

# Financial Rules of Thumb

A review of the evidence and its implications



## Report Summary

### Introduction and scope

Cognitive biases are difficult to avoid and emotions are difficult to ignore. They can lead to erroneous decision-making in general and this can be particularly costly when it comes to financial decisions. The busy lives we lead and the plethora of financial products available to us only combine to make decision-making ever more difficult, with precious little time for alternatives to be evaluated and fully-informed, optimal decisions to be made. Financial rules of thumb can help us to avoid some cognitive biases, dampen emotions and allow decisions to be made even in complex scenarios and when time is scarce.

In March 2016, HM Treasury and the FCA published the Financial Advice Market Review (FAMR) final report. FAMR was launched in August 2015 in light of concerns that the market for financial advice in the UK was not working well for all consumers. The aim of the Review was to explore ways in which Government, industry, and regulators could stimulate the development of a market that delivers affordable and accessible financial advice and guidance to everyone, at all stages of their lives. By ‘advice’, the Review generally means advice that is regulated by the FCA and which results in a personal recommendation to buy (or sell) a specific product, and by ‘guidance’, information and general help on personal finances.

One of the conclusions of the FAMR Final Report was that: “the successful development of nudges and rules of thumb could have a significant impact on the way consumers engage with their finances.”

Due to the lack of previous research in this area, the Money Advice Service (MAS) commissioned the Centre for Applied Behavioural Economics at Manchester Metropolitan University and the Behavioural Research in Finance Group at the University of Newcastle-upon-Tyne to produce a literature review of financial rules of thumb in line with the Government approach to Rapid Evidence Assessment. This report considers the existing evidence for the evaluation, design and application of financial rules of thumb (in the UK and internationally) to establish:

- What rules of thumb exist and what evidence exists for their rationale and utility?
- What learning can be gathered from previous attempts to design and deploy rules of thumb?
- What gaps and risks in using rules of thumb should be explored or tested?

Rules of thumb can be useful to enable or encourage decision-making in contexts when information asymmetry or complexity may make consumers stall. It can be overwhelming to know what to do for the best when thinking about big financial decisions like retirement, home ownership, etc. Unfortunately, when we do not know what to do for the best, we often do nothing. This kind of paralysis can be very costly in financial decisions.

Decisions on saving for retirement, for example, can require confidence to navigate complex products and the capability to generate answers to a series of questions dependent on many variables and unknowns. Consumers may be tempted to put off and avoid making complex decisions even if this leads to detriment or severely sub-optimal outcomes. However, even if it represents a sub-optimal outcome, failing to save in a company pension scheme will mean missing out on the employer’s contribution. Whether this is viewed as free money or a deferred payment for work undertaken, a simple rule of thumb, such as “save 10% of your income”. or encouraging consumer awareness of employers’ offer to match contributions, can break down complex financial decision problems into a quick one-liner to enable action, thus overcoming procrastination and cutting through complexity.

Early action – saving sooner rather than later – is particularly important in the context of saving for starting retirement, where the benefits of compounding can be woefully underestimated. Generally low levels of financial literacy and an inability to envision the exponential growth of “the money that money makes, makes more money” commonly ascribed to Benjamin Franklin, mean that many may miss out on the financial benefits of compounding by starting to save too late. A simple rule of thumb, such as “save sooner, not later”, might be a powerful action enabler.

It is important to recognise that rules of thumb are general guidelines, meant to help make quick evaluations, and as such lack precision. Indeed, dependent on the specifics of the financial circumstances at play, they need not always hold true. However, they do represent general approximations, sufficient on which to base initial plans or help promote initial actions that are widely applicable to a broad range of consumers. Simple rules of thumb make it easier for us as lay people to make financial decisions in an ever more dynamic and complex financial world.

## Method

To ensure a robust and consistent evaluation, the project undertook a Rapid Evidence Review, in line with the Government's Rapid Evidence Assessment Toolkit (2015). This includes:

- keyword analysis to filter and categorise different rules of thumb
- prioritising robust evaluations with a clear method
- including 'grey' literature in scope – ie, non-academic publications from government, industry and financial capability organisations as well as websites, blogs and articles usually excluded from more academic literature reviews
- gauging the impact of sources of evidence from citation analysis and reach.

## Financial Rules of Thumb

Financial rules of thumb work as heuristics: cognitive processes by which individuals ignore part of the information necessary to make a decision (Gigerenzer and Gaissmaier, 2011). This can be achieved through: examining fewer cues, reducing the effort of retrieving cue values, simplifying the weighting of cues, integrating less information or examining fewer alternatives.

Heuristics can be efficient as they significantly reduce the amount of cognitive effort needed for obtaining a solution to a problem, independently of whether the problem concerns consumption, investment, or financial choices. In particular, rules of thumb can be effective in helping individuals overcome loss aversion and the distorting effects of time on decision-making, whereby individuals tend to value immediate costs/benefits over future costs/benefits.

There is evidence that rules of thumb assist consumers in short-cutting information overload to prompt action. It is important to recognise that rules of thumb are general guidelines, meant to help make quick evaluations, and as such lack precision.

Generally, a financial rule of thumb achieves a positive outcome via one of three mechanisms: countering a specific behavioural bias, simplifying complex decisions or triggering engagement and action. The Evidence Review analyses existing rules of thumb through a framework developed by Hoy & Tarter (2010) which sets key elements of an effective heuristic:

- Satisficing – a rule of thumb should enable an effective solution for many not aim for the optimum
- Framing – a positive approach to harness behavioural biases
- Defaults – harnessing the path of least resistance
- Simplicity – avoiding complex instructions
- Uncertainty – control for uncertain events
- Transparency – including commitment mechanisms

Through the analysis, the Evidence Review establishes a typology consisting of several categories of existing rules of thumb for personal finance:

- Saving for a short-term buffer
- Long-term savings (pensions)
- Managing investments
- Budgeting
- Using credit
- Making large purchases (car and home)

This typology can be used to develop a catalogue of financial rules of thumb, for use in financial decision-making along the customer journey.

Financial rules of thumb have varied success; the simpler and more general ones tend to be more robust, both in terms of their value as a decision-making aid and in their longevity.

Financial rules of thumb tend not to adapt to new economic and social environments. Care should be taken in their design to ensure that they are flexible to future, demographic and economic changes. Evidence suggests some of the most persistent rules of thumb are communicated between family and friends in a social context, across generations. This creates the challenge that rules of thumb do not adapt to:

- changing economic contexts
- life-cycle issues
- cohort effects and associated issues (eg, student debt).

The evidence for the design and communication of financial rules of thumb is limited. However, there is evidence that behaviourally-informed design is valuable, where focusing on established behavioural effects such as commitment mechanisms can lead to better outcomes. Design could vary depending on the behavioural bias or barrier to decision-making faced by consumers. It would be appropriate to design a different type of rule of thumb if the problem was an excess of information, compared to a problem of inertia, even if both present in the form of a lack of consumer engagement with the decisions involved.

Communication of financial rules of thumb suggest that trust strongly influences adoption and use. Trusted communicators and an understanding of the dynamics of consumer trust should be central to communication of rules of thumb.

## Getting started

This report evaluates the evidence regarding financial rules of thumb, developing a robust collection methodology in order to consider what personal finance heuristics exist and are used in the wider economy.

Chapter 1 presents an introduction to rules of thumb, including the factors which necessitate their existence. Complexity and how we perceive time are discussed as providing a decision-making environment amenable to the use of rules of thumb. In order to develop and assess rules of thumb, this understanding is crucial.

Chapter 2 evaluates common financial rules of thumb against the key success factors of satisficing, framing, default options, simplicity, uncertainty and transparency. This chapter also provides a typology of financial rules of thumb, the components of which are assessed as a counter to their driving bias. This provides insight into the design process.

Chapter 3 discusses evidence relating to the design, communication and application of rules of thumb for personal finance and their implications for designing new financial rules of thumb.

The Financial Advice Working Group (FAWG) Sub-Group on Rules of Thumb and Nudges provided input and steer to this evidence review and its emerging findings.

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# Chapter 1: Heuristics and Rules of Thumb

## Key learning points from Chapter 1

1. The wide use of rules of thumb in financial decision-making is motivated by the complexity of the decisions involved in personal finances, particularly by cognitive limitations, constant emotional influences, and limited willpower.
2. Rules of thumb are derived from heuristics, which have a wide range of application in individual decision-making.
3. Applying heuristics/rules of thumb in the context of personal finance is driven by intuition and has a number of advantages, for instance, a reduced cognitive effort.
4. For instance, anchoring can lead to a quantum in a rule of thumb becoming a target or default.

## Introduction

This chapter discusses the complexity associated with financial decision-making, as well as the sources of this complexity and the implications. An understanding of complexity associated with financial decision-making is vital for understanding the development of rules of thumb, how they work and the limitations of what they can achieve in personal finance.

Decision-making is an ever-present aspect of our lives. Whether the decision-making process entails a simple selection of a holiday destination for next year, or whether it is concerned with a more serious financial choice of durable consumer and investment goods, such as a car or a house, it puts a considerable level of cognitive pressure on the decision maker. Depending on the trade-off between the efforts required to make a decision and the importance of the outcome of that decision, it may be preferable for the individual to make a sub-optimal choice, rather than make no decision and take no action at all. However, such choices do not coincide with the predictions of the standard models of decision-making focusing on individual utility maximization (von Neumann & Morgenstern, 1947). This rather systematic discrepancy between choices made and those predicted is particularly pronounced in financial decision-making, where cognitive demands imposed on agents are significant (Barberis, 2013).

The theory behind optimal decision-making, primarily in the financial context, was developed for rational individuals (Gigerenzer, 1991). However, important insights provided by researchers in psychology have shown that rationality itself has many 'shades of grey'. For instance, we generally try to make the right decision, but the optimum decision in any circumstance may require a degree of calculation impractical for the everyday choices. In 1955 (p. 588), Simon made an important distinction between substantive rationality (the outcome of acting consistently with the principle of utility maximization) and procedural rationality. The latter form of rationality, more commonly known as "bounded rationality" (Simon, 1979), turned out to be the driving force behind the gap characterising the predicted and the actual behaviour of individuals exposed to financial decision-making. Thus, in order to understand why people do not behave in their own best interest, it is necessary to ask what are the factors motivating "bounded rationality". An answer to this question is offered by Jones (1999), who explains that humans are only boundedly rational because of their cognitive limitations and constant emotional influences, which in turn drive them away from their intended goal of utility maximization. In fact, Loewenstein et al (2001) claims that people's judgements concerning risky alternatives are often illustrating their emotions.

Further to limited computational capacities and emotions, Gigerenzer (1989) and Mullainathan and Thaler (2000)

point out that factors such as time constraints (Finucane et al, 2000), narrow knowledge (including low levels of financial sophistication, see Beshears, Choi, Laibson, Madrian, 2011), and limited attention (Della Vigna, 2009) restrict the ability of individuals to make optimal financial choices. Rubinstein (1997) also links the presence of agents' rationality bounds to limited memory.

