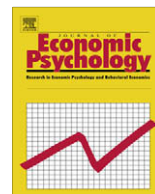




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Experience, prediction and recollection of loan burden

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ABSTRACT

Loan use is a process over time, and the subjective loan burden may differ over stages. In this paper, experience of loan burden over time is contrasted with forecasts and recollections. Furthermore, it is suggested that loan burden relates to the mental association between the loan and the loan-financed goods. A survey of 117 homeowners at different stages of the loan process demonstrated that participants expected lower levels of loan burden in the future and reported higher levels in the past; in their view, loan burden decreases over the loan period. In contrast, participants at all stages reported similar current loan burden, suggesting no systematic change over time. Predictions and recollections were systematically different from experience: predictions were too positive, recollections too negative. Subjective loan burden can, in part, be predicted by home-to-loan associations, i.e. the degree to which thoughts of the home evoke thoughts of the loan. Homeowners seem to hold an intuitive theory about adaptation to the financial situation and this contributes to misforecasts.

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Household debt has grown considerably over recent years. In the United States, household debt is at a record high relative to disposable income, with the primary driver being mortgage debt, rising from 36% of disposable income to 66% over the past 30 years (Maki, 2000). Several researchers (e.g. DeVaney & Lytton, 1995; O'Neill, 1995) have pointed out that debt not only implicates direct costs but also indirect personal, emotional and psychological costs. Empirical evidence suggests that debt is associated with higher levels of psychological distress. For example, taking out a student loan involves a psychological burden, and indebted students report poorer psychological well-being (Roberts, Golding, & Towell, 1998; Stradling, 2001). Similarly, Brown, Taylor, and Wheatley Price (2005) found that households with outstanding credit are less likely to report high levels of psychological well-being than households without debt. Moreover, there are some indications that subjective financial strain is associated with common mental disorders (Weich & Lewis, 1998), with health problems (e.g. Drentea & Lavrakas, 2000) and with marital conflict (Dew, 2007).

A better understanding of credit, loan burden and its relation to consumer well-being can be achieved by viewing credit use as an evolving and dynamic process (Kamleitner & Kirchler, 2007). In the current paper, we adopt a process view and

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investigate how homeowners experience loan burden over time. In the following, we will use the term 'loan burden' to refer to feelings of psychological and financial strain attributed to the loan, e.g. distress, negative emotions or feelings of being restricted in one's activities because of the loan. We examine how people predict loan burden will change in the future; how they recollect such change in the past; and whether these theories fit the actual experience of the course of loan burden over time. Furthermore, we examine whether the degree of mental cost–benefit association (i.e. whether thoughts of the loan evoke thoughts of the home and vice versa) is related to loan burden, and whether actual experience, prediction and recall of cost–benefit associations follow similar patterns to the loan burden.

1. Predictions and recollections

Research has shown that people anticipate how they will feel about the outcomes of decisions, and that choice is guided by these anticipated emotions (Mellers, Schwartz, & Ritov, 1999; Shiv & Huber, 2000). For example, when making a decision about taking up a loan for a house or apartment, people are likely to consider how much emotional strain the loan will cause. A crucial question is, therefore, whether people can accurately predict which events will make them feel in what way. Research on 'affective forecasting' indicates that such predictions are often not in line with actual emotions, and that misforecasts occur (e.g. Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; Loewenstein & Schkade, 1999; Wilson & Gilbert, 2003). Affective forecasting can be described through the dimensions of valence, intensity and duration (Wilson & Gilbert, 2003). In general, people make accurate predictions about the valence of their emotional experiences but have problems predicting intensity and duration. The most common problem is the impact bias, defined as the tendency to overestimate the impact that future events will have on the intensity and duration of emotional reactions. Loewenstein and Schkade (1999) note that the quality of decisions depends on the accuracy of the predictions about future emotions. For example, in the case of consumer purchases, errors in predicting feelings can lead to consumer dissatisfaction (Loewenstein & Schkade, 1999; MacInnis, Patrick, & Park, 2005). In the context of mortgages, affective misforecasts become problematic when people overestimate the positive future emotions related to the house or apartment, or when they underestimate the future negative emotions related to the loan.

