

The impact of behavioural economics and finance on retirement provision

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ABSTRACT

The significant shift from defined benefit to defined contribution retirement funds in South Africa has led to many fund members bearing responsibility for a range of risks. Many of these risks, such as those related to investment, longevity and cognitive deterioration are unavoidable. Another category of risk is that related to the choices made by government, employers, trustees, advisors and/or individuals at either national, scheme or individual level. These choices may also pose a threat to a member's financial wellbeing in retirement. Behavioural economics and finance helps to explain the choices made by these stakeholders in the retirement industry. The authors explain this concept in the context of industry stakeholders and the unique South African economic and demographic landscape, focusing on defined contribution retirement funds. Key behavioural insights applicable to the retirement industry are explored and, where practical, illustrated by stakeholder behaviour. Possible ways to harness these insights in order to improve retirement wellbeing are then discussed.

KEYWORDS

Behavioural economics; behavioural finance; heuristics; retirement; annuitisation; choice architecture

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1 INTRODUCTION

1.1 The South African retirement landscape has changed significantly. The dominance of defined benefit (DB) funds has waned in favour of defined contribution (DC) funds. Most DB funds are balance-of-cost funds where the employer bears the majority of risk in the fund. In contrast, members bear the majority of risk in DC funds. Longevity, investment and expense risks have been passed to members in most cases. These risks, although open to mitigation, are unavoidable.

1.2 A shift to greater member choice has accompanied the shift to DC funds (Thaler & Benartzi, 2007). Members may be given choices on, amongst other things, the level of contributions and risk benefits, underlying investments and annuity type. This choice has, in the authors' opinion, led to an erosion of the ability of the institutional features of a retirement fund to manage individuals' systematic irrationality in savings and investment behaviour, part of the economic rationale underlying retirement funding identified by National Treasury (2012a). The risk that an individual's behaviour poses to their retirement outcome is an important one.

1.3 The increase in member choice may be accompanied by increased confusion and, potentially, an increase in member behaviour that may be categorised as irrational from a purely economic point of view. Under the economic life cycle model, households are presumed to want to smooth consumption over their life cycle (Thaler & Benartzi, 2004). Consumption smoothing is also one of the underpinning tenets of retirement funding (National Treasury, 2012a). However, as the statistics below show, South Africans seem to be doing a poor job of smoothing consumption into retirement:

- Trustees estimate that only 24% of members will be able to maintain their standard of living in retirement (Sanlam, 2015a).
- Research shows that 45% of pensioners experience a shortfall between their monthly income and expenses, while only 43% believe that they have saved enough capital to last the rest of their lives (Sanlam, 2015c).
- The average member in the Alexander Forbes Umbrella Fund is expected to retire with a retirement income of only 43.4% of their pre-retirement income (Alexander Forbes, 2015).
- Just under half the pensioners surveyed (45%) believe that they will run out of money during retirement (Old Mutual, 2013).

1.4 Where does this disconnect between theory and practice lie? The life cycle model implicitly assumes that households are:

- cognitively capable of maximising their lifetime utility function
- have sufficient willpower to do so, and
- favour future consumption over immediate consumption temptations (Thaler & Benartzi, 2004).

1.5 Based on the high levels of household debt as a percentage of disposable income in South African households (South African Reserve Bank, 2014) and the above statistics, these assumptions do not seem to hold in South Africa. Amongst the factors that may contribute to a lack of saving are widespread financial illiteracy, high unemployment and low life expectancy. However, South Africa is not the only country exhibiting insufficient household saving.

1.6 Thaler & Benartzi (2004) identify behaviours such as a lack of willpower, procrastination and time inconsistent behaviour—weighting current and near-term consumption heavily—amongst the reasons for American households saving below the life cycle rate. Behaviour influences outcomes. They consider the possibility that households saving below the ideal life cycle rate are making a mistake. This reasoning is backed by the finding that, although it is difficult to determine the appropriate savings rate, households reported that they would like to save more, but lack the self-control to do so.

1.7 Human beings do not always behave as economic theory predicts. The remainder of the paper explores this inconsistency, how it filters through to the retirement industry and how it may be used to positively influence individual retirement outcomes.

2. BEHAVIOURAL ECONOMICS AND FINANCE

2.1 Behavioural economics and its related field, behavioural finance, incorporate elements of psychology in order to understand how ‘real’ people make financial decisions. This is in contrast to standard economics which assumes that people make purely rational decisions based on all relevant information (Ariely, 2008).

2.2 Mullainathan & Thaler (2000) defined behavioural economics as “the combination of psychology and economics that investigates what happens in markets in which some of the agents display human limitations and complications”.

2.3 According to Sowinski, Schnusenberg & Materne (2011), behavioural finance is a relatively new branch of financial research with origins in behavioural economics. It acknowledges that individuals may not always behave in what is considered their own best interest. Behavioural finance aims to provide explanatory models for commonly observed deviations from classic economic theories, including expected utility theory.

2.4 Mitchell & Utkus (2004) noted that “These new notions of how people make decisions have spurred the rapidly growing fields of behavioural economics and finance.”

2.5 Behavioural economics and finance has particular relevance to the retirement industry. By understanding how people make decisions, stakeholders such as regulators, employers and trustees can then consciously address behavioural challenges as opportunities to improve

the retirement outcome of members. Richard Thaler refers to this as ‘nudging’ (Thaler & Sunstein, 2009).

3. KEY CONCEPTS

Behavioural theory postulates that when people are faced with potentially complex choices, many cope by adopting simple heuristics, or rules of thumb. This makes it easier for them to cope with the amount (or lack) of information they need to consider, their cognitive limitations and the time they have to make a decision. Though often useful and accurate, heuristics can however lead to systematic biases which, along with a person’s preferences, influence how they make decisions and may lead to suboptimal choices. The explanations of the behavioural concepts given in this section are often an amalgamation of definitions by several authors. These sources are given after the explanation.

3.1 Anchoring and Adjustment

3.1.1 Anchoring is a cognitive bias that draws upon the tendency of people to attach or anchor their thoughts around an initial reference point. Subsequent estimates are biased to this anchor, which unduly influences future decision-making. This reference point could be an initial set of conditions, something that the person is familiar with or have no logical relevance to the decision at hand. Once an anchor is in place, the decision maker makes adjustments away from that anchor in the direction and magnitude that they feel is appropriate in light of emerging information. There is a bias toward interpreting additional information around the anchor (Tversky & Kahneman, 1974; Botha et al., 2014).

3.1.2 For example, Tversky & Kahneman (1974: 1128) state that:
different starting points yield different estimates, which are biased toward the initial values. We call this phenomenon anchoring.

3.1.3 While Thaler & Sunstein (2009: 23) explain that:
You start with some anchor, the number you know, and adjust in the direction you think is appropriate. So far so good. The bias occurs because the adjustments are typically insufficient.

3.1.4 As these adjustments are often insufficient, the initial anchor or reference point carries disproportionate weight in subsequent decision-making. This bias is often used in negotiations where the seller sets the initial price offered, which then provides an anchor for the rest of the negotiation so that prices lower than the initial price seem more reasonable even if they are still higher than what the item is worth.

3.1.5 In a study by Dan Ariely, an audience was asked to write the last two digits of their social security number. They were then asked to consider what they would pay for items whose value they did not know, such as wine, chocolate and computer equipment (Ariely, Loewenstein & Prelec, 2003). They were then asked to bid for these items. Audience members with higher two-digit numbers submitted bids that were between 57 percent and 107 percent higher than those with the lower social security numbers, which had become their anchor. Similar results were obtained in earlier studies by Tversky & Kahneman (1974).

3.1.6 In Benartzi, Previtro & Thaler (2011), it is suggested that the rate at which members adjust their anchor depends on their cognitive skills.

3.2 Naïve Diversification (1/n Heuristic)

3.2.1 Benartzi & Thaler (2001: 96) found that when people are confronted by simultaneous choice, some diversify in a naïve fashion. An extreme example of this is the 1/n diversification heuristic.

3.2.2 Consistent with the diversification heuristic, the experimental and archival evidence (Benartzi & Thaler, 2001) suggests that some people spread their retirement contributions evenly across the investment options irrespective of the particular mix of options in the plan.

3.2.3 Simply put, according to the 1/n heuristic some people allocate 1/n of their contributions to each of the n available investment options (putting an egg in each basket). Therefore a member following such a rule in a retirement fund with mostly high equity investment options would inadvertently have a higher total equity holding compared to a similar member in a retirement fund with mostly low equity investment options.

3.2.4 As an example Zweig (1998) quotes Harry Markowitz, a pioneer in the development of modern portfolio theory, when he had to choose his split between equities and bonds:

I should have computed the historical co-variances of the asset classes and drawn an efficient frontier. Instead, I visualised my grief if the stock market went way up and I wasn't in it—or if it went way down and I was completely in it. My intention was to minimize my future regret. So I split my contributions fifty-fifty between bonds and equities.

3.2.5 While such an approach could in some instances produce a sensible result, it does not, in itself, assure members of a sensible investment strategy and may not produce the most optimal long-term outcome.

3.2.6 One solution would be to offer a well-diversified multi-managed portfolio to members. However as Thaler & Benartzi (2007) state “It seems that participants are reluctant to stick with one fund, even when that fund already contains several different funds.”

