



DISCUSSION PAPER

PAYMENT CARDS CENTER

Perspectives on Recent Trends in Consumer Debt

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***Summary:** The causes and ramifications of the rise in the consumer debt burden over time have been subject to much debate. This paper first offers a brief overview and analysis of the key economic variables used to evaluate consumer debt levels. The principal focus of the paper, however, is a broad review of the literature on the topic of consumer debt to provide a framework for how to assess recent credit trends. In addition, three explanations for credit growth — the democratization of credit, increased convenience use of credit, and increased homeownership — are evaluated in terms of their contribution to overall credit growth. This paper concludes that while these three trends have all played some part in increasing credit outstanding, there are clearly other significant factors contributing to the increase in consumer debt over time.*

*The views expressed in this paper do not necessarily represent those of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.

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Introduction

Growth in the U.S. consumer debt burden has become a popular subject of debate. Some analysts point favorably to the increased availability of credit as allowing more Americans to become homeowners and providing consumers greater liquidity to purchase goods as they need them (Tallman, 2001). Many analysts also argue that the growth in consumer debt is not a major concern because the nation's increasing wealth helps provide an adequate hedge against higher debt holdings.

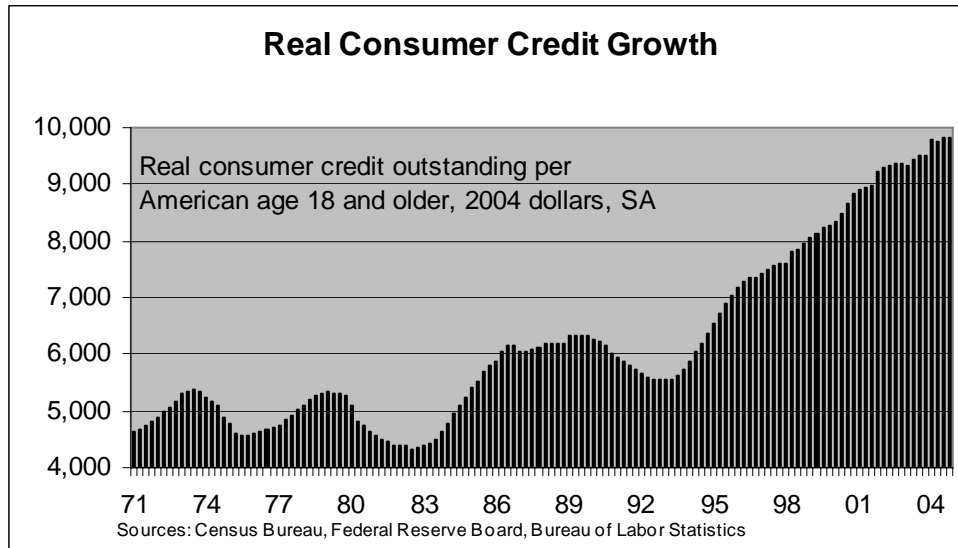
Others, however, see the nation's mounting consumer debt as a cause for serious concern. These analysts worry that a growing proportion of consumers will be unable to pay off their debts, resulting in increased consumer bankruptcies and higher losses for lenders. They also point out that consumers' net worth is intimately tied to the fortunes of the housing market and that a reversal of recent house-price gains would pose significant challenges for highly leveraged consumers.

The popular press, in particular, has expressed a decidedly dim view of the growth in consumer debt. In an analysis of articles from 1965 to 1995 on consumer credit published by the *New York Times*, Thomas Durkin and Zachariah Jonasson found that 69 percent of the articles were negative in tone (Durkin and Jonasson, 2002). This proportion would be even higher had the study excluded articles dominated by the opinions of academics, government officials, and business executives. The authors of the study also found that the tone of consumer credit reporting tended to change depending on the point in the business cycle, closely tracking the health of the economy.

This paper reviews the academic research on the growth in consumer debt to better understand how to evaluate recent changes in debt and whether the concerns expressed by some academics, the media, and public policymakers are warranted. Section I of this paper looks at the relevant facts to provide the reader with a general understanding of recent trends in consumer debt. Section II groups the various issues that are often raised in regard to the growth in consumer debt and then reviews relevant research on each of these topics. Section III summarizes the major conclusions of the paper.

