers received the most noticed contents on Facebook are pictures (51.7%), followed by videos (27.7%). According to Peterson (2015) and Priebe (2015) videos should have the highest response rates on Facebook. Maybe the divergent results show that not only response rates are important, but also perception. The importance of pictures is emphasized by the fact that only seven people (1.7%) stated that they follow text postings on Facebook.

Travel habits

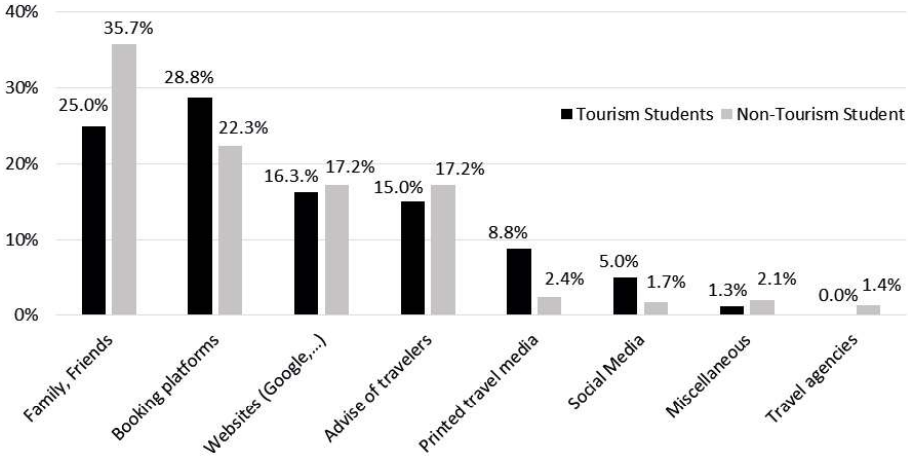
The authors defined travel as a change of one's location, outside of the place one is used to, to reach a single destination or to explore several places (Sölter 2009). The questionnaire was based on this definition. It was mentioned on the survey to guarantee a common understanding of travelling amongst the respondents. 93.8% of them answered that they have done one or more trips during 2016. There was no significant difference between tourism and non-tourism students (Chi2 (1, n=371)=1.05, p=0.31). More than 60% of both groups indicated that they travel at least one time during a period of six months. There is no significant difference between tourism and non-tourism students (Chi2(1, n=371)=1.49, p=0.18) but a slight trend can be seen: 68.8% of tourism students agreed on travelling at least once per six months, as compared to 60.5% of the non-tourism students. In terms of organising a travel, 88.1% plan their trips on their own, 11.3% rely partially on travel agencies and only 0.6% have their trip completely set up by an agency. This

fact goes along with increasing independency concerning travel arrangements, based on easy inspiration and information processes via internet and social networking platforms (Kim et al. 2014).

Asked for their reasons for travelling, those respondents who went on at least one trip in 2016 (n=348) stated the following motivations (multiple options possible): culture and sightseeing (61.2%), beach and bathing (56.3%), active travels (49.4%), visiting friends and relatives (46.3%), relaxation (39.1%), visiting events (32.2%), exchange semester/internship (25.3%), wellness (19.8%) and shopping (10.3%). A deeper analysis showed that both groups of students indicated culture and sightseeing as the main reason for travelling. A slight difference can be observed in terms of beach and bathing related holidays. 22.1% of NTS named it as their main reason for travelling in 2016, as compared to 14.3% of TS. The main motivating factors for tourism-students were educational reasons (TS: 20.6% to NTS: 14.4%), active holidays (TS: 20.8% to NTS: 13.7%) and visiting friends and relatives (TS: 10.4% to NTS: 5.9%). Beside going to bathing destinations, relaxing holidays are the most named reasons for travelling amongst non-tourism students (12.9%), as compared to TS (7.8%).

Schmeißer (2010) pointed out the importance of direct exchange processes with friends and relatives in terms of travel planning. Petterson stated in 2007 that mass media, like television and radio, had lost its importance as a source of inspiration (Petterson 2007). The study at hand confirms previous findings and emphasizes the importance of direct conversions (87.9%), recommendations of other travellers (62.4%), internet in general (55.2%), social networking platforms (48.9%) and booking and reviewing platforms (44.1%). Summing up the mentions of travel magazines, television and travel agencies as a source of inspiration, a total percentage of 46.6% is identified.