3.2.7 There are some practical constraints to the 1/n heuristic. When the number of funds increases and the 1/n heuristic becomes increasingly impractical to apply, people then tend to adopt a different strategy, including ‘giving up’ (Thaler & Benartzi, 2007). Alternatively, when the number of funds make mental arithmetic more difficult, for example, if the number of funds is three instead of two or four, people may adopt some other arithmetically simple division, such as half, quarter and quarter (Thaler & Benartzi, 2007).

3.3 Representativeness or Similarity

3.3.1 Representativeness is a cognitive bias that refers to an over-reliance on stereotypes. People tend to associate similar or identical situations where, in fact, there are important differences. Representativeness can often be a helpful heuristic as experience

gained is used to efficiently categorise and process new data (Tversky & Kahneman, 1974; Botha et al., 2014).

3.3.2 Thaler & Sunstein (2009) offered the following explanation:

We think a 6-foot-8-inch African-American man is more likely to be a professional basketball player than a 5-foot-6-inch Jewish guy because there are lots of tall black basketball players and not many short Jewish ones ... Stereotypes are sometimes right!

3.3.3 However, the representative heuristic and consequent behaviour, such as interpreting new information as confirming pre-existing notions, can lead to serious errors. Two examples of such errors, base-rate neglect and insensitivity to sample size, are explained below.

3.3.4 Base-rate neglect refers to attaching too much weight to similarities between events and ignoring other factors. Consider the following example (Tversky & Kahneman, 1974):

Linda is 31 years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations.

Interviewees were then asked to pick the more likely statement, either statement A, "Linda is a bank teller" or statement B, "Linda is a bank teller and is active in the feminist movement." They typically give a greater probability to B, which is statistically impossible given that it requires both conditions to be true. Option B is picked as elements of Linda's description may sound like attributes associated with feminists.

3.3.5 Insensitivity to sample size or 'law of small numbers' refers to drawing conclusions from very small datasets. For example, a relatively inexperienced retirement fund trustee may base his expectations of future returns on the returns earned over the last few years.

3.4 Availability

The availability heuristic is a mental shortcut that influences people's judgement purely based on how easy it is to think of an example. This often tilts any decision towards the latest information, without necessarily assessing its accuracy (Botha et al., 2014). In assessing the risk of an event, people ask themselves if they can easily recall an example of such a risk occurring (Thaler & Sunstein, 2009). There are a number of categories of availability bias that are applicable to investors: retrievability, categorisation, limited experience and personal resonance.

3.4.1 RETRIEVABILITY (OR EASY TO RECALL BIAS)

Retrievability refers to the ease with which an example can be recalled, with easily recalled information regarded as the most credible. This is influenced by advertising, publicity, word of mouth and the vividness of the example. Numerous studies have shown that people overestimate the risk of sensational risks like a shark attack or an earthquake compared to less vivid risks like pneumonia or diabetes (Botha et al., 2014; Thaler & Sunstein, 2009).

3.4.2 CATEGORISATION

Categorisation refers to how easy it is to mentally link new data to related existing information. When new data is difficult to link to existing data it may feature less prominently in decision-making. New products or ideas may take a while to be accepted.

3.4.3 LIMITED OR NARROW RANGE OF EXPERIENCE

People have a restricted frame of reference based on their own experience or on anecdotes that they have heard which they then retrieve and use in decision-making. These may influence their judgement and, for example, when investing, lead to insufficient diversification and instead sticking to investments with which they are familiar (or a reasonably similar type of investment).

3.4.4 PERSONAL RESONANCE

The degree to which information resonates with an individual's personality can also affect decision-making. For example, some investors more readily identify with a specific investment style such as value or momentum investing (Botha et al., 2014; Thaler & Sunstein, 2009; Barberis & Thaler, 2003).

3.5 Regret Aversion

3.5.1 Regret aversion (or avoidance) is an emotional bias in decision-making which occurs as a result of the desire to avoid regret when making a future comparison of 'what is' versus 'what might have been', had a different choice been made. This bias leads to indecisiveness as people fear that any action may lead to a suboptimal outcome. This indecisiveness could lead to no decision (status quo bias) or to a suboptimal compromise decision similar to the one used by Markowitz earlier in the paper. However, any decision involves risk, including that of not taking a decision.

3.5.2 In relation to investments, a person could suffer from errors in commission, regretting an investment decision or errors in omission, regretting his failure to invest. This is closely related to the status quo bias, loss aversion, decision avoidance and naïve diversification concepts (Botha et al., 2014).

3.6 Overconfidence Bias

3.6.1 Overconfidence is a cognitive bias in which a person's subjective confidence in their intuitive reasoning, judgement and cognitive abilities is greater than their objective accuracy. Overconfidence is a miscalibration of subjective probabilities. Perhaps the most celebrated better-than-average finding is Svenson's (1981) finding that 93% of American drivers rate themselves as better than the median.

3.6.2 Overconfidence may manifest itself in decision behaviour, creating an illusion of knowledge which does not exist (even an unforeseeable event may be predicted by hindsight) and creating an illusion of control. Symptoms of overconfidence in investors include wrongly attributing their success to their superior ability, leading to them become blind to negative information or to interpret new information in a way which confirms their

existing views, switching excessively between investments or holding investments that lack diversification. (Botha et al., 2014; Thaler & Sunstein, 2009; Barberis & Thaler, 2003; Ritter, 2003)

3.7 Peer Effects and Herd Behaviour

3.7.1 People learn from each other's behaviour. This can be advantageous or disadvantageous: what they learn can be valid or a misconception (Thaler & Sunstein, 2009). Rational people may sometimes ask for help from a knowledgeable expert, especially regarding a question in which they are not themselves experts (Thaler & Benartzi, 2007). However, decisions may also be influenced by inexpert peers. Dufo & Saez (2002) show that both participation and investment decisions in a retirement fund can be influenced by such peers and that there is a strong participation effect within subgroups (gender, service, status and age). An American company found that investment decisions taken by their supermarket employees were influenced by the butcher's investment philosophy (Thaler & Benartzi, 2007). Butchers are not often thought of as investment specialists.

3.7.2 Peer pressure may cause individuals to go along with the majority, even when the others in the group are strangers and their disclosed individual decisions are in opposition to what the subject believes to be true. A peer group's consumption norm greatly influences individual consumption patterns (Thaler & Sunstein, 2009).

3.7.3 Herd behaviour that is irrational and driven by emotion (greed in bubbles and fear in crashes), is often argued as one of the causes of large stock market trends. Individual investors join the crowd of others in a rush to get in or out of the market (Thaler & Sunstein, 2009) or specific sectors or shares.

3.8 Decision Avoidance

3.8.1 Research by Iyengar & Lepper (2000) found that when people were offered more choices they were often less likely to buy anything at all. Their study, comprising a number of different varieties of jam on display, tested the impact of having only six varieties compared to 24. Those passers-by who sampled the jams received a coupon for \$1 off any jam. The larger display attracted more interest than the smaller one but, when comparing purchases, people who saw the large display were one-tenth as likely to make a purchase as people who saw the small display. This suggests that choice, to the extent that it requires greater decision-making among options, can become increasingly difficult for individuals to process and ultimately is counterproductive.

3.8.2 Decision avoidance can contribute to both the selection of the status quo (in order to avoid having to make an active choice) and procrastination.

3.9 IKEA Effect

Consumers place a disproportionately high value on products they help create. This effect's name derives from a furniture manufacturer, IKEA, whose furniture comes partially assembled. By requiring purchasers to do some work, the finished product is more appreciated than if it had been sold ready for use. A parallel may be drawn between this and aiding

members to make fund choices that require some effort e.g. determining an appropriate saving level (Moses, 2013).

3.10 Mental Accounting

3.10.1 Many people separate their money into separate accounts based on a variety of subjective criteria, often to address lack of self-control. Criteria for separation may include the source of the money and/or the purpose of each account. People consequently treat these accounts as largely non-fungible and their marginal propensity to consume differs per account. According to economic theory, money is fungible, i.e. all money is the same, regardless of its origin or intended use, "... it does not come with labels" (Thaler & Sunstein, 2009). Although many people apply mental accounting, they do not realise how illogical this behaviour sometimes is. For example, consider a person who has a special 'piggy bank' with money set aside for a specific purpose, while simultaneously also having significant bank overdraft. Would it not be logical to use the money to reduce the overdraft? Depending on the reason for saving, the piggy bank may be considered too important to raid.

3.10.2 Under the behavioural life cycle hypothesis, people mentally frame assets as belonging to either: current income, current wealth or future income. This has implications for their financial behaviour. People are more willing to consume current income and treat future income more conservatively (Shefrin & Thaler, 1988).

3.10.3 The above can impact how retirement fund members invest. Some funds allow members to adopt a different strategy for existing assets in their retirement fund compared to new contributions. Similarly, investors may see their different forms of investments as separate buckets of money with a different investment goal, for example, their current retirement fund savings versus assets in a preservation fund (Shefrin & Thaler, 1998; Thaler & Sunstein, 2009; Thaler & Benartzi, 2007; Botha et al., 2014).