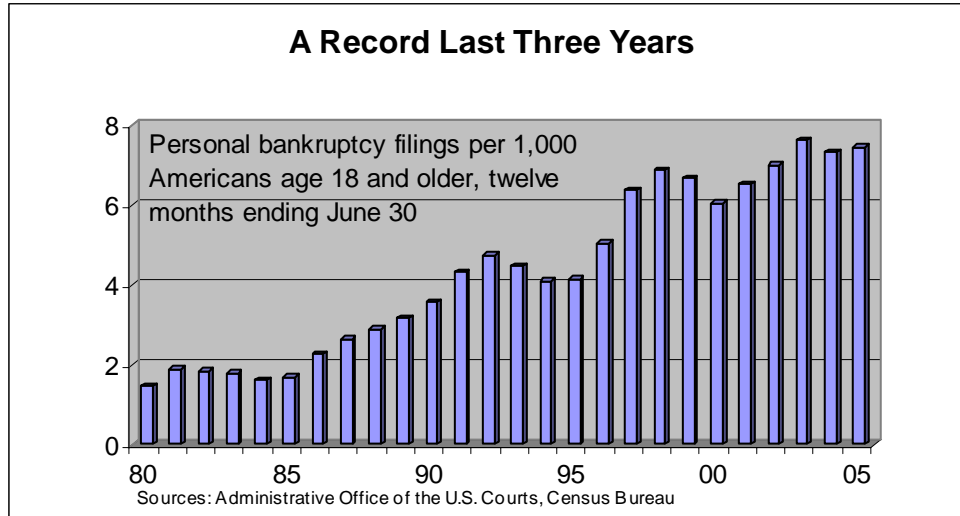
Section I. The Numbers

Consumer credit outstanding, which excludes mortgage debt, totaled more than \$2.1 trillion at the end of 2005, equivalent to an average debt of \$9,710.69 for each American age 18 and over. When mortgage debt is included, as in the Federal Reserve Board's data on household liabilities, the average debt obligation among this group rises to \$51,062.02. Looking at nonmortgage consumer credit data on a real per capita basis, actual retrenchments in consumer credit are discernable during business cycles, although it appears that no drop in debt holdings took place during the latest recession.



Personal bankruptcy filings rose in tandem with the steady rise in consumer debt. More than 1.6 million Americans filed for bankruptcy in the 12 months ending June 30, 2005, roughly double the number of filings a decade earlier. Even adjusting for population growth, the rate of filings per 1,000 Americans age 18 and older has more than quadrupled since 1985. Overall, the correlation between annual real consumer credit per American age 18 and older and annual personal bankruptcy filings per 1,000 Americans age 18 and older was 0.87 from 1991 to 2004.¹ *The Wall Street Journal* points out that insolvency, once dominated by the young, now appears to be increasingly afflicting middle-aged consumers (Hwang, 2004).

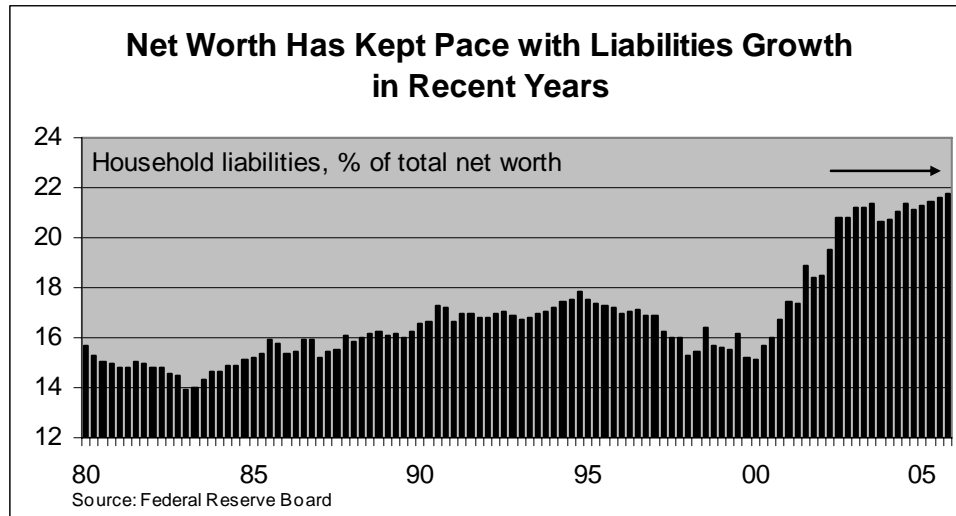
¹ A correlation of 1 means that these two variables move completely in concert, whereas a correlation of 0 indicates that there is no correlation between the two variables. Thus, a value of 0.87 suggests a very strong positive relationship between annual real consumer credit per American age 18 and older and annual personal bankruptcy filings per 1,000 Americans age 18 and older.



Another important measure of consumers' ability to repay their obligations is the ratio of liabilities to overall net worth, since consumers can tap accumulated wealth to pay off debt. Indeed, as former Federal Reserve Chairman Alan Greenspan noted:

In evaluating household debt burdens, one must remember that debt-to-income ratios have been rising for at least a half century... Without an examination of what is happening to both assets and liabilities, it is difficult to ascertain the true burden of debt service (Greenspan, February 2004).