As shown in Figure 1, for NTS the personal exchange with friends and relatives is the most important source of information (35.7% to TS: 25.0%), whereas TS named booking and reviewing platforms as their most import source (28.8% to NTS: 22.3%). Only 5% of TS and 2% of NTS named social media platforms as relevant in terms of deciding for a destination. Compared with the figures of the sources of inspiration (48.9%), one can assume that social media platforms are important for finding a destination but the quality of information seems to be low. Also, another option seems to be possible. Zhang and Van Alstyne (2004) stated that social media platforms indicate a certain importance



Source: authors' own design

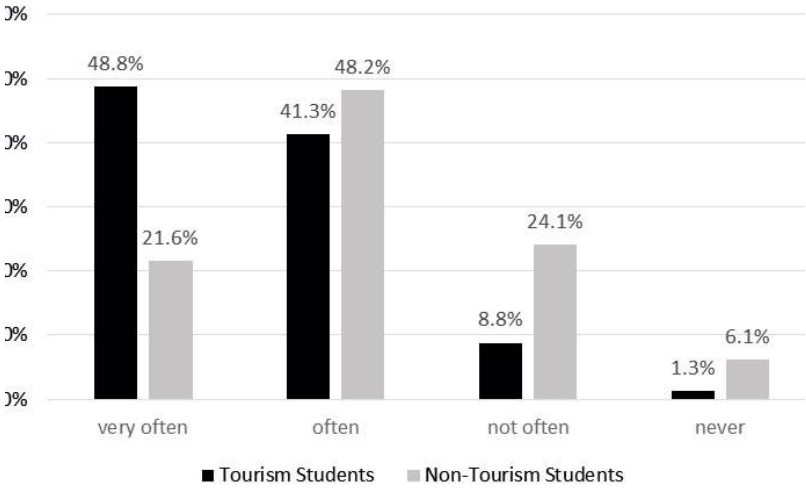
Figure 1. On which source of information is your booking decision based on?

in finding information, but if the search is not successful immediately, people head to other sources. Websites of tourism associations and results of Google search show a certain prominence (TS: 16.3%; NTS: 17.2%). These figures may include some limitations as Google search engines also guide users to reviewing or booking platforms.

When grouping the students according to their Facebook usage, differences in sources of inspiration can be identified. While *weak Facebook users (WFbU)* prefer personal discussions with friends and other travellers (WFbU: 44.2% to HFbU: 38.0%), *heavy Facebook users (HFbU)* make use of travel platforms, websites and social network to find destinations more often (WFbU: 41.2% to HFbU: 51.7%). In-depth analyses of the decisive roles of destination choices show similar tendencies. Booking platforms were more often mentioned by the HFbU (33.3%) than by the WFbU (22.8%). Also websites of tourism associations, and results of Google search are more important for the decisions making process for the HFbU (21.2%) than for the WFbU (12.0%). 38.0% of the WFbU prefer talking with friends and relatives, as compared to HFbU for whom this source is less important (25.8%).

Influence of Facebook on destination decisions

According to Sparkler (2014) travelling is the most widespread topic on Facebook. The study on hand reveals that 74.3% of the Facebook users (n=358) indicated that they follow travel related postings very or quite often, 20.7% don't follow such postings very often, and 5.0% don't follow travel related content on Facebook. If tourism students and non-tourism students are to be compared, a clear difference appears: 48.8% of TS followed travel related Facebook postings very often, but only 21.6% of NTS have followed this type of posts. If we compare the answers given for the option *not very often* we see that 24.1% of NTS chose it, whereas only 8.8% of TS ticked it. The correlation of both variables *Recognition on Facebook* and *Study Program* is, according to Spearman, two-tailed significant ($r(356)=0.27$, $p<0.01$). This correlation could be based on the fact that TS have more friends on social media who are interested in tourism so they get in contact with travel-related content more often than NTS. As we know from Sparkler (2014. 6) that 42% of all Facebook users share travel experiences with friends, this effect might be intensified.



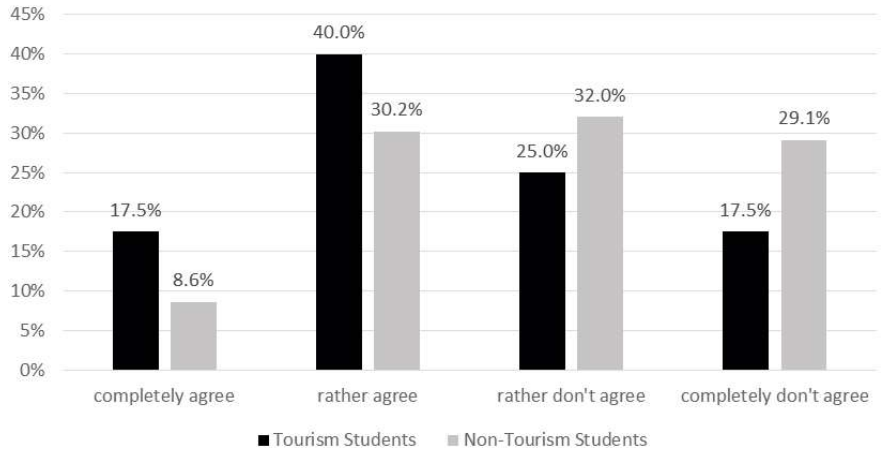
Source: authors' own design

Figure 2. How often do you follow travel related content on Facebook?

