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Psychological determinants of consumer credit: the role of attitudes

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Abstract

Purpose – Consumer credit as a proportion of household debt has grown considerably during the last 20 years across many developed countries. A fairly extensive literature from the field of empirical psychology has provided evidence that personality factors and attitudes may influence individuals' debt financing decisions. The purpose of this paper is to investigate the importance of attitude to credit and three main research questions are addressed. Is there any relationship between attitude and use of consumer credit? Are there any differences between the attitudes of credit users and non-users that can be associated with motivations for using consumer credit? Does attitude towards credit affect preferences for the financing of consumption?

Design/methodology/approach – The authors provide answers based on the results of an original survey of the use of consumer credit conducted on a wide sample of Italian households, which allowed the authors to asses the respondents' attitudes towards credit and to examine them with respect to credit decisions, controlling for several socio-economic variables.

Findings – The findings indicate that the influence of attitude on consumer credit decisions cannot be ruled out. Attitude toward credit appears to play an important role and is significantly related to motivations for using credit and to the method of choice for financing consumption.

Originality/value – This study improves on most existing research on these topics in the particularly large size and scope of the sample, and also because several studies from the psychological field lack a thorough assessment of household economic conditions and expectations.

Keywords Italy, Consumer credit, Consumer behaviour, Debt financing, Psychology, Psychological attitudes to credit

Paper type Research paper

Over the last decade, Italian households have increased their propensity to indebtedness and, as a consequence, their financial liabilities in relation to their equity as well as in absolute terms[1]. Moreover, there has been a substantial modification in the structure of household budgets, on both the assets and the liabilities sides. Not only are Italians saving less than in the 1990s, but they have also changed the composition of their wealth, with a shift toward less liquid financial instruments and real estate investments (Banca d'Italia, 2011).

The economic literature has mainly explained households' debt choices through socio-economic and demographic variables. More specifically, attention has been concentrated on their disposable income and economic characteristics. However, this approach has not led to unambiguous conclusions on the role of consumer credit in the

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management of household budgets, partly due to the confounding effects of banks' and other intermediaries' lending policies. Indeed, empirical evidence is often at odds with the classical models of permanent income and life-cycle consumption behavior, and several studies have shown the explanatory relevance of liquidity constraints and household-specific socio-economic characteristics (Jappelli and Pagano, 1989; Magri, 2007; Guiso *et al.*, 1994).

The aim of this paper is to provide new evidence about the influence of attitudes to credit on households' debt-related decisions. The main hypothesis to be tested is whether the psychological profile of the household's decision maker determines consumer credit use, focussing on attitudes. We also investigate the relationship between motivations and contractual forms of credit use; one original contribution in this direction is the isolation of the influence of attitudes to credit from attitudes to money with regard to the use of revolving credit cards, which the existing literature has not yet achieved (Hayhoe *et al.*, 1999).

The paper is organized in four sections. The first section is a review of the literature on the psychological aspects and determinants of consumer credit. Section 2 is a description of the sample and method used to build the research's data set. The statistical analyses and results are presented in Section 3; Section 4 concludes.

1. Review of the literature

The widespread growth in both the size and scope of household debt over the last two decades has been driven by demand as well as supply side factors[2]. Among demand factors, the increased propensity to credit has been encouraged by the gradual consolidation of a more favorable attitude toward debt, in particular for financing one's own consumption needs (Merskin, 1998; Watkins, 2000). This attitude has spread at the individual as well as the cultural level, thus modifying some social models of economic behavior, previously mainly directed toward saving (Godwin, 1997).

For an explanation of households' behaviors with respect to debt, a clarification on the nature of the debt itself is of primary importance. On this point, there is a distinction in the literature between consumer credit and consumer debt. Although the distinction between the two terms is blurred in normal usage, strictly speaking "consumer credit" refers to recourse to institutional credit, involving a request for credit by a household which the banker considers solvent, and the subsequent decision to lend. On the other hand, the expression "consumer debt" refers to the debts which arise when the debtor does not fulfill his repayment obligations, against his own intentions and those of his creditor (Livingstone and Lunt, 1992; Berthoud and Kempson, 1992; Ford, 1988; Lea *et al.*, 1993, 1995).

Some authors do not consider this distinction necessary, defining the concept of consumer debt either as the possible end of a credit relationship, or as the result of a frequently transient situation of difficulty, consequent on a non-premeditated behavior (Kamleitner and Kirchler, 2007). Consumer debt is frequently associated to poverty and economic or financial weakness, and is thus a forced status, arising from the household's situation and needs (Lea *et al.*, 1993) combined with a lack of sufficient income or inadequate backup from liquid assets.

