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Consumer Financial Behavior

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# **Consumer Financial Behavior**

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#### Abstract

Consumer financial behavior is a domain between micro-economics, behavioral finance, and marketing. It is based on insights and behavioral theories from cognitive, economic, and social psychology (biases, heuristics, social influences), in the context of and sometimes in conflict with micro-economic theories of consumers, investors, and markets. Behavioral finance has a descriptive approach, how people make financial decisions. Not always rational, but often in a systematic irrational way. Consumer financial behavior is also a basis and starting point for the marketing management of financial products and services, as well as for consumer education and protection policy. This monograph is on the determinants/drivers and consequences of spending, saving, borrowing, insuring, and investing. Ultimately, this monograph is on the financial requirements for financial inclusion, and participation in present society with its myriad of products and services, experiences, social media, information (overload), and the pursuit of meaning, satisfaction, happiness, and wellbeing.

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Financial behavior of consumers is very relevant for government policy, for marketing management of companies on the consumer market, and, last but not least, for consumers themselves and consumer protection.

Many consumers lack sufficient knowledge (literacy) about budgeting, financial products, and financial planning. Due to this, they make suboptimal decisions, take too much credit, pay too high interest rates, do not save enough for their retirement and pension plan, are over- or underinsured, and make costly mistakes in their investments. Financial education could possibly help them to make better financial decisions (Mandell, 2001; Lusardi and Mitchell, 2014), but some researchers such as Willis (2011) conclude that financial education increases people's confidence but not their financial ability. An alternative to financial education is assistance and advice of experts and systems that work in the consumer interest. People make use of heuristics (quick and easy decision rules) rather than using a slow and difficult economic approach. Gigerenzer (2007) argues that these heuristics are not inferior ways of information processing and decision making but are evolutionary functional in a complex world to make quick, often even unconscious (intuition), evaluations and decisions.

#### 2 Introduction

Consumer organizations and market authorities need to know how consumers spend, save, borrow, insure, invest, and save for their pension. From a*consumer protection* perspective, this information may provide ways where and how to protect consumers against unscrupulous sellers and against themselves as illiterate and imperfect decision makers. How should people best manage their financial affairs? And how should they avoid the risk of mistakes and losses they cannot bear?

Financial products are bought on the *market*. Banks, insurance, and credit-card companies develop and sell new products and services, communicate about these products and services, and advice consumers what to buy. Banks, insurance, and credit-card companies, and other financial institutions should become more customer-centric. Products should be offered that people need and want in the short-term and in the long-term, and products that are safe under various economic conditions such as a recession. The duty of care of sellers includes protecting consumers against severe mistakes and risk of losses they cannot bear. Financial products and services may look profitable and attractive in the short term, but could be 'dangerous' for consumers in the long term under different economic conditions.

Consumer spending, saving, borrowing, investing, and tax compliance also have implications for *macro-economic policy* of a country. Katona (1975) was one of the first to recognize that consumers have power with their discretionary spending and saving. The economy of a country may stagnate if consumers have a low level of confidence and delay and curtail their spending. Consumer confidence has been low in many countries during the economic recession of 2008–2013. Consumer spending was low and saving was high during this period and this had severe consequences for the sales of products and services and the economy as a whole.

#### Objectives

This monograph is about financial behavior, products, and services at the generic and domain-specific level: choice and expenditure within a product category or between product variants. It is not focused on the specific level of brand choice (Van Raaij and Verhallen, 1994). The objective of this monograph is to bring together the scientific knowledge of consumer financial behavior in a systematic way in order to improve the understanding and insights of this behavior. Target groups of readers of this monograph are:

- 1. Teachers and students of marketing, finance, and management (university level).
- 2. Financial advisors and planners.
- 3. Consumer educators.
- 4. Communicators and consumer advisors of financial institutions.
- 5. Consumer policy makers.
- 6. Consumers themselves (for a better understanding of their own behavior).

#### Structure of the monograph

This monograph contains sections on (2) money management, spending, and budgeting, (3) saving behavior, (4) credit behavior and debt problems, (5) insurance behavior, (6) pension plans and old-age provisions, (7) investment behavior, (8) tax behavior, compliance, and evasion, and (9) responsible financial behavior.