17.5% of the TS fully agreed with the sentence *I like to share postings of my travel experiences*, whereas only 8.6% amongst NTS totally agreed. *I rather agree*

was chosen by 40% of the TS and 30.2% of the NTS. The answering possibilities *I rather don't agree* (TS: 25% to NTS: 32%) and *I fully don't agree* (TS: 17.5% to NTS: 29.1%) were somewhat significant according to the chi-square test (Chi2(3, n=358)=10.6, p=0.01). There is no significant correlation between the variables *Like to share travel experiences on Facebook* and the *Facebook Usage*. But we see a huge difference within the answering possibility *I rather agree*, when we compare HFbU (42.4%) and WFbU (22.8%). There is also no significance between the variables *Facebook Usage* and *Recognition of Travel postings on Facebook*. If the respondents indicate to share travel experiences on Facebook, the majority does it in form of pictures (86%).

Although there is a difference in terms of sharing posts on Facebook between TS and NTS (see Figure 3), there is no significant correlation regarding the variable *Evaluation and recommendation of destinations on Facebook*. Only 20.1% of the Facebook users mentioned to have already rated or recommended a destination on Facebook. The study shows that the higher the usage of Facebook is, the more often users have already rated destinations (HFbU: 24.2% to WFbU: 15.2%).



Source: authors' own design

Figure 3. I'd like to share postings about my travels on Facebook

Similar results can be shown for the question: *Did you ever visit a destination, because it was recommended on Facebook (Answers: yes/no)?* 20.4% answered

yes, they did (TS: 28.1% to NTS: 18.2%), whereas 79.6% have not yet done it. HFbU choose twice as often a destination because it was recommended on Facebook (34.6% to WFbU: 17.4%). Independently of the study program, the authors found a significant correlation between *Facebook usage* and *destination choices* (Chi2(2, n=358)=10.4, p=0.005).

Discussion

Before the internet appeared, social discussions and travel reports have been crucial for choosing a product or a destination (Bone 1995; Capella–Greco 1989; Gitelson–Crompto 1983). According to the research on hand, these sources of information are still relevant. Those respondents, who have done at least one trip in 2016 have indicated that their most important sources of inspiration have been personal discussions with friends and relatives. Internet and social networks are supplemented to the former types of inspiration. Many students use the current possibilities of the web and especially of the social network system (SNS) to get in contact with other travellers and share information (Xiang–Gretzel 2010). Amongst students of tourism related degree programs booking and reviewing platforms are the most important sources of information in terms of booking travels. This study identified the differences between the SNS, like Facebook, and travel or booking platforms, like TripAdvisor or Booking.com. By doing this, it was possible to state that Facebook plays a minor role in travel decisions but people like to use it as a source of inspiration. On the other hand, booking and reviewing platforms are not very popular as sources of inspiration but play, after personal discussions, the second most important role as source of information for booking decisions. Disregarding the type of study programs within the sample, it was shown that the more often people use Facebook, the more relevant internet-related sources of inspiration and information become.

The results reveal that tourism students follow the topics *Travel* and *Holidays* on Facebook significantly more often than students of non-tourism programs. Postings on Facebook, which include pictures, become more and more important. 52.1% of the respondents named pictures as the most followed postings. 57.8% of the TS like to share postings with pictures about travel experiences on Facebook, which itself can be an indicator that pictures are very widely followed.

An existing influence of Facebook on destination decisions amongst students can be confirmed by the study on hand. The possibility that a student

visits a destination because it was recommended by a friend on Facebook rises significantly with the intensity of the person's Facebook use. More than this, tourism students indicated to have visited a destination because of a Facebook recommendation more often. The assumption that TS are more familiar with the topics of travelling and tourism than NTS, and so they get more often in contact with these topics also on Facebook, can be verified. Taking into consideration the influence of user generated content on Facebook on the choice of a travel destination amongst all relevant factors which can have influence on destination choices, UCG has little influence. The decision to visit a destination is affected by individual interests, the image and reputation of a destination, available packages and the travel motivations in general. Facebook and social networking systems can have influence to a certain extent, as they offer exchange possibilities of travel experiences, but finally a combination of travel motivations and sources of information will lead to the decision to travel to a certain destination.