There are several reasons why a mismatch between predicted and experienced emotions can occur (Loewenstein & Schkade, 1999; Wilson & Gilbert, 2003). People may neglect non-focal factors that can influence their feelings in the future (focalism), they may underestimate how quickly they can cope with positive and negative events (sense-making) or they may underestimate the impact of drives and visceral states (hot/cold empathy gap). An additional reason for affective misforecasting can be found in inaccurate intuitive theories of well-being (Gilbert et al., 1998; Loewenstein & Schkade, 1999; Wilson & Gilbert, 2003). People hold various intuitive theories of hedonics, i.e. theories about what makes them happy or unhappy, theories about changes in taste and about moods at different points in time (Loewenstein & Schkade, 1999). Whereas most explanations focus on single events and their emotional consequences, intuitive theories can also be applied to experiences that extend over time.

Taking out a loan is a long-term process and therefore intuitive theories of change or stability of emotions, of adaptation and habituation are important when considering loan burden over time. Some research has shown that people are likely to overestimate adaptation. People expect adaptation in situations where in fact it does not occur, e.g. people believe in more adaptation to noise than research has shown to occur (Snell, Gibbs, & Varey, 1995). People also believe in adaptation when predicting changes in their tastes (Kahneman & Snell, 1992). However, other research has shown that situations occur in which people are likely to underestimate adaptation processes. For example, Ubel, Loewenstein, and Jepson (2005) found some evidence that people fail to consider adaptation to disability. More generally, Igou (2004) demonstrated that intuitive theories of affect progression actually have an influence on affective forecasts. Participants who were subtly primed with a theory of decreasing affect predicted a shorter duration of affective reactions than participants primed with a theory of continuing affect.

Implicit theories, e.g. on changes in loan burden, are not only able to explain systematic variation in prediction of emotions but also in recall of emotions. Similar to forecasts, memories of emotions are susceptible to biases that reduce accuracy (e.g. Levine & Safer, 2002). People base recall on implicit theories of stability and change (Ross, 1989), which can result in two forms of systematic biases: (a) people exaggerate stability, and therefore overestimate the similarity of past and present; (b) people exaggerate change, and therefore overestimate the extent to which their present state differed from an earlier state. For example, Conway and Ross (1984) found that participants' beliefs about the effectiveness of a study skill programme led to biases in recall (i.e. underestimation of their original skills) as well as predictions (i.e. future grades).

In summary, intuitive theories can contribute to systematic differences between actual experience on the one hand, and predictions and recall on the other. If people cling to intuitive theories of constancy, and change occurs in reality, they will underestimate such actual change in prediction and recall. If people cling to intuitive theories of change, and no change occurs in reality, they will overestimate change in prediction and recall. In a loan context, there is evidence that people's intuitive theories are theories of change. First, an interview study with prospective and actual loan users (Kamleitner & Kirchler, 2006) suggests that people expect at least some decrease in subjective loan burden over time. Second, expectations of improvement appear to be linked to credit use: students often borrow money because they expect higher future incomes (Davies & Lea, 1995) and hence a decrease in loan burden; and optimistic consumers were shown to borrow more (Brown

et al., 2005; Van Raaij & Gianotten, 1990). If loan users hold implicit theories of a decrease in loan burden, and if loan burden remains constant in reality, they are likely to overestimate actual change in both prospect and retrospect.

2. Cost–benefit associations

Taking up a loan and living in a new home brings both costs and benefits: on the one hand, the recurring payments and the resulting emotional burden; on the other hand, the pleasures of having one's own space for living. Recent theoretical considerations (Kamleitner, Hoelzl, & Kirchler, 2007; Kamleitner & Kirchler, 2006; Prelec & Loewenstein, 1998; Soman & Gourville, 2001; Thaler, 1999) suggest that how people experience a transaction depends on how they mentally associate costs and benefits (for a literature review see Kamleitner & Hoelzl, *in press*). Building on mental accounting, Prelec and Loewenstein's (1998) theory of prospective double-entry mental accounting suggests that people associate the costs and benefits of a transaction to differing degrees ('coupling'), and that such differences may influence consumer experiences. Thus cost–benefit associations may also influence perceived loan burden. The direction and strength of cost–benefit association are described by two coefficients: α is the degree to which thoughts of consumption evoke thoughts of payment and β is the degree to which thoughts of payment evoke thoughts of consumption. If α is high, each thought related to consumption (e.g. the house) leads to thoughts of the payment (e.g. the loan). Conversely, if β is high, each thought related to the payment (e.g. the loan) leads to thoughts of consumption (e.g. the house). Each direction of association is assumed to have specific hedonic consequences: α stands for 'attenuation' and indicates the degree to which thoughts of payment attenuate the pleasure of consumption; β stands for 'buffering' and indicates the degree to which the pain of payment is buffered by thoughts of consumption benefits (Prelec & Loewenstein, 1998). Translating this to the current context, α would be the home-to-loan association: the stronger it is, the more the home evokes thoughts of the loan, which, in turn, reduces the pleasure of the home. β would be the loan-to-home association: the stronger it is, the more the loan evokes thoughts of the home, which, in turn, reduces the loan burden.