In the area of consumer credit, in contrast, income variables are less effective in providing a full explanation for credit use. Some empirical analyses report a positive relationship between income and credit use (Crook, 2001, 2003; Cosma, 2006; Fabbri and Padula, 2004), whereas other contributions highlight a negative relationship with current income level but a strong link to permanent income (Magri, 2002, 2007; Cox and

Jappelli, 1993; Jappelli and Pagano 1989; Guiso *et al.*, 1994). Lastly, if average disposable income is considered per component, the use of credit turns out to be highly concentrated around medium-to-low values (Cosma, 2009a)[3].

According to some studies, demand for credit also derives from behaviors that deviate from economic rationality (Bertaut and Haliassos, 2006); often, using credit is influenced by personal and psychological factors other than utility maximization (Bertrand *et al.*, 2005). In this sense, the understanding of households' economic behavior can benefit from an integrated analysis which also takes psychological, individual and interpersonal factors into account (Rumiati and Mistri, 1998)[4]. A number of studies have investigated the role of credit for households, and consumers' ability to manage their financial situations, for the institutional purposes of preventing over-indebtness and improving financial education. The various investigations reveal that consumer credit is becoming an ordinary ingredient (in terms of frequency) in the management of household budgets, partly due to the greater availability of credit, but that this does not always go hand in hand with a growing ability to manage its financial effects, especially in difficult economic conditions (Ironfield-Smith *et al.*, 2005).

Research and empirical findings aimed at explaining the credit-related behavior of households abound within the psychological literature, investigating numerous aspects of this behavior as well as the decision making related to debt choices and credit purchases. It emerges that differences in personality, motivation, abilities and personal preferences play a significant role. Also to be considered are the complex interactions between contextual and individual factors (Kirchler and Zappalà, 1995).

In the light of these considerations, a review of the literature can be organized in two main strands, one focussing on the relationship between the individual and the social environment in which financial decisions are made and the other specifically dedicated to studying the personal characteristics of the credit user.

1.1 Interpersonal factors

The first strand studies the role and effects of household-environment interaction and of the unconscious conditionings that each individual experiences simply because they belong to or act within a given context. These aspects are defined as "interpersonal factors," taken to include interactions between general contextual factors (such as reference group, dominant culture, behavioral patterns, ethical and aesthetic values and modes of communication) and subjective factors (such as personal needs, aspirations, motivations and cultural level) that bear on behavioral models through perceptions as well as processes of emulation or differentiation.

These elements all modify households' behaviors, sharpening their comparative evaluation of their own situations; where the materialistic connotation of social classes is strong, a stronger propensity and more favorable attitudes are observed with respect to credit (Watson, 2003; Walker, 1996). In this respect, a positive relationship has been identified between recourse to credit and the distance perceived, in income terms for instance, between a household's situation and its social group of reference (Karlsson *et al.*, 2004). Explaining their own debt situations, households tend to compare themselves to a reference group with similar economic and financial situations, showing consistency between their perception of belonging and their actual condition (Livingstone and Lunt, 1991). A certain consistency in social comparison has been pointed out by Lea *et al.* (1993) too, as households with debts are more likely than those without to affirm that the majority of their own relatives, acquaintances or friends consider getting into debt to be normal.

Moreover, the act of consumption is often a crucial factor in financial decisions because of the material and social meanings attributed to it. Often, consumption and credit together acquire a connotation of social identification for the household, thus satisfying the need to experience a sense of belonging to their peers (Livingstone and Lunt, 1991; Bernthal *et al.*, 2005). Moreover, through its consumption the household (or individual) also defines its living standards and lifestyle, filling the gap it perceives in comparison with its real or ideal reference groups (Morgan and Christen, 2003). And yet, while on the one hand recourse to credit satisfies needs for social identification, it must not be forgotten that being in debt may also involve a psychological cost and a substantial increase in stress levels (Brown *et al.*, 2005).

1.2 Personal factors and attitudes

Studies dedicated to credit users' characteristics generally concentrate on subjective and personal factors, on the meaning the individual attributes to credit and being in debt, and on the relationships between life events, credit behaviors and the risk of over-indebtedness. Specifically, individual factors concern personality, motivations, purposes of action, abilities, preferences and perceptions, in particular those relating to the general economy or environment as well as the individual's own situation.

"Attitudes," defined as subjective tendencies to do something, expressed through the favorable or unfavorable evaluation of a given object (Eagly and Chaiken, 1993) play an important role in explaining (or understanding) credit behaviors.

In the case of consumer credit, on the one hand more or less favorable attitudes may affect judgment, influencing the cognitive and decision-making process concerning recourse to credit itself, while on the other they may be associated with a higher or lower tendency to use it. For our purposes, it becomes useful to break down attitudes further, to single out three significant components: cognitive, affective and behavioral.

The cognitive component consists of the individual's whole information set, knowledge, beliefs, opinions, perceptions and thoughts regarding credit, which she has matured during her life on the basis of her own experiences and interactions with the environment. The cognitive component is important because it helps to determine the frame of reference within which behavioral decisions are made.