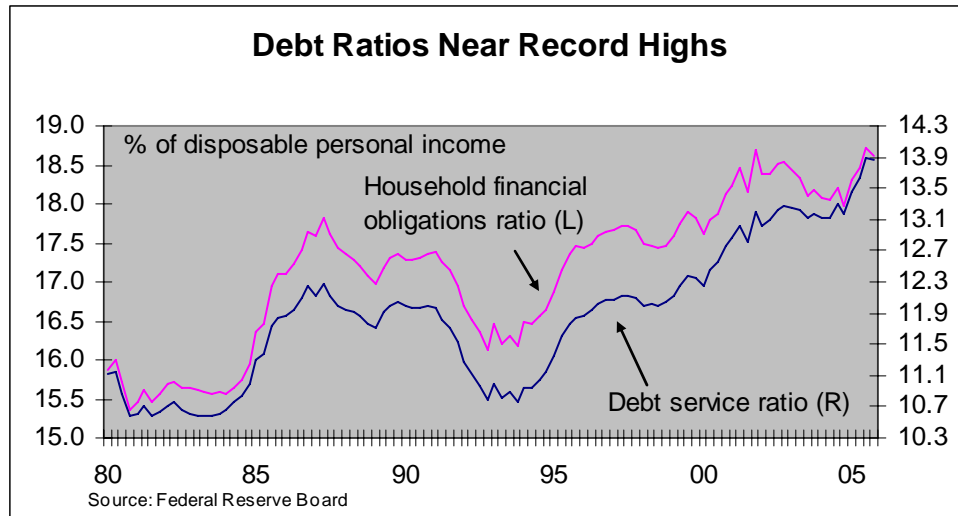
The ratio of *household liabilities to net worth* hit a record high in the fourth quarter of 2005, although after a swift increase in the early part of this decade, the ratio has trended within a narrow range for roughly the past three years.



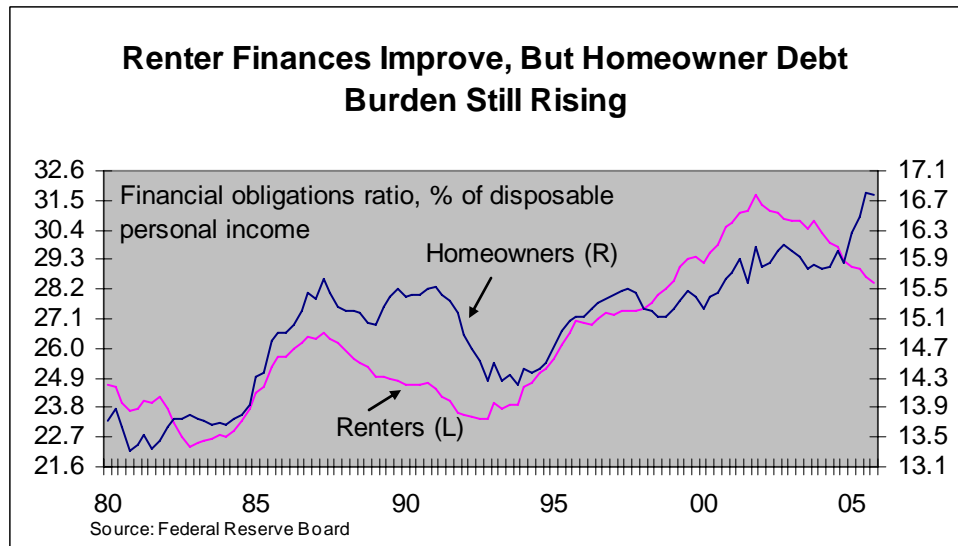
Much of the increase in the liabilities to net worth ratio during the early part of this decade is due to the housing market boom. The denominator of this ratio, net worth, has jumped nearly 24 percent since 1999, propelled by a 91 percent rise in the value of household real estate holdings. However, mortgage debt also surged 97 percent over the same period, pushing the liabilities to net worth ratio higher. The rise in mortgage debt can be attributed largely to historically low mortgage rates. Excluding household mortgage debt, consumer liabilities as a share of net worth have barely changed over the past 25 years.

Another important consumer debt measure is the *debt service ratio*, cited by Alan Greenspan as a primary measure used by Federal Reserve policymakers to gauge the status of household debt (Greenspan, February 2004). This ratio, which has been published since 1980, measures the share of disposable income committed to the payment of mortgage and consumer debt. In late 2003, the Federal Reserve introduced a more comprehensive statistic, the *financial obligations ratio*, which includes other common obligations of households, including rent, auto leases, property taxes, and homeowner's

insurance.² Both ratios declined in the fourth quarter of 2005 but remain close to record highs.



The financial obligations ratio is also broken out into separate ratios for homeowners and renters.



As can be seen, the debt burden paths for renters and homeowners have diverged in recent years. The renter obligations ratio has steadily fallen for four years, largely

² More information on the calculation of the newer financial obligations ratio can be found at www.federalreserve.gov/pubs/bulletin/2003/1003lead.pdf.

because of an improving labor market, a key factor of financial stability for renters.

