Credit Repayment Decisions: The Role of Long-term Consequence Information, Economic and Psychological Factors

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Abstract

Information concerning the long-term consequences of credit repayment decisions is often not available for flexible credit facilities such as credit cards. The role of such information in repayment decisions was investigated in two questionnaire-based experiments in which bank customers (N = 241; 300) were presented with credit card and remortgage repayment scenarios. A dual mental accounting model of money management predicted that repayments would be influenced by both total cost and loan duration information. In both studies these were varied in a 2 x 2 randomised-groups factorial design. Experiment 2 also investigated the role of key economic and psychological factors, including some related to a risk defusing operator model of risk management. In both studies analysis of covariance showed that information on the long-term consequences of repayment decisions lead to significantly higher levels of repayment. However, in Experiment 2, it was found using hierarchical multiple regression that disposable income, level of education, and the perception of, and worry about, repayment difficulties had larger significant effects on repayment levels. The findings are interpreted in terms of mental accounting and risk defusing operator models. The role of worry was more complex than anticipated and further research on this is proposed.

Keywords: Consumer credit, Decision making, Mental accounting, Risk defusing operators

JEL classification: D18
Introduction

This paper concerns the psychology of flexible credit repayment decisions, such as those for credit cards. The Office of Fair Trading (2004), in their UK credit card survey, found that a third of the population were using credit cards to purchase goods and services and of these only 47% paid off the full amount at the end of each month. Overall, UK credit card annual transactions grew from £87.3 billion in 2002 to £105.2 billion in 2006 (Office of Fair Trading, 2008). Flexible credit allows the consumer to choose the level of their monthly repayments from month to month. This is in contrast to closed-end loans where the amount borrowed must be repaid in a specified number of fixed repayment amounts. Chien and DeVaney (2001) suggest that mental processes and risk perception are different for flexible credit decisions compared to those for closed-end loans. Such mental processes may include, for example, consideration of current and future income, expenditure and assets (Shefrin & Thaler, 1988).

To address the lack of a common conceptual framework for credit decision research, Kamleitner and Kirchler (2007) proposed a three stage model with the addition of situational and personal characteristics (see also Gärling, Kirchler, Lewis, & van Raaij, 2009; Kirchler, Hoelzl & Kamleitner, 2008). The first stage they identified concerns processes before credit take up, the second involves those at the time of the decision to take it, and the third stage concerns processes during the repayment period. For closed-end credit, decisions concerning the level of repayment are taken at the second stage, whereas for flexible credit they are made periodically during the third stage.

In the present paper we consider the effects of providing total cost and loan duration information on repayment decisions with flexible credit. Two independent-groups experiments are reported that test predictions from dual mental accounting and risk defusing operator (RDO) models. The first presented UK bank customers with two scenarios, a credit
card and a mortgage with options to overpay, and varied the above-mentioned supplementary
information. The second experiment replicated and extended the first with a different sample
of UK bank customers. It also investigated the role of key economic and psychological
factors, including some related to a risk defusing operator model of risk management.

Total cost, loan duration and credit repayment decisions

In a process tracing study, Ranyard, Hinkley, Williamson & McHugh (2006) found
that when making closed-end repayment decisions, credit consumers frequently ask about,
and made trade-offs between, monthly repayment amount, total cost and loan duration.
Participants’ information search and think aloud responses were interpreted as evidence that
consumers develop simplified mental representations of instalment credit in terms of dual
mental accounts (Ranyard & Craig, 1995). The first of these is a total account, which is the
sum of all repayment instalments, i.e. the absolute, total cost of the loan ignoring the
distribution of repayments over time. The hypothesis that the total mental account
representation, and therefore total cost, influences credit decisions was further tested in
experiments presenting decision scenarios involving credit alternatives varying in loan
duration and fixed monthly repayments. Although APR information had a strong effect on
such decisions, its effect was moderated by total cost information (Ranyard et al., 2006;
McHugh, Ranyard, & Lewis, 2010).

