



Consumer Financial Protection

The Harvard community has made this article openly available. [Please share](#) how this access benefits you. Your story matters

Citation	Campbell, John Y., Howell Edmunds Jackson, Brigitte C. Madrian, and Peter Tufano. 2011. Consumer financial protection. <i>Journal of Economic Perspectives</i> 25(1): 91-114.
Published Version	doi:10.1257/jep.25.1.91
Citable link	http://nrs.harvard.edu/urn-3:HUL.InstRepos:9887620
Terms of Use	This article was downloaded from Harvard University's DASH repository, and is made available under the terms and conditions applicable to Open Access Policy Articles, as set forth at http://nrs.harvard.edu/urn-3:HUL.InstRepos:dash.current.terms-of-use#OAP

Consumer Financial Protection

John Y. Campbell, Howell E. Jackson, Brigitte C. Madrian, and Peter Tufano

John Y. Campbell is the Morton L. and Carole S. Olshan Professor of Economics, Howell E. Jackson is the James S. Reid, Jr., Professor of Law, Harvard Law School, Brigitte C. Madrian is the Aetna Professor of Public Policy and Corporate Management, Harvard Kennedy School, and Peter Tufano is the Sylvan C. Coleman Professor of Financial Management, Harvard Business School, all at Harvard University, Cambridge, Massachusetts. Their e-mail addresses are <john_campbell@harvard.edu>, <hjackson@law.harvard.edu>, <brigitte_madrian@harvard.edu>, and <ptufano@hbs.edu>, respectively.

***Abstract:** The recent financial crisis has led many to question how well businesses deliver services and how well regulatory institutions address problems in consumer financial markets. This paper discusses consumer financial regulation, emphasizing the full range of arguments for regulation that derive from market failure and from limited consumer rationality in financial decision making. We present three case studies—of mortgage markets, payday lending, and financing retirement consumption—to illustrate the need for, and limits of, regulation. We argue that if regulation is to be beneficial, it must be tailored to specific problems and must be accompanied by research to measure the effectiveness of regulatory interventions.*

Acknowledgements: The authors have benefited from helpful comments from David Autor, Charles Jones, John List, Sendhil Mullainathan, Timothy Taylor, and participants in the Harvard Joint Center for Housing Study's February 2010 "Symposium: Moving Forward—The Future of Consumer Credit and Mortgage Finance."

Over the past 65 years, financial innovation has presented U.S. households with an ever-widening set of financial options from an expanding set of firms and accompanied by a sometimes dizzying amount of information. At the same time, consumer finance has increasingly become a “do-it-yourself” activity (Ryan, Trumbull, and Tufano, 2010). Households are expected to make decisions about pension plan contributions and payouts, to choose from a wide array of credit instruments to fund everything from home purchase to short-term cash needs, and more generally to assume a greater level of responsibility for their financial well-being.

This greater consumer autonomy with respect to more, and more important, financial decisions poses special public policy concerns in light of the mounting evidence that consumers do not always behave as time-consistent, rational utility maximizers. For example, many consumers appear to have present-biased preferences, which lead them to favor present consumption, although they would display greater patience if they could commit to a plan of savings and future consumption. Some consumers may lack the cognitive capacity to optimize their financial situation even if presented with all the information that in principle is required to do so.

Such biases and cognitive limitations may be particularly important in the financial context because learning from experience in major financial decisions is difficult. Many financial decisions like choosing a mortgage or investing in a retirement account are undertaken only infrequently. Moreover, the outcomes of these decisions are delayed, perhaps for decades, and are subject to large random shocks, so that personal experience is slow to accumulate and is contaminated by noise. It can also be difficult to learn about financial decisions from the experiences of others. Financial shocks are often correlated across individuals, so that averaging the experience of neighbors or acquaintances may not eliminate noise. The rapid pace of financial innovation reduces the relevance of older cohorts’ experiences. Social taboos on discussing personal finances further reduce the effectiveness of social learning (Zelizer, 1994).

In the next section, we argue that these considerations provide a rationale for consumer financial protection that goes beyond the standard market failures, both because unregulated financial markets may be inefficient and because they may generate undesirable distributional outcomes. We then use three case studies—of mortgage choice, payday lending, and retirement saving—to explore these issues. Finally, skepticism about consumers’ ability to understand and use financial products is an important motivation for the Consumer Financial Protection Bureau authorized in legislation passed in summer 2010. We conclude by proposing an agenda for the new bureau, taking into account some potential limits to its regulatory effectiveness.

The Case for Consumer Financial Regulation

Standard neoclassical analysis provides a taxonomy of market failures related to market structure and the incentives of market participants. These traditional failures—externalities, information asymmetries, market power, and coordination failures like those that arise with public goods—can all be applied to consumer financial markets.

For example, positive externalities from human capital accumulation and home ownership have been used to justify government subsidies to student loans and home mortgages. Conversely, foreclosures have social costs that are not taken into account by mortgage borrowers and lenders. Campbell, Giglio, and Pathak (forthcoming) present evidence that foreclosures lower the prices of nearby houses and suggest that the transmission mechanism may be vandalism or neighborhood deterioration. Such negative externalities can be the starting point for a case for policy interventions to reduce the incidence of foreclosures.

Consumer financial markets provide the textbook case of market failure due to information asymmetries: the underprovision of insurance due to adverse selection and moral hazard. Regulatory responses to this type of market failure include mandating the purchase of insurance, public provision to mitigate adverse selection, and subsidizing private insurance through the tax code. Information failures have also been implicated in the underprovision of consumer credit.

One feature of many retail markets is price dispersion, which can be sustained by the existence of search costs that make some consumers willing to pay higher prices than they might find elsewhere. These search costs give retailers a degree of market power, allowing them to charge prices above marginal cost. One example in the financial arena is the wide range of fees charged for nearly identical stock market index funds based on the Standard and Poor's 500 index (Hortaçsu and Syverson, 2004). Policy responses include standardized or centralized information provision to reduce search costs, or direct price regulation.

More generally, making sensible decisions about financial products often requires considerable information on terms and conditions, not just prices. This is especially true for financial decisions that are undertaken only infrequently. But in many cases, consumers cannot efficiently generate information on their own, and the joint production of such information with other consumers, with its public good characteristics, is not easily coordinated. Often the financial provider will be the most efficient supplier of information, which creates an additional rationale for mandates that firms produce and disseminate certain types of information.

Even with disclosure rules in place, lack of trust is a problem that may lead consumers to avoid the use of certain financial products altogether (Christelis, Jappelli, and Padula, 2010; Cole and Shastry, 2009; Guiso, Sapienza, and Zingales, 2008). Since lack of financial market participation can be a serious mistake, there is a case for regulation to improve consumer trust through restrictions on insider trading and suitability and fiduciary requirements. There is evidence that mutual fund markets with stronger levels of investor protection are larger than those with lower levels of protection (Khorana, Servaes, and Tufano, 2009), perhaps working through this channel of trust.

In addition to these traditional market failures, research in behavioral economics has highlighted the potential for inefficient market outcomes that result from consumers' biases and cognitive limitations. A leading example is the case of present-biased preferences, which can lead an individual to make a decision today that reduces future welfare in a way that the individual later regrets (Strotz, 1955; Laibson, 1997). This situation in which a present decision creates negative future consequences is sometimes referred to as an "internality." Present-biased preferences have

been used to explain behaviors as diverse as failing to save for retirement and smoking. Possible policy responses to such preferences are to constrain the present self from taking actions that would be too detrimental to the future self, for example, by limiting early access to retirement savings or taxing the sale of cigarettes.

Recent research has documented a pervasive lack of basic financial literacy, an example of a cognitive limitation (for example, Lusardi and Mitchell, 2006, 2007; Lusardi, Mitchell, and Curto, 2010; Lusardi and Tufano, 2009). Table 1 lists a short set of financial literacy questions first added to the Health and Retirement Study in 2004 and subsequently incorporated into several other national and international surveys. Among the older Health and Retirement Study Respondents, only 56 percent correctly answer both the first two questions, and only 24 percent get all three questions correct (Lusardi and Mitchell, 2006). The younger respondents in the National Longitudinal Survey of Youth fare even worse, with only 46 percent answering both the first two questions correctly and 27 percent getting all three questions right (Lusardi, Mitchell, and Curto, 2010).

