

THE POSSIBLE EFFECTS OF INTER-TEMPORAL CHOICE MODELS ON CONSUMER LOAN AGREEMENTS

Barna FÖMÖTÖR, Anett PARÁDI-DOLGOS

Kaposvár University, Faculty of Economic Science, H-7400 Kaposvár, Guba Sándor u. 40

ABSTRACT

The analysis and understanding of the background of consumer choices get more and more attention nowadays. A significant amount of consumer choices are traceable as one of those inter-temporal decisions of the individual that are made at different times. To map the decision-making process, it is necessary to introduce inter-temporal choice models and to show the characteristic features that are the most relevant for decision making. The discounted utility model shows the temporal features of decision-making, the characteristics of which are the positive time-preference and the time-consistent discount rate. Since the discounted utility model – in numerous cases – did not prove the characteristics of the decisions of everyday life, new models were created to describe these procedures: these are the hyperbolic and quasi-hyperbolic models. With their help it is possible to explain the main features of temporal decisions. The parameters, which show a distortion towards the present and are inconsistent in time, make it possible to explain some human behaviours that were not previously understandable. One of these behaviours is when one extends their present consumption with the help of a loan. Regarding the fact that a consumer loan can be considered to be an inter-temporal choice, it has become justifiable to compare the results of behavioural science in this field with the legislation covering consumer loans. In this study we are going to make an attempt at this comparison while also looking for an answer to the question of whether the results of inter-temporal choice models appear in operative legislation or not. If they do, we would like to see whether they are seriously taken into consideration or not. Furthermore, we would like to know what possibilities need to be considered by the legislature, law enforcement bodies and all others present in this complex field.

Keywords: inter-temporal decisions, time-preference distortion towards the present, consumer loan agreements

INTER-TEMPORAL DECISIONS

The analysis and understanding of the psychological background of consumer choices – a type of behaviour – was considered important even in neoclassical economics. Adam Smith was the first to deal with the topic, while further analysis showed that the background of consumer choice has a significant influence on the consumer's emotions and evaluation related to time. People associate different future times with typically underestimated preferences. This relationship clearly defines an individual's decision made in the present but influencing his or her future.

In connection with the examination of the topic mentioned in the title of this study, we have started with the following economic assumption: money is considered a general factor of production. At the centre of our study, we analyse

the consumer choices that make it possible to gain the above mentioned factor of production, in other words we examine consumer choices in connection with loans. In the case of a loan, the most important factor is its temporality, ergo an inter-temporal choice in connection to money.

The starting point of our study could be the description of a *homo oeconomicus*, an individual – driven by needs and necessities – who aims to consume as soon as possible, in the present or in the near future. The wish to fully satisfy their needs and necessities soon can easily lead to choices in which the importance of consumption in the present becomes so great that the individual will enlarge that at the expense of his or her future consumption. In this way, the individual restricts some future possibilities while trying to get a certain amount of money – an abstract utility factor – which he or she does not have in the present. Actually, this is what happens in the case of asking for a loan – which according to its aim – is also the extension of some future consumption. One brings forward their present consumption at the expense of future consumption, in other words, exchanges their future (possible future consumption) for the present (present excess consumption) (Andor, 2012). However, these decisions can have severe risks that cannot always be seen beforehand. That is why it is justifiable to analyse the factors that influence the background of these choices.

The issue presented in the first paragraphs of this study – in a much simpler version – was first modelled by Fischer in 1930. He said that inter-temporal choices – the comparison of the present utility factor of different times – depend on the marginal rate of substitution related to time. The marginal rate of substitution is defined by time preference and decreasing marginal utility. A significant breakthrough in this field was Discounted Utility (DU) theory created by Samuelson (1937). Discounted Utility theory spread fast and was really popular primarily because of its simplicity. The other reason for its popularity was that it managed to involve all the psychological factors that influence our choices in one parameter, which is the discount rate (Bölcskei, 2009). Samuelson collected all the heterogeneous and diverse factors of choice in one discount rate and considered it a *constant*. This way different utilities appearing at different times became easily comparable. According to Samuelson: “*at any time an individual behaves so as to maximize the discounted sum of all future utilities. [...] An individual discounts future utilities in a simple and consequent way, which method is known for us.*” (Samuelson, 1937) So a positive temporal discounted unit has to be connected to the theory, which means that a distant temporal point will have smaller utility, and, thus, this will strengthen consumption closer to the present. DU theory considers the discount factor in an exponential way, so the utility rate – related to the present and the one related to the future – will also change in a constant way. We can assume that a constant discount rate and time-consistent preference is a typical characteristic of discounted utility theory.