As Thaler (1985, 1999) has argued, people also mentally simplify a series of financial
transactions by grouping them into budget periods, often weekly or monthly to coincide with
regular income. Ranyard and Craig (1995) described this kind of mental account as a
recurrent, budget period account to incorporate the anticipation that future budget periods are
generally similar in times of financial stability. A primary concern of any credit decision is to
consider the affordability of the repayment relative to anticipated income and other budget
period constraints. In addition, credit consumers are also concerned with the number of
budget periods for which credit repayments are necessary, i.e. the loan duration. Ranyard et al.’s (2006) process tracing study found that participants often sought to reduce loan duration, taking account of the affordability of higher repayments for shorter loan periods. Also, Henderson and Peterson (1992) found that consumers often choose credit for car purchase with duration corresponding to their expected ownership of the vehicle (see also, Wonder, Willhelm & Fewings, 2008).

There are important differences between closed-end and flexible credit in the information normally available. With closed-end credit, borrowers usually have available information concerning the long term implications of repayment decisions, i.e. the consequent loan duration and total cost of alternative levels of repayment. However, when borrowers have to decide how much they want to repay with flexible credit, the long term consequences of their decisions are unclear. Several studies have shown that estimates of loan duration for flexible credit are quite inaccurate (Lewis & van Venrooij, 1995; Overton & MacFadyen, 1998). Usually the monthly percentage rate of interest is available, but from this neither the number of instalments, nor the financial charge or total cost of the loan are precisely known. Furthermore, although APR information is also readily available to borrowers, this is also not useful as an aid to gauging either loan duration or total cost; its relationship to these aspects of the loan is rather complex. Ranyard and Craig (1993) explored the effect of providing total cost and APR information on estimates of loan duration and found that total cost significantly improved estimates of loan duration, whereas APR led to significantly less accurate estimates. That is, if the total cost for a certain average monthly repayment amount is known, then loan duration can be readily estimated. The above considerations lead us to predict that flexible credit repayments will be influenced by information concerning their long term consequences. Specifically:
H1: When total cost and loan duration information are available, people will choose significantly higher credit repayment levels.

As far as we know, this hypothesis has not previously been tested.

Other economic and psychological determinants of credit repayment decisions

In addition to information concerning total cost and loan duration information, there are other potential determinants of repayment levels\(^1\). First, as discussed earlier, a key economic factor is the borrower’s income, or disposable income, which generally determines their maximum affordable repayment. If people are future oriented rather than present oriented (Webley & Nyhus, 2001), they will be motivated to maximise repayments in order to ameliorate the long term negative consequences of credit decisions. This would result in a positive relationship between income, or disposable income, and repayment level. Second, the borrower’s level of education may be related to repayment decisions, because level of education is related to financial capability (Financial Services Authority, 2006; Taylor, Jenkins & Slacker, 2009). However, it is unclear a priori whether the relationship between financial capability and repayment level would be positive or negative. On the one hand, more capable borrowers may choose higher repayments because they tend to be more future-oriented. On the other hand, they may choose lower repayment levels in order to better manage the risks of repayment difficulties. This latter issue was examined by Ranyard, Hinkley and Williamson (2001) in a process tracing study of credit consumers’ decisions concerning payment protection insurance (PPI). This study evaluated the validity of Huber’s (1997, 2007) risk defusing model, which proposes that if people perceive a risk, such as

\(^1\) Several potential determinants of repayment decisions were not investigated in the present research, such as attitudes towards credit and debt (Livingstone & Lunt, 1992; Lea, Webley & Walker, 1995), temporal discounting (Ainslie, 1992; Estalami, 2001) and information concerning the mandatory minimum repayment (Stewart, 2009).
future repayment difficulties, they will search for a risk defusing operator (RDO). One important RDO is control: attempting to reduce the probability of the negative outcome below a threshold. Ranyard et al. argued that the level of repayment can be used to control the risk of future repayment difficulties in two ways: (1) it could be set low in order to reduce the risk of difficulties for the recurrent budget period account; or alternatively (2) it could be set high to reduce the duration over which the risk is experienced. Therefore, the relationship between the borrower’s subjective probability of repayment difficulties and level of repayment chosen may be either positive or negative. Finally, emotions and anticipated emotions concerning repayment difficulties may be relevant to repayment decisions (Loewenstein, Weber, Hsee, C. & Welch, 2001; Peters & Slovic, 2000; Slovic, Finucane, Peters, & MacGregor, 2004; Zeelenberg, Nelissen, Breugelmans & Pieters, 2008), especially worry (Sjöberg, 1998). Recently, Ranyard and McHugh (2010) found that the decision to take PPI was related to worry concerning future repayment difficulties. This could also be related to decisions concerning level of repayment, although as with the subjective probability of repayment difficulties, the direction of association could be positive or negative. The above considerations lead to our second hypothesis, addressed in Experiment 2:

H2: Level of repayment will be significantly predicted by disposable income, level of education, the subjective probability of the likelihood of repayment difficulties, and worry about repayment difficulties.

