Cleaner and Responsible Consumption 1 (2020) 100003

Contents lists available at ScienceDirect

Cleaner and Responsible Consumption

journal homepage: www.journals.elsevier.com/cleaner-and-responsible-consumption

Affluence and unsustainable consumption levels: The role of consumer credit

Richard Ahlström[a], Tommy Gärling[b,*], John Thøgersen[c]

[a] Mid Sweden University, Östersund, Sweden
[b] University of Gothenburg, Göteborg, Sweden
[c] Aarhus University, Denmark

ARTICLE INFO

Keywords:
Planetary boundaries
Affluence
Consumer credit
Consumption level
Psychological determinants

ABSTRACT

Several pressures on planetary boundaries are directly linked to the production of goods and services driven by people's ever-increasing spending of money to improve their material living standard beyond a comfortable life. The over-spending on material consumption by people in industrialized countries, and in the growing middle and upper classes of developing countries, constitutes a serious threat to the planet, does not boost individual happiness, and exposes citizens in a society to inequalities known to negatively affect their well-being. Owing to economic means and psychological factors spurring consumption, affluence increases spending on consumption of expensive luxury goods and services that aggregated have detrimental effects on the planet. We conjecture that these effects are increased by consumer credit enabling moderately affluent people to match their peers' and the very affluent people's spending on expensive luxury consumption, and making less affluent people over-spend money on purchases of inexpensive short-lived fast-fashion consumer products. In addition to other means to curtail current unsustainable consumption levels, our analysis highlights that consumer credit may need to be restricted.

1. Introduction

The over-spending on private material consumption by people in industrialized countries, and in the growing middle and upper classes of developing countries, constitutes a serious threat of exceeding the planetary boundaries (Hirschnitz-Garbers et al., 2016; ÓNeill et al., 2018), does not seem to boost individual happiness (Dittmar et al., 2014), and may expose citizens to inequalities known to negatively affect their well-being (Pickett and Wilkinson, 2015).

Cohen (2007) notes that an obsession with consumer sovereignty has prevented unsustainable levels of material consumption to become a policy issue.[1] Consuming more efficiently, not consuming less, is a common policy goal endorsed by the political system. Instead of changes of taxes and regulations to influence consumer choices, changes to a cleaner production are targeted. An increasing affluence, a growing supply, and an active marketing of consumer products are neglected potential causes of unsustainable consumption levels.

Although it is debatable how much the level of private material consumption must globally be reduced to not exceed planetary boundaries,[2] more efficient use of natural resources and energy is judged to be insufficient (Jackson, 2012). Efficiency of production remains an important goal but needs to be set in conjunction with a goal of sufficiency of consumption (Akenji, 2014; Røpke, 1999; Callmer, 1947). Is it possible then to reduce the unsustainable levels of material consumption

* Corresponding author. Centre for Finance and Department of Economics, School of Business, Economics, and Law, University of Gothenburg, P.O. Box 640, 405 30, Göteborg, Sweden.

E-mail addresses: Richard.Ahlstrom@miun.se (R. Ahlström), Tommy.Garling@psy.gu.se (T. Gärling), jbt@mgmt.au.dk (J. Thøgersen).

[1] As Akenji (2014) notes, the recognition that consumption levels are unsustainable has a long history. Despite the early recognition, Røpke (1999) argues that actions have been taken on the basis of a case-by-case analysis of damages to the environment caused by particular products instead of focusing on the aggregated consumption.

[2] Raworth (2012) claims that it would have little effect on the planet to ensure that all people has a minimum standard of decent living, including food, water, shelter, health, energy, education, and jobs. The current planetary-boundary stress (Rockström et al., 2009; Steffen et al., 2015) is primarily caused by the most affluents' excessive material consumption and the production of goods and services it drives. Material consumption is only sustainable below an upper level that does not exceed the planetary boundaries.

https://doi.org/10.1016/j.clrc.2020.100003
Received 23 July 2020; Received in revised form 11 September 2020; Accepted 14 September 2020

by people enjoying high living standards? Answers to this question needs to be based on research identifying antecedents and consequences of private material consumption. Recognized antecedents include consumption needs and desires, failures in exerting self-control facing consumption urges, limitations in processing of information and lack of knowledge, habits, low environmental concern, and pro-consumption norms (Thøgersen, 2005, 2014). In this paper we present a supplementary psychological account of over-consumption.[3] This leads to our belief that consumer credit may play a significant role, and the primary aim of the paper is to analyze this role. We summarize our analysis in three conjectures offered as points of departures for further theoretical analyses, future research, and in the longer term environmental policies.

Our aim in this paper is thus to analyze how unsustainable levels of private material consumption, increasing with affluence, are amplified by consumer credit. Cohen [5, p. 63] argues that "… household financial management deserves equal treatment in discussions of sustainable consumption alongside more conventional social scientific issues such as the impact of marketing promotionalism, the content of major media, the trend toward long working hours, the emphasis on comfort and convenience, and the manifestation of greater lifestyle embellishment." Similar to Cohen (2007), we recognize the absence of empirical data and theoretical reasoning addressing how unsustainable consumption levels depend on consumer credit. This paper takes a step in the direction of closing this gap.

In the following two sections, we offer our conjectures of how affluence, and affluence amplified by consumer credit, increases unsustainable private consumption levels. The discussion section raises questions about means to reduce consumer credit to purchases of unsustainable consumer products, as well as reductions of the levels of material consumption, targeting individual citizens/consumers, markets of products and consumer credit, and governments. We also identify additional knowledge research needs to deliver.

2. Affluence and unsustainable consumption

Affluence implies having the economic means to privately finance luxury material consumption. It does however not follow that affluence by necessity lead to unsustainable consumption levels. First, the saving rate increases with income, that is, higher-income people save a higher share of their income than other income groups (Deaton, 1992). Second, higher-income people are more likely to buy high-quality products that are more durable and in other ways more environmentally friendly (Gilg et al., 2005). Still, some of the most environmentally taxing types of consumption increase with income, such as meat consumption (Godfray et al., 2018), leisure air-travel (Böhler et al., 2006), car ownership (Nolan, 2010), and the size of homes (Frenkel and Kaplan, 2015).