Numerous experiments done in the field of behavioural economics deny DU theory, since the respondents to the problems did not make their decisions in harmony with the model (Neszveda and Dezső, 2012). As a result, it is evident that the behaviour of the respondents could be much better described with other

discounted models. The experiments and researches resulted in the hyperbolic and quasi-hyperbolic models that describe preferences distorted towards the present.

The phenomena described by hyperbolic models was first analysed during animal testing. The animals preferred a smaller but immediate award to a larger one that they would have received later. The model was created right after the evaluation of the experiment, while the discount rate showing time preference was drawn in the form of a hyperbola. The model was altered more times. Finally, it was *Loewenstein and Prelec* who in 1992 created general hyperbolic discounting, with the help of which it was possible to handle some earlier anomalies as well as a description of human behaviour. However, it was difficult to apply their model in more complex cases. It was the quasi-hyperbolic discount model that became popular within a relatively short period of time (*Neszedi and Dezső*, 2012). It describes an inconsistent behaviour in time – similar to the hyperbolic discount model – however, the model is much simpler and easier to handle.

The idea of quasi-hyperbolic discounting comes from *Phelps and Pollak*. It is inconsistent in time and assigns a bigger discount rate to short-term time preference. The time preference of the distant future can be consistent in time, but its distortion towards the present is significant. The β parameter was involved in the model as a further discounting factor compared to the only (constant) discount rate of DU theory. If we compare the form of hyperbolic function to that of the exponential one, in the case of hyperbolic function the consumption utility close to the present can significantly lean towards the pole – depending on the value of the β parameter. The long-term time preference will become straighter and straighter across time, so the discount rate decreasing in time is typical only in the period closer to the present (distortion towards the present), then the discount rate becomes consistent in time (*Nagy*, 2011).

We must mention here that the two different discounted models have different results regarding the distant future, but in this study we are not going to deal with this aspect.

The significance of the hyperbolic and the quasi-hyperbolic models is the following: with their help it became possible to explain and describe human behaviours that had not seemed sensible earlier (*Bölskei*, 2009). Due to preferences distorted towards the present, present consumption utility is more important than possible future consumption utility. However, if future consumption is postponed to a later date, it will decrease in utility not exponentially but by a larger amount. That is why any individual in this case will try to maximize his or her consumption – or in other words, his or her utility – as much as possible, regardless of the present financial possibilities. Let us not forget that the exchange of the present to the future works the other way round too: an individual can reach an excess of consumption in the present by asking for a loan. In this case, we talk about the results of an inconsistent time-preference distorted towards the present.

Consumers' time-inconsistent behaviour is not a novelty in the field of bank loans. Banks offer numerous banking products that are based exactly on this type of time preference distorted towards the present (*Sebestyén et al.*, 2011). The credit delivery system can easily lead (and has already led) to consumer loans, where the

debtor asked for a loan – because of his or her time-inconsistent time preference and some over-optimistic estimation regarding his or her future financial situation – and finally he or she was not able to pay the instalments. The realization of this type of credit delivery system was the result of the information ascendancy of financial institutions. Instead of ascendancy perhaps we had better use the term: information asymmetry. In the case of banking products and services, the vendor of the product or service – the bank – has significantly more information than the buyer (the future debtor).

An important question comes up here: does the operative legislation take into consideration the circumstances and characteristics of the individual's inter-temporal decision making or not?

LEGISLATION

1. The contract is defined in the Civil Code by Section 6:58 of Act V from 2013 as the following: „The contract is a mutual and unanimous disclaimer of the parties according to which obligation arises for performing the service, as well as entitlement arises for demanding the service.” The New Civil Code – in harmony with Act IV from 1959 in the (Old) Civil Code remained in force until the 14th of March 2014 – primarily ensures the principle of freedom of contract. According to this principle, the subjects of private law can enter into a contractual relationship as they wish. The legal standards relating to contracts are mainly dispositive provisions, from which the parties may differ by mutual consent. The parties can agree on the subject and the details of the contract. Contractual obligations can be defined by law only in exceptional cases. In private law, equality and juxtaposed relationships are presupposed and ensured by main principles. Any intervention in a private law relationship is guaranteed by law for the case only when the legal or contractual balance between the parties is upset because of an information deficit or the lack of necessary professional information. In these cases legislation has the presumption that in order to re-establish the contractual balance, the weaker party has to be supported legally. A typical instance for intervention into a private law relationship – by legislative provisions with mandatory content – is the contractual relationships on General Terms and Conditions and Consumer contracts.