The influence on repayment decisions of the psychological factors stated in this hypothesis has not previously been investigated.

Experiment 1

The aim of the first experiment was to test H1, which predicts that the repayment level chosen will be higher when total cost and loan duration information are available.

Method
Design and questionnaires

This study was part of a larger questionnaire survey of customers of a high street bank with some questions varied across participants. Responses to the first four questions are reported elsewhere. For questions five and six, a 2 x 2 factorial independent-groups design was adopted with independent variables total cost information (given or not) and loan duration information (given or not given), resulting in four experimental conditions. Two credit repayment scenarios were devised, one based on repaying a credit card balance of £1,500 (question 5) and the other on remortgaging a property loan of £40,000 (question 6). The dependent variable was the average of the repayment levels chosen in the two scenarios. Four versions of the questions were prepared with different information corresponding to the four experimental conditions. The credit card scenario for the condition with both total cost and loan duration is presented in Table 1, which shows that participants were asked to choose one of seven repayment levels. One version of the questionnaire presented all the information as in Table 1 (without shading); a second showed only the monthly repayment level and the tick box; a third showed monthly repayment level, loan duration (second column) and tick box; and the fourth showed monthly repayment level, total cost (third column) and tick box. The £40,000 mortgage scenario had the same information variation between the versions. In this case participants were asked to choose one of eight repayments; the highest monthly repayment was £768 for 5 years, repayments then decreased on a scale to the lowest of £252 for 25 years. The final questions of the questionnaire, the same in all versions, requested demographic information including age, gender and income.

Participants and Procedure

The participants were recruited from a random sample of 2000 adults from a high street bank’s database of personal account customers. They were randomly assigned to one of four equal groups each of which received one of the four questionnaires, posted with a
covering letter and return postage paid envelope. The letter explained the purpose of the study and that any information provided was for research purposes only and would remain anonymous. The participants were asked to read the introduction, and then to make their decisions by ticking a box. Participants returning the questionnaire could choose to participate in a cash prize draw. If they wished to be included in the draw, contact details were to be entered at the end of the questionnaire; this information was detached from the questionnaire during the opening and sorting process.

Of the 242 replies, (12.1% return) nearly all completed the section on personal characteristics: 62% were male and 38% female; 85% were working. The majority of participants were older, with only 17% being between 16 and 40 years, 28% between 40 and 50, and 55% above 50. For annual income, respondents reported as follows: 33% up to £20,000; 30% between £20,000 and £35,000; and 37% above £35,000. The number of participants returning questionnaires in each group was 47, 61, 66 and 68. Chi-square and Kruskal-Wallis tests showed that there were no significant differences in the above demographic characteristics across the four groups.

Results

A 2 x 2 analysis of covariance (ANCOVA) was carried out with independent variables total cost and loan duration information. The covariates were age, gender and income, and the dependent variable was average repayment level. As summarized in Table 2, the ANCOVA showed that there was a small but significant effect of total cost information, a moderate significant effect of loan duration information, and no significant interaction between these independent variables. In addition, with respect to the covariates, Table 2 shows that there were no significant effects of age or gender on repayment level decisions although as expected, income did have a moderate significant effect: higher income was related to higher repayments. Mean repayment levels across the four experimental conditions
are shown in Figure 1, on a scale from 1 (lowest repayment) to 7.5 (highest repayment on both scenarios). It can be seen that that the group receiving only monthly repayment information had the lowest mean repayment level and the other three groups, presented with either total cost, loan duration information or both, had similar mean repayments, nearly one unit higher. In summary then, H1, the hypothesis that providing total cost or loan duration information would encourage higher repayment levels, was supported. These findings will be discussed in the final section.