A lack of financial knowledge need not be problematic if, as Milton Friedman (1953) suggested, consumers learn to behave optimally through trial and error, much as a pool player need not have any knowledge of physics in order to play pool well. But there is growing evidence that consumers make avoidable financial mistakes with nontrivial financial consequences (Agarwal, Driscoll, Gabaix, and Laibson, 2009; Bar-Gill and Warren, 2008; Campbell, 2006; Choi, Laibson, and Madrian, forthcoming). Moreover, these mistakes are more common among consumers with lower levels of education and income (Calvet, Campbell, and Sodini, 2007, 2009) and lower financial literacy (Kimball and Shumway, 2007). There is some evidence that consumers who perform better on cognitive tests make better financial decisions in laboratory experiments (Benjamin, Brown, and Shapiro, 2006) and earn higher returns on their equity portfolios later in life (Grinblatt, Keloharju, and Linnainmaa, 2009).

Even if consumers cannot maximize their own welfare, regulators may not necessarily do better. But in certain cases, outcomes may be improved by regulations on market conduct that reflect the presumed judgment of what most consumers would want, were they fully informed and well advised. This logic underpins the rationale for “libertarian paternalism” or “nudges,” discussed at length by Thaler and Sunstein (2008), as well as more heavy-handed forms of government intervention.

Consumers’ behavioral biases and cognitive limitations may also change the optimal response to traditional market failures. Traditional failures are often addressed by information provision or disclosure: to mitigate asymmetric information, to reduce search costs and limit market power, and to remedy the underprovision of a public good. But mandated information provision may be an ineffective remedy if consumers either do not understand the information or believe that it is not relevant to their decisionmaking. For example, if consumers mistakenly believe that they will pay their credit bill on time every month, clear and transparent disclosure of late fees and interest rates may not change behavior because consumers deem the information irrelevant at the time they make a purchase.

The functioning of consumer financial markets may also have distributional implications. For example, consumers may choose a bank account with “free” checking, underestimating the extent to which they will pay penalty fees for overdrawing their accounts in the future. However, banks then compete away the excess profits they obtain from overdraft fees by keeping base charges low on checking accounts. This implies that naïve consumers cross-subsidize sophisticated consumers who don’t overdraw their accounts. Products that allocate costs more equally across naïve and sophisticated consumers cannot be successfully brought to market as sophisticated consumers find it attractive to retain the cross-subsidies embedded in existing products. Nor is it profitable for firms to educate naïve consumers, because educated consumers become sophisticated and then demand fewer high-cost financial services. This “shrouded equilibrium” has been modeled by Gabaix and Laibson (2006). Campbell (2006) presents evidence that similar phenomena are important in mortgage markets. Naïve consumers are likely to have less cognitive ability and financial experience—and lower income—than other consumers. As a result of dynamics like these, people with lower incomes may systematically end up in the segments of the market where financial charges are highest.

Case Study: Choosing a Mortgage

A great variety of mortgages are available, some of which are complex and pose risks that are difficult even for financial professionals to thoroughly understand. Mortgage costs appear in a number of forms, not all of which are straightforward to measure. Households take out mortgages relatively infrequently, and often negotiate them at the same time that they are undergoing a major life transition by moving homes. Under these circumstances, households may well fail to make optimal decisions.

One rationale for government policy in this area is to make information on mortgages available, comparable, and comprehensible. A second rationale is to encourage contractual terms for mortgages that are less likely to cause later regret by buyers who are often present-oriented and have limited financial literacy. A third rationale for government mortgage policy is a public interest in reducing the incidence of foreclosures, which, as we mentioned reduce not only the value of foreclosed properties, but also the prices of neighboring properties (Campbell, Giglio, and Pathak, forthcoming). The negative effect on the neighborhood is an externality that will not be taken into account by private lenders even if their foreclosure decisions are privately optimal. A final rationale for government policy in this area is that a wave of foreclosures resulting from house price declines and unfavorable credit market conditions can contribute to macroeconomic instability, as suggested by the U.S. experience during both the Great Depression of the 1930s and the Great Recession of 2007–2009.

In the late 1920s, the dominant mortgage form was a short-term balloon loan that required frequent refinancing. Low house prices and reduced bank lending capacity in the early 1930s prevented many homeowners from refinancing, causing a wave of foreclosures that exacerbated the Depression. Since then, the dominant mortgage form in the U.S. has been a long-term amortizing mortgage with a fixed nominal interest rate. This type of mortgage, unusual in other countries, has been fostered by implicit public subsidies through government-sponsored entities, most notably Fannie Mae and Freddie Mac.

The fixed-rate mortgage has some important advantages. The predictability of nominal payments simplifies the household's financial planning problem, at least when inflation is relatively stable. The fixed nominal interest rate means that households are protected against rising inflation. On the other side, the mortgage typically has an option to refinance, protecting the household against unexpected declines in inflation during the life of the mortgage that would otherwise increase the real debt burden.

However, the fixed-rate mortgage has at least three major problems. First, because borrowers with a refinancing option are protected against inflation, inflation can create systemic risk for lenders of fixed-rate mortgages. Second, long-term nominal fixed-rate mortgages require homeowners to decide when they should refinance. This decision is complex; in fact, it is an example of a sophisticated "real options" optimal investment problem. Campbell (2006) presents evidence that in the late 1990s and early 2000s many households, particularly poorer and less-educated ones, paid higher mortgage rates than necessary. In American Housing Survey data, 12–14 percent of households were paying more than 2 percentage points above the prevailing mortgage interest rate in the late 1990s and early 2000s; this figure rose above 25 percent in 2003 after steep drops in interest rates made refinancing particularly advantageous. Third, present-oriented borrowers are tempted to extract home equity by increasing their mortgage balance. This temptation exists in all forms of mortgages, but the nominal fixed-rate mortgage, with its strong incentive to refinance in an environment of rising house prices and declining interest rates, provides frequent opportunities to succumb (Khandani, Lo, and Merton, 2009).

Other types of mortgages can mitigate these problems. For example, an adjustable-rate mortgage charges an interest rate that adjusts to variations in market rates and therefore indirectly to variations in inflation. Over the lifetime of an adjustable-rate mortgage, the real present value of mortgage payments is approximately invariant to inflation. Furthermore, an adjustable-rate mortgage normally has a lower interest rate than fixed-rate options, since lenders need not charge homeowners the cost of a one-sided bet on inflation. For these reasons, Greenspan (2004) famously argued that some U.S. homeowners would benefit by shifting from fixed to adjustable-rate mortgages.

However, even though the present value of mortgage payments is invariant to inflation with an adjustable-rate mortgage, the cash flow consequences of changing monthly mortgage payments can be material. An increase in inflation necessarily leads to a rise in real payments to compensate lenders for the erosion of the real value of their principal. This acceleration in the required repayment schedule causes serious problems for households that lack alternative means to borrow (Campbell and Cocco, 2003). More generally, variation in required monthly mortgage payments complicates the household's financial planning problem. Bucks and Pence (2008) present evidence that households with adjustable-rate mortgages systematically underestimate the degree to which their mortgage interest rates can vary over time.¹

¹ The popularity of adjustable-rate mortgages has varied over time, not only in response to the spread between fixed and adjustable interest rates, but also in response to recent rate movements, as if households have an irrational belief in mean-reversion of long-term interest rates (Campbell, 2006).