The affective (or "emotional") component consists of the emotions, sentiments and, especially, sensations aroused by credit, i.e. by the actual condition or just the thought of being in debt. The affective component is important for defining the meaning actually attributed to credit and the structure of preferences, which may be distorted by external factors in the cognitive component.

The behavioral component includes all explicit behaviors toward credit and, in part, also proactive intentions not yet transformed into explicit behaviors. These also include decisions about money management, the household budget and recourse to consumer credit, differentiated by spending intentions.

The relationship between attitudes and credit use has been the subject of several studies, the empirical findings of which do not provide consistent results. This absence of consistency is mainly due to the specific focus of a large number of studies on revolving consumer credit (via credit card), where attitudes toward credit overlap with those toward money. The latter are strongly dependent on demographic and interpersonal factors, also relating to the effects of the use of credit cards as payment instruments, and thus as a means of affirming social status or to overcoming a sense of personal inadequacy (Furnham, 1984; Hanley and Wilhelm, 1992). Livingstone and Lunt (1992) have found a positive, significant relationship between the individual's favorable or unfavorable attitude to credit, his level of indebtedness and his intention to repay. This relationship is also reported by Lea *et al.* (1993) who made a comparative study of households who had run into debt with a water-utility firm and observed a generalized negative attitude to indebtedness, which was, however, significantly stronger in households without debts. Zhu and Meeks (1994) are unable to prove a significant relationship between attitudes and credit, but their findings are from a highly educated sample. Davies and Lea (1995) analyze the opinions of students who had made use of loans to fund their education and find a positive relationship between favorable attitudes and debt. In contrast with the findings of Lea *et al.* (1993), the students do express tolerant attitudes to consumer debt. Actually, attention must be paid to the relationship between behaviors and attitudes, because the former may influence the latter; for instance, with regard to consumer debt, opinions tend either to justify the individual's own status (Lea *et al.*, 1991) or to be significantly inconsistent (Ajzen, 1996).

The role of attitudes in defining financial decisions with regard to consumer credit is also unclear, especially when it comes to the consistency between attitudes and behaviors, given the considerable difficulty in understanding whether attitudes or behaviors come first. It has been noticed that previous experience of consumer credit use, even through friends or relatives, increases the probability of credit use and induces a more favorable attitude toward it (Kaynak and Harcar, 2001).

The relationship between attitudes and behaviors has also been further examined with reference to types of credit instruments. Given the assumption that attitudes are generally a mediating factor for other characteristics, Chien and Devaney (2001) report that a generic higher propensity to credit is more likely to lead to the use of installment loans, whereas specific favorable attitudes are associated with a higher probability of credit card use[5]. The role of different components within attitudes was specifically analyzed by Xiao *et al.* (1995), who studied students' attitudes to credit. Notwithstanding the bias due to reference to revolving credit card use for the measurement of attitudes, on the whole the interviewees turn out to be in favor of credit. And yet, significant differences emerge between affective, cognitive and behavioral components, with a striking positive relationship between the intensity of the first two and the use of credit cards. The same result emerges in Hayhoe *et al.* (1999), confirming both the existence of a positive relationship between the affective component and the use of credit cards and the importance of the cognitive component in influencing behaviors.

2. Research method

2.1 Description of the sample

The data set used in this research is the outcome of a dedicated survey involving 2,000 Italian households, carried out from April to June 2009 by a market research firm. The sample comprises households that had recently had recourse to consumer credit when interviewed, as well as families that had not. Since consumer credit is not very common in Italy, credit users were oversampled in order to collect as much information as possible about the phenomenon, making them half of the whole sample[6]. Otherwise, the sample design aimed to represent the composition of the population of Italian households by size and domicile.

A questionnaire of 60 closed-form questions devised by the authors was submitted by telephone interview (through the CATI system) to a single member of any household in the survey list who declared himself to be involved in the household's financial and economic decisions. The questionnaire consisted of three main sections, respectively, about: demographic, professional and educational characteristics; financial status and credit use; and psychological profile with regard to personality and attitudes toward credit.

For the purposes of this research, a "credit user" is a household that was either using consumer credit when interviewed or had used it during the previous 24 months. "Credit non-user" households are those that do not satisfy either of these conditions. The decision to limit the definition of credit usage to two years in the past is intended to ensure the reliability of answers about motivations, behavior and the credit-related decision-making process.

In 144 cases out of 2,000 the interviewee did not answer all questions about his psychological profile. Therefore, only 1,856 cases are actually available for investigation; 909 cases are credit users and the remaining 947 cases are non-users. The overall frequency of non-responses is relatively low (7.2 percent) and it is higher for users (8.1 percent) than for non-users (5.3 percent); in neither of the two types did preliminary data analyses reveal any systematic difference between respondents and non-respondents in terms of the characteristics of either the household or the interviewee[7].