---- Table 2 and Figure 1 here -----

Experiment 2

The first aim of experiment 2 was to further test H1 by replicating and extending experiment 1 using a more sensitive dependent variable based on four repayment scenarios. The second aim was to test H2 and in addition, assess the relative impact of long-term consequence information on repayment decisions, in relation to the economic and psychological factors stated in H2.

The data for this second study was collected during the period of January to March 2009, a time of credit crunch anxiety as the UK was officially declared to be in recession. In the UK during 2008 house prices fell on average 10.5% and consumer confidence continued to decline as fears about rising unemployment and the effects of the global recession gathered momentum. In October 2008 the Chancellor of the Exchequer warned that the UK economy was facing its worse crisis for 60 years, and announced rescue packages for 3 high street banks and nationalised one of the largest building societies. The credit crunch and recession would be likely to have an impact on the risk perception of people and on their financial planning. For some the uncertain outlook of the national economy and its effects on individual households would mean additional worry about their finances. To explore the
effect of worry about the general economic climate on risk perception and credit decisions an additional question not previously used was included in the second study.

**Method**

*Design and questionnaires*

The basic design and procedure for experiment 2 were the same as experiment 1 but with four credit repayment scenarios instead of two, and several new economic and psychological variables included. The study was part of a larger questionnaire survey of customers of a high street bank with some questions varied across participants. Some of the questions, concerning payment protection insurance decisions, are reported elsewhere. Part 1 of the questionnaire was a 2 x 2 factorial independent-groups design with independent variables total cost information (given or not) and loan duration information (given or not given), resulting in four experimental conditions. The credit repayment scenarios from experiment 1, based on repaying a credit card balance of £1,500 and on remortgaging a property loan of £40,000, were used together with two additional scenarios involving a credit card balance of £3,000 and a property loan of £80,000. The dependent variable was the average of the repayment levels chosen in the four scenarios. As in experiment 1, four versions of the questions were prepared with different information corresponding to the four experimental conditions. One of the mortgage scenarios for the condition with both total cost and loan duration is shown in Table 3, which shows that participants were asked to choose one of eight repayment levels.

Part 2 of the questionnaire included questions that measured psychological variables concerning cognitive appraisal and worry about repayment difficulties, with responses required on a 7-point scale (reverse-coded for analysis):

1. *Subjective probability of repayment difficulties (Risk SP).* If you took out a loan today, for £7,500 over three years, how likely is it that you would have difficulties
with your repayments because of redundancy or not being able to work for several months due to sickness or injury? (1 = very likely; 7 = very unlikely);

2. **Worry about repayment difficulties, personal (Risk Worry 1).** When thinking about taking out such a loan, how much would you worry about future difficulties with your repayments because of the above reasons? (1 = very worried; 7 = not at all worried);

3. **Worry about repayment difficulties, external (Risk Worry 2).** When thinking about taking out such a loan, how much would you worry about future difficulties with your repayments because of possible future rises in living costs? (1 = very worried; 7 = not at all worried).

Finally, Part 3 of the questionnaire invited participants to give some demographic details, including age in bands of 10 years, and gender. Information on monthly disposable income (DI) was requested on a 9 point scale, from up to £150 per month to over £2,000 per month. Level of education was divided into three: 1 = leaving school with no further training; 2 = further/higher education; 3 = degree/professional/occupational qualifications.

**Participants and Procedure**

The participants were recruited from a new random sample of 2000 adults from a high street bank’s database of personal account customers. As in experiment 1, they were randomly assigned to one of four equal groups each of which received one of the four questionnaires. The procedure adopted was the same as in experiment 1. Of the 301 replies, (15% return), respondents were 50.3% female; median age = 48 years, range 20 to 69 years; median monthly disposable income = £605; Professional or university level education, 63%.

The number of questionnaires returned in the four groups varied from 48 to 87.

**Results**

In order to test H1, as in the first experiment a 2 x 2 analysis of covariance (ANCOVA) was carried out with independent variables total cost information and loan
duration information. The dependent variable was the average repayment level across the four scenarios and there were five covariates: disposable income, level of education, Risk SP; Risk Worry 1 and Risk Worry 2. The results are summarized in Table 4, which shows that although there were no significant main effects, there was a small but significant interaction between total cost and loan duration information. The nature of this is illustrated in Figure 2, which shows the mean repayment levels across the four experimental groups. It can be seen that providing either total cost or loan duration information individually resulted in higher monthly repayments (about half a scale point). However, unlike in experiment 1, their combined effects were not additive, although repayment levels were still slightly higher than the baseline condition without long-term consequence information. These findings offer some support for H1 since when total cost and loan duration information are available, participants chose higher repayment levels. Table 4 also shows that all the economic and psychological covariates had significant effects on repayment levels that were at least small to medium. In particular, the effect of disposable income was quite large. These effects are discussed in more detail below.