The consequence of the presence of such a high number of factors hindering "rational" choice is that people often make their decisions intuitively. Unlike deliberate reasoning, intuition explains why intentions and actions might not be aligned, despite what economists and policy makers may assume (see the comment by Laibson, Repetto, Tobacman, Hall, Gale and Akerlof, 1998). The advantage that intuition has over reasoning is that it is easily accessible, namely, it can be achieved automatically and effortlessly (Higgins, 1996; Kahneman, 2003), and it is governed by habit and emotions (Stanovich and West, 2000). In fact, Gilbert (1989, 2002), Wilson (2002) and Epstein (2003) claim that most thoughts and actions are normally intuitive, as opposed to being reasoned. As emphasised by Klein (1998), such thoughts are skilled, unproblematic, and reasonably successful.

Thus, people who are not accustomed to or confident in weighing up complex financial questions often prefer to trust their intuitive judgement. It is worth noting that such judgements can become predictable if repeated on numerous occasions (Kahneman, 2003).

The importance of bounded rationality in financial decision-making is motivated by a large volume of psychological research undertaken in the second half of the last century. This research describes the variety of human limitations affecting the outcomes of financial choices (Mullainathan and Thaler, 2000). People whose will is bounded tend to make choices that are not in their long-run interest. Examples of such choices involve insufficient savings for retirement, excess consumption in the current periods, and low levels of investment in education and training. These choices require both complex calculations and willpower. Individuals often feel content with an outcome of an easier choice, as the returns from 'correct' choices are not observed immediately. Thus, even if an individual knows what is best for her/him, s/he sometimes fails to choose the optimal outcome for self-control reasons (see for example Choi, Laibson, Madrian, and Metrick, 2005).

It should be well understood that individuals economise on their cognitive capabilities. We are not particularly skilled at self-control and are often acting by representing other than self-interest. All these factors imply that financial choices made by individuals are far from the optimal ones. Rather, people tend to use more simplified procedures, also known as 'heuristics' or 'rules of thumb', to make both judgement and decisions (Kahneman and Tversky, 1974). These shortcuts are considered next.

### Key Point:

Optimal decision-making can be frustrated by the sheer volume of information about the choice. Shortcuts through this information to a good rather than perfect outcome are often used and can be harnessed to better understand and aid decision-making.

## Heuristics, short-cuts and decision-making

Evidence shows that rules of thumb can be powerful instruments in shaping individual decision-making. This section explains the reasons for applying rules of thumb to decision-making. Specifically, starting with heuristics, it outlines in which situations rules of thumb can facilitate the decision-making process, thus, highlighting the scenarios in which the use of rules of thumb is most common. Using examples of a few rules of thumb, including anchoring, and framing, this section presents the advantages as well as the disadvantages associated with the implementation of rules of thumb in the financial context.

Financial rules of thumb are a branch of a psychological process called heuristics. Heuristics are cognitive processes, in which an individual ignores part of the information necessary to make a decision (Gigerenzer and Gaissmaier, 2011). This can be done in different variants, more specifically by (a) examining fewer cues, (b) reducing the effort of retrieving cue values, (c) simplifying the weighting of cues, (d) integrating less information, and (e) examining fewer alternatives (Shah & Oppenheimer, 2008). Thus, heuristics are said to be efficient as they significantly reduce the amount of cognitive effort needed for obtaining a solution to a problem, independently of whether the problem concerns consumption, investment, or financial choices. As such, heuristics have been applied to a wide range of settings including business organisation, health care, and legal institutions (eg, Busenitz and Barney, 1997; and Carvalho et al, 2009).

There is a large number of heuristics associated with human decision-making. For instance, Gigerenzer and Gaissmaier (2011) analyse the use of heuristics, such as the recognition heuristic, fluency heuristic, one-clever-cue heuristic, and take-the-best heuristic in choices concerning investment, consumption, and making predictions. Luce (1956), Tversky (1972), Dawes (1979) study models of heuristics involving lexicographic rules, elimination-by-aspect, and equal-weight rules.

Payne et al (1993) show how the latter heuristics can be adapted to various choice tasks. Moreover, Kahneman and Tversky (1973), Tversky and Kahneman (1974), and Kahneman et al, (1982) identify heuristics that people are prone to use in the situations of judgement under uncertainty. In the following, we focus only on a very small sample of heuristics by analysing anchoring, framing and nominal loss aversion. These and other heuristics will be evaluated in more depth in the context of making financial choices.

## Cognitive biases in financial decision-making

The idea of anchoring was popularised by Tversky and Kahneman (1974), who applied it to individual decision-making under uncertainty. According to these authors, anchoring is implemented when people struggle to make a choice because of the various constraints discussed in the earlier section.

### Key Point: Anchoring

We have a behavioural tendency to fixate on a belief or perceived fact in making decisions, for example 'house prices will always go up', which can have a strong impact on decision-making. Anchoring to a particular belief makes it harder to move away from it, even when presented with evidence to the contrary.

Thus, they anchor on information that easily comes to their minds. For instance, while watching TV people are exposed to various advertisements, among them those of loan companies promoting their services. If the advertisement says that the particular company is the quickest in providing a loan, next time when an individual thinks of taking a loan, s/he may consider this company first before consulting other options. Hence, the anchoring rule may have a negative impact on financial decisions for individuals. The key point here is what constitutes an anchor for an individual. Initial anchors are adjusted for if a new piece of information is available (Epley and Gilovich, 2006). This is why anchoring is usually referred to as anchoring-and-adjustment heuristic.

However, if an anchor is particularly strong, it may become a target. For instance, if an individual saves £200 per month on a regular basis for retirement, this may become an anchor to the individual's saving behaviour in spite of their changing needs, income and additional information they receive about their likely needs in later life. Another example is that of a couple applying for their first mortgage. If the couple is told by their friends and family that it is better to take a mortgage with a fixed interest rate to avoid uncertainty, this anchor may become a target for the couple, despite potential benefits resulting from variable rates in an economy with low interest rates, such as the UK from 2009 onwards. As in the case of other heuristics used in decision-making, anchoring-and-adjustment reflects individuals' intuition. However, this intuition is a result of an excessive influence of initial impressions, perspectives and values (eg, Gilbert, 2002, and Gilbert & Gill, 2000). As shown by Mussweiler and Strack (1999a, 1999b, 2000, 2001b), anchoring can be corrected for, but not if the anchor-consistent information is easily accessible. Therefore, anchors, particularly those self-generated, are a powerful tool, which significantly simplifies a complicated judgement and can quickly be adjusted if required (Epley and Gilovich, 2006).

#### Key Point: Framing

The context, and manner in which a choice is phrased can affect the decision. We tend to prefer positive over negative suggestions.

Closely related to anchoring-and-adjustment heuristic, framing refers to the impact that labelling of a particular choice task has on the result of this task (Levin, Schnittjer, and Thee, 1988). Framing is particularly popular because many choice tasks are characterised by less than perfect information, providing individuals with an opportunity to interpret the problem in their own subjective ways (Kuhn, 1997). Framing can be used in order to manipulate people's preferences for particular products and services, including financial ones (eg, Kahneman, Slovic, and Tversky, 1982; and Thaler, 1985).

## Time and decision-making

The outcome of decision-making depends on a large number of intrinsic and external factors. One of these factors, not discussed in detail so far, is time. Many choices made by individuals are 'intertemporal'. That is, they involve trade-offs between costs and benefits in the past, present and future. For instance, both saving for retirement and investing money in bonds imply a lower level of consumption today but this outcome is compensated for with a higher level of consumption in the future. We are often challenged by making decisions, understanding future values of current investments and current values of future costs and benefits, which are much more complex. To explain this, below there are several examples of intertemporal choices that highlight an increased level of complexity in decision-making involving time.

#### Key Point: The problem of value over time

Empirical studies suggest that people assign a lower value to distant future events, yet, as these events approach, their subjective worth increases. A typical example of this type of human behaviour is observed in the context of pensions. Throughout most of an employee's career the subjective value of having a pension plan is low. In fact, this value is often perceived as negative as it reduces current consumption in favour of increased future consumption. However, towards the end of the career, as retirement approaches, this value rises significantly. It is only when the pension is received that the subjective and true values align.

Psychology has long suggested that we have a preference for immediate consumption – we tend to prefer to spend on consumption today rather than delay and save for tomorrow. Economic experiments to test this psychological insight have highlighted a large number of systematic behavioural patterns in decision-making over time.

One of these patterns suggests that people employ a zero discount rate to losses but not to gains (Mischel et al, 1969; Yates and Watts, 1975; Loewenstein, 1987; Benzion et al, 1989; Mac Keigan et al, 1993; and Redelmeier and Heller, 1993). For instance, when receiving a parking ticket, individuals prefer to pay for it immediately rather than wait. In contrast, when receiving a monetary reward, the same individuals are prepared to wait for their payment, exhibiting more patience. This phenomenon, known as ‘sign effect’ has been attributed to loss aversion and has been given evolutionary foundations (Bilgin and LeBoeuf, 2010).

Nominal loss aversion is a concept introduced by Kahneman and Tversky (1979) that describes our tendency to value avoiding losses over acquiring equivalent gains. Loss aversion and framing explain ‘delay-speedup’ asymmetry, where individuals prefer to accelerate payment if they perceive it as a loss, in contrast to prefer delaying action, if the payment is framed as a gain (Loewenstein, 1988). The way time is framed can also influence people’s choices. Read et al (2005) and LeBoeuf (2006) find that deadlines formulated in terms of end dates as opposed to extents (length of time) are discounted using lower rates. Time also affects our preference for discounting outcomes of different magnitude. As demonstrated by a large volume of studies (eg, Ainslie and Haendel, 1983), people tend to discount large outcomes less severely than small ones.

#### Key point:

Fear of making the wrong decision can prevent us making any decision at all leading to inertia. This is a common feature of issues with saving and insurance, where the decision is very complex so the default of doing nothing is often taken.

Many rules of thumb applied to intertemporal decisions have been developed to help consumers to take positive action. Procrastination can be explained by observing that many individuals treat immediate costs and benefits as salient or vivid in comparison to future costs and benefits (eg, O’Donoghue and Rabin, 2001). In this context there is potential value in rules of thumb, which would reduce barriers and friction to making choices and taking action. Being aware of rules affecting financial choices may direct the consumer toward better choices or it may reduce the negative outcome of the choices already made. For instance, prohibition of or reduction in large penalties for deferring repayment of loans have been advocated by Heidhues and Koeszegi (2010). Brocas and Carrillo (2004) argue that investors should be forced to acquire information before making investment decisions, as it would benefit them and the economy as a whole. It has been also proposed to encourage individuals to save more by creating commitment devices for them, eg illiquid savings accounts with tax incentives, such as Individual Savings Accounts (ISAs) in the UK. Moreover, enrolment into pension schemes is now automatic, as it increases

employees’ participation, particularly those with low income levels (Madrian and Shea, 2001).

These examples show that understanding how people behave in making financial decisions, particularly, those entailing savings, is crucial for designing effective financial rules of thumb. Intertemporal decisions deserve special attention, as they impose more cognitive demands on individuals, which, frequently lead them to wrong choices based on incorrect perceptions and impressions (eg, Gilbert and Osborne, 1988).

## Chapter Conclusion

This chapter highlights the potential value for financial rules of thumb in helping consumers navigate the complexity of decision-making they face. This complexity takes many forms but is generally based around behavioural biases, information overload and realisation of the present value of future consumption. As we struggle to agree with our future selves we tend to undervalue savings and fail to appreciate the true effect of debt repayments. Ultimately, making the optimum financial decision can be complex, and issues with time further complicate the decision. By adopting a satisficing rather than optimising outcome and by countering the biases associated with time, a financial rule of thumb can improve decisions.