Renters also may have cut back on taking on additional debt, affecting the numerator of the financial obligations ratio, with growth in consumer debt excluding mortgage debt slowing notably in recent years. Conversely, the financial obligations ratio for homeowners has surged in the last year, driven by increased mortgage and home equity borrowing, as well as rising insurance and property tax liabilities.

If we take a longer historical view, however, the financial obligations ratio for homeowners was, until the spike in 2005, comparable to its previous peaks in the 1980s and 1990s. A surge in home mortgage refinancing helped stabilize the debt burden for homeowners in the early part of this decade by allowing them to reduce their monthly payments and extract equity from their homes. The Federal Reserve estimates that the effect of these two actions roughly offset each other, leaving the average mortgage payment unchanged but giving homeowners a windfall of equity-extracted cash (Greenspan, February 2004). As will be discussed later, some consumers used that surplus to pay off higher-interest debt, while others used this cheaper form of cash to support spending.

Meanwhile, even with the improvement over the past four years, the financial obligations ratio for renters is still up notably since 1992. Weak income growth among renters was the main factor driving this trend. From 1992 to the fourth quarter of 2001, when the financial obligations ratio for renters peaked, the income of renters rose just 22 percent compared with a 60 percent increase for homeowners during the same period (Dyran, Johnson, and Pence, 2003). The Survey of Consumer Finances provides evidence that the increasing penetration of credit cards may also have contributed to a

rising renter debt burden. In 2001, 44.3 percent of renters reported some amount of credit card debt compared to 38.6 percent in 1992.

Section II. Topics on Consumer Debt

Having examined the major statistics used to measure consumer debt levels, this paper now examines the economics literature relevant to various consumer debt issues that have arisen in the media and in policy discussions.

A. The democratization of credit and the loosening of credit constraints

The growth in lending to previously rejected groups is often cited as a contributing factor to the consumer credit expansion. At the root of this view is what economists call the life-cycle hypothesis. This theory proposes that consumers wish to smooth their consumption over their lifetimes, even though their income and wealth will invariably fluctuate depending on their stages in life and unanticipated shocks to income or wealth. Consequently, in the absence of liquidity constraints, the life-cycle hypothesis predicts that young consumers will typically want to borrow from their future earnings and elderly individuals will typically use savings garnered during their prime earning years to live beyond their current incomes (Dornbusch and Fischer, 1981). However, if consumers are liquidity constrained, their consumption choices are also constrained by current income and current net worth. If consumer behavior adheres to the life-cycle

hypothesis, a relaxation in liquidity constraints can lead to a rise in indebtedness for consumers with temporarily low incomes.³

In a recent speech on consumer finance, Alan Greenspan spoke about the relaxation of credit constraints and increased access to credit:

Unquestionably, innovation and deregulation have vastly expanded credit availability to virtually all income classes. Access to credit has enabled families to purchase homes, deal with emergencies, and obtain goods and services. Home ownership is at a record high, and the number of home mortgage loans to low- and moderate-income and minority families has risen rapidly over the past five years (Greenspan, 2005).

One of the key innovations that Greenspan is likely referring to is the advancement in credit-score modeling. The ability to quantify a borrower's riskiness in an increasingly accurate credit score has enabled lenders to safely extend credit to a wider population.

The life-cycle hypothesis has proved useful in many econometric studies. For example, Sebastian Barnes and Garry Young build a life-cycle model of consumption with constraints on borrowing by the elderly that tracks the rise in the debt-to-income ratio in the 1970s and 1990s (Barnes and Young, 2000). In this model, the rise in debt-to-income in the 1970s is spurred by the surge in young baby boomers borrowing against future earnings, while the rise in indebtedness in the 1990s is stimulated primarily by falling interest rates and rising incomes. However, the model's results are inconsistent with the growth in the debt to income ratio in the 1980s, when the aging of the baby boom generation, higher interest rates, and slower economic growth should have resulted in a contraction in consumer credit. The authors argue that this inconsistency may be the

³ There are obviously other factors that could have contributed to debt growth. For example, a greater supply of desirable durable goods could have induced consumers to take on new debt. Additionally, consumer attitudes regarding debt could have changed.

result of the model's inability to capture the significant financial liberalization in the 1980s, including measures such as the 1986 Tax Reform Act and the increased availability of home equity credit lines. Additionally, Barnes and Young's model predicted that, absent any significant shocks or notable consumer misperceptions about growth, the ongoing adjustment to low interest rates and satisfactory income growth should promote continued expansion in consumer debt (Barnes and Young, 2000).