------ Table 4 and Figure 2 about here ------

The second analysis tested H2, which proposed that level of repayment decisions will be significantly predicted by disposable income (DI), level of education, the subjective probability of repayment difficulties (Risk SP), and worry about repayment difficulties (Risk worry 1, Risk worry 2), was investigated by correlation and regression analysis. The Pearson’s product-moment correlations among these variables are shown in Table 5. First, it can be seen that there were significant positive correlations between level of repayment decisions and both DI and level of education. Second, there were significant negative correlations between level of repayment and both Risk SP and Risk Worry 2, although the
The correlation between level of repayment and Risk Worry 1 was not significant. Finally, the table shows that several correlations between the predictors were significant.

The main analysis to test H2 was hierarchical multiple regression with outcome variable average level of repayment. The predictors were entered as follows: step 1, the economic variable DI; step 2, the demographic variable level of education; step 3, the cognitive variable, Risk SP; step 4, the emotion-related variables Risk Worry 1 and Risk worry 2. As the table shows (top part), prediction improved significantly at each step with $R^2 = 0.25$ for the final model. Table 6 also shows the statistics for the final model (bottom part). It can be seen that all five variables were significant predictors, with DI having a moderate effect predicting choice of higher repayment level. Level of education and Risk worry 1 had small effects in the same direction, whereas Risk SP and Risk worry 2 had small effects predicting choice of lower repayment.

----- Tables 5 and 6 about here ----- 

**Discussion**

*The role of long-term consequence information*

In both experiments hypothesis 1 was supported: total cost and loan duration information had statistically small but significant effects on credit repayment decisions. The absolute effect was that with either item of information, repayment levels were higher by between a half and one scale point, although the effects of the two items of information were not consistently additive. The effects of total cost and loan duration information have different theoretical implications. On the one hand, the effect of total cost information supports the proposition that people mentally represent the cost of credit in terms of a simplified total account representation (Ranyard & Craig, 1993, 1995; McHugh et al., 2010). On the other hand, the effect of loan duration information is consistent with the general tendency towards future-orientation rather than present orientation (Webley & Nyhus, 2001).
More specifically, the direction of the effect, moving decisions towards higher repayments and shorter loan duration, serves the long-term financial planning goal of removing the credit repayment cost from the recurrent budget period account as quickly as possible (Ranyard & Craig, 1995). Related to this, Ranyard et al. (2006) reported preferences for higher repayments and shorter loan duration with closed-end loans. Also, as mentioned earlier, Henderson and Peterson’s (1992) findings show that long-term financial planning is a factor in repayment decisions.

An alternative interpretation of the effect of loan duration information is possible in terms of temporal discounting. If future repayments were discounted according to an exponential discounted utility model, then awareness of the loan duration would lead to preference for loans of shorter duration with higher repayments, as long as the subjective discount rate were lower than the APR of the loan (in fact, the total account model assumes zero discount rate). However, Estalami (2001) has shown that discount rates are highly context-dependent and consequently, clear predictions from discounted utility models are difficult to test. Similarly, Frederick, Loewenstein, & O'Donoghue (2002, p.394 argue for ‘relinquishing the assumption that the key to understanding intertemporal choices is finding the right discount rate (or even the right discount function)’ in favour of ‘readopting the view that intertemporal choices reflect many distinct considerations and often involve the interplay of several competing motives’. We conclude therefore, that future-orientation and financial planning offer a better account of our findings concerning loan duration information.