#### Key Point: Chapter 1

Financial rules of thumb can create a short-cut through complexity and have the potential to counter key behavioural biases which hinder effective decision-making – eg, loss aversion, complexity and time.

## Chapter 2: Financial Rules of Thumb

### Key learning points from Chapter 2

1. This evidence review demonstrates a robust and efficient methodology for evaluation of financial rules of thumb and can be used for future policy evidence evaluations.
2. Financial rules of thumb fulfil the heuristic (short-cut) need discussed in Chapter 1 demonstrating clear potential to be valuable tools to inform financial decision-making.
3. Financial rules of thumb have varied success; the simpler ones tend to be more robust, both in terms of their value as a decision-making aid and in their longevity.
4. Many financial rules of thumb tend to focus on the specific, whereas the more general financial wellbeing rules of thumb are more universally accepted and used.
5. Financial rules of thumb tend not to adapt to new economic and social environments, care should be taken in their design to ensure that they are flexible to future, demographic and economic changes.

## Introduction

This chapter concerns evidence base for financial rules of thumb, in particular to assess what rules of thumb exist and what evidence exists for their success or otherwise, as well as evaluating and considering potential gaps in the evidence base.

## Methodology

In order to evaluate the evidence base for financial rules of thumb, a dataset of the literature was constructed, this broadly followed the construction of a standard evidence dataset using keyword analysis to filter and categorise different rules of thumb. Robust evaluations with a clear method were prioritised by gauging the impact of sources of evidence from citation analysis and reach. However, to fully evaluate the evidence for financial rules of thumb and to provide insight into delivery mechanisms discussed in Chapter 3, the review also included 'grey' literature as in scope, specifically non-academic publications from government, industry and financial capability organisations as well as various websites, blogs and articles usually excluded from more academic literature reviews.

The full methodology is presented in the appendix and resulted in around 500 highly relevant sources filtered from an estimated 23,100. These include grey literature rather than discounting it (traditional approach) and giving prominence to robust empirical evaluations. In short this allows for a complete evidence review of rules of thumb.

The review methodology prioritises the most relevant sources, recognising the changing economic environment since the 2008 financial crash. The financial rules of thumb evaluated are from contemporary (generally 2016) sources. Any older sources are the most relevant sources to evidence the behavioural context. The methodology prompts the optimum source, that is any source that has been replaced with a better study/more recent (reliable) one was discounted for the most recent.

## Common financial rules of thumb

There is large empirical and experimental evidence supporting the existence of numerous rules of thumb adopted by individuals to simplify their decision-making process. In this section we discuss a number of such rules by highlighting how they reduce the cognitive effort of individual decision makers. This section produces an overall typology of financial rules of thumb, discusses rules concerning borrowing and debt repayment and summarises rules concerning short term and long term saving.

### Financial rules of thumb typology

Given the sheer number and variety of rules of thumb, it is useful to group them into broader categories, this enables an evaluation of the fundamental behavioural workings of financial rules of thumb groups. The financial rules of thumb can be broadly grouped into several types, these are:

1. Saving (for a short-term buffer)
2. Long-term (pension) saving
3. Managing investments
4. Budgeting
5. The use of credit
6. Making large purchases (car and home)

Clearly many of the presented financial rules of thumb can fit into several categories, for instance budgeting and the use of credit, saving and making large purchases are inherently linked. When considering the design of financial rules of thumb, these linkages and interactions must be considered to avoid contradiction and to adhere to the rule of thumb framework presented in this chapter.

#### Key Point:

There are limited financial rules of thumb regarding 'newer' products. For example we found little evidence for rules of thumb concerning 'payday' loans.

Financial rules of thumb concerning the teenager/adult transition are also limited.

## Rules concerning borrowing and debt repayment

It has been shown that in general people are unwilling to borrow unless constrained by their access to liquid assets, which is a rare occurrence (Manchester and Poterba, 1989). In fact, a prominent rule of thumb found among a large number of individuals is to borrow only if the purchase entails relatively expensive durable goods, such as a house, a car or appliances (Thaler, 1990). As suggested by Thaler Shefrin (1981), this idea of limiting the amount borrowed serves as a pre-commitment device. Additionally, it can prompt people buying a car to consider costs over its life-cycle, by bringing into focus running costs as well as the purchase price, eg the associated costs of petrol and insurance (the so-called '20|4|10' rule for buying a vehicle).

Another example of a rule supporting the so called 'debt ethic' involves simultaneous borrowing and lending, which enables an individual to transfer consumption over time. Despite the good intention of individuals, it has been documented that this rule leads to a significant welfare loss by individuals who do not understand the regulations concerning a loan repayment. Such individuals over-borrow both on credit cards and mortgages, where the baseline repayment rates are cheap, but then they delay their repayments incurring significant financial penalties (Heidhues and Koeszegi, 2010).

#### Key Point: Mental Accounting

Rules of thumb that help consumers to understand how to allocate their income and expenditure in discrete areas such as saving, debt repayment, living expenses and luxuries, can harness automatic impulses of mental accounting for improved money management and engagement.

As suggested previously, borrowing is also affected by mental accounting. For instance, people rarely borrow money from a mental account considered to be for future income, but they are more willing to take money away from their asset account, and are even keener to use their current income to finance their borrowings (Thaler, 1990). Exceptions to that rule are observed in 'emergency' situations, such as when a person is temporarily out of work. In these situations, borrowing is combined with substantial reductions in consumption. Due to people's dislike of borrowing, it is often assumed that agents exhibit

aversion to debt (eg, Deaton, 1989). Indeed, individuals seem not to borrow, even when borrowing is considered to be an arbitrage opportunity. For instance, Warshawsky (1987) demonstrates that a great majority of individuals with complete life insurance policies do not borrow in order to purchase government bonds, even though the policy allows for borrowing against the proceeds on which the interest rate is only a half of the interest earned on government debt. Moreover, this author shows that this reluctance to borrow slows down the learning process of individuals who become aware of such arbitrage opportunities only after a considerable period has passed (and in which case, interest rates may have changed).

**Key Point: Focus on decision-points and particular moments to make decisions easier.**

Some rules of thumb focus on practical prompts to commit consumers to behaviours rather than focusing on the decision itself. For instance, a prompt to leave credit card at home or taking only the cash required can help pre-commit consumers to restraint by making it harder to overspend in the moment.

Other commonly applied rules of thumb that help individuals avoid excessive borrowing are leaving the credit card at home when going shopping or using a debit card instead (King and King, 2011). This activates several responses from simply providing an obstacle to a tempting purchase to activating 'system 2' thinking to calculate how much is needed along with budgeting. Further examples of rules are spending less than the amount of earnings, paying off the debt with high-interest rates first (Taylor, 2014), and students taking loans not exceeding the expected value of the first year's salary. The rationale behind these financial rules of thumb is that loans impede or delays positive and planned for life events, such as getting married, having children, buying a house, saving for college and saving for retirement.

## Rules concerning short-term and long-term saving

One of the most interesting areas of applications of rules of thumb are decisions concerning savings, as saving involves forgoing current consumption in favour of future consumption, a trade-off which is often perceived by individuals as a loss.

This negative frame surrounding saving is reflected in a variety of rules of thumb used to facilitate the decision-making process by reframing saving or providing a memorable target to norm saving. For instance, many savers choose to spend what is left after saving in order to avoid financial losses (the 'pay yourself first' rule by Roth, 2016).

A number of existing rules of thumb relate to investment strategies as part of saving for the longer-term. Often people are sceptical about investing in the unknown (Zeckhauser, 2006) potentially missing out on better investments, but also potentially avoiding risky pitfalls. Other rules of thumb employed by individuals concerned with savings are those of "am I a stock or a bond", which helps position savings based on age and job security (Milevsky, 2013); or "subtract your age from 100 to determine your stock allocation" which gives an estimate of asset allocation linking it to age of an individual (Forbes, 2016). There is "grandpa's rule – save 10% of your income" (Esplin, 2016); and "the rule of 72" which is designed to determine how many years it will take to double the value of investment by dividing the expected return into 72, eg an investment with a 6% return will take 12 years ( $72/6$ ) to double (Pacioli, 1494).

A number of studies have illustrated the scale of under-saving for retirement (eg, Benartzi and Thaler, 2007). For instance, Bernheim (1993) demonstrates that the amount saved by the current generation will be sufficient to finance only a third of their present consumption in retirement. DWP's own analyses give a sense of the scale of the working-age population who are currently under-saving and planning inadequately for retirement (eg, DWP 2013). The disparity in saving behaviour is large. As shown by Moore and Mitchell (1997), older households characterised by a high level of wealth have 45 times more assets than the poorest decile and this disparity increases with age.

One of the reasons why retirement saving is so problematic is that it is unlike other life events that may be repeated and learnt from, like buying a home or having a child. Thus, implementing a financial rule of thumb approach can assist with satisficing decision-making which ultimately is better than no decision, a potential default due to the complexity regarding long-term saving and lack of a trial and error opportunity for successful retirement saving.

Indeed, there is a large number of rules used to facilitate saving. People often believe that it is worthwhile to enrol into the pension scheme offered by the employer and never to borrow from the retirement fund for expenses or even investment during the working life. This aspect is also related to the previous discussion about borrowing and mental accounting (Smith, 2016). If borrowing is necessary, it is recommended not to withdraw more than 4% of your portfolio's annual value (Cooley et al, 1998). There is no clear evidence on the extent to which rules of thumb change the amount that people choose to save for retirement; but the widespread discussion of such rules of thumb suggest they have some influence.

For instance, 10% is often used as an indicator of the proportion of an annual income devoted to savings (Anspach, 2016). According to different rules of thumb, the total value of retirement savings should be equivalent to twenty times an individual's gross annual income, or the investment in retirement should generate 70% to 80% of the income that an individual received while working (Biggs, 2016). It is also often believed that retiring after thirty years of saving is a good rule, often despite potentially changing economic and demographic environments (Biggs, 2016). However, the pensions policy landscape in the UK continues to change and evolve. Any new rules of thumb will need to speak to the changing context, and while the journey towards retirement may present more structured opportunities to communicate with consumers, there may be a risk that newly developed rules of thumb challenge previously embedded social norms and expectations about retirement.

## Evaluation of individual financial rules of thumb

An evaluation of the literature suggests a large amount of financial rules of thumb in use throughout the economy. In order to further make sense of these and provide a framework for design and analysis, they are grouped into a typology. Initial analysis of the common financial rules of thumb is presented in the next table.

The initial analysis is developed from a framework presented in Hoy & Tarter (2010) which suggests a good rule of thumb should have the following characteristics:

1. Satisficing Characteristic – a rule of thumb should not try to find the optimum solution as this is generally different for everyone, but instead should find an acceptable solution.
2. Framing Characteristic – be a positive approach to beneficially harness behavioural biases.
3. Where possible, have a Default characteristic – consider harnessing the path of least resistance. If a financial rule of thumb can tie into what someone wants to do or is already doing to an extent then it may be successful. For example, financial rules of thumb encouraging consumers to increase pension contributions at lifecycle points may be more successful.
4. Simplicity Characteristic – avoid complex instructions.
5. Uncertainty Characteristic – control for uncertain events.
6. Transparency Characteristic – involving commitment mechanisms and wider groups. For example, a general financial rule of thumb around discussing household finances could lead to improved wider outcomes, such as saving or budgeting.