However, recent research suggests an additional mechanism via which cost–benefit associations influence behaviour. Strong associations are argued to make the associated cognition mentally accessible (Kamleitner et al., 2007). The ease of accessibility is, in turn, interpreted in accordance with intuitive theories (e.g. Schwarz, 2004; Schwarz, Sanna, Iann, & Yoon, 2007). In particular, if a loan-financed house strongly evokes thoughts of the loan, the loan becomes easily accessible to consumers. Since in most cases the loan will be aversive, consumers might interpret their intense thoughts of the loan as indicative of the massive pain of paying. Now, α would no longer only attenuate consumption pleasure, rather it would also increase the pain of paying, i.e. the loan burden. In line with this reasoning, Kamleitner et al. (2007) report consistent evidence that α has an impact on the perceived pain of paying.

Summarizing, these considerations suggest that loan burden in part depends on cost–benefit associations. If strong, both directions of association may influence loan burden. The loan-to-home association may buffer the loan burden, whereas the home-to-loan association may lead to the perception of an increased loan burden.

Assuming that cost–benefit associations relate to the subjective pain of paying, a change in cost–benefit associations should correspond to a change in loan burden. In fact, a cross-sectional interview study found some evidence that loan users experience and expect a decrease in both directions of cost–benefit associations over the course of the credit period (Kamleitner & Kirchler, 2006). Loan users' intuitive theories of change in cost–benefit associations thus seem similar to their intuitive theories of change in subjective loan burden: In both cases, loan users seem to expect a decrease. If no such decrease occurs, loan users are likely to overestimate actual change in prospect and retrospect. We expect to observe patterns of experience, anticipation and recall of cost–benefit associations that are similar to patterns of experience, anticipation and recall of subjective loan burden.

In summary, in the present study we examine: (a) whether loan burden changes over time; (b) whether people predict a decrease of loan burden in the future; (c) whether they recall such a decrease in the past; and (d) whether these predictions and recollections fit the actual change of loan burden. Furthermore, we investigate (e) whether the degree of cost–benefit association is related to loan burden; and (f) whether actual experience, prediction and recollection of change in cost–benefit associations follow similar patterns as change in loan burden.

3. Method

3.1. Material

Data were collected in a survey with homeowners who held a loan for their house or apartment. In a cross-sectional design, participants were compared at three stages of the loan process. Groups were formed a priori according to how long they had lived in the house or apartment in question. Group 1 participants had lived in their home for up to five years, group 2 participants between 5.1 and 10 years and group 3 participants between 10.1 and 15 years. A time period of 15 years was chosen because normally this is the minimum duration of a mortgage loan in Austria.

Questionnaires differed between the groups with the aim being that all participants had to report on the same three stages in the loan process; participants at the beginning of the loan process had to make predictions for the future and participants at the end of the loan process had to form recollections. In detail, group 1 reported current experience and

predictions for time points 5 and 10 years in the future. Group 2 reported current experience, predictions for a time point 5 years in the future and recollections for a time point 5 years in the past. Group 3 reported current experience and recollections for time points 5 and 10 years in the past. Among other questions the key items in the questionnaire regarded loan burden and cost–benefit associations. Each participant had to answer the same questions for the three different points in time.

Loan burden: Two questions examined loan burden, measuring general feelings of strain and feelings of being constrained in one's activities ('To what extent do you feel the loan to be a psychological strain?'; 'To what extent does the loan have an impact on your private life regarding other expenditures such as holidays, purchase of consumer goods, luxury goods?', very weakly – very strongly, seven-point scale). The mean of these two items was used as an index for loan burden (Cronbach's $\alpha = 0.82$).