Almost 45 percent of the sampled households live in northern Italy. The proportion of credit users is 14 percent higher than that of non-users in southern Italy (including Sicily and Sardinia) and 8 percent lower in the north west of the country. Almost 20 percent of households have one or two members, 25 percent have three and the rest (55 percent) four or more. Larger households are more frequent among credit users than non-users, where three-member households are most common. In over 90 percent of cases households have one or two income earners; the distribution by number of income-earning members does not vary particularly between credit users and non-users. The similarity between the two types of households also holds good with respect to the gender of respondents: 40 percent are male and 60 percent female. Most interviewees (67 percent) are in the 35 to 64 age range; the frequency of non-users is slightly higher in the younger (15 percent) and older (26 percent) age classes than for the whole sample. The level of education of respondents is mostly (80 percent) middle school and secondary school leaving diploma; among credit non-users, university and primary school qualifications are more frequent than among users. In 55 percent of instances respondents were working when interviewed; the proportion is higher for credit users (60 percent) than for non-users (50 percent), which include a higher concentration of retirees (30 percent compared to 21 percent for credit users).

2.2 Assessing and measuring attitudes

A section of the questionnaire aims to assess the psychological characteristics of the interviewee. The section consists of 12 questions about attitudes toward credit. All questions elicit an expression of agreement about a given statement on a five-grade Likert scale, but the interviewee is allowed not to answer if she does not have an opinion. The level of agreement is coded from "strongly agree" to "strongly disagree."

The assessment of attitudes toward credit follows the approach of Lea *et al.* (1995). Five items relate to the cognitive, three to the emotional and four to the behavioral attitudes (Table I). A score from 1 to 5 is attributed to any answer; the higher the value, the more strongly approval of credit is expressed. The Lea, Webley and Walker approach was preferred over alternatives, such as Xiao *et al.* (1995) or its evolution by Hayhoe *et al.* (1999), because it avoids any reference to credit card use, which, for the

Cognitive
Taking out a loan is a good thing as it allows you to make your life better
It is a good idea to have something now and pay for it later
Having debt is never a good thing
Credit is an essential part of today's lifestyle
It is important to live within one's means
Emotional
I am not worried of having debt (this condition is not stressful for me)
I like having a credit card
I do not like borrowing money
Behavioral
I prefer to save for making an expensive buy
It is better to go into debt than to let children go without Christmas presents
Even on a low income, I save a little regularly
Borrowed money should be repaid as soon as possible

Notes: The 12 questions devised by the authors to assess attitude toward credit, grouped into the three components of attitude. Interviewees were asked to express their agreement about any of the 12 statements on a five-grade Likert scale (but were allowed not to answer not having an opinion); the level of agreement was coded from "strongly agree" to "strongly disagree"

Table I. Questionnaire items for assessing attitude by components

purposes of this study, might introduce a confounding bias because it elicits answers that are also correlated with attitudes to money.

The self-consistency of attitude evaluations over the various items was checked for with Cronbach's α (Cronbach, 1951). This indicator acquires values from 0 to 1 as the consistency of answers improves. The α values for the cognitive, emotional and behavioral component items are 0.539, 0.186 and 0.335, respectively. These values were improved upon by intentionally selecting only certain items for each attitude component (Table II). The best representation of the cognitive attitude is thus achieved by retaining only items 1, 2 and 3, which deliver an α level equal to 0.593; for the emotional component items 6 and 8 achieve $\alpha = 0.227$; finally, items 9, 11 and 12 were selected for the behavioral component ($\alpha = 0.385$). Considering all selected items together (i.e. regardless of the dimension they belong to) the overall α level is 0.534.

The selected items were combined into four synthetic measurements of attitude toward credit (referred to as "scale"): one for each of the three components and a further comprehensive measure of overall attitude. For each sample case and each measurement, a scale value was calculated by summing the scores on any relevant item and standardizing the result over the unit range, so that the closer the resulting value to 1, the stronger the liking for credit.

3. Analyses and results

This section is about the results of the statistical analyses performed on the sample data collected. The most important hypothesis tested for is the presence of a relationship between consumer credit use and attitude toward credit. Two further aspects were examined: whether attitude can be associated to motivations for using consumer credit and households' preferred forms of credit. Finally, a logistic regression analysis was performed to check whether the influence of attitude on credit decisions persists when other potentially relevant household characteristics are also taken into account as concurrent (possibly competing) factors.