### Key Point: What works?

The evidence shows effective rules of thumb are simple to follow and easy to action.

For example, saving a proportion of your income in a standard savings account to form an emergency buffer is an easier thing to do – and therefore more likely to happen – than working out exactly how much you should be saving, how much you need to save and what the best possible savings product is. Simple satisficing rules are more likely to lead to action than complex choice frameworks.

The table presented over the next pages sets out behavioural explanations for the workings of each rule of thumb, including how financial rules of thumb keys into the standard behavioural biases and how it helps consumers satisfice and make decisions.

The analysis demonstrates how a large range of established financial rules of thumb fulfil several aspects of the ideal framework. The simplest financial rules of thumb have the greatest success in meeting the framework. This is as they are easy to follow, provide a commitment mechanism and adapt to economic events. This framework has considerable implications for the design of financial rules of thumb and is further explored in Chapter 3.

For ease of review the table also includes a scoring system based on the evidence for and against<sup>1</sup>, the working mechanisms and assessment against the Hoy & Tarter Framework.

### Scoring:

A = Excellent evidence for the success of this financial rule of thumb, with a clear behavioural causal mechanism and meeting at least four of the criteria of the Hoy & Tarter Framework.

B = Generally good evidence for the success of this financial rule of thumb, with a behavioural causal mechanism and meeting at least three of the criteria of the Hoy & Tarter Framework.

C = Mixed evidence for the success of this financial rule of thumb, with behavioural causal mechanism and meeting at least two of the criteria of the Hoy & Tarter Framework. To note, rules of thumb achieving lower than grade C were excluded from this summary table.

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<sup>1</sup> The overview nature of the evidence review means we are not able to identify direct impacts on consumer decisions; this can only be done through in-depth consumer research.

## Financial Rules of Thumb Summary Table:

The financial rule of thumb <sup>2</sup>	How it works (explanation from a financial advice/wellbeing/lifestyle site, blog or publication) <sup>3</sup>	How it works from a behavioural perspective	Initial analysis against the Hoy & Tarter Framework	Score
<b>Buying a vehicle 20 4 10 rule</b>	20% deposit, finance 4 years, no more than 10% of income on transport costs – to prevent you spending more on transport than you can afford.	The immediate consumption bias is constrained by rules limiting the value of large purchases to a function of income. Recognising that payback of a loan/mortgage is underweighted by consumers, rules which give clear guidance on borrowing/repayment amounts can promote more analytical, considered and engaged thought (System 2 thinking).	This is satisficing rather than optimising, the default is not considered. In terms of simplicity this asks for three processes and does not control for uncertain events, it does however provide a commitment mechanism.	B
<b>Home ownership 20% rule</b>	20% deposit on a home to ensure you can afford the property and ensure manageable mortgage costs.	The immediate consumption bias is constrained by rules limiting the value of large purchases to a function of income or savings. Recognising that pay back of a loan/mortgage is underweighted by consumers, rules which give clear guidance on borrowing/repayment amounts can promote system 2 effects: engagement, analysis and deliberative consideration. It should be noted that property purchase (particularly in the UK) is subject to several behavioural biases <sup>4</sup> , emphasising the social norm that housing is always a risk free high reward investment.	Satisficing, though a potential negative frame. Does not control for uncertainty, but does provide a benchmark and commitment process.	B

<sup>2</sup> Names of rules collected in the evidence review are from numerous sources, including financial advice and wellbeing websites, and kept true to that source.

<sup>3</sup> The explanation of the financial rule of thumb was gleaned from standard publicly accessible sources in order to use the explanation closest to the public use of the rule, in particular financial advice and wellbeing websites available to the general public were mined for data.

<sup>4</sup> See Whittle et al (2014). Behavioural Economics and House Prices: A literature review.

## Financial Rules of Thumb: A review of the evidence and its implications

The financial rule of thumb <sup>2</sup>	How it works (explanation from a financial advice/wellbeing/lifestyle site, blog or publication) <sup>3</sup>	How it works from a behavioural perspective	Initial analysis against the Hoy & Tarter Framework	Score
<b>Retirement 10% rule</b>	Simple number to use and ensure that if you do not know what to save, you are saving something even as your income changes.	Circumvents issues with myopia, but needs to be used in conjunction with other rules of thumb to avoid the spike of temptation. Particularly around housing or short-term consumption where the social norm may be to forgo pension saving to 'get on the property ladder'. However, this is often done to maintain the level of immediate consumption as well as purchase property. Allows for a satisficing rather than optimum approach. While a simple percentage target offers a blanket approach to help the consumer move closer to a positive decision to save some of their income, it does not prompt deeper consideration of what they could save now relative to future life stages.	Satisficing, with a generally positive frame. Very simple, percentage allows for control over uncertainty and can provide a transparent commitment mechanism. However this has the danger of becoming a default, for instance 10% may become a target despite economic environments where people may need to save more.	A
<b>Student loans, loans not to exceed expected first year total wage</b>	Ensures that too much debt isn't taken out and thus affects the long term graduating financial position.	Controls for payback myopia and internal justification mechanisms, though may be skewed by anchoring effects or over-optimistic expectations of earnings potential in near-future.	Satisficing over optimising, but with a negative frame, little uncertainty control and lacks simplicity (what is the realistic expected salary for a student outside a vocational course?).	C
<b>Saving, 6-month emergency fund rule</b>	A simple savings ambition.	A direct instruction to make consumption sacrifices.	Satisficing, with a generally positive frame. Very simple, though less control over uncertainty. Can provide a transparent commitment mechanism.	B
<b>Pay off debt before saving for retirement</b>	People pay off high-interest debt before making low-interest savings.	This rule of thumb counters our psychological tendency to take comfort in savings. There is a phenomenon demonstrated in data where individuals keep long term savings in low-interest-paying accounts whilst still holding high-interest debt, rather than using the savings to pay off the debt.	Satisficing with a positive frame, a simple rule with some control over uncertainty. Needs more control over the default, but is transparent.	B

The financial rule of thumb <sup>2</sup>	How it works (explanation from a financial advice/wellbeing/lifestyle site, blog or publication) <sup>3</sup>	How it works from a behavioural perspective	Initial analysis against the Hoy & Tarter Framework	Score
<b>Spend 3 times income on home</b>	Ensures you can afford house and mortgage repayments.	The immediate consumption bias is constrained by rules limiting the value of large purchases to a function of income or savings. Recognising that payback of a loan/mortgage is underweighted by consumers, rules which give clear guidance on borrowing/repayment amounts can promote system 2 effects.	Satisficing and simple, needs more emphasis on the default and framing. Can be transparent.	B
<b>Pay off smallest debt first</b>	Paying off the first debt should motivate further debt repayment.	Helps with our behavioural tendency to continue successes. We will get a positive feeling from the initial success of clearing a small debt and so will be more motivated to continue. Creates a prompt to take action and build confidence as the consumer begins to engage with debt repayment but also raises the risk of detriment as it does not help consumers to prioritise repayment between priority debts, non-priority debt and debt emergencies.	Satisficing with a positive frame, a simple rule with some control over uncertainty. Needs more control over the default, but is transparent.	B
<b>Own your own age in bonds</b>	Simple rule of thumb to motivate savings.	This can avoid our inherent tendency to overtrade whilst reigning in our risk seeking behaviour. Especially unconscious risk taking associated with macro cycles.	Satisficing and simple with clear default and transparency aspects, counters uncertainty.	A
<b>Credit cards lead to overspending</b>	Avoid credit card debt.	This is a simple rule of thumb which counters our preference for immediate consumption, however this preference is very strong and an instruction to avoid credit card debt could prompt a movement to more expensive debt eg high-cost-short-term credit.	Satisficing with a positive frame, a simple rule with some control over uncertainty. Needs more control over the default, but is transparent.	B

## Financial Rules of Thumb: A review of the evidence and its implications

The financial rule of thumb <sup>2</sup>	How it works (explanation from a financial advice/wellbeing/lifestyle site, blog or publication) <sup>3</sup>	How it works from a behavioural perspective	Initial analysis against the Hoy & Tarter Framework	Score
<b>Always take employer pension contributions</b>	Encourages sensible retirement saving.	This rule of thumb encourages a sacrifice of immediate consumption by reminding us of the extra cost of not saving and focuses the consumer on maximising the opportunity open to them from their employer, raising the possibility of harnessing loss-aversion. This also includes semi-transparent commitment mechanisms as the social norm of longer term saving post auto enrolment becomes clear.	Satisficing, with a generally positive frame. Very simple, though less control over uncertainty. Can provide a transparent commitment mechanism.	B/A
<b>Never break into retirement savings</b>	Presents a red line to protect retirement savings, primarily from a US context.	Controls our tendency for immediate consumption aided by the structures and protections around pension saving in the UK	Satisficing, simple with a direct frame. Does not factor in uncertainty, but a clear commitment mechanism is present.	B
<b>Never co-sign a loan</b>	Presents a sensible financial precaution to avoid taking on others and unexpected debt.	Controls our 'desire to help' without considering the consequences; a simple self-management rule to interrupt and challenge social pressures of reciprocity or duty to family or friends by refocusing the consumer of risks they are taking as an individual.	Satisficing, Simple with a direct frame. Does not factor in uncertainty, but a clear commitment mechanism is present. However, this financial rule of thumb in particular does not factor in economic environments.	B
<b>Never pay interest on something which depreciates in value over time</b>	Prevents a double financial payment on a purchase.	Again, reins in our preference for immediate consumption, this time by activation of a system 2 type process.	Satisficing and simple, needs more emphasis on the default and framing. Can be transparent.	C
<b>Don't mess with the tax authority</b>	Always claim what is correct, and invokes a clear authority to highlight the importance of knowing one's own tax obligations.	Activates a system 2 response coupled with a social norm of tax morale.	Optimising and potentially complicated. Counters the default.	B/C
<b>In general, save an emergency fund first; pay off high-interest debt second; and begin investing (at the same time you pay down remaining debt)</b>	A simple easily understood savings plan.	Fulfils a heuristic need to deal with complexity and time as well as covering payback myopia and nominal value illusion. Provides a clear set of prioritised actions to consumers, however the specific priorities will not be universally applicable across the full diversity of life stages and contexts.	Satisficing, with a generally positive frame. Very simple, though less control over uncertainty. Can provide a transparent commitment mechanism	B