A key question regarding the influence of the democratization of credit on consumer debt growth is whether there were significant credit constraints in the past that have since disappeared. Donald Cox and Tullio Jappelli's work with the 1983 Survey of Consumer Finances (SCF) suggests that liquidity constraints did exist for a notable subset of the population two decades ago, implying that the liberalization of credit since that time is one factor promoting growth in consumer debt. Cox and Jappelli defined liquidity-constrained households as those that reported being denied credit or not being able to get as much credit as they applied for or that opted not to seek credit because they assumed they would be refused. Using a model driven by the debt holdings of nonliquidity-constrained households, the authors predicted how much desired debt the liquidity-constrained group would hold given the absence of liquidity constraints. The results were more than 75 percent higher than that cohort's actual debt holdings as reported in the 1983 Survey of Consumer Finances (Cox and Jappelli, 1993). The authors found that younger consumers, those age 25 or less, were most hindered by liquidity constraints in 1983.

An examination of SCF data from 1989 and 2004 also supports the case that the democratization of credit has played a role in consumer debt growth.⁴ The share of households with some form of debt has risen significantly for each of the three lowest income quintiles, suggesting that more low- and moderate income Americans are obtaining credit than in the past. The share of elderly Americans with some debt holdings has also expanded rapidly relative to 1989. Interestingly, however, the share of white households with debt rose faster than the proportion for nonwhite families over the 15-year period.

TABLE 1
PERCENTAGE OF FAMILIES HOLDING DEBT

Percentiles of income	1989	2004	Change
Less than 20	47.1	52.6	5.5
20-39.9	59.5	69.8	10.3
40-59.9	78.1	84.0	5.9
60-79.9	86.2	86.6	0.4
80-89.9	93.7	92.0	-1.7
90-100	87.6	86.3	-1.3
Head of household under 35	80.0	79.8	-0.2
Age 35-44	88.6	88.6	0.0
Age 45-54	85.3	88.4	3.1
Age 55-64	70.8	76.3	5.5
Age 65-74	49.6	58.8	9.2
Age 75 or older	21.0	40.3	19.3
White non-Hispanic	73.3	78.0	4.7
Nonwhite or Hispanic	69.4	72.5	3.1

Source: Survey of Consumer Finances

Large increases in debt for some cohorts, such as elderly households or low-income families, are a major factor in explaining the growth in the share of Americans with some form of debt. However, they are only a modest factor in explaining the overall

⁴ The 2004 SCF website offers numerous data tables for analysis. The figures cited in this paper use data from the inflation-adjusted tables based on internal SCF data. These internal data incorporate weighted adjustments to address the issue of survey nonresponses.

growth in consumer credit because these cohorts typically hold only a small percentage of the total dollar amount of debt outstanding. The 2004 Survey of Consumer Finances, for example, found that the average American household with some debt owed \$103,400. This compares to an average debt of \$24,600 for families in the lowest income quintile and an average debt of \$54,000 for heads of household age 75 or older. This disparity is partially due to the fact that fewer families in these cohorts have a home mortgage. However, average debt holdings in other categories, such as credit cards, for these cohorts were also well below the national average.

Overall, an analysis of data from the Survey of Consumer Finances reveals that consumers in the two lowest income quintiles accounted for 3.3 percent and 7.4 percent of total consumer debt, respectively, in 2004. However, that combined share, 10.7 percent, is up from 7.7 percent in 1989, suggesting that these two income cohorts are qualifying for more loans than in the past. Indeed, according to SCF data, families in the two lowest income quintiles accounted for 13.4 percent of the overall real growth in household liabilities over the 1989 to 2004 period.⁵

⁵ Because the SCF provides mean values of debt holdings by cohort as well as the household share each cohort represents, it is possible to derive total debt holdings for a representative sample of 100 households. From there, one can estimate each cohort's share of total debt as well as the cohort's contribution to the growth in total debt from 1989 to 2004.

TABLE 2
SHARE OF TOTAL DEBT AND CONTRIBUTION TO DEBT GROWTH, 1989 & 2004

Percentiles of income	Share of total debt	Share of total debt	Contribution to total
	1989	2004	debt growth, 1989-2004
Less than 20	1.9	3.3	4.5
20-39.9	5.8	7.4	8.9
40-59.9	13.2	14.9	16.4
60-79.9	26.0	23.9	21.9
80-100	53.0	50.6	48.3
Head of household under 35	27.5	17.9	9.0
Age 35-44	35.3	27.5	20.3
Age 45-54	20.9	30.0	38.4
Age 55-64	12.1	16.7	20.9
Age 65-74	3.6	5.0	6.3
Age 75 or older	0.9	2.9	4.9
White non-Hispanic	82.6	79.9	77.4
Nonwhite or Hispanic	17.4	20.2	22.7

Sources: Survey of Consumer Finances, author's calculations

It should be made clear that this 13.4 percent share cannot be exclusively attributed to the democratization of credit because a significant portion of this debt growth surely represents some households electing to take on additional debt. However, it seems clear that the extension in lending to low-income and middle-class families has at least had some role in influencing growth in consumer debt. The results undoubtedly would have been larger had one looked at low-income debt holdings from more than three decades earlier, when credit was far scarcer. According to the Survey of Consumer Finances, for example, only 2 percent of families in the lowest income quintile reported using a credit card in 1970 (Durkin, 2000).⁶