Items by components of attitude	Total correlation	α if item excluded
Cognitive		
Taking out a loan is a good thing…	0.46	0.37
It is a good idea to have something now…	0.49	0.343
Having debt is never a good thing	0.25	0.514
Credit is an essential part of today's lifestyle*	0.19	0.555
It is important to live within one's means*	0.13	0.559
Emotional		
I am not worried of having debt	0.14	0.05
I like having a credit card*	0.07	0.227
I do not like borrowing money	0.10	0.131
Behavioral		
I prefer to save for making an expensive buy	0.29	0.166
It is better to go into debt than to let children…*	0.08	0.385
Even on a low income, I save a little regularly	0.16	0.315
Borrowed money should be repaid as soon…	0.22	0.232

Notes: The second column of the table shows the total correlation of each item with all the other 11 items that contribute to the overall attitude score. The third column shows the values of Cronbach's α of the components' attitude scores after the exclusion of each single item. *Items that were excluded from the computation of the final scores used in subsequent analyses

Table II.
Reliability analysis

3.1 Attitude toward credit and credit use

The presence of a relationship between attitudes and the use of credit was tested for by comparing the average scale values totaled on each factor by credit users and non-users. In general, the values of attitude are higher for users than for non-users, and their differences are always strongly statistically significant (Table III). Larger differences are recorded for the cognitive (0.079) and behavioral (0.061) components, while the values of the emotional component are more similar for the two groups (0.193 vs 0.165); moreover, the significance of this component should be judged with care, because of its low performance on the consistency test ($\alpha = 0.227$). For the single components as well as for the overall attitude, the results are consistent with those presented in most of the existing literature and with expectations. Also, since the data are quite well behaved, the results do not change particularly if more robust statistics of scale values, such as the median and Mann-Whitney's test, are used[8].

The evidence of a more positive attitude on the part of credit users persists if the sample is broken down by respondent features in several different ways (Table IV).

The first conclusion that can be drawn from these analyses is that a positive and significant relationship between attitude and credit usage cannot be ruled out.

3.2 Household financial status and attitude to credit

Having found that attitude to credit has a positive influence on its usage, it becomes logical to check that this is not driven by a primary relationship between attitude and household need. It is indeed possible that interviewees may display a positive attitude toward credit in order to justify the fact that their household is in debt because of economic strain. As shown in Table V, the more favorable attitude among credit users compared to non-users does not change greatly across household per capita income classes, which is taken to proxy the degree of household need[9]. Furthermore, no clear relationship between attitudes and needs emerges within either of the two groups.

Characteristics	Users	Non-users	Difference	t-test	p-value
Overall attitude toward credit	0.253	0.197	0.056	10.550	0.000
Cognitive	0.324	0.245	0.079	9.247	0.000
Behavioral	0.243	0.182	0.061	9.435	0.000
Emotional	0.193	0.165	0.028	3.427	0.002
n cases	909	947			

Notes: Simple average values of attitude scores (overall and for each component) for credit users and non-users and their differences. The two-tailed t-tests for equal means were computed assuming the same standard deviation of scores in the two groups, as we always failed to reject the null hypothesis of equal variances with Levene's pre-test at the 10 percent level. The last column of the table shows the marginal significances (p-value) of each t-test, which were evaluated on the standard normal distribution

Table III. Attitude toward credit and credit use

	Users			Non-users					
Characteristics	Mean	SD	*n* cases	Mean	SD	*n* cases	Difference	t-test	p-value
Gender									
Male	0.263	0.121	338	0.210	0.113	395	0.053	6.071	0.000
Female	0.248	0.115	571	0.188	0.110	552	0.060	8.897	0.000
Education									
Up to licenza elementare	0.205	0.109	23	0.187	0.129	53	0.018	0.621	0.267
Licenza media inferiore	0.264	0.103	203	0.188	0.106	251	0.077	7.774	0.000
Diploma	0.255	0.119	584	0.203	0.113	490	0.052	7.332	0.000
Laurea or higher	0.231	0.131	99	0.197	0.111	153	0.034	2.125	0.017
Age class (years)									
18-24	0.247	0.073	30	0.195	0.116	52	0.052	2.489	0.006
25-44	0.260	0.122	318	0.201	0.111	258	0.059	6.024	0.000
45-64	0.256	0.119	434	0.201	0.110	396	0.056	6.999	0.000
65 +	0.229	0.106	127	0.188	0.114	241	0.041	3.422	0.000
Occupational status									
Employed	0.262	0.119	545	0.201	0.111	482	0.061	8.470	0.000
Housekeeper	0.257	0.129	138	0.163	0.090	106	0.094	6.708	0.000
Retiree	0.229	0.105	190	0.200	0.115	285	0.029	2.815	0.002
Student	0.217	0.076	20	0.212	0.114	55	0.006	0.250	0.401
Unemployed	0.269	0.115	16	0.205	0.150	19	0.063	1.418	0.078
Domicile of household									
Northwest	0.236	0.103	186	0.196	0.111	274	0.040	3.959	0.000
Northeast	0.257	0.113	163	0.189	0.117	186	0.067	5.482	0.000
Center	0.246	0.133	159	0.212	0.103	196	0.034	2.630	0.002
South and islands	0.263	0.118	401	0.194	0.114	291	0.069	7.778	0.000