Cost–benefit association: The extent of cost–benefit association was measured by two questions corresponding to the direction of association (home-to-loan association: 'When you think of your house or your apartment, does this also make you think of your loan?'; loan-to-home association: 'When you think of your loan, does this also make you think of your house or your apartment?'). Each question was answered by three items (after long consideration – automatically, very weakly – very strongly, never – always, seven-point scale). These items aimed to capture the frequency, automaticity and strength of the associations. The mean of these three items was used as an index for home-to-loan association (Cronbach's $\alpha = 0.91$) and loan-to-home association (Cronbach's $\alpha = 0.89$).

3.2. Procedure

Participants were recruited by visiting residential areas with one-family houses and owner-occupied flats in Lower and Upper Austria. At first contact, participants were asked how long they had been living in their house/apartment. Depending on the group (0–5 years, 5.1–10 years, 10.1–15 years) the respective questionnaire was handed out and explained. The questionnaire was collected the following day and participants received €15 in payment. On average, it took 15 min to complete the questionnaire.

3.3. Participants

A total of 137 participants were recruited. Twenty participants were excluded because they had already paid off their loan or the remaining loan period was shorter than the period they were asked to make predictions for. Thus, the analysis was based on 117 respondents, of whom 57 were male and 60 female. Age ranged from 26 to 73 with a median of 39 years ($M = 41.29$, $SD = 9.22$). Five participants indicated a household net income up to €1500, 15 between €1500 and €2000, 19 between €2000 and €2500 and 76 reported an income over €2500. The monthly payments for the loan ranged from €20 to €1750 with a median payment of €600. Forty-three participants had lived in their house/apartment for 0–5 years (group 1), 36 participants for 5.1–10 years (group 2) and 38 participants for 10.1–15 years (group 3).

4. Results

4.1. Changes in loan burden over the course of the loan period

To investigate changes in loan burden over the course of the loan period, we compared current reports of participants of group 1 (0–5 years), group 2 (5.1–10 years) and group 3 (10.1–15 years). A one-way ANOVA revealed no significant effect of group on loan burden, $F(2,114) = 0.97$, $p = 0.38$. Participants of all groups reported similar average loan burden (group 1: $M = 3.05$; group 2: $M = 3.60$; group 3: $M = 3.29$; see Table 1).

To control for differences in the sample structure due to the quasi-experimental design, and to make sure that differences in loan burden were not suppressed by other factors that might have an influence on loan burden, we reran the analysis

Table 1

Experienced, predicted and recollected loan burden, by group and time.

Duration of living in home	Stage of loan process					
	Time 1		Time 2		Time 3	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Group 1 ($n = 43$)	3.05	1.80	2.77 ^b	1.50	2.13 ^{a,b}	1.37
Group 2 ($n = 36$)	4.67 ^{a,b}	1.66	3.60	1.71	3.36	1.76
Group 3 ($n = 38$)	4.68 ^{a,b}	1.89	4.22 ^a	2.03	3.29	1.74
Total ($n = 117$)	4.08	1.94	3.50	1.84	2.88	1.70

Note: Current reports are printed in bold along the diagonal, entries above the diagonal are predictions, entries below are recollections. Predictions or recollections marked with ^a are significantly different from current reports within a row (group); Predictions or recollections marked with ^b are significantly different from current reports within a column (time), t -tests, $p < 0.05$.

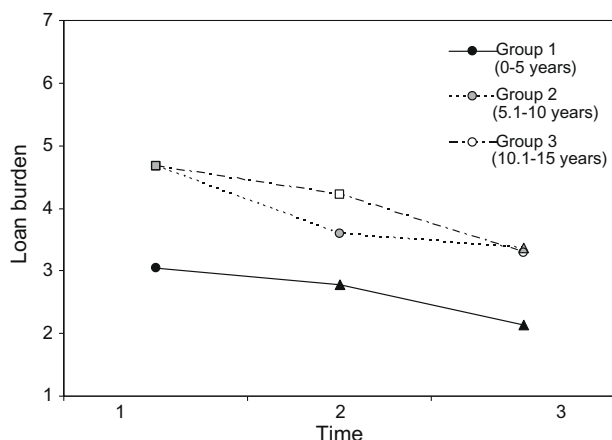


Fig. 1. Loan burden, by group and time. Note: Current reports are marked with a circle, predictions with a triangle and recollections with a square. Time 1 represents the first five years of the loan process (current experience of group 1, 5-year recollections of group 2 and 10-year recollections of group 3). Time 2 represents the years 6–10 of the loan process (current experience of group 2, 5-year predictions of group 1 and 5-year recollections of group 3). Time 3 represents the years 11–15 of the loan process (current experience of group 3, 5-year predictions of group 2 and 10-year predictions of group 1).