The financial rule of thumb <sup>2</sup>	How it works (explanation from a financial advice/wellbeing/lifestyle site, blog or publication) <sup>3</sup>	How it works from a behavioural perspective	Initial analysis against the Hoy & Tarter Framework	Score
<b>If you're not willing to pay cash for it, don't buy it on credit</b>	Prevents unwise and/or unaffordable purchases.	A direct instruction to make consumption sacrifices.	Satisficing and simple, though does not factor in uncertainty.	B
<b>The credit card debt rule</b>	If you have credit card debt your first step to a better financial position should be to pay down that debt.	A rule of thumb which controls for our tendency not to see real, but nominal values of debt. Furthermore, this instruction controls for the behavioural tendency to think about debt in a linear rather than compound fashion.	Satisficing with a positive frame, a simple rule with some control over uncertainty. Needs more control over the default, but is transparent.	B
<b>The automobile sanity rule</b>	The value of all your automobiles should be less than half your financial income as cars depreciate very quickly.	The immediate consumption bias is constrained by rules limiting the value of large purchases to a function of income. Recognising that pay back of a loan/mortgage is underweighted by consumers, rules which give clear guidance on repayment amounts can promote system 2 effects.	This is satisficing rather than optimising, the default is not considered, and it does not control for uncertain events, it does however provide a commitment mechanism.	C
<b>The mansion is not a great investment rule</b>	Mortgage shouldn't be more than twice income – this prevents over-commitment and constrains the immediate consumption bias.	The immediate consumption bias is constrained by rules limiting the value of large purchases to a function of income. Recognising that pay back of a loan/mortgage is underweighted by consumers, rules which give clear guidance on repayment amounts can promote system 2 effects.	Satisficing and simple, needs more emphasis on the default and framing. Can be transparent.	B
<b>The intelligent insurance rule</b>	Insurance firms are profit-making, small emergencies should instead be covered by savings, why have a small emergency fund and insurance against small emergencies?	Attempts to activate system 2 effects by assuming that the insurance purchase is system 1.	Optimising rather than satisficing, however the substrata is satisficing.	C
<b>Grandpa's rule: save 10% of your income</b>	The quintessential financial rule of thumb, simple, and straightforward.	Counters our preference for immediate consumption with an easy to follow instruction. Acts as a clear heuristic, but as a rule needs to occasionally be broken which can lead to restart issues.	Satisficing, with a generally positive frame. Very simple, percentage allows for control over uncertainty and can provide a transparent commitment mechanism	A

## Financial Rules of Thumb: A review of the evidence and its implications

The financial rule of thumb <sup>2</sup>	How it works (explanation from a financial advice/wellbeing/lifestyle site, blog or publication) <sup>3</sup>	How it works from a behavioural perspective	Initial analysis against the Hoy & Tarter Framework	Score
<b>The rule of 72</b>	Divide 72 by the rate of return on an investment to determine how many years it will take to double in size.	Tend not to have a behavioural component, but allows quick calculation of return, allowing a system 2 process to take place in system 1, potentially facilitating quicker comparison and allowing for improved decision-making. However there are issues around this rule creating artificial confidence and thus an endowment bias where the investor over rates their skills.	Satisficing rule, but with potential pitfalls regarding simplicity. A positive frame, but potentially prone to uncertainty.	C
<b>The leaky bucket rule</b>	Fund charges can have a large negative effect over time. Behaviourally we tend not to account for charges, only headline growth. This rule prompts wider consideration of charges on outcome.	More of an information spike to prompt system 2 analysis.	Satisficing and simple, though does not factor in uncertainty. Attempts to address the default.	B
<b>The Young and Bold, Old and Cautious rule</b>	An investment rule of thumb, designed to lessen risk taking closer to retirement.	This can avoid our inherent tendency to overtrade whilst reining in our risk seeking behaviour, especially unconscious risk taking associated with macro cycles.	Satisficing, simple with a direct frame. Does not factor in uncertainty, but a clear commitment mechanism is present.	B
<b>The When can I retire rule</b>	Suggested that this is 30 years from starting to save, as this allows for growth over time.	This can act as a positively framed anchor to encourage savings behaviour, however there are also issues with realistic outcomes and creation of a pessimism bias if this is assumed by the individual to be a social norm.	Satisficing rule, but with potential pitfalls regarding simplicity. A positive frame, but prone to uncertainty.	B
<b>The 4% withdrawal rule</b>	A simple withdrawal in retirement rule.	Counters our preference for immediate consumption by putting a constraining function on a now accessible large pot of money, thus avoiding the spike of temptation of a large purchase. The figure stems from the finding of Bengen (1994) which tested different withdrawals across historic rates of return. The clear quantum of 4% is clear and consistent guide but may neither be sustainable or feel feasible in a persistent low return environment.	Satisficing and simple, though does not factor in uncertainty.	B

The financial rule of thumb <sup>2</sup>	How it works (explanation from a financial advice/wellbeing/lifestyle site, blog or publication) <sup>3</sup>	How it works from a behavioural perspective	Initial analysis against the Hoy & Tarter Framework	Score
<b>Spend less than you earn</b>	The simplest rule of thumb.	Counters our preference for immediate consumption with an easy to follow instruction. Acts as a clear heuristic, but as a rule needs to occasionally be broken which can lead to restart issues.	Satisficing, with a generally positive frame. Very simple, allows for control over uncertainty and can provide a transparent commitment mechanism	A
<b>Keep it simple</b>	Aimed at lifestyle choices, this rule is designed to promote prudence.	Constrains our preference for immediate consumption and at the same time attempts to remove complexity and thus choice paralysis, inertia and cognitive bandwidth issues. However, it may only provide limited use in navigating inherent complexity of products including mortgages and pensions.	Satisficing and simple with clear default and transparency aspects, counters uncertainty, once the decision has been made. For instance, making the decision to save is aided by simple options but not directed by it.	B
<b>Don't invest in the unknown</b>	The complexity involved may lead to indecision, cognitive dissonance and unwanted outcomes.	Attempts to remove complexity and thus choice paralysis, inertia and cognitive bandwidth issues.	Satisficing rather than optimising, counters uncertainty.	B
<b>Pay cash for cars</b>	Cars depreciate and interest on a debt is static, therefore the differential increases and the loan becomes more expensive	Recognising that pay back of a loan/mortgage is underweighted by consumers, rules which give clear guidance on repayment amounts can promote system 2 effects. However, excludes wider considerations of both consumption-smoothing and consumer protections.	This is satisficing rather than optimising, the default is not considered, and it does not control for uncertain events, it does however provide a commitment mechanism.	C
<b>Pay off your plastic</b>	A common rule of thumb, aimed at removing credit card debt first. This prioritises credit card debt to make it more tangible and visible in money management.	Recognising that pay back of a loan/mortgage is underweighted by consumers, rules which give clear guidance on repayment amounts can promote system 2 effects, namely engaging with the task of tackling historic credit balances.	Satisficing with a positive frame, a simple rule with some control over uncertainty. Needs more control over the default, but is transparent.	B
<b>Learn about indexing</b>	Understand your products, costs and outcomes.	This rule promotes system 2 thinking countering biases present in system 1. However it relies on the system 2 approach and complexity being accessible for all investors.	Optimising, but counters uncertainty.	C

## Financial Rules of Thumb: A review of the evidence and its implications

The financial rule of thumb <sup>2</sup>	How it works (explanation from a financial advice/wellbeing/lifestyle site, blog or publication) <sup>3</sup>	How it works from a behavioural perspective	Initial analysis against the Hoy & Tarter Framework	Score
<b>Stop comparing yourself to others</b>	Comparisons with imperfect information are flawed. Other people generally present their best outcomes to public view.	Humans tend toward a herd-like behavioural bias where we attempt to fit in with others, however our view of others tends to be more positive than in reality due to our lack of information and their tendency to promote their successes. However, provides broad lifestyle/wellbeing messages that consumers won't necessarily read across to personal finance.	Satisficing with a positive frame, a simple rule with some control over uncertainty. Needs more control over the default, but is transparent.	B
<b>Be aware of your finances: people should think about what their future standard of living will be.</b>	A basic, simple and strong rule of thumb for holistic financial wellbeing. Many financial advisers claim people don't think about planning for their retirement – until it is too late.	A key behavioural approach, simply the act of knowing how much money you have/can spend, can constrain your behaviour.	Satisficing and simple, countering uncertainty and the default. A positive frame with the potential for a transparent commitment mechanism.	A
<b>Splurge on what matters, cut back elsewhere</b>	Abstinence leads to frugal fatigue, so some (small) reward is required for financial restraint.	A rule of thumb designed to prevent 'frugal fatigue', a bias where prudence eventually results in a financial 'blow out' (typically at Christmas time).	Satisficing rule, but with potential pitfalls regarding simplicity. A positive frame, but potentially prone to uncertainty.	B
<b>Pay yourself first</b>	Sets a simple saving and commitment mechanism, incorporating positive framing and mental accounting and making longer-term future more immediate by framing saving as spending on your future self.	A direct instruction to make consumption sacrifices, incorporating mental accounting and reframing saving as a priority expenditure on your future self.	Satisficing and simple, countering uncertainty and the default. A positive frame with the potential for a transparent commitment mechanism.	A
<b>Budgeting 50/30/20</b>	A budgeting rule comprising of living (50% of income), saving (30% of income) and (extra/luxury) spending (20% of income). The action of this rule of thumb is to allow a luxury to prevent frugal fatigue.	A direct instruction to make consumption sacrifices.	This is satisficing rather than optimising, the default is not considered. In terms of simplicity this asks for three processes and does not control for uncertain events, it does however provide a commitment mechanism.	B

The financial rule of thumb <sup>2</sup>	How it works (explanation from a financial advice/wellbeing/lifestyle site, blog or publication) <sup>3</sup>	How it works from a behavioural perspective	Initial analysis against the Hoy & Tarter Framework	Score
<b>Buying a vehicle (ten year rule)</b>	Keep a new car for a minimum of 10 years to maximise the value after depreciation.	Recognising that pay back of a loan/mortgage is underweighted by consumers, rules which give clear guidance on repayment amounts can promote system 2 effects. After a relatively short amount of time, payback can simply be incorporated into the financial situation as the norm, increasing temptation to spend again on a car. This rule prevents this and multiple debts for an automobile.	Satisficing with a positive frame, a simple rule with some control over uncertainty. Needs more control over the default, but is transparent.	B
<b>Homeownership 20% deposit rule</b>	It ensures you don't spend more on a home than you can afford, it can lower your monthly mortgage cost, and it can increase your chances of being approved for a loan. You also may not have to pay higher interest and additional charges.	The immediate consumption bias is constrained by rules limiting the value of large purchases to a function of income. Recognising that pay back of a loan/mortgage is underweighted by consumers, rules which give clear guidance on repayment amounts can promote system 2 effects.	Satisficing, though a potential negative frame. Does not control for uncertainty, but does provide a benchmark and commitment process.	B
<b>Retirement Income Rule</b>	You should save 20 times your gross annual income.	This heuristic addresses the complexity of long term saving and time.	Satisficing and simple though does not counter uncertainty.	B
<b>A saver should ask: 'Am I a stock or a bond' person?</b>	Some people may put their savings in safe but low-return government bonds; others prefer to take risks, hoping for bigger returns. The best choice depends on amount saved, job security, and age.	This can firstly avoid our inherent tendency to overtrade and become over confident, whilst reining in our risk seeking behaviour, especially unconscious risk taking associated with macro cycles.	Satisficing, though could be more simple. This has quite a positive frame, but does not counter uncertainty.	B
<b>Retirement has priority over children's university education</b>	Savers should not be put off saving for the long-term by additional and immediate needs of older children, with the logic that student finance is available there are no retirement loans available.	Aids self control, over the immediate consumption of altruistic behaviour; speaks to a very specific life-stage for parents but may not be potent enough to counter social/familial norms to provide support for children of any age.	Simple and satisficing, but with a potentially negative frame.	B
<b>Windfalls should be held for a period of time before spending them</b>	The initial excitement of a windfall will diminish allowing you to make better financial decisions.	Aids self control counting the immediate consumption bias, especially as a windfall will take time to psychologically become part of an individual's wealth calculation rather than be seen as an extra.	Satisficing and simple, countering uncertainty and the default. A positive frame with the potential for a transparent commitment mechanism.	A