Because adjustable-rate mortgages do not have fixed monthly payments, it is comparatively straightforward to set their terms to require lower payments initially. It became common in the late 1990s and early 2000s to offer a low initial “teaser rate,” which was sometimes fixed for several years in “hybrid” adjustable-rate mortgages. After the initial period, many of these mortgages charged much higher interest rates, which made it highly desirable to refinance them if at all possible. These mortgages are similar to those that prevailed in the U.S. before the Great Depression in that they lead to defaults and foreclosures if refinancing is not available. They are also considerably more complex and therefore harder for households to evaluate and manage.²

Economists have suggested alternative mortgage forms that may be superior to any of those observed in the marketplace. For example, a fixed-rate mortgage that automatically refinanced with no option for home equity extraction would eliminate discretion over refinancing and the temptation to deplete home equity at refinancing dates. A fixed-rate mortgage with payments that are indexed to inflation would eliminate the remaining problem of inflation sensitivity. Adjustable-rate mortgages could be constructed with level nominal or real payments and a principal balance that adjusts to variation in short-term nominal interest rates. Finally, mortgages could have principal balances that automatically adjust in the same direction as the regional level of house prices, reducing the effect of regional price changes on mortgage borrowers’ home equity. (Shiller, 2008).

If such contracts would be superior to existing mortgage forms, at least for certain groups of home-buyers, why do they not appear in the marketplace? As discussed earlier, in a mortgage market in which some households are present-oriented and cognitively challenged, financial innovators may have only weak incentives to design and market new products that can only be evaluated by sophisticated households. Instead, innovators may design superficially attractive products that cater to household behavioral biases. Some households will take out conventional fixed-rate mortgages without anticipating that they will fail to refinance them optimally and thus will pay higher mortgage rates than they need to when interest rates decline. Sophisticated households who do know how to refinance their mortgages will find conventional fixed-rate mortgages attractively cheap because they benefit from a cross-subsidy from naïve households. Sophisticated households will not perceive any benefit from an automatically refinancing fixed-rate mortgage, and financial entrepreneurs offering such a product will not be able to win customers either by advertising to sophisticated households or by educating naïve households to become sophisticated.

There are several ways in which consumer financial regulation might help improve mortgage contracts. Most obviously, disclosure requirements can facilitate risk comparison across mortgage forms. In this regard, it is key to offer households measures of risk as well as expected cost. Standard calculations of interest rates using annual percentage rates are helpful for

² Miles (2003) presents evidence that households in the United Kingdom, where mortgages with adjustable teaser rates are standard, failed to manage them properly in the early 2000s. He shows that almost one-third of U.K. households were paying a higher rate than they could get by taking out a new adjustable rate mortgage. Similarly, it has been claimed that many U.S. households took out complex subprime mortgages during the credit boom of the 2000s even though they would have qualified for cheaper prime mortgages (U.S. Government Accountability Office, 2004; Bond, Musto, and Yilmaz, 2009).

comparing mortgages with similar risks, but not for comparing fixed- and adjustable-rate mortgages, nor for comparing adjustable-rate mortgages with different initial fixed-rate periods, interest rate caps, and other complex features. Both the Federal Reserve Board and the Department of Housing and Urban Development have recently augmented disclosure requirements surrounding mortgage originations.

A related approach would be to focus on the mortgage brokers, who are often providing information to potential borrowers. In 2008, Congress passed the Safe Mortgage Licensing Act with the goal of establishing minimum state standards for licensing mortgage originators. A more drastic approach would be to establish a fiduciary duty for mortgage brokers—that is, a legal duty that they use their best judgment in acting in the best interest of borrowers.

An alternative regulatory strategy would be to promote a relatively small group of standard mortgage choices. The case for doing so is based on the presumption that a relatively small number of standard mortgages are a reasonable choice for most households. If these mortgages are offered as a “default” option, most households will choose from among them and this may reduce the incidence of financial mistakes. The existence of standard mortgages would let households concentrate on standard mortgage terms rather than considering a vast array of special features. For example, Woodward (2003) presents evidence that households pay lower mortgage fees when all fees are rolled into the interest rate, simplifying the task of cost comparison. Thaler and Sunstein (2008, Ch. 8) have proposed that mortgage terms be made available electronically in standardized form to permit the development of online sites for comparison shopping.

However, designating a preferred group of standard mortgages can have pitfalls, as well. In the past, government-sponsored enterprises like Fannie Mae and Freddie Mac implicitly subsidized long-term, nominal fixed-rate mortgages and helped them become de facto standard mortgages. One cost of this policy became apparent during the recent financial crisis when the government was forced to assume losses incurred by Fannie Mae and Freddie Mac. If certain mortgages are to be favored, it is preferable to do so explicitly: for example, by lowering capital requirements on banks holding such mortgages or by requiring consumers to go through additional steps to qualify for nonstandard mortgages.³ Another difficulty with promoting a small group of standard mortgages is that, given the problems with existing mortgage contracts, it is important not to choke off the development of new and potentially superior mortgages.

Finally, instead of focusing on helping consumers with their task of choosing a suitable mortgage, a complementary approach might focus on regulations that encourage or require mortgage modification as an alternative to foreclosure when unexpected circumstances arise. Lenders are particularly reluctant to reduce the principal balance on mortgages, in part because they find it hard to distinguish cases where this is the efficient outcome from cases where borrowers do not need principal reduction or cases where borrowers cannot support even a reduced level of mortgage debt. One alternative, discussed by White (2009), would be to rely on

³ The Federal Reserve Board’s 2008 amendments to regulations implementing the Home Ownership and Equity Protection Act impose new and stringent underwriting standards for “higher priced mortgage loans” associated with the subprime crisis.

bankruptcy judges to make this determination by altering the bankruptcy code to allow mortgage principal reduction in bankruptcy.

Case Study: Payday Lending

Payday loans are relatively small-size, short-term, unsecured loans that are often used by less well-to-do consumers. Most payday loans follow a standard lending process and take a standard form. Consumers visit a storefront location, request a loan, have their employment verified, and if approved, walk out minutes later with the loan proceeds. Most transactions are small—about 80 percent of loans are for less than \$300. Instead of a finance charge that varies with the duration of the loan, the standard fee typically ranges from \$15 to \$30 per \$100 borrowed for approximately a two-week period (Stegman, 2007). In some states, borrowers can repay the loan (plus fee) by rolling it over to a new, higher balance loan, while other states limit same-store rollovers. Many studies document sizable repeat usage of payday loans, although the exact amount varies by study (Elliehausen, 2009; Stegman and Farris, 2003; Parrish, 2008; Lawrence and Elliehausen, 2008; Flannery and Samolyk, 2005). The volume of payday loans is roughly \$40 billion per year. For a review of this industry, see Stegman (2007) in this journal and the pioneering work of Caskey (1994, 2001, 2002).

Lawrence and Elliehausen (2008) find that payday loan customers tend to have a moderate level of education, are under age 45, and have children. Most are from lower and middle-income households with limited liquid assets (Elliehausen, 2009). Many have been denied credit in the past 12 months, have credit cards at the limit, have concerns about their ability to access credit, and are less likely to have home equity to tap (Elliehausen and Lawrence, 2001; Lawrence and Elliehausen, 2008). Those who use payday loans are also more likely to use other forms of high-cost credit (Lusardi and Tufano, 2009).

There are almost 24,000 payday loan outlets nationally, but the industry is not particularly concentrated, with the largest six companies accounting for 20 percent of the market. The few studies on business profitability suggest that payday lending is not extraordinarily profitable, due to high operating costs (Flannery and Samolyk, 2005; Tufano and Ryan, 2009; Huckstep, 2007; Skiba and Tobacman, 2007).

Traditional market failures seem an unlikely basis for regulation of payday loans. There is little evidence of market power or abnormal profits.⁴ In some low-income communities, the number of payday loan outlets far exceeds the number of banks and even fast food restaurants (Morse, 2009), and they are more prevalent in less-banked communities (Graves, 2003). There don't appear to be asymmetries of information, with lenders knowing more than borrowers, nor material nonpublic information that might justify regulation.

There is mixed evidence on whether payday loans help or harm users. For example, Morse (2009) finds that households facing natural disasters were less likely to experience foreclosures (or larcenies) when payday loans were more accessible. Wilson, Findlay, Meehan,

⁴ Mann and Hawkins (2007) argue that the most convenient locations for customers are more expensive, which may privilege established firms and “hinder the effectiveness of price competition.”

Wellford, and Schurter (2010) replicate this finding with a laboratory experiment. Some evidence from states that shut down payday lending through rate caps shows that restricting access to payday loans causes deterioration in the overall financial condition of households (Zinman, 2008; Morgan and Strain, 2008).