**Disposable income, long-term consequence information and repayment decisions**

It is useful to consider the effects of information concerning the long-term consequences of repayment decisions relative to the effect of income, or more importantly, disposable income. In experiment 1, reported annual income was requested in bands of £5,000, increasing from the lowest (below £10,000). Analysis of covariance showed that this
correlated positively with repayment decisions, with an effect size statistically small but similar to that of total cost and loan duration information. Simple linear regression showed that the absolute effect was rather small, with an increase of one income band producing on average an increase of about one-ninth of a repayment level. In experiment 2, since disposable income is clearly more relevant to repayment decisions than annual income, information on monthly disposable income was requested (in bands of about £200, from the lowest of less than £150). Analysis of covariance revealed a moderate effect of disposable income. Furthermore, the first step of the hierarchical regression analysis showed that the absolute, simple effect of disposable income was rather substantial, with an increase of one band of disposable income producing on average an increase of more than one repayment level. This was somewhat greater than the effect of long-term consequence information reported in both experiments.

Affordability clearly influenced participants’ repayment decisions. In experiment 2, for each scenario overall (across the four versions of the questionnaire), there were differences according to loan amount. Response frequencies indicate a preference for quicker repayment for the lower credit card (£1.5K) and mortgage loan amount (£40K) compared to the larger loan of each type (£3K credit card and £80K). The monthly repayments to clear the larger of the loans of each type in the shortest time was double that for the smaller ones. This preference is likely to be a reflection of the affordability in the repayments relative to disposable income.

**Other factors predicting repayment decisions**

Experiment 2 also aimed to test H2: level of repayment will be significantly predicted by disposable income, level of education, the subjective probability of the likelihood of repayment difficulties, and worry about repayment difficulties. As discussed above, disposable income predicted level of repayment in the expected direction, and hierarchical
regression analysis showed that the other factors also predicted it significantly. Participants’ educational experience was categorised in three levels, essentially secondary, further and higher. Level of education accounted for a small but significant proportion of variance in repayment decisions in addition to that accounted for by disposable income. The direction of the effect suggests that more financially capable participants chose higher repayments because they tend to be more future-oriented, as discussed earlier.

The next variable entered in the regression analysis, participants’ subjective probability of repayment difficulties, also had a small and significant additional effect on repayment decisions, with higher subjective probability associated with decisions for lower repayments. In terms of Huber’s RDO model, this suggests that participants who perceived a significant risk sought to control it by choosing lower repayments, rather than by choosing shorter loan duration. In the final step of the regression analysis, two measures of worry concerning future repayment difficulties were entered. Although jointly they made a small and significant additional contribution to the prediction of repayment decisions, their individual effects were in opposite directions. This is difficult to explain.

Concluding remarks

We found that participants decided to repay significantly more when they were given information about the long-term consequences of alternative repayment options. We explained the effect of total cost information with reference to a total account representation of credit cost (Ranyard & Craig, 1995), and the effect of loan duration information in terms of future-oriented thinking and long-term planning. It is necessary to recognise that although these separate interpretations of the effects of total cost information and loan duration information are plausible, these two items of information are interdependent (Ranyard & Craig, 1993). In any case, we did not find clear evidence that their effects were additive. Consequently, the two interpretations are confounded, and further research could usefully
disentangle the roles of the total mental account representation and financial planning in repayment decisions.

Stewart (2009) recently reported evidence that information on credit card minimum repayments influences the real repayment decisions of those not repaying the minimum as well as influencing hypothetical repayment decisions. Further research would be useful to investigate whether our findings on the effects of long-term consequence information generalise to real credit card repayment decisions. In addition, further research on Stewart’s findings would be useful. He found that minimum repayment information influenced repayment decisions in the absence of long-term consequence information. However, this is a context of uncertainty that previous research has shown to be particularly conducive to such anchoring effects (Mussweiler & Strack, 2000). It might be expected that the anchoring effect of minimum repayment information would disappear if uncertainty were reduced by giving information on the long-term consequences of alternative levels of repayment. In any case, we argue that this information should routinely be provided on credit card statements to support consumers in making more financially capable decisions (Atkinson, Mckay, Collard & Kempson, 2007 Taylor, Jenkins, S & Slacker, 2009).