including the covariates gender, age, income and monthly payment. The ANCOVA led to the same results and demonstrated no significant effect of group on loan burden, $F(2,99) = 1.45$, $p = 0.24$. To check whether the non-significant result was due to the small sample size we conducted a post hoc power analysis, which showed sufficient power: the power observed to detect a medium effect ($f = 0.25$) was 0.66 and to detect a large effect ($f = 0.40$) was 0.98. To check whether any differences were suppressed by grouping, a correlation between loan burden and the exact duration of living in the home was conducted and found to be non-significant, $r(116) = 0.07$, $p = 0.49$. Overall, these results suggest that experienced loan burden does not differ systematically across different stages of the loan period.

4.2. Prediction and recollection of loan burden

To examine the differences between current experiences, predictions and recollections, reports were combined into three variables representing three points in time. Time 1 represents the first five years of the loan process and includes the current experience of group 1 participants, 5-year recollections of group 2 participants and 10-year recollections of group 3 participants. Time 2 represents the next 5 years of the loan process and includes the current experience of group 2 participants, 5-year predictions of group 1 participants and 5-year recollections of group 3 participants. Finally, time 3 represents years 11–15 of the loan process and includes the current experience of group 3 participants, 5-year predictions of group 2 participants and 10-year predictions of group 1 participants.

A 3 (group) \times 3 (time, within-subjects) ANOVA¹ yielded a significant main effect of group, $F(2,114) = 10.55$, $p < 0.01$, and a significant main effect of time, $F(2,228) = 42.76$, $p < 0.01$, on loan burden. The interaction was not significant, $F(4,228) = 2.30$, $p = 0.06$. However, a tendency for an interaction can be seen and is due to group 2 participants who reported higher differences between current and recollected loan burden than between current and predicted loan burden (see Table 1 for details and Fig. 1 for illustration of the pattern).

The main effect of time indicates that participants reported different levels of loan burden for different points in time. The graphical analysis illustrates that all groups reported a decrease in loan burden over time, predicting as well as recollecting this decrease. Detailed comparisons revealed that participants expected no change in loan burden in the next five years, but a decrease in the long run during the next 10 years. Furthermore, they reported a higher loan burden for both 5 and 10 years in the past (for all simple comparisons see Table 1). Thus, in the view of the participants, loan burden appears to decrease over the course of the loan period. By contrast, as analyses in Chapter 4.1 have shown, participants in all three groups reported similar current loan burden.

The main effect of group indicates that the groups differed in their average reported loan burden. Differences in average loan burden probably occurred because participants based predictions and recollections on current loan burden. Groups reported similar current loan burden and a similar change in loan burden. Looking back made the recalled loan burden larger, whereas looking forward made the anticipated loan burden lower. We analysed these differences in detail with simple comparisons comparing reports of the three groups for the same points in time (for all simple comparisons see Table 1). The overall pattern showed that neither predictions nor recollections correspond with actual experiences. Predictions appear too

¹ An ANCOVA including the covariates gender, age, income and monthly payment led to the same results with a significant main effect of group, $F(2,99) = 13.79$, $p < 0.01$, a significant main effect of time, $F(2,206) = 41.45$, $p < 0.01$ and a non-significant interaction, $F(4,206) = 2.26$, $p = 0.06$.

Table 2
Correlations.

	Correlations					
	1	2	3	4	5	6
1. Loan burden						
2. Gender	−0.04					
3. Age	0.01	−0.04				
4. Monthly payment	0.30*	−0.05	−0.15			
5. Income	−0.32*	−0.04	−0.17	0.13		
6. Loan-to-home association	0.39*	−0.03	0.02	−0.01	−0.22*	
7. Home-to-loan association	0.65*	−0.10	0.14	0.18	−0.25*	0.50*

Note: Gender: 0 = male, 1 = female; Age in years, centred on the median, 0 = 39 years; Monthly payment: 0 ≤ €600, 1 > €600; Income: 0 ≤ €2500, 1 > €2500; Associations: very weakly – very strongly, seven-point scale. * $p < 0.05$.

Table 3
Loan burden regressed on home-to-loan association and loan-to-home association.

