
Addition by Division

Partitioning Real Accounts for Financial Well-Being

GEORGE LOEWENSTEIN, CYNTHIA E. CRYDER,
SHLOMO BENARTZI, AND ALESSANDRO PREVITERO

If consumers had infinite computing capacity and perfect self-control, they would estimate their total lifetime accumulation of wealth and decide whether to make each purchase by comparing the utility of that purchase to the utility of the next best use of the money, or in some cases, to the best use of money, in which case the purchase would not occur. However, for a variety of reasons, consumers find it useful to set up mental accounts (Thaler, 1985, 1999), which help classify different sources of income (Henderson & Peterson, 1992), different pools of savings (e.g., Shefrin & Thaler, 1992; Thaler & Shefrin, 1981), and different categories of spending (e.g., Heath & Soll, 1996), in some cases linking one set of categories (e.g., income sources) to another (e.g., spending categories; see, e.g., O'Curry, 1997). Although mental accounting strategies can yield patterns of behavior that deviate from rational standards (e.g., Arkes & Blumer, 1985; Tversky & Kahneman, 1981), people employ mental accounting for a reason. Mental accounts help consumers rationalize expenditures and enhance self-control (see Thaler, 1985, 1999) and can, in certain situations, also help consumers derive greater enjoyment from their spending (Loewenstein & O'Donoghue, 2006).

The concept of mental accounting, as well as many specific features of mental accounts, derives inspiration from real financial accounts. As Thaler (1999) writes, "Perhaps the easiest way to define [mental accounting] is to compare it with financial and managerial accounting as practiced by organizations" (p. 184). Much of the literature on mental accounting has assumed that mental accounts are determined, in part, by the real financial accounts that are available to consumers, such as the common division of bank holdings into checking and savings accounts (Shefrin & Thaler, 1981, 1992).

In this chapter, we suggest that inspiration can work the other way around. Financial institutions can seek inspiration from consumers' natural mental accounting strategies and then create financial accounts that encourage the establishment of specific mental accounts. We argue that investment and bank accounts should be subdivided in ways that could, despite being only paper changes, have profound effects on individual behavior and satisfaction. Such accounts can address a variety of specific problems that bedevil spenders and savers and can produce benefits such as improved investment decisions, increased savings, and even increased enjoyment of spending. Below we describe four common problems that challenge consumers' ability to save adequately or enjoy saving and spending. For each problem, we propose a division of real financial accounts to address it.

PROBLEM 1: THE DESIRE TO MEDDLE**SOLUTION: NEST EGG AND FUN ACCOUNTS**

Investing can be fun, an observation that, however obvious, has been ignored in the academic literature on individual investor behavior. Testing one's theories about which stocks will take off is exhilarating and has the potential to be financially rewarding. It turns out, however, that increased stock trading is associated with decreased returns; on average, the more a person meddles or plays with their portfolio, beyond perhaps periodic rebalancing, the worse off they seem to be. A 2001 study (Barber & Odean, 2001), for example, found that women and men trade stocks at different rates and consequently experience different portfolio performance levels. Women holding common stock portfolios turned over their holdings at a rate of 53% annually, whereas men holding common stock portfolios turned their holdings at a rate of 77% annually—a significant difference. Portfolio performance was negatively related to the amount of trading, not only due to transaction costs but also because there was a tendency to buy stocks that performed worse than those that were sold. The consequence was worse overall portfolio performance for men, whose returns were 2.65% below average market returns, compared to women, whose returns were 1.72% below average market returns.

The simple solution seems obvious: Encourage consumers to buy reliable index funds that provide less temptation for interference. Yet, buying index funds is a bore. Between the pleasure of gambling, the irresistible lure of stock tips and hunches, and the conceit that one is smarter than the market, the urge to actively trade individual stocks can be overwhelming, particularly for some individuals. Protecting such individuals, without totally squashing their pleasure, calls for a financial account solution that gives investors an outlet for their urge to play the market, but does not put (much of) their savings at risk. We propose separate nest egg and fun accounts to meet these requirements.