How can over-consumption be explained? Based on a review of previous research we recognize a number of psychological factors that arguably are essential components of a general account of unsustainable consumption levels. A caution expressed by Ribeiro et al. (2019) and Sanne (2002) is that these factors may place too much weight on the role of consumers' preferences instead of structural factors. We recognize that market supply has a huge influence. But there are several other structural factors that increase consumption, for instance, as noted by Sanne (2002), population increases, reduced household sizes, changes in residential location patterns (urban sprawl), and technological innovations (e.g. digital broadcasting). A similar cross-disciplinary analysis is offered by Røpke (1999) to answer two questions: (i) Why are increases in productivity transformed to increases in income instead of leisure? (ii) Why are increases in income predominantly used for material consumption instead of non-material consumption that would be less taxing on the environment? We focus in the following on a set of specific psychological factors shaping or interfering with people's consumption preferences. The factors we propose in the following, grounded in psychological research, are partly different, partly the same factors as noted by Røpke (1999), Sanne (2002), and Schor (2005) in their economic analyses.

(1) *Market supply.* A perennial and escalating market supply of novel products or models of products is necessary but not sufficient to fuel and amplify consumption. An additional necessary component is an active marketing of the products that identifies desires and wants in different consumer segments, making the products (real estates, automobiles, vacation travel, electronic devices, fashion clothes) available, informs and persuades the consumers in the identified segments to purchase the products (Black et al., 2017; O'Shaugnessy and Jackson O' Shaugnessy, 2002). Still another necessary component is consumers' motivation associated with the following factors.

(2) *Compensation.* People in employment work long hours and expect to be rewarded for this (Schor, 1992). Unless spent on consumption that compensates for the work efforts, the resulting higher income does not maximize short-term happiness (a combination of a high frequency of experienced positive affect, a low frequency of experienced negative affect, and a judgment of being satisfied with life, see Tov et al., 2018). For many people work is itself rewarding, but they still spend more time than desired on work (Mogilner et al., 2018).

(3) *Social motives.* Initially, many novel products are only affordable to very affluent people who therefore become early adopters. Less affluent people believe that matching the consumption of the seemingly satisfied very affluent people would make themselves equally satisfied. Through the mass media and by direct observations, very affluent people's consumption thus plays an important role in shaping prototypes of levels and types of consumption essential for a good life. Chancellor and Lyubomirsky (2011) and Lyubomirsky et al. (2005) question, however, that a material living standard exceeding a certain level makes people more satisfied with their lives. Possession of consumer goods is also a means for people to communicate to others what kind of person they are, with whom they affiliate socially, and what their socio-economic status is (Dittmar et al., 2014; Røpke, 1999).

(4) *Affective forecasting.* People tend to believe that future consumption increases satisfaction more than it does (Loewenstein et al., 1999; Wilson et al., 2003). A proposed explanation is the focusing illusion (Schkade and Kahneman, 1998), implying that positive consequences are attended and negative consequences neglected. A complementary explanation is that the duration of hedonic adaptation (see below) is underestimated. People may thus falsely believe that they will be more satisfied for a longer time than what they actually are.

(5) *Self-control.* People may yield to consumption desires due to a lack of self-control. For instance, Hoch and Loewenstein (1991) note that unplanned purchases of consumer products are occasionally spurred by momentary desires creating an inner conflict with long-term consequences. Proximity in time is one factor accounting for the sudden increases in desires, but other proximity factors (e.g., physical proximity in a store) also do this. Besides, self-control losses may be caused by high-intensity visceral factors including drive states (e.g., hunger, thirst, and sexual desires), cravings, and emotions (Loewenstein, 1996; Van Boven et al., 2013). A corollary is the hot-cold empathy gap referring to that people underestimate the influence of high-intensity visceral factors, either failing to anticipate in a cold state how they will be influenced in a hot state, or in the hot state failing to recognize the influence of this state. Both types of empathy gaps are likely to operate when purchasing consumer products (Cohen et al., 2008).

[3] Arguing that explanations of consumption can only be partial unless cross-disciplinary, Ribeiro et al. (2019) present an integrative view. Our aim is more modest, emphasizing a psychological account of the role of consumer credit for unsustainable levels of private material consumption.

As a result of momentary desires, unplanned purchases of consumer products may become frequent.

(6) *Adaptation.* Although people initially respond to changes rather than steady states, they adapt to the changes after some time. Adaptation occurs at physiological, perceptual, cognitive, affective, and motivational levels (Frederick et al., 1999). Not being able to adapt to negative changes would make life miserable – adaptation to negative changes is therefore an adequate form of adaptation. Paradoxically, people also adapt to positive changes, in fact both faster and more fully than they adapt to negative changes (Wilson and Gilbert, 2008). Referred to as affective or hedonic adaptation, this applies to satisfaction derived from consumption (Dunn et al., 2011). By analogy to a treadmill (the "hedonic treadmill effect", see Brickman et al., 1978), hedonic adaptation to consumption of goods (e.g. new cars) after some time results in a lost interest in the novel features unless they change. Newly purchased consumer goods then become ordinary and are no longer associated with positive feelings (Diener et al., 2006).[4] In contrast, interest in more varied experiences (e.g. vacation journeys) may not fade away equally fast (Carter and Gilovich, 2010). If a material goods has varied uses (e.g. the smartphone), interest may also be sustained longer (Lyubomirsky et al., 2005). Hedonic adaptation that after some time causes an experience of normalization of an increase in material living standard motivates people to acquire new material goods. Sensitization instead of adaptation to negative features (Frederick et al., 1999) further contributes to the hedonic treadmill.

(7) *Evaluation of product performance.* Whether or not satisfaction is derived from the use of an owned product partly depends on that its performance matches or exceeds an aspiration level (Oliver, 2010). However, if the aspiration level increases (Kahneman et al., 1999), satisfaction eventually decreases. Both hedonic adaptation and an increasing aspiration level make consumer goods becoming replaced before worn out.