	B	SE	β	p
Constant	1.36	0.46		<0.01
Gender	0.04	0.23	0.01	0.85
Age	−0.01	0.01	−0.08	0.28
Monthly payment	0.74	0.25	0.21	<0.01
Income	−0.94	0.26	−0.25	<0.01
Loan-to-home association	0.03	0.09	0.02	0.76
Home-to-loan association	0.62	0.09	0.59	<0.01
Total R^2	0.54			

Note: Gender: 0 = male, 1 = female; Age in years, centred on the median, 0 = 39 years; Monthly payment: 0 ≤ €600, 1 > €600; Income: 0 ≤ €2500, 1 > €2500; Associations: very weakly – very strongly, seven-point scale.

positive: predicted loan burden is lower than actual loan burden. Recollections, on the other hand, appear too negative: recollected loan burden is higher than actual loan burden.

4.3. Relation between loan burden and cost–benefit association

Zero-order correlations of all variables are reported in Table 2. Loan burden is significantly correlated with home-to-loan association ($r = 0.65$) as well as loan-to-home-association ($r = 0.39$). Furthermore, participants with a low income ($r = -0.32$) and high monthly payment ($r = 0.30$) experience higher loan burden, and participants with a low income report higher home-to-loan ($r = -0.25$) as well as loan-to-home associations ($r = -0.22$). Home-to-loan and loan-to-home association are also moderately correlated ($r = 0.50$).

To study the relation of cost–benefit association to loan burden in more detail, we conducted a multiple regression analysis, regressing loan burden on home-to-loan association and loan-to-home association. Taking into account the covariates age, gender, income and monthly payment, in a first step we conducted a regression model including only these variables. In a second step we added home-to-loan association and loan-to-home association into the regression analyses. Compared with the first model, in the second model R^2 was significantly increased from $R^2 = 0.22$ to $R^2 = 0.54$, $p < 0.01$. After controlling for covariates, loan burden was only significantly influenced by home-to-loan association ($\beta = 0.59$) but not by loan-to-home association ($\beta = 0.02$, Table 3). It is noteworthy that although the zero-order correlation between loan burden and loan-to-home association was significant and opposite to the prediction of buffering (Prelec & Loewenstein, 1998), this correlation seems to be due to the interrelation between home-to-loan and loan-to-home associations because it was suppressed in the multiple regression analysis. When considering both directions of association simultaneously, only the home-to-loan association showed an effect on loan burden. The same results were found when conducting a separate multiple regression analysis for each group (home-to-loan association: $\beta_{\text{group1}} = 0.70$, $\beta_{\text{group2}} = 0.49$, $\beta_{\text{group3}} = 0.53$; loan-to-home association: $\beta_{\text{group1}} = -0.01$, $\beta_{\text{group2}} = 0.24$, $\beta_{\text{group3}} = -0.14$).

Results suggest that only one direction of association, home-to-loan association, is relevant for experienced loan burden². Therefore, subsequent analyses focus on home-to-loan association only. Considering that home-to-loan association predicts loan burden, it should follow the same pattern of experience, prediction and recollection over time. A one-way ANOVA³ on

² Note that this is not due to ceiling or floor effects in loan-to-home association ($M = 4.27$, $SD = 1.60$, range 1–7).

³ An ANCOVA including gender, age, income and monthly payment as covariates led to the same results with no significant effect of group on home-to-loan association, $F(2,99) = 0.24$, $p = 0.78$.

Table 4

Experienced, predicted and recollected home-to-loan association, by group and time.

Duration of living in home	Stage of loan process					
	Time 1		Time 2		Time 3	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Group 1 (<i>n</i> = 43)	3.22	1.67	3.15	1.74	2.47 ^{a,b}	1.49
Group 2 (<i>n</i> = 36)	5.11 ^{a,b}	1.49	3.26	1.55	3.50	1.44
Group 3 (<i>n</i> = 38)	4.84 ^{a,b}	1.78	4.25 ^{a,b}	1.67	3.52	1.67
Total (<i>n</i> = 117)	4.33	1.85	3.54	1.72	3.13	1.60

Note: Current reports are printed in bold along the diagonal, entries above the diagonal are predictions, entries below are recollections. Predictions or recollections marked with ^a are significantly different from current reports within a row (group); Predictions or recollections marked with ^b are significantly different from current reports within a column (time), *t*-tests, $p < 0.05$.

home-to-loan association revealed no significant effect of group, $F(2,114) = 0.39$, $p = 0.68$. Participants in all groups reported similar average levels of home-to-loan association, suggesting that there are no systematic changes over time (group 1: $M = 3.22$; group 2: $M = 3.26$; group 3: $M = 3.52$; Table 4). Hence, it seems that not only loan burden but also home-to-loan association remains constant over the course of the loan period.