## Financial Rules of Thumb: A review of the evidence and its implications

The financial rule of thumb <sup>2</sup>	How it works (explanation from a financial advice/wellbeing/lifestyle site, blog or publication) <sup>3</sup>	How it works from a behavioural perspective	Initial analysis against the Hoy & Tarter Framework	Score
<b>Subtract your age from 100 to determine your stock allocation</b>	It gives you a general idea of what your asset allocation should look like, based on your age.	This can firstly avoid our inherent tendency to overtrade and become over confident, whilst reining in our risk seeking behaviour, especially unconscious risk taking associated with macro cycles.	Satisficing, though could be more simple. This has quite a positive frame, but does not counter uncertainty.	B
<b>Keep 5–10% of your portfolio in gold.</b>	Appropriate asset structure.	In theory this should counter risk seeking behaviour developed through overconfidence. However, it is possible that this low risk buffer will create a mental account of low- vs. high-risk investments, increasing risk taking on aggregate.	Satisficing and simple, but does not take into account the economic environment.	B
<b>To retire comfortably, your investments must generate 70% to 80% of the income you received while working</b>	A simple saving rule of thumb	Circumvents issues with myopia, but needs to be used in conjunction with other rules of thumb to avoid the spike of temptation. Allows for a satisficing rather than optimum approach, but does not promote specific engagement-orientated actions, nor can it directly tackle optimism bias about likely retirement income.	Satisficing and simple, though does not factor in uncertainty.	B

## Do these financial rules of thumb counter behavioural biases?

This section assesses whether the financial rules of thumb work with as a mechanism of improving financial decision-making. Chapter 1 explains the factors that impinge upon decision-making, including complexity, information overload, temporal positioning and a preference for

immediate consumption. Heuristics provides short-cuts through this complexity to allow consumers to make a decision. Financial rules of thumb can be developed to enable consumers to make improved financial decisions.

Utilising the typology presented above, the common issues and biases around decision-making can be identified and the rule of thumb can be assessed as to how it counters these issues. This can be seen in the table below:

Type of financial rule of thumb	Key behavioural biases and issues	How a financial rule of thumb can counter the bias
<b>Saving for a short-term buffer</b>	Preference for immediate consumption	A direct instruction to make consumption sacrifices
	Immediacy and justification of consumption	A direct instruction to make consumption sacrifices
<b>Long term (pension) saving</b>	As above and issues around temporal valuation	Circumvents issues with myopia, but needs to be used in conjunction with other rules of thumb to avoid the spike of temptation
	Complexity of decision-making	Allows for a satisficing rather than optimum approach
<b>Managing investments</b>	Behavioural biases associated with investment – for instance the disposition effect	Prevents individual behavioural decision-making issues with clear instruction
<b>Budgeting</b>	Preference for immediate consumption	A direct instruction to make consumption sacrifices
<b>The use of credit</b>	Preference for immediate consumption	Credit allows us to further our preference for immediate consumption, in essence borrowing from tomorrow for today. Clear restrictions on use can address this
	Payback myopia, we tend to underweight the impact of paying back a debt, as well as failing to adequately estimate interest	Recognising that pay back of credit is underweighted by consumers, rules which give clear guidance on repayment amounts can promote system 2 effects
<b>Making large purchases (car and home)</b>	Lack of restraint, we tend to want to consume as much as possible	The immediate consumption bias is constrained by rules limiting the value of large purchases to a function of income
	Payback myopia	Recognising that pay back of a loan/mortgage is underweighted by consumers, rules which give clear guidance on repayment amounts can promote system 2 effects

## Rules of thumb and financial capability

In the following, we consider whether there is a link between employing rules of thumb by individuals and their financial capability.

Clancy et al (2001), investigates the impact of financial education for those on low incomes. In particular, the subjects of their study are given a choice of different government saving programmes, each programme associated with different numbers of hours spent on financial education. It turns out that financial education matters in that an increase in savings is positively correlated with the time spent on this type of training.

### Key Point: Financial Capability:

The broad dimensions of financial capability, in particular 'financially capable behaviours' are of crucial importance for the understanding, design and implementation of financial rules of thumb.

Another important contribution to the literature investigating the relationship between financial capability and the use of rules of thumb is provided by Lusardi and Mitchell (2007). They demonstrate that people who make their retirement plans are those with both high financial and political literacy. In that way, they confirm that there is a positive link between people's interest in current events and personal finance. The same authors also examine the relationship between retirement planning and exposure to economics courses. The existence of a positive relationship between the two variables would confirm that retirement planning is fostered by financial literacy. Therefore, if a financial rule of thumb can replicate financial literacy outcomes it should have similar effect, that is financial literacy and financial rules of thumb can get to similar outcomes via different routes.

A major problem that all the discussed studies face is self-selection, which makes the obtained results more subjective. Hence it is not clear whether financial education is the way to improve the decision-making process for all individuals. The question is: what can be done to facilitate this process, such that it yields the desired outcomes?

## Financial rules of thumb: potential for detriment?

While one-size-fits-all financial advice might not always produce the best outcome possible, financial rules of thumb are largely thought to be beneficial, helping us to avoid cognitive biases, dampen emotions and escape from the grip of procrastination. In the context of saving for retirement, for example, the positive consequences associated with simple financial rules of thumb, such as hold a diversified portfolio of assets, save sooner than later (thus exploiting the power of compounding), take advantage of tax incentives and employer pension contributions, are incontrovertible.

It is conceivable, however, that the use of simple rules of thumb to short-cut complex evaluations and decisions might lead to unintended and detrimental consequences. In other arenas, for example, the use of league tables as a means of condensing performance measurement across a range of evaluation criteria down to a single metric has been shown to have potential dysfunctional consequences for investment behaviour (Keasey, Moon and Duxbury, 2000). While there is little evidence to date, it is possible too that the adoption of financial rules of thumb might also have unintended consequences, either for the individual following the rule or, if the adoption of specific rules of thumb is wide-spread, society more generally.

Sticking with saving for retirement, a frequently occurring rule of thumb is '100 minus your age' used to determine the percentage of one's assets that should be held in equities. While this rule does not provide specific advice concerning the optimal allocation of a given individual's portfolio across asset classes, it does follow the generally voiced wisdom of financial advisors, that an individual should reduce their exposure to risky equity the closer they are to retirement (Duxbury, Hudson, Keasey and Summers, 2005).

For a second example, we turn to rules of thumb concerning borrowing or debt. We know from past survey evidence that a substantial proportion of society struggle from time to time with their finances (Ironfield-Smith, Keasey, Summers, Duxbury and Hudson, 2005) MAS (2016: 20) estimate that there are 8.25 million over-indebted adults in UK. Rules of thumb that advocate borrowing, or prioritise living for today, such as ‘You Only Live Once’ (‘yolo’) might well contribute to the social normalisation of debt and a growing willingness to use credit/debt to fund consumption rather than to save. Over time, even seemingly positive rules such as “payoff outstanding credit card balances each month” might promote the wider acceptance and normalisation of debt, creating social norms and contributing to an increase in aggregate debt accumulation. In an examination of cultural meanings as integral mechanisms in the normalisation of credit/debt, Peñaloza and Barnhart (2011) consider that simple heuristics or rules contribute to the process. They conclude that financial literacy programs focused on educating people about credit card fees and compound interest rates are insufficient to reverse high levels of credit/debt, instead they advocate education programs that help consumers understand how they use credit/debt to become independent, meet the expectations of their social class, and as security when experiencing life transitions (ie, the meanings they place on the use of credit/debt). It is important that consumers recognise their vulnerabilities in using credit/debt to fulfil the needs of independence and of social class.

Other rules of thumb that have become embedded in society, such as ‘you only live once’ or ‘you can’t take it with you’, while at first glance might appear neutral or even flippant, may well be associated with substantive behaviour and subsequent negative consequences for certain sections of society<sup>5</sup>. Research into ‘baby boomers’, by Innovate UK and ScienceWise, notes that more so than the generations before them “(b)oomers believe in spending their wealth rather than in saving and passing it on to future generations: [known as] SKiINg – Spending the Kids’ Inheritance.” (Innovate UK, 2016). Thus baby boomers, having benefited from intergenerational transfers from the generations before them, are actively choosing to spend their wealth to the detriment of future generations, in part driven perhaps by such rules as ‘you only live once’ or ‘you can’t take it with you’.

Ultimately, however, it is difficult to assess the extent to which baby boomers behave differently from other generations, because so many changes have occurred in recent decades (such as increased life expectancy, fewer children, and increased divorce rates).

The effects of a rule of thumb can vary between people: for example, the extent to which people pay attention to financial information is influenced by the extent to which they feel accountable (Kennedy, 1993; Kruglanski and Freund, 1983). Yet making individuals aware of the hindsight bias (seeing the outcome as predictable in the aftermath of events) does not prevent them from acting in accordance with the bias (Fischhoff, 1982; and Quattrone et al, 1984). Similarly, people tend to be overconfident to the extent that their ‘best guess’ and ‘best case’ judgements coincide (Newby-Clark et al, 2000). Moreover, Dhar (1997) finds that when available alternatives are quite similar, individuals tend to defer their choice as compared with alternatives that differ in their attractiveness to a large extent. Furthermore, Gigerenzer and Hoffrage (1995) show that people make better judgements regarding frequencies than probabilities. Thus it seems recommended for policy makers to present agents with choices involving frequencies rather than probabilities or, alternatively, to train people how to translate problems involving probabilities into those entailing frequencies.

Despite these powerful insights relating the policy design to rules of thumb, it is important to emphasise that in most cases people apply financial rules of thumb prior to conscious thought, even in the presence of policy instruments designed to prevent such a behaviour (Bechara et al, 1997). Zajonc (1980) supports this argument by showing that people usually have an affective reaction to a stimulus before reacting cognitively. Therefore, psychological differences may have a larger impact than financial literacy of individuals, thus the scope for financial rules of thumb for impact is increased.

<sup>5</sup> It is worth noting here that the evidence or rule of thumb causation is limited at best, the picture is far more ‘chicken and

egg’, with rules of thumb potentially being explanations for observations in some people and causes of behaviour in others.

## Behavioural insights for financial rules of thumb

The behavioural economics present in financial rules of thumb are of particular interest to this study. Generally a financial rule of thumb achieves a positive outcome via one of three mechanisms:

1. The financial rule of thumb counters a specific behavioural bias, for example savings rules counter the immediate consumption preference.
2. The financial rule of thumb simplifies complex decisions reducing information overload and cognitive bandwidth issues, for example rules of thumb around saving something approximating the right amount rather than the precise maximum possible.
3. The financial rule of thumb encourages people to make a conscious decision about money, rather than deciding on 'autopilot', for example rules around property which counter prevalent autopilot assumptions regarding the supposedly risk free, guaranteed win, 'take the biggest mortgage you can' present in the economy.

## A Behavioural Impact Case

A study presented in several online financial wellbeing sites and blogs, concerns the simple action of physically writing down the monthly finances, using old-fashioned pen and paper, with claims that this encourages financial responsibility. With one site suggesting that this could help reduce spending by up to 60% with another suggesting that physically writing how much would be saved in 5 years if the savings plan was more likely to work. These sites suggested that the use of PC software removed 'connection' from the process<sup>6</sup>.