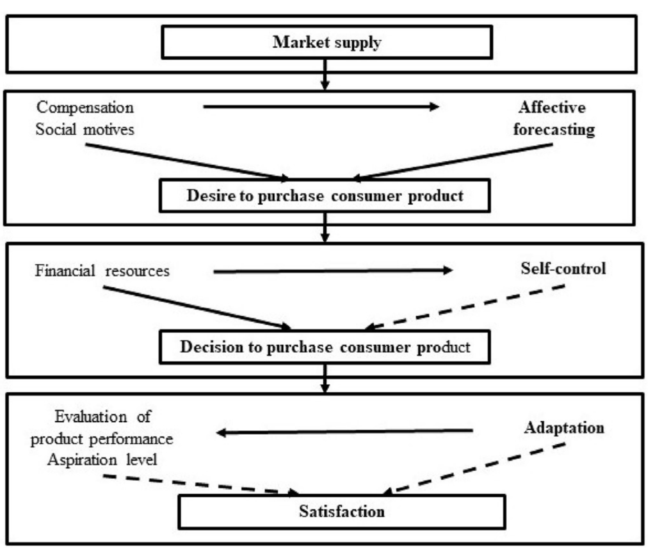

Fig. 1. The interaction of determinants of desire to purchase, decision to purchase, and satisfaction with a new consumer product. (Solid arrows represent positive effects, broken arrows negative effects.)

Fig. 1 illustrates how the different factors interact when a novel consumer product is introduced in the market. If others have purchased the product or one feels purchasing it is a reward for long work hours, a desire to purchase the product is evoked from anticipating satisfaction with its use. A strong such desire may impair cognitive processing (Hofmann et al., 2012) such that the purchase decision becomes less influenced by anticipation of long-term consequences. If purchased, satisfaction may after some time decrease because of adaptation and increases in aspiration level. This will spur new consumption. The conceptual model is the foundation of our first conjecture.

Conjecture 1. *Owing to economic means in conjunction with psychological factors spurring consumption, affluence increases spending on expensive luxury material goods (real estates, airplanes, automobiles, boats, fashion clothes, meat), travel (long-haul vacations and weekend holiday trips), and other goods and services that aggregated have detrimental effects stressing the planetary boundaries.*[5]

3. Consumer credit and unsustainable consumption

An under-researched question is how markets of consumer credit influence unsustainable consumption levels (Cohen, 2007). Recent years have seen an associated increase in consumption levels and markets for consumer loans (Bouyon, 2015; Crouch, 2009). Does it mean that those people who lack the financial resources to purchase needed or desired consumer products use different forms of consumer credit such that their consumption levels increase with negative effects for the planet?

It may be argued that consumer credit only redistributes consumption opportunities; some people borrow from others at one point in time and pay back later, which would, everything else equal, not increase consumption. Interest and other loan costs may even lead to lower lifetime consumption opportunities for those using credit to finance consumption. However, without possibilities to borrow, savings by those with excess income and wealth would lead to a reduction in aggregate consumption. This potential reduction is diminished by the extent to which affluent people's excess income is made available to others for financing consumption by loans, thus making aggregate consumption levels larger than it would be without markets for consumer credit.

A frequent type of credit attracting moderately affluent people is loans secured on real estate (Ong et al., 2013; Smith and Searle, 2008). Such loans used to fund material consumption may increase consumption levels when real estate prices go up. The markets for consumer credit may also increase consumption desires that make moderately or less affluent people borrow to fund consumption, and in order to repay loans and loan costs, to work longer hours or use future income increases. This would boost aggregate working hours, incomes, and consumption levels.

Why do consumers decide to borrow to fund purchases of consumer products? Fig. 2 displays several determinants identified by Gärling and Ranyard (2020) based on previous research. First, people tend to value immediate consumption higher than the same consumption later (Frederick et al., 2002; Read et al., 2018). This phenomenon, referred to as present-biased temporal discounting, makes it difficult to defer consumption (Labroo et al., 2017) and is considered to be a major determinant of credit use to fund purchases of desired consumer products (Webley et al., 2008). In addition, borrowers tend to fail to anticipate that the pain of later repayments may undermine the satisfaction derived from consumption (Kamleitner and Hoelzl, 2009; Prelec and Loewenstein, 1998). Not having the means to pay for the purchase furthermore induces a feeling of financial deficit (Cannon et al., 2018; Mani et al., 2013; Shah et al., 2012). Since attention is focused on how to reduce the financial deficit, consumer credit becomes attractive. This likewise

[4] A complementary account is that the aspiration level increases (Kahneman et al., 1999).

[5] Without further specification depending on product category, we refer here and below to the depletion of energy and other natural resources (minerals, fresh water, plants, biodiversity), and greenhouse gas (GHG) emissions causing climate change (Ivanova et al., 2016; Steen-Olsen et al., 2015).

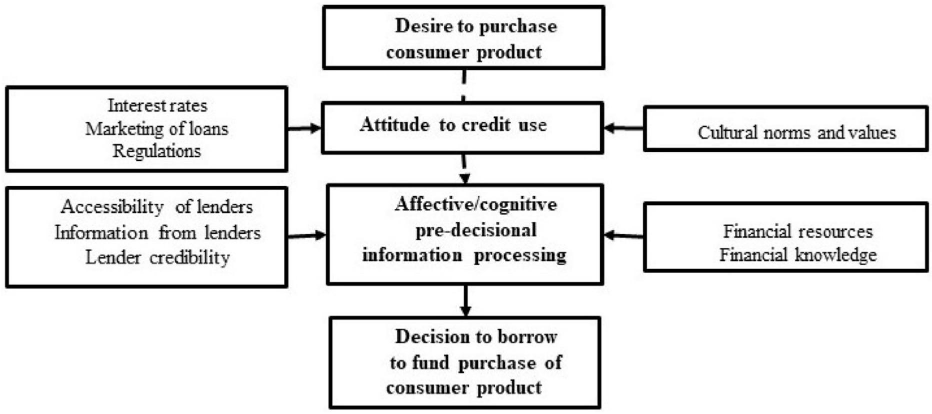

Fig. 2. Determinants of decisions to use credit to fund purchase of consumer products. (Solid arrows represent direct effects, the broken arrow that the direct effect is moderated by the variable in the overlayed box.)

downplays the burden of repayments.

A counteracting factor is a negative attitude to credit use that moderates the influence of needs and desires on the pre-decisional information processing leading to credit decisions. The role of attitudes for credit use and debt has been the target of much research (Kamleitner et al., 2012). An attitude is a memory representation that, when activated, makes people respond favorably or unfavorably to the attitude object, in thinking and expressing opinions (Albarracin and Shavitt, 2018) as well in overt behavior (Ajzen et al., 2019). Interest rates, marketing of loans, regulations, and cultural norms and values are factors that influence the attitude to credit use (Kamleitner et al., 2012). Although consumption needs and desires may also have an influence on the attitude to credit use, attitude is still an independent input shaping the pre-decisional process in conjunction with information from lenders, accessibility and credibility of lenders, and financial resources and knowledge.