Conclusion

The influence of user generated content on Facebook in relation to the choice of destination amongst students was stated. Slight differences between tourism and non-tourism students were found, although the most significant distinctions could be proven in relation to the intensity of Facebook usage, regardless of the kind of study program. It was proven that shared pictures of travel experiences tend to become a source of inspiration for other people.

The study was conducted amongst students in Austria, by using a fully standardized online questionnaire. In total, 371 questionnaires were fully answered and useable. The group of answering tourism students (n=80) is much smaller than the ones of non-tourism students (n=291). Due to organizational reasons and resource limitations, it was not the aim of the authors to get fully representative results concerning the population of students in Austria. To reach a higher level of representativeness, the questionnaire was sent to all academic tourism programs in Austria. Due to reasons of anonymity it was not possible to draw any conclusions regarding the home-based university of the respondents. Taking into account that two of the three authors work or study at the FH JOANNEUM, it is assumed that the response rate amongst students of this university was higher. Further research should focus on gaining fully representative results for Austrian students in general. To be more specific, in terms of data analysis, a separate view

on male and female results could generate more knowledge about the topics. The study on hand did not analyse the data in terms of gender-related differences, as the research questions did not ask for gender-specific answers. In terms of target group oriented marketing or communication strategies for tourism companies or destination management organizations (DMOs), a view on gender-related results could develop new knowledge.

The authors see huge potential for DMOs to encourage their guests to post pictures and videos during their stay, but also to evaluate it when they are back home. Reward systems or other benefits for coming-back guests could be helpful.

For practical application more research is needed in terms of UGC and its implications on destination choosing. For example, a research topic of interest could be to examine the relations of the DMO's published media (pictures, videos, stories, etc.) and their impact on the guests' expectations before they arrive. Moreover, the question if it is possible to guide guests in a certain destination via UGC to an intended behaviour (visiting attractions, eat at local restaurants, etc.) might be of interest for DMOs and tourism entrepreneurs. Finally, UGC could be of help to develop a gentle usage of resources within a destination, which should be an intrinsic motivation for every DMO.

For Facebook itself, the knowledge about the impact of booking and reviewing portals in terms of sources of inspiration and information, shows potentials for further development. Right now it is possible to evaluate destinations or hotels, but the importance of Facebook as a travel influencing platform could be much higher. The authors suggest providing integrated linking possibilities from sources of inspiration (UGC pictures, videos, etc.) with sources of information (booking and reviewing platforms, etc.). These linkages could lead to a much higher impact for Facebook to become not only a place of inspiration, but also a place for information.

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Investigating savings-related preferences of a sample of the Hungarian population by using factor and cluster analyses[1]

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Nowadays, attitudes to financial matters are becoming more important as decisions that have a direct or indirect impact on our money matters are made on a daily basis. Such an area is represented by savings. As a result of the crisis, several financial products significantly lost their values, and trust in financial service providers was shaken. Our research examines the decision-making preferences of savings based on questionnaire surveys conducted at two different dates. The first one was carried out in 2015 with 147 respondents and the second in 2016 with over 400 respondents. The answers were analysed with multivariate statistical methods. The final objective was to identify savings-related preferences and to examine whether separate groups can be defined on statistical bases. By means of cluster analysis four well-discernible personality types could be identified that behave differently in terms of safety and liquidity, namely the 'Risk Averse', the 'Conscious', the 'Considerate' and the 'Risk Takers'.

Keywords: savings, preferences, cluster analysis, finance, attitude.
JEL code: D14.

Introduction

In today's consumer society we can say that due to the increasingly wider choice of different products it is necessary to have all the detailed information when selecting a product. This holds true not only for products in their materialistic form, but also for services. Among services, the financial ones, that could affect everyday life, are basically becoming more and more important. By now, it is a widely accepted fact that consumers gain information from different sources and they buy more consciously, based on their decision making mechanisms, when

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shopping for food (Mellan 1997). The question is whether such considerations and attitudes have a role in our (long-term) financial decisions on savings.

The main goal of our research is to create a typology of the Hungarian population's expectations related to savings. The relevance of the topic is provided by the fact that financial service providers offer different financial products to their customers, but they are not indifferent to their customers' needs and to what customers expect from each financial product. Both service providers and customers can benefit from analysing aspects and evaluating them, as the service provider can grant a targeted product to the customer.

The article starts with a literature review, followed by an overview of the research methods and data. The examined factors of savings were separated into two groups, liquidity and safety factors and, by means of cluster analysis, four well-discernible personality types could be identified, that behave differently in terms of safety and liquidity. At the end of our article, conclusions and suggestions are formulated.