There is a clear behavioural explanation for this, firstly the act of writing down income and expenditure does not rely on any of the aids present in software, for example auto sum, forcing a more system 2 approach. Secondly, the potential inconvenience of having to write down income and expenditure can be seen as an obstacle to spending. An example is given of a successful window-shopping trip taken without bringing pen and paper as well as the act of writing creating a 'further cost' (in terms of effort) and prompting a further evaluation of a purchase.

Thus the simple act of writing down income and expenditure information, can provide a behavioural mechanism for an increase in financial wellbeing, both through activation of budgeting processes and system 2 effects from avoidance of inbuilt aids which may facilitate a system 1 approach.

### Key Point: Chapter 2

The evidence collected suggests that financial rules of thumb which are simple, well timed and address a behavioural bias leading to poor decisions or absence of decision-making are likely to be more successful.

<sup>6</sup> Note that software on a PC has been shown to have a different behavioural impact from apps, say on a smartphone. Smartphone apps have been shown to be effective at promoting behavioural change (see Glynn et al, 2014) and so the potential is there for

them to bridge the gap and provide effective financial wellbeing tools.

## Chapter 3: Design and Implications of Financial Rules of Thumb

### Key learning points from Chapter 3

1. Some rules of thumb last longer than others. In some cases, a rule of thumb is passed from one generation to the next (from parents to children, or from experienced employees to new employees). It seems likely that a person will only pass on a rule of thumb if they consider it is reliable. Generational rules of thumb often struggle to adapt to new economic environments. An example is 'Grandpa's Rule', which recommends a person should save 10% of their income (Esplin, 2016).
2. Communication of financial rules of thumb is vital to the successful design, for instance understanding when in the lifecycle process saving becomes practical, as suggestions to save when it is 'impossible' can result in long-term negative outcomes.
3. Modification of existing rules of thumb can have issues and lead to confusion, for instance appropriate income levels and house purchases.

## Introduction

This chapter provides a general discussion about transmission mechanisms for 'rules of thumb'. It begins by discussing how a rule of thumb can be communicated from one person (or organisation), to other people.

Linnainmaa (2011: 1632) claims that households making financial decisions cannot solve complicated mathematical problems or process information flawlessly; so a household must use a simplified model, based on rules of thumb. McHugh, Ranyard & Lewis (2011) discuss household borrowing – they claim many people misunderstand the relationship between 'Annualised Percentage Rate', and the total cost of taking a loan.

Psychologists such as Kahneman have analysed rules of thumb. There are several reasons to use a rule of thumb: sometimes, a household does not have enough information to make an optimal choice; on other occasions, the household does have enough information, but it would take a long time to analyse the available information (Shleifer, 2012: 1084). A third reason for a rule of thumb is that it gives an answer which is close to optimal, without requiring the decision-maker to analyse too much detail: "Since all real decisions are made under conditions of imperfect information, calculation down to the last decimal place is pointless" (Baumol & Quandt, 1964: 23). Weber (2000) investigates whether or not households use rules of thumb, when deciding how much to consume (or save) from their current income. There is widespread empirical evidence that many households do use rules of thumb. Shleifer (2012: 1086) claims phrases such as 'the trend is your friend' are used by investors to make decisions on buying and selling shares: "Heuristics provide a natural way of thinking about these phenomena."

Perhaps rules of thumb are vital for consumers, when making important decisions. Shleifer (2012: 1083), referring to Kahneman's insights, claims "people do not just get hard problems wrong, as bounded rationality would predict; they get utterly trivial problems wrong because they don't think about them in the right way". If households adopt effective rules of thumb, they can develop a framework in which good decisions are made as a matter of routine. Adoption of an appropriate rule of thumb could prevent households making costly mistakes. Jabbar (2011: 447), discussing rules of thumb, stated "these mental shortcuts may be considered rational or efficient; relying on previous experience or intuition can lead to optimal decisions in certain situations".

Rules of thumb are not limited to households: firms, and professional investors, also use them. For example, Menchero, Wang & Orr (2012: 40) claim that financial practitioners use the rule of thumb of 'scaling up' the expected risk by 20%, to avoid bias; if even financial professionals find rules of thumb helpful, think how much they could help ordinary

people – who have much less knowledge of financial opportunities. When designing or publicising a rule of thumb, we should consider the behavioural bias or other problem which it is intended to resolve. It would be appropriate to design a different type of rule of thumb if the problem was ‘too much information’, rather than a different problem such as ‘inertia’. Sometimes, it may be appropriate for a new rule of thumb to think more carefully about an important subject (such as how much to save), which might be achieved by a rule requiring a person to collect more information before applying a simple rule; in other cases, the rule of thumb might aim to achieve the opposite – to reassure a decision-maker they don’t need to think about a subject at all, provided they adopt a simple rule.

**Key Point: Social Financial Rules of Thumb.**

Often financial rules of thumb develop organically. Ones which are ‘common sense’ are trialled, and if successful, adopted by society. Evidence suggests an effect where due to greater self control in later lifecycle points, a societal norm of financial wellbeing is developed which becomes a rule of thumb passed on to those at different lifecycle points.

Often organic financial rules of thumb can become outdated, and as such benefit may be found in updating them, especially if they become the default as per the Hoy & Tarter framework.

If every household or every person must adopt rules of thumb to make decisions, how will these rules of thumb be learnt? One possibility is that people will automatically adopt rules of thumb from people they meet, because this is an effective way to learn how to cope in a complicated environment. When it comes to adopting a new rule of thumb, we cannot tell the extent to which a person is more likely to listen to a family member or neighbour, rather than to a financial expert. For example, consumers could cut their costs easily – by reallocating their own debt from high-interest-rate credit cards to low-interest-rate credit cards, or by repaying credit card debt (Stango & Zinman, 2009); once these ideas are suggested (by a friend or relative), the rule of thumb may immediately be adopted as ‘common sense’. Consumers use rules of thumb, even without encouragement by firms and other organisations: this may explain how consumers change their spending patterns, in response to changes in government spending (Galí, López-Salido, and Vallés, 2007).

According to Milkman, Rogers and Bazerman (2008), it is common for a person to feel conflict between what he/she wants to do, and what he/she feels they should do: this is often referred to using the ‘elephant and rider’ metaphor (Blanding, 2014), where each person has two aspects: an ‘elephant’, which is irrational and interested in short-term goals; and a ‘rider’, who has long-term goals and makes rational decisions. In such situations, a rule of thumb may

help a person stick to a particular plan: for example, regarding keeping to a diet (John, Norton & Norris, 2014), or in the context of personal finance this helps us understand savings behaviour better. Individuals often feel as though they should be saving or saving more, yet they want immediate consumption. It is often tempting to internally justify what we want to do, for instance an individual convincing themselves an expense is justified to make up for a disappointment.

Winter, Schlafmann & Rodepeter (2012) claim simple decision rules are effective, in that they cause only small amounts of inefficiencies – and help a person decide, despite saving motivations changing over a person’s life (saving can be for long-run consumption smoothing, and for short-run insurance against income shocks).

Weber (2000: 498) suggests some households may use rules of thumb, whereas other households do not, regarding decisions on how much to save or consume. Some people may lack confidence because they consider themselves unsuccessful in financial decisions (and may stop making financial decisions, with harmful consequences: Linnainmaa, 2011: 1633-4); such people may be grateful for a new ‘rule of thumb’. Behavioural psychologists warn us that humans tend to make mistakes in many financial decisions; economists claim that better information can improve decision-making. More specifically, the economic concept of ‘bounded rationality’ suggests it is unrealistic to expect every person in the UK to make optimal financial decisions. Rules of thumb have potential to improve the lives of each UK citizen, from better financial decisions; more ability to control behavioural biases affecting consumer spending; more saving; making plans and decisions about for retirement saving and income needs later life; and reducing household debt (Europe Economics, 2016; Money Advice Service, 2016).

## Generational Financial Rules of Thumb

This section discussed intergenerational transmission of rules of thumb. It considers the possibility that a parent (or other family member, such as a grandparent) could pass on one or more rules of thumb to children. We could consider this as ‘childhood socialisation’, by which a parent’s culture is passed on to their children. The role of parents in their children’s lives is often discussed (eg Jabbar, 2011: 449). Butler, Giuliano & Guiso (2016) suggest that values we learn from our parents influence our trust in others with money and business. At the same time, the Money Advice Service report ‘It’s time to talk: young people and money regrets’ (2014) suggests that near-to-peers, i.e. those who are relatable in age and credible but also recognised as more experienced can be a powerful stimulus for young people to think about how they could do better in their own lives.

#### Key Point: Behavioural Intervention.

A period of transition can be a good point for intervention. A financial rule of thumb aimed at the parent rather than the individual could be impactful.

A financial rule of thumb of parental intervention prior to the transition event in the child's life could address early debt accumulation via hedonism.

Thaler and Shefrin (1981: 397–8) discuss 'internal' rules of thumb – ie, rules adopted by a person voluntarily as a form of self-control. Such rules could include a 'debt ethic', to avoid all borrowing. They claim that such rules are "learned as much as chosen. Rules like the debt ethic are learned from parents and other models, which suggests that there will be differences in the use of rules depending on social class, education, and age".

Thaler and Shefrin (1981: 401) also claim some people are more at risk than other people, of overspending or even bankruptcy: "The best predictors of which individuals will fall into which groups are probably related to family background, since the family is the most likely place for the individual to learn (or not learn) the rules and norms necessary to overcome the self-control problems."

Linnainmaa (2011: 1632) claims some investors profit from high-frequency trading, by learning from their experiences – they use naive reinforcement learning heuristics. Such traders appear to teach themselves – they do not rely on guidance from older generations.

King, Montenegro & Orazem (2012: 40-1) claim "in a steady state, where there are no shocks, traditional rules of thumb are efficient", suggesting that financial rules of thumb will only be effective in stable macro-economic conditions and that when they are perhaps most needed, say in a recession they work less well. Other writers appear to have a very different view: for example, Geddes, Lueck & Tennyson (2012: 851) argue that rules of thumb are likely to be especially important for decisions which are made only occasionally in life, such as the age at which a person will leave school and seek employment. In such cases, a child or young adult may be reliant on advice from their parents. For other decisions, such as when to retire, parental advice may be less helpful.

Thaler and Shefrin (1981: 398; 403-4) imply self-control is learned in two stages: initially taught by parents, and then later adopted by the child. Hence, they claim, we can observe differences between decision-makers of different ages, because it takes time for young people to develop self-control.

## Firms' communication to customers

This section examines the communication of financial rules of thumb, by commercial firms, to their current or potential customers. Such communication is generally seen as a conscious choice by a firm; it is presumably intended to increase the firm's profits, but this does not necessarily mean the communication is harmful to consumers. Communication could be by advertising; but there are other mechanisms by which a firm communicates with customers including offers, letters and direct correspondence.