Despite this positive evidence, there is also a body of work suggesting that payday loans may harm users. Melzer (forthcoming) finds that access to payday loans is related to increased difficulty paying mortgage, rent, and utility bills; a higher rate of moving out of one's home due to financial difficulties; and delayed medical care, dental care, and prescription drug purchases. Skiba and Tobacman (2009) conclude that loan approval for first-time payday loan applicants increases the likelihood of Chapter 13 bankruptcy. (Conversely, Stoianovici, and Maloney, find no relationship between these loans and bankruptcy filings.) Campbell, Martinez-Jerez, and Tufano (2008) find fewer involuntary bank account closures due to overdrafts after Georgia banned payday lending. For military personnel, payday loans are associated with declines in overall job performance and lower levels of retention (Carrell and Zinman, 2008). Indeed, to discourage payday loans to military personnel, the 2007 National Defense Authorization Act caps the fees on payday loans to service members at a 36 percent annual percentage rate.

Those who are concerned about payday loans emphasize that they seem designed to exploit both the cognitive limitations and present-biased preferences of certain borrowers. Lusardi and Tufano (2009) document that payday loan borrowers and users of other forms of nontraditional credit have low levels of debt literacy (as measured by their understanding of interest compounding). Bertrand and Morse (2009) find that about 40 percent of payday loan borrowers claim that their *annual* percentage rate is around 15 percent, apparently confusing the cash charge per hundred dollars and an annual interest rate. Some payday loan borrowers use this form of high-cost borrowing even though they have access to lower-cost credit in the form of unused credit card borrowing capacity (Agarwal, Skiba, and Tobacman, 2009) or savings and checking account balances (Carter, Skiba, and Tobacman, 2010). Finally, the substantial evidence of repeat or chronic payday borrowing could reflect present-biased preferences. Critics emphasize that payday loans have undesirable distributional consequences because they are used disproportionately by less well-off individuals and racial minorities (Graves, 2003; Stegman and Faris, 2003).

However, defenders of payday loans point out that many sources of short-term credit have very high annual percentage rates, including overdraft protection on a checking account, returned check fees, and credit card late fees (*Consumer Reports*, 2005; Lehman, 2005). They argue that the costs of not having access to credit can be extraordinarily high. For example, if electricity or telephone service is shut off, the time and expense to restart service can far exceed a payday loan fee (Community Financial Services Association of America, 2006).

Taking these arguments and evidence together, it seems likely that payday loans benefit some consumers and harm others. Used "responsibly" as an alternative to even higher-cost borrowing or the failure to pay certain bills, payday loans are likely beneficial. But when used repeatedly, they may lead to ballooning debt and ever-deepening financial distress.

Given these uncertainties about the practice of payday lending, it is perhaps not surprising that regulation has been somewhat helter-skelter. At the federal level, banking authorities took a series of steps starting in 2000 to discourage federally insured depository institutions from participating in payday lending (Smale, 2005). As a result, payday lending is largely conducted and regulated at the state level (Peterson, 2008). Georgia prohibits payday lending entirely, and nine other states effectively prohibit it with interest rate caps that make it unprofitable. The Truth-in-Lending Act requires that the loan amount, finance charges, and annual percentage rate must be clearly disclosed in any contract or agreement the borrower signs. Thirty states require payday lenders to clearly and prominently post annual percentage rates and fee schedules, although critics argue that these notices are frequently not posted (Fox and Woodhall, 2006). Many states limit the maximum amount of a payday loan, and some states prohibit rollover loans. Thus, the range of regulatory practices extend from outright or *de facto* bans, to disclosure requirements, with a middle ground of restrictions on contract terms or business practices like repeat usage.

From a policy design perspective, regulation of payday loans should address how the product is used by the borrower and what alternatives will arise if such loans are restricted. One possibility is that payday loans are used because of behavioral considerations like present-minded bias and financial illiteracy. In this case, addressing these issues would help people avoid making a choice they may later regret. If payday loans are an impulse item, then a short “cooling off” period might give people time to consider whether they really want a loan, although the evidence suggests that a few days’ wait has not dampened the demand for tax refund anticipation loans (Cole, Thompson, and Tufano, 2008). If payday loans result from financial illiteracy, then well-designed disclosure may help consumers make better decisions. A recent experiment by Bertrand and Morse (2009) found that fee disclosure in dollar terms was more effective in reducing same-store payday loan demand than describing fees in terms of annual percentage rates or in other ways, but the absolute reduction in subsequent borrowing was modest. Overall, these results raise questions about the form and efficacy of disclosure.⁵ If, however, payday loans are used primarily by individuals who are unable to match their income to surges in their spending needs, then barring rollovers of payday loans—or banning the loans themselves—won’t address the need that gives rise to the product.

While regulation should be designed to protect consumers, it must also be cognizant of business realities. For example, consider a policy that would cap payday loan interest rates at a 36 percent annual percentage rate.⁶ For a \$300 two-week loan, a 36 percent annual interest rate cap would limit the lender’s total revenue to \$4.15 ($300 \times 0.36/26$). But average losses are \$5.72 per payday loan, before accounting for the cost of wages, buildings, advertising, or overhead (Flannery and Samolyk, 2005). Thus, a 36 percent interest rate ceiling might not create “affordable” payday loans but might simply lead to the exit of existing vendors. More generally,

⁵ In a similar vein, Choi, Laibson, and Madrian (2010) and Beshears, Choi, Laibson, and Madrian (forthcoming) find that current mutual fund fee disclosures generally have little effect. Hastings and Tajeda-Ashton (2008) find that disclosing fees in dollar terms, rather than percentages, is more effective in changing behavior.

⁶ Federal legislation that was pending in 2010—H.R.1608 in the House of Representatives and S.500 in the Senate—would have set such a limit.

rate caps could lead to new products or practices that skirt the rules or lead consumers to seek other, possibly even less-attractive, sources of short-term credit.

A different regulatory approach would be to encourage alternatives to payday loans. Before she assumed her role as chairman of the Federal Deposit Insurance Commission, then-academic Sheila Bair (2005) reviewed alternative models and called for regulatory encouragement of low-cost, short-term loans. At the FDIC, she launched a pilot program to advance these products, although the results so far are limited. To investigate the range of possible payday loan proposals and how to encourage alternatives, having academics evaluate each program independently seems unlikely to be efficient. Instead, it would be useful if some of the research was carried out by policymakers themselves, albeit independently. This type of activity could be carried out by the research group of the new Consumer Financial Protection Bureau.

Case Study: Financing Consumption in Retirement

The process of accumulating wealth for retirement when young and transforming that wealth into consumption when older involves long-term financial commitments that are large and consequential for most households. In the United States, the three largest financial resources of the elderly are Social Security, home equity, and the value of employer-provided pension or retirement savings account balances. In this journal, Gustman, Steinmeier, and Tabatabai (2010) report that at the median, Social Security accounts for 40 percent of the wealth of households approaching retirement, housing accounts for 22 percent, and pensions/retirement savings plans account for 20 percent.

Here, we focus our discussion on consumer financial decisions and policies related to this last category of pensions and retirement savings plans, which are mediated through employers. In the United States, employer involvement in financing retirement consumption is largely motivated by provisions in the federal tax code that exclude from taxable income both employee and employer contributions to employer-sponsored pension and retirement savings plans. There is some rationale for subsidizing employer involvement in this market because employers are in a unique position to help solve some of the problems that might otherwise lead to market failure. For example, employers may reduce search costs for employees by vetting financial providers; they may mitigate adverse selection by pooling individuals into employee groups; and they may alleviate problems that arise due to limited cognition or lack of financial literacy by acting as an agent on behalf of their employees. Employers may also negotiate better terms with financial providers than employees could obtain individually.

Employer-sponsored retirement plans broadly come in two forms. In a “defined benefit” plan, employees accumulate a claim to a certain level of pension benefits based on a formula that takes into account years with their employer and their pay level at the time of retirement. In a defined benefit plan, employees have few choices to make: the employer determines the benefits to be paid in retirement and makes the contribution and investment choices necessary to make good on the promised benefits. In a “defined contribution” plan, employees contribute a certain amount to a personal retirement account like a 401(k), perhaps matched by an employer contribution. In a typical defined contribution plan, employees face many choices: whether or

how much to contribute, how to invest their account balances, and at what rate to withdraw their accumulations at retirement.