Notes: Simple average values of overall attitude scores for credit users and non-users by characteristics of the respondents. In most cases, the t-tests for equal means were computed assuming the same standard deviation of scores in the two groups, as we failed to reject the null hypothesis of equal variances with Levene's pre-test at the 10 percent level. Group-specific variances were used for: education, laurea or higher; age class, 18-24; occupational status, housekeeper and student; domicile of household, center. The last column of the table shows the two-tailed marginal significances (p-value) of each t-test, which were evaluated on the standard normal distribution

Table IV. Attitude toward credit by respondents' features

Household equivalent income (€ per month)	Users Mean	SD	n cases	Non-users Mean	SD	n cases	Difference	t-test	p-value
Up to 350	0.263	0.129	49	0.196	0.120	65	0.067	2.840	0.002
351-500	0.246	0.106	126	0.200	0.104	116	0.046	3.420	0.000
501-750	0.264	0.119	268	0.193	0.112	298	0.071	7.281	0.000
751-1,000	0.249	0.105	194	0.200	0.115	176	0.049	4.240	0.000
1,001-1,250	0.259	0.144	81	0.217	0.112	69	0.042	1.983	0.024
1,251-1,500	0.228	0.111	99	0.196	0.119	56	0.033	1.678	0.047
1,501 +	0.259	0.124	92	0.193	0.109	167	0.067	4.306	0.000

Notes: Simple average values of overall attitude scores for credit users and non-users by classes of household's equivalent income. (See footnote 10 for the definition of equivalent income.) The two-tailed t-tests for equal means were computed assuming the same standard deviation of scores in the two groups, as we always failed to reject the null hypothesis of equal variances with Levene's pre-test at the 10 percent level. The last column of the table shows the marginal significances (p-value) of each t-test, which were evaluated on the standard normal distribution

Table V.
Attitude toward credit by household's per capita income

3.3 Attitude and motivations for using credit

Attitude to credit is related to motivations for using it[10]. The comparison of average scale values between users and non-users shows that stronger attitudes prevail among the former across all reported motivations (Table VI). However, the difference is larger and more significant when credit is used for unexpected, non-discretionary expenditure, because it is cheap or for carrying out a project important for the household. The smallest difference is observed when borrowed money is used for hedonistic purposes. It is also worth pointing out that while for credit users average scale values are quite homogeneous across motivations, they are more dispersed among non-users, tending to be higher when associated to discretionary purposes.

3.4 Attitudes and preferred forms of consumer credit

As documented in the literature review section, consumers' psychological traits can influence the types of credit they prefer. The questionnaire included two questions specific to this topic. Credit users were asked to declare the actual form of credit they

Declared motivations	Users	Non-users	Differences	t-test	p-value
Financing an unexpected expenditure	0.247	0.186	0.061	8.118	0.000
Financing an important project	0.257	0.211	0.046	3.669	0.000
Smoothing expenditure over the year	0.254	0.214	0.040	2.238	0.027
Satisfying a desire	0.256	0.222	0.034	2.071	0.039
Credit is cheap	0.264	0.206	0.058	3.521	0.001

Notes: Simple average values of overall attitude scores for credit users and non-users by declared motivation for using credit. In all but one case, the t-tests for equal means were computed assuming the same standard deviation of scores in the two groups, as we failed to reject the null hypothesis of equal variances with Levene's pre-test at the 10 percent level. Group-specific variances were used only for the "credit is cheap" motivation. The last column of the table shows the marginal significances (p-value) of each t-test, which were evaluated on the standard normal distribution

Table VI.
Attitude toward credit by motivations

had used, while non-users were asked to say what form they would have been most likely to use had they had recourse to consumer credit[11]. This particular way of formulating the question is intended to isolate the respondent's attitude to credit, thus reducing the bias from attitude to money that affects most previous studies.

The data thus collected were analyzed in connection to the interviewee's attitude to credit, for both users and non-users simultaneously. This was done by running a multinomial logistic regression, where the dependent variable is the preferred form of credit and the covariates are the household type (user or non-user) and the attitude scale measurements. The reference category of the dependent variable is credit card financing. The results are summarized in Table VII; a positive (negative) value of any given coefficient means that a higher value on the attitude scale increases (decreases) the probability of using the corresponding form of credit instead of credit cards.