3.11 Hyperbolic Discounting

3.11.1 Hyperbolic discounting refers to a time-inconsistent model of discounting. People tend to show impatience for short-horizon decisions, but show more patience for long-horizon decisions. This implies a motive for consumers to constrain their own future choices to counter self-control issues (Laibson, 1997).

3.11.2 This behaviour is in contrast to the standard assumption of exponential discounting, in which patience is independent of horizon. In standard exponential models, people are equally patient at long and short horizons.

3.11.3 For example, consider the choice between:

- Question A: a dollar today or three dollars tomorrow, or
- Question B: a dollar in one year or three dollars in one year and one day?

A significant fraction of subjects will take the lesser amount today (showing a preference for a result that arrives sooner rather than later), but will wait one extra day in a year's time in order to receive the higher amount instead (Thaler, 1981).

3.12 Loss Aversion

3.12.1 Loss aversion is an emotional bias based on people's intense fear of losing what they have. People tend to strongly favour avoiding a loss over making a gain. For example, a person who loses R1 000 feels a greater level of pain than another person who wins R1 000 feels joy. According to Thaler & Sunstein (2009) a loss influences a person roughly twice as much as a gain.

- 3.12.2 Loss aversion can lead to the following in the context of investments:
- the disposition effect where investors hold on to a losing investment position for too long (in the hope that it will recover or rebound and reduce the loss) and sell winning investments positions too early (fearing that they may eventually lose their profit).
 - risk aversion or conservatism. When people evaluate outcomes which are uncertain, they attempt to reduce that uncertainty. For example, a risk-averse person might choose to put his money into a bank account with a low but guaranteed interest rate, rather than investing in equities which have higher expected returns, but also a higher risk of losing money.
 - myopic loss aversion may result when loss aversion is combined with frequent or short evaluation periods of an investment. As a result, investors who should have a long-term investment horizon become hypersensitive to short-term losses (Botha et al., 2014, Thaler & Sunstein, 2009; Kahneman, Knetsch & Thaler, 1991; Benartzi & Thaler, 1995).

3.12.3 Loss aversion (along with the status quo bias) is also closely linked to the observation of an endowment effect. That is, once you have acquired something you place more value on it. Participants in a study by Kahneman, Knetsch & Thaler (1991) were asked the value of a mug, then given the mug and offered the chance to sell it or trade it for an equally priced alternative item (pens). It was found that participants required twice as much compensation for the mug, once they had taken ownership of it, than before it was given to them.

3.12.4 A study by AARP and American Council of Life Insurers (2007) found that many American retirees are hyper loss-averse. Half (49%) the retirees would be unwilling to take a bet that offers a 50:50 chance of winning \$100 or losing \$10. Only 6% of retirees would be willing to bet \$100 with a 50/50 chance of losing their \$100 or gaining \$100.

3.13 Status Quo Bias

3.13.1 Status quo bias is a cognitive bias that refers to a strong preference for the existing state (or status quo). The current state is taken as a reference point, or baseline, and people are reluctant to move from this as the disadvantages of moving loom larger than the advantages. Some authors refer to a status quo bias as inertia (Kahneman, Knetsch & Thaler, 1991; Allianz, 2010; Hardcastle, 2012).

3.13.2 The status quo bias interacts with other behavioural concepts such as loss aversion, the endowment effect and regret aversion. All of these are relevant to prospect theory which is discussed in Section 3.15. Under prospect theory, a person weighs the potential losses of switching from the status quo more heavily than the potential gains from switching.

3.13.3 Practical examples of the impact of the status quo bias can be seen in comparing default options that require people to actively opt-in with those that require people to actively opt-out. Thaler & Sunstein (2009) consider the difference in organ donor consent rates in Austria and Germany. Germany uses an opt-in system for organ donation. Only 12% of German citizens give their consent to be an organ donor. On the other hand, 99% of Austrian citizens do not opt out of organ donation.

3.13.4 Status quo bias implies that members may remain with their initial choice of investment option, contribution rate and level of life cover even if it is no longer the optimal choice (Kahneman & Tversky, 1979; Thaler & Sunstein, 2009; Benartzi & Thaler, 2001).

3.13.5 Procrastination is a form of status quo bias. Two professors conducted an experiment concerning the existence and setting of deadlines amongst three different classes of university students taking the same course (Ariely, 2008). The first class was given the option of setting their own deadlines for submitting assignments (with an accompanying penalty if the students' own deadlines were missed), the second class were given dictatorial, temporally spaced deadlines and the third class merely had to submit their assignment before the end of term. Class grade averages were compared to determine if students procrastinate and which of the first two methods was most successful in curbing procrastination.

3.13.6 Unsurprisingly, students were found to procrastinate. Dictatorial deadlines had the most impact on curbing procrastination. Offering students a tool by which they could curb their own procrastination helped them achieve better outcomes. That said, some students in the first class appeared not to realise their tendency to procrastinate, missed their self-imposed deadlines and dragged the class average down. It was concluded that individuals who realise that they procrastinate benefit from a tool that helps them to minimise this behaviour. A tool that allows members to pre-commit to their preferred path of action may yield good results without being perceived as dictatorial.

3.14 Framing

3.14.1 Framing of choice refers to the significant impact on people's preferences of seemingly inconsequential changes in the way that an option or outcome is presented. Specifically, individuals have a tendency to exhibit inconsistent choices which vary depending on whether an option is presented in either a positive or negative frame, as a loss or a gain or as a certainty or a probability (Tversky & Kahneman, 1981).

3.14.2 For example, does '75% lean' beef sound healthier than '25% fat'? Consider a person who has a serious medical condition requiring surgery. The decision whether to undergo surgery or not may well be influenced if the likelihood of success is presented as 'of the 100 patients to undergo surgery, 90 are still alive after five years' compared to '10 are dead within five years'. The second phrase focuses on loss and we have learned that individuals are loss averse. In both of the examples, different (but logically equivalent) words and phrases lead people to change their preferences.

3.14.3 The framing of choice is a cognitive bias that impacts every facet of daily life. The option chosen is influenced by framing, often in conjunction with loss aversion. For

example, consider labelling the difference between the cash price and the price paid on credit as either a surcharge (on credit) or discount (for cash). It is easier to forgo a discount (as it is seen as a gain) than to suffer a surcharge (as this is seen as a loss).

3.14.4 The evaluation of too few factors, ignoring the bigger context, is referred to as narrow framing and may also exacerbate loss aversion (Botha et al., 2014; Thaler & Sunstein, 2009; Tversky & Kahneman, 1981; 1986).

3.14.5 People rarely make decisions in absolute terms; items are considered relative to each other (Ariely, 2008). This can be used to influence a member's choice between options as follows:

- The ordering of a list of options has an impact on which option is chosen. Most people will chose the middle of three options (Ariely, 2008). However, if asked to make an immediate choice after reading a list, individuals often pick the first option. Similarly, if asked to make a choice after some time has elapsed since reading the list, the last option may be preferred.
- People focus on comparing options which are easily comparable, discarding options that are difficult to compare. If two items are easily comparable and the third item is not, it is likely that the option which is not easily comparable will be discarded. The other two options will be compared in relative terms (Ariely, 2008). It follows that choice can be influenced by the way that options are presented. One should not present a readily comparable alternative to the option(s) that you do not wish an individual to choose, but rather ensure that there is an easily comparable, relatively inferior option to the option which you wish an individual to choose.
- People tend not to choose the most expensive option presented to them (Ariely, 2008). To increase the probability that members choose a high-value option, one should place a more expensive option on the list. Sales people have been known to exploit this behavioural trait.
- Offering something for free (which may or not have economic value to the recipient) introduces a feel good factor to a person's decision (Ariely, 2008). Adding a 'free' element to one of the options will skew member choice towards this option.

3.15 Prospect Theory

3.15.1 Prospect theory, developed by Kahneman and Tversky in 1979, is a behavioural economic theory that describes the way people choose between risky events, where the probabilities of outcomes are known. The model is descriptive: it tries to model real-life choices, rather than optimal decisions. The theory was conceived as an alternative to expected utility theory, providing a more psychologically accurate description of decision-making.

3.15.2 Prospect theory differs from expected utility theory in that utility is defined over gains and losses (i.e. deviations from current wealth) instead of net value and probabilities are replaced by decision weights. Prospect theory predicts that individuals tend to:

- Feel a loss more significantly than a similar gain (i.e. display loss aversion).
- Be risk averse when making a gain and thereby attempting to lock in a gain, but risk seeking when making a loss and thereby willing to gamble in order to avoid a loss.

— Favour a gain that is perceived to be a certainty or sure thing above a larger gain which is merely probable.

3.15.3 The above implies an ‘S’-shaped value function; the utility function is concave for gains, while it is convex and with a much steeper slope for losses—as in Figure 1.

3.15.4 Prospect theory identifies two specific thought processes: editing and evaluating. In the editing phase, alternatives are ranked according to a certain heuristic e.g. representativeness, framing, availability etc. During the subsequent evaluation stage, a reference point (where the curve changes from concavity to convexity) is designated, often the status quo. This acts as an anchor whereby a lesser outcome is treated as a loss and a greater outcome as a gain.

3.15.5 Additionally, when choosing between risky events, people generally discard characteristics shared by all the choices under consideration and focus on what distinguishes them; this tendency (or isolation effect) leads to inconsistent preferences when the same choice is described differently since choices can be framed in different ways.