2. Most consumer credit contracts are signed using General Terms and Conditions, so it would be logical to examine these legal parameters now. According to paragraph (1) Section 6:77 of the New Civil Code: „General Terms and Conditions are the conditions of a contract, the details of which were defined unilaterally in advance by one party, without the participation of the other party, in order to be applied on more contracts”. The general Terms and Conditions will become valid only if the applier of the contract makes it possible for the other party to read the content of the contract before signing it. The other condition is that the other party has to accept the conditions of the contract. The New Civil Code prescribes the obligation to inform the other party in connection with the acceptance of the conditions. Another important regulation is that in the case when the General Terms and Conditions differ from any other condition of the contract, the latter

will be in force¹. In practice it generally means that if the consumer signs a shorter version of the contract – which refers to the General Terms and Conditions – and there is a contradiction between the contract and the General Terms and Conditions, the shorter version will be in force, and the parts that are in contradiction will not be part of the contract.

As we have already mentioned, the justification of the mandatory provisions regulating contractual freedom derives from the fact that in certain cases the balance between the contractual parties shifts or is upset. This situation makes it justifiable to protect the rights of the weaker party. It is typical in the case of the application of General Terms and Conditions, since one party – unilaterally, without the cooperation of the other half – defines the conditions of the contract. As a result, an obligation or condition can become part of the contract, which can evidently be disadvantageous for one party. A good example for this is the right of financial institutions to modify contracts unilaterally. According to the Civil Code² it is not a violation of law if a financial institution declares its right – in the General Terms and Conditions – to modify contracts unilaterally. In this case, this new condition becomes part of the contract. It is evident that here the consumer's contractual position weakens by great measure, since there is the possibility to apply a term in the General Terms and Conditions which will provide the possibility for the bank to modify the contract unilaterally and, at the same time, will exclude the right of the court to alter or modify the contract.

The Act CCXXXVII of 2013 on Credit Institutions and Financial Businesses acknowledges the right of financial institutions to unilaterally modify their consumer credit agreements, however, at the same time it partly restricts that right – in order to protect consumer rights – by saying that it is possible to modify only interest, costs and fees. According to the Supreme Court, the financial institutions' right to modify interest, costs and fees is rational, as it serves both parties' interests³.

3. The defenceless state – deriving from the nature of the legal relationship – made it necessary to provide legal protection for consumers who suffer from unfair General Terms and Conditions in contracts.

A condition of a contract is considered unfair when the applier of the contract defines the obligations and rights – unilaterally and wantonly – by violating the requirement of good faith and righteousness on the expense of the other party⁴. To

¹Section 6:80 on New Civil Code.

²True to both the Old and the New Civil Code.

³ 2/2012. (XII.10.) PK opinion: „The legal possibility to modify rates, interests and fees has the benefits for both contractual parties. The right to modify the contract unilaterally makes it possible – in the case of a long-run contract – to keep the contractual balance that was set at the time of contracting. Its aim is to reduce the risks deriving from calculations of a long-term contractual relationship. It protects the consumer by guaranteeing that the financial institution shall not devolve the calculated rate of rising costs to the consumer and will not offer a more expensive loan because of these calculated costs.”

⁴Paragraph (1) Section 6:102 New Civil Code.

regard a contractual condition unfair, every aspect that led to signing the contract has to be examined. The function of the service, as well as the contracting parties' relationship to other contracts and other conditions in the same contract, has to be examined. With regard to these aspects, one has to refer to the relevant chapter⁵ of Act CCXXXVII of 2013 on Credit Institutions and Financial Businesses – referring to the defence of clients. These regulations include how to inform clients properly and declare special regulations related to contracts.

We must emphasise that the regulations that refer to unfair General Terms and Conditions cannot be applied for contract conditions that define the main service or the rate of service and remuneration, if those are clear and understandable. Furthermore, according to the New Civil Code, the General Terms and Conditions are not considered unfair if those are defined by law or if those are drafted according to standard legislation.

THE RELATIONSHIP BETWEEN INTER-TEMPORAL DECISIONS AND LEGISLATION

If we compare the results of behavioural science in connection with inter-temporal decisions and the legislation that we have summarized in the 2nd chapter – without attempting to be comprehensive –, we can assume the following correspondence.

The case of legislative intervention – to violate or break the principle of contractual freedom of private law – is acceptable in the case of models describing preferences distorted towards the present. In these cases a consumer can get into a situation – because of inconsistent time preference, his or her over-confidence and over-optimistic estimation regarding his or her future – when the contractual balance shifts at his or her expense. The reasoning for this regulation basically refers to information asymmetry: it is typical in a situation where the contractual balance – deriving from the equal position of the parties – is upset because of the lack of important pieces of relevant information. That is why legislation provided the right to legally intervene in contractual relationships. A strong distortion towards the present and the decrease of time-inconsistent utility will become really significant at this point, since these are typical characteristic features of any inter-temporal decision and quasi-hyperbolic model. The circumstances, that the consumer makes a decision in a state of time-distorted utility decrease, will definitely influence the chance for an objective consideration. In the hope of maximising his or her present excess consumption, the individual will tend to disregard the negative effects on his or her decreasing consumption possibilities. We think that the characteristics of the quasi-hyperbolic model will have a double effect in this case. On the one hand, the disadvantageous situation, with its information asymmetry, will seem „desirable” for the consumer. On the other hand, because of the same reasons, the consumer is not able to evaluate the effects of the information asymmetry in a sensible way and will be inclined to neglect the negative effects of the shift of the contractual balance.