The pattern with regard to differences between current experiences, predictions and recollections of home-to-loan association was also similar to the pattern of loan burden. A 3 (group) \times 3 (time, within-subjects) ANOVA⁴ yielded a significant main effect of group, $F(2,114) = 9.64$, $p < 0.01$ and a significant main effect of time, $F(2,228) = 41.47$, $p < 0.01$, as well as a significant interaction, $F(4,228) = 7.74$, $p < 0.01$. The interaction is due to group 2 participants, who reported higher differences between current and recollected home-to-loan association than between current and predicted home-to-loan association. Details are shown in Table 4.

In summary, home-to-loan association predicted loan burden. In line with this finding, experience and subjective change in loan burden and home-to-loan association followed the same pattern: participants in all stages of the loan process expected lower levels in the future or recollected higher levels in the past. Thus, participants appeared to believe that loan burden as well as home-to-loan association decreased over the course of the loan period. In contrast, participants in all three groups reported similar current levels. Predictions and recollections were systematically different from actual experience; predictions were too positive, recollections too negative.

5. Discussion

Results indicate that loan burden does not appear to change over time among home loan users, although loan users recall and predict a decrease in loan burden. One factor relating to subjective loan burden is the degree to which thinking about the home evokes thoughts of the loan. The stronger this mental association, the higher the subjective loan burden reported by participants. In addition, experience, predictions and recollections of a change in home-to-loan association follow the same pattern as subjective loan burden. The strength of association does not appear to change over time and yet participants predict and recollect a decrease in home-to-loan association. The similarity in patterns combined with the relation between home-to-loan association and loan burden suggests that the differences between experience and predicted and recollected loan burden can, to some extent, be explained by the differences between experience and predicted and recollected home-to-loan association.

5.1. Limitations

Although the pattern of findings is clear-cut, some limitations need to be considered. Loan burden for houses and apartments is a phenomenon that covers a long time span, whereas the current study used a cross-sectional design. First, therefore, a direct test of the assumption that the mental association between loan and home causes the loan burden (Kamleitner et al., 2007) is not possible. Second, it might be argued that the results do not necessarily imply errors in judgement. It could be possible that all three groups are correct and that, indeed, having a loan was more burdensome 10 years ago and will be less burdensome 10 years in the future. However, such an explanation seems unlikely given the general rise in credit use reported, e.g. for the US (Maki, 2000). It would be interesting to take into account changing economic conditions over time⁵; however, an overall measure of economic condition seems difficult to incorporate. We do not have access to detailed data at the individual level (e.g. specific loan conditions, income at the time of taking up the loan, etc.), which seem especially important when considering differences in economic conditions. Comparing the forecasts of one group with the current experiences of another group might not be the ideal method, but for long-term phenomena it is a useful approximation, e.g. when studying

⁴ An ANCOVA including the covariates gender, age, income and monthly payment led to the same results with a significant main effect of group, $F(2,99) = 7.81$, $p < 0.01$ and a significant main effect of time $F(2,206) = 38.16$, $p < 0.01$ and a significant interaction, $F(4,206) = 5.61$, $p < 0.01$.

⁵ We are grateful to an anonymous reviewer for this suggestion.

the impact of tenure on happiness (Gilbert et al., 1998). Third, the conclusion that no systematic change in loan burden occurs over time is based on a between-subjects comparison, whereas the analysis of forecasts and recollections is based on a within-subjects comparison with higher statistical power. However, even a fine-grained analysis of loan burden over years instead of 5-year groups using correlations showed no change, and the between-subjects comparisons of predictions versus experience and recollections versus experience were significant, which suggests that the findings are not biased by different statistical power. There are some reasons for assuming that the findings can be replicated in a longitudinal study. First, in all analyses we controlled for variables that might systematically differ between groups and might influence loan burden and cost–benefit associations (i.e. age, gender, income and loan rate). Although these variables sometimes became significant, their inclusion never changed the substantive results. Second, each group covered a range of approximately five years. Despite this long period of time and heterogeneous responses from participants, the resulting patterns are consistent.