The prevalence of defined benefit and defined contribution plans has changed significantly over time in a way that demonstrates the potential for government regulation to shape markets in dramatic ways—sometimes intended, sometimes not. In 1975, participants in employer-sponsored defined benefit pension plans outnumbered participants in defined contribution plans by 2.4 to 1. This situation began to change in the 1980s, precipitated by a series of laws and regulations. The first, the Employee Retirement Income and Security Act of 1974 (or ERISA), was intended to protect current and former employees and their beneficiaries from employer abuses such as the underfunding of promised pension benefits or onerous vesting requirements. ERISA was followed in 1978 by the addition of section 401(k) to the Internal Revenue Code. A subsequent clarification in 1981 allowed employers to exclude employer and employee 401(k) contributions from taxable income. The 401(k) plan was originally envisioned as a savings vehicle to supplement, not supplant, traditional defined benefit pension plans. But given the higher costs and regulatory restrictions imposed on defined benefit plans following ERISA, the 401(k) plan quickly became an attractive substitute for employers. By 2007, defined contribution participants outnumbered defined benefit participants by 3.4 to 1, a striking and completely unanticipated reversal from three decades earlier (Department of Labor, 2008, 2010).

From an employee's perspective, a defined contribution plan has a number of attractive features relative to a defined benefit plan: flexibility in the amount of current compensation deferred to the future, portability across jobs, and reduced risk that an employer will underfund or mismanage plan assets resulting in an inability to fund promised payments. But defined contribution plans have drawbacks as well, foremost being the number of decisions required of savings plan participants. A growing body of evidence suggests that present-biased preferences and cognitive limitations shape participant choices in ways that may give rise to inefficiencies.

For example, one set of studies compares plans in which the default is that employees are out of the plan but can decide to opt in, with plans in which the default is to be in the plan but employees can decide to opt out. Because the costs of opting in or opting out are small, standard economic theory predicts that the default option should have little effect on savings plan participation. But participation in defined contribution plans is in fact heavily influenced by the default (Madrian and Shea, 2001; Choi, Laibson, Madrian, and Metrick, 2006; Carroll, Choi, Laibson, Madrian, and Metrick, 2009). Similarly, contribution rates and asset allocation outcomes are also significantly influenced by employer defaults (Thaler and Benartzi, 2004; Choi, Laibson, and Madrian, 2005 and 2009). Many savings plan participants never rebalance their portfolios in response to changes in the relative value of different assets (Ameriks and Zeldes, 2004; Mitchell, Mottola, Utkus, and Yamaguchi, 2006). When employees do actively choose their asset allocation or their contribution rate, their choices are heavily influenced by recent trends (Benartzi, 2001; Choi, Laibson, Madrian, and Metrick, 2004, 2009) and the structure of the investment menu, like the number of choices offered (Benartzi and Thaler, 2001; Brown, Liang, and Weisbenner, 2007).

Concern that consumers were making suboptimal choices about their defined contribution plans motivated several key provisions in the Pension Protection Act of 2006, the biggest

regulatory reform of pensions and retirement savings plans since ERISA. This legislation includes inducements for employers to structure their savings plans to incorporate automatic enrollment, automatic contribution escalation, and a diversified default asset allocation. These plan features help circumvent the tendency for employees with present-biased preferences to delay participating in an employer-sponsored savings plan or to choose a contribution rate that may be too low.

Since the passage of the act, the fraction of plans with these features has increased significantly. For example, Fidelity Investments (2009), the largest 401(k) plan administrator in the United States, reported a 70 percent increase in the fraction of its sponsors offering automatic enrollment between 2007 and 2009. By 2009, nearly half of its participants were in plans with automatic enrollment. Fidelity also reports that nearly all (96 percent) of its automatic enrollment plans now use “target date funds” as their default investment option, a fund category that includes a mix of domestic and international equities, bonds, and short-term securities with allocation between these asset classes changing over time as investors approach retirement. Previously, the default investment funds chosen by employers were predominantly money market or “stable value” funds. Whether these provisions of the Pension Protection Act improve long-run retirement security remains to be seen. For example, it is possible that increased savings in defined contribution savings plans will crowd out savings in other areas or be offset by increasing consumer debt. But recent evidence on savings-related crowd-out suggests that it is largely confined to higher-income households (Engelhardt and Kumar, forthcoming).

Some have argued that these concerns about defined contribution savings plans are severe enough that the appropriate response is to scrap the current system in favor of mandatory savings schemes (Ghilarducci, 2008). Others would prefer a greater emphasis on defined benefit pension plans. However, much of the focus has been on what further regulation might be desirable within the current defined contribution system.

First, not all employers offer retirement savings plans. Thus, one set of proposals would expand access to workplace-based savings plans (Iwry and John, 2009). Second, few individuals annuitize any part of their defined contribution account balances at retirement, even though most economic models suggest that they should at least partially annuitize. This “annuity puzzle” is not restricted to defined contribution participants—an increasing fraction of defined benefit pension beneficiaries are opting to take a lump sum at the time of retirement rather than the traditional annuity. Tax incentives or mandates could lead to greater annuitization. Third, many employees appear overly invested in the stock of their employer: within publicly traded firms; 56 percent of 401(k) plans offer employer stock as an investment option, 53 percent of participants in these plans invest some of their assets in employer stock, and 10 percent of participants allocate more than half of their balances to employer stock (Holden, VanDerhei, and Alonso, 2009). But too heavy an emphasis on employer stock means a lack of diversification not only within the investment portfolio, but also because returns on employer stock are correlated with the returns on labor income. Finally, some investment options that might make sense for retirement savings, notably longer-term investments that carry a premium because they are not liquid in the short run, are not typically available in defined contribution savings plans because these investments are not amenable to daily valuation. These problems suggest the need for

regulations that better align investment options for defined contribution plans with investor needs.

Conclusion: An Agenda for the Consumer Financial Protection Bureau

The Wall Street Reform and Consumer Protection Act of 2010 that was signed into law in July 2010 authorizes the creation of a new Consumer Financial Protection Bureau to safeguard consumer interests in many financial markets.⁷ Administratively, the new bureau will be located inside the Federal Reserve, but it will have independence from the normal Fed decision processes in setting rules and bringing enforcement actions. The mandate of the new bureau is still taking shape, but it will focus primarily on issues affecting consumer borrowing, whether that happens through mortgages, bank loans, credit cards, or payday lending—as well as on payment services and some forms of savings. The bureau is not authorized to address issues involving auto lending, securities investments, pensions and other employee fringe benefits, or insurance, although the bureau does have broad latitude to undertake research related to consumer finance and financial literacy.

In this paper, we have described a number of rationales for consumer financial regulation. Given what we know about market failures in consumer finance, both traditional and behavioral, what should be the agenda of the Consumer Financial Protection Bureau?

A natural focus of the Consumer Financial Protection Bureau will be the provision of adequate information to consumers. We believe this is the right starting point. However, it will be important to keep in mind how consumers actually use information to make decisions: disclosure needs to be both salient and easy to understand. Traditional disclosure policies, such as the requirement of the Truth in Lending Act that the costs of credit should be reported in the form of annual percentage rates, are often better adapted to how economists or lawyers think than to consumers' natural habits of mind.

In some cases, disclosures can be improved by customizing them to reflect average consumer experience. For example, banks might be required to report the cost of a bank account given the average number of overdrafts or other fee-generating actions that customers with these accounts have taken. Such augmented disclosure could even be made conditional on relevant characteristics of particular households.

The new agency should monitor the effectiveness of disclosures, not only in improving consumer understanding, but also in reducing the actual costs consumers pay for financial products and in improving their financial well-being. If disclosures are only weakly effective, then the bureau can consider more intrusive regulation, for example by requiring an explicit opt-in for features of financial products that appear difficult to understand, or by requiring consumers to qualify for these features or even banning them altogether.⁸

⁷ The creation of a specialized consumer financial protection agency follows a proposal initially put forward in Warren (2007).