Literature review

Savings have a broad theoretical background. Nowadays, the decisions of households on how much to spend on consumption and how much to save are of micro-economic nature, so it depends on the decision makers' individual behaviour. Although the responses are important from a macroeconomic point of view, the decisions of households influence the performance of the entire economy in the short and long term. Savings are also influenced by income and fiscal political factors.

Adam Smith, one of the emblematic characters in the field of economics, stated in his book entitled 'The Wealth of Nations' from 1776 that individuals are able to increase the wealth of the nation by personal and national savings (Smith 2007). Without savings that last from birth to death it is impossible to pile up a fortune (Bekker 2002). According to Adam Smith a good government does not intervene in the economy.

The personal and societal interests interweave as our predecessors have sensed. In our opinion, the controlling role of the government and the state is crucially important in influencing the individual decisions, especially when it comes to savings and self-financing.

According to Keynes nothing guarantees that the demand for capital goods will be the same as for savings. In Keynes's opinion the private sector is not adequately

able to take care of the products and services required by the society such as accommodation, transport, health care and education. He relates the consuming willingness to the characteristics of the human mentality. In his opinion the human subjective-psychological motivations have important roles. Three psychological basic factors are identified: 1. psychological susceptibility for consumption, 2. relation to liquidity, and 3. evaluation of the capital wealth future yield (Pethő 2004). Based on his tenet, first we have to decide what portion of the income will be spent on consumption and on accumulation. Next, the individual makes a decision on the proportion of the savings which will be monetary or of other nature. As consumption is the centre of his theory he is approaching the savings from the consumption and consuming willingness perspectives. The factors defining consumption were divided into objective and subjective (Mankiw 1999).

The wealth of a country and the well-being of an individual rely on savings. The elements of the financial system should be formed so that, through the instruments of economic policy, both economic and social objectives should be met (Tatay 2009). The saver and the investor are financial players who do not spend part of their income for a specific period, but rather temporarily transfer it to the financial system (Vígvári 2008). In the world of finance extremely rapid changes take place but the basic need of the efficient decision making of the individual and the household alike makes them constantly monitor the legal regulations that affect them (Horváthné Kökény 2014).

The issue of financial culture has become more significant nowadays as it is part of our everyday life and decisions on finances are made on a regular basis.

According to the International Network of Financial Education (INFE) of OECD "financial culture is the combination of consciousness, knowledge, skills, attitudes and forms of behaviour that is necessary to make considerate financial decisions and, ultimately, to reach individual financial well-being" (Atkinson–Messy 2012. 14). Based on the definition above we can state that it is very difficult to grab and measure financial culture. Although there is no standard examination methodology of financial culture, researchers have been dealing with financial personality types since the 1970's to define people's financial attitude based on different points of view. Mellan (1997) identified nine personality types based on attitude towards finances (Saver, Spender, Ascetic, Escaper, Grabber, Waster, Worried, Risk Taker, Risk Averse) and Csiszárik-Kocsir (2016) showed that there are certain social groups who think the financial system is organised on ethical

principles. All in all, it can be stated that different groups prefer different savings and financial products.

Boldizsár et al. (2016) reported that mainly the more liquid forms of savings were typical and widespread in the Hungarian households and that a greater diversification of financial products could only be observed in households with higher income. Moreover, almost forty percent of the Hungarian households did not possess "significant financial assets".

Typically, it is not the geographical situation that determines the saving habits of Hungarian households, but rather their financial attitude, which is greatly influenced by the extent they are acquainted with the different forms of saving (Széles–Horváthné Kökény 2014).

The focus is placed on the extent to which people can decide the veracity of statements or how precisely they can define certain financial terms. The old conservative attitudes, such as thriftiness, are not enough as people are exposed to impulse buying due to the market and other impacts (Németh et al. 2016). That is why it is very important to identify consumer groups based on their preferences related to money matters. After identifying them, special measures could be taken to improve financial culture and develop/create financial services in the future.

Table 1. Proportion of Hungarian households with different forms of savings (%)

Forms of savings	2001	2005	2010	2015
Current account	58	64	72	76
Deposit account	12	9	9	7
Securities	9	7	5	6
Cash	7	18	14	11
Foreign currency account	5	3	5	3
Building savings account	8	6	5	5
Health insurance system	4	11	19	6
Life assurance	28	30	30	23
Pension fund	20	17	na.	11

Source: Medgyesi (2016)

Table 1 presents the forms of saving preferred by the Hungarian households. More than one of the forms of savings included in the survey could be labelled. The highest proportion of households surveyed possess current accounts whose volume shows a steady increase. In addition to the money held in the bank

account, cash was a decisive factor. Securities which would provide higher yields for the Hungarian households were not of great significance during the period under review.