3.15.6 The exact form of curve differs across cultural and geographic boundaries (Sowinski, Schnusenberg & Materne, 2011), which impacts the degree to which behaviours are exhibited in different countries. This has particular relevance to a heterogeneous country, like South Africa with its many different cultures.

3.15.7 Subsequent to this early development of prospect theory, Tversky & Kahneman (1992) developed cumulative prospect theory as a model for describing decision-making. The difference between this updated version and the original version of prospect theory is that it incorporates rank-dependent weightings which transform cumulative rather than individual probabilities. This was in response to concerns that prospect theory gave rise to violations of first-order stochastic dominance. This removes the reliance on dominance detection as part of the editing and evaluation process and also allows the updated theory

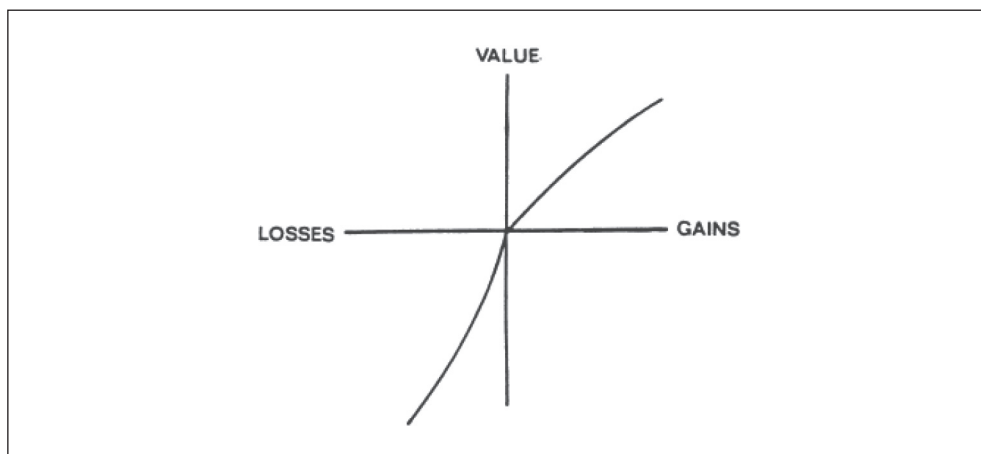


FIGURE 1. Hypothetical value function
Source: Kahneman & Tversky (1979)

to deal with more or even continuous outcomes. (Kahneman & Tversky, 1979; Sowinski, Schnusenberg & Materne, 2011; Botha et al., 2014, Barberis & Thaler, 2003; Mitchell & Utkus, 2004).

4. CRITICISM OF BEHAVIOURAL ECONOMICS AND FINANCE

The field of behavioural economics and finance is not without detractors. Some of these criticisms relate to how the observed biases are interpreted and whether it is desirable to shape peoples' choices by exploiting these biases. A selection of these criticisms can be summarised as follows:

- Fama (1998) believes observed behavioural biases in financial markets to be anomalies which are economically and statistically marginal over the long term. Most anomalies are chance results; apparent over-reaction of stock markets to price information is about as common as under-reaction to such information. This behaviour is consistent with the efficient market hypothesis.
- Hausman & Welch (2010) warn that choice architects impose their will on someone making a choice. Nudging may pose a risk to an individual's control over their own deliberations, even if some nudging is justifiable. Choice shaping may be abused by governments if it is used to influence people to make choices different to the preference they would have otherwise expressed. Yeung (2012) also comments on the autonomy-reducing character of nudges and their potential for abuse.
- Hausman & Welch (2010) favour influencing choice through rational persuasion. They state that this method respects an individual's right to choose.
- Gerd Gigerenzer, a psychologist and director of the Centre for Cognition and Adaptive Behaviour at the Max Planck institute in Berlin, believes that behavioural economists such as Kahneman present an unfairly negative view of the human mind—suggesting that, because of various observable failures in reasoning when making decisions, people are represented as incapable of choosing the best outcome for themselves—the basis of the philosophy behind nudge economics. Gigerenzer argues that people are just ill-educated in thinking about statistical probability and, with education, can become more 'risk savvy' (Adams, 2014).¹
- Whitman (2011) points out that those wishing to correct cognitive biases are also susceptible to them.

5. CURRENT INDUSTRY ISSUES

This section shows how the current environment and government incentives have been partially shaped by member behaviour. It also uses behavioural concepts to shed light on issues with which the South African retirement industry is currently grappling.

1 Adams, Tim (2014). Nudge economics: has push come to shove for a fashionable theory? *The Guardian*, 1 June 2014. www.theguardian.com/science/2014/jun/01/nudge-economics-freakonomics-daniel-kahneman-debunked, accessed August 2014

5.1 Voluntary Nature of Retirement Savings

5.1.1 South African employers are not required to sponsor a retirement fund. If employers choose to sponsor a fund, they have the option of offering membership to a certain class of employees only, excluding, for example, non-permanent staff or those very close to retirement.

5.1.2 A South African retirement fund has to enrol all new employees, who are eligible to join the fund, into the fund in order for it to be approved under the Income Tax Act and enjoy favourable tax treatment. All eligible employees at the fund's establishment have to be given the option to join the fund within 12 months. South African legislation does not permit unapproved funds financing retirement benefits.

5.1.3 It is, however, possible for an employer to have a policy of paying retirement benefits provided that these are not promised to employees and are discretionary.

5.1.4 The self-employed can save for retirement via approved retirement annuity funds. Old Mutual (2015) found that nearly 40% of working South Africans do not save for retirement via a retirement fund or retirement annuity. Similarly, 41% of those surveyed stated that their children will look after them when they are old.

5.1.5 In jurisdictions where mandatory enrolment of employees is not required in order to obtain tax concessions, such as in the United States of America, it has been found that auto-enrolment is successful in countering employees deferring signing up to the fund (Benartzi & Thaler, 2013). Employees are allowed to opt out of the fund if they wish.

5.1.6 The South African government has identified that individuals often over-consume while they are working, despite fiscal encouragement to save for retirement (National Treasury, 2012a). This suggests evidence of discounting amongst the population. Mandatory enrolment in a social security scheme for those in formal employment is being considered (National Treasury, 2007). It will reduce procrastination by introducing forced saving for a large segment of the population. Those outside formal employment will, however, not be covered.

5.1.7 Proposals to reform occupational retirement funds have been made by National Treasury. The possibility of auto-enrolment in such funds is up for discussion (National Treasury, 2012a), possibly until a broader social security scheme is put in place.

5.2 Low Contributions

5.2.1 Retirement savings simultaneously reduce the likelihood that an individual will be eligible for state old-age pension and help to finance economic growth. The South African government therefore uses tax incentives to encourage retirement savings. It was National Treasury's aim to harmonise the tax treatment of pension and provident funds while capping the contributions eligible for tax exemption, in both percentage and monetary terms. The implementation date for this harmonisation, referred to as T-day, took place on 1 March 2016. The proposed caps may be viewed by individuals and employers as an indication of the level of contributions needed to fund an adequate retirement. As can be seen in the survey results shown later in this section, percentage caps do not appear to be a strong form of anchoring. When these caps were first mooted, 87% of trustees believed that they were at such a high level that it would affect less than 5% of fund members (Sanlam, 2012).

5.2.2 Most occupational funds provide retirement and other benefits to their members. The level of contributions paid into the fund is often expressed as a percentage of pensionable salary. Contributions towards retirement savings are usually determined by reducing gross contributions by expenses paid out of the fund, e.g. administration fees and contributions earmarked for the provision of contingency benefits.

5.2.3 Retirement benefits provided under DB funds are predefined. If the current contribution rate is insufficient to meet these benefits, the valuator will recommend a modified contribution rate. Increases to the costs of contingency benefits have seen net contributions towards retirement benefits reduce over time in some funds. Gross contributions would have had to increase to ensure retirement benefit security. To counteract this, some DB funds made rule changes to cap the percentage of contributions allocated towards risk benefits. Rising employer costs were one of the contributing factors towards the conversion of occupational funds from DB to DC.

5.2.4 The net contribution made towards retirement benefits has a direct impact on the level of benefits received under a DC fund. To ensure that the proportion of members' contributions allocated to risk benefits is not too high, some funds cap the cost of risk benefits as a percentage of pensionable salary. With the impact of HIV/AIDS becoming more manageable, the percentage of funds using caps has steadily decreased from 2008 to 2014. In 2014, 35% of standalone DC funds capped the cost of life cover while 39% capped the cost of disability benefits (Sanlam, 2014a).

5.2.5 Net contributions to retirement funding for standalone funds, as shown in Table 1, have improved over the last five years and have been above 12% since 2011.

TABLE 1. Contributions to retirement funding—standalone funds

All results as percentage of pensionable salary	2014 survey	Average over last 5 years
Employer contributions	9.66% ²	9.91%
Employee contributions	6.44%	6.05%
Total contributions	16.10%	15.96%
Less group life cover	1.59%	1.63%
Less disability cover (lump sum)	1.01%	1.16%
Less fund administration costs	0.98%	0.95%
Net contribution to retirement funding	12.52%	12.23%

Source: Sanlam (2014a).