Finally, our findings show that as well as disposable income and therefore affordability, repayment decisions are influenced by perceptions and emotions concerning future repayment difficulties. Specifically, choosing lower repayments was associated with perceptions of greater likelihood of repayment difficulties. In terms of Huber’s (1997, 2007) model, then, choosing lower repayments may be an RDO used to control this risk. The role of worry about such risks was not straightforward, however. In general, borrowers are advised not to ‘overstretch’ themselves, which can be seen as recognition of the value of this control RDO. Future research would be useful to clarify three issues: (1) the role of lowering level of
repayment as an RDO for credit risk management, in relation to other RDOs such as taking out payment protection insurance (Ranyard & McHugh, 2010); (2) the influence of worry on repayment decisions; and (3) differences in borrowers’ credit risk management strategies for different types of credit, especially mortgages versus consumer credit.
References


Acknowledgements

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Table 1. Examples of credit card decision scenario

Imagine that you have just paid for a holiday, home improvements, or personal/household goods to the value of £1,500. You have used your credit card to make the purchase(s). The APR on this credit card loan is 15.2%. You now have to decide how much you want to pay off monthly.

<table>
<thead>
<tr>
<th>How much do you want to pay monthly?</th>
<th>Time to clear the loan if same payments made regularly. Number of months</th>
<th>Total cost if the same monthly repayments continue</th>
<th>Please tick your choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>£41</td>
<td>48 months</td>
<td>£1,968</td>
<td>√</td>
</tr>
<tr>
<td>£52</td>
<td>36 months</td>
<td>£1,872</td>
<td></td>
</tr>
<tr>
<td>£72</td>
<td>24 months</td>
<td>£1,728</td>
<td></td>
</tr>
<tr>
<td>£98</td>
<td>17 months</td>
<td>£1,666</td>
<td></td>
</tr>
<tr>
<td>£135</td>
<td>12 months</td>
<td>£1,620</td>
<td></td>
</tr>
<tr>
<td>£198</td>
<td>8 months</td>
<td>£1,584</td>
<td></td>
</tr>
</tbody>
</table>
Table 2. Study 1: ANCOVA significance tests of main effects (total cost and loan duration information), their interaction and three covariates.

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Mean Square</th>
<th>F (1, 209)</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cost information (TC)</td>
<td>8.58</td>
<td>4.98*</td>
<td>.023</td>
</tr>
<tr>
<td>Loan duration information (LD)</td>
<td>15.47</td>
<td>8.99**</td>
<td>.041</td>
</tr>
<tr>
<td>TC x LD</td>
<td>2.52</td>
<td>1.47</td>
<td>.007</td>
</tr>
<tr>
<td><strong>Covariates</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>19.87</td>
<td>11.54***</td>
<td>.052</td>
</tr>
<tr>
<td>Age</td>
<td>5.01</td>
<td>2.91</td>
<td>.014</td>
</tr>
<tr>
<td>Gender</td>
<td>1.61</td>
<td>0.93</td>
<td>.004</td>
</tr>
</tbody>
</table>

Note: * significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$
Table 3. Study 2: Example of mortgage scenario for £80,000.

Imagine you have reviewed your repayment mortgage account. You still have further mortgage payments to make before the time comes when you will own your home outright. You have renegotiated your mortgage for a lower interest rate of 5.9%. You now have to decide in the two examples below the number of years you wish to take to repay.

Mortgage loan of **£80,000**

<table>
<thead>
<tr>
<th>Amount of monthly repayments</th>
<th>Number of years to continue to make mortgage payments</th>
<th>Total cost if the same monthly repayments continue</th>
<th>Please tick your choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>£1536</td>
<td>5 years</td>
<td>£92,160</td>
<td>✓</td>
</tr>
<tr>
<td>£1040</td>
<td>8 years</td>
<td>£99,840</td>
<td></td>
</tr>
<tr>
<td>£878</td>
<td>10 years</td>
<td>£105,360</td>
<td></td>
</tr>
<tr>
<td>£770</td>
<td>12 years</td>
<td>£110,880</td>
<td></td>
</tr>
<tr>
<td>£664</td>
<td>15 years</td>
<td>£119,520</td>
<td></td>
</tr>
<tr>
<td>£594</td>
<td>18 years</td>
<td>£128,304</td>
<td></td>
</tr>
<tr>
<td>£560</td>
<td>20 years</td>
<td>£134,400</td>
<td></td>
</tr>
<tr>
<td>£505</td>
<td>25 years</td>
<td>£151,500</td>
<td></td>
</tr>
</tbody>
</table>
Table 2. Study 2: ANCOVA significance tests of main effects (total cost and loan duration information), their interaction and five covariates.