The estimates from the regression show that the hypothesis of a more positive attitude to debt not having any effect on the preferred form of consumer credit is strongly rejected across all household types. For actual users, the higher the attitude value the more likely financing consumption with credit cards or point-of-sale lending becomes as compared to more direct forms such as personal bank credit or salary loans. On the other hand, credit non-users are more likely to utilize direct forms as attitude to credit improves; point-of-sale lending is also significantly preferred to credit cards. Further analyses on the specific effect of the cognitive component return a result pattern largely similar to the one that emerged from the overall attitude regression[12].

Preferred form of credit	Household type	Coefficient	SE	p-value
Point-of-sale lending	User	1.746	0.609	0.004
	Non-user	3.447	1.054	0.001
Personal credit	User	−1.774	0.669	0.008
	Non-user	5.683	1.013	0.000
Salary loan	User	−6.485	1.266	0.000
	Non-user	3.265	1.296	0.012

Notes: Maximum likelihood estimates of the multinomial logistic regression model:

$$\text{Prob}(y=j)=\frac{\exp(b_j x)}{1+\sum_{k=2}^{4}\exp(b_k x)}\quad \text{for } j=2,3,4$$

$$\text{Prob}(y=1)=\frac{\exp(b_j x)}{1+\sum_{k=2}^{4}\exp(b_k x)}$$

on $n=1{,}546$ cases (292 non-responses were excluded). The dependent variable y is an index of the preferred form of credit: 1 = credit card, 2 = point-of-sale lending, 3 = personal credit, 4 = salary loan. The binary independent variable x is household type. The model coefficients are normalized with respect to choice $y=1$, so that a positive (negative) value of any b coefficient means that a higher value on the attitude scale increases (decreases) the probability of using the given form of credit instead of credit cards. The last column of the table shows the marginal significances (p-value) of each coefficient according to the asymptotic z-test, which were evaluated on the standard normal distribution

Table VII.
Influence of attitude on preferred form of credit

3.5 Attitude vs other factors as determinants of credit use

The empirical evidence collected supports the claim that attitudes can be an important determinant in consumer credit decisions. In order to be more confident on this, it is necessary to check whether the attitude toward credit still exerts an influence when other potentially relevant factors are simultaneously taken into account.

This was done by running a binary logistic regression of credit use on the attitude scale values and several control covariates. Apart from customary demographic variables, controls include the logarithm of current per capita income, the number of income recipients, the interviewee's expectations of future household income and the ownership of the family home. This specification was chosen by supervised backward selection, starting from a model that included more factors, which turned out not to be statistically significant and were then excluded. The regression results are displayed in Table VIII.

The estimated regression has a very good fit to the sample data, as the pseudo-R^2 is quite high (13.1 percent) and the Hosmer-Lemeshow test does not reject the null hypothesis of consistency between the observed and predicted values by a large margin (p-value = 0.401). The coefficient and Wald test values confirm that attitude has a major influence on consumer credit decisions: as the attitude scale value increases, so does the probability of taking on debt. It is confirmed that the household's economic condition, as represented by the log of per capita equivalent income, does not have any significant influence on the use of consumer credit. The covariates that relate to the earning capacity of the household are significant, as the probability of using credit increases with the number of income recipients, and their coefficients are lower if the household decision maker is a student or has retired from work. Strong expectations of rising income also bear positively on credit use. This is consistent with the permanent income hypothesis, but this variable may also represent how optimistic the decision maker is about the future.

4. Conclusions

Based on the analyses of an original data set from a survey on 2,000 Italian households, the empirical evidence presented in this paper supports the hypothesis that consumer credit users and non-users differ with respect to their psychological profile. Particularly, the attitude to credit is more positive among the former. Also, a better attitude makes using consumer credit more likely, even taking into account the simultaneous effect of other factors that may influence household financial decisions, such as per capita income and earnings expectations.

Motivations for using credit are also related to attitude. Larger and positive differences in attitude between users and non-users are found with respect to those motivations that are related to conscious or planned recourse to credit. On the other hand, stronger attitudes are associated to discretionary consumption for both groups.

The declared preference for different forms of credit (e.g. personal loans, credit cards) is also influenced by attitudes. As attitude becomes more positive, credit users are more likely to finance consumption with credit cards or point-of-sale lending rather than with direct credit, while the opposite is true for non-users. The cognitive component, which determines the individual's decision-making framework, seems to be crucial in shaping this relationship.

When the effects of attitude, income, households' socio-demographic features and other potential determinants of consumer credit are considered together, attitudes emerge as an important factor that increases the probability of borrowing money and using consumer credit.