5.2.6 It is noteworthy that pensionable salary may be expressed as a percentage of total earnings and may exclude such items as commission and bonuses. In a recent survey

2 The 2015 summary booklet of the Sanlam Benchmark Survey shows the employer contribution significantly increasing to 11.09%. The booklet notes that this is probably due to an increase in the number of large funds incorporated in the survey. Employer contributions to umbrella funds increased minimally over the period.

(Sanlam, 2014a), it was found that pensionable salary on average amounts to 83% of total remuneration, with 14% of funds using a figure below 70% of total remuneration. Such definitions have the effect of reducing the level of retirement contributions and, consequently, benefits. Individuals, who are basing their contribution levels on heuristics, e.g. a belief that contributing 15% of salary will lead to a comfortable retirement, may not realise that they are not contributing at the suggested level as they are applying the 15% rule to a lower basis.

5.2.7 Some DC funds offer members a choice from a range of contribution rates: 29% of funds allow members to specify their employer contributions, while 39% allow members to set their own contributions (Sanlam, 2014a). Trustees set a default contribution rate for members who do not wish to make a choice. The default may act as an anchor for the contribution decision, especially if it is the first rate mentioned to the members.

5.2.8 Given the time pressure on a new employee and their lack of expertise when deciding on their contribution rate, one might expect new employees to review their decisions subsequent to joining a company. However, Sanlam (2014b) found that less than 6% of new employees (who had joined a company in the last 12 months) reviewed the decisions made during their induction programme. Reasons for this status quo bias range from not being at the employer long enough, being satisfied with their choices to not having enough knowledge. Of new employees, 11.5% indicated that they did not review their choice simply because they were happy to have some retirement benefits; they were not particularly interested in the detail.

5.2.9 Members may exhibit discounting behaviour by choosing the lowest permitted contribution rate in order to maximise current consumption. The degree to which members do this may vary according to income levels. Old Mutual (2015) has found that wealthier South Africans are more likely to increase their levels of savings and prioritise saving for retirement.

5.2.10 Attempts to improve contribution rates through education have generally had disappointing results (Thaler & Benartzi, 2007).

5.2.11 The 2007 Budget proposed the creation of a social security scheme providing for a contribution rate of between 13% and 18% of the earnings of formally employed individuals (National Treasury, 2007). A wage subsidy is under consideration that would subsidise social security contributions for low-income earners so as not to overburden the labour market. If implemented, the proposal will counteract discounting behaviour. If the contribution rates are applied to total remuneration, and allowance is made for UIF, then the proposed contribution rates will be broadly consistent with the survey results from Sanlam (2014a).

5.2.12 As is currently the case for most occupational funds, only a portion of the contributions to the social security scheme will be allocated toward retirement funding. Scheme retirement benefits are intended to supplement the state old-age pension, which may no longer be subject to a means test.

5.2.13 Whether the total retirement benefit that is expected to accrue after a full employment record under the proposed social security scheme can be viewed as adequate will depend on the scheme's contribution rate and benefit requirements on implementation

and on an individual's viewpoint. On the other hand, a mandatory contribution of 13% of earnings would have a large impact on take-home pay for those not currently saving for retirement.

5.3 Low Levels of Preservation

5.3.1 There is currently no legislation requiring preservation of retirement benefits on pre-retirement withdrawal from a retirement fund. There are tax incentives to retain such money within a tax-approved vehicle, but many prefer to receive a taxed cash benefit. Trustees have indicated that they see this lack of preservation as the biggest mistake that members can make in saving for retirement (Sanlam, 2015a).

5.3.2 Sanlam (2015a) found that funds estimate that 72% of their members withdraw their retirement savings in cash when terminating employment (as opposed to transferring their savings to another fund or becoming a paid-up member). Alexander Forbes (2015) report the average preservation rate to be 8.9% in their umbrella fund, with those members younger than 25 having the lowest preservation rate.

5.3.3 Given the very low number of members preserving their savings, one might wonder if there are systemic biases towards members taking their savings in cash. However, 86% of trustees believed that their employer's human resource processes do not have a built-in bias towards non-preservation (Sanlam, 2013).

5.3.4 When surveying retirement fund members who have withdrawn their savings in cash when changing employment (Sanlam, 2015b), the top five uses given were settling short-term debt (credit and store cards), paying for living expenses, home improvements, starting their own business, and education. The reality is that once members spend their retirement savings, they can never rewind the clock and make up for the years of compounding returns that they have lost.

5.3.5 Of the current retirement fund members who withdrew their retirement savings in cash, 49.3% stated that they did not realise how much tax they would pay on withdrawal, and 45.3% of these members also did not appreciate the impact of non-preservation on their eventual retirement outcome. Furthermore, 61.3% of these members have regretted withdrawing their savings in cash (Sanlam, 2015b).

5.3.6 Retirement funds have responded to this problem by:

- providing relevant information to members (78%),
- arranging for financial counselling (42%),
- designing their forms and procedures to increase the likelihood that members opt for the preservation strategy (25%), and
- offering a default preservation strategy (15%).

5.3.7 Sadly, 7% of funds do nothing. When asked whose responsibility it is to encourage preservation, trustees feel that preservation is the member's responsibility, followed by the employer and then the fund trustees. Only 4% believed it was the government's responsibility (Sanlam, 2015a).

5.3.8 The South African National Treasury is concerned about the current lack of

enforced preservation on pre-retirement withdrawal (National Treasury, 2012a). It is seen as encouraging short-sighted member behaviour. They are proposing that funds nudge members to save for the long term by creating appropriate defaults within the fund. It is proposed that funds will be required to identify a default preservation option either in the fund or externally. Members may opt out of this internal fund transfer and take a cash benefit only if they have taken financial advice. The proposals recognise that, if a form of preservation is mandated, it may be necessary to allow a degree of access to accumulated retirement funds in the absence of a comprehensive social security safety net for employees. Unemployment benefits are only payable for eight months. Given South Africa's high unemployment rate, it may be difficult for the previously-employed to find jobs.

5.3.9 The National Treasury's proposal regarding preservation has been through a number of iterations. Following the latest feedback, National Treasury amended their proposal—which is currently under consultation—as follows (National Treasury, 2014):

- Introducing a *de minimis* requirement, i.e. small amounts do not need to be preserved.
- Limiting withdrawals to one withdrawal per tax year.
- Reviewing of the tax treatment of pre-retirement withdrawals to ensure fairness and to discourage withdrawals for frivolous reasons.
- Any withdrawals before retirement will reduce the amount that can be paid in the form of a lump sum at retirement to minimise the erosion of retirement benefits by early access.

5.4 Chosen Retirement Age

5.4.1 The Income Tax Act (South African Government, 1962 as amended) specifies the normal retirement date for members of pension and provident funds as the date on which members become entitled to retire from employment for reasons other than sickness, accidental injury or incapacity. Members of retirement annuity and preservation funds have a normal retirement age of 55. These provisions prohibit members from accessing their funds in a tax-efficient manner before retirement. It can be seen as a nudge from government to counter discounting.

5.4.2 Under the lifecycle hypothesis, individuals can solve the complex problem of when to retire via optimisation. This is unlikely to be adopted in practice. Many individuals are likely to follow the anchor set by reaching the retirement age at their current employer, or the earliest age at which members can retire from an occupational fund.

5.4.3 Even given South Africa's high mortality rate, men and women who reach retirement at age 65 are projected to live another 16 to 20 years respectively, of which seven to nine years will be in relatively good health (Alexander Forbes, 2013).

5.4.4 One may therefore expect fund members to remain employed for as long as possible to compensate for low contributions and general lack of preservation during their working lifetime. However, the results of a number of surveys have disproved this. Although the most popular retirement age for new employees is still 65 (Sanlam, 2015a), a pensioner survey found that 64% retired at age 60 or earlier (Sanlam, 2015c).

5.4.5 These figures are consistent with the following survey findings from Old Mutual (2013):

- the average age at which members would like to retire is 59.8,
- the average age at which members think they can afford to retire is 63, and
- the average age at which members plan to retire is 61.3.

5.4.6 On average, members plan to retire earlier than they think they can afford to. The gap between when members want to retire and when they think they can afford to retire is narrowest for more wealthy members. On average, members believe that their savings need to last them another 17.1 years (Old Mutual, 2013).

5.4.7 These statistics seem counter-intuitive in the face of increasing longevity in retirement. They show that retirement ages have not moved much since 1916 when the German national old-age social security system had a retirement age of 65 (reduced from a normal retirement age of 70 at the system's inception). Where retirement ages have changed, they have mostly been lowered. In Sanlam's first study in 1981, more than half the funds used a retirement age of 65 for males and 60 for females (Sanlam, 1981). As was shown earlier, 65 is still the most popular retirement age for new employees. Perhaps employers are anchored to their current retirement age by the widespread historic use by employers of age 65 for retirement.

5.5 Level and Type of Annuitisation

5.5.1 The Income Tax Act (1962) states that a maximum of one third of the benefits accrued under pension and retirement annuity funds may be taken as a cash lump sum and the remainder must be used to provide an income out of the fund or from an approved financial provider. It was proposed that members of provident funds who retire after 1 March 2015 and who are younger than 55 at this date should be subject to the same mandatory annuitisation requirement (on benefits accruing after that date) and may not withdraw their entire retirement savings by way of a lump sum (National Treasury, 2014). Exceptions are made for small amounts, as specified in the *Government Gazette*, where annuitisation would lead to trivial pension pay-outs. Mandatory annuitisation aims to protect members against a potential lack of self-control. The implementation of this proposal has been delayed for further consultation, with trade unions raising a number of concerns with this proposal. As such, there is current no requirement for provident fund members to purchase an annuity on retirement.