Households adopting rules of thumb may be making inefficient choices (Love, 2013). One possibility is that there is a zero-sum game: if consumers make mistakes, there is scope for firms to make more profit (for example, if people take out more insurance cover than they need). Another possibility is that firms and customers may both be harmed by an unwise rule of thumb: for example, if house-buyers choose a mortgage which is four times their annual salary but find repayments are too high, the household may be unable to repay the mortgage – causing problems to the household and to their bank. It would be appropriate for rules of thumb to be informed by empirical evidence, such as the UK ‘Financial Capability Survey’ (Money Advice Service, 2016). DiCenzo (2007) discusses choices regarding saving & investment (in USA), claiming that firms steer customers towards a preferred choice: “many participants seem to simply accept plan defaults set by corporate plan sponsors ... The path of least resistance is paved by the plan sponsor” (DiCenzo, 2007: 1). A rule of thumb to accept the default plan, referred to by behaviourists as an ‘anchor’, may not be optimal for the customer (DiCenzo, 2007: 12).

One way firms can encourage rules of thumb is to publish information in particular ways. For example, financial ratios give helpful insights into assets, and households can adopt the rule of thumb that they should aim for a particular ratio (Harness, Finke & Chatterjee, 2008). Regarding saving for retirement, Love (2013) found households use rules of thumb such as:

- save 10% of your pre-tax income, before retirement
- when saving, the percentage of your wealth should be ‘100 minus your age in stocks’
- withdraw 4% of your savings each year, in retirement.

### Key Point:

Care should be taken to avoid herd following of a financial rule of thumb. For instance the creation of a savings rule may create a social norm around this to the detriment of debt repayment and/or (remembering our preference for immediate consumption) actually increase personal debt.

It would be expected that any rule of thumb is imperfect; Baumol & Quandt (1964: 41) advise firms to assess each rule of thumb they adopt, in order to clarify the range of situations in which that rule is appropriate. Consumers should consider if the rule of thumb is appropriate for them and their finances and policy should be aware of consumer accessibility to them, for instance percentage calculation issues.

## Financial rule of thumb design

This section discusses how a new ‘rule of thumb’ could be designed by a government agency. This could include creation of a completely new idea; or modification of an existing rule of thumb; or adoption of an idea already used in a different context (for example, a rule of thumb already used in another country). This section deals with financial rules of thumb; this document assumes a broad definition of the term ‘financial’, to include short-term financial issues such as budgeting (eg, how much cash is needed to manage this week?), and long-term issues such as planning (eg, is it appropriate to put a larger fraction of savings into a fixed-term account, gaining a higher interest rate but not permitting the money to be withdrawn immediately?). Burtless (2004: 18) implies that rules of thumb are more likely to be used for short-term decisions, than for long-term decisions.

The assumption of this section is that the design process is top down. But it should be borne in mind that the government or any single financial services provider does not have a monopoly of new ideas or reach, and confidence of consumers in any new rule of thumb introduced will (in a sense) be in competition with rules of thumb and heuristics developed by others, such as commercial firms (including financial firms); non-profit organisations such as charities; and rules invented by an individual himself/herself.

Developing new ‘rules of thumb’ could be seen as a service to the UK population; evidence summarised in this report shows that adoption of a rule of thumb is often a more efficient way for people to make financial decisions. An increasing body of evidence (in economics, finance, psychology, etc) shows that rules of thumb often help to counteract human biases, and promote appropriate action. Designing new rules of thumb, or adopting existing advice, is only part of the task: the general public need to be informed of these recommendations.

As the world becomes increasingly complex, each person is faced by many decisions (for example, a shopper walking into a large supermarket is faced by many choices regarding what he or she purchases). If it is possible to encapsulate the most important factors into a simple rule of thumb, a government might be able to improve decision-making – potentially helping everyone affected by those decisions. A rule of thumb can have different advantages: if a decision-maker hasn't got enough information to make an optimal choice; or if he/she has so much information that it would take too long to analyse it (Shleifer, 2012: 1084). There is empirical evidence that rules of thumb can improve decision-making. For example, Drexler, Fischer and Schoar (2014) found rules of thumb effective for bank employees, in the Dominican Republic. Rules of thumb help workers to understand a reasonable retirement income replacement rate (Hershey and Jacobs-Lawson, 2012). Bower (2014) found rules of thumb improve complex financial decisions. Rules of thumb can improve decision-making, by helping to control behavioural biases affecting consumer spending; saving; and retirement planning (Europe Economics, 2016). Menchero, Wang and Orr (2012: 40) claim that financial practitioners use the rule of thumb of 'scaling up' the expected risk by 20%, to avoid bias. Theodos et al (2016) argued that, "(r)esults indicated that rules of thumb can be effective at altering consumer behavior and that they can be delivered at a very low cost". The Consumer Financial Protection Bureau (2016: 7) suggests rules of thumb are an important part of every young person's education: "To be financially capable, individuals must be able to understand and apply financial knowledge. Individuals also have to acquire healthy money habits, norms, and rules of thumb."

Before informing people about a newly designed rule of thumb, it is advisable to test the rule in a variety of circumstances. One way to assess a possible new rule of thumb is to look at past data, and assess whether or not the new decision rule would have worked successfully (Baumol and Quandt, 1964: 25-6). However, when deciding on a rule of thumb, Baumol and Quandt (1964: 24) argue the designer should consider not just whether a decision rule gives a good answer on average: it is important to also consider how the decision rule would operate in a range of circumstances. Also, as Bower (2014: 26) noted: "Business heuristics are not without risks; a rule of thumb that works well at first can misfire as circumstances change."

To conclude this section, economists can offer some advice to a person who intends to devise a new financial rule of thumb; some of these ideas are discussed above. It is important to be careful in designing a new rule of thumb; and also important to check the rule of thumb has the intended effects.

## Implications of 'new' financial rules of thumb

This section considers likely implications for any new rules of thumb that a UK government agency may choose to invent or adopt. There are various reasons why a new financial rule of thumb could be helpful. One reason is that publicising a rule of thumb makes decision-making agents aware that there is a choice to be made: decisions such as how much to save (for retirement) might not be considered by household members. Another possible benefit is to speed up decision-making, because a rule of thumb tends to make a decision easier. Another advantage is that it may help people to make better decisions: better for themselves, or for society, or both.

Perhaps a new financial rule of thumb will have little or no influence, even if it is well designed. There is a chance that the people who are the intended audience for a new rule of thumb will never hear the message. All of us are bombarded with information nowadays – such as advertisers wishing to sell their products, or news agencies trying to increase their share of the market for news. Even if the proposed rule of thumb is well advertised, many people may not notice the new idea – or may not invest the time to learn more about what the rule says, or when it should be applied.

Another possible reason for ineffectiveness is that people may hear about a new financial rule of thumb, but decide not to adopt it. There are many possible reasons: perhaps the rule of thumb seems to be steering people towards a behaviour which they do not want to adopt. People may have already developed their own rule of thumb as a simple shorthand, to reflect and summarise their own previous decisions (Jabbar, 2011: 446).

If we see rules of thumb as a reflection of an individual decision-maker's thought processes, it may be very difficult for an external agency to impose a different rule of thumb: why should a person make different decisions, just because the government is now suggesting a new approach? One possibility is to choose ideas which seem self-evident, when they are suggested – for example, Theodos et al (2016: 22) advise that it is often better to pay in cash than by card, because using a credit card raises the cost by 20% on average.

It is possible that a newly-designed rule of thumb may do more harm than good. This could happen in various ways: the rule of thumb might have been designed inappropriately, encouraging behaviour which seems undesirable – at least to some people. Alternatively, a rule of thumb may work well in some situations, but have drawbacks if applied to other decisions (perhaps decisions not considered by the designers of the rule of thumb). Such problems apply to many choices made by governments (and other organisations): it is very difficult to anticipate the economic situation the UK will be in, after a few years. King et al (2012: 40-1) suggest simple rules of thumb may work effectively at times where little change occurs, but can be inappropriate if there are sudden changes in the economy.

It is difficult for economists to know how much effect, if any, results from people using rules of thumb to simplify their decision-making. Kollmann (2012: 568) suggests rules of thumb may explain some observed human behaviour; but the same behaviour might be explained by other processes. Gali et al (2004) suggest a fraction of consumers may follow a simple rule of thumb. Sahm et al (2012: 216) consider possible implications of changes in government policy; they wrote that in standard economic models based on rational, unconstrained and fully engaged consumers, the details of a fiscal stimulus would be “immaterial”, that is if we all made ideal decisions regardless, policy changes are simply incorporated into perfect decision-making– but “it might matter if, for example, many households follow rules of thumb”. This implies a possible interaction between different government policies and the potential for government policies and rules of thumb to pull against each other – which might confuse consumers and minimise the impact of any new rules of thumb.

Linnainmaa (2011: 1632) appears to accept that households often use a rule of thumb regarding purchase of financial assets; but suggests that in practice, their rules of thumb have little or no effect on the household (compared to more a careful decision-making process).

## Chapter Conclusion

The evidence for the design and communication of financial rules of thumb is limited; however there is evidence for behavioural design being an effective process. Financial rules of thumb around knowing one's financial position as well as keying into behavioural effects such as commitment mechanisms can lead to better outcomes. Communication of financial rules of thumb suggest that trust is particularly important in the adoption of any financial rule of thumb, this is vital in design of communication strategies as is an awareness of the dynamic nature of trust. The design and communication any new financial rules of thumb should consider how the messages could be embedded in social and peer-to-peer and near-to-peer communication in the longer term.

### Key Point:

The design of financial rules of thumb must include design of their communication.

Design implications include the need to harness behavioural effects.

## About the authors

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## Appendices

### Methodology

The methodology for the financial rules of thumb evidence review is presented below:

### Keyword Analysis

Keywords were formed via various focus type groups and designed to give a complete overview of a subject or rule of thumb. Boolean search techniques were used to maximise the evidence in any particular area.

For example:

“Rule of Thumb” AND/OR “evidence base” AND/OR “heuristic” AND/OR “process”

“Rule of Thumb” AND/OR “evidence base” AND/OR “heuristic” AND/OR “process”

“Rule of Thumb” AND/OR “evidence base” AND/OR “heuristic” AND/OR “process”

“Rule of Thumb” AND/OR “evidence base” AND/OR “heuristic” AND/OR “process”

“Rule of Thumb” AND/OR “evidence base” AND/OR “heuristic” AND/OR “process”

Continuing until saturation.

### Timeframe

Generally for the evidence review the timeframe remained uncapped. However for areas which presented a wealth of evidence or a disproportionate amount of older evidence, remembering the view of generational financial rules of thumb, a time-filter was applied with a general (though not exclusive) date of 2008.

### Type of Literature

The literature searched comprised of academic literature, industry reports and findings and publicly accessible financial guidance websites and financial guidance/wellbeing blogs. This allowed the study to utilise the financial rules of thumb and data used by the public.

### Impact

The impact or reach of the literature was assessed through a citation analysis where relevant, or in the case of newer literature an assessment of the standing of the authors, organisation or publication.

### Robustness

The robustness of the literature is primarily relevant for empirical and or evidence based studies. Much of the evaluation of rules of thumb is based on insufficient evidence such as small scale non-generalizable qualitative interviews or evaluation of undergraduate psychology students. As a criteria of the evidence review is to inform for the design of financial rules of thumb, non generalizable evidence such as small scale interviews were treated as able to provide insight, but not guidance with regard to evaluation and design of financial rules of thumb.

### Database Choice

The evidence base was generally built from Business Source Premier, Emerald, Science Direct and Google Scholar with supplementary grey material from targeted web searches.

### Methodology Summary

The methodology produces a database which collects appropriate evidence for the evaluation, assessment and design of financial rules of thumb.