While low- and moderate-income consumers have played a role in consumer debt growth, Table 2 makes clear that the overall growth in consumer debt is driven primarily by high-wealth consumers in their prime earning years. According to my calculations, Americans in the highest income quintile were responsible for over 48 percent of the

⁶ Technology has played a critical role in the distribution of credit since the 1970s. Consumers are now offered credit cards via the Internet; at sporting events; by telephone, television, and radio; and, of course, through direct mailings. Indeed, some of these approaches have become so effective that laws, such as the Do-Not-Call Implementation Act, were created to prevent abuse.

expansion in total debt growth from 1989-2004. Similarly, families with a head of household age 45 to 54 accounted for more than 38 percent of the gain in total consumer debt among age cohorts. In short, the democratization of credit has had an influence on consumer debt burden statistics, but it has been the high-wealth consumers who are primarily responsible for driving the growth in credit.

Although the democratization of credit has not been the chief driver of credit growth, there is still concern that those individuals qualifying for their first credit card or loan may be especially vulnerable to predatory practices. For example, some analysts and policymakers are concerned that lenders will encourage individuals to become overextended and then charge these customers high penalty fees. Although it is difficult to quantify the number of consumers currently overextended, it is true that many consumer lenders are relying increasingly on fees as a source of revenue. The rise in fee revenue as a share of total lender income is part of a shift over the last decade in the credit card industry away from a simple one-size-fits-all pricing model to a more sophisticated system of varying APRs, fee structures, and different finance charges tailored to better manage the risk of the portfolio (Furletti, 2003). Cardweb.com, an online publisher of information on payment cards, found that credit card fees accounted for more than 33 percent of credit card revenues in 2003, more than double the 16 percent share in 1996 (as cited in Pacelle, 2004). A significant proportion of this increase was due to higher penalty fees. For example, between 1996 and 2001, annual industry late fee revenues more than quadrupled (Furletti, 2003).

Current research indicates that consumers' spending habits are influenced by the size of the credit line offered by lenders. David Gross and Nicholas Souleles, for

example, have empirically tracked the positive correlation between an increase in the credit line and individual debt holdings. Gross and Souleles studied the activity for two to three years of a data set of several hundred thousand credit card accounts, representative of all open domestic accounts in 1995, to calculate the impact of an increase in the credit line on credit consumption. The authors found that consumers increased their debt by \$130, or 13 percent, for every \$1,000 increase in the credit line (Gross and Souleles, February 2002). Gross and Souleles also discovered that the trend in individual debt holdings tended to suggest that consumers have a target utilization rate. Consequently, within several months after a line increase, the utilization rate tended to return to the original level (Gross and Souleles, February 2002). In short, Gross and Souleles's findings suggest that an increase in a consumer's credit line does have a real impact on spending habits. Interestingly, these results could be interpreted either positively or negatively. On the positive side, the findings suggest that a relaxation of credit constraints, in the form of an increase in the credit line, allows consumers to better optimize their consumption. Some, however, could interpret the results as a warning sign that consumers could easily be lured into taking on excessive debt.

B. The relationship between consumer debt and economic growth

A principal concern often expressed in the popular press is that the rise in consumer debt burdens in the last decade poses a threat to the economy. Proponents of this view argue that pressures from high debt levels will eventually force consumers to substantially reduce spending. Since real consumer spending has accounted for 74

percent of real GDP growth in the post-World War II period, a large reduction in consumer spending would prove a significant drag on macroeconomic activity.

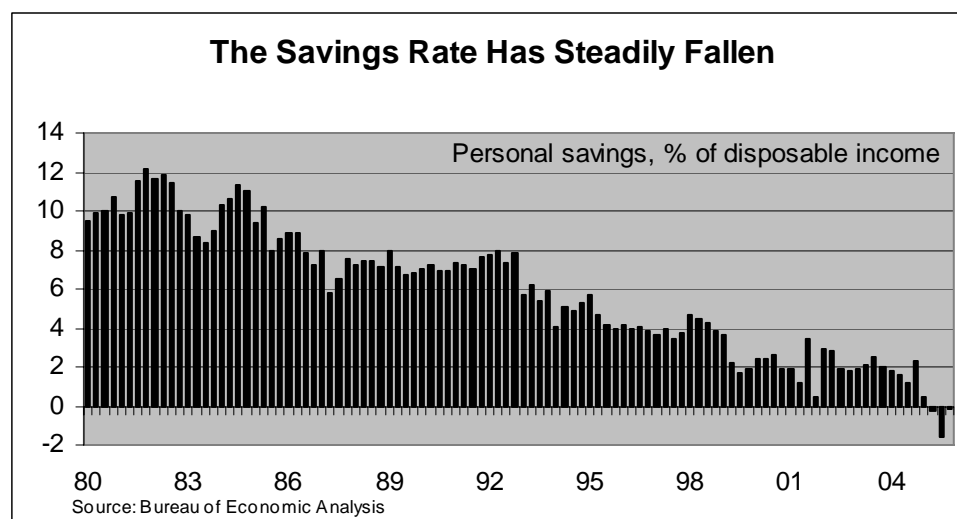
There is some evidence for this pessimistic viewpoint. For example, a paper by Christopher Carroll and Wendy Dunn finds that fluctuations in unemployment expectations have a greater impact on durable spending in a deregulated economy with high debt burdens compared with a more credit-constrained economy (Carroll and Dunn, 1997). To explain the intuition behind their result, the authors use the example of down-payment requirements for a home mortgage. The market decision to relax the requirements on down payments for a mortgage resulted in consumers' generally taking out larger mortgages. Since consumers have less equity at the time of the mortgage origination and owe higher monthly payments due to the size of the mortgage, any negative shock requires a larger retrenchment in consumption than if the loan to value ratio and monthly payments had been lower. Carroll and Dunn's findings are interesting because they suggest that consumption smoothing grows more difficult, not less difficult, when credit restraints are removed, since the inevitable surge in debt heightens consumers' reactions to adverse economic events (Carroll and Dunn, 1997).