Section 2: *Money management, spending, and budgeting* focusses on how people handle their money in daily transactions and payments, and how people try to 'make ends meet' by budgeting their expenses.

Section 3: *Saving behavior*, saving motives and goals. Consumers save to have a financial buffer, save for specific transactions, for 'rainy days', their children and for old age. A long time horizon is needed to refrain from immediate spending but save for 'later.'

Section 4: Credit behavior and debt problems. Although credit is an attractive way to buy now rather than after saving, consumers may become over-indebted on their credit cards and personal loans. Impulsive behavior and lack of overview and self-control are psychological factors that explain why some people get into financial problems.

Section 5: *Insurance behavior* is on the avoidance of potential financial losses. People are often under- or over-insured, not knowing the coverage of their insurance policies. Important home insurance against

#### 4 Introduction

natural disasters is often lacking, whereas less relevant insurances such as warranty extensions, have been bought.

Section 6: Most people agree that *pension plans and old-age provi*sions are of great importance, but nevertheless many people spend little time on this topic and do not save enough for their retirement. How can this situation be improved in the consumers' and societal interest?

Section 7: *Investment behavior* is often risky and full of biases and heuristics guiding private investor's behavior. Risk propensity and attitude are thus the major concepts and explanations of investment behavior.

Section 8: Tax behavior, compliance and evasion is important for people and the tax authority. Traditionally, tax payers and tax authority played the 'cops & robbers' game of mistrust and control. A modern approach is the 'clients & services' approach, in which there is more trust between parties and the tax authority provides an already filledout tax declaration and other services to the tax payers (Kirchler, 2007).

Section 9: *Responsible financial behavior* is an ultimate goal for consumer financial behavior. The financial literacy of most people is low and is a cause of many mistakes and lack of appropriate actions, for instance to save for retirement. Financial education might be a solution, but other ways to get around the illiteracy problem of consumers are financial planning and advice. Even with a high level of financial literacy, financial behavior is often not responsible and sustainable.

Not all financial behaviors of consumers and private investors have been included in this monograph. Missing areas are: (1) gambling and betting in casinos and on the internet, (2) participation in lotteries, (3) 'unlawful' behavior and paying fines for traffic and other law violations, and (4) fraud, theft, pyramid games for investors, and other criminal financial behaviors, except for insurance fraud (Section 5) and tax evasion (Section 8).

#### What will be included?

Many factors and variables may be included in describing financial behavior and its determinants and consequences. The list is almost endless. To restrict this number to manageable proportions, the structure

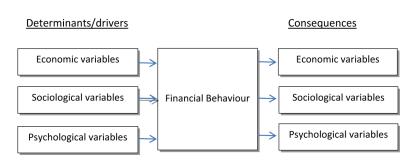


Fig. 1.1 Structure of variables.

of Figure 1.1 has been used with a maximum van five types of variables in each box.

The content of the boxes of Figure 1.1 consists of:

### Financial behavior:

- 1. Specific acts, such as buying a product or putting money on a savings account.
- 2. Categories of acts, such as spending, saving, and borrowing.
- 3. Financial skills such as budgeting, financial planning, decision making, and using heuristics such as mental accounting.

#### Economic variables:

- 1. Income and wealth of households and individuals.
- 2. Interest rate, inflation rate.
- 3. Supply and prices of financial products and services.
- 4. Business cycle: recession and upswing.
- 5. Financial risk and uncertainty.

#### Sociological variables:

- 1. Socio-demographic characteristics of people.
- 2. Household, family life-cycle.
- 3. Life events such as marriage, divorce, birth of children, moving, and job change.
- 4. Social reference and comparison.
- 5. Norms and values.

5

#### 6 Introduction

Psychological variables:

- 1. Perception of gains and losses.
- 2. Risk preference and tolerance for uncertainty.
- 3. Confidence in the economy and trust in financial institutions.
- 4. Self-control, impulse control, pre-commitment, conscientiousness, and need for cognition (Cacioppo and Petty, 1982).
- 5. Time preference (present *versus* future).

Note that some economic and sociological variables, such as interest and inflation rate and family life-cycle, can only be determinants and not consequences of financial behavior (Figure 1.1).