5.5.2 Members face longevity and investment risk during retirement. Prospect theory infers that members should value the certainty of retirement income provided by guaranteed annuities which pass both investment and longevity risk on to an insurer. In DB retirement funds, trustees faced with these same risks can rely on actuarial and investment professionals to advise them on how to manage these risks. This expert advice is not available to individual DC fund members, who have varied levels of financial literacy, leaving them to deal with very complex decisions on their own. Decisions include whether or not to take the full one-third lump-sum retirement benefit and what type of annuity to purchase: one with a form of guarantee or a living annuity.

5.5.3 VOLUNTARY ANNUITY PURCHASE

5.5.3.1 According to Benartzi, Previtro & Thaler (2011), framing has an important role to play in a member's annuitisation choice at retirement. This is especially true as annuity choice is not something that many people consider before nearing retirement age nor is it an area in which they could learn from experience as most members only retire once. Surveys show that 29% of respondents have never heard of an annuity (Old Mutual, 2013) and a fifth of members will only seek financial advice regarding retirement less than five years before retirement (Sanlam, 2015b).

5.5.3.2 Benartzi, Previtro & Thaler (2011) further postulate that DB and DC funds inherently frame annuitisation differently:

- DB funds foster a consumption frame, promising members a certain income in retirement based on years worked and final salary. This allows members to budget accordingly, secure in their knowledge that they will receive a certain income.
- DC funds on the other hand foster an investment frame. Members receive regular feedback regarding their account value, showing contributions into the account and investment return. It is up to members to convert their final account value into what is really needed, a retirement income.

5.5.3.3 Members accustomed to a consumption frame are more likely to choose an annuity.

5.5.3.4 Mental accounting, discounting and the endowment effect play a role in the decision to annuitise. A DC fund member essentially writes the biggest cheque he may ever write at retirement, taking a big pot of money which he possibly worked a lifetime to accumulate, and exchanging it for a stream of small ones. There is a tendency for members to want to hold on to their asset value, the perceived value of which exceeds the behaviourally discounted value of the alternative income stream.

5.5.3.5 Although members may not want to lose control of their lump sum, research indicates that they are unable to manage it effectively. Of the pensioners surveyed, 47% have depleted their cash lump sum received at retirement (either one-third or full-fund credit depending on the type of fund); more than 60% of these did so within two years of retiring (Sanlam, 2015c).

5.5.3.6 Members with low retirement savings may opt not to annuitise for the following reasons:

- it would disqualify them from accessing state old-age support (due to a means test applied);
- decision avoidance, purchasing an annuity can be a complex choice: there are various types of annuity offered by a range of providers, each providing numerous permutations with regard to escalation, spouses cover, guaranteed terms and payment date. The range of choices can be overwhelming;
- poor financial literacy and lack of intergenerational learning (in the South African context many workers would not have had parents eligible to join a retirement fund due to race); and
- overconfidence in their own financial decision-making.

5.5.3.7 Returning to the survey result showing that 29% of respondents have never heard of an annuity (Old Mutual, 2013), the concept of an annuity was explained to the same respondents who were then prompted about their preferred annuity structure. Many of them (55%) appeared risk averse and opted for an annuity that offered inflation protection, albeit with a lower level of income. In Sanlam (2014b), when members were asked to indicate their preferred income in retirement, 48% indicated a pension from their employer's retirement fund, rather than an annuity (whether a guaranteed or living annuity). In many ways, members still desire a DB benefit structure but their actions contradict this.

5.5.4 TYPE OF ANNUITY PURCHASED

5.5.4.1 Annuities that offer some form of guarantee range from conventional annuities, where a member's pension income is clearly pre-defined, to with-profit annuities where pension increases are not known in advance. Living annuities that allow a drawdown of capital within certain restrictions are also permissible vehicles for income provision under the Income Tax Act (South African Government, 1962 as amended).

5.5.4.2 Actuaries may naturally think that purchasing a guaranteed annuity, especially one guaranteed to escalate with inflation, as the most risk-mitigating option. However, loss-averse members may view the same transaction as taking the entire account value, of a given (or certain) amount, and exchanging it for a stream of uncertain small ones. The purchase of a guaranteed annuity can therefore be viewed as a gamble: will the member live long enough to make the exchange worthwhile? The perceived downside looms large—'first you die and then the insurer takes the rest of your account value'. This view can also lead to members questioning the fairness of the pricing and conditions of guaranteed annuities. A member who chooses a living annuity, however, is in a pool of one and has no one with whom to share their longevity risk.

5.5.4.3 Risk-averse members may also dislike the loss of control over their assets when purchasing a guaranteed annuity—they do not know when they might need an income in excess of their annuity payment to cover unforeseen expenses.

5.5.4.4 According to National Treasury (2012b), the proportion of single premiums used to purchase a guaranteed (conventional) annuity has decreased from 50% in 2003 to around 14% in 2011. A comparison of the average size of the single premium used to purchase annuities suggests that growing numbers of middle- and lower-income individuals are purchasing living annuities instead of guaranteed annuities.

5.5.4.5 National Treasury (2012b) considers that the following may be reasons for the increasing popularity of living annuities:

- The potential for higher total intermediary sales incentives of living annuities. The ability to receive a recurring fee for advice on a living annuity outweighs the initial commission on a guaranteed annuity.
- Members may select high drawdown rates that result in a higher initial income than that available under a guaranteed annuity. This comes at the expense of capital depletion.
- Health considerations: it is still uncommon for insurers to underwrite guaranteed annuity proposals individually in South Africa.

— Bequest motives (which the authors of this paper believe to be misplaced for those with insufficient retirement saving).

5.5.4.6 It is interesting to note that Sanlam (2015a) found that, when trustees were asked to pick the most appropriate annuity for the average member of their fund, 24% of trustees chose a living annuity, down from 30% in 2014. This contrasts with the fact that 84% of pensioners indicated that they prefer the certainty of a guaranteed income for life increasing with inflation rather than more volatile pension income. Similarly, 79% still preferred a guaranteed income for life increasing with inflation rather than having the flexibility of choosing how their assets are invested or having their estate retain control of these assets on their death (Sanlam, 2015c). It is perhaps understandable that, while 80% of trustees are concerned with how members utilise their retirement benefits, nearly the same number (76%) do not want any further involvement with members after retirement (Sanlam, 2015a). These findings indicate that the choosing of an optimal default annuity solution by the trustees may not be straightforward.

5.5.4.7 When considering the drawdown of a retirement account (US terminology), Benartzi, Previtero & Thaler (2011) question how individuals calculate their own optimal drawdown rate, with members either being too conservative at the expense of consumption or too aggressive, depleting their capital. The same comments apply to the drawdown rate on South African living annuities. Clearly this is an area requiring financial advice, especially at older ages where the need to make tough decisions and cognitive impairment often collide. However, obtaining financial advice does not seem to be popular with many South Africans. Old Mutual (2014) found that only 27% of individuals surveyed use a financial advisor, while Sanlam (2015c) found that only 37% of pensioners still make use of a financial advisor.

5.5.4.8 Lastly, despite the earlier survey results indicating the hardship that many pensioners face, Sanlam (2015c) found that 66% of pensioners are happy with their retirement income given the capital that they had available. Furthermore, 54% would have preferred complete freedom of choice, without any restriction from trustees.

5.6 Member Apathy

5.6.1 Few retirement fund members seem to have an emotional connection to their retirement savings, with many seemingly satisfied with just belonging to a retirement fund. We focus on some survey results below to illustrate the high levels of member apathy.

5.6.2 Old Mutual (2013) found that only 33% of individuals are aware of the rand value of their current retirement fund savings, 43% know who is managing their retirement fund and 36% have some idea of where their savings are invested.

5.6.3 Three quarters (74.6%) of fund members cannot name even one of their trustees and, although members appoint half the board of trustees in a standalone retirement fund, only 14% participated in trustee elections (Sanlam, 2015c). Yet, when members who invested in the fund's default investment choice were asked why they chose this, 70% indicated that they trust the trustees to make sound investment decisions (i.e. they trust a nameless person who most did not bother voting for). The next popular reason was that they

just want to know that their retirement savings are growing and are not really interested in the detail.

5.6.4 Few members seem to feel that they have a role to play in their retirement provision. When this is viewed in the light of the IKEA effect, it can be postulated that the general lack of engagement may cause members to place a low value on their retirement benefits.

5.7 Investment Decisions

Over-confidence, anchoring, availability, regret aversion, decision avoidance, mental accounting, hyperbolic discounting, loss aversion, framing and the status quo bias are all examples of biases that may lead to poor investment choices. The use of heuristics such as naïve diversification, or succumbing to peer effect and herd behaviour, may have a similarly poor impact on investment outcomes.