While Carroll and Dunn's work raises some concerns that high debt burdens may slow future growth, most economists find that high debt growth is positively correlated with stronger future consumption growth (Maki, 2000).⁷ There are two main explanations cited for a positive relationship between debt growth and future

⁷ Another individual whose work raises concerns about consumer debt is Robert Murphy, who finds an inverse relationship between the Federal Reserve's debt service ratio and real personal consumption. Specifically, Murphy finds that lagged values of the debt service ratio explain approximately 8 percent of the change in real personal consumption. This relationship is strongest for services consumption (explaining 13 percent of the change in services spending) but is nonexistent for nondurable consumption (Murphy, 1999).

consumption. First, creditors might expand credit availability by loosening lending standards when they anticipate a healthier economy in the future (Maki, 2000). A second reason, consistent with the life-cycle hypothesis, is that debt growth increases when consumers upwardly revise their expectations about future income. In this case, acquisition of credit fuels additional spending and higher debt that will ultimately be covered by the anticipated rise in income.

This latter argument could also help explain why the savings rate has fallen steadily since the early 1980s. Improved optimism about the economy reduces the need to save and induces consumers to increase spending. This effect may be particularly important in explaining the growth in consumption and debt accumulation for the wealthiest Americans. Roger Ferguson points out that households with incomes in the top quintile have accounted for nearly the entire drop in the personal savings rate in the last 15 years, with the remaining 80 percent of the population continuing to save at the same rate over this period (Ferguson, 2004).

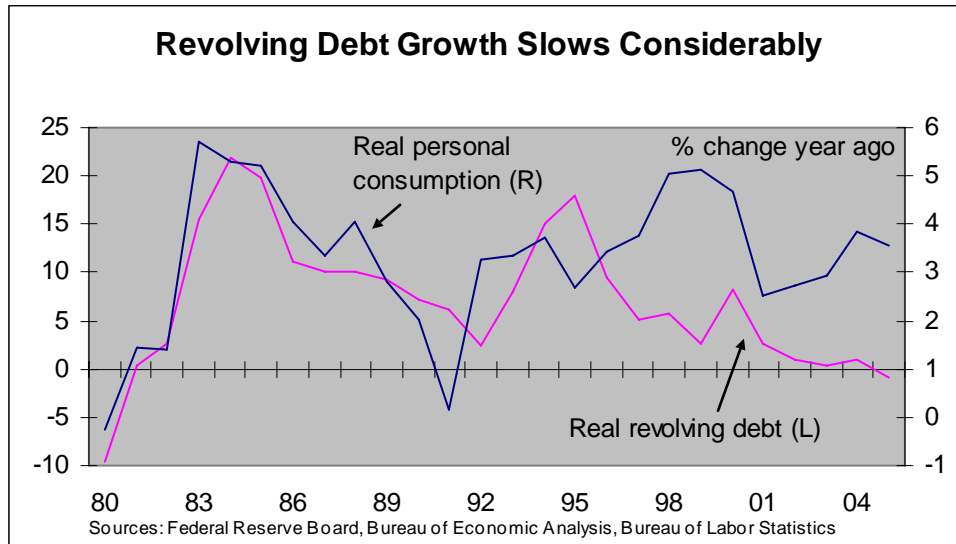


It is worth emphasizing that the savings rate is often measured with substantial error, and savings rate statistics are subject to large revisions over time. Leonard

Nakamura and Tom Stark point out that although the early 1980s is now known for a high savings rate, preliminary data initially indicated that the savings rate during that period was near a post-Korean War low (Nakamura and Stark, 2005). Overall, the average savings rate from 1965 to 1999 has been revised up by 2.8 percentage points, from an initial estimate of 5.3 percent to the current calculation of 8.1 percent (Nakamura and Stark, 2005).