- Antonides, G., I. M. de Groot, and W. F. van Raaij (2008), Financial Behavior of Consumers. Wijzer in Geldzaken study. The Hague: Department of Finance.
- Antonides, G., I. M. de Groot, and W. F. van Raaij (2011), 'Mental budgeting and the management of household finance'. *Journal of Economic Psychology* **32**, 546–555.
- Ariely, D. (2012), *The (Honest) Truth about Dishonesty*. New York: Harper Perennial.
- Barrick, M. R. and M. K. Mount (1991), 'The big five personality dimensions and job performance: A meta-analysis'. *Personnel Psy*chology 44, 1–26.
- Benartzi, S. and R. H. Thaler (2001), 'Naïve diversification strategies in defined contribution plans'. American Economic Review 91, 79–99.
- Berger, L. M., J. M. Collins, and L. Cuesta (2013), 'Household debt and adult depressive symptoms'. Working paper, University of Wisconsin at Madison.
- Bikhchandani, S. and S. Sharma (2001), 'Herd behavior in financial markets'. *IMF Staff Papers* 47(3), 279–310.
- Brockhaus, R. H. (1980), 'Risk taking propensity of entrepreneurs'. Academy of Management Journal 23, 509–520.

- Brüggen, E., I. Rohde, and M. van den Broeke (2013), 'Different people, different choices'. Netspar Design Papers 15, Tilburg University.
- Butler, G. and A. Matthews (1987), 'Anticipatory regret and risk perception'. Cognitive Therapy and Research 11, 551–565.
- Byrnes, J. P., D. C. Miller, and W. D. Schafer (1999), 'Gender differences in risk taking: a meta-analysis'. *Psychological Bulletin* 125, 367–383.
- Cacioppo, J. T. and R. E. Petty (1982), 'The need for cognition'. Journal of Personality and Social Psychology 42, 116–131.
- Capon, N., G. J. Fitzsimons, and R. A. Prince (1996), 'An individual level analysis of the mutual fund investment decision'. *Journal of Financial Services Research* 10, 59–82.
- Chien, Y. and S. DeVanny (2001), 'The effects of credit attitude and socioeconomic factors on credit card and installment debt'. *Journal* of Consumer Affairs **35**, 162–179.
- Clark, W. (1998), 'Paying off student loans'. Canadian Social Trends 51, 24–28.
- Connelly, E. (2009), 'New credit card rules may reveal unwelcome details'. Associated Press, http://www.forbes.com/feeds/ap/2009/ 08/19/personal-finance-financials-us-credit-cards-mixed-blessing\_ 6796305.html.
- Davies, E. and S. E. G. Lea (1995), 'Student attitudes to student debt'. Journal of Economic Psychology 16, 663–679.
- De Bondt, W. F. M. and R. Thaler (1985), 'Does the stock market overreact?'. *Journal of Finance* 40, 793–805.
- Diacon, S. and C. Ennew (2001), 'Consumer perceptions of financial risk'. The Geneva Papers on Risk and Assurance 26, 389–400.
- Donkers, B. and A. van Soest (1999), 'Subjective measures of household preferences and financial decisions'. *Journal of Economic Psychology* 20, 613–642.
- Dreyfus, M. and K. Viscusi (1995), 'Rates of time preference and consumer valuations of automobile safety and fuel efficiency'. *Journal of Law and Economics* 28, 79–105.
- Duesenberry, J. S. (1949), Income, Saving and the Theory of Consumer Behavior. Cambridge, MA: Harvard University Press.