The nest egg account would be designed to house the bulk of one's savings, and the funds would be managed primarily by investment professionals in "safe" mutual funds. This account would be kept largely out of the investor's sight, so it could grow unhindered. In contrast, the smaller fun account would be designed to include individual stocks that are actively managed by the investor, as well as limited liability derivatives (e.g., purchases but not sales of options). The investor can use this small account to test their hunches about stock performance and potentially even make some money. However, at the same time that consumers are enjoying playing the stock market with this fun account, they are not putting their life savings at risk. By protecting the majority of one's savings in the nest egg account and playing with a smaller piece in the fun account, the investor both gets to enjoy investing and protects his or her savings and future spending ability.

PROBLEM 2: LACK OF PLEASURE OR REASSURANCE FROM SAVING**SOLUTION: EARMARKED ACCOUNTS**

Of the many reasons that saving money is difficult, perhaps the most fundamental is that immediate uses of money tend to be far more concrete, and hence compelling, than delayed uses of the same money (see Rick & Loewenstein, 2008). John Rae, who wrote the first book-length treatment of saving in 1834, focused on the first part of the problem—the concreteness of immediate consumption—when he famously wrote,

The actual presence of the immediate object of desire in the mind by exciting the attention, seems to rouse all the faculties, as it were to fix their view on it, and leads them to a very lively conception of the enjoyments which it offers to their instant possession. (as cited in James, 1965, p. 120)

Böhm-Bawerk (1889/2006), author of the second significant treatise on the topic, focused on the

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limn a more or less incomplete picture of our future wants and especially of the remotely distant ones" (pp. 268–269). The concreteness of immediate expenditures, as contrasted with the relative intangibility of the delayed consequences of spending, can tip the balance toward spending now as opposed to saving for the future.

One way to prompt increased savings, then, is to make saving for the future more vivid, and one tactic for accomplishing this goal is to attach specific goals to selected buckets of savings. For example, a consumer could earmark a savings account specifically for his or her children's college savings. Once earmarked, it is then more satisfying to save \$10,000, because it is easier to imagine how \$10,000 will make a meaningful difference to a college savings fund than to a general savings fund. The college savings fund is tied to the specific and imaginable outcomes of a child's education.

Financial institutions can help consumers establish such earmarked accounts for savings. From the vantage point of the bank, this involves a purely paper change, dividing a pool of money into smaller components. From the vantage point of the saver, earmarked accounts can help increase the commensurability, and hence quality of trade-offs, between immediate and delayed expenditures. The multiple savings account system can be customized to fit individuals' savings and spending goals and can even be expanded to include accounts for esoteric savings goals, such as saving for wine collections or electronics.

Earmarked savings accounts also can provide greater peace of mind about one's future. For example, when a consumer worries about paying for future health care, he or she can find comfort in the savings account set aside specifically for health care expenses. Similarly, earmarked retirement accounts can provide peace of mind about general spending needs after retirement and, like the "spend it" accounts that we will discuss later, can also be more easily spent and enjoyed during retirement (see also Keller & Lusardi, Chapter 21 of this volume). In sum, the point of these multiple earmarked savings accounts is that moving saving from an abstract process to a concrete one makes saving more gratifying and, hence, more likely.

PROBLEM 3: DIMINISHING MOTIVATION TO SAVE SOLUTION: "OLD MONEY" AND "NEW MONEY" ACCOUNTS

When people invest their savings, they often mass them into a single investment account and, especially if this account consists largely of mutual funds, are likely to pay attention to a single number: the total value of the account. This common practice turns out to be relatively uncondusive to saving beyond a particular point, because contributing to this single pot of money becomes less satisfying with each contribution. As consumers get further away from the starting point or reference point in their savings account, usually \$0 of savings, they experience diminishing marginal utility for each contribution (Kahneman & Tversky, 1979). Each additional dollar added feels less satisfying, because it has less of a proportional impact on the increasingly larger account. For example, adding a \$10,000 contribution to a \$50,000 savings account is more gratifying than adding the same contribution to a larger \$1,000,000 savings account. An initial zeal for building a savings account can turn to indifference, as additional contributions feel like only a drop in the bucket.