Covariates	Coefficient	SE	DoF	p-value
Education			3	0.000
Licenza media	0.640	0.288	1	0.026
Diploma	0.945	0.284	1	0.001
Laurea or higher	0.332	0.312	1	0.289
Occupational condition			4	0.000
Housekeeper	0.391	0.171	1	0.022
Retiree	−0.316	0.130	1	0.015
Student	−1.213	0.293	1	0.000
Unemployed	−0.277	0.373	1	0.458
Domicile of household			3	0.000
Northeast	0.262	0.153	1	0.086
Center	0.231	0.154	1	0.135
South and islands	0.671	0.133	1	0.000
Size of hometown			3	0.000
5,000-39,999	0.377	0.140	1	0.007
40,000-249,000	0.330	0.159	1	0.039
250,000 +	−0.270	0.180	1	0.134
Number of income recipients	0.248	0.079	1	0.002
Home ownership	−0.668	0.162	1	0.000
Log of per capita income	0.124	0.101	1	0.218
Income expectations			4	0.021
Increasing	−0.771	0.383	1	0.044
Stable	−0.546	0.377	1	0.148
Decreasing	−0.227	0.404	1	0.574
Strongly decreasing	0.036	0.651	1	0.956
Attitude toward credit	4.245	0.455	1	0.000
Constant	−2.988	0.876	1	0.001
n cases	1,856			
Log-likelihood	2,312.57			
Pseudo-R^2 (Cox-Snell)	0.131			
Hosmer-Lemeshow $\chi^2(8)$	8.343			
(p-value)	(0.401)			

Notes: Results of the logistic regression model:

$$\mathrm{Prob}(y=1) = \frac{\exp(b'x)}{1+\sum_{k=2}^{4}\exp(b'x)}$$

estimated by maximum likelihood. The binary dependent variable y is equal to 1 for credit users and 0 for non-users. The vector x includes continuous and discrete independent variables. Each discrete independent variable was coded with respect to a reference modality: education, up to Licenza elementare; professional condition, employed; domicile, northwest; size of hometown, $<5{,}000$; income expectation: strongly increasing. The marginal significance values (p-value) of each coefficient in vector b are reported in the last column and were computed according to the asymptotic Wald test, which follows a χ^2-distribution. The joint significance test of the coefficients on the modalities of each discrete independent variable are also reported. The relevant degrees of freedom for each test appear in the fourth column

Table VIII.
Logistic regression analysis of credit use

The main conclusion from this study is that the hypothesis that psychological profile may influence households' credit behavior cannot be rejected. While attitudes and other psychological factors, being complex features, are admittedly not easy to measure in survey-based studies, the topic is worth further investigation, as these factors help to define consumers' preferences and decision-making frameworks. They also turn out to be complementary to expected income in shaping the outcome of credit decisions; integrating them into models based on economic rationality is therefore a promising line of research.

Notes

1. At the end of 2009 the ratio of household debt to annual disposable income was about 60 percent compared to 33 percent in 2001. In the same period, the incidence of debt servicing (including both capital and interest payments) on annual disposable income was about 9 vs 6 percent in 2001 (Banca d'Italia, 2010).
2. The explanations of the evolution of household debt from a supply side point of view have focussed on the numbers and variety of products and distributional channels (Holmes *et al.*, 2005), the types of intermediaries (Cosma, 2009b), the credit processes and policies (Barone *et al.*, 2006; Casolaro *et al.*, 2006; Gambacorta and Casolaro, 2005; Kidane and Mukherji, 2004; Cosma and Filotto, 2003), the availability of credit (Soman and Cheema, 2002) and credit constraints (Grant, 2003; Cox and Jappelli, 1993).
3. The average disposable income per component is equal to the current income divided by the number of household components.
4. Psychological disciplines have already been well exhaustive in explaining economic and financial behaviors, such as purchasing or investment decisions (Shefrin, 1999; Shiller, 2000).
5. The general attitude is measured by analyzing opinions on consumer credit, while specific attitudes are measured by examining the propensity to use credit when purchasing discretionary rather than basic goods.
6. The Bank of Italy (2009) estimates that the share of Italian households using consumption credit was 13 percent at the end of year 2008.
7. Sample descriptives are not reported in order to save space, and are available from the authors upon request.
8. The median comparisons and the outcomes of non-parametric tests are available from the authors upon request.
9. Per capita income is calculated using the Italian Bureau of Statistics equivalence scale, which adjusts the number of components divisor by factors that consider the less than proportional increase of household needs with size (ISTAT, 2009). In 903 cases (48.7 percent of the total sample) the interviewees did not declare their household's income. Missing income values were estimated using a two-stages Heckit model (Heckman, 1979) including the following explanatory variables: the household's domicile by geographic area, the number of income recipients and an indicator as to whether the household owns its home. Non-responses turn out to be less likely when the interviewee is the head of the household or as his age increases. Heckit estimates are available from the authors upon request.
10. For non-users, motivations refer to a hypothetical situation of recourse to credit.
11. In all, 32.7 percent of non-users did not answer this question. Therefore, the analyses presented in this paragraph were carried out on a sample of 1,546 households.
12. The cognitive component is in fact the most influential determinant of attitude.

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