We claim that moderately affluent people have easy access and positive attitudes to some forms of credit, such as secured bank loans, that make possible to match the consumption of their peers, and that both they and their peers strive to match the luxury consumption of the very affluent people. Consumer credit thus permits funding purchases of the expensive consumer products they otherwise would not afford. This reasoning leads to our second conjecture.

Conjecture 2. *Consumer credit makes moderately affluent people able to match their peers' and the very affluent people's spending on expensive luxury consumption, thereby increasing the aggregate level of consumption with detrimental effects stressing the planetary boundaries*.

An indication of high credit use among the less affluent people in wealthy societies is that saving rates are low and sometimes negative, thus debt rather than wealth is accumulated (Ahlström and Southerton, 2011; Schreiner and Sherraden, 2017). Falling product prices are identified by Schor (2005) as a factor accounting for unsustainable consumption levels. The cheaper consumer products are usually imitations having less quality and durability. A lower durability in conjunction with fast-fashion-related desires to replace products before being worn out, may still make consumer products temporarily unaffordable to less affluent people who therefore borrow to fund purchases they would not otherwise make. Young people are among the less affluent to whom fast-fashion products may be particularly attractive. In this group, peer influences cause both increases in purchases and credit use (Sotiropoulos and d'AstousA, 2012; Sotiropoulos and d'Astous, 2013). Access to installment payments, credit cards, and other high-interest credit forms further contributes to that less affluent consumers more frequently make purchases that they otherwise would not do (Financial Conduct Authority, 2017; Lim et al., 2014; Pak, 2018). Our third conjecture is that this increases unsustainable consumption levels.

Conjecture 3. *For less affluent people, consumer credit finances frequent purchases and repurchases of consumer products that have short durability, thereby increasing the aggregate level of consumption with detrimental effects stressing the planetary boundaries*.

4. Discussion

In this paper, we submit three conjectures of why affluence (Conjecture 1), and affluence amplified by consumer credit (Conjectures 2 and 3), result in levels of private material consumption that impose pressure on the planetary boundaries. The conjectures apply to the very affluent and the moderately affluent in all countries, and also to some of the less affluent people in the wealthy countries, contributing most to the globally unsustainable consumption levels. The very affluent people consume more per capita than the other groups, and the moderately affluent people consume more per capita than the less affluent people. The gravity of the aggregated effects on the planet may however be the reverse given the different numbers in these groups (Roser, 2013). The groups who in aggregate consume most also to a larger extent use credit for funding their consumption. Therefore, consumer credit may play a more than marginal role for the levels of unsustainable material consumption, especially in the wealthy countries. Firm evidence would still be needed to document this.[6]

Various proposals have been made for how to reduce unsustainable levels of private material consumption. These proposals should be informed by Raworth's (Raworth, 2012) analysis considering the lower level of resource use needed to ensure a decent living standard for all people (social sustainability) as well as the upper level of resource use for not exceeding the planetary boundaries (ecological sustainability). Our focus is on ecological sustainability in analyzing the roles of consumer credit for excessive levels of consumption by very, moderately and less affluent people in wealthy countries. If, as we conjecture, consumer credit plays an important role for the levels of consumption by moderately and less affluent people, limiting the supply of consumer credit would be a straight-forward measure to reduce levels of material consumption (Bouyon, 2015). Limits on consumer credit in the wealthy countries are unlikely to threaten social sustainability,[7] and if people are able to find non-material substitutes, it does not necessarily lead to substantial losses in happiness (Chancellor and Lyubomirsky, 2011). A

[6] We have without success searched different data bases for information about consumer credit in different affluence segments of the world population.

[7] Note the distinction between credit for financing purchase of consumer products and credit for financing investments, such as the Gramen Bank type of micro-credits used in some developing countries to create self-employment options as a means of escaping poverty (Ahlin and Jiang, 2008).

positive correlation between ecologically responsible behavior and happiness (Brown and Kasser, 2005) suggests this, and in a similar vein, Kashlev et al. (2020) showed that happy people are more willing than unhappy people to act to protect the planet.

Our analysis supports that the production and market supply of novel products and models make possible the high levels of private material consumption, and that for the moderately and less affluent people, increasing access to consumer credit plays an additional role. If possible to influence people to reduce their desire for novel products and models, this would decrease levels of consumption and production as well as use of consumer credit. It would however be difficult to eliminate judgmental biases such as affective forecasting, present-biased temporal discounting, the hot-cold empathy gap, and adaptation (Larrick et al., 2004), which we suggest all play roles. Social motives also play an important role. Material resources (food, drink, clothes, and shelter) are necessary for subsistence, but people do not need to use material resources (e.g. luxury cars, large houses, fashion clothes) to communicate their identity and socio-economic status (Dittmar et al., 2014; Røpke, 1999). Still, changing social motives for material consumption is challenging. Similarly, it would be difficult to deny hard-working people their compensatory enjoyment derived from consumption. A potential partial solution may be the emerging, more sustainable alternatives to traditional markets that offer second-hand goods and services at lower prices. In particular younger, less affluent people are attracted by a sharing economy in which (frequently online) secondary markets are available for goods and services to be exchanged among strangers instead of being purchased (Schor et al., 2015). Markets for rentals of different products are other potential substitutes that may suppress purchases of material goods (Park and Joyner Armstrong, 2019).

Research (Labroo et al., 2017; Cannon et al., 2018) has investigated how people fail to maintain self-control to resist immediate satisfaction from consumption that would violate their long-term goals. Boosting self-control is important to reduce both consumption and credit use. Hoch and Loewenstein (1991) conjectured that people to exert self-control use different techniques. A hypothesized two-factor model distinguishes between techniques that strengthen willpower and techniques that reduce desire. In an empirical study by Karlsson (2003), the model received support in a population-based Swedish sample. It is however doubtful, except for very young people, whether the use of these techniques (e.g. "Think of the positive aspects with deferring purchase"; "Avoid places in which impulse buying is tempting") needs to be taught. It appears more significant to increase motivation to use the techniques. This may require an awareness of the need to reduce consumption to preserve human life on the planet – and that everyone is willing to contribute their share (Thøgersen, 2005). Campaigns that inform citizens about the need to reduce their material consumption levels are seldom, but should be, initiated or encouraged by governments. In fact, evidence suggests that people are ready to accept policies that limit private material consumption (Defila and Di Giulio, 2020).