- Duxburry, D. and B. Summers (2004), 'Financial risk perception: Are individuals variance averse or loss averse?'. *Economic Letters* 84, 21–28.
- Fehr, E., U. Fischbacher, and S. Gächter (2002), 'Strong reciprocity, human cooperation, and the enforcement of social norms'. *Human Nature* 13, 1–25.
- Ferber, R. and L. C. Lee (1974), 'Husband-wife influence in family purchasing behavior'. Journal of Consumer Research 1, 43–50.
- Festinger, L. (1962), A Theory of Cognitive Dissonance. London: Tavistock.
- Fischhoff, B., P. Slovic, S. Lichtenstein, S. Read, and B. Combs (1978), 'How safe is safe enough? A psychometric study of attitudes towards technological risks and benefits'. *Policy Sciences* 9, 127–152.
- Fisher, I. (1930), The Theory of Interest, as Determined by Impatience to Spend Income and Opportunity to Invest it. London: Macmillan.
- Frank, R. H., A. S. Levine, and O. Dijk (2013), 'Expenditure cascades'. *Review of Behavioral Economics* 1, 55–73.
- Frederick, S., G. Loewenstein, and T. O'Donoghue (2002), 'Time discounting and time preference: A critical review'. *Journal of Economic Literature* 40, 351–401.
- Frey, B. S. (1998), 'Institutions and morale: The crowding-out effect'. In: A. Ben-Ner and L. Putterman (eds.): Chapter 17 in Economics, Values, and Organization. Cambridge: Cambridge University Press, pp. 437–444.
- Frey, B. S. and B. Torgler (2007), 'Tax morale and conditional cooperation'. Journal of Comparative Economics 35, 136–159.
- Friedman, M. (1957), A Theory of the Consumption Function. Princeton, NJ: Princeton University Press.
- Gasper, K. and G. L. Clore (1998), 'The persistent use of negative affect by anxious individuals to estimate risk'. *Journal of Personality and Social Psychology* 74, 1350–1363.
- Gigerenzer, G. (2007), Gut Feelings. The Intelligence of the Unconscious. New York: Viking.
- Glaser, M., M. Nöth, and M. Weber (2004), 'Behavioral finance'. In:
  D. J. Koehler and N. Harvey (eds.): *Blackwell Handbook of Judgment & Decision Making*. Oxford, U.K.: Blackwell, pp. 527–546.

- Guiso, L., P. Sapienza, and L. Zingales (2008), 'Trusting the stock market'. Journal of Finance 63, 2557–2600.
- Gurin, G. and P. Gurin (1970), 'Expectancy theory in the study of poverty'. *Journal of Social Issues* **26**, 83–104.
- Hagenaars, A. J. M. and B. M. S. van Praag (1985), 'A synthesis of poverty line definitions'. *Review of Income and Wealth* **31**, 139–154.
- Hardisty, D. J., E. J. Johnson, and E. U. Weber (2010), 'A dirty word or a dirty world? Attribute framing, political affiliation, and query theory'. *Psychological Science* 21, 86–92.
- Harrison, J. D., J. M. Young, P. Butow, G. Salkeld, and M. J. Solomon (2005), 'Is it worth the risk? A systematic review of instruments that measure risk propensity for use in the health setting'. *Social Sciences* and Medicine **60**, 1385–1396.
- Haultain, S., S. Kemp, and O. S. Chernyshenko (2010), 'The structure of attitudes to student debt'. *Journal of Economic Psychology* **31**, 322–330.
- Heath, C. and J. B. Soll (1996), 'Mental budgeting and consumer decisions'. *Journal of Consumer Research* 23, 40–52.
- Hessing, D. J., H. Elffers, and R. H. Weigel (1988), 'Exploring the limits of self-reports and reasoned action: An investigation of the psychology of tax evasion behavior'. *Journal of Personality and Social Psychology* 54, 405–413.
- Hey, J. D. and A. Morone (2004), 'Do markets drive out lemmings or vice versa?'. *Economica* **71**(284), 637–659.
- Higgins, E. T. (1998), 'Promotion and prevention: Regulatory focus as a motivational principle'. In: Advances in Experimental Social Psychology. London: Academic Press.
- Hilgert, M. A., J. M. Hogarth, and S. G. Beverly (2003), 'Household financial management: the connection between knowledge and behavior'. *Federal Reserve Bulletin* 89, 309–322.
- Hsee, C. K. and H. C. Kunreuther (2000), 'The affection effect in insurance decisions'. *Journal of Risk and Uncertainty* **20**, 141–159.
- Insurance Research Council (2000), 'Thirty-five percent of people surveyed think it's OK to inflate insurance claims'. Press release, June 6, Malvern PA: IRC.