Margaret McConnell, Richard Peach, and Alex Al-Haschimi argue that the historically low savings rate is a major factor explaining the rise in consumption and consumer debt. The authors point out that mortgage refinancing activity alone generated pre-tax interest savings of \$61 billion over the 2001-2003 period (McConnell, Peach, and Al-Haschimi, 2003).

More significantly, however, the authors argue that consumers have come to understand the advantages of using low-cost, tax-advantaged mortgage debt to stabilize spending rather than incurring high cost nonmortgage debt from sources such as credit cards. Using the historical relationship between durable goods consumption and the acquisition of nonmortgage debt, the authors found that actual growth in nonmortgage debt was far weaker starting in the second quarter of 2002 than the historical trend would predict (McConnell, Peach, and Al-Haschimi, 2003). Indeed, with consumers fueling spending through home equity loans and home equity lines of credit, real revolving debt growth has averaged just 0.4 percent growth over the last four years compared with growth of over 10 percent from 1983 through 2000.



Finally, economists point out that consumer debt growth is overstated to some extent by the increased use of credit cards as a payment instrument. If a consumer pays off his or her credit card in full each month and does not carry forward any outstanding credit card debt, standard measures of consumer credit will reflect this activity as consumer debt, since the debt measures are taken as a snapshot in time rather than at the close of a billing cycle. Consequently, as credit card use for payment transactions increases, consumer credit will rise accordingly, even if the increased balances are paid in full every month.

Consumer use of credit cards as a payment vehicle has increased rapidly as consumers have a number of financial incentives to use credit cards instead of other payment instruments. Some merchants grant discounts when shoppers use their proprietary credit card, while credit cards with universal rewards offer the lure of free goods, airline tickets, or cash back. Consumers who pay their credit cards off in full every month also earn float from the time of purchase to the date their credit card bill is paid.

The increased speed of payment card processing is also contributing to the greater use of credit cards for payments at outlets such as grocery stores and gas stations. Using scanner data from grocery store transactions, for example, Elizabeth Klee finds that check transactions take 40 seconds, or 30 percent longer than debit card transactions (Klee, 2006). Although Klee focuses primarily on debit cards in her study, it is likely that credit cards also offer a significant time advantage over checks, offering faster checkouts for time-pressed consumers.

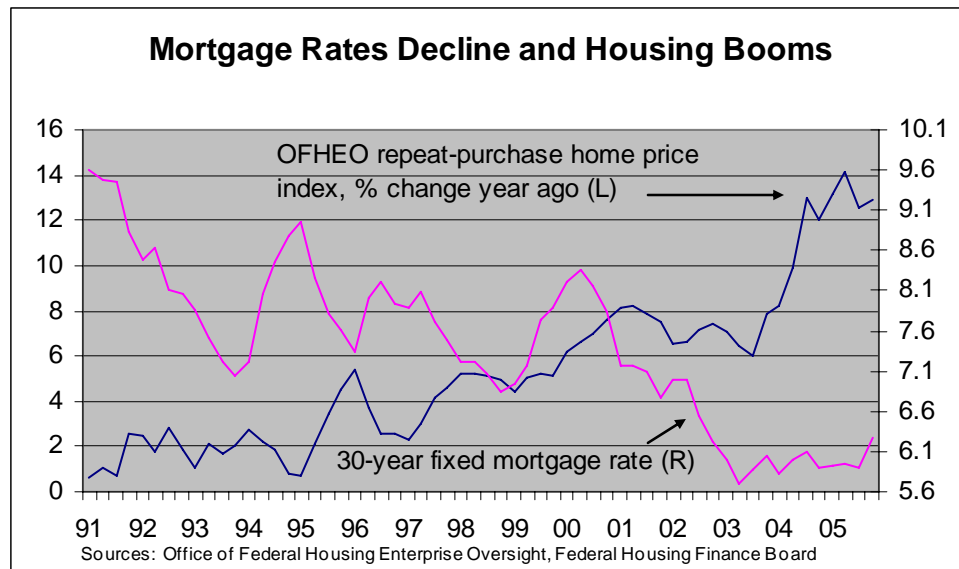
Rapid growth in convenience use has been a substantial factor in the growth of credit card debt, although it represents a relatively small factor in explaining the growth in total consumer debt. Using data from the Survey of Consumer Finances, Kathleen Johnson modeled the quantitative impact of convenience use on overall credit card borrowing. Johnson found that convenience use rose from 5.9 percent of total measured credit card debt in 1992 to 10.8 percent in 2001 (Johnson, 2004).⁸ Assuming that the proportion of convenience use in 2001 was the same in 2004, convenience use would have accounted for \$84.4 billion in real revolving credit outstanding in the fourth quarter of 2004, up from \$21.9 billion in 1992. This growth in convenience use of credit cards is thus responsible for 15.4 percent of the real growth in credit card outstandings from 1992 to 2004