Governments also need to more strictly regulate markets for the most unsustainable products and consumer credit for funding purchases of these products. Certification of sustainable consumption already in effect in the EU countries may be extended to consumer credit. Of course, credit is essential in making financial resources available for investments as well as to help people in times of economic turmoil. Yet, over-indebtedness with serious individual and societal consequences is a side-effect which is receiving attention (Elliot and Lindblom, 2019). Current regulations are therefore primarily aimed at reducing lenders' credit risk to protect borrowers from over-indebtedness. The possible side-effect that consumer credit increases unsustainable levels of material consumption appear not to be recognized (Cohen, 2007; Crouch, 2009). Do regulations aimed at decreasing the risk of over-indebtedness also reduce this side-effect? Or would it be necessary to impose additional regulations on lenders, for instance, restrictions on for what purposes (sustainable versus unsustainable consumption) loans are granted. A possibility would be to restrict secured loans for additional unsustainable material consumption. Access to installment payments and high-interest instant loans need to be more strictly regulated. The public and political acceptability, effectiveness, and efficiency of these suggested policy measures should be addressed by future research.

In considering methods that would limit current unsustainable consumption levels, it is necessary to also consider the time horizon. Given that the transition is urgent, behavioral research may have less to offer in terms of how to change norms, attitudes, and values related to consumption. Neither is it likely that a transition to a post-consumer society would be fast enough, although there are precursors of that it will take place (Cohen et al., 2015). Implementing governmental policies that regulate markets likewise appears to have a too long time horizon. Nudging (Thaler et al., 2013) offers a method of changing consumer choices in a shorter time perspective. Eco-labeling is an example that helps consumers align purchase decisions with their green preferences (Noblet et al., 2015). It also informs retailers, producers, and governments about these preferences. Whereas eco labels are simplified information that consumers need to understand (Ölander and Thøgersen, 2014), other nudging techniques tends to elicit automatic choices. One such example is framing an option as a default, that is the option received if no active choice is made. Since this technique appears to have a powerful effect because people frequently refrain from making an active choice (Johnson et al., 2013), the purchase of a product should never be made the default but require an active choice. Although this appears difficult to implement in a consumer society, another perhaps more feasible example is social nudges that likewise have strong effects in that people are willing to imitate the choices made by others (Andor and Fels, 2018). This may be a way of spreading information about a frugal lifestyle. Another approach is to make people increase their savings on incomes that otherwise would be spent on not needed material consumption. Nudges have successfully been implemented to increase pension savings (Thaler et al., 2013). Additional research is still needed to address the question of how nudges should be designed to make people consume less, not differently, and how to implement such nudges if found to be effective.

Reduction of credit use has been shown to be influenced by warnings at the time when people intend to take consumer loans (Bertrand and Morse, 2011).[8] Borrowing decisions are not frequently preceded by search for information about alternative credit options (e.g. credit cards, see (Gärling and Ranyard, 2020)), most likely due to high search cost (Ranyard et al., 2006). Research has accordingly demonstrated that simplified information may result in more sensible borrowing decisions (Ranyard et al., 2018). It is an open question whether these findings can be applied to make consumers restrain themselves from credit payments at the point of purchase of consumer products. It is anyway a viable starting point for research evaluating means of reducing use of consumer credit for purchases of consumer products.

Our analysis is limited in that it proposes that primarily the supply of novel products drives the consumption levels and that, for the moderately and less affluent people, access of consumer credit plays a facilitating role. It is clear that a broader approach is necessary. Several approaches to reduce consumption levels in wealthy countries have been suggested (Røpke, 1999; Jackson, 2012). In this connection, Akenji (2014) makes the important point that green consumerism puts the whole responsibility on consumers, ignoring the need for macro changes. A concerted approach is suggested implying a change of attitudes of all stakeholders, facilitators of actions corresponding to the changed attitudes, and an infrastructure making sustainable consumption levels the default. Even though we believe such an approach is crucial, it is beyond our current scope to address it.

[8] A law recently passed in Sweden requires that online retailers make cash payment the default choice.

Author statement

The first version of the paper was drafted by TG. RA and JT added material and suggested amendments. The final version was written by TG and approved by RA and JT.

Declaration of competing interest

None of the authors are aware of any conflicts of interest.

Acknowledgments

This research was financially supported by grant #2010–02449 from the Swedish Governmental Agency for Innovation Systems (VINNOVA) to the Centre for Finance, School of Business, Economics, and Law, University of Gothenburg, Göteborg, Sweden.

We thank Ted Lindblom and Rob Ranyard for helpful comments on an earlier manuscript version, and Viktor Elliot for help in retrieving and processing statistical information.

References

Ahlin, C., Jiang, N., 2008. Can micro-credit bring development? J. Dev. Econ. 86, 1–21. https://doi.org/10.1016/j.jdeveco.2007.08.002.

Ahlström, R., 2011. Debt. In: Southerton, D. (Ed.), Encyclopedia of Consumer Culture. Sage, New York.

Ajzen, I., Fishbein, M., Lohmann, S., Albarracin, D., 2019. The influence of attitudes on behavior. In: Albarracin, D., Johnson, B.T. (Eds.), Handbook of Attitudes, second ed., vol. 1. Routledge, London, pp. 197–256.

Akenji, L., 2014. Consumer scapegoatism and limits to green consumption. J. Clean. Prod. 63, 13–23. https://doi.org/10.1016/j.jclepro.2013.05.022.

Albarracin, D., Shavitt, S., 2018. Attitudes and attitude change. Annu. Rev. Psychol. 69, 299–327. https://doi.org/10.1146/annurev-psych-122216-011911.

Andor, M.A., Fels, K.M., 2018. Behavioral economics and energy conservation – a systematic review of non-price interventions and their causal effects. Ecol. Econ. 148, 178–210. https://doi.org/10.1016/j.ecolecon.2018.01.018.