- Jarvis, W. and I. C. MacMillan (2009), 'How vulnerable is your business to consumer debt?'. *Harvard Business Review* 87(10).
- Javalgi, R. G. and P. Dion (1999), 'A life cycle segmentation approach to marketing financial products and services'. Service Industries Journal 19, 74–96.
- Jemison, D. B. and S. B. Sitkin (1986), 'Corporate acquisitions: A process perspective'. Academy of Management Review 11, 145–163.
- Jevons, W. S. (1871/1911), The Theory of Political Economy. London: Macmillan, 4th edition. Originally published in 1871.
- Jianakoplos, N. A. and A. Bernasek (1998), 'Are women more risk averse?'. *Economic Inquiry* 36, 620–630.
- Jianakoplos, N. A. and A. Bernasek (2006), 'Financial risk taking by age and birth cohort'. *Southern Economic Journal* **72**, 981–1001.
- Johnson, E. J., J. Hershey, J. Meszaros, and H. Kunreuther (1993), 'Framing, probability distortions, and insurance decisions'. *Journal* of Risk and Uncertainty 7, 35–51.
- Kahneman, D. and A. Tversky (1979), 'Prospect theory: An analysis of decision under risk'. *Econometrica* 47, 263–291.
- Kahneman, D. and A. Tversky (1984), 'Choices, values and frames'. American Psychologist 39, 341–350.
- Katona, G. (1975), Psychological Economics. New York: Elsevier.
- Keynes, J. M. (1936), *The General Theory of Employment, Interest and Money.* London: Macmillan.
- Kilborn, J. J. (2005), 'Behavioral economics, overindebtedness, comparative consumer bankruptcy: Searching for causes and evaluating solutions'. *Emory Bankruptcy Developments Journal* 22, 13–45.
- Kirchler, E. (2007), *The Economic Psychology of Tax Behaviour*. Cambridge: Cambridge University Press.
- Kirchler, E., E. Hoelzl, and I. Wahl (2008), 'Enforced versus voluntary tax compliance: the "slippery slope" framework'. *Journal of Economic Psychology* 29, 210–225.
- Kogan, N. and M. A. Wallach (1964), Risk Taking: A Study in Cognition and Personality. New York: Holt, Rinehart and Winston.
- Kojima, S. (1994), 'Psychological approach to consumer buying decisions: Analysis of the psychological purse and the psychology of price'. Japanese Psychological Research 36, 10–19.

- Kojima, S. and Y. Hama (1982), 'Aspects of the psychology of spending'. Japanese Psychological Research 24, 29–38.
- Kunreuther, H. (1996), 'Mitigating disaster losses through insurance'. Journal of Risk and Uncertainty 12, 171–187.
- Kunreuther, H., R. Ginsberg, L. Miller, P. Sagi, P. Slovic, B. Borkan, and N. Katz (1978), *Disaster Insurance Protection: Public Policy Lessons.* New York, NY: Wiley Interscience.
- Kunreuther, H., A. Önçüler, and P. Slovic (1998), 'Time insensitivity for protective investments'. Journal of Risk and Uncertainty 16, 279–299.
- Kunreuther, H. and M. Pauly (2005), 'Insurance decision-making and market behavior'. In: *Foundations and Trends in Microeconomics*, vol. 1, No. 2. Delft, Hanover, MA: NOW Publishers, pp. 63–127.
- Langer, E. J. (1975), 'The illusion of control'. Journal of Personality and Social Psychology 32, 311–328.
- Laurent, G. and J.-N. Kapferer (1985), 'Measuring consumer involvement profiles'. Journal of Marketing Research 22, 41–53.
- Lauriola, M. and I. P. Levin (2001), 'Personality traits and risky decision-making in a controlled experimental task: An exploratory study'. *Personality and Individual Differences* **31**, 215–226.
- Lea, S. E. G., P. Webley, and C. M. Walker (1995), 'Psychological factors in consumer debt: Money management, economic socialization, and credit use'. *Journal of Economic Psychology* 16, 681–701.
- Lichtenstein, S., B. Fischhoff, and L. D. Phillips (1982), 'Calibration of probabilities: The state of the art to 1980'. In: D. Kahneman, P. Slovic, and A. Tversky (eds.): Judgment under Uncertainty; Heuristics and Biases. New York: Cambridge University Press, pp. 306–334.
- Lindqvist, A. (1981), 'A note on the determinants of household saving behavior'. Journal of Economic Psychology 1, 39–57.
- Lunt, P. K. and S. M. Livingstone (1991), 'Psychological, social and economic determinants of saving: Comparing recurrent and total savings'. Journal of Economic Psychology 12, 621–641.
- Lusardi, A. and O. S. Mitchell (2007), 'Financial literacy and retirement preparedness: Evidence and implications for financial education'. Business Economics pp. 35–44.