5.7.1 GOVERNMENT INTERVENTION

5.7.1.1 As mentioned in the Introduction, the institutional nature of retirement fund savings may manage individuals' systematically irrational investment behaviour. The South African government uses legislation and guidance, at least partially, to direct investment decisions away from individuals towards the trustees. It is the Board of Trustees' responsibility to invest fund assets. They are required to engage professional assistance should they lack the necessary skills to perform their duties. Trustees may delegate the custodianship of the assets or their management to a third party, but it remains their ultimate responsibility.

5.7.1.2 Regulation 28 of the Pension Fund Act (South African Government, 1956 as amended) is applicable to all retirement funds. Regulations concerning what assets a fund may hold include limits by asset class, securities issued by participating employers and individual investments. Investment in participating employers is capped at 5%. These limits are, with a few exceptions, applied on a 'look through' basis and at individual fund member level.

5.7.1.3 In addition to the Pension Fund Act, Circular PF No. 130 issued by the Financial Services Board (PF 130) gives guidance to trustees on the governance of funds in South Africa (FSB, 2004). Under this guidance, trustees or their advisors should have an understanding of investment risks and strategies. Every fund should have an investment policy statement that is appropriate in the light of its member profile and fund needs.

5.7.2 INVESTMENT CHOICE

5.7.2.1 Where a fund permits investment choice, trustees must ensure that the portfolios made available to members are appropriate to their membership profile. Members are to be supplied with sufficient information to enable them to make an informed investment choice (Circular PF No. 130, FSB, 2004). Members are not forced to consult experts and may still choose poorly. The partial devolution of investment decisions from the trustees to individual members is a major source of risk.

5.7.2.2 Sanlam (2015a) found that 60% of standalone retirement funds offer member investment choice, with nearly all of those providing a default portfolio to members.

In most cases, this is a life-stage solution which invests members' savings aggressively at early ages and less aggressively closer to retirement age. Trustees estimate that 83% of all members are invested in their fund's default investment option.

5.7.2.3 The basis on which retirement fund members choose their investments was surveyed by Sanlam (2015b).³ It was found that members who have investment choice used the following bases to select their investments (members were permitted to choose more than one method):

- On advice from a financial advisor (55%), with wealthier members more likely to approach a financial advisor.
- Own personal knowledge (32%). This result may indicate an overconfidence bias in some members.
- Trustee recommendation i.e. the default option (16%).
- Picking the most conservative option—not wanting to lose money (15%), indicative of loss aversion.
- Advice from a colleague (11%), with this potential peer effect more prevalent amongst low income groups.
- Random choice (7%), with this naïve form of diversification more prevalent amongst lower income bands.
- Split money over all options (7%), indicative of the 1/n heuristic.
- Picking the middle of the road option, not too conservative or aggressive (6%).

5.7.2.4 Some members make a conscious choice to select the default portfolio.

5.7.2.5 Sanlam (2013) found that more than a quarter of funds (29%) offered members six or more investment options to choose from, while the average was 4.4 options. Too many options can be demotivating (Iyengar & Lepper, 2000).

5.7.2.6 Interestingly, Van Heerden & Koegelenberg (2013) found that an equally weighted investment strategy (such as the 1/n heuristic) used to split the four main domestic (i.e. South African) asset classes and three overseas asset classes outperformed a CPI+4% benchmark around 73% of the time. Similarly, Pflug, Pichler & Wozabal (2012) found that the 1/n investment strategy is optimal under high model ambiguity.

5.7.2.7 Trustees should carefully consider the range of options available, being cognisant of members naïvely diversifying their portfolios. For example, if a member decides to follow the 1/n heuristic, would this still lead to a sensible end result? Trustees may also not have anticipated members picking seemingly contradictory options when applying the 1/n heuristic.

5.7.2.8 Members tend to exhibit a strong anchoring bias. When primed by a reference to the global financial crisis (2007–2008), 41% indicated that they are now more cautious with their retirement fund assets than ever before (Sanlam, 2014b). A further 21% wished that their assets were better protected against market volatility.

3 Sanlam provided additional information on sub-groups within the study beyond that available to the general public.

5.7.2.9 The only annuity product that offers investment choice in retirement is a living annuity. It is questionable whether most pensioners at advanced ages are capable of making sound investment choices without appropriate advice. Advice may not be sought or heeded by those suffering from cognitive impairments such as dementia.

5.7.3 MEMBERS EXHIBITING MYOPIC LOSS AVERSION

Members are provided with investment feedback on a quarterly or more frequent basis by 52% of funds (Sanlam, 2015a). This may make members susceptible to myopic loss aversion. One of the authors visited a small manufacturing company in Johannesburg during 2014. The company is unusual in that they show members their retirement fund value on their monthly pay sheets. While this level of disclosure can be welcomed, it has a profound impact on how members are invested. All the blue-collar factory workers are invested in cash and have been so for nearly ten years. Management conceded that this cash investment helps prevent labour disruptions as it ensures that the fund values never reduce in monetary terms. These investment decisions will, however, have a significant impact on long-term returns.

5.7.4 MEMBERS EXHIBITING MENTAL ACCOUNTING

Benartzi & Thaler (2001) highlight how mental accounting affects the holding of company stock (shares in a member's employer) in a pension plan. Instead of members reducing their allocation to other equity to compensate for the company stock they hold, members tend to see the company stock as a separate category of assets, which do not impact the allocation of the rest of their assets. Regulation 28 places limits on a South African fund's investment in the participating employer, which applies to a member's total holding of shares or debt of their employer. Some South African retirement funds still allow members to keep a separate account reflecting the member's portion of the shares allocated to the retirement fund during the demutualisation of two large insurers (in 1998 and 1999 respectively). Due to both insurers' shares forming a large part of the local stock exchange overall market capitalisation, most members would in any event have a significant holding of both. In essence, these members are deciding to make the stock selection decisions themselves for a portion of their equity holding, many without realising this.

5.8 Method of Communication

5.8.1 PF Circular No. 130 states that a fund should have a communication strategy (FSB, 2004). Members are to be provided with annual benefit statements and information regarding benefit options. Sanlam (2014a) found that standalone retirement funds prefer using the following communication mediums (in order of popularity): an annual benefit statement, rule booklet, information on the internet or intranet, annual trustee report and new member induction information packs.

5.8.2 Interestingly, retirement fund members prefer face-to-face interaction for both their initial and on-going engagement (including withdrawal). A further 78% do not wish to receive communication from their retirement fund using social media. This is mostly because they see social media as personal and to be used for 'fun stuff' (Sanlam, 2014b).

5.8.3 Pensioners generally prefer communication via post as opposed to electronic format. They rate the quality of communication they receive on their pension or annuity as 7.2 out of 10 (Sanlam, 2014c).

6. HARNESSING BEHAVIOUR TO IMPROVE RETIREMENT WELL-BEING

This section examines how behavioural concepts can be used by key stakeholders to improve the retirement well-being of members.

6.1 Possible Employer Intervention

6.1.1 Possible employer interventions include providing member education and tools and having innovative plan design (Thaler & Benartzi, 2007). Attempts to educate members may not be as effective as expected. A study showed that members scored an average of only 55% on a true/false test after participating in a financial education programme (Thaler & Benartzi, 2007). Their average score before the programme was 1% lower at 54%. Random guessing should have resulted in an average score of 50%.

6.1.2 Plan design can be a cost-effective way to effectively help members (Thaler & Benartzi, 2007). This includes changing existing plan design to include sensible defaults and opportunities to increase savings. Targeted communication could bolster these efforts.

6.2 Default Options and Architecture of Choice

6.2.1 The South African retirement fund industry is impacted by member behaviour such as decision avoidance, status quo bias and discounting. The preceding section shows that both the South African government and trustees continue to respond to current industry concerns, with trustees often introducing and refining default options for the level of contributions, group life cover and/or investment choice. This may be an attempt to guide members who are faced with a series of complex decisions towards better financial decisions.

6.2.2 Recently the South African National Treasury stressed the importance of appropriate defaults and recognised that there is currently no requirement for retirement funds to provide members with default options. To remedy this omission, National Treasury published draft regulations (National Treasury, 2015), which will require retirement funds to provide members with appropriate default options for investments, preservation and annuitisation. National Treasury stated that ensuring that default options are appropriate, serve members' best interests and also provide good value for money can significantly improve members' retirement outcomes and are therefore of paramount importance.

6.2.3 These defaults act as powerful behavioural nudges in circumstances where:

- the needs of members or certain classes of members are fairly homogenous,
- the decisions that members need to make are complex and rare,
- no prompt feedback is available, and
- members have trouble translating aspects of the choice in terms that they can easily understand.

6.2.4 Thaler & Sunstein (2009) identified nudges as especially important in the above circumstances. Where the members of a fund exhibit heterogeneity in risk preferences, it may be difficult to find an appropriate default for the majority of members.

6.2.5 Although members can opt out of these default options, few do as opting out requires an active decision and some form of action (Thaler & Sunstein, 2009).

6.2.6 Decision avoidance results in members ending up in the default option. Many members do not move from this default choice due to inertia and the status quo bias.

6.2.7 Another possible reason for the popularity of default options is that they are often perceived as the trustees' recommended choice, carrying their seal of approval. The extent to which this influences members depends on the extent to which the trustees are trusted and considered to be knowledgeable.

6.2.8 Although the setting of defaults is a welcome move in the right direction, these default options are often introduced separately to deal with a specific issue. There may be little or no thought as to how these defaults form a holistic blueprint to guide members to what is really needed, a secure income in retirement.