Bertrand, M., Morse, A., 2011. Information disclosure, cognitive biases, and payday borrowing. J. Finance 66, 1865–1893. https://doi.org/10.1111/j.1540-6261.2011.01698.x.

Black, I.R., Shaw, D., Trebeck, K., 2017. A policy agenda for changing our relationship with consumption. J. Clean. Prod. 154, 12–15. https://doi.org/10.1016/j.jclepro.2017.03.182.

Böhler, S., Grischkat, S., Haustein, S., Hunecke, M., 2006. Encouraging environmentally sustainable holiday travel. Transport. Res. Part A 40, 652–670. https://doi.org/10.1016/j.tra.2005.12.006.

Bouyon, S., 2015. Towards a Balanced Contribution of Household Credit to the Economy. CEPS Task Force Report.

Brickman, P., Coates, D., Janoff-Bulman, R., 1978. Lottery winners and accident victims: is happiness relative? J. Pers. Soc. Psychol. 36, 917–927. https://doi.org/10.1037/0022-3514.36.8.917.

Brown, K.W., Kasser, T., 2005. Are psychological and ecological well-being compatible? The role of values, mindfulness, and lifestyle. Soc. Indicat. Res. 74, 349–368. https://doi.org/10.1007/s11205-004-8207-8.

Callmer, Å., 1947. Making Sense of Sufficiency: Entries, Practices and Politics, Doctoral Thesis. KTH Royal Institute of Technology, Stockholm, TRITA-ABE-DLT, p. 2019.

Cannon, C., Goldsmith, K., Roux, C., 2018. A self-regulation model of resource scarcity. J. Consum. Psychol. 29, 104–127. https://doi.org/10.1002/jcpy.1035.

Carter, T., Gilovich, T., 2010. The relative relativity of experiential and material purchases. J. Pers. Soc. Psychol. 98, 146–159. https://doi.org/10.1037/a0017145.

Chancellor, J., Lyubomirsky, S., 2011. Happiness and thrift: when (spending) less is (hedonically) more. J. Consum. Psychol. 21, 131–138. https://doi.org/10.1016/j.jcps.2011.02.004.

Cohen, M.J., 2007. Consumer credit, household financial management, and sustainable consumption. Int. J. Consum. Stud. 31, 57–65. https://doi.org/10.1111/j.1470-6431.2005.00485.x.

Cohen, J.B., Pham, M.T., Andrade, E.B., 2008. The nature and role of affect in consumer behavior. In: Haugtvedt, C.P., Herr, P.M., Kardes, F.R. (Eds.), Handbook of Consumer Psychology. Taylor & Francis, New York, pp. 297–348.

Cohen, M.J., 2015. Toward a post-consumerist future? Social innovation in an era of fading economic growth. In: Reisch, L.A., Thøgersen, J. (Eds.), Handbook of Research on Sustainable Consumption. Edward Elgar, Cheltenham, UK, pp. 426–441.

Crouch, C., 2009. Privatised Keynesianism: an unacknowledged policy regime. Br. J. Polit. Int. Relat. 11, 382–399. https://doi.org/10.1111/j.1467-856X.2009.00377.x.

Deaton, A., 1992. Understanding Consumption. Clarendon, Oxford, UK.

Defila, R., Di Giulio, A., 2020. The concept of "Consumption Corridors" meets society: how an idea for fundamental changes in consumption is received. J. Consum. Pol. https://doi.org/10.1007/s10603-019-09437-w published online.

Diener, E., Lucas, R.E., Napa Scollon, C., 2006. Beyond the Hedonic Treadmill: revising the adaptation theory of well-being. Am. Psychol. 61, 305–314. https://ink.library.smu.edu.sg/soss_research/921.

Dittmar, H., Bond, R., Hurst, M., Kasser, T., 2014. The relationship between materialism and personal well-being: a meta-analysis. J. Pers. Soc. Psychol. 107, 879–924. https://doi.org/10.1037/a0037409.

Dunn, E.W., Gilbert, D.T., Wilson, T.D., 2011. If money doesn't make you happy, then you probably aren't spending it right. J. Consum. Psychol. 21, 115–125. https://doi.org/10.1016/j.jcps.2011.02.002.

Elliot, V., Lindblom, T., 2019. Indebtedness, over-indebtedness and wellbeing. In: Hauff, J.C., Gärling, T., Lindblom, T. (Eds.), Indebtedness in Early Adulthood: Causes and Remedies. Palgrave Macmillan, Cham, Switzerland, pp. 21–48.

Financial Conduct Authority, 2017. Understanding the financial lives of UK adults. https://www.fca.org.uk/publication/research/financial-livessurvey-2017.pdf. (Accessed 28 March 2020).

Frederick, S., Loewenstein, G., 1999. Hedonic adaptation. In: Kahneman, D., Diener, E., Schwarz, N. (Eds.), Well-being: the Foundations of Hedonic Psychology. Russel Sage Foundation, New York, pp. 302–329.

Frederick, S., Loewenstein, G., O'Donoghue, T., 2002. Time discounting and time preference: a critical review. J. Econ. Lit. 40, 351–401. https://doi.org/10.1257/002205102320161311.

Frenkel, A., Kaplan, S., 2015. The joint choice of tenure, dwelling type, size and location: the effect of home-oriented versus culture-oriented lifestyle. Lett Spat Resour Sci 8, 233–251. https://doi.org/10.1007/s12076-014-0131-1.

Gärling, T., Ranyard, R., 2020. The psychological perspective on the antecedents and consequences of borrowing decisions. In: Zaleskiewicz, T., Traczyk, J. (Eds.), Psychological Perspectives on Financial Decision Making. Springer, Cham, Switzerland, pp. 267–290.

Gilg, A., Barr, S., Ford, N., 2005. Green consumption or sustainable lifestyles? Identifying the sustainable consumer. Futures 37, 481–504. https://doi.org/10.1016/j.futures.2004.10.016.

Godfray, H.C.J., Aveyard, P., Garnett, T., Hall, J., Key, T.J., Lorimer, J., et al., 2018. Meat consumption, health, and the environment. Science 361 (6399). https://doi.org/10.1126/science.aam5324.

Hirschnitz-Garbers, M., Tan, A.R., Gradman, A., Srebotnjak, T., 2016. Key drivers for unsustainable resource use – categories, effects and policy pointers. J. Clean. Prod. 132, 13–31. https://doi.org/10.1016/jclepro.2015.02.038.