Moreover, if savings are invested in risky assets, as the value of the portfolio grows, it becomes increasingly likely that fluctuations in the principal amount resulting from market changes will overwhelm the impact of incremental contributions. Depending on the vicissitudes of the stock market, with a large portfolio, even if one adds a substantial amount in any year, it is quite likely that the value of the portfolio will shrink in any given year. Needless to say, this is a demoralizing outcome given the sacrifice entailed by putting the money aside.

To combat this problem of diminishing motivation to save, we suggest the periodic establishment of "new money" accounts that separate new contributions from accumulated past contributions

held in “old money” accounts. New money accounts could be established either based on timing (e.g., a new account created every 5 years and old accounts denoted by time intervals, such as “savings between 2005 and 2010”) or based on amount accumulated (e.g., old money could be partitioned into buckets of \$500,000).

Beyond combating the decline in motivation to save that might otherwise occur, the creation of old and new money accounts could also yield benefits when it comes to wise investment decisions. Similar to the nest egg and fun accounts that we proposed earlier, consumers could be encouraged to actively manage new money accounts, which are small enough to minimize damage, while old money accounts could be put into long-term, out-of-sight, out-of-mind, age-based funds that shift toward more conservative investments as the consumer ages.

PROBLEM 4: THE PAIN OF PAYING

SOLUTION: “SAVE IT” AND “SPEND IT” ACCOUNTS

Standard economic theory assumes that the cost of a particular purchase is the (typically future) consumption that must be forgone as a result of indulging oneself in the present. However, in reality, consumers rarely consider what they are giving up when they make a purchase (Frederick, Novemsky, Wang, Dhar, & Nowlis, 2009). Instead, they experience an immediate, psychological pain of paying (Knutson, Rick, Wimmer, Prelec, & Loewenstein, 2007; Prelec & Loewenstein, 1998). This pain of paying helps rationalize spending by providing an immediate, tangible cost to making a purchase that can be compared to the immediate benefit. The downside of the pain of paying, however, is that it decreases enjoyment that consumers obtain from their purchases. This damper on pleasure leads to the following paradoxical situation: Consumers spend too much, according to the dismally low rates of consumer savings, but at the same time, the pain of paying limits their enjoyment of the purchases that they make. Neurological studies have confirmed the existence of the pain of paying; studies in which shoppers’ brains are scanned while they decide whether to purchase goods have found that showing the price of a good activates neural systems associated with pain processing, an effect which is accentuated when the price of the good is perceived to be excessively high (Knutson et al., 2007).

A recently developed spendthrift–tightwad scale measures individual differences in the tendency to experience the pain of paying (Rick, Cryder, & Loewenstein, 2008). Individuals on the spendthrift end of the scale typically experience minimal pain of paying and, therefore, tend to spend more than they would ideally like to. Individuals on the tightwad end typically experience intense pain of paying and, therefore, tend to spend less than they would ideally like to. Individuals in the middle of the scale, termed *unconflicted consumers*, experience a moderate amount of the pain of paying and experience minimal divergence between their desired and actual spending levels. One’s status as a spendthrift or tightwad predicts a wide range of important spending outcomes; for example, spendthrifts who use credit cards are three times more likely to carry debt than are tightwads who use credit cards, even after controlling for income (Rick et al., 2008).