In the past few years the amount of annual savings of the Hungarian population has considerably increased; the annual accumulated funds in 2015 nearly grew by 80% as of 2012. In 2015 the net financing capacity of the households was HUF 2665 billion, while this only amounted to HUF 1512 billion in 2012 according to the National Bank of Hungary. The net savings of households in 2015 translated into 7.9 percent of the GDP (Baranyai-Csirmaz et al. 2017).

Material and method

The objective of the research is to identify and classify the attitudes of the Hungarian population towards financial services through statistical methods.

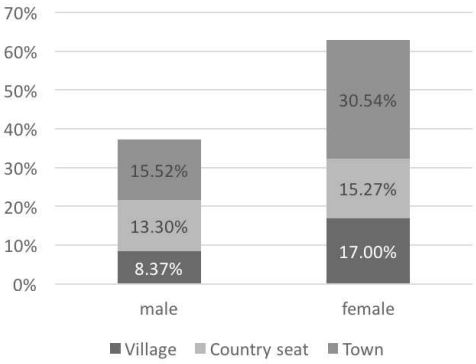
In order to collect data, we carried out a questionnaire survey between September 1 and November 30, 2016. The questionnaire consisted of multiple choice and Likert scale questions and for the selection of respondents we used the snowball method.

The questionnaires were filled out both electronically and on paper. The electronic survey was conducted through the Google forms questionnaire. The paper-based questionnaire was filled with personal interviewing, randomly-minded.

After aggregations and data clean-up, the database was generated by 406 questionnaires, which was 91% of the total number of questionnaires submitted. During the data clean-up, the incomprehensible data and answers were filtered out. There were 406 assessable responses to the study, which were analysed by using statistical methods.

Demographic characteristics were considered when selecting the sample. It can be stated that the sample is not representative, but due to the large item number the results are worth of consideration.

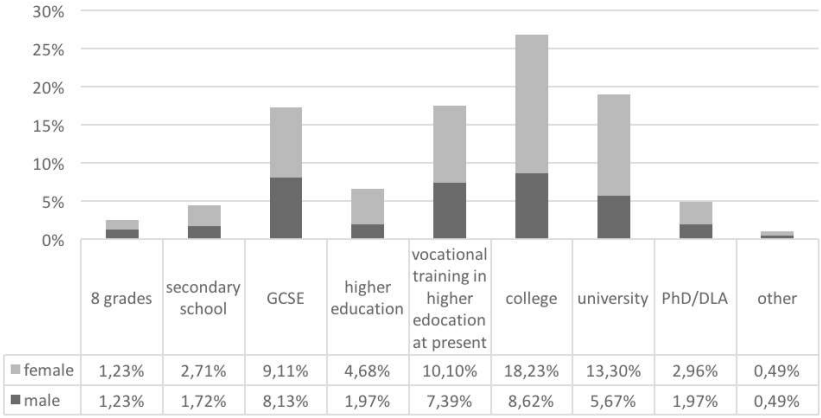
The breakdown of the sample by residence and gender is as follows: 25.37% of the respondents live in villages, 46.06% in towns and 28.57% in county seats; 37.19% of the respondents are male and 62.81% female (Figure 1). Female respondents were overrepresented, which could be explained by the willingness to response.



Source: authors' own design

Figure 1. Breakdown of the sample by gender and residence (n=406)

57.39% of the respondents had a higher education degree, while the proportion of those with secondary or lower education amounted to 42.61% (Figure 2).

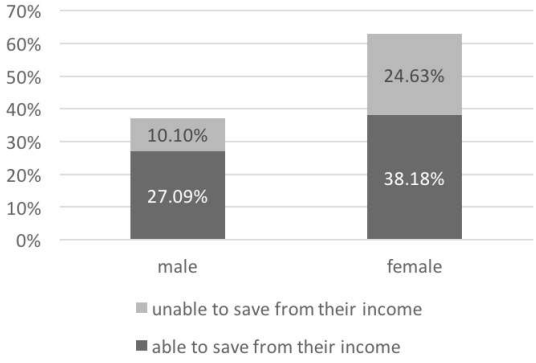


	8 grades	secondary school	GCSE	higher education	vocational training in higher edocation at present	college	university	PhD/DLA	other
female	1,23%	2,71%	9,11%	4,68%	10,10%	18,23%	13,30%	2,96%	0,49%
male	1,23%	1,72%	8,13%	1,97%	7,39%	8,62%	5,67%	1,97%	0,49%

Source: authors' own design

Figure 2. Breakdown of the respondents by gender and qualification (n=406)

Respondents were asked if they could make savings in their present financial situation; 65.27% gave an affirmative answer, while 34.73% stated that they are unable to save (Figure 3).