## Full text available at: http://dx.doi.org/10.1561/1700000039

- Lusardi, A. and O. S. Mitchell (2014), 'The economic importance of financial literacy: Theory and evidence'. *Journal of Economic Literature* 52, 5–44.
- Lusardi, A., O. S. Mitchell, and V. Curto (2010), 'Financial literacy among the young'. Journal of Consumer Affairs 44, 358–380.
- Lusardi, A. and P. Tufano (2009), 'Debt literacy, financial experiences, and overindebtedness'. NBER Working Paper 14808.
- Madrian, B. and D. Shea (2001), 'The power of suggestions: Inertia in 401(k) participation and savings behavior'. Quarterly Journal of Economics 116, 1149–1225.
- Mandell, L. (2001), Improving Financial Literacy: What Schools and Parents Can and Cannot Do. Washington, DC: Jump\$tart Coalition.
- Mandell, L. (2008), 'Chapter 9'. In: A. Lusardi (ed.): Overcoming the Savings Slump. How to Increase the Effectiveness of Financial Education and Saving Programs. Chicago: University of Chicago Press, pp. 257–2279.
- March, J. G. and Z. Shapiro (1987), 'Managerial perspectives on risk and risk taking'. *Management Science* 33, 1404–1418.
- Markus, H. R. and B. Schwartz (2010), 'Does choice mean freedom and well-being?'. Journal of Consumer Research 37, 344–355.
- Marshall, A. (1890), *Principles of Economics*. London: Macmillan.
- Martin, K. D. and R. P. Hill (2012), 'Life satisfaction, selfdetermination, and consumption adequacy at the bottom of the pyramid'. Journal of Consumer Research 38, 1155–1168.
- Modigliani, F. (1966), 'The life cycle hypothesis, the demand for wealth, and the supply of capital'. *Social Research* **33**, 160–217.
- Modigliani, F. (1986), 'Life cycle, individual thrift and the wealth of nations'. American Economic Review 76, 297–313.
- Mühlbacher, S., E. Kirchler, and H. Schwarzenberger (2011), 'Voluntary versus enforced tax compliance: Empirical evidence for the "slippery slope" framework'. *European Journal of Law and Economics* 32, 89–97.
- Mullainathan, S. and E. Shafir (2013), Scarcity: Why Having too Little Means So Much. New York: Henry Holt & Company.
- Norman, W. T. (1963), 'Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination

personality ratings'. Journal of Abnormal & Social Psychology 66, 574–583.

- OECD (2005), Improving Financial Literacy: Analysis of Issues and Policies. Paris, France: Organization for Economic Cooperation and Development.
- Osborn, R. N. and D. H. Jackson (1988), 'Leaders, riverboat gamblers, or purposeful unintended in the management of complex dangerous technologies'. *Academy of Management Journal* **31**, 924–947.
- Peñaloza, L. and M. Barnhart (2011), 'Living U.S. capitalism: the normalization of credit/debt'. Journal of Consumer Research 38, 743-762.
- Pitta, D. A., R. Guesalaga, and P. Marshall (2008), 'The quest for the fortune at the bottom of the pyramid: Potential and challenges'. *Journal of Consumer Marketing* 25, 393–401.
- Poiesz, T. B. C. and W. F. van Raaij (2007), Strategic Marketing and the Future of Consumer Behaviour. Introducing the Virtual Guardian Angel. Cheltenham, U.K.: Edward Elgar.
- Prelec, D. and D. Simester (2001), 'Always leave home without it: A further investigation of the credit-card effect on willingness to pay'. *Marketing Letters* 12, 5–12.
- Ranyard, R. and G. Craig (1995), 'Evaluating and budgeting with instalment credit: An interview study'. *Journal of Economic Psychology* 16, 449–467.
- Rowe, W. D. (1977), An Anatomy of Risk. New York: John Wiley.
- Rowell, D. and L. B. Connelly (2012), 'A history of the term "moral hazard"'. Journal of Risk and Insurance 79, 1051–1075.
- Ryan, R. M. and E. L. Deci (2000), 'Self-determination theory and the facilitation of intrinsic motivation, social development, and wellbeing'. American Psychologist 55, 68–78.
- Schneider, F. (2013), 'Size and development of the shadow economy of 31 European and 5 other OECD countries from 2003 to 2013: A further decline'. Working paper, April 5.
- Schneider, F. and A. Buehn (2012), 'Shadow economies in highly developed OECD countries: What are the driving forces?'. Paper IZA-DP 6891, October.