In the case of choices regarding consumer credit agreements based on the inter-temporal and the quasi-hyperbolic models, we have revealed and analysed their

⁵Chapter XIII. Act on Credit Institutions and Financial Businesses.

negative aspects on consumers at two points. The most important thing is that we have compared them to the relevant law in force. The behaviour deriving from the temporality of the decision places the situation – which leads to asymmetric information and shift of balance – in better light than it is in reality; on the other hand, the chance to take the negative effects into consideration is greatly reduced. As far as we are concerned, we would say that it is evident that the possession of all the relevant information, combined with professional knowledge and experience, would normally counterbalance a decision-making process generated by a distorted time-preference. Since this latter factor is evidently subjective, there is much less chance to make a rational decision based on objective pieces of information. We must add here that the contractual balance will be further shifted if the financial institutions offer banking products which exploit this time-preference distortion towards the present.

If we think about it further, we must ask a question: if time-preference distorted towards the present has such a strong correlation with information asymmetry, like we have shown above, then where is the borderline of legal intervention? How much freedom does legislation have in this field? To what extent can legislation intervene in a situation in order to ensure the contractual balance in the long run – and in a calculable way? By answering these questions we have to emphasise that the only aim of legislation is to guarantee contractual balance and to define the measure of legal intervention in private law cases.

We can also state that by regulating the general terms and conditions, consumer rights and the unfair general terms and conditions of contracts, the legislative system has created a new legal situation. Parts of this regulation can be applied in order to re-establish the contractual balance of inter-temporal consumer decisions. The most important aspect here is the obligation of a financial institution to give proper and relevant information to consumers. However, giving proper information may have the result of decreasing the disadvantages of inter-temporal decisions – not of hindering them. The obligation to give proper information can be especially relevant when one party proposes the invalidation of a contract by referring to its unfair state. Every aspect that led to signing the contract has to be examined in this case.

Theoretically, it can occur that a financial institution offers a banking credit product to a consumer and applies a time-preference distorted towards the present on purpose. In this case the consumer can attack the contract because of an intentional error of the financial institution. It means that the bank intentionally avoids giving relevant information or provides wrong data to the consumer.

We must underline here that our findings cannot lead to procedures which are greatly limited because of taking the characteristics of inter-temporal decisions into consideration. In the case of making an economic decision, reason and the objective ranking of risks are basic phenomena. However, because of the experiences of the last couple of years – especially the case of those who have foreign-currency credits – it is advisable to take into consideration every aspect that can lead to system-level risks. In our view, risk-management can be divided into three fields: providing the necessary and justifiable legislation, offering objective and relevant information to consumers and the legal application of relevant information.

We must also mention that the low level of deposit interest rate⁶ offered by the credit institutions at present, combined with the rate of taxation⁷ on interest income, further strengthen the distortion towards the present.

The results of behavioural science in connection with the inter-temporal decisions when applying for a consumer credit – especially those of the quasi-hyperbolic model – meet the requirements of the principals of private law contracts. We have found that the behaviour regarding the temporality of the decision when applying for a consumer credit on the one hand supports, and on the other hand strengthens, the shift of contractual balance. In order to re-establish the contractual balance, we have collected the possible fields of intervention and their limits as well. By applying these actions consequently, we hope to minimize the risks of these types of financial transactions for all contracting parties in the long run.

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⁶ 1.000.000.- HUF for 6 months, in the case of an unconditioned deposit EBKM (Annual Interest Rate): 0,65 % - 2,9 %, according to the mean of 24 banks the Annual Interest Rate is: 1,95 % <http://www.bankracio.hu/betetkalkulator/lekotottbetet/feltetelek-nelkul?deviza=17>

⁷ Act CXVII of 1995 on personal income tax; according to the regulations 16% tax rate has to be paid on the interest of deposits rate. Besides tax rate, since January 1st 2013, a 6% health care contribution has to be paid according to Act LXVI of 1998. Total tax after interest income is 22 %.

Corresponding author:

Anett, PARÁDI-DOLGOS

Kaposvár University, Faculty of Economic Science

Department of Finance and Economics

H-7400 Kaposvár, Guba S. utca 40.

Tel.: +36-82/505-940

e-mail: dolgos.anett@ke.hu