Average savings rates in the United States and the general attention to undersaving suggest that tightwads represent a sparse segment of the American population; however, tightwaddism is actually quite prevalent. In some large samples (e.g., a sample of more than 10,000 *New York Times* readers), tightwads outnumber spendthrifts three to two (Rick et al., 2008). Although underspending does not make headlines, it seems to affect a substantial portion of the population (see also Kivetz & Simonson, 2002).

Tightwads are not the only ones that experience this pain of paying. All consumers experience this pain to some degree, and some situations exist that make spending painful for nearly everyone, such as paying credit card bills for past purchases after the pleasure of those purchases has long past

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To help consumers manage their spending, we propose the creation of “old money” and “new money” accounts. “Old money” accounts are accounts that have been established for a long time and are typically used for savings. “New money” accounts are accounts that are established more recently and are typically used for spending.

Similar to the nest egg and fun accounts that we proposed earlier, consumers could be encouraged to actively manage new money accounts, which are small enough to minimize damage, while old money accounts could be put into long-term, out-of-sight, out-of-mind, age-based funds that shift toward more conservative investments as the consumer ages.

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HOW FINANCIAL WELL-BEING IS AFFECTED BY SPENDING BEHAVIOR

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(Prelec & Loewenstein, 1998). Moreover, in the current tense economic situation, consumers may experience the pain of paying more intensely than usual. Many consumers are walking a financial tightrope, making almost every purchase stressful and psychologically painful.

To help alleviate this pain, we propose that consumers should go beyond common implicit saving and spending budgets and actually create real accounts designed to formally partition saving and spending; we call these accounts "save it" and "spend it" accounts. Checking and savings accounts already often provide structures ready to partition money for saving and spending; however, consumers tend to use fuzzy rules to allocate the money into these checking (spending) and saving buckets. For example, people often use checking accounts to receive and house their monthly paycheck, and savings accounts to hold any leftovers at the end of the month. This unsystematic division inevitably results in little to no money saved by the end of the month and an uncomfortable sliding budget for spending. With the slightly reframed save it and spend it accounts, a preset fraction of each paycheck would automatically go into each account, with the predetermined amount dictated by the individual's saving goals. A main benefit of establishing these accounts is that clearly partitioning money into saving and spending accounts provides a bright-line spending limit for consumers. The bright line can not only help constrain spending, but also simply knowing that the bright line is there can reduce the anxiety that one might be overspending.

The second benefit is that these accounts allow more relaxed spending from the "spend it" account. By having some money specifically designated to be spent, consumers can more easily use that money without fear of going into debt or restricting future spending ability. In the same way that some consumers help themselves save by establishing savings accounts that are designed to be psychologically costly to draw from, they can establish a spend it account that is intended to be psychologically easy to spend from, thus reducing the psychological costs of paying.

These partitioned accounts for spending allow consumers to essentially prepay for consumption. A model of prospective accounting proposed by Prelec and Loewenstein (1998) suggests that future payments can hang over our heads to cloud the pleasure of current consumption, whereas past payments are written off, so consumption that has already been paid for can be enjoyed almost as if it were free. People often prefer to pay ahead of time for experiences such as vacations, so they can enjoy the experience unburdened from thoughts of payment (Prelec & Loewenstein, 1998). Similarly, prepaid spending accounts can reduce the anxiety of thinking about where the money to fund a particular expenditure is going to come from. Mental accounts for spending also help relieve the pain of paying by reducing thoughts about opportunity costs. Once the money is in the spending account, the choice about how to use it is a pleasurable one of deciding between different forms of short-term gratification, rather than a potentially more painful one about consuming now versus later, such as choosing between a nice restaurant dinner tonight and a fraction of one's child's college education in the future. These partitioned spend it accounts may be especially attractive not only to individuals who are tightwads but also to other groups who experience high levels of the pain of paying, such as people who are worried about overspending due to tough economic times and retired individuals who need to finance their spending out of capital rather than a steady income.