⁸ We present a more complete review of possible forms of regulatory intervention in Campbell, Jackson, Madrian, and Tufano (2010).

As the Consumer Financial Protection Bureau develops its agenda, it will be important to keep in mind several limitations on the ability of regulation to improve financial outcomes for consumers.

First, while regulation should be primarily attuned to consumers, the bureau should be keenly aware of the economics of consumer financial markets. For example, many products involve large customer-acquisition, set-up, or processing costs that are fixed for each customer, as well as marginal costs that vary with the scale of the customer's financial activity. As a result, consumer financial products characterized by small transactions relative to fixed costs are relatively expensive to provide (Schneider and Tufano, 2007). In the market for short-term consumer credit, for example, small loans will be costly to service unless they are organized through long-term relationships that allow firms to amortize their fixed costs over many related transactions. But the pricing for most savings, investing, and borrowing products is largely based on variable elements (like expense ratios on mutual funds or annual percentage rates on loans). With single-part pricing schemes, ceilings on interest rates or charges can have the unintended effect of foreclosing the market for smaller accounts. Regulators need to understand, and perhaps even encourage, two-part pricing schemes. Furthermore, if policymakers seek to expand consumer access to certain markets, regulations that help firms lower the costs of acquiring and servicing customers could be helpful.

Second, because consumers of financial products can be very different, regulators should be cautious about imposing "one size fits all" solutions. For example, a homebuyer who expects to move in the near future might decide against a long-term, nominal fixed-rate mortgage and instead choose a mortgage where the interest rate is fixed for only a few years. Similarly, a blanket ban on payday loans might benefit some consumers, while injuring others.

Third, regulation should seek to allow, and indeed encourage, financial innovation. In the market for retirement savings products, for example, current investment solutions lack any mechanism for giving consumers access to less-liquid asset classes that might earn them an illiquidity premium. As noted earlier, economists have suggested several innovative types of mortgages that might improve upon existing products.

Fourth, regulators must be aware that financial innovation will circumvent clumsily designed or costly regulations. The fragmented structure of the U.S. system of financial oversight and the capacity of firms to use different legal forms to provide similar financial services create many opportunities for regulatory arbitrage (Jackson, 1999). A leading example is the 1974 reform of defined benefit pensions which inadvertently encouraged the growth of defined contribution retirement savings plans. As noted earlier, defined contribution plans have certain advantages, like greater portability as employees move from one job to the next; but they also impose a more substantial burden on households to self-manage their retirement savings. It is not clear that the current U.S. system of financing retirement consumption is optimally structured. In the case of payday lenders, the decision of regulators to exclude federally insured depository institutions from participating in payday lending may have served largely to move that activity to smaller, local firms that are both less efficient and more difficult to supervise.

Finally, all regulation is subject to the political process, which can easily capture regulation. For example, politicians' desire to extend credit access to lower-income households was a contributing factor in the development of the subprime mortgage market, the recent housing and credit bubbles, and ultimately the financial crisis of 2007–09.

Given these potential problems, the new Consumer Financial Protection Bureau should follow a disciplined process when considering new financial regulations. First, identify specific problems. Second, design metrics for success in addressing these problems. For example, if the problem is wide dispersion in the fees that consumers pay for extremely similar products such as index mutual funds, metrics for success could include an increase in consumer knowledge of available low-cost options or a decrease in both the level and the dispersion of fees that consumers actually pay. Third, tailor interventions to the problems at hand. Fourth, evaluate both potential and existing regulations to determine whether interventions actually deliver the desired improvements in the metrics for success.

This last step will require a broad array of research methodologies. Some evidence can be gathered from aggregate data: for example, in measuring the adequacy of retirement saving from statistics on wealth accumulation in 401(k) plans. Other evidence can come from cross-country comparisons. There is also an urgent need for improved experimental data on individual consumer responses to, and understanding of, new financial products, and for household-level field data to reveal cross-sectional variation in financial decisionmaking. Most household-level field research uses surveys, such as the Federal Reserve's Survey of Consumer Finances, but these surveys have severe limitations including refusals to participate (particularly among the wealthy), limited granularity, and inaccurate responses. It will be important to gather accurate household-level data from a wide array of financial service providers. Such data will be much more useful if they can be merged into a comprehensive package that describes the complete financial position of households, and more useful still if they can be linked with survey data on households' beliefs, stated objectives, and financial literacy.

Table 1
Individual Financial Literacy

Financial Literacy Question	Health and Retirement Study 2004 (Respondents largely aged 50-69)			National Longitudinal Survey of Youth 2007-2008 (Respondents aged 23-28)		
	Correct	Incorrect	Don't know or refused	Correct	Incorrect	Don't know or refused
Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow: more than \$102, exactly \$102, less than \$102?	67.1	22.2	10.7	79.5	14.6	5.7
Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy more than, exactly the same as, or less than today with the money in this account?	75.2	13.4	10.4	54.0	30.7	15.1
Do you think that the following statement is true or false? "Buying a single company stock usually provides a safer return than a stock mutual fund."	52.3	13.2	34.6	46.8	15.8	37.3

Source: Columns 1-3, Lusardi and Mitchell (2006); Columns 4-6, Lusardi, Mitchell and Curto (2010)

References

- Agarwal, Sumit, John C. Driscoll, Xavier Gabaix, and David Laibson.** 2009. "The Age of Reason: Financial Decisions over the Life Cycle and Implications for Regulation." *Brookings Papers on Economic Activity*, no. 2, pp. 51-118.
- Agarwal, Sumit, Paige Skiba, and Jeremy Tobacman.** 2009. "Payday Loans and Credit Cards: New Liquidity and Credit Scoring Puzzles?," Available at SSRN: <http://ssrn.com/abstract=1327125>
- Ameriks, John and Stephen P. Zeldes.** 2004. "How do Household Portfolio Shares Vary with Age?" Unpublished paper.
- Bair, Sheila.** 2005. "Low-Cost Payday Loans: Opportunities and Obstacles." Annie E. Casey Foundation. <http://www.aecf.org/upload/publicationfiles/fes3622h334.pdf>
- Bar-Gill, Oren, and Elizabeth Warren.** 2008. "Making Credit Safer." *University of Pennsylvania Law Review* 157(1):1-100.
- Benartzi, Shlomo.** 2001. "Excessive Extrapolation and the Allocation of 401(k) Accounts to Company Stock?" *Journal of Finance*, 56(5):1747-1764.
- Benartzi, Shlomo and Richard H. Thaler.** 2001. "Naive Diversification Strategies in Retirement Saving Plans." *American Economic Review* 91(1): 79-98.
- Benjamin, Daniel J., Sebastian A. Brown, and Jesse M. Shapiro.** 2006. "Who is 'Behavioral'? Cognitive Ability and Anomalous Preferences." Available at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=675264
- Bertrand, Marianne and Adair Morse.** 2009. "Information Disclosure, Cognitive Biases and Payday Borrowing," *Chicago Booth Research Paper No. 10-01*.
- Beshears, John, James J. Choi, David Laibson, and Brigitte C. Madrian.** Forthcoming. "How Does Simplified Disclosure Affect Individuals' Mutual Fund Choices?" in David A. Wise, editor, *Explorations in the Economics of Aging*.
- Bond, Philip, David Musto, and Bilge Yilmaz.** 2009. "Predatory Mortgage Lending." *Journal of Financial Economics* 94(3): 412-27.
- Brown, Jeffrey R., Nellie Liang, and Scott Weisbenner.** 2007. "Individual Account Investment Options and Portfolio Choice: Behavioral Lessons from 401(k) Plans." *Journal of Public Economics* 91(10):1992-2013.
- Bucks, Brian K. and Karen M. Pence.** 2008. "Do Borrowers Know Their Mortgage Terms?" *Journal of Urban Economics* 64(2): 218-233.

Calvet, Laurent E., John Y. Campbell and Paolo Sodini. 2007. "Down or Out: Assessing the Welfare Costs of Household Investment Mistakes." *Journal of Political Economy* 115(5):707-747.