Hoch, S., Loewenstein, G., 1991. Time-inconsistent preferences and consumer self-control. J. Consum. Res. 17, 492–507. https://doi.org/10.1086/208573.

Hofmann, W., Schmeichel, B.J., Baddeley, A.D., 2012. Executive functions and self-regulation. Trends Cognit. Sci. 16, 174–180. https://doi.org/10.1016/j.tics.2012.01.006.

Ivanova, D., Stadler, K., Steen-Olsen, K., Wood, R., Vita, G., Tukker, A., Hertwich, E.G., 2016. Environmental impact assessment of household consumption. J. Ind. Ecol. 20, 526–536. https://doi.org/10.1111/jiec.12371.

Jackson, T., 2012. Prosperity without Growth. Foundations for the Economy of Tomorrow, second ed. Routledge, London, K.

Johnson, E.J., Goldstein, D.G., 2013. Decisions by default. In: Shafir, E. (Ed.), The Behavioral Foundations of Public Policy. Princeton University Press, Princeton, NJ, pp. 417–427.

Kahneman, D., 1999. Objective happiness. In: Kahneman, D., Diener, E., Schwarz, N. (Eds.), Well-Being: the Foundations of Hedonic Psychology. Russel Sage Foundation, New York, pp. 3–25.

Kamleitner, B., Hoelzl, E., 2009. Cost-benefit associations and financial behavior. Appl. Psychol.: Int. Rev. 58, 415–452. https://doi.org/10.1111/j.1464-0597.2009.00400.x.

Kamleitner, B., Hoelzl, E., Kirchler, E., 2012. Credit use: psychological perspectives on a multifaceted phenomenon. Int. J. Psychol. 47, 1–27. https://doi.org/10.1080/00207594.2011.628674.

Karlsson, N., 2003. Consumer self-control strategies: an empirical study of their structure and determinants. J. Consum. Pol. 26, 23–41. https://doi.org/10.1023/A:1022631106077.

Kashlev, K., Drummond, D.M., Heintzelman, S.J., Diener, E., 2020. Do happy people care about society's problems? J. Posit. Psychol. https://doi.org/10.1080/17439760.2019.1639797 published online.

Labroo, A.A., Pocheptsova, A., 2017. What makes tomorrow's gain worth today's pain? Cognitive and affective influences on self-control dilemmas. In: Jansson-Baird, C.V., Zawisza, M.J. (Eds.), Routledge International Handbook of Consumer Psychology. Routledge, London, pp. 447–466.

Larrick, R.P., 2004. Debasing. In: Koehler, D.J., Harvey, N. (Eds.), Blackwell Handbook of Judgment & Decision Making. Blackwell, Oxford, UK, pp. 316–337.

Lim, Y., Bickham, T., Broussard, J., Dinecola, C.M., Gregory, A., Weber, B.E., 2014. The role of middle-class status in payday loan borrowing: a multivariate approach. Soc. Work 59, 79–92. https://doi.org/10.1093/sw/swu033.

Loewenstein, G., 1996. Out of control: visceral influences on behavior. Organ Beh Hum Dec 65, 272–292. https://doi.org/10.1006/obhd.1996.0028.

Loewenstein, G., Schkade, D., 1999. Wouldn't it be nice? Predicting future feelings. In: Kahneman, D., Diener, E., Schwarz, N. (Eds.), Well-being: the Foundations of Hedonic Psychology. Russel Sage Foundation, New York, pp. 85–105.

Lyubomirsky, S., Sheldon, K.M., Schkade, D., 2005. Pursuing happiness: the architecture of sustainable change. Rev. Gen. Psychol. 9, 111–131. https://doi.org/10.1037/1089-2680.9.2.111.

Mani, A., Mullainathan, S., Shafir, E., Zhao, J., 2013. Poverty impedes cognitive function. Science 341 (6149), 976–980. https://doi.org/10.1126/science.1238041.

Mogilner, C., Whillans, A., Norton, M.I., 2018. Time, money, and subjective well-being. In: Diener, E., Oshio, S., Tay, L. (Eds.), Handbook of Well-Being. DEF Publishers, Salt Lake City, UT http://doi.org/nobascholar.com.

Noblet, C.L., Teisl, M.F., 2015. Eco-labelling as sustainable consumption policy. In: Reisch, L.A., Thøgersen, J. (Eds.), Handbook of Research on Sustainable Consumption. Edward Elgar, Cheltenham, UK, pp. 300–312.

Nolan, A., 2010. A dynamic analysis of household car ownership. Transport. Res. Part A 44, 446–455. https://doi.org/10.1016/j.tra.2010.03.018.

Ölander, F., Thøgersen, J., 2014. Informing versus nudging in environmental policy. J. Consum. Pol. 37, 341–356. https://doi.org/10.1007/s10603-014-9256-2.

Oliver, R.L., 2010. Satisfaction. A Behavioral Perspective on the Consumer. Sharpe, New York.

Ong, R., Parkinson, S., Searle, B.A., Smith, S.J., Gavin, A., 2013. Channels from housing wealth to consumption. Hous. Stud. 28, 1012–1036. https://doi.org/10.1080/02673037.2013.783202-018-0021-4.

O'Neill, D.W., Fanning, A.L., Lamb, W.F., Steinberger, J.K., 2018, February. A good life for all within planetary boundaries. Nature Sust 1, 88–95. https://doi.org/10.1038/s41893-018-0021-4.

O'Shaugnessy, J., Jackson O' Shaugnessy, N., 2002. Marketing, the consumer society and hedonism. Eur. J. Market. 36, 524–547. https://doi.org/10.1108/03090560210422871.

Pak, T.Y., 2018. Financial literacy and high-cost borrowing: exploring the mechanism. Int. J. Consum. Stud. 36, 27–38. https://doi.org/10.1111/ijcs.12429.

Park, H., Joyner Armstrong, C.M., 2019. Will "no-ownership" work for apparel?: implications for apparel retailers. J. Retailing Consum. Serv. 47, 66–73. https://doi.org/10.1016/j.jretcomser.2018.10.012.

Pickett, K.E., Wilkinson, R.G., 2015. Income inequality and health: a causal review. Soc. Sci. Med. 128, 316–326. https://doi.org/10.1016/j.socscimed.2014.12.03.