Source: authors' own design

Figure 3. Breakdown of the respondents by gender and their ability to save (n=406=100%)

In addition to the most important demographical data the questions were directed at what characteristics are considered important by the respondents when it comes to savings. On a 5-degree Likert scale 1 stood for "not at all important" and 5 for "very important" and, of course, there was a possibility of opting for "does not apply/cannot decide" as suggested by the literature (Malhotra 2008). The other responses mentioned were considered as missing values and were not counted in the examination, so the results were not distorted.

The database was imported into the SPSS statistical programme package as SPSS is suitable for analysing databases in economics and social sciences (Marques de Sá 2007). Afterwards, by means of proper data transformation and uni- and multivariate selection, statistical methods were used for the analysis.

Our examination was directed at risk preference and group formation. An answer was sought whether there was a possibility of grouping respondents based on their risk taking preferences, i.e. to what extent the conditions of investment are important for them, i.e. safety, return, not risky, guarantee, ensuring earnings during the year, guaranteed yield, state guarantee, additional services and liquidity.

To examine the saving preferences of the population, factor and cluster-analyses were carried out. As a first step of the factor analysis it was examined whether the data could be organised into factors by using the correlation calculation and the value of the KMO (Kaiser-Melker-Olkin) indicator; if it is

above 0.5 it signals that the data could be organised into factors (Sajtos–Mitev 2007). The other criterion of the factor analysis is that the variables examined should correlate. Correlations were identified at the generally accepted 5% significance level, which is an acceptable level in social sciences (Szűcs 2004).

By means of the factors identified we examined if different groups could be distinguished on statistical bases. To this end, the hierarchical cluster analysis was used along with the centroid method. The point here is that the central values of the different groups should be the farthest from each other. The component matrixes were rotated by using the Varimax method and more accurate data were obtained (Sajtos–Mitev 2007).

Results

The preliminary examinations showed a significant correlation (p=0.021) between all variables, therefore a principle component analysis was carried out.

Based on the value of the KMO indicator (0.740) before the examination, the characteristics could be organised into factors. The component matrix obtained was rotated by the Varimax method and as a result, two factors were mathematically separated (Table 2); these results are very similar to the findings of our previous research (Csernák 2012).

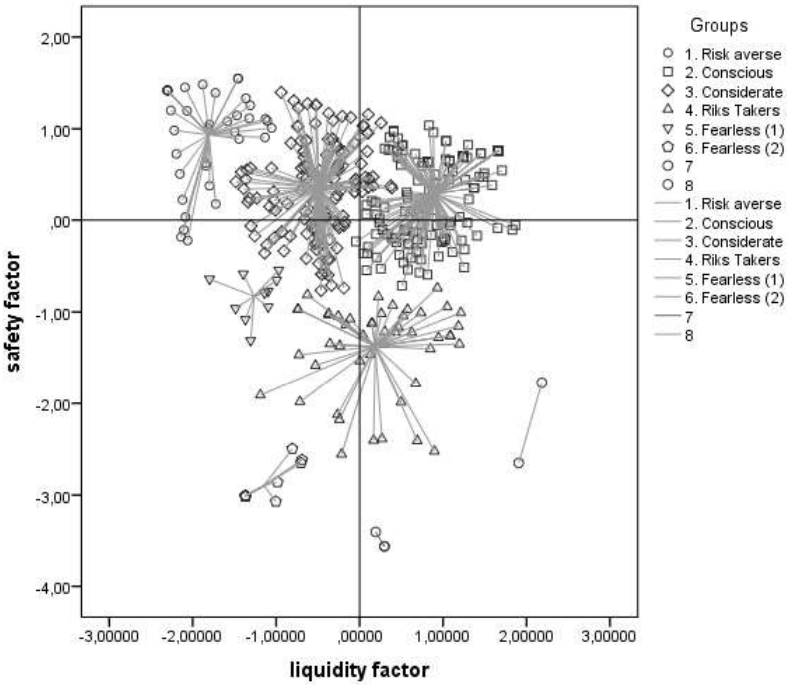
Table 2. Organising saving preferences into factors (rotated component matrix)

Factors	Characteristics	Factor	
		1	2
'**Safety**' factor	capital guaranteed	0.807	0.064
	guaranteed yield	0.792	0.218
	no risks	0.732	0.196
	state guarantee	0.709	0.155
'**Liquidity**' factor	redeemable within one year	0.006	0.820
	rearning yields within the year	0.219	0.795
	additional insurance product	0.334	0.500

Source: authors' own design

Based on the examined sample, two factors, namely 'Safety' and 'Liquidity', could be mathematically identified. The 'Safety' factor consists only of preferences dealing with the security issues regarding savings. When it comes to the 'Liquidity' factor the decisive element was that the deposit should be redeemable within a

year. The "additional insurance product" shows the importance of liquid savings for the respondents, i.e. to get access to their savings.