Calvet, Laurent E., John Y. Campbell and Paolo Sodini. 2009. "Fight or Flight? Portfolio Rebalancing by Individual Investors" *Quarterly Journal of Economics*, 124(1): 301-48.

Campbell, Dennis, Asis Martinez-Jerez and Peter Tufano. 2008. "Bouncing Out of the Banking System: An Empirical Analysis of Involuntary Bank Account Closures," http://www.bos.frb.org/economic/cprc/conferences/payments2008/campbell_jerez_tufano.pdf

Campbell, John Y. 2006. "Household Finance." *Journal of Finance* 61(4):1553-1604.

Campbell, John Y. and Joao Cocco. 2003. "Household Risk Management and Optimal Mortgage Choice." *Quarterly Journal of Economics* 118(4):1449-1494.

Campbell, John Y., Stefano Giglio, and Parag Pathak. Forthcoming. "Forced Sales and House Prices." *American Economic Review*.

Campbell, John Y., Howell Jackson, Brigitte Madrian, and Peter Tufano. 2010. "The Regulation of Consumer Financial Products: An Introductory Essay with Four Case Studies." Harvard Kennedy School Working Paper No. RWP10-040. Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1649647

Carrell, Scott and Jonathan Zinman. 2008. "In Harm's Way? Payday Loan Access and Military Personnel Performance," Available at: http://www.dartmouth.edu/~jzinman/Papers/PayDay_AirForce_aug08.pdf

Carroll, Gabriel D., James J. Choi, David Laibson, Andrew Metrick and Brigitte C. Madrian. 2009. "Optimal Defaults and Active Decisions." *Quarterly Journal of Economics* 124(4): 1639-74.

Carter, Susan P., Paige M. Skiba, and Jeremy Tobacman. 2010. "Pecuniary Mistakes? Payday Borrowing by Credit Union Members." *PRC Working Paper* WP2010-32, Pension Research Council.

Caskey, John. 1994. *Fringe Banking: Check-Cashing Outlets, Pawnshops, and the Poor*. New York: Russell Sage Foundation.

Caskey, John. 2001. "Payday Lending." *Financial Counseling and Planning*, 12(2): 1-14.

Caskey, John. 2002. "The Economics of Payday Lending," Madison, WI: Filene Research Institute.

- Choi, James J., David Laibson and Brigitte C. Madrian.** 2005. "Are Empowerment and Education Enough? Underdiversification in 401(k) Plans." *Brookings Papers on Economic Activity*, no. 2, pp. 151-198.
- Choi, James J., David Laibson and Brigitte C. Madrian.** 2009. "Mental Accounting in Portfolio Choice: Evidence from a Flypaper Effect," *American Economic Review* 99(5): 2085-2095.
- Choi, James J., David Laibson and Brigitte C. Madrian.** 2010. "Why Does the Law of One Price Fail? An Experiment on Index Mutual Funds," *Review of Financial Studies* 23(4): 1405-1432.
- Choi, James J., David Laibson and Brigitte C. Madrian.** Forthcoming. "\$100 Bills on the Sidewalk: Suboptimal Investment in 401(k) Plans." *Review of Economics and Statistics*.
- Choi, James J., David Laibson, Brigitte C. Madrian and Andrew Metrick.** 2004. "Employees' Investment Decisions About Company Stock," In *Pension Design and Structure: New Lessons from Behavioral Finance*, ed. Olivia S. Mitchell and Stephen P. Utkus, pp. 121-136. Oxford University Press.
- Choi, James J., David Laibson, Brigitte C. Madrian and Andrew Metrick.** 2006. "Saving for Retirement on the Path of Least Resistance." In *Behavioral Public Finance: Toward a New Agenda*, ed. Edward J. McCaffrey and Joel Slemrod, pp. 304-51. New York: Russell Sage Foundation.
- Choi, James J., David Laibson, Brigitte C. Madrian and Andrew Metrick.** 2009. "Reinforcement Learning and Savings Behavior," *Journal of Finance*, 44(6): 2515-34.
- Christelis, Dimitris, Tullio Jappelli, and Mario Padula.** 2010. "Cognitive Abilities and Portfolio Choice." *European Economic Review*, 54(1): 18:38.
- Cole, Shawn, and Gauri Kartini Shastry.** 2009. "If You Are So Smart, Why Aren't You Rich? The Effects of Education, Financial Literacy, and Cognitive Ability on Financial Market Participation." Harvard Business School Working Paper 09-071.
- Cole, Shawn, John Thompson and Peter Tufano.** 2008. "Where Does It Go? Spending by the Financially Constrained." Harvard Business School Working Paper 08-083.
- Consumer Reports,** 2005. "False Security Check-Bounce Protection," May 1, page 45.
- Community Financial Services Association of America.** 2006. "National Data on Short-Term Credit Alternatives."
http://www.cfsa.net/downloads/National_Data_on_Short_Term_Credit_Alternatives.pdf.
- Department of Labor, Employee Benefit Security Administration** (2008), "Private Pension

Plan Bulletin Historical Tables.”

<http://www.dol.gov/ebsa/pdf/privatepensionplanbulletinhistoricaltables.pdf>

Department of Labor, Employee Benefit Security Administration (2010), “Private Pension Plan Bulletin: Abstract of 2007 Form 5500 Annual Reports.”

<http://www.dol.gov/ebsa/pdf/2007pensionplanbulletin.pdf>

Elliehausen, Gregory. 2009. "An Analysis of Consumers' Use of Payday Loans," In *Financial Services Research Program, Monograph No. 41*. Washington, DC: George Washington University School of Business.

Elliehausen, Gregory and Edward C. Lawrence. 2001. *Payday Advance Credit in America: An Analysis of Consumer Demand*. Monograph 35, Credit Research Center, McDonough School of Business, Georgetown University. http://www.fdic.gov/bank/analytical/cfr/2005/jan/CFRSS_2005_elliehausen.pdf

Engeldardt, Gary V. and Anil Kumar. Forthcoming. “Pensions and Household Wealth Accumulation.” *Journal of Human Resources*.

Fidelity Investments. 2009. “Evaluating Auto Solutions.” *Fidelity Perspectives*, Summer 2009.

Flannery, Mark and Katherine Samolyk. 2005. "Payday Lending: Do the Costs Justify the Price?" *Center for Financial Research Working Paper*. Washington, DC: FDIC.

Fox, Jean Anne and Patrick Woodall. 2006. "Cashed Out: Consumers Pay Steep Premium to “Bank” at Check Cashing Outlets," Washington, DC: Consumer Federation of America.

Friedman, Milton. 1953. "The Methodology of Positive Economics". In *Essays in Positive Economics*, 3-43. University of Chicago Press.

Gabaix, Xavier, and David Laibson. 2006. “Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets.” *Quarterly Journal of Economics* 121(2):505-540.

Ghilarducci, Teresa. 2008. “When I’m Sixty-Four: The Plot against Pensions and the Plan to Save Them.” Princeton University Press.

Graves, Stephen M. 2003. "Landscapes of Predation, Landscapes of Neglect: A Locational Analysis of Payday Lenders and Banks." *The Professional Geographer*, 55(3): 303-17.

Greenspan, Alan. 2004. “Understanding Household Debt Obligations.” Speech to Credit Union National Association 2004 Governmental Affairs Conference, Washington, DC. Available online at <http://www.federalreserve.gov/boarddocs/speeches/2004/20040223/>

Grinblatt, Mark, Matti Keloharju, and Juhani Linnainmaa. 2009. "Do Smart Investors Outperform Dumb Investors?" University of Chicago Center for Research in Security Prices Working Paper 09-33.

Guiso, Luigi, Paola Sapienza, and Luigi Zingales. 2008. "Trusting the Stock Market." *Journal of Finance* 63(6):2557-2600.

Gustman, Alan L., Thomas L. Steinmeier, and Nahid Tabatabai. 2010. "What the Stock Market Decline Means for the Financial Security and Retirement Choices of the Near-Retirement Population." *Journal of Economic Perspectives* 24(1):1-22.