Prelec, D., Loewenstein, G., 1998. The red and the black: mental accounting of savings and debt. Market. Sci. 17, 4–28. https://doi.org/10.1287/mksc.17.1.4.

Ranyard, R., Hinkley, L., Williamson, J., McHugh, S., 2006. The role of mental accounting in consumer credit decision processes. J. Econ. Psychol. 27, 571–588. https://doi.org/10.1016/j.joep.2005.11.001.

Ranyard, R., McHugh, S., McNair, S., 2018. The psychology of borrowing and over-indebtedness. In: Ranyard, R. (Ed.), Economic Psychology. Wiley, New York, pp. 222–238.

Raworth, K., 2012. A Safe and Just Space for Humanity. Can We Live within the Doghnut? Oxfam Discussion Paper. Oxfam, Oxford.

Read, D., McDonald, R., He, L., 2018. Intertemporal choice: choosing for the future. In: Lewis, A. (Ed.), The Cambridge Handbook of Psychology and Economic Behavior, second ed. Cambridge University Press, Cambridge, UK, pp. 167–197.

Ribeiro, A.P., Harmsen, R., Rosales Carreón, J., Worrell, E., 2019. What influences consumption? Consumers and beyond: purposes, contexts, agents and history. J. Clean. Prod. 209, 200–215. https://doi.org/10.1016/jclepro.2018.10.103.

Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin III, F.S., Lambin, E.F., et al., 2009. A safe operating space for humanity. Nature 461, 472–475. https://doi.org/10.1038/461472apmid:19779433.

Røpke, I., 1999. The dynamics of willingness to consume. Ecol. Econ. 28, 399–420. https://doi.org/10.1016/S0921-8009(98)00107-4.

Roser, M., 2013. Global economic inequality. https://ourworldindata.org/global-economic-inequality. (Accessed 27 May 2020).

Sanne, C., 2002. Willing consumers - or locked-in? Policies for a sustainable consumption. Ecol. Econ. 42, 273–287. https://doi.org/10.1016/S0921-8009(02)00086-1.

Schkade, D., Kahneman, D., 1998. Does living in California make people happy? A focusing illusion in judgments of life satisfaction. Psychol. Sci. 9, 340–346. https://doi.org/10.1111/1467-9280.00066.

Schor, J.B., 1992. The Overworked American: the Unexpected Decline of Leisure. Basic Books, New York.

Schor, J.B., 2005. Prices and quantities: unsustainable consumption and the global economy. Ecol. Econ. 55, 309–320. https://doi.org/10.1016/j.ecolecon.2005.07.030.

Schor, J.B., Fitzmaurice, C.J., 2015. Collaborating and connecting: the emergence of the sharing economy. In: Reisch, L.A., Thøgersen, J. (Eds.), Handbook of Research on Sustainable Consumption. Edward Elgar, Cheltenham, UK, pp. 410–425.

Schreiner, M., Sherraden, M., 2017. Can the Poor Save?: Saving and Asset Building in Individual Development Accounts. Routledge, London.

Shah, A.K., Mullainathan, S., Shafir, E., 2012. Some consequences of having too little. Science 338 (6107), 682–685. https://doi.org/10.1126/science.1222426.

Smith, S.J., Searle, B.A., 2008. Dematerialising money? Observations on the flow of wealth from housing to other things. Hous. Stud. 23, 21–43. https://doi.org/10.1080/02673037017l225.

Sotiropoulos, V., d'Astous, A., 2013. Attitudinal, self-efficacy, and social norms determinants of propensity to overspend on credit cards. J. Consum. Pol. 36, 179–196. https://doi.org/10.1007/s10603-013-9223-3.

Sotiropoulos, V., d'Astous, A., 2012. A Social networks and credit card overspending among young adult consumers. J. Consum. Aff. 46, 457–484. https://doi.org/10.1111/j.1745-606.2012.01239.x.

Steen-Olsen, K., Hertwich, E., 2015. Life cycle assessment as a means to identify the most effective action for sustainable consumption. In: Reisch, L.A., Thøgersen, J. (Eds.), Handbook of Research on Sustainable Consumption. Edward Elgar, Cheltenham, UK, pp. 131–144.

Steffen, W., Richardson, K., Rockström, J., Cornell, S.E., Fetzer, I., Bennett, E.M., et al., 2015. Planetary boundaries: guiding human development on a changing planet. Science 347 (6223), 1259855. https://doi.org/10.1126/science.1259855.

Thaler, R.H., Sunstein, C.R., Balz, J.P., 2013. Choice architecture. In: Shafir, E. (Ed.), The Behavioral Foundations of Public Policy. Princeton University Press, Princeton, NJ, pp. 428–439.

Thøgersen, J., 2005. How may consumer policy empower consumers for sustainable lifestyles? J. Consum. Pol. 28, 143–178. https://doi.org/10.1007/s10603-005-2982-8.

Thøgersen, J., 2014. Unsustainable consumption: basic causes and implications for policy. Eur. Psychol. 19, 84–95. https://doi.org/10.1027/1016-9040/a000176.

Tov, W., 2018. Well-being concepts and components. In: Diener, E., Oshio, S., Tay, L. (Eds.), Handbook of Well-Being. DEF Publishers, Salt Lake City, UT http://doi.org/nobascholar.com.

Van Boven, L., Loewenstein, G., Dunning, D., Nordgren, L.F., 2013. Changing places: a dual judgment model of empathy gaps in emotional perspective taking. In: Olson, J.M., Zanna, M.P. (Eds.), Advances in Experimental Social Psychology, vol. 48. Academic Press, Burlington, VT, pp. 117–171.

Webley, P., Nyhus, E.K., 2008. Inter-temporal choice and self-control: saving and borrowing. In: Lewis, A. (Ed.), The Cambridge Handbook of Psychology and Economic Behavior. Cambridge University Press, Cambridge, UK, pp. 105–131.

Wilson, T.D., Gilbert, D.T., 2008. Explaining away: a model of affective adaptation. Perspect. Psychol. Sci. 3, 370–386. https://doi.org/10.1111/j.1745-6924.2008.00085.x.

Wilson, T.D., Gilbert, D.T., 2003. Affective forecasting. In: Zanna, M.P. (Ed.), Advances in Experimental Social Psychology, vol. 35. Academic Press, San Diego, CA.