HOW FINANCIAL INSTITUTIONS CAN HELP

We have proposed that the creation of multiple formal financial accounts can help consumers with different types of spending and saving challenges. Financial institutions, for their part, can help customers establish these financial accounts by asking their customers to describe their financial issues, advising them on what types of accounts to create, and making it easy for consumers to open and manage multiple accounts. The primary benefits of the multiple accounting system accrue to

consumers; however, benefits exist for financial institutions as well. First, encouraging accounts that help consumers enjoy saving and spending can only make customers more satisfied with their banking institutions. In addition, most of the multiple accounting systems that we propose encourage saving, thus increasing the account balances that consumers house at their financial institutions.

Some currently available budgeting services take an intermediate step of helping consumers formalize their mental budgeting strategies. For example, www.mint.com provides free online budgeting tools to consumers that allow them to establish budgeting and saving goals, allocate spending to different categories, and then receive feedback every week about how they are performing toward their goals, all based on information that Mint pulls directly from consumers' credit card purchases and checking account withdrawal data. However, establishing real, institutionalized, financial accounts has several benefits beyond using mental accounts or even budgeting tools like Quicken and Mint. Establishing real accounts relieves some of the mental tracking and budget management burden from the consumer, making maintenance of budgets easier and the overall budgeting effort more likely to succeed. In addition, real financial accounts encourage consumers to stick to their original plans. It is more difficult to spend or save outside of one's budget when the accounts are real rather than mental (i.e., in one's head), due to not only the time costs of transferring funds but also the impossibility of engaging in the kind of slippery math that is possible with purely mental accounts. In fact, formalizing implicit mental accounts has been shown to help consumers meet their financial goals. When a set amount of money is formally partitioned for savings, even if that partition is as simple as a separate envelope of cash, people save more than if money is not set aside (Cheema & Soman, 2009).

Another reason that formally establishing a multiple accounts system ahead of time can be successful is that once people set up financial accounting systems, they are unlikely to change them. Samuelson and Zeckhauser (1988) investigated the decision patterns of 1987 TIAA-CREF investors and found that the median number of changes in asset allocation over participants' lifetimes was zero. A more recent study found a similar result; in a 10-year study of TIAA-CREF investors, almost half made zero changes to their allocation structure over the 10 years (Ameriks & Zeldes, 2000). If people set up the portfolios of multiple financial accounts that are proposed in this chapter, they are likely to stick with them if for no other reason than a resilient tendency to stick with the status quo.

An important feature of all of these proposed accounts is that they rely on immediate withdrawal or debit systems. People spend more carefully when transactions are immediate (i.e., in debit systems) as opposed to delayed (i.e., in credit systems; Soman, 2001). In addition, debit systems provide access to resources that an individual actually has available, in contrast to credit systems, especially credit cards, which provide easy access to resources that the individual does not have and that will put them in debt if they are used (see Soman, Cheema, & Chan, Chapter 20 of this volume).

Another potential design feature of these financial accounts is of note. The multiple accounts system can be designed so that people place deposits into their spending accounts at a regular interval. When the money is depleted for an account, it is gone, and no more can be spent until the next period without trading off resources from another account, a deliberate process that promotes judicious use of resources. When money is left unspent for a week, the consumer can be reminded of the excess in the next week when it is time for the next deposit, promoting use and enjoyment of resources that are available. With this system, consumers have extra checks in place that help them stick to their original goals of saving and spending

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HOW RESEARCHERS CAN HELP

Although past research and theories from social science have suggested that partitioned financial accounts will help consumers reach their spending and savings goals, the only real way to know the effectiveness of each type of account is to experimentally test each one and measure consumers' savings and satisfaction outcomes. Ideally, these tests could be done in the field in partnerships with financial institutions. Although financial institutions may desire to know whether partitioned accounts work, they may not have the expertise to run their own experiments to find out how useful, and profitable, each type of account can be. This is where experienced researchers come in. Partnerships between financial institutions and academic researchers allow gains for both groups. The financial institutions gain the expertise from the researcher to run the experiments, while the researchers gain access to field data from the financial institutions that they otherwise would not have access to.