- Schneider, S. L. and L. L. Lopes (1986), 'Reflection in preferences under risk: Who and when may suggest why'. Journal of Experimental Psychology: Human Perception and Performance 12, 535–548.
- Schuurmans, J. B. (2011), 'Fundamental changes in personal financial advice. Customer centricity in financial services'. PhD dissertation, Tilburg University, The Netherlands.
- Schwartz, B. (2004), The Paradox of Choice: Why More is Less. New York: HarperCollins.
- Sharma, E. and A. L. Alter (2012), 'Financial deprivation prompts consumers to seek scarce goods'. *Journal of Consumer Research* 39, 545–560.
- Shefrin, H. and M. Statman (1985), 'The disposition to sell winners too early and ride losers too long: Theory and evidence'. *Journal of Finance* 40, 777–790.
- Shefrin, H. M. and R. H. Thaler (1988), 'The behavioral life-cycle hypothesis'. *Economic Inquiry* 26, 609–643.
- Shiller, R. J. (2000), Irrational Exuberance. Princeton, NJ: Princeton University Press.
- Shiv, B. and A. Fedorikhin (1999), 'Heart and mind in conflict: The interplay of affect and cognition in consumer decision making'. *Jour*nal of Consumer Research 26, 278–292.
- Sitkin, S. B. and A. L. Pablo (1992), 'Reconceptualizing the determinants of risk behavior'. Academy of Management Review 17, 9–38.
- Sitkin, S. B. and L. R. Weingart (1995), 'Determinants of risky decisionmaking behavior: A test of the mediating role of risk perceptions and propensity'. Academy of Management Journal 38, 1573–1592.
- Slovic, P. (1972), 'Psychological study of human judgment: Implications for investment decision making'. Journal of Finance 27, 779–799.
- Soman, D. (2001), 'Effects of payment mechanism on spending behavior: The role of rehearsal and immediacy of payments'. *Journal of Consumer Research* 27, 460–474.
- Soman, D. and A. Cheema (2002), 'The effect of credit on spending decisions: The role of the credit limit and credibility'. *Marketing Science* 21, 32–53.
- Strotz, R. H. (1956), 'Myopia and inconsistency in dynamic utility maximization'. Review of Economic Studies 23, 165–180.

- Svenson, O. (1981), 'Are we all less risky and more skillful than our fellow drivers?'. Acta Psychologica 47, 143–148.
- Tennyson, S. (2002), 'Insurance experience and consumers' attitudes toward insurance fraud'. Journal of Insurance Regulation 21, 35–55.
- Tennyson, S. (2008), 'Moral, social, and economic dimensions of insurance claims fraud'. Social Research 75, 1181–1204.
- Thaler, R. (1985), 'Mental accounting and consumer choice'. Marketing Science 4, 199–214.
- Thaler, R. (1999), 'Mental accounting matters'. Journal of Behavioral Decision Making 12, 183–206.
- Thaler, R. H. and S. Benartzi (2004), 'Save more tomorrow: Using behavioral economics to increase employee saving'. *Journal of Political Economy* **112**, S164–S187.
- Thaler, R. H. and E. J. Johnson (1990), 'Gambling with the house money and trying to break even: The effect of prior outcomes on risky choice'. *Management Science* **36**, 643–660.
- Thaler, R. H. and H. M. Shefrin (1981), 'An economic theory of selfcontrol'. Journal of Political Economy 89, 392–406.
- Thaler, R. H. and C. R. Sunstein (2008), Nudge: Improving Decisions about Health, Wealth, and Happiness. New York: Yale University Press.
- Tversky, A. and D. Kahneman (1981), 'The framing of decisions and the psychology of choice'. *Science* **211**, 453–458.
- Tyszka, T., T. Zaleśkiewicz, A. Domurat, R. Konieczny, and Z. Piskorz (2002), 'When are people willing to buy insurance?'. In: Stability and Power, IAREP/SABE Conference Proceedings. pp. 404–408.
- Van Praag, B. M. S. (1971), 'The welfare function of income in Belgium: an empirical investigation'. *European Economic Review* 2, 337–369.
- Van Praag, B. M. S. and P. Frijters (1999), 'The measurement of welfare and well-being: The Leyden approach'. In: D. Kahneman, E. Diener, and N. Schwarz (eds.): *Chapter 21 in Well-Being. The Foundations of Hedonic Psychology.* New York: Russell Sage Foundation, pp. 413–433.
- Van Raaij, W. F. (2009), 'Hoe krijgt de financiële sector het vertrouwen weer terug? [How does the financial sector regain trust?]'. *Me Judice*. Economics website of Tilburg University, May 14. www.mejudice.nl/.