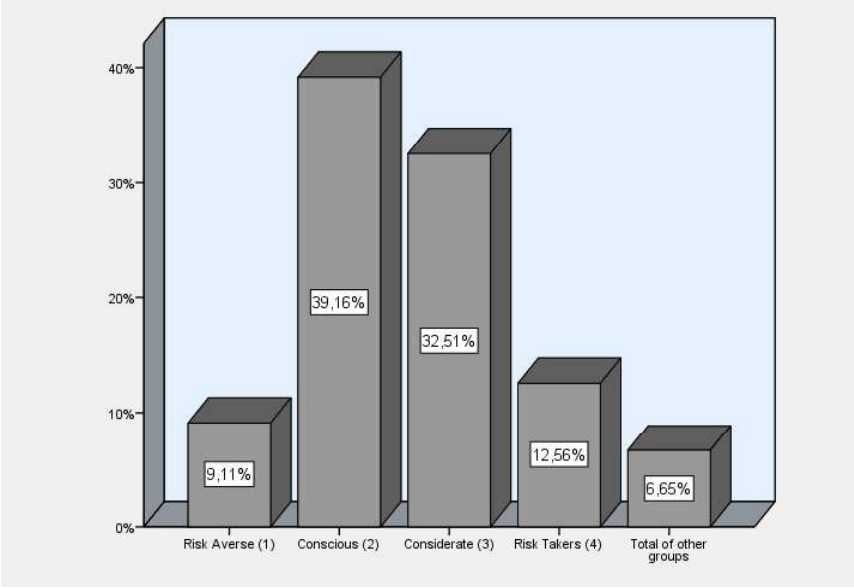
Source: authors' own design

Figure 4. Breakdown of the respondents by the importance of safety and liquidity regarding savings (n=406)

The respondents were grouped by means of cluster analysis based on the characteristics identified in the factor analysis. Eight separate groups could be isolated based on the centroid methodology (Figure 4).

The eight groups with different saving preferences were named after their most typical characteristic. The first group was named 'Risk Averse', as the safety of their savings was the most important for them and liquidity, i.e. flexible accessibility, was not so important. Risk Averse represents 9.11% of the sample. The second group was named 'Conscious' as for them both safety and accessibility were important regarding savings; they represent 39.16% of the sample, i.e. a little more than one-third of the sample was represented by respondents who consider

their savings a complex issue. The third group was named ‘Considerate’. What describes them is that, although safety is important in savings, liquidity, i.e. the flexible access to their savings, was not so important for them, so presumably they do not try other products than the classical savings forms. The Considerate group represents 32.51% of the sample. The fourth group was named ‘Risk Takers’. They can be characterised by the fact that safety as a factor is less typical for them than for the other groups presented above. In contrast, the impact of the liquidity factor is approximately as high as for the Conscious and the Considerate groups. The Risk Takers represent 12.56% of the sample. In the sample, similarly to other analyses of such kind, there are some groups whose opinions are different, almost extreme, but the number of items in these groups is not significant. In the current sample we differentiated some who are more fearless than the others, but the number of items from this group did not reach 5% of the sample. If we add these small groups, it amounts to 6.65% of the sample. All in all, 93.34% remained in the dominant personality groups (Figure 5).



Source: authors’ own design

Figure 5. Breakdown of the respondents by saving preference groups (n=406=100%)

In addition to the consumer habits identified, other important issues to take into consideration are how these groups can be influenced, and how they can be formed. The typology of financial preferences can also be used in education to differentiate such disciplines (Bakos-Tóth–Baranyi 2016).

Conclusions and recommendations

The objective of our study was to examine the saving preferences of the Hungarian households by using factor and cluster analyses on a sample of 406 respondents.

As a result of the principle component analysis we identified two factors, namely 'Safety' and 'Liquidity' (access to savings).

By means of cluster analysis four well-distinguished personality groups could be identified, whose opinions are divided on Safety and Liquidity. The two biggest groups consist of the 'Conscious' (39.16%) and the 'Considerate' (32.51%). For the Conscious respondents both Safety and Liquidity were important factors, so they are presumably more knowledgeable about their savings and can find the offers which are safe and quite flexible regarding accessibility. For the Considerate, Liquidity is less important and the main issue for their savings is Safety.

We can conclude that the Hungarian population is not homogeneous in terms of saving preferences. By means of statistical methods well-distinguished groups could be created in which respondents had different opinions on savings. In our opinion the distinction is essential as the preferences of the different groups and their expectations and attitudes towards financial products must be considered when financial culture is being developed.

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