As an example, a simple test of the solution to problem 4 above could measure the benefit of automatically allocating predetermined percentages of consumers' paychecks to checking and savings accounts (i.e., spend it and save it accounts) in contrast to the standard procedure of sending one's entire paycheck to the checking account and then depositing leftovers into the savings account later. To conduct the test, a group of consumers at a financial institution who do not already partition their paychecks ahead of time could be selected for the experiment. Then, half could be randomly selected to be encouraged to divide their paycheck deposit ahead of time between spend it and save it accounts. Even though not all of the consumers in the experimental group would choose to divide their paycheck ahead of time, some would, and the group as a whole could be compared to the control group (i.e., an intention to treat analysis). Using surveys to measure satisfaction, researchers could then determine if there is benefit to encouraging the partitioning of savings and spending ahead of time in terms of accumulated savings and spending enjoyment. Then, they also could look specifically at those individuals who adopted the new accounts to measure the magnitude of the gain for individuals who chose to adopt the new allocation procedure.

Similar tests could be done with all the different types of accounts that we propose, such as encouraging the old and new money accounts or earmarked accounts. For all of these tests, a big question is whether consumers will in fact be interested in adopting the accounts. Although many of them seem likely to be beneficial once adopted, the accounts may not be automatically appealing to the consumer. This concern seems especially applicable to the nest egg and fun accounts, which require a consumer to recognize that his or her own stock picks will likely perform worse than standard mutual funds. Thus, with all of these tests, it is important not only to measure the difference in outcomes for groups given and not given access to the new accounts but also to track real adoption rates and measure outcomes for those who actually did and did not adopt the new account strategies and test different approaches to marketing. For example, with the nest egg and fun accounts, if few people adopted the accounts, but those who did experienced success, that success information can be used to develop marketing messages that encourage more consumers to adopt such accounts.

In summary, past research has suggested that partitioned financial accounts yield many benefits to consumers in terms of increased savings and satisfaction. However, experimental tests in the field are necessary to determine both the adoption rate of these accounts and their success once adopted. Partnerships between academic researchers and financial institutions can provide financial institutions with the research expertise to test the impact of different configurations of accounts and give academic researchers the opportunity to test their ideas in the ultimate proving ground of the real world.

CONCLUSIONS

Consumers rely on mental accounting strategies to help them code, categorize, and efficiently manage financial decisions (Thaler, 1980, 1985). Although these strategies can yield behavior that deviates from rational standards (e.g., Arkes & Blumer, 1985; Tversky & Kahneman, 1981), they can help consumers by allowing them to make sense of their financial situation and exert self-control. In this chapter, we propose that financial institutions can enhance the positive effects of consumers' mental accounting strategies by offering real financial accounts that match, and in some cases guide, consumers' mental accounts. Restructured financial accounts could provide diverse benefits to consumers, including increased enjoyment from saving, increased savings, and increased enjoyment of spending. Because of the many benefits that multiple financial accounts can provide to consumers, and because of the almost nonexistent risks and costs of using multiple accounts, we consider multiple financial accounts for consumers to be a case of hedonic arbitrage (Benartzi, Loewenstein, & Previtro, 2008). That is, multiple accounts can allow consumers to enhance their hedonic experience without necessarily increasing their resources or incurring meaningful costs or risks.

Thaler and Shefrin (Shefrin & Thaler, 1992; Thaler & Shefrin, 1981) have discussed how consumers' mental accounts are often modeled after real financial accounts, for example in the way that consumers implicitly treat money in savings and checking accounts differently. In this chapter, we propose going much further in exploiting and taking control of the effects that real accounts can have on consumer thinking, feeling, and behavior. New types of formal accounts that use ideas from psychology and behavioral economics to help consumers achieve their goals have the potential to benefit both consumers and their financial institutions.

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