A final limitation relates to the context. This study focused on loans for houses and apartments only. A loan for a house may well be a particular case because a house constitutes a permanent value and is used on a constant basis. In particular, we assume that our finding of constancy in actual loan burden over time may not hold in other loan contexts, e.g. consumer goods. The pattern of prediction and recollection may, however, be more universal and even apply to contexts other than loans where intuitive theories about adaptation play a role. Furthermore, it might be argued that the sample size is rather small; however, as reported in the results section a post hoc power analysis demonstrated sufficient power. Nevertheless, future studies need to test for the generalizability of our results across designs and contexts.

5.2. Theoretical and practical implications

The present study contributes to the affective forecasting literature, to the literature on loans and to the developing research area of cost–benefit associations. With respect to the affective forecasting literature, the differences between prediction and experience observed in our study cannot be explained by the impact bias (Wilson & Gilbert, 2003). This bias would predict that people overestimate loan burden; in contrast, we found that they underestimated future loan burden. We suppose that the differences between experience, prediction and recollection we found are due to incorrect intuitive theories of change that guided predictions as well as recollections (e.g. Ross, 1989; Snell et al., 1995). Our study stands out from most previous research on affective forecasting by demonstrating differences between experience and both prediction and recollection within the same study. The fact that participants predicted as well as recollected a decrease in loan burden supports the explanation that people hold an intuitive theory of adaptation. Such a theory appears to entail a decrease in home-to-loan association and loan burden over the course of the loan period. Intuitive theories of change appear to be difficult to overcome. Since anticipation matches recall, prediction errors may not be noticed and people may face difficulties in learning from prediction errors (Meyvis, Ratner, & Levav, 2007).

A further implication for the affective forecasting literature is the finding of an overestimation of adaptation to an aversive experience. Participants in the present study believed that an aversive experience would improve over time. As illustrated in the literature review, different beliefs regarding adaptation were found in different contexts (Kahneman & Snell, 1992; Snell et al., 1995; Ubel et al., 2005). Future research needs to identify moderating factors that influence the predominance of beliefs in adaptation, constancy or sensitization to aversive experiences⁶.

With regard to the literature on loans, the results highlight the importance of a process view. Most studies focused on loans at one point in time despite loans being a long-term process (Kamleitner & Kirchler, 2007). Although some authors speculated about a change in loan burden over time (e.g. Kirchler, Hoelzl, & Kamleitner, 2008; Prelec & Loewenstein, 1998), there are few empirical analyses. Home loan users seem to expect and recall adaptation to the loan burden over time, yet no such adaptation seems to occur. In part, this might explain why loans can have an impact on psychological well-being (Brown et al., 2005; Roberts et al., 1998; Stradling, 2001). Loans seem to constitute a constant strain, even though loan users themselves appear to underestimate this constancy.

With regard to the literature on cost–benefit associations, the analyses demonstrated that loan burden was influenced by the strength of the home-to-loan association but not by the strength of the loan-to-home association. People reporting a strong association between the house and the loan were more likely to perceive a large loan burden. This pattern does not fit well with the assumption that the loan-to-home association buffers loan burden (Prelec & Loewenstein, 1998). It seems to be better explained by the assumption that cost–benefit associations make the associated content more salient and hence increase its perceived importance (Kamleitner et al., 2007). In the current case, it seems that the strong home-to-loan association made respondents more aware of the loan and triggered an increased feeling of being burdened by it.

Results also suggest important practical implications. Research has shown that anticipated emotions guide choice (Mellers et al., 1999). Consequently, it can be assumed that people take into account their anticipation of future loan burden when deciding about financing a good. Ideally, people would correctly predict loan burden, especially when considering long-term commitments such as taking out a loan for real estate. Misforecasts, as were found in the present study, might lead people to overestimate their capability to deal with a loan in the long run. The intuitive theory of adaptation to the financial situation might lead to unfavourable decisions. It would therefore be in the interest of consumer organizations and creditors to inform loan users that taking out a loan always involves a financial and emotional burden and that forecasts

⁶ We are grateful to an anonymous reviewer for this suggestion.

can be misleading. Problems in recall are also of practical importance. In retrospect, loan experience is remembered as being worse than it was but, at the same time, it is remembered as an improving sequence. Both aspects may determine word of mouth and the intention to take up a loan again, but in different directions. Whereas the overall high recalled loan burden may prevent consumers from producing positive word of mouth or taking up a loan again, the recalled improvement may lead to positive word of mouth and to the belief that one can handle a loan again. However, such a belief could overtax financial capabilities and contribute to indebtedness.

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