6.2.9 During the conversion of DB funds to DC funds, trustees and members seem to have switched their focus from providing a pension to the accumulation of a lump sum at retirement. We believe a more suitable way for DC fund trustees to structure their architecture of choice would be to start with the end in mind (to borrow a phrase from Stephen Covey). This implies focusing on providing an adequate retirement income. The target level of retirement income for an average fund member may well differ across retirement funds. It should take the competing needs of members into account. All fund communication and benefit options should then be designed (and framed) to align with this target. This approach will help trustees to create a retirement blueprint aimed at increasing the likelihood of members achieving their targeted income in retirement.

6.2.10 From Sanlam (2015a), many funds are already incorporating elements of this proposal in their choice architecture—57% of DC funds work towards a stated target pension expressed as a net replacement ratio (up from 35% in 2012). The average targeted net replacement ratio is 68%.

6.2.11 Of those funds with a target pension, 67% have aligned their default contribution rate with their stated target. A slightly higher percentage of funds, 76%, believe that a member who stays invested in the fund's default investment option over their entire working lifetime will be able to achieve the fund's stated target pension. Of those funds using a life-stage model, 54% have aligned this with members' annuity options at retirement.

6.2.12 Architecture of choice could be complemented by effective communication.

6.3 Communication Strategies

6.3.1 Where a fund is working towards a stated target pension, the authors believe that it is desirable to communicate the stated target pension clearly to members: trustees should set out why the stated target was selected, and should describe the characteristics of the average fund member who was considered when this target was decided. The more vivid and realistic the example is, the more likely it is to resonate with fund members. Additionally,

this will make it easier for members with different financial circumstances to realise that the target pension may be inappropriate for them and that they may need to consult a financial advisor.

6.3.2 Members could be informed of their projected individual net replacement ratio (or a similar alternative) to allow them to track their progress over time. In this regard, 58% of funds provide members with a net replacement ratio statement, while 48% of all funds provide members with a web-based net replacement ratio calculator (Sanlam, 2015a). Funds that offer contribution choices may wish to expand these programmes by encouraging members to log on to the calculator to find the contribution rate that would be likely to achieve their desired net replacement ratio. This approach could make it easy for members to implement a revised contribution rate by clicking a button. This application of the IKEA effect may help members feel more engaged in the process, possibly leading to a greater appreciation of the benefits of the fund.

6.3.3 Peer effect and anchoring could be used to nudge members into making better choices. For example:

- Members with low contribution rates could be informed how much their peers are contributing or what the average projected member replacement ratio is. Nobody wants to be worse off than their fellow workers.
- Attention could be paid to the order in which options are given. For example, consider a fund with the following employee contribution options: 2.5%, 5% and 7.5%. Starting with the lowest figure can anchor members to this level, therefore rather start with the highest rate first.
- It is possible to prime members before offering them a choice. For example, if members are informed of the contribution rate that the trustees believe is necessary to achieve an adequate retirement income prior to asking them to select a rate, it may influence their contribution rate choice. Thaler & Sunstein (2009) found that in many domains, the more you ask for, the more you tend to get.
- Members could be encouraged to get financial advice by offering them reduced (or no) advice fees. They could be informed that the fund's accredited advisor normally charges a certain amount for advice, anchoring members to this fee. A special lower fee (or even no cost) could then be communicated to members requiring advice. Ariely (2008) discusses the powerful attractive properties of something that is free.

6.3.4 Trustees could consider making options, especially default options, as easy to understand as possible. This includes reducing the number of options. This could be done by using familiar terms, for example 'pension' rather than 'annuity' (most people can readily identify with what is meant by a pensioner, but not annuitant). The frequency with which trustees communicate to members could be considered.

- Members want information readily available when they need it and for that information to be relevant to the decision they need to make i.e. 'just in time' communication. Not many young members want to read an article on how a 64-year-old can mentally prepare for retirement.

— Overly frequent communication of investment returns to members may lead to myopic loss aversion. Including an indication of how much retirement income can be bought with the account value is more important than short-term market fluctuations and will foster a consumption frame.

6.3.5 Mental accounting could be used to encourage preservation. It is possible to frame the default preservation option as savings which belong in a special account for the member's future self. This may encourage members not to impoverish their future selves.

6.3.6 New employees' induction programmes could be used to ensure that members do not start saving for retirement by making poor choices. Employers could use short video clips or stories before asking members to make retirement fund decisions to utilise the availability and retrievability biases. For example, consider including a vivid message from a penniless pensioner to his younger self or a clip showing a pensioner thankful to retain his standard of living in the light of peers who are having to make large adjustments to their lifestyles. Where possible, trustees could explain fund concepts by drawing parallels to concepts that young members are familiar with instead of lecturing them. Similarly, the effects of a market downturn or longevity can be shown to near retirees.

6.4 Automation Options

6.4.1 AUTOMATED CONTRIBUTION RATE ESCALATION

Trustees should consider providing members who currently have low contribution rates with the functionality to automatically escalate their contribution rate annually at the same time as salary increases. This escalation will cease when a targeted contribution rate is reached. (See 'Save More Tomorrow' programme by Thaler & Benartzi, 2004 and Benartzi, Peleg & Thaler, 2007.) Aligning this with salary increases prevents members from experiencing a reduction in their take-home pay (addressing loss aversion) and the automated nature utilises members' inertia to opt out. Members are also more likely to agree to enrol if the 'pain' is only felt sometime in the future (hyperbolic discounting). It needs to be acknowledged that not all administrators have the functionality to implement this solution.

6.4.2 AUTO RE-ENROLMENT

Trustees may wish to consider instituting auto re-enrolment of default options, especially where they are concerned that many members are unlikely to achieve the stated target pension. This would require members to take a positive action every few years to opt out of the retirement fund's default investment strategy and contribution rates. Trustees should ensure that the re-enrolment process is communicated clearly and gives members ample time to opt out as default strategies do not suit all members. If not, they may face resistance from some members if auto re-enrolment is implemented.

7. CONCLUSION

7.1 The authors believe that the South African retirement industry needs to accept that retirement fund members are human beings, exhibiting normal human behavioural biases—particularly when faced with decisions, in a world of ever-increasing financial complexity. While some members may thrive in the flexibility and choice provided by DC funds, others find the range of choice bewildering and discouraging.

7.2 All too often there is a direct link between member behaviour and the poor retirement outcomes that have been observed. The behaviours range from low contribution levels and not preserving retirement savings when changing employment to inappropriate investment and annuitisation options. With limited knowledge and experience to help them make the correct decisions, many members rely on heuristics or rules of thumb. Though often useful and accurate, heuristics can lead to systematic biases which, along with personal preferences, influence how members make decisions. This may lead to the poor retirement outcomes as illustrated in this paper.

7.3 The industry may wish to consider stacking the odds in a member's favour by harnessing behaviour to help members towards a better retirement outcome than would otherwise be the case. This starts with being cognisant of the factors that influence how members make decisions and how existing scheme design and communication may inadvertently lead to poor decision-making. Armed with this knowledge, both scheme design and communication can be enhanced to either nudge members to make better decisions or to put those members who avoid decision-making on a more secure path for their retirement journey through the use of appropriate defaults.

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APPENDIX

BRIEF DESCRIPTION OF SURVEYS USED

The South African survey results used in this paper are primarily those of Sanlam, Alexander Forbes and Old Mutual. A brief description of each survey follows, focusing on the differences in populations surveyed, sample size and survey methodology used.

A.1 Sanlam Benchmark Survey

A.1.1 The Sanlam Benchmark Survey has been conducted regularly in the retirement industry since 1981. It was initially a biennial survey only interviewing trustees and principal officers of DB funds. The survey evolved to include a separate section surveying DC funds in 1994. It has been conducted annually since 2006, from which time the DB survey was discontinued. From 2010 onwards, a separate survey of umbrella funds (multi-employer schemes), retirement fund members still saving for retirement (active members) and pensioner surveys have been added.

A.1.2 Since 2006, the research has been conducted by an independent market research agency (BDRG). Stratified sampling is used to ensure that the respondents reflect the population of retirement funds in terms of size, industry and region. Sample sizes are adjusted between surveys. The 2015 survey covered 100 standalone retirement funds, 100 participating employers in umbrella funds, 302 pensioners and 503 working members.

A.2 Alexander Forbes Member Watch

The Alexander Forbes Member Watch Survey has been conducted since 2011 by analysing the data of the Alexander Forbes Retirement Fund, a large umbrella fund. For the 2015 survey, the data analysed covered 239 000 fund members and 728 participating employers.

A.3 Old Mutual Retirement Monitor

The Old Mutual Retirement Monitor surveys South Africans employed full-time. They are not all necessarily retirement fund members. The survey has been conducted annually since 2010. The latest survey, Old Mutual Retirement Monitor 2013, covered 1180 members. The sample was quota-controlled by personal income.

A.4 Old Mutual Savings and Investment Monitor

The Old Mutual Savings and Investment Monitor is a biannual survey started in 2009 which outlines the savings and investment habits of working metro households in South Africa. It comprises face-to-face interviews with a sample of 1000 households from across South Africa. Quotas are imposed on household income to allow for analyses by income bracket.