Hastings, Justine S., and Lydia Tejada-Ashton, 2008, "Financial Literacy, Information, and Demand Elasticity: Survey and Experimental Evidence from Mexico" NBER Working Paper No. 14538.

Holden, Sarah, Jack VanderHei, and Luis Alonso. 2009. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2008." *Investment Company Institute Research Perspective*, vol. 15, no. 2. <http://www.ici.org/pdf/per15-02.pdf>

Hortaçsu, Ali, and Chad Syverson. 2004. "Product Differentiation, Search Costs, and Competition in the Mutual Fund Industry: A Case Study of S&P 500 Index Funds." *Quarterly Journal of Economics* 119(2):403-456.

Huckstep, Aaron. 2007. "Payday Lending: Do Outrageous Prices Necessarily Mean Outrageous Profits?" *Fordham Journal of Corporate and Financial Law*, 12(1): 203-31.

Iwry, J. Mark and David C. John. 2009. "Pursuing Universal Retirement Security Through Automatic IRAs." The Retirement Security Project, No, 29-3.

Jackson, Howell E. 1999. "Regulation of a Multisector Financial Services Industry: An Exploratory Essay." *Washington University Law Quarterly* 77(2):319-97.

Khandani, Amir E., Andrew W. Lo, and Robert C. Merton. 2009. "Systemic Risk and the Refinancing Ratchet Effect." National Bureau of Economic Research Working Paper 15362.

Khorana, Ajay, Henri Servaes and Peter Tufano. 2009. Mutual Fund Fees Around the World," *Review of Financial Studies* 22(3): 1279 – 1310.

Kimball, Miles S. and Tyler Shumway. 2007. "Investor Sophistication and the Home Bias, Diversification, and Employer Stock Puzzles." Available at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1572866

Laibson, David. 1997. "Golden Eggs and Hyperbolic Discounting." *Quarterly Journal of Economics* 112(2):443-477.

Lawrence, Edward C. and Gregory Eliehausen. 2008. "A Comparative Analysis of Payday Loan Customers." *Contemporary Economic Policy*, 26(2): 299-316.

Lehman, Thomas E. 2005. "Contrasting Payday Loans to Bounced-Check Fees," Washington, DC: Consumer Credit Research Foundation. <http://www.cfsa.net/downloads/contrasting-reports.pdf>

Lusardi, Annamaria and Olivia S. Mitchell. 2006. "Financial Literacy and Planning: Implications for Retirement Well-Being." Pension Research Council Working Paper No. 1.

Lusardi, Annamaria, and Olivia Mitchell. 2007. "Baby Boomer Retirement Security: The Roles of Planning, Financial Literacy, and Housing Wealth." *Journal of Monetary Economics* 54(1):205-224.

Lusardi, Annamaria, Olivia S. Mitchell and Vilsa Curto. 2010. "Financial Literacy among the Young." *The Journal of Consumer Affairs* 44(2): 358-80.

Lusardi, Annamaria and Peter Tufano. 2009. "Debt Literacy, Financial Experiences, and Overindebtedness." *NBER Working Paper No.* 14808.

Madrian, Brigitte and Dennis Shea. 2001. "The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior," *Quarterly Journal of Economics*, 116(4): 1149-1187.

Mann, Ronald J. and Jim Hawkins. 2007. "Just until Payday." *UCLA Law Review*, 54(855).

Melzer, Brian T. Forthcoming. "The Real Costs of Credit Access: Evidence from the Payday Lending Market." *Quarterly Journal of Economics*.

Miles, David. 2003. *The UK Mortgage Market: Taking a Longer-Term View, Interim Report: Information, Incentives, and Pricing.* London: HM Treasury.

Mitchell, Olivia S., Gary Mottola, Steve Utkus, and Takeshi Yamaguchi. 2006. "The Inattentive Participant: Trading Behavior in 401(k) Plans." Pension Research Council Working Paper.

Morgan, Donald P. and Michael R. Strain. 2008. "Payday Holiday: How Households Fare after Payday Credit Bans." In *Staff Report no. 309.* Federal Reserve Bank of New York.

Morse, Adair. 2009. "Payday Lenders: Heroes or Villains?" http://faculty.chicagobooth.edu/adair.morse/research/Morse_paydayDisaster.pdf

Parrish, Leslie. 2008. "High Cost Payday Lending Traps Arizona Borrowers." Center for Responsible Lending, September 16. <http://www.responsiblelending.org/payday-lending/research-analysis/high-cost-of-payday-in-arizona.pdf>

Peterson, Christopher L. 2008. "Usury Law, Payday Loans, and Statutory Sleight of Hand: Saliency Distortion in American Credit Pricing Limits." *Minnesota Law Review*. 92(4):1110-65.

Ryan, Andrea, Gunnar Trumbull and Peter Tufano. 2010, "A Brief Postwar History of US Consumer Finance." Unpublished manuscript.

Schneider, Daniel J. and Peter Tufano. 2007. "New Savings from Old Innovations: Asset Building for the Less Affluent," in *Financing Low-Income Communities*, ed. Julia Sass Rubin. Russell Sage.

Shiller, Robert J. 2008. *The Subprime Solution: How Today's Global Financial Crisis Happened, and What to Do About It*. Princeton, NJ: Princeton University Press.

Skiba, Paige and Jeremy Tobacman. 2007. "The Profitability of Payday Loans." http://bpp.wharton.upenn.edu/tobacman/papers/profit_ability.pdf

Skiba, Paige and Jeremy Tobacman. 2009. "Do Payday Loans Cause Bankruptcy?" Available at SSRN: <http://ssrn.com/abstract=1266215>.

Smale, Pamela. 2005. "Payday Loans: Federal Regulatory Initiatives." Congressional Research Service Report CR21728.

Stegman, Michael A. 2007. "Payday Lending." *Journal of Economic Perspectives*, 21(1): 169-90.

Stegman, Michael A. and Robert Faris. 2003. "Payday Lending: A Business Model That Encourages Chronic Borrowing." *Economic Development Quarterly*, 17(1): 8-32.

Stoianovici, Petru S. and Michael T. Maloney. 2008. "Restrictions on Credit: A Public Policy Analysis of Payday Lending." Available at SSRN: <http://ssrn.com/abstract=1291278>

Strotz, R.H. 1955. "Myopia and Inconsistency in Dynamic Utility Maximization." *Review of Economic Studies* 23(3):165-180.

Thaler, Richard H. and Shlomo Benartzi. 2004. "Save More Tomorrow: Using Behavioral Economics to Increase Employee Savings." *Journal of Political Economy*, 112(1, Part 2): S164-S187.

Thaler, Richard H. and Cass Sunstein. 2008. *Nudge: Improving Decisions About Health, Wealth, and Happiness*. New Haven, CT: Yale University Press.

Tufano, Peter and Andrea Ryan. 2009. "Blue Ocean or Stormy Waters? Buying Nix Check Cashing." *Harvard Business School Case*, 210-012.

U.S. Government Accountability Office. 2004. "Consumer Protection: Federal and State Agencies Face Challenges in Comparing Predatory Lending." GAO-04-280.

Warren, Elizabeth. 2007. "Unsafe at Any Rate." *Democracy*, Issue 5 (Summer, 2007), pp. 8-19.

White, Michelle J. 2009. "Bankruptcy: Past Puzzles, Recent Reforms, and the Mortgage Crisis." *American Law and Economics Review*, 11(1):1-23.

Wilson, Bart, David W. Findlay, James W. Meehan, Charissa P. Wellford and Karl Schurter. 2010. "An Experimental Analysis of the Demand for Payday Loans." Available at SSRN: <http://ssrn.com/abstract=1083796>

Woodward, Susan E. 2004. "Consumer Confusion in the Mortgage Market." http://www.sandhillecon.com/pdf/consumer_confusion.pdf

Zelizer, Viviana A. 1994. *The Social Meaning of Money: Pin Money, Paychecks, Poor Relief, and Other Currencies*. Basic Books.

Zinman, Jonathan. 2008. "Restricting Consumer Credit Access: Household Survey Evidence on Effects around the Oregon Rate Cap," Federal Reserve Bank of Philadelphia, *Working Paper No. 08-32*.