## Full text available at: http://dx.doi.org/10.1561/1700000039

- Van Raaij, W. F. and T. M. M. Verhallen (1994), 'Domain-specific market segmentation'. European Journal of Marketing 28, 49–66.
- Van Rooij, M., A. Lusardi, and R. Alessie (2007), 'Financial literacy and stock market participation'. NBER Working Paper 13565. Cambridge, MA: National Bureau of Economic Research.
- Veblen, T. B. (1899), *The Theory of the Leisure Class*. New York: Macmillan.
- Vlek, C. and P. J. Stallen (1981), 'Judging risks and benefits in the small and in the large'. Organizational Behavior and Human Performance 28, 235–271.
- Von Böhm-Bawerk, E. (1888), *The Positive Theory of Capital*. London: Macmillan.
- Walker, C. M. (1996), 'Financial management, coping and debt in households under financial strain'. *Journal of Economic Psychology* 17, 789–807.
- Wärneryd, K.-E. and B. Walerud (1982), 'Taxes and economic behavior: Some interview data on tax evasion in Sweden'. *Journal of Economic Psychology* 2, 187–211.
- Watson, J. J. and J. Barnao (2009), 'Debt repayment: A typology'. International Business & Economics Research Journal 8, 59–67.
- Webley, P. and E. K. Nyhus (1998), 'A Dynamic Approach to Consumer Debt'. Working paper, Center, Tilburg University, The Netherlands.
- Weinstein, N. D. (1980), 'Unrealistic optimism about future life events'. Journal of Personality and Social Psychology 39, 806–820.
- Wells, W. D. and G. Gubar (1966), 'Life cycle concept in marketing research'. Journal of Marketing Research 8, 355–363.
- Wertenbroch, K. (2003), 'Self-rationing: Self-control in consumer choice'. In: G. Loewenstein, D. Read, and R. F. Baumeister (eds.): *Time and Decision. Economic and Psychological Perspectives on Intertemporal Choice.* New York: Russell Sage Foundation, pp. 491–516.
- Wijzer in Geldzaken (2014), Verantwoord Financieel Gedrag: De drie Dimensies [Responsible Financial Behavior: The three Dimensions].The Hague: Department of Finance.

- Willis, L. E. (2009), 'Evidence and ideology in assessing the effectiveness of financial literacy education'. San Diego Law Review 46, 415–458.
- Willis, L. E. (2011), 'The financial education fallacy'. American Economic Review 101, 429–434.
- Winnett, A. and A. Lewis (1995), 'Household accounts, mental accounts, and savings behaviour: Some old economics rediscovered?'. *Journal of Economic Psychology* 16, 431–448.
- Wong, A. and B. J. Carducci (1991), 'Sensation seeking and financial risk taking in everyday money matters'. *Journal of Business and Psychology* **5**, 525–530.
- Xiao, J. J., F. E. Noring, and J. G. Anderson (1995), 'College students' attitudes towards credit cards'. Journal of Consumer Studies and Home Economics 19, 155–174.
- Zeelenberg, M. and R. Pieters (2007), 'A theory of regret regulation 1.0'. Journal of Consumer Psychology 17, 3–18.
- Zhou, R. and T. Pham (2004), 'Promotion and prevention across mental accounts: When financial products dictate consumers' investment goals'. *Journal of Consumer Research* **31**, 125–135.
- Zuckerman, M. (1994), Behavioral Expressions of Biosocial Bases of Sensation Seeking. New York: Cambridge University Press.