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III. DEMAND FOR CONSUMER CREDIT

Previous chapters showed that credit use by individuals is as old as recorded history and its regulation is just as old, but credit today labeled "consumer credit" became widespread domestically in the United States only in the twentieth century and especially after World War II. The National Commission on Consumer Finance (NCCF) undertook its review of consumer credit conditions fifty years after modernization of consumer credit began in the 1920s, and full maturation had taken place in the early postwar era. At the outset of the 1970s, the Commission produced a list of recommendations for updating existing credit processes and regulations to help consumers, the relevant institutions, and the legal environment to work better together.

The National Commission on Consumer Finance did not spend a great deal of time in its 1972 *Report* discussing underlying individual economic motivations for consumer credit use, known in economics as 'credit demand.' Apparently, the Commission believed that by this time the reasons were fairly obvious. The Commission found that some credit use was by "necessitous" borrowers down on their luck (and often without much discretionary income, i.e., often poor), but most modern consumer credit use was much more mainstream. The Commission's *Report* reflected the economic theory of consumer credit that had developed during the credit-modernization period and it recorded the empirical evidence.

Serious economic study of consumer credit began a century ago, around the time of the beginnings of the "modern period" of credit use in the 1920s. To preview the discussion in the current chapter, at that time economists determined that consumer credit was more than a means of merely advancing the pleasures of household consumption; indeed, consumer credit at that time also supported household capital formation.

There are two major benefits for consumers in encouraging capital formation through credit use. First, credit use facilitates purchase of goods and services like housing, vehicles, appliances, home repairs, and educations that provide a return over time from their services. Second, credit use enables consumers to adjust consumption patterns over time including over their entire life cycle to a preferred pattern. It enables purchases like housing and durable goods and services at younger ages when they provide high rates of return for those who have not yet acquired such assets. Necessary saving can take place through repayments when incomes have risen. This provides a clear life-cycle effect in credit use where it is most frequently used by the young and use fades a bit with aging. To economists, this is known as a life-cycle effect.

Empirical evidence shows that most consumer credit use arises with household spending to acquire capital goods that provide benefits over time: acquisition of consumer durable goods and services like transportation assets (vehicles), appliances and furniture, home repairs and modernizations, substantial hobby and recreation items, higher education, and mitigation of emergencies. Purchases of this kind involve more than merely current consumption. Instead,

they are precisely the kinds of purchases that provide ongoing household services producing additional future benefits, not merely shifting consumption from the future to the present as commonly believed in the past. Consumer investments such as these provide a return in preferred consumption over time that can easily exceed the cost of the credit used in acquisition. Investments that provide a positive return amount to household capital. They are analogous to industrial capital assets, and are wealth and welfare enhancing.

There is a visible life-cycle effect in the purchase of such assets and the accompanying use of consumer credit: Credit use is more frequent among younger consumers (especially those married with children at home, as discussed in Chapter 2). This is the time in the life cycle when asset holdings and household capital typically are low and the rate of return upon acquiring them is high. It also is the time when ready credit availability likely is lowest due to family incomes that have not yet grown, and families have not yet demonstrated to potential lenders the ability to manage credit use successfully. High return and low credit availability in such situations explain why credit demand can exceed supply from mainstream suppliers and how some households at certain times are willing to use higher-cost alternative credit products, even such forms as payday loans discussed further in Chapter 5.

As households mature, they typically reduce debt use gradually and often transition from borrowing to lending, investing funds by lending to banks and other financial intermediaries like insurance companies and pension providers (including IRA trustees) through various savings products. These institutions then lend the funds to businesses, governments, and other consumers. The process of lending to institutions to lend to others is conventionally called "saving," but it should be recognized that it is simply another way in which households make investments that generate a positive return. In this case, the return is through interest payments, life insurance protections, pensions, and other benefits of savings products received from the institutions.

Empirical studies over many decades have confirmed this simple but powerful neoclassical economic model that the primary use of consumer credit by most families is to make productive investments rationally that generate a positive return over time. In this sense, most consumer credit usage is similar to the reasons why businesses use credit. This chapter reviews the neoclassical model of consumer demand and the empirical evidence that has validated it over time. The chapter then discusses behavioral economics approaches to demand for consumer financial services and especially consumer credit, a novel theory that questions the neoclassical consensus that has dominated the field since its inception a century ago.

Reasons for Credit Use

The NCCF was aware of the economic theory and evidence that had developed, which was by no means new even in its time. Concerning specific reasons for credit use, the NCCF stated in its *Report* (page 5): "The reasons for this increased use of consumer credit may be found in the natural adaptation of consumer and business changes to changes in the ability and willingness of consumers to incur debt, as well as to a continued shift toward the ownership of assets." In the next few paragraphs the Commission mentioned a number of specific factors. They included increasing and more stable household incomes in the postwar period, increased urbanization of the population, changing population age distribution toward younger families, more women in the workplace necessitating changes at home, and enhanced willingness of creditors to lend. The Commission also discussed trends in the sale of household durable goods and then closed this section by returning to the importance of increased asset ownership (p. 6):

> The shift to asset ownership also reflects a decision by consumers to substitute the use of consumer-owned capital goods for the use of commercially-owned capital goods. Thus the purchase of an automobile substituted, perhaps unfortunately, for daily fares on street cars and buses, the home washing machine and dryer for payments at the laundromat, and the television set for the admission price to movies and other forms of entertainment. Even if the auto or appliance were purchased on credit, the monthly installments paid for it over a much shorter interval than the period of time over which services were received. In addition, quite often consumers also gained significant returns on their investment.

These motivations are intuitive as well as consistent with economic theory and empirical evidence. By itself, however, acquisition of investment assets (or satisfying necessitous situations) is not the complete answer to the question of underlying economic motivation leading to consumer-credit use. There is more to the story. As indicated, economists have thought about the essentials of this motivation for more than a century.[1]

For descriptive purposes, it is common to say that consumers use consumer credit for such and such a purpose, most notably for purchase of costly assets. Nonetheless, a little reflection quickly shows that buying autos, household repairs and furnishings, major hobby items, and educations is only part of the fundamental economic behavior that gives rise to these classifications of debt. There is also another part.

It is useful to recall that a significant component of the underlying, basic economic demand motivation for consumer credit use is the desire by consumers to change both the size pattern and the timing of their resource inflows and outflows, especially the investment outflows. Credit markets arise to change the lumpiness of the patterns, particularly of the outflows for purchasing housing and durable goods or for necessities, and to bring *household capital investment* transactions forward in time to the present instead of far off in the future.

In more detail, most purchases on credit could be accomplished by accumulating cash first and then buying the item later, but this often is not the time pattern consumers prefer. Significantly, for many goods, accumulating cash first could mean doing without the item or paying for more expensive substitute services for a period that might amount to years, both of which are costly. For instance, delaying purchase of a vehicle while saving enough cash to make a cash purchase means doing without the convenience of available transportation, possibly limiting places to live, and paying for expensive transportation substitutes in the meanwhile. Not managing some emergency situation could prove even more costly. Waiting to make these asset adjustments is frequently not going to be the preferred option in societies where there is an

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[1]For the early development of theory in this area, see Irving Fisher, *The Rate of Interest: Its Nature, Determination, and Relation to Economic Phenomena* (New York: Macmillan, 1907), Irving Fisher, The Rate of Interest (New York: Macmillan, 1930), and especially Edwin R. A. Seligman, *The Economics of Installment Selling: A Study in Consumers' Credit* (New York: Harper, 1927, two volumes). The foundational economics is discussed in considerably more detail than here in Thomas A. Durkin, Gregory Elliehausen, Michael E. Staten, and Todd J. Zywicki *Consumer Credit and the American Economy* (Oxford and New York: Oxford University Press, 2014), Chapters 3 and 4, and in many references there. See also Gregory Elliehausen, "Behavioral Economics, Financial Literacy, and Consumers' Financial Decisions," in Allen E. Berger, Philip Molyneux, and John O. S. Wilson, *The Oxford Handbook of Banking* (Oxford: Oxford University Press, 2019), Chapter 25. For discussion of cultural aspects of development of consumer credit in the twentieth century and its institutions, see especially Lendol C. Calder, *Financing the American Dream: A Cultural History of Consumer Credit* (Princeton: Princeton University Press, 1999) and in other historical references noted in this Taskforce report in a footnote in Chapter 2 above.

alternative. The types of credit we observe in the marketplace in large part come about because they are the least costly ways of providing an acceptable alternative.

Specifically, inflows from salaries and wages that comprise the income of most employed workers in a modern economy typically are quite regular for most consumers (even for many hourly workers), and credit offers the opportunity to smooth the outflows. Lumpiness in outflows can occur during the course of the period between paychecks, but it certainly will occur during the course of longer periods like a year, within a particular life cycle stage, or over a consumer's or family economic unit's whole lifetime.

For example, for many families expenditures increase during selected seasons like vacation periods, back to school time in September, and around the year-end holidays. Then in some years there also are bigger, investment-type purchases, such as an automobile or a new home. A few years later there may be need for another auto or a larger home and later still for college educations for children. Purchase of a vacation home or a large recreation item like a boat may occur once or twice in a lifetime. Home repair or modernization may be important at some points. Sometimes there also are emergencies.

Credit facilitates all these transactions by enabling households to use future regular inflows for the saving necessary to pay for lumpy expenditures made today. Consumers have shown that they are willing to pay a price in the form of interest and finance charges for the possibility of changing the time pattern of saving to a preferred one: acquiring the relevant asset and the return advantages it provides now, thereby obviating the need for costly substitutes, delay, inconvenience, and even delayed gratification while undertaking the sometimes lengthy and disciplined savings process.

This picture of inflow and outflow/expenditure patterns illustrates how it often is not really correct to say that credit arises solely for the purpose of purchasing specific investment items. The purchases could often be made anyway, just on a different schedule. The accumulating (saving) could be done first, although this would also mean postponing the benefits of the investments (or not solving the emergency situation) and often paying for substitutes in the meanwhile, often for a long time, both of which are costly. The correct interpretation is that credit markets arise to increase consumers' overall well-being by changing the time pattern of both saving and expenditure outflows (typically for lumpy, large purchases) to a preferred one.

The classification by usage problem is especially obvious in the example of an individual purchasing a $35,000 automobile or truck on credit but who simultaneously holds $35,000 or more in a savings account, IRA, 529 college savings plan, or some other financial asset. In some significant sense this individual is not really using credit only to purchase the vehicle. Rather, the underlying motivation for credit use is to avoid some combination of not buying the car or truck now and entailing costs in not being able to undertake transportation, not giving up some other important purchases either, not paying taxes and penalties for liquidating assets held in retirement accounts, and not reducing reserves stored in other financial assets. Risk-averse consumers may well prefer not to reduce their reserves, which are valuable to them, and replacing them is costly and takes time. For many individuals, credit availability through good credit standing can also serve as at least a partial substitute for extensive advance and precautionary savings. In other words, credit availability obviates the need to do things consumers think are disadvantageous, like giving up substantial current consumption in order to make large purchases or periodically running down financial reserves, while still matching the pattern of outflows (payments) better to inflows (paychecks).

Certain kinds of credit associated with specific sorts of investment purchases arise because they permit changing the flow pattern in the least-cost manner. Credit is often associated with automobile purchase transactions, for example, because the associated expenditure is large and since relatively large amounts of credit at relatively low cost are readily available to those who are willing to offer the auto or truck as collateral for the loan. Such loans are so common that "automobile credit" has become a large industry by itself. Credit generated in the process of making home improvements and buying automobiles, durable goods, and educations, and a variety of other transactions including payment of taxes, debt consolidation, etc. which are all well-known types of consumer credit. Advertising for each usage is common and many financial institutions memorialize these distinctions by separate departments and personnel, even separate subsidiaries and companies.

For the most part, most official figures of the volumes of credit for many "uses" are no longer assembled by the government's statistical mills, largely for the conceptual reasons mentioned, and because of the practical difficulties with collecting necessary data from creditors to generate meaningful statistical aggregates according to consumers' use of the credit.[2] The only practical way to produce an estimate of consumer credit purposes is to design statistically reliable surveys of consumers like the Surveys of Consumer Finances, ask respondents about their credit experiences, and then in some manner extrapolate from their experiences to the broader public using statistical weighting procedures (see Chapter 2 of this Taskforce report for further discussion of the Surveys of Consumer Finances and some findings about credit use).

Neoclassical Economic Theory of Consumer Credit Demand

Consistent with these ideas as indicated above, neoclassical economics, sometimes referred to as "mainstream economics," began formal exploration of consumer credit use in the early part of the twentieth century. It soon produced a body of testable hypotheses that have stood the test of time.

As with use and production of other goods and services, underpinnings of neoclassical economics arise from the central concepts of demand and supply. In neoclassical economics, demand for anything arises from its usefulness or "utility." Supply, in turn, depends on production costs and the potential opportunities for gains over production cost (profits) among potential suppliers. Interaction of demand and supply in markets produces exchange at prices reflecting the utility and production-cost characteristics of the products exchanged. Prices tend toward equilibrium where demand equals supply. Competition can lower prices to the lowest level consistent with covering production costs and profitability just sufficient to bring capital into the industry.

Economists have examined these notions of demand, supply, prices, equilibrium, and competition for decades, even centuries for some products. In these explorations, few areas have a richer history than credit demand and supply. Analysis of credit and credit markets has

[2]In the past, the Federal Reserve collected information on amounts of consumer credit by usage in its monthly survey of credit volume at granting institutions, but the Board discontinued the usage collection decades ago, except for automobile credit and student loans. Before that time, the monthly surveys asked lending institutions to report credit according to whether it was for automobiles, durable goods, home improvement, or other, but even classifying credit into a few broad categories became increasingly difficult with the advent of open-end credit like revolving credit cards where lending institutions knew little or nothing about specific uses of the accounts.

become a major mainstream area of economics known today as "finance." And so, this chapter looks first in further detail at the basic question of the motivations for using consumer credit in the first place, the concept of credit demand in mainstream financial economics.

The next chapter then discusses credit supply, but not before the second part of this chapter moves to some recent ideas about the range of motivations that might influence credit demand. This latter discussion arises from suggestions for possible enrichments to mainstream economics that have arisen from a branch of the field known as behavioral economics. Suggestions from behavioral economics concerning use of financial services and especially credit use have not always been demonstrated empirically, however, as discussed further in the next section.