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Mean Square</th>
<th>F (1, 280)</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cost information (TC)</td>
<td>58.97</td>
<td>2.10</td>
<td>.007</td>
</tr>
<tr>
<td>Loan duration information (LD)</td>
<td>4.65</td>
<td>0.17</td>
<td>.001</td>
</tr>
<tr>
<td>TC x LD</td>
<td>119.34</td>
<td>4.25*</td>
<td>.015</td>
</tr>
</tbody>
</table>

**Covariates**

<table>
<thead>
<tr>
<th>Covariate</th>
<th>Mean Square</th>
<th>F (1, 280)</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposable income</td>
<td>1047.12</td>
<td>37.20***</td>
<td>.118</td>
</tr>
<tr>
<td>Level of education</td>
<td>240.70</td>
<td>8.57**</td>
<td>.030</td>
</tr>
<tr>
<td>Risk SP</td>
<td>263.80</td>
<td>9.39**</td>
<td>.032</td>
</tr>
<tr>
<td>Risk worry 1</td>
<td>298.25</td>
<td>10.62**</td>
<td>.037</td>
</tr>
<tr>
<td>Risk worry 2</td>
<td>217.08</td>
<td>7.722**</td>
<td>.027</td>
</tr>
</tbody>
</table>

Note: * significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$
Table 5. Study 2: Pearson correlations matrix for variables relevant to H2 (n = 291-298).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Risk SP</th>
<th>RW1</th>
<th>RW2</th>
<th>Ed</th>
<th>DI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of repayment</td>
<td>-.23</td>
<td>-.10</td>
<td>-.24</td>
<td>.26</td>
<td>.41</td>
</tr>
<tr>
<td>Risk SP</td>
<td>.57</td>
<td>.31</td>
<td>-.15</td>
<td>-.22</td>
<td></td>
</tr>
<tr>
<td>Risk Worry 1 (RW1)</td>
<td>.61</td>
<td>-.12*</td>
<td>-.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk Worry 2 (RW2)</td>
<td></td>
<td>-.13*</td>
<td>-.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of education (Ed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.29</td>
</tr>
<tr>
<td>Disposable income (DI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* = significant at $p < .05$

Bold type = significant at $p < .01$
Table 6. Study 2: Hierarchical regression analysis of five predictors of level of repayment.

<table>
<thead>
<tr>
<th>Step</th>
<th>Predictors added</th>
<th>R</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>$\Delta R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Disposable income</td>
<td>.41</td>
<td>.17</td>
<td>.17</td>
<td>.17***</td>
</tr>
<tr>
<td>2.</td>
<td>Level of education</td>
<td>.44</td>
<td>.19</td>
<td>.19</td>
<td>.03**</td>
</tr>
<tr>
<td>3.</td>
<td>Risk SP</td>
<td>.45</td>
<td>.21</td>
<td>.20</td>
<td>.01*</td>
</tr>
<tr>
<td>4.</td>
<td>Risk Worry 1, 2</td>
<td>.49</td>
<td>.24</td>
<td>.23</td>
<td>.04**</td>
</tr>
</tbody>
</table>

---

Final Model

<table>
<thead>
<tr>
<th></th>
<th>$B$</th>
<th>$SEB$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>14.80</td>
<td>1.53</td>
<td></td>
</tr>
<tr>
<td>Disposable income</td>
<td>0.87</td>
<td>0.14</td>
<td>.34**</td>
</tr>
<tr>
<td>Level of education</td>
<td>1.26</td>
<td>0.44</td>
<td>.15**</td>
</tr>
<tr>
<td>Risk SP</td>
<td>-.78</td>
<td>0.24</td>
<td>-.21**</td>
</tr>
<tr>
<td>Risk Worry 1 (personal)</td>
<td>0.91</td>
<td>0.27</td>
<td>.26**</td>
</tr>
<tr>
<td>Risk Worry 2 (economy)</td>
<td>-.67</td>
<td>0.25</td>
<td>-.18*</td>
</tr>
</tbody>
</table>

* $p < .05$, ** $p < .01$
Figure captions

Figure 1. Study 1: Mean repayment levels for each condition.

Figure 2. Study 2: Mean repayment levels for each condition.