Today, most close observers of consumer credit find that its demand arises from its usefulness. Much of it clearly serves useful purposes by allowing individuals to purchase and use capital goods and services while simultaneously undertaking the saving to pay for them through the loan repayments. For many individuals, this allows a change in timing of capital purchases to a more favorable schedule. Importantly, it also avoids the necessity of purchasing expensive substitutes in the meantime while the saving is taking place. People could take often-expensive urban and suburban mass transit to work for years, for instance, while also foregoing the mobility they prefer by saving first rather than using auto loans. Likewise, they could exercise the high opportunity cost of years with a lesser-skill/paying (and possibly less satisfying) job while saving for college instead of employing a student loan.

The modern formal economics of credit use essentially began with the classic works of Yale University economist Irving Fisher in the early twentieth century (Fisher 1907, 1930). Subsequently extended to consumer credit by Seligman, Hirshleiffer, and Juster and Shay, Fisher's work provides the basic framework of the neoclassical economic theory of consumer credit use.[3]

The basic idea of the mainstream theoretical explanation for credit demand derived ultimately from Fisher is that individuals have available to them opportunities that provide a desirable future return. Examples include consumer durable asset purchases that provide a return over a future period. Opportunities also include services, like investing in human capital development such as educations, and cost-reducing actions that mitigate the effects of emergencies.

These opportunities permit individuals to invest current resources to provide a return over time while saving for the purchase through loan repayments. The optimal amount of investment is undertaken when the rate of return on the next investment (declining as the more promising investments are undertaken earlier) just equals the available interest rate on the next investment (rising as lender risk increases).

Investments that provide a return over time use current resources, however, possibly large amounts of them. If individuals prefer more current consumption than allowed by the remaining resources still available from current income, consumer credit permits them to borrow resources to finance the assets and still maintain preferred levels of current and future

[3]See Irving Fisher, *The Rate of Interest* (1907 and 1930), op. cit., Edwin R. A. Seligman, *The Economics of Installment Selling*, op. cit., Jack Hirschleifer, "On the Optimal Investment Decision, *Journal of Political Economy*, August, 1958; and F. Thomas Juster and Robert P. Shay, *Consumer Sensitivity to Finance Rates: An Empirical and Analytical Investigation* (New York: National Bureau of Economic Research Occasional Paper Number 88, 1964).

consumption through employing future saving to make the repayments. In other words, as they undertake the investment process that requires current resources and interferes with current consumption, they can borrow against future income in a way that advances both goals: 1) facilitating household investment with its returns and 2) preferred pattern of consumption.

Development of this theory demonstrated that the optimal investment decision with borrowing opportunities available can involve greater levels of investment and higher returns than otherwise. It also permits a more highly-valued intertemporal pattern of consumption than the optimal investment without borrowing opportunities. This important result for consumer credit (discussed first by Seligman in 1927) countered the widespread belief held in the late nineteenth and early twentieth centuries, and still existing today in some quarters, that all or much of consumer credit use is merely profligacy, and essentially an attempt to live beyond one's means. (Sometimes the profligacy notion of consumer credit used to be called disparagingly by some economists and other observers the "home economics" theory of consumer credit that saving should always take place first.)

Of course, there are exceptions to this general rule that credit use is not necessarily profligate, as there are to almost any such general statement. It is easy enough to cite examples of individuals who borrow when they probably should not. Some bad outcomes are even predictable in advance when repayment commitments visibly become too large for a satisfactory outcome.

But other bad outcomes from credit use come about because of events that arise only subsequently to the credit decision and were not predictable at the outset. They include credit failures that arise from economic problems such as job loss or other emergencies that reduce or eliminate expected future income. This involves the concept of risk. To limit these situations, creditors themselves have an interest in preventing too much credit expansion: Losses can ensue when credit for any individual becomes too high (even any credit amount greater than zero for some potential borrowers). Creditors guard against such situations by requiring initial equity in assets (through down payments), raising the price of credit as risk increases (higher interest rates), and by limiting credit all together at some point (credit rationing). They also typically diversify their credit granting by lending to many consumers, not all of whom are likely to have the same emergencies or job losses at the same time.

Most consumers may not fully think about or understand all the components of the credit demand process outlined, but the economic theory derived ultimately from Fisher and Seligman is consistent with empirical evidence. Evidence shows that much of consumer credit use comes about in the process of acquiring consumer assets that provide a return over time. Such credit generation includes automotive credit, student loans, durable goods and large recreational goods credit, and credit involving home repairs and modernization. All of these involve larger purchases that provide a return over time with payment patterns that do not eliminate current consumption either.

Another component of credit generation involves mitigating emergencies. Reducing or solving an emergency situation amounts to an investment addressing some cost-causing event, for example an automobile repair need or a health emergency. Eliminating or mitigating the emergency situation without also drastically changing the pattern of current consumption can reduce costs of the emergency, again providing a net positive return over time due to the reduced costs. In the case of a health emergency, the cost reduction (return) versus not fixing the problem could be substantial. In any of these events, focusing only on the cost of the credit without looking at the return is incomplete.

Another empirical finding described in Chapter 2 and mentioned earlier in this chapter is that consumer credit use is more frequent among younger households, especially younger families with children, than among older consumers. Younger households have had less time and older consumers a longer time to undertake investments and acquire productive consumer assets including transportation and educations. This suggests that the younger consumers will often find remaining investment opportunities with higher returns than older consumers, and younger consumers will often be more willing to borrow to change the pattern of future consumption than their older compatriots. This has led to a life-cycle formulation of the pattern of consumer credit use.

Analysts such as Hirshleiffer and Juster and Shay followed in Fisher's and Seligman's footsteps by relaxing some of the theoretical contentions especially relevant to consumer credit in the earliest manifestations of neoclassical finance theory. Hirshleifer explored the situation where rates that consumers can borrow are higher than rates at which they can lend. This led to the conclusion that there are situations when consumers will borrow (rate of return is greater than their borrowing-cost rate), lend (rate of return is less than their lending rate), or do neither (rate of return is between their borrowing rate and lending rate). All of these possibilities are observable among differently-situated consumers, with the younger ones most likely willing to borrow. Hirshleifer also explored the implications of rising borrowing rates for consumers as they take on more debt. He concluded that rising rates would reduce the amounts of investments and borrowing as rates rise, but this was consistent with the theory.

Even armchair empiricism suggests the reasonableness of Hirschleifer's conclusions. Many individuals will borrow when presented by attractive opportunities (returns are high), but they are less likely to continue borrowing at higher debt levels because interest rates rise and the protection of current consumption is smaller due to greater repayments. That is, the underlying rates of return become lower due to higher interest rates and repayments. At some point rates of return no longer exceed borrowing costs and new investment ceases. Consumers in this situation may neither borrow nor lend or they may lend in financial markets or through financial institutions. Thus, looking at the household borrowing life cycle, borrowing at a young age, then later limiting borrowing, and eventually switching over more to lending rather than borrowing as rates of return on further investments fall reflects the situation of many consumers as they age.

Juster and Shay's further extensions of the theory accounted for contract terms that reflect the unwillingness of many consumer lenders to finance the entire cost of consumer durables (i.e. they require down payments) and the existence of specialized lenders offering small amounts of unsecured credit at relatively high interest rates. Their conclusions also are consistent with empirical experience.[4]

Other than credit cards, consumer credit is generally offered on an installment basis, with a repayment schedule of periodic (typically monthly) payments that amortize the loan

[4]This is the same Robert P. Shay of Columbia University who was an economic consultant and, in effect, the Chief Economist of the National Commission on Consumer Finance in 1971-2. F. Thomas Juster was a specialist in human capital formation and was Director of the large Institute for Social Research at the University of Michigan where much of the early research work on psychological and behavioral analysis of credit demand took place around the same time. Both were veterans of the National Bureau of Economic Research (NBER), then in New York and now in Cambridge, Massachusetts, where Shay had been full-time head of the consumer-credit research program in the 1960s and Juster the NBER's president.

principal plus interest. Common automobile loans, student loans, and unsecured personal loans take this form. Since the funds for repayment depend on the consumer's uncertain ability to have available future income for payments, lenders commonly limit the amount of credit and adjust repayment terms. On nonrevolving credit that was the common sort of consumer credit available when Juster and Shay were writing, creditors limited the amount of credit by requiring an initial down payment and a repayment term that was less than the expected economic life of the asset.

In their addition to lending theory, Juster and Shay discussed the possibility that a range of different lenders would develop in the marketplace, based upon their willingness to make riskier loans and charge higher lending rates. Consumers who prefer more credit than primary (low cost) lenders are willing to offer them, or who are unable to borrow at all from these primary lenders because of risk, may be able to borrow from supplemental lenders who provide additional credit at rates higher than market rates of primary lenders.

Looking at the marketplace today, there are many lenders that provide credit to riskier borrowers than prime borrowers. They include various kinds of subprime lenders such as higher-rate subprime credit card and auto lenders, small-loan companies, and payday lenders, among others (see Chapter 5 for further discussion of them). Supplemental lenders' willingness to extend additional credit is not unlimited either, however. Consumers may sequentially increase borrowing from additional lenders who are willing to accept greater default risk, but the amounts are ultimately limited because ultimately no lender will make loans that are certain to default without compensation.[5] This is the basis of the idea of credit rationing (credit rationing is also discussed further in Chapter 5).

Much has changed since Juster and Shay were writing in the early 1960s. For instance, advances in information availability through credit reporting agencies (CRAs, widely known as "credit bureaus") and in the technology to manage and analyze large amounts of information have improved ability of creditors to assess risk, making them on balance more willing to lend. Credit reporting through the credit bureaus is now much closer to comprehensive and new information about individuals with little prior credit experience is under exploration. This has the potential to make overall predictions of future payment performance better still. Development of generic credit scores by the credit bureaus has made statistical evaluation relatively inexpensive and readily available to virtually all lenders. Marketplace competition has also relaxed lenders' equity requirements, as terms to maturity have lengthened for credit advances and down payment requirements have grown smaller and less frequent. Today, many consumers are more able to finance a greater proportion of household investment through primary (low-rate) lenders like automobile and credit-card lenders than in the past. Competition of lenders on a variety of margins including price, availability, and non-price terms is discussed further in Chapters 6, 7, and 8.

At the same time, there are more secondary (higher-rate) lenders who are willing to lend supplementary amounts beyond the willingness of primary lenders. The National Commission on Consumer Finance extensively studied the operations, costs, and credit supply of one group, traditional installment cash lenders (known then as small loan companies or licensed lenders). There were pawnshops at the time of the NCCF, but they were uncommon enough in many places that the Commission barely mentioned them. There also were considerable amounts of consumer credit available from retail stores and dealers and the Commission discussed retail-

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[5]See also David S. Bizer and Peter M. DeMarzo, "Sequential Banking," *Journal of Political Economy*, February, 1992.

store credit at some length. This latter kind of consumer credit has dwindled greatly over the decades since then with the growth of bank credit cards.

Today, unsecured credit on bank credit cards is more widely available, and many borrowers now use them in the manner that they used unsecured personal loans from finance companies in the past.[6] Competition has extended availability of bank credit cards to many consumers who in the past would have had difficulty qualifying for them. Because bank-card rates are generally lower than other unsecured consumer-credit rates, unsecured credit is now available to more consumers at a lower cost than in the past.

Nonetheless, there also are more pawnshops nationwide than existed at the time of the NCCF, and also whole new classes of secondary lenders. They include so called "payday lenders" and vehicle-title lenders (sometimes called title pawns). Despite better technology and relaxed standards among primary lenders, there still are many individuals unable to borrow from low-cost primary lenders who necessarily rely upon secondary lenders or who have no institutional credit available at all, including from secondary lenders.

Chapter 2 of this report showed that interaction between relative benefits and costs of credit has led to a lot of credit use over time. Further, although there is always a lot of discussion about conditions where credit arrangements go wrong, the Surveys of Consumer Finances show that the difficult cases are not in the majority. For instance, in the 2019 survey, 12.3 percent of consumers with any debt indicated being behind in any payments in the previous year but only 4.6 percent behind by 60 days.[7] Undoubtedly, at least some of these accounts paid off and produced a positive outcome, even if slow. According to the 2019 Survey, 2.0 percent of households had declared bankruptcy in the previous five years. This is not to minimize the woe that results for individuals who stumble in using consumer credit, but rather to point out that these cases are not the norm. Taken as a whole, evidence does not suggest an increase in the proportion of distressed borrowers over time, and discussion on Chapter 2 above showed that aggregate repayments on consumer credit relative to household income have not increased in the past four decades (see Figure 2-3).

Measuring rates of return on consumer assets empirically is difficult in large part because circumstances and needs of credit-using consumers vary so widely, and outcomes differ as well. It seems difficult to argue, though, that returns can be anything other than positive for the most part, as theorized by Seligman, Hirschleiffer, and Juster and Shay. For consumers themselves, it seems that benefits and costs of credit use are too well known not to be the part of consideration and deliberation by credit users in most cases.

It is not especially difficult for consumers to contemplate the potential benefits and costs of credit use. This would be especially true following their initial experiences, and evidence shows that following initial experiences, most consumers continue to use consumer credit over their life cycles. On the cost side, Truth in Lending, passed in 1968 and implemented the following year, was an attempt to simplify cost understanding. Evidence shows that many consumers use this information in the ways they prefer, annual percentage rates (APRs) for

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[6]See Bizer and DeMarzo, 1992, "Sequential Banking," op. cit. and Dagobert L. Brito and Peter R. Hartley, "Consumer Rationality and Credit Cards," *Journal of Political Economy*, April, 1995.

[7]Neil Bhutta, et al., "Changes in U.S. Family Finances from 2016 to 2019: Evidence from the Survey of Consumer Finances," *Federal Reserve Bulletin*, September 2020, pp. 28-9.

larger amounts of credit for longer periods of time, and dollar finance charges for small amounts for shorter periods (see further discussion in Chapters 5 and 7 below).

Seligman discussed flows of utilities from consumer investment in durable goods as early as 1927, and there have been attempts at direct empirical measurement at least since the time Juster and Shay were writing. For instance, in 1964 Poapst and Waters published their estimates of rates of return on consumer durable goods in the prestigious *Journal of Finance*.[8] Using methodology basically similar to how an investment analyst would study a commercial investment opportunity, they estimated rates of return on an automatic washer and dryer and a television set "for different rates of usage and periods of investment" (p. 673). Costs of acquisition and operation were estimated with care and their equations showed that discounted returns were quite high with reasonable estimates of usage and length of ownership. This would encourage household investment in durable goods using credit under many common circumstances. In their words, "Under such circumstances, the relatively minor variations in consumer loan interest rates that general monetary policy might be able to produce are not likely to markedly alter the volume of consumer investment" (p. 677).

The NCCF was aware of their approach and commissioned Professors Dunkelberg and Stephenson of Stanford University Business School to examine it further.[9] In addition to looking at discounted flows of returns and costs together as a financial analyst would do (and Poapst and Waters did), they explicitly also discussed how discounted net returns would also determine the pattern of acquisition of durable goods, namely, those with highest returns would likely be purchased first. They noted that this order could vary substantially among different consumers and households due to preferences and could vary over time, depending upon life-cycle stage. Due to the difficulties of ascertaining individual preferences, Dunkelberg and Stephenson directed their attention first to discounted net returns for a washer and dryer under varying usage conditions, similar to Poapst and Waters.

They then used their own analysis of returns on this particular pair of consumer durable goods as a benchmark. They found (like Poapst and Waters) that returns on an owned washer-dryer could be quite high in many cases and they concluded that returns on some other durable goods must be even higher. They discussed how estimates of rates of return for all durable goods in all circumstances would be difficult to make, but that ownership patterns suggested that many other goods, like refrigerators, were even more important than washers and dryers. If they were more important, this meant they provided even higher discounted returns (data on appliance holdings of families were from the 1967 Survey of Consumer Finances). Dunkelberg and Stephenson acknowledged and discussed the analytical difficulties with this conclusion (such as differences between home owners and renters), but in their words findings "suggest that such an approach could provide considerable insight into the purchasing behavior of consumers, when combined with data about the cost and availability of capital for various population subgroups" (p. 46).

In 2001 Elliehausen and Lawrence provided simple simulations of potential returns on consumer purchases and concluded that they could be welfare enhancing even at payday-loan

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[8]J. V. Poapst and W. R. Waters, "Rates of Return on Consumer Durables," *Journal of Finance*, December, 1964.

[9]William C. Dunkelberg and James Stephenson, *Durable Goods Ownership and the Rate of Return, Technical Studies of the National Commission on Consumer Finance,* Vol. VI (Washington: Government Printing Office, 1975).

rates. For discussion, they assumed the example of an individual in need of a $200 payday loan of two weeks for a fee of $30 (APR of 391 percent). But public transportation to employment and additional time spent is also expensive, and under reasonable representations of such incurred costs, it was easy enough to show that the loan to repair the car now would be welfare enhancing on the basis of a financial analyst's calculation of net present value. This would argue for the financial choice to borrow and make the repair.[10]

More recently, analysts at Georgetown University used an approach similar to Poapst and Waters, Dunkelberg and Stephenson, and Elliehausen and Lawrence to rank colleges according to graduates' returns from attendance/`graduation`, taking college costs and student loan costs into account.[11] Although similar in underlying methodology to the earlier studies, the Georgetown study also includes simplified description of the underlying approach for those less familiar with financial analysis.

On the first page of the Introduction, the authors lay out the essence of the issue about credit: "However, while much has been written about student debt, not all debt is bad.... In addition, they [students] should consider the net present value (NPV) of their potential earnings, weighing the costs of investing in college now against the potential gains over time." The report goes on to use data from the U. S. Department of Education's College Scorecard, its online database providing information on earnings and debts of attendees at post-secondary schools across the country, to rank these institutions by net return on investment.

The approach in the education study is basically the same as undertaken by Poapst and Waters and Dunkelberg and Stephenson, but with much more extensive data. The methodology of any such study requires care in properly stating gains and costs, and all these studies discuss what they have done. The Georgetown study necessarily works with medians whereas the earlier studies of durable goods looked more at the range of individual outcomes under varying circumstances rather than medians. The education study also provides footnotes to some other related studies with some differences in their underlying estimating equations (like employing different discount rates). But for the purposes here, the interesting aspect involves its basic conclusions, even though changing the underlying data assumptions could lead to some variations in the specifics of the outcomes.

In particular, the conclusions are certainly more favorable and optimistic than the conventional wisdom. It seems there exists a widespread view that there is a student-loan debt "crisis" due to high costs and unfavorable economic outcomes associated with much of higher education today. Certainly, the nature of medians is that they are the center of the range of outcomes. There necessarily are going to be better and worse outcomes than the medians. Some will be much worse (and some much better). But the notable finding of the study is positive net present value of graduating at virtually *all* of the institutions, even given the possibility of taking on debt: "Our findings buttress the idea that college is a worthwhile investment. Moreover, we take the position that college should be seen as a long-term investment" (p. 4).

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[10]Gregory Elliehausen and Edward C. Lawrence, *Payday Advance Credit in America: An Analysis of Customer Demand* (Washington: Georgetown University Credit Research Center, Monograph Number 35, 2001).

[11]Anthony P. Carnevale, Ban Cheah, and Martin Van Der Werf, "A First Try at ROI: Ranking 4500 Colleges," Georgetown University Center on Education and the Workforce, 2019. Other studies referenced there have also used the same basic approach.

Clearly, investors in such undertakings (students and parents) should consider the potential benefits and costs, as with any investment. They certainly also should consider the likelihood that the student will finish the course. Even then, this is not to say that an outcome much worse than the median might occur in individual situations. Potential variation in outcomes involves the concept of risk, which is a characteristic of all investments. And certainly, no one ever liked a debt, due to undertaking an investment or not, but this does not mean the investment should not be undertaken.

To summarize, the message in this section of this report chapter is that development of the neoclassical economic theory of consumer credit suggests a number of important ideas and that empirical evidence is consistent with them:

1) Consumers will be willing to borrow, depending upon rates of return and cost of borrowing available to them. For many households, using debt to finance certain purchases is a rational investment that provides an implicit rate of return that exceeds the cost of finance.

2) Borrowing will tend to be related to household investment undertakings like purchase of durable goods, acquiring human capital, capital improvements and repairs, and emergencies when credit use can be cost saving (or sometimes even life-saving).

3) There would be a life cycle effect in credit use, since rate of return would be higher in most cases for younger consumers who have not developed a stock of assets and who have limited savings and lower incomes they typically will have later in life.

4) Since credit involves an unknown future, there are risks in using it.

5) There will be both primary (lower-rate) and supplementary (higher-rate) lenders that develop (in the absence of regulation to the contrary, discussed further in Chapter 5).

6) Secondary lenders supplement available credit for some borrowers and provide it to others for whom credit is not available from primary lenders.

7) There is also risk in lending and so there is an absolute lending limit even for secondary lenders due to economic credit rationing. This means that there are some individuals who have only higher-rate credit available or no institutional credit available at all. Credit rationing is discussed further in Chapter 5.

Empirical evidence is broadly consistent with these conclusions but this does not mean these conclusions complete the theory of demand for household credit or that they are not controversial. The next section looks at this question in still more detail.

Behavioral Theory and Neoclassical Economic Theory of Consumer Credit Demand

The standard neoclassical model of consumer demand for financial services has provided a theoretically robust and empirically well-verified model of consumer behavior for approximately a century, dating back at least to Irving Seligman's two volume work on theory of

consumer demand for installment credit in 1927. That model of consumer behavior provided the conceptual structure for the NCCF Report fifty years later. Today the neoclassical model of consumer demand continues to provide reliable explanations and predictions of how consumers use financial products, including usage of alternative financial services by rationed consumers.

In recent years, however, some commentators have proposed an alternative model of consumer behavior grounded in the rubric of "behavioral economics" ("BE"). Assessing the application of behavioral economics with respect to consumer financial behavior is difficult because of ambiguities in BE's claims. The traditional neoclassical approach to consumer demand for financial services offers a clear and determinate theory of consumer behavior and a set of direct testable implications that can be used to assess the empirical validity of the model. In essence, the model assumes that consumers determine and pursue their own best interests, and tests of the model evaluate outcomes in the context of interests thus defined. The BE approach departs from this theory and replaces it with an inquiry into the quality of consumer preferences. Consequently, its testable implications are not always clear. Of particular concern, BE provides no clear analytical framework for determining which of hundreds of different, often contradictory biases and cognitive flaws might prevent consumers from making welfare-increasing decisions at different times in different contexts. The view of the Taskforce is that although some elements of BE show some potential to provide marginal insights to consumer financial decision making that might eventually be applicable to policy development, especially when determining how to best provide information to aid shopping decisions, BE remains too uncertain as a science and its policy implications too speculative to provide a firm foundation for policy development compared to the longstanding and well-developed neoclassical model of consumer finance.

This section of the report will not provide an exhaustive discussion of BE and its limits. Instead, the discussion here will focus on the unanswered questions of BE that should be addressed before CFPB or other consumer protection agencies try to use it as an analytical tool

for consumer protection in a fashion that will be likely to improve consumer welfare. Following a brief overview of BE and its sister field of Behavioral Law & Economics ("BLE"), this section will discuss three unresolved difficulties with relying on BE and BLE as a basis for consumer financial protection policy: (1) questions about BE's economic foundations and the robustness of evidence for various biases, (2) the challenges for BE as a matter of theory in determining which of the hundreds of biases that have been alleged to exist would be relevant to assessing consumer decision making in any given choice context, including the strength of any biases relative to offsetting biases and how widespread those biases are in the population, and (3) the lack of empirical validation for the application of BE-derived hypotheses to explain observed decision making by consumers in financial contexts. Given the current state of knowledge about these issues there seems to be little reason to believe that abandoning the neoclassical model of consumer finance would result in better consumer financial protection policy.

A. What is Behavioral Economics, Behavioral Law & Economics, and Consumer Demand for Financial Products

There appears to be no single accepted definition of what constitutes "behavioral economics." Different definitions of the concept have been provided over time with different implications for economic analysis and public policy. The first approach simply recognizes that consumers face limited time, attention, and cognitive capacity and these psychological constraints are relevant to predicting economic behavior. The second approach pushes further and argues that consumer decision making is riddled with "biases" and other cognitive limits that lead them to make errors systematically that make them worse off.

1. Behavioral Economics and Psychology

At its most abstract level, BE can be defined as "a method of economic analysis that applies psychological insights into human behavior to explain economic decision making."[12] To the extent that BE simply reflects an effort to apply psychology to the analysis of economic decision making or to model consumer decision making more accurately, there is nothing terribly controversial or novel about it. Beginning in the 1950s and continuing through the next few decades, economist Herbert Simon first started to raise questions about the models of individual decision making that implicitly motivated much of the economic research of the era. Simon argued that time and cognitive attention are scarce resources that must be allocated across many different decision making tasks. Because acquiring information requires time and attention, all decisions—including consumer purchasing decisions—will be made with imperfect information. Decision makers will thus be "boundedly rational" instead of fully rational, in that they will always make decisions with less than full information.[13] From this insight, it was but a short extension of the theory to recognize that in a world of scarce time and attention, consumers will collect additional information up to the point where they subjectively believe that the marginal value of acquiring more information is equal to the marginal cost of doing so.[14]

In addition, many consumer decisions invariably include projections about the future. But the future is inherently uncertain. Uncertainty about the future is especially important when a consumer decides whether to use debt to make a purchase. For example, the decision whether to borrow to purchase a home or to attend college requires a projection about the expected return on those investments over time in light of the opportunity cost of alternatives. Taking out any loan involves risk of unexpected financial setback, such as illness or unemployment that could result in making it more difficult than expected to repay the debt; alternatively, an

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[12] *See* "behavioral economics" *in* OXFORD LANGUAGES; *see also* "Behavioral Economics" *in* INVESTOPEDIA.COM, *available in* https://www.investopedia.com/terms/b/behavioraleconomics.asp ("Behavioral Economics is the study of psychology as it relates to the economic decision making processes of individuals and institutions.").
[13] HERBERT A. SIMON, MODELS OF BOUNDED RATIONALITY (1982).
[14] *See* George J. Stigler, 69 *The Economics of Information*, J. OF POL. ECON. 213 (1961).

unexpected salary raise or stock market boom makes repayment easier and reduces the risk of nonpayment. Given the long-term implications of many decisions, consumers invariably face uncertainty with respect to any given investment. Moreover, no matter how the rational the estimate of time at the time of the transaction might be, it inevitably will be wrong in some cases.

Using psychology to analyze consumer financial habits has been part of the field since its beginning. As early as 1889, Thorsten Veblen's theory of "conspicuous consumption," that people's spending habits are intended to impress their neighbors, implicitly assumed that consumers would be willing to rely on debt to live above their means if necessary.[15] In his 1912 book *Charge It*, Irving Bacheller complained that access to credit induced people to live extravagant lifestyles that exceeded their actual financial means, leading many to financial ruin.[16] By 1938, in his famous book *The Folly of Instalment Buying*, Roger Babson railed about the predatory nature of consumer installment sales, which he believed seduced people into purchasing unnecessary luxuries—his example was a clothes washing machine—with the promise of easy monthly payments instead of saving up and paying cash.[17] Merchants were criticized especially harshly for supposedly preying on women by exploiting their supposed weaker level of psychological self-control (relative to men) and supposedly weaker math skills (again relative to men) to sell them goods on installment credit.[18] Although many of these theories were grounded more in pop psychology than scientific psychology, there is no shortage

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[15] THORSTEN VEBLEN, THE THEORY OF THE LEISURE CLASS (1889); *see also* Colin Campbell, *Conspicuous Confusion? A Critique of Veblen's Theory of Conspicuous Consumption*, 13 SOCIOLOGICAL THEORY 37, 41 (1995) (noting that Veblen's theory suggests that people would be "willing to run up a sizable debt in pursuing this goal" of using conspicuous consumption to obtain social status).

[16] IRRVING BACHELLER, CHARGE IT: OR KEEPING UP WITH HARRY (1912).

[17] *See* ROGER W. BABSON, THE FOLLY OF INSTALMENT BUYING 8-9 (1938). According to Babson, it was beyond the ability of "housewives to resist [the] temptation" of a new automatic laundry, and their husbands refused to "use the arithmetic" they were "taught in grammar school" or they would have not have yielded to the temptation. *Id.* Although little-known today, Babson was legendary during his era as a leading investor, one of the founders of investment theory, and most notably, as one of the few economists who predicted the 1929 stock market crash. Babson was the founder of Babson College.

[18] *See* LENDOL CALDER, FINANCING THE AMERICAN DREAM: A CULTURAL HISTORY OF CONSUMER CREDIT 166 (2001).

of voices today that echo sentiments that some groups of consumers are not fully capable of making wise choices for themselves—updated to remove sexist stereotypes about consumer incapacity.

The first rigorous analysis of financial decision making from the perspective of modern psychology was provided by George Katona of the University of Michigan's Survey Research Center in his 1975 book *Psychological Economics*. Katona's investigation into consumer decision making revealed that in making financial decisions they acted consistently with the predictions of the bounded rationality model of consumer decision making. Katona found consumers tended to invest greater resources in planning and search when purchasing expensive durable goods, such as planning for the purchase, extensive search for information, and careful consideration of alternatives before making a purchase.[19] Moreover, consumers tended to invest more time and deliberation when purchasing a product that was especially expensive or important, a new or unfamiliar product, or when they were dissatisfied with a previous purchase.

Because information is costly and cognitive attention is scarce, consumers will always make purchase decisions with limited and imperfect information. As a result, it also follows that consumers inevitably will make errors that could have been avoided had they had sufficient time and energy to research and search further. But assuming that consumers in their search activities typically tend to turn first to those sources of information that produce most valuable and reliable sources of information first and less-useful sources later in their search process, consumers should, on average, make more correct, welfare-improving decisions than wrong decisions even with limited information. This approach also suggests that when decisions are repeated consumers should learn from experience and thereby become better at making repeated decisions over time than decisions they make sporadically. In addition, because other

[19] *See* THOMAS A. DURKIN, GREGORY ELLIEHAUSEN, MICHAEL E. STATEN, AND TODD J. ZYWICKI, CONSUMER CREDIT AND THE AMERICAN ECONOMY 128 (2014).

consumers are simultaneously engaging in active search and evaluation, the process of trial-and-error and feedback associated with the market process itself should generate default rules that are responsive to consumer preferences.[20] The aggregation of experiences of many consumers making choices itself implicitly provides information to consumers as to the quality of competing providers and the usefulness of different products and services.

In turn, suppliers use advertising and other types of information to reduce the information costs to consumers of learning about those products and to highlight the terms and features of most interest to consumers. Sellers will have an incentive to highlight or nudge consumers toward existing and new products, attributes, and experiences that increase their satisfaction and welfare, thereby building brand loyalty and a positive market reputation.[21] "If, for example, consumers discount future consequences too heavily, sellers of products or services with long-term benefits have incentives to try to make those consequences more vivid and more salient to the consumer. If complex pricing plans are difficult for consumers to understand, firms in competitive markets have incentives to simply those plans to attract customers."[22] Sellers also have incentives to avoid the problem of "information overload, because it will undermine the message they are trying to convey" and if some consumers are paralyzed by too many choices, some sellers will have the incentive to simplify available options.[23] Sellers also

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[20] *See* Adam C. Smith and Todd J. Zywicki, *Nudging in an Evolving Marketplace: How Markets Improve Their Own Choice Architecture*, *in* NUDGE THEORY IN ACTION: BEHAVIORAL DESIGN IN POLICY AND MARKETS 225 (Sherzod Abdukadirov ed., 2016). This ongoing co-evolutionary process of consumer choice and market adaptation has been coined "ecological rationality" by economist Vernon Smith, reflecting the evolutionary and adaptive nature of the iterative process in a mutual process of discovery between consumer choice and market providers. Smith contrasts ecological rationality with constructivist rationality, such as the imposition of "nudge" rules by government central planners based on abstract economic theories instead of the emergent process of market dynamics. *See* VERNON L. SMITH, RATIONALITY IN ECONOMICS: CONSTRUCTIVIST AND ECOLOGICAL FORMS 94-114 (2007); *see also* F. A. Hayek, *Competition as a Discovery Procedure*, 5 Q. J. AUSTRIAN ECON. 9 (2002)..

[21] *See* Adam C. Smith and Todd J. Zywicki, *Nudging in an Evolving Marketplace: How Markets Improve Their Own Choice Architecture*, *in* NUDGE THEORY IN ACTION: BEHAVIORAL DESIGN IN POLICY AND MARKETS 225 (Sherzod Abdukadirov ed., 2016).

[22] J. Howard Beales, *Behavioral Economics and Credit Regulation*, 11 J. L., ECON., AND POLICY 349, 359(2015).

[23] *See* J. Howard Beales III, *Consumer Protection and Behavioral Economics: To BE or Not to BE?*, 4 COMPETITION POLICY INTERNATIONAL 149, 166 (2008).

draw on the experiences of many other consumers to suggest new products and services that consumers might not be familiar with.[24] For all of these reasons and others, even in a world of costly information, uncertainty, and limited time and attention, consumers in a competitive market should be expected generally to make decisions that are "correct" in the sense that they on average improve their welfare relative to the opportunity, even if their decisions do not appear to be "optimal" as defined by abstract economic principles.

The policy implications of using psychology to understand how consumers make economic decisions is straightforward. Most obvious, consumers develop useful shortcuts and heuristics to reduce information costs and uncertainty. They develop their own rules and habits to maximize their likelihood of being satisfied at lowest cost and through their own iterative feedback process they typically retain rules that work to solve recurrent problems efficiently and abandon those that do not.[25] For example, consumers generally can rely on the value of a name brand or trademark as a signal of quality in situations where they lack the expertise to evaluate quality attributes directly or for experience goods where consumers will not learn about quality attributes until later.[26] Consumers often will be willing to pay a price premium to purchase from a provider with a quality brand when they believe that paying the premium to receive an implicit assurance of quality will be less-expensive than the risk and cost of trying to ascertain directly the quality attributes of an unbranded alternative. In this sense, relying on brand names as a

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[24] *See* Smith and Zywicki, *supra* note 20. For example, as discussed below, current rules regarding enrollment in bank overdraft protection requires consumers to "opt-in" to coverage for ATM and debit card transactions. When initially asked about whether they would choose to opt-in, about half of respondents in one focus group indicated they would not. When prompted as to whether they would opt-in to coverage so as to have it available in case of an emergency, however, half of those who initially said they would not enroll changed their mind and opted-in. *See* ICFMACRO, DESIGN AND TESTING OF OVERDRAFT DISCLOSURES: PHASE TWO at 18-19 (Oct. 12, 2009) (research conducted in collaboration with Board of Governors of Federal Reserve).

[25] *See* Gerd Gigerenzer, *Why Heuristics Work*, 3 PERSPECTIVES ON PSYCHOLOIGCAL SCIENCE 20 (2008).

[26] *See* discussion in chapters 6 and 7.

proxy for quality is a rational response to decision making under conditions of uncertainty and costly information.[27]

Government intervention can also provide a useful role within a framework of bounded rationality to improve the outcomes of consumer decision making. For example, government regulations that mandate disclosure of important product terms and features in a standardized format can reduce consumer shopping costs and facilitate competition, thereby improving the likelihood of beneficial outcomes for consumers.[28] On the other hand, the same psychological constraints of scarce attention, time, and energy place limits on the ability of consumers to process and understand mandated disclosures and that too many mandated disclosures can overwhelm and confuse consumers.[29] In addition, rules that prohibit fraudulent and deceptive communications can reduce cognitive processing costs for consumers by reducing the prevalence of inaccurate information in the market that consumers will have to wade through to find accurate and useful information.

Nevertheless, despite the incentives for consumers to shop proactively and to collect useful information in a cost-effective manner and despite their use of sensible information-processing shortcuts, they will nevertheless still make mistakes, either because of a lack of information or because uncertainty makes certain information unknowable at the time of the decision. Governmental policy interventions can help to reduce the frequency and cost of decision errors but cannot eliminate them.

2. Behavioral Economics as the Study of Consumer Biases and Errors

Behavioral economics as it has come to be known and practiced since Simon and Katona, however, has largely abandoned the project of seeking to understand how consumers actually make decisions under conditions of uncertainty. Instead, BE has become a research program of

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[27] *See* Benjamin Klein and Keith B. Leffler, *The Role of Market Forces in Assuring Contractual Performance*, 89 J. POL. ECON. 615 (1981).
[28] *See* DURKIN, ET AL., *supra* note 19, at 129.
[29] *See* OMRI BEN-SHAHAR AND CARL E. SCHNEIDER, MORE THAN YOU WANTED TO KNOW: THE FAILURE OF MANDATED DISCLOSURE (2014).

demonstrating and cataloging purported "anomalies" and "biases" in human reasoning and behavior. Under this approach, the researcher establishes the "correct" answer derived from some measure (consumer's stated preferences or some stipulated outcome measure) and measures deviations from it and then grades consumers accordingly, often without considering alternative explanations as to whether the deviations may be rational in the real world.[30]

The modern field of BE is typically associated with a series of articles published in the 1970s by Amos Tversky and Daniel Kahneman, in which they purported to show a series of supposed biases and errors in individual psychology and problem solving.[31] Building on this foundation in psychology, economist Richard Thaler applied those concepts to economic decision making to document consumer deviations from the model of unbounded rationality implicitly suggested by some economists as the model for measuring successful consumer decision making.[32] Although often referred to today to as "biases" or "heuristics-and-biases," sometimes BE is simply referred to as concerning itself with the study of individual "irrationality." Although there is no precise definition of what constitutes an individual "bias" or "anomaly" it is estimated that researchers have identified about 200 different biases that are said to affect individual decision making.[33] These include purported biases that could be relevant to understanding consumer use of financial products, such as framing, loss aversion, mental accounting, hyperbolic discounting, and dozens of others.

BE has primarily developed in a laboratory setting, divorced from consumers' actual real-life decision making tasks and contexts. Participants in experiments are often asked to

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[30] *See* Gerd Gigerenzer, *The Bias Bias in Behavioral Economics*, 5 REV. OF BEHAVIORAL ECON. 303, 303-04 (2018).
[31] *See* Amos Tversky and Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, 185 SCIENCE 1124 (1973); Amos Tversky and Daniel Kahneman, *Availability: A Heuristic for Judging Frequency and Probability*, 4 COGNITIVE PSYCHOLOGY 207 (1973); Amos Tversky and Daniel Kahneman, *The Framing of Decisions and the Psychology of Choice*, 211 SCIENCE 453 (1981); *see also* DANIEL KAHNEMAN, THINKING, FAST AND SLOW (2011).
[32] *See* RICHARD H. THALER, MISBEHAVING: THE MAKING OF BEHAVIORAL ECONOMICS (2015).
[33] *See* Jeff Desjardins, *Every Single Cognitive Bias in One Infographic*, VISUALCAPITALIST.COM (Sept. 25, 2017), *available in* https://www.visualcapitalist.com/every-single-cognitive-bias/; Wikipedia, *List of Cognitive Biases*, *available in* https://en.wikipedia.org/wiki/List_of_cognitive_biases.

perform somewhat arbitrary mental tasks that bear little resemblance to decisions they make in their day-to-day lives and real-world contexts, including financial decision making. Researchers design the experiments and then interpret the results. As a result, the researchers face the challenge of ensuring the laboratory experiment they design actually tests the intended hypothesis and then the researcher must understand the subject's state of mind to interpret the results of the experiment. This requires the experimenter posit a "correct" answer to a question that is distinct from the answer chosen by the individual being studied and the assumption that the choice actually made is somehow "wrong."

As a result, a distinct characteristic—and challenge—of BE is that it abandons a fundamental precept of standard economics, the premise of "revealed preference."[34] Originally associated with the work of economist Paul Samuelson, the theory of revealed preference holds that the best evidence of a consumer's actual preferences is the actual purchase and other choices they make.[35] The postulate of revealed preference arises from the subjective nature of consumer preferences and diminishing marginal utility.[36] As a result, consumer preferences vary from person to person and even within the same person in different choice contexts.[37] It is only by making actual choices among available alternatives in a specific context at a specific time that an external observer can ascertain an individual's preferences. In many instances an individuals might not know their true preferences themselves until forced to choose in a particular context. What people *say* they prefer in the abstract is an unreliable predictor of preferences when

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[34] *See* Joshua D. Wright, *The Antitrust/Consumer Protection Paradox: Two Policies at War with Each Other*, 121 YALE L. J. 2216 (2012); *see also* Todd Zywicki, *The Behavioral Economics of Fixed-Rate Mortgages(and Other Just-So Stories)*, 21 SUP. CT. ECON. REV. 157, 189-90 (2014).
[35] *See* Paul A. Samuelson, *A Note on the Pure Theory of Consumers' Behaviour*, 5 ECONOMICA 61 (1938); Paul A. Samuelson, *Consumption Theory in Terms of Revealed Preference*, 15 ECONOMICA 243 (1948).
[36] *See* CARL MENGER, PRINCIPLES OF ECONOMICS (1871).
[37] *See* THOMAS SOWELL, KNOWLEDGE AND DECISIONS 218 (1980) (("The real problem is that the knowledge needed is a knowledge of *subjective patterns of trade-off that are nowhere articulated*, not even to the individual himself. I might *think* that, if faced with the stark prospect of bankruptcy, I would rather sell my automobile than my furniture, or sacrifice the refrigerator rather than the stove, but unless and until such a moment comes I will never *know* even my own trade-offs, much less anybody else's."); JAMES M. BUCHANAN, COST AND CHOICE: AN INQUIRY IN ECONOMIC THEORY (1969).

making real-world choices and tradeoffs. What matters is the choices people actually make in specific contexts under then-existing choice constraints.

BE rejects the idea that revealed preferences is the best evidence of an individual's "true" preferences. Instead, it contends that because of various biases and problems of self-control, a person's "true" preferences can deviate from preferences revealed by actual behaviors. More important, BE theory implicitly holds that it is possible to ascertain an individual's "true" preferences and to determine how revealed preferences as inferred from the actual choices made under conditions of scarcity deviate from "true" preferences.[38]

Although the process by which BE theorists go about ascertaining people's "true" preferences as opposed to their revealed preferences is somewhat mysterious, they seem to use two mechanisms. First, they look at what people say are their preferences using surveys or choices made in the artificial environment of the economics laboratory. Second, it seems that BE theorists derive propositions that they believe to be welfare-maximizing for the average person and then assume those are the preferences for everyone, regardless of their subjective preferences or whether they are value maximizing for them, such that any deviations are considered presumptively irrational.

For example, many BE theorists claim to have discerned that consumers have a "true" preference to save more money for retirement than they currently do based on their expressed views in surveys but because of a variety of supposed cognitive biases, they often fail to carry through on these plans.[39] At the same time, however, an overwhelming number of people *also* say that they would like to work less, borrow less, save for other goals (such as a home, emergency savings, or their children's college education), and spend money on goods and

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[38] *See* Richard H. Thaler and Cass R. Sunstein, *Libertarian Paternalism*, 93 AM. ECON. REV. 175 (2003); John Beshears, James J. Choi, David Laibson, and Brigitte C. Madrian, *How are Preferences Revealed?* 82 J. OF PUBLIC ECON. 1787 (2008).

[39] It is not specified how widespread this deviation between intended and executed plans must be for it to be considered problematic. It is not clear why only those who save too little for retirement might be considered as exhibiting biased decision making whereas those who save too much are not, even though both groups bear costs from their choices.

services that would make their lives easier and more comfortable, such as a reliable car, new roof, refrigerator, furniture, rent, or utilities.[40] And, as discussed in chapter 12, the vast majority of Americans save enough or more than enough for retirement and of those who do not currently save for retirement are pressed by other financial priorities or saving for other purposes. One survey by a major provider of retirement plans found that roughly 80% employees were participating in the employer's plan and those who were not were ineligible, paying down consumer or student loan debt, saving for some other purpose (such as emergency savings, a home, or college), or were using all of their income to meet current needs.[41] By contrast only a trivial minority of those who at any given time are not participating in a retirement plan do so for reasons emphasized by BE, such as not "taking the time to do it" —only 6 percent of the 20 percent of employees who were not participating [42]

Surveys and games played in a laboratory do not simulate decisions made subject to real-world constraints in real-world contexts and it is not viable to claim to be identifying an individual's "true" preferences without accounting for the reality of opportunity cost and constraints. Can economists confidently conclude that it is "irrational" to choose spend money on a memorable wedding honeymoon today because the "true self" would rather save to have marginally more money to spend when he or she is 75 year-old widow/widower? Or the opposite? Indeed, a non-trivial number of people do not even survive until retirement age; there is a clear survivor bias in asking *only* those who do survive whether they wish they had saved more money for retirement. The probability that a thirty-year-old will die before she or he

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[40] *See* Todd J. Zywicki, *Do Americans Really Save Too Little and Should We Nudge Them to Save More? The Ethics of Nudging Retirement Savings*, 14 GEORGETOWN J. OF LAW AND PUBLIC POL'Y 877 (2016).
[41] TRANSAMERICA CENTER FOR RETIREMENT SAVINGS, 16TH ANNUAL TRANSAMERICA RETIREMENT SURVEY: A COMPENDIUM OF FINDINGS ABOUT AMERICAN WORKERS 31 (Aug. 2015), https://www.transamericacenter.org/docs/default-source/resources/center-research/16th-annual/tcrs2015_sr_16th_compendium_of_workers.pdf
[42] *Id.*

reaches the age of seventy is 15% for women and 20% for men.[43] It is a reasonable assumption that had those individuals known they would die before their retirement was reached, their "true" preferences would have been to increase their consumption while alive instead of deferring consumption until they were deceased.

Even when behavioral economists do not assume they know "true" preferences, they frequently compare their findings to the optimal choice that a fully informed person facing no costs of information, no costs of decision making, and no uncertainty would make. That, however, assumes away the economic realities that motivated BE in the first place. It offers no useful insights into public policy in particular, any more than the observation that if people were unconstrained by their incomes, they would purchase more Mercedes and fewer Volkswagens. Similarly, it is a reasonable assumption that we would all make different decisions if we knew the future with certainty. Had those who die young known they would die before their retirement was reached, their "true" preferences would have been to increase their consumption while alive instead of leaving a larger inheritance for their heirs.

3. Behavioral Law & Economics

For current purposes, behavioral law & economics (BLE) can be understood as the effort to apply the supposed insights of BE to implement legal and policy goals.[44] BLE claims that the insights of BE can be applied in specific institutional choice contexts to identify market failures caused by individual cognitive biases and mistakes and to develop corrective policies that will increase consumer welfare. The premise of BLE is that policymakers can (1) predict *which* biases will apply and *how* those biases will manifest themselves in any particular choice context, (2) those biases are *systematic*, and (3) government regulation can improve outcomes.[45]

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[43] *See* Any Kiersz, *This Is When You're Going to Die*, BUSINESS INSIDER (Mar. 21, 2014), http://www.businessinsider.com/social-security-life-table-charts-2014-3.
[44] *See* Christine Jolls, Cass R. Sunstein, and Richard Thaler, *A Behavioral Approach to Law and Economics*, 50 STANFORD L. REV. 1471 (1998).
[45] These assumptions appear to be implicit in BE as well.

For example, consider a well-trod BLE hypothesis regarding the supposed propensity for consumers to "overborrow" on their credit cards. According to BLE theorists, "many" consumers believe each month that they are going to pay off their outstanding balance at the end of the month but fail to do so, leading them to revolve their debt and pay finance charges. This recurrent pattern of mistakes occurs because consumers supposedly suffer from a variety of cognitive biases, such as "overoptimism" bias, hyperbolic discounting, and others that lead them to overestimate their likelihood of paying off their credit card bill in full each month.[46] In addition to consumers' being mistaken about their propensity to revolve balances on average, consumers' errors are posited to be systematically biased in the sense that consumers are substantially more likely to be *overoptimistic* about their propensity to pay off their balance each month (i.e., they believe that they will pay off the bill and do not) than they are to be *underoptimistic* (i.e., they believe they are going to revolve balances but do not).

In the context of credit cards, therefore, BLE makes three predictions that distinguish it from standard economics regarding choice under uncertainty: first, many consumers make mistakes; second, those mistakes are systematically biased toward borrowing too much and saving too little; and third, because of the deep-seated and unconscious nature of these biases, consumers do not learn from their mistakes. Neoclassical economics of decision making under uncertainty, by contrast argues the opposite: (1) consumers on average make welfare-improving decisions and are more likely to do so as the cost of errors increases, (2) errors will be systematically unbiased, and (3) consumers learn from their mistakes and update their choices going forward and the larger the costs of their mistakes the more likely they are to learn.

One can thus visualize the model of consumer behavior from neoclassical economics as consumers having a distribution of outcomes centered around the "correct" answer, with errors being symmetrical in distribution. To use the example of credit cards, most consumers would be

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[46] *See* Oren Bar-Gill, *Seduction by Plastic*, 98 NW L. REV. 1373 (2004).

expected to accurately predict their likelihood of revolving their balances each month, with the distribution of errors being systematically unbiased (i.e., consumers are just as likely to underestimate their probability of revolving as to overestimate their probability). The BLE model, by contrast, would predict that the majority of consumers (or at least a sizable and identifiable minority) would err in their expected likelihood of revolving balances at the end of the month and that those errors would be systematically biased, i.e., consumers would be much more likely to be *overoptimistic* about their likelihood of paying off their balances than to be *underoptimistic*.

B. Difficulties with the BE and BLE Models of Consumer Financial Protection

The remainder of this part of the chapter will discuss three challenges to the prospect of BE and BLE emerging as a viable alternative to the traditional economic model of demand for consumer finance that has motivated economic research and policymaking for the past century: (1) Ongoing questions about the robustness and context-dependent nature of many of the supposed biases and anomalies that BE theorists have claimed to have identified in individual decision making, (2) BLE's questionable theoretical foundations with respect to being able to determine and predict which the nearly 200 biases that have been identified will apply in specific choice contexts and the direction and magnitude of those influences, and (3) BLE's lack of empirical support to date for its hypotheses regarding consumer's use of financial products and services.

1. BE's Contested Scientific Foundations

Many of the underlying scientific premises of BE remain highly contested. As BE has matured from a niche field of *ad hoc* anomaly-spotting to a more mature field of claimed generalizable insights about human decision making, many of the original claims of BE have become less secure rather than more secure, including growing questions about the existence, robustness, and context-dependent nature of many supposed individual cognitive biases.

Indeed, co-founder Daniel Kahneman has attested to the ongoing reevaluation process of early conclusions, admitting that he "placed too much faith in underpowered studies" of which he was not sufficiently skeptical at the time and which have failed to be replicated by independent researchers.[47]

These problems with BE stem from a variety of sources, including problems in experimental design and the challenges inherent in interpreting raw data from observed laboratory findings by attaching a motivation or "bias" to explain the finding. Hypotheses are often poorly specified for testing in artificial experimental settings and alternative hypotheses that might explain the observed behavior are often ignored. Many initially-identified biases have come to be recognized as context-dependent or contingent on the specific conditions of the experimental design. In other instances, contrary results of some experiments have been ignored in reporting on the claimed overall robustness of the evidence in support of a proffered bias. In many instances, the willingness of BE and BLE scholars to engage in *ad hoc* and *ex post* rationalizations to interpret observed findings as confirming BE hypotheses itself might itself be explained by reference to various identified biases, in particular confirmation bias and motivated reasoning.[48] Abandoning the theory of revealed preferences as the best evidence of consumers' actual subjective preferences also raises the potential for the observer to inadvertently believe that his or her own preferences are actually the "true" preferences of the subject.

The inability to replicate leading findings in a variety of scientific fields has given rise to what has been labeled a "replication crisis" or "reproducibility crisis" across the sciences.[49] The

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[47] *See* Ulrich Schimmack, Moritz Heene, and Kamini Kesavan, *Reconstruction of a Train Wreck: How Priming Research Went off the Rails*, REPLICABILITY-INDEX Feb. 2, 2107), *available in* https://replicationindex.com/2017/02/02/reconstruction-of-a-train-wreck-how-priming-research-went-of-the-rails/.

[48] *See* Todd J. Zywicki, *The Behavioral Economics of Behavioral Law & Economics*, 5 REV. OF BEHAVIORAL ECON. 439 (2018).

[49] The "replication crisis" can be distinguished from the problem of outright fraud in that has led to the withdrawal of many leading papers, including several research findings that were later withdrawn that

replication scandal has hit the field of psychology especially hard, as one 2015 effort found that less than half of leading studies published in three psychology journals could be replicated by independent researchers.[50] The problem of replication has not spared behavioral and experimental economics: one effort to replicate the top-line statistical finding from 18 laboratory-experimental papers published in the *American Economic Review* and the *Quarterly Journal of Economics* between 2011 and 2014 was unable to do so in 40 percent of cases.[51]

Beyond the question of the ability to replicate earlier experimental economics studies lies a larger issue—the contested scientific basis for many of the most important "biases" that have provided the intellectual foundations of BE. These include such linchpins of BE as the "endowment effect," "loss aversion," and a variety of observed behaviors that are often interpreted as reflecting cognitive biases or errors in human decision making but can be explained more persuasively by other explanations.

The "endowment effect"—overestimating the value of one's possessions—was once considered to be one of the best known and most "robust" theories in behavioral economics, serving as the basis for hundreds of articles in economics, law, and other fields.[52] Analysis by Charles Plott and Kathy Zeiler, however, has cast doubt on the existence and robustness of a stable "endowment effect," attributing positive findings to elements of experimental design, not

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BLE scholars have relied on in their own research. *See* Todd Zywicki, *Does the Growing Exposure of Scientific Fraud in Social Psychology have Implications for Behavioral Law & Economics*, THE VOLOKH CONSPIRACY (Oct. 8, 2012), *available in* http://volokh.com/2012/10/08/does-the-growing-exposure-of-scientific-fraud-in-social-psychology-have-implications-for-behavioral-law-economics/.

[50] *See* Open Science Collaboration, *Estimating the Reproducibility of Psychological Science*, 349 SCIENCE 943 (2015) (Issue 6251, August 28, 2015).

[51] *See* Colin Camerer, et al., *Evaluating Replicability of Laboratory Experiments in Economics*, 351 SCIENCE 1433 (Issue 6280, Mar. 25, 2016). The authors note that the finding that a "significant effect in the same direction as in the original study" could be replicated in only 61% of the cases was "considerably lower than the replication rate of 92% (mean power) that would be expected if all original effects were true and accurately estimated." It is not evident from the report how many of those experiments specifically tested BE-related hypotheses and whether those findings were more robust than other types of experiments.

[52] *See* Jack Knetsch, Fang-Fang Tang, and Richard Thaler, *The Endowment Effect and Repeated Market Trials: Is the Vickrey Auction Demand Revealing?*, 4 EXPERIMENTAL ECONOMICS 257 (2001) (calling the endowment effect "one of the most robust findings in the psychology of decision making").

a robust, context-independent finding of a stable preference.[53] As a result, the positive finding of an endowment effect is believed to be highly contingent on the design of the experiment, and variations in experimental design can produce multiple outcomes.[54]

Leaving aside questions regarding the robustness of findings of an endowment effect in economic experiments, economist Jonathan List has raised questions about the degree to which the endowment effect can be generalized as being relevant to behavior outside the artificial choice environment of the economics laboratory.[55] In particular, List found the behaviors that had been identified as evidence of an endowment effect became weaker as people developed experience making choices in real markets and had incentives to improve their decision making. Subsequent research by Engelman and Hollard concluded that behavior that was attributed to the "endowment effect" might have actually reflected some uncertainty regarding the trading procedure itself, perhaps as a result of perceived transactions costs or risks.[56] Manne and Zywicki have noted that even if the endowment effect exists, this would not meaningfully affect market efficiency because it would create a profit opportunity for entry by those who are not subject to those biases, such as corporations.[57] Overall, analysis has raised doubts about the existence and strength of the endowment effect in general, and, even if behavior consistent with the theory is observed, the applicability of the endowment effect in contexts where individuals have incentives to act rationally and opportunities to learn from experience.

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[53] *See* Chareles R. Plott and Kathy Zeiler, *Exchange Asymmetries Incorrectly Interpreted as Evidence of Endowment Effect Theory and Prospect Theory?*, 97 AM. ECON. REV. 1449 (2007); Charles R. Plott and Kathy Zeiler, *The Willingness to Pay-Willingness to Accept Gap, the "Endowment Effect," Subject Misconceptions, and Experimental Procedures for Eliciting Valuations*, 95 AM. ECON. REV. 530 (2005); *see also* Charles R. Plott and Kathey Zeiler, *The Willingness to Pay-Willingness to Accept Gap, the "Endowment Effect," Subject Misconceptions, and Experimental Procedures for Eliciting Valuations: Reply*, 101 AM. ECON. REV. 1012 (2011).

[54] *See* DURKIN, ET AL., *supra* note 19, at 146-48.

[55] *See* Jonathan A. List, *Does Market Experience Eliminate Market Anomalies? The Case of Exogenous Market Experience*, 101 AM. ECON. REV. 313 (2011); Jonathan A. List, *Neoclassical Theory Versus Prospect Theory: Evidence from the Marketplace*, 72 ECONOMETRICA 615 (2004); Jonathan A. List, *Does Market Experience Eliminate Market Anomalies?*, 118 Q. J. ECON. 41 (2003).

[56] Dirk Englemann and Guillaume Hollard, *Reconsidering the Effect of Market Experience on the "Endowment Effect,"* 78 ECONOMETRICA 2005 (2010).

[57] *See* Geoffrey A. Manne and Todd J. Zywicki, *Uncertainty, Evolution, and Behavioral Economic Theory*, 10 J. L. ECON. & POLICY 555 (2014).

The endowment effect is grounded in another foundational premise of BE and BLE, the related idea of "loss aversion," i.e., that losses are systematically experienced as being more psychologically impactful than gains.[58] The idea of "loss aversion" has been proffered as the basis for a variety of observed behaviors and proffered biases that have been asserted to be inconsistent with neoclassical economics, including the endowment effect, "inequality aversion," and the "status quo bias."[59]

A review by Gal and Rucker of experimental studies supposedly finding evidence of loss aversion concluded that the claim of a stable "loss aversion" bias was: (1) often a manifestation of the experimental design used to test the concept, and (2) a misattribution of the motivations behind observed behavior to loss aversion instead of some other explanation.[60] According to Gal and Rucker, most of the experiments that claim to find evidence for loss aversion are fundamentally flawed in that they offer individuals just two choices—either to trade their existing endowment or to keep it.[61] When offered only these two choices, some 90 percent of participants choose to keep their initial endowment, regardless of what it is. But this result ignores a third possibility—that many participants in the experiment are largely indifferent between either the two endowments provided to them. Changes from the status quo require psychological and intellectual effort to undertake. Where individuals are indifferent between possessing two low-value and arbitrarily-assigned entitlements, even a small amount of transaction costs or friction would be expected to be sufficient to obstruct trading. Indeed, when offered the third option of "indifferent between options," and not just the binary choice of

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[58] *See* Daniel Kahneman and Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 Econometrica 263 (1979). Loss aversion is also referred to as "prospect theory."
[59] *See* Colin F. Camerer, *Three Cheers—Psychological, Theoretical, Empirical—For Loss Aversion*, 42 J. MARKETING RESEARCH 129 (2005) (reviewing various theories linked to the premise of "loss aversion").
[60] David Gal and Dereck Rucker, *The Loss of Loss Aversion: Will It Loom Larger Than Its Gain?*, 28 J. OF CONSUMER PSYCHOLOGY 497 (2018); *see also* David Gal and Dereck Rucker, *Loss Aversion, Intellectual Inertia, and a Call for a More Contrarian Science: A Reply to Simonson & Kivetz and Higgins & LIberman*, 28 J. CONSUMER PSYCHOLOGY 533 (2018).
[61] In most experiments of the endowment effect and loss aversion, individuals are divided into to two groups and randomly endowed with two arbitrary alternatives of small and more or less equivalent market value, such as a pen or coffee mug and then are invited to trade.

whether to trade or not, a majority of participants select it. This suggests their decision not to trade has little to do with the presence of a supposed biases such as the endowment effect or loss aversion but instead to the participants' absence of a preference for one of the items over the other, such that even a modest investment of time and energy to think about trading one item for another of comparable market and subjective value is larger than any gains that might be achieved. Gal and Rucker conclude the concept of loss aversion is not stable to different choice contexts, "Our main conclusion is that the weight of the evidence does not support a general tendency for losses to be more psychologically impactful than gains (i.e., loss aversion). Rather, our review suggests the need for a more contextualized perspective whereby losses sometimes loom larger than gains, sometimes losses and gains have similar psychological impact, and sometimes gains loom larger than losses."[62]

As reported by Eldad Yechiam in a review of studies on loss aversion, there is no consistent finding that individuals express a systematic asymmetry in their psychological experience of losses and gains.[63] Many of the studies that have purported to find evidence of loss aversion have failed efforts at replication. Moreover, "researchers have found a host of other asymmetries between gains and losses that occur simultaneously with no loss aversion.... All these asymmetries were found to emerge in task conditions where individuals did not overweight losses compared to gains, which further suggests that the effect of losses on the human mind cannot be singly captured by loss aversion."[64] Yechiam concluded that where behavior is found that is consistent with the theory of loss aversion, it actually reflects an aversion to "high-stakes losses" and "gain/loss neutrality for small-to-moderate losses."[65] Moreover, Yechiam notes the findings of some of these studies have been systematically misrepresented to reflect loss aversion, though they did not actually find it. In many instances,

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[62] *See* Gal and Rucker, *Loss of Loss Aversion*, *supra* note 60, at 498.
[63] *See* Eldad Yechiam, *Acceptable Losses: the Debatable Origins of Loss Aversion*, 83 PSYCHOLOGICAL RESEARCH 1327 (2019).
[64] *Id.* at 1329.
[65] *Id.*

where behavior consistent with loss aversion is observed, that behavior could be explained by alternative theories that are at least as intuitively persuasive as loss aversion. As Yechiam concluded[66]:

> In summary, the current review suggests that the literature concerning losses existing in and prior to Kanheman and Tversky has been over-interpreted by Kanheman and Tversky and in the subsequent literature. First of all, the preponderance of loss aversion... seems to have been exaggerated as this behavioral regularity was not observed in several studies, including studies that were cited as supporting loss aversion. Second, loss aversion in estimated utility functions was only observed in studies focusing on very high amounts and not in studies of small amounts. Third, even in the studies focusing on high amounts... loss aversion was not observed for about half of the participants for the smallest amounts used, but only for higher amounts. These findings are difficult to reconcile using a "tilted scales" metaphor of losses being overweighted compared to gains; nevertheless, they were over-interpreted to indicate a general asymmetry in the utility function for gains and losses.[67]

Psychologist Gerd Gigerenzer has extensively documented problems with many of the supposed biases and anomalies that BE theorists have attributed to individual decision making. As Gigerenzer observes, from its initial promising roots in Simon's admonitions to take the ideas of bounded rationality more seriously in economic thought, BE has evolved under the influence of the heuristics-and-biases literature into a research program to identify deviations from the neoclassical economics paradigm, "or what it took that paradigm to be. Experimenters aimed at demonstrating 'anomalies' and 'biases' in human behavior."[68] As such, BE research has built its findings on a hodgepodge of findings drawn from unrepresentative choice contexts, generalized context-dependent findings to broader focus, failed to consider alternative hypotheses for observed behavior, and in some instances simply misunderstood the phenomena they were purporting to examine. Gigerenzer concludes that this redefinition of BE away from its origins in understanding how people generally think and approach economic decisions toward an agenda-

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[66] *Id.* at 1336 (citations omitted).
[67] Plott and Zeiler similarly noted that despite claims that the presence of the endowment effect was robust and important, a substantial minority of experiments had failed to find a gap between participants' willingness to pay and willingness to accept. *See* Plott and Zeiler, *supra* note 53 (noting that 12 of 39 experiments of the endowment effect failed to confirm the hypothesis).
[68] *See* Gerd Gigerenzer, *The Bias Bias in Behavioral Economics*, 5 REV. OF BEHAVIORAL ECON. 303, 304 (2018).

oriented approach of identifying and cataloging supposed biases, has led BE to its own problem—the "bias bias," or "The tendency to see systematic biases in behavior even when there is only unsystematic error or no verifiable error at all."[69]

Gigerenzer describes numerous supposed "biases" identified by BE researchers that, in fact, are not biases at all, such as the "hot hand" and "gambler's fallacies." BE researchers often also frequently assume that "logically equivalent frames" are "informationally equivalent," when in fact people interpret information through a lens of shared communication and poorly worded questions lead to erroneous interpretations of results.[70] Unsystematic errors are often believed by researchers to be systematic errors. Numerous other similar methodological and logical problems have been identified as plaguing the findings of BE.[71]

According to Gigerenzer, what is often believed by BE theorists to be evidence of "biases" or "irrationalities" can be more accurately understood as explaining how individuals actually make decisions under uncertainty, as opposed to the implicit assumption of decisions made under risk where all states of the world are potentially known in a probabilistic fashion.[72] In a context of uncertainty, as opposed to risk, so-called "fast-and-frugal heuristics" often lead to superior decision making compared to efforts to create more elaborate optimizing decision rules.[73] In fact, efforts to apply more elaborate decision making rules can lead to worse outcomes. Decision making in the context of uncertainty has also been shown to explain what is

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[69] *Id.* at 307.
[70] For example, Gigerenzer notes that in the famous "Linda Problem," which asks whether it is more likely that a hypothetical woman named "Linda" is just a "bank teller" or a "bank teller active in the feminist movement," the inclusion of the additional seemingly-extraneous information about Linda might logically be interpreted by participants in the study as asking for a different judgment than that intended by the experimenter. *See* Ralph Hertwig and Gerd Gigerenzer, *The "Conjuction Fallacy" Revisited: How Intelligent Inferences Look Like Reasoning Errors*, J. OF BEHAVIORAL DECISION MAKING (1999).
[71] For an extensive discussion, *see* DURKIN, ET AL., *supra* note 19, at chapter 4.
[72] *Id.* at 329.
[73] *See* GERD GIGERENZER AND R. SELTEN, BOUNDED RATIONALITY: THE ADAPTIVE TOOLBOX (2001); *see also* Gerd Gigerenzer, *How To Explain Behavior?*, TOPICS IN COGNITIVE SCIENCE 1 (2019); Gerd Gigerenzer and Henry Brighton, *Homo Heuristics: Why Biased Minds Make Better Inferences*, 1 TOPICS IN COGNITIVE SCIENCE 107 (2009).

often claimed to be evidence of hyperbolic discounting, i.e., the systematic preference for an immediate reward over a larger future award.[74]

Overall, based on the state of knowledge about BE and the "biases-and-heuristics" research program, it provides minimal confidence that it can provide a viable general alternative framework to analyze consumer financial economics and consumer financial protection policies compared to the traditional model developed at the beginning of this chapter. Claims about the existence, strength, and frequency of various biases in the population are highly suspect. Many of the biases that are claimed to exist are potentially explained by alternative hypotheses about individual reasoning and behavior. Where potential biases are found to exist, they are usually context dependent and it is difficult to identify *ex ante* which context can be expected to bring forth which biases and in what direction. For example, as noted, there are severe doubts about whether the "loss aversion" bias exists at all. But even if it does, it is context-dependent, as different contexts produce behavior at different times that is consistent with loss aversion, gain preferring, or gain-loss neutrality. It is difficult to see how this somewhat *ad hoc* collection of purported biases and anomalies can provide a reliable foundation for a coherent system of consumer financial protection that is consistent with the rule of law.

2. Weaknesses in BE's Theoretical Foundations as Applied in Particular Choice Contexts

Even if BE's foundational concepts are assumed to be empirically sound and generalizable beyond their specific laboratory contexts, there are profound challenges to applying those laboratory-induced findings to understand consumer demand for financial products in real-world choice contexts. As a matter of theory, at least three unresolved difficulties can be identified to general usage of BE as a theoretical framework for deriving a

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[74] *See* Peter D. Sozou, *On Hyperbolic Discounting and Uncertain Hazard Rates*, 265 PROCEEDINGS OF THE ROYAL SOCIETY LOND. B. 2015 (1998); J. Doyne Farmer and John Geanakoplos, *Hyperbolic Discounting Is Rational: Valuing the Far Future with Uncertain Discount Rates*, Cowles Foundation Paper No. 1719 (Yale 2009).

general theory of consumer demand for financial products and services: (1) selecting *which* of multiple potential biases supposedly applies in a given choice context and how to determine which bias will predominate if multiple different biases might apply, (2) *how* any specific bias will apply in a given choice context and what to do if different biases contradict each other, and (3) the problem of assessing the welfare effects of policies for consumers, especially given the abandonment of revealed preferences as the yardstick for measuring consumer welfare. Consider each of these three concerns in turn.

a. Which Biases Apply in a Particular Context?

First, BE has no discernible or scientific theory of how to predict in any given choice context which of the nearly 200 different potential biases might apply and the magnitude of their effects. Indeed, BE's methodology on this point appears to be the opposite of standard economic methodology: instead of specifying a model and its testable hypotheses, BE instead begins with an isolated observation of some consumer behavior that is asserted to be welfare-reducing and inconsistent with the individual's true preferences then retroactively attaches an *ad hoc* BE-based label to explain the purported choice of suboptimal behavior.[75] In many instances, however, the observed behavior can be understood as a rational response to the individual's constraints and choice context.[76] For example, in predicting whether someone is going to take an action such as starting a new business or buying a home, how does the observer know whether the individual is likely to be motivated by the "status quo bias" on one hand—which would suggest undue passivity, pessimism, "loss aversion," and inertia about starting the new business—or the "optimism" or "wishful thinking" bias on the other—which would be predicted to make him or her unduly optimistic about the new business or the future expected path of home prices? Or what if different purported biases apply to different people in different ways at different times in different choice contexts? How is a policymaker supposed to predict as

[75] *See* Zywicki, *Just-So Stories*, *supra* note 34, at 187-89.
[76] *Id.*

a matter of theory whether those biases will cancel out, exacerbate each other, or some combination for different people at different times?

The problem becomes even more difficult when the policymaker must weigh two or more competing policy options through the lens of BE. Consider the issue of mortgage choice and its relationship to the 2008 mortgage-induced financial crisis. Leaving aside obvious problems of fraud in the marketing and origin of some mortgages during that period, many consumers simply made mistakes about the wisdom of home-buying and mortgage choices largely because of mistaken assumptions about the future expected path of home prices and interest rates. In particular, some consumers took out higher-cost subprime mortgages with adjustable interest rates based on unduly optimistic projections about the future path of housing prices, leading them to take on greater leverage and pay a higher price to purchase a home than was warranted in light of subsequent developments.[77] Some commentators have attributed the boom in housing prices and use of subprime mortgages to a grab-bag of widespread behavioral biases that supposedly led to those mistakes.[78]

Regardless whether they held prime or subprime mortgages, homeowners who took out adjustable rate mortgages when the Federal Reserve initially drove down short-term interest rates in the early 2000s obviously suffered when the Fed reversed course a few years later and dramatically raised rates.[79] But many consumers also make mistakes and suffer welfare losses, judged after the fact, when they decide to take out a traditional 30-year fixed-rate mortgage with an unlimited right to prepay.[80] Homeowners pay a substantial interest rate premium for a fixed-rate mortgage that can amount to thousands or tens of thousands of dollars over the life of the

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[77] Although such behavior may be rational in asset markets where valuations are determined by parties' expectations of future price behavior, not underlying use values, giving rise to "asset bubbles." *See* STEVEN D. GJERSTAD AND VERNON L. SMITH, RETHINKING HOUSING BUBBLES: THE ROLE OF HOUSEHOLD AND BANK BALANCE SHEETS IN MODELING ECONOMIC CYCLES (2014).
[78] *See* Oren Bar-Gill, *The Law, Economics, and Psychology of Subprime Mortgage Contracts*, 94 CORNELL L. REV. 1073 (2009).
[79] *See See* Todd J. Zywicki and Gabriel Okloski, *The Housing Market Crash*, Mercatus Center Working Paper No. 09-35 (Sept. 2009).
[80] *See* Zywicki, *Just-So Stories*, *supra* note 34.

mortgage to purchase long-term insurance against future increases in interest rates.[81] Consumers who purchase a home using a fixed-rate mortgage suffer losses if interest rates fall and they are locked into a higher rate (or have to spend a substantial sum in closing costs to refinance) or sell their house and move earlier than expected (thus losing the benefit of the premium they paid for long-term interest-rate stability). If their house has declined in value in the meantime and they are in a negative equity position they will only be able to refinance into a lower rate if they can also come up with sufficient amounts of cash to cover the shortfall on the prior mortgage.[82]

It is not difficult to identify homeowners who suffered wealth losses because they chose an adjustable-rate mortgage instead of a fixed-rate mortgage and then attribute those decisions *post hoc* to the presence of some bias. But it also is not difficult to identify homeowners who suffered losses because they chose the opposite and attribute those *post hoc* to the same or other biases.[83] It is also not difficult to provide after-the-fact explanations grounded in the *ad hoc* application of various cognitive biases to "explain" the choices that led to these mistakes, regardless of whether adjustable rate or fixed rate mortgages. A theory malleable enough to explain both the overuse of adjustable rates mortgages and the opposite is of limited usefulness as a foundation for understanding consumer demand.[84]

b. How do Biases Manifest Themselves in Particular Contexts?

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[81] The average premium for a fixed-rate mortgage over an adjustable-rate mortgage is about 100 basis points. *See id.*

[82] *See id.*

[83] *See id.* In fact, available evidence indicates that consumers generally choose between adjustable and fixed rate mortgages in a fashion consistent with the predictions of economic rationality, namely, those with shorter time horizons who plan to move within a few years tend to be more likely to choose adjustable-rate mortgages than those who are expecting to stay put for a longer time. with respect to the particular question of mortgage choice during the housing boom, the increasing market share between fixed and adjustable rate mortgages was explained by changes in the relative price differentials between the two products created by the Federal Reserve's interest rate policies during that period. *See* Todd J. Zywicki and Gabriel Okloski, *The Housing Market Crash*, Mercatus Center Working Paper No. 09-35 (Sept. 2009).

[84] *See* Zywicki, *Just-So Stories*, *supra* note 34.

A second theoretical problem for efforts to develop a robust and useful BE model of consumer finance and consumer financial protection is the difficulty of determining how a particular bias will apply in a particular choice context. Thus, the same bias might generate completely contradictory predictions depending on how the choice context is identified.

Consider the most prominent example of BE policy analysis—the argument that individuals save too little (i.e., "undersave") for retirement relative to their supposed "true" preference to save more.[85] This failure to save as much as people say they want to do is supposed to be attributable to a variety of cognitive biases that are said to favor short-term consumption over long-term savings for retirement, including self-control problems, procrastination, hyperbolic discounting, and others.[86] Under the logic of this argument, the failure to save adequately can be assessed by the difference between the amount that people *say* they want to save and the amount they actually do save each month. This supposed difference between what people do and what they say they want to do leads to the policy idea that workers should be "nudged" or required to increase their retirement savings by being automatically enrolled in their company's employer-provided retirement plan, which would increase the number of people participating in the plan.

As discussed in chapter 12, evidence reveals that the vast majority of current and future retirees are saving enough or more than enough for retirement, especially once government benefits are taken into account.[87] Only a small number of retirees today are suffering financially and only a minority of working-age people are potentially on course to retire with inadequate resources. But even those saving less than average might be doing so only temporarily in light of light of the dynamics of their financial lifecycles, changes in the dynamics of work and retirement, and the availability of government social welfare benefits. With respect to

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[85] *See* RICHARD H. THALER AND CASS R. SUNSTEIN, NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS 106-07 (2008).
[86] *See* discussion in Zywicki, *supra* note 40.
[87] *See* Zywicki, *Save Too Little*, *supra* note 40.

understanding the retirement savings habits of higher-income Americans, traditional projections of how much they should be saving today for retirement in the future needs to be updated. It should be reevaluated to account for their changing work and retirement habits, especially the tendencies of higher-income individuals to work longer and beyond the traditional retirement age and to increase their pace of retirement savings after satisfying more urgent spending and savings priorities in their family-building years, such as saving for a home purchase and college for children. With respect to lower-income families, the progressive nature of the social security system means that lower-income families will receive a higher replacement percentage of their income in retirement than average, reducing their need for private savings. Also, unfortunately, lower-income workers tend to have shorter lifespans on average than higher-income workers, but ultimately this reduces their need for large private retirement savings. But is it possible to state without equivocation that BE theory predicts that people systematically will undersave for retirement and could one confidently assume that pushing them or requiring them to save more today would make them better off?

Although BE claims to identify some biases that suggest that people will undersave for retirement, other biases that predict that many people will *oversave* for retirement.[88] For example, one supposed manifestation of the "optimism" bias is that people hold unrealistically optimistic opinions about their chances to live a long life and underestimate their likelihood of premature death as a result of accident or disease.[89] For example, the average 30 year old American faces a 15-20% likelihood of dying before he or she reaches the age of 70. This means, of course, that roughly one-fifth to one-sixth of working Americans can be projected to *never* spend any of their money saved for retirement. If the optimism bias is accurate, this suggests that some people are *oversaving* for retirement because they are overoptimistic about their

[88] Zywicki, *supra* note 40; Zywicki, *Just-So*, *supra* note 34.
[89] Individuals also supposedly underestimate their probability of getting divorced in the future, which if known accurately would be likely to produce reduced savings and increased consumption during married life. *See* Zywicki, *Just-So*, *supra* note 34.

expected probability of living to retirement age and therefore are unrealistically deferring income to enjoy in retirement, which some of them are unlikely to ever see.[90] Yet they bear the cost of this overoptimistic "biased" estimate of life expectancy because they have to forego current enjoyment today, either by working more or foregoing consumption, to shift income to a speculative future they will never achieve.

But the propensity to save too much, too little, or the correct amount for retirement is not randomly distributed in the population, just as life expectancy is not randomly distributed.[91] Savings and other financial habits are correlated with other behaviors that impact mortality, such as eating, sleeping, working, exercise, weight, and smoking habits.[92] In general, those who save less than average for retirement and exhibit other poor financial habits (such as lower credit score and delinquency on debt) are also those who tend to live a lifestyle that is correlated with an increased risk of premature death, such as smoking, working in a dangerous occupation, or being overweight. By contrast, those with higher levels of income and education tend to both save and live longer than average. Thus, it is appears that those who are saving more, less, or the average amounts may actually be saving optimally given their projected life expectancies.[93] As a result, policies designed to induce a savings rate based on a measure of *average* life expectancy and *average* retirement financial needs could have the unintended consequence of displacing this more nuanced pattern of the relationship between savings behavior and life expectancy with a crude default rule that reduces the fit for either group.[94]

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[90] Zywicki, *supra* note 40.
[91] Zywicki, *supra* note 40.
[92] Zywicki, *supra* note 40, at 912-13.
[93] *See* Zywicki, *supra* note 40.
[94] In addition, automatically enrolling workers in a retirement plan with a default contribution rate can increase contributions in the short-term from those contributing less than average but can also reduce the contribution rate of those who were previously saving more than average. *See* Brigitte C. Madrian and Dennis F. Shea, *The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior*, 116 Q. J. ECON. 1149 (2001); *see also* MARIO J. RIZZO AND GLEN WHITMAN, ESCAPING PATERNALISM: RATIONALITY, BEHAVIORAL ECONOMICS, AND PUBLIC POLICY 303-06 (2020) (discussing studies).

Moreover, a natural limitation of human experience is that people have difficulty accurately projecting what their lives will be like in retirement. Many people believe they will be healthier and more active when they retire than they actually will be thus they may overestimate their expected spending on travel and other activities. They may also underestimate how much their living costs will decline in retirement by eliminating from their budget the costs associated with working full-time (taxes, commuting, clothing, etc.) as well as replacement rates of consumer durable goods, such as automobiles, furniture, and appliances. Because they have more time available, most retirees also substitute home production for many services they purchased when they were working, such as food preparation, home cleaning, lawn care, and home repair services. As a result of these unanticipated reductions in spending, many retirees today actually build wealth in retirement instead of drawing it down.

Overall, it simply is not possible for any economist to be confident that people will be made better off by shifting income from today to decades into the future without knowing their current budget constraints and uncertainties about their projected life expectancies. Because of inherent household budget constraints, increasing one's retirement savings now can only be funded by reallocating funds from their current allocation to fund future consumption.[95] There are costs to deferring income and they include not only reducing current consumption but also potentially giving up valuable household investment opportunities. Other sacrifices could include challenges in meeting the expenses associated with raising children; reducing saving for other purposes (such as an emergency reserve fund, a home purchase, or college savings); or needing to work more to increase income at the expense of time for family and personal development (such as exercise or enjoyable hobbies); or to simultaneously save more for retirement while increasing usage high-cost consumer credit to maintain one's preferred level of consumption. As noted above, surveys of those who are not saving for retirement indicate that

[95] *See* discussion in chapter 12; Zywicki, *supra* note 40.

only a trivial number fail to do so because of BE-style motivations, such as "not having taken the time to do it," as opposed to weightier concerns such as not being eligible, trying to make ends meet on a month-to-month basis, paying down consumer debt or student loans, or saving for some other priority such as a home or college education. Moreover, as noted, between one-fifth andone-sixth of working age adults will not survive to retirement age to enjoy their deferred resources. Thus, although changing the default rule with respect to enrollment in retirement plans could potentially increase the overall rate of retiring saving, which by itself is unclear, this effect cannot by itself be assumed to increase overall welfare without also understanding the opportunity cost associated with budget-constrained households reallocating those resources from some other, usually also high-valued, purpose.[96]

A second example of the theoretical limits of BE relates to the question of whether merchants should be permitted to impose a surcharge fee on customers who want to pay using a payment card (debit, credit, or prepaid card) instead of simply being permitted to offer a discount for using other types of payment.[97] Federal law requires that merchants be permitted to offer a cash discount to consumers as part of their agreement with credit card issuers, although many states have banned surcharging of card transactions.[98] Merchants, however, have wanted to be allowed to impose a surcharge to recover the credit card merchant discount fees that are incurred when a consumer pays using a payment card. Although they were permitted to offer a cash discount already under law, they also wanted the option of imposing a surcharge.

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[96] An additional example is the idea of "cooling-off" periods, which give consumers an opportunity to make a purchase but then to rescind it within a specified time period. Some behavioral economists have argued that cooling off periods are useful for consumers to overcome certain biases, such as hyperbolic discounting or myopia. On the other hand, cooling-off periods could be argued to be ineffective because of biases such as the status quo bias or commitment bias. *See* Beales, *To BE, supra* note 23, at 361. Indeed, such remedies could even be argued to be counterproductive, if consumers are more likely to make a purchase than otherwise based on a belief that they can return it if they change their mind but have an unrealistic assessment of their likelihood of doing so. [Sentence is confusing. Needed?]

[97] *See* Todd J. Zywicki, Geoffrey A. Manne, and Kristian Stout, *Behavioral Economics Goes to Court: The Fundamental Flaws in the Behavioral Law & Economics Arguments Against No-Surcharge Laws*, 82 MISSOURI L. REV. 769 (2017).

[98] Agreements between payment card networks and merchants also historically banned surcharging but those provisions were removed pursuant to a litigation settlement.

A group of American self-styled behavioral economists supported the merchants demand to be allowed to surcharge payment card transactions and not just to offer a discount, asserting that having the ability to impose surcharges would be more effective at redirecting consumers to use a non-card alternative. They argued that even though a surcharge and discount were mathematically equivalent, labeling the price differential a "surcharge" instead of a "discount" would psychologically "frame" the issue as a "loss" to the consumer. This framing supposedly would trigger certain behavioral biases such as loss aversion and the endowment effect that would persuade consumers to more readily try to avoid this penalty by switching to a different payment mechanism.[99] Permitting a cash discount, by contrast, was asserted to be less effective because it would frame the transaction as a "gain," which supposedly would cause consumers to be less responsive to the fee. As a result, permitting surcharging was asserted to be more effective at deterring use of payment cards than discounting and thereby would increase overall consumer welfare by reducing merchant costs. The proponents of the argument offered no real-world empirical support for their hypothesis (and the limited evidence that is available suggests the opposite).[100]

The *a priori* reasoning of the American BLE scholars was striking because another group of BLE analysts, this one in the United Kingdom's Office of Fair Trading (OFT), examined the same pricing practice of surcharging and reached the opposite conclusion with respect to the welfare consequences for consumers. According to the OFT, this marketing scheme of announcing a lower up-front price and then adding additional fees later in the transaction process—a practice known as "drip pricing"—is one of the most harmful pricing practices for consumer welfare, as consumers rarely change their mind about going through with the transaction once they have reached that point but instead simply go through with it and pay the

[99] *See* discussion *id.*
[100] *Id.*

higher price.[101] Of particular note, the OFT pointed to several of the same biases to *criticize* surcharging that the American BLE scholars pointed to in *supporting* surcharging, such as the endowment effect. In other words, applying BE concepts to the same transactional context—allowing merchants to impose surcharges on consumers for using payment cards to conduct a transaction—American and British experts in behavioral economics reached the exact opposite conclusions about the welfare consequences of that policy for consumers. Once again, BE theories can be invoked in support of permitting something and its opposite.

Additionally, the example of surcharging, like BE proposals to increase savings by manipulating default rules, illustrates the potential for BE-based policies to backfire and result in harm to consumers. As explained by Zywicki, Manne, and Stout, there is an alternative explanation for why merchants want to surcharge payment card transactions, instead of just offering cash discounts: surcharging (but not discounting) enables merchants to extract wealth by imposing surcharges where consumers have a highly inelastic demand for using cards and so are unable to reasonably avoid the fee by switching to an alternative payment device. This includes such transactions purchasing airline tickets, travel, hotels, internet transactions, and sit-down restaurants, or where consumers are not repeat customers and thus can be fooled by the merchant's drip pricing techniques of luring consumers with a lower posted price and imposing a higher price that includes the surcharge later.[102] In fact, reviewing the evidence from countries where surcharging has been permitted indicates that merchants do not impose surcharges uniformly across industries but are much more likely to impose surcharges on payment cards in markets where consumers have less ability to substitute to alternative types of payments, such as those mentioned. Moreover, where surcharging has been permitted, merchants universally surcharge well above any reasonable estimate of their actual costs of accepting cards, which strongly suggests that merchants use surcharges as a profit center to

[101] *Id.* at 834-40.
[102] *See* Zywicki, Manne, and Stout, *supra* note 97.

extract wealth from consumers, instead of merely to cover their costs or to try to redirect consumers to an alternative payment device. In fact, far from using surchages as a vehicle to persuade consumers to substitute some other payment device, such as cash, surcharging is most prominent in transaction settings where consumers are *least* likely to be able to substitute to a non-card alternative.[103]

c. Tautological or Untestable Hypotheses

An additional problem with using BE as a foundation for consumer financial protection policy involves properly specifying testable hypotheses concerning the ability of BE to explain observed behavior and the welfare consequences of some of its policy recommendations. In some instances, this can collapse into tautological reasoning. If BE theorists propose a policy intervention (such as a "nudge") that is supposed to correct a problematic consumer behavior but when the behavior is not observed to change the BLE theorist concludes that the bias or anomaly is just more rigid than originally thought.

This problem of untestable and potentially tautological hypotheses stems from abandoning a consumer's revealed preferences as the benchmark for assessing consumer welfare. Once revealed preference is abandoned, the theorist drives a wedge between an individual's preferences as shown by actual choices made subject to existing constraints and what the theorist posits to be the individual's "true" preferences. As noted, preferences are inherently subjective and context-dependent, such that an individual's preferred choices might differ over time or depending on the specific constraints and opportunities presented at the moment of making a choice. As a result, the theorist faces the daunting task of trying to reconstruct what constitutes the individual's "true" preferences in a specific choice context without referring to the consumer's actual choices as their presumptively preferred choice.

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[103] *Id.*

Consider as an example the usage of bank overdraft protection by consumers. Many commentators have expressed concerns that some consumers use overdraft protection "excessively," leading them to pay what is believed to be excessive fees from frequent use of the product. Exemplifying these concerns, in 2010 federal financial regulators enacted a rule that banks can assess a fee for clearing a payment using overdraft protection for an ATM or nonrecurring debit card transaction only if the consumer affirmatively "opts-in" to authorize the use of the service in that context, as opposed to the prior regime that authorized the bank to automatically enroll customers in overdraft protection for those transactions subject to the consumer "opting-out."

The policy was applauded initially by BLE scholars, who saw changing the default rule from opt-out to opt-in as a useful "nudge" to induce consumers, especially more frequent users, to reduce their use of overdraft protection by raising the costs of using overdraft.[104] According to some BLE theorists, overdraft protection for ATM and debit card transactions is used to "exploit consumer mistakes" and "provide[s] little social value."[105] The primary intended beneficiaries of the new rule were those who used overdraft protection frequently, as it was assumed they would benefit the most from making it more difficult to access overdraft protection.

BLE theorists, however, were surprised and apparently disappointed to learn that after the adoption of the rule frequent overdraft users were substantially *more* likely to opt in to the usage of overdraft protection than those who rarely or never used it. Moreover, the likelihood of opting-in increased in a linear fashion from those who never used the service (and who rarely opted-in) to those who used the service frequently (and who opted-in at the highest rates). BLE theorists view this tendency of more-frequent users to opt-in after the rule change as confirming their prior assumptions about the irrationality of frequent overdraft users and their

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[104] *See* Lauren Willis, *When Nudges Fail: Slippery Defaults*, 80 U. CHI. L. REV. 1155 (2013); *see also* Ryan Bubb & Richard Pildes, *How Behavioral Economics Trims its Sails and Why*, 127 HARV. L. REV. 61 (2014).
[105] Bubb & Pildes, *supra* note 104.

susceptibility to manipulation by financial institutions through aggressive sales techniques. They did not consider any alternative hypothesis that might be consistent with consumer rationality.

For BLE theorists, the finding that frequent users of overdraft protection were also those who were most likely to opt-in after the rule change is *itself* evidence of the depth of irrationality and lack of self-control among some consumers and the need for heightened efforts to protect them from themselves and banks.[106] But the conclusion that the failure to respond to the nudge demonstrates the irrationality of the underlying behavior is tautological—the nonresponsiveness of some consumers to a policy that is supposedly protect them from their own irrationality cannot be offered as proof of that premise that they are irrational. Under the reasoning of BLE theorists, there would be no response by consumers that could disprove the hypothesis that frequent usage of overdraft is driven by consumer irrationality and biased decision making: if usage by frequent users declined after the rule change, that would confirm the hypothesis that consumers had been fooled into using overdraft protection irrationally and changing the default rule was sufficient to overcome their biases; but if usage among frequent users did not change substantially (which was what actually happened) that would prove instead that they were even more biased and irrational than originally believed, and that more severe steps would need to be taken to protect them from themselves.

But there is an alternative hypothesis that does not rest on tautological reasoning and a self-confirming hypothesis of consumer irrationality—those who were more likely to opt-in to overdraft protection after the rule change were those who find greater value in the product and were willing to go to the additional effort to opt-in.[107] Standard economic theory holds that those who would be willing to do so would be those who have the strongest and most inelastic demand

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[106] *See* Todd Zywicki, *Behavioral Law and Economics and Bank Overdraft Protection*, THE VOLOKH CONSPIRACY (Nov. 20, 2013), *available in* http://volokh.com/2013/11/20/behavioral-law-economics-bank-overdraft-protection/,

[107] *Id.*

for the product. In fact, frequent users of bank overdraft protection use the product because they have poor credit and limited choice due to lack of access to other more desirable types of credit, such as credit cards.[108] For the average heavy user of overdraft protection, the next-best alternative is usually a payday loan, which can be comparable in cost to the consumer but often less convenient to use. Given their limited choices among a set of unattractive and constrained options, those who had the strongest and most inelastic demand for overdraft protection would be predicted to be most likely to opt-in, which is what actually happened.[109]

3. BE's Empirical Foundations as Applied to Consumer Finance

A third problem area for a BE-based consumer financial protection policy program is its poor success in finding empirical support for its hypotheses in real-world contexts outside the artificial laboratory environment. This failure of BE as an empirical research program is ironic in light of its central claim that it predicts observed behavior by consumers more accurately than does the rationality-based assumptions of the neoclassical model. Yet when BE's hypotheses are tested empirically they typically fail when compared to the traditional model of consumer demand for financial services laid out in the first half of this chapter.

Usage of consumer credit provides a readily-available testing ground for the claims of BLE theories versus neoclassical theories of consumer finance. As noted above, the predictions of BLE theories differ from traditional theory in three dimensions. Both theories accept the reality that in a world of uncertainty combined with imperfect and costly information, consumers will make mistakes in their selection and usage of consumer credit products. But they differ in important ways.

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[108] *See* Robert L. Clarke and Todd J. Zywicki, *Payday Lending, Bank Overdraft Protection, and Fair Competition at the Consumer Financial Protection Bureau*, 33 REV. OF BANKING AND FIN. LAW.235 (2013-14) (summarizing research); Todd J. Zywicki, *The Economics and Regulation of Bank Overdraft Protection*, 69 WASH. & LEE L. REV. 1141 (2012).

[109] *See also* Fumiko Hayashi and Emily Cuddy, *Recurrent Overdrafts: A Deliberate Decision by Some Prepaid Card Holders?*, Fed. Res. Bank of Kansas City Research Working Paper RWP 14-08 (Oct. 2015).

The neoclassical model predicts: (1) Most consumers will choose correctly in the sense of making choices that increase their welfare and avoiding those that make them worse off, (2) Errors will be systematically unbiased, and (3) consumers generally will learn from their mistakes over time, will take actions to change their future course of action in response to past mistakes, and their propensity to take corrective action will be related to the costliness of their mistake. The BLE model, by contrast, predicts: (1) Most or a large number of consumers will make mistakes with respect to their choices, frequently making choices that result in reducing their welfare, (2) Errors will be systematically biased, resulting in large welfare losses, and (3) Because of the deep-seated and unconscious nature of many of their biases consumers will be slow to learn from their mistakes and slow to change their behavior going forward to reduce those losses.

There are few papers that directly attempt to test BLE hypotheses of consumer finance against predictions provided by the neoclassical model. Although many examples could be provided, two notable examples are briefly discussed here—credit card usage and payday loan usage. In both instances, the predictions of BE have been roundly rejected.

One of the most prominent applications of BLE has been to the analysis of credit card usage by consumers.[110] Law professor Oren Bar-Gill has argued that consumer usage of credit cards is explained by a variety of behavioral biases that lead consumers to overuse credit cards and to make expensive mistakes that reduce their economic welfare. Bar-Gill identifies the "underestimation" bias as a primary source of irrationality, exacerbated by problems of hyperbolic discounting. Bar-Gill claims that biases such as hyperbolic discounting and lack of self-control create a baseline problem where consumers are unable to govern their spending impulses which are empowered by the ability to make purchases with their credit cards even without sufficient liquidity. He claims that consumers then justify these purchases by telling

[110] *See* Bar-Gill, *supra* note 46.

themselves that they will pay for those purchases at the end of the month when the bill comes due, but because of the "underestimation" bias consumers are unrealistically optimistic in their ability to pay their credit card statement in full when due. This leads them to unexpectedly revolve their balance to the next month, at which time the dynamic repeats itself again. Indeed, according to Bar-Gill, "credit card financing [is] *uniquely* vulnerable to the underestimation bias" compared to other types of consumer credit such as closed-end installment loans.[111]

According to Bar-Gill, these same biases to focus on short-term rewards at the expense of long-term costs also affect the shopping process for credit cards. In particular, the unrealistic beliefs of consumers that they will not revolve their credit card balances leads them to undervalue the importance of interest rates when they choose their credit card and to focus unduly on short-term features such as the annual fee, rewards, and short-term "teaser" rates. As a result, once they end up revolving their balances they pay higher APRs and larger finance charges than they would have if they had instead shopped for their card based on a more realistic assessment of their probability of revolving their balances. He also proposes some ancillary hypotheses, such as the prediction that debit cards would never gain substantial market share in the United States because of the inability of debit card issues to exploit consumer's underestimation bias and the temptation of deferred payments.[112]

Summarizing his argument, Bar-Gill believes: (1) consumers frequently err in their usage of credit cards, specifically by underestimating their likelihood of revolving their balances from month to month, (2) consumer errors are systematically biased, in that consumers are much more likely to underestimate their likelihood of revolving their balances than to overestimate, a and (3) consumers do not learn from their mistakes and as a result continue to make the same mistakes repeatedly, leading to ever-growing mountains of debt and ever-higher finance charges until they finally collapse under the weight of their debt.

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[111] Bar-Gill, *supra* note 46, at 1379.
[112] *Id.* at 1378.

Bar-Gill did not attempt to provide much empirical support for his claims, but they were evaluated by Durkin, Elliehausen, and Zywicki.[113] Reviewing existing data and empirical studies, Durkin, et al., concluded that none of the hypotheses suggested by Bar-Gill's arguments were confirmed empirically: (1) The majority of consumers accurately predict their likelihood of revolving their balances from month-to-month and in selecting their credit card those who expect to revolve their balances are more aware of their APR and more likely to change credit cards in response to an offer of a lower APR than those who do not revolve their balances; (2) any errors that consumers make with respect to their credit card choice and usage is unbiased, meaning that consumers are no more likely to underestimate their potential to revolve balances than they are to overestimate it;and (3) consumers who make mistakes with respect to credit card selection respond by adjusting their behavior going forward and the larger the size and cost of their mistakes the more likely they are to alter their future behavior.[114]

In addition, Durkin, et al., concluded that contrary to Bar-Gill's prediction that debit cards would gain only "limited success vis-à-vis the credit card," debit card usage surpassed credit card usage in transaction volume in 2006—the very year his article was published. Nor has there been any evidence that credit card usage had created an upward spiral in household indebtedness over time leading to increased risk of financial breakdown. Consumers were also not found to be irrationally responsive to short-term product attributes such as credit card rewards or teaser rates.[115] In short, there appears to be little evidence to support the hypothesis that consumer credit card usage is better explained by BLE theories of consumer demand than the traditional model.

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[113] Thomas A. Durkin, Gregory Elliehausen, and Todd J. Zywicki, *An Assessment of Behavioral Law and Economics Contentions and What We Know Empirically about Credit Card Use by Consumers*, 22 SUPREME CT. ECON. REV. 1 (2015).
[114] *See* Sumit Agarwal, Souphala Chomsisengphet, Chunlin Liu, and Nicholas S. Souleles, *Do Consumers Choose the Right Credit Contracts*, 4 THE REV. OF CORP. FIN. STUDS. 239 (2015).
[115] *See* Howard Beales and Lacey L. Plache, *Rationality, Revolving, and Rewards: An Analysis of Revolving Behavior on New Credit Cards*, 21 S Ct Econ Rev 133 (2014); Tom Brown and Lacey Plache, *Paying with Plastic: Maybe Not so Crazy*. 73 U Chi L Rev 63 (2006).

Use of alternative financial products has also been the subject of BLE theorizing about consumer demand for financial products. Relying on many of the same purported biases as with credit cards, BLE theorists have argued that the initial decision to take out a payday loan and then to rollover the loan is motivated by behavioral biases such as optimism, imperfect self-control, status quo bias, and hyperbolic discounting.[116] Empirical studies by Ronald Mann[117] and Allcott, et al.,[118] test the hypothesis that payday loan borrowers are systematically overoptimistic in their beliefs about their likelihood of rolling over their payday loans. Mann surveyed payday loan customers about their expectations of how many periods it would take them to repay their loans and then compared their predictions to their actual performance. He found that a majority (60 percent) of customers correctly predicted at the time of their loan how long it would take to repay the loan and that errors among those who did not accurately predict the time to repay were unbiased, meaning that payday loan customers were just as likely to repay their payday loans earlier than expected as they were to repay their loans later than expected.

Using a similar methodology to Mann, Allcott, et al., found that "[O]n average, people almost fully anticipate their high likelihood of repeat borrowing." They also found that payday loan borrowers also learned with experience and although inexperienced borrowers did understate their expected course of borrowing "more experienced borrowers predict exactly correctly on average." Of additional note, Allcott, et al.,[119] compared the relative success of actual payday loan borrowers at anticipating how long it would take to repay their loans to the predictions of a group of experts consisting of payday lending practitioners and academic economists who study related issues. They found that while actual payday loan borrowers only underestimated their future borrowing by just 4 percentage points (all among less-experienced

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[116] *See* T.R. Harmon-Kizer, *Let the Borrower Beware: Towards a Framework for Debiasing Rollover Behavior in the Payday Loan Industry*, 42 J. CONSUMER POLICY 245 (2019).
[117] Ronald Mann, *Assessing the Optimism of Payday Loan Borrowers*, 21 S. CT. ECON. REV. 105 (2014)
[118] Hunt Allcott, Joshua Kim, Dmitry Taubinsky, and Jonathan Zinman, *Are High-Interest Loans Predatory? Theory and Evidence from Payday Lending*, working paper (Mar. 9, 2020).
[119] *See* Alcott, et al., *supra* note 118.

borrowers) the group of "experts" predicted that payday loan borrowers would underestimate their future borrowing by 30 percentage points. This suggests that experts hold a much dimmer view that is warranted of the ability of payday loan customers to understand their needs and pursue available solutions. To the extent these experts' views are representative of the views of regulators and other policymakers, their inaccurate stereotype of the low sophistication, rationality, and intelligence of payday loan customers, could make those authorities overoptimistic about their ability to identify policies that will improve consumer welfare by overriding the choices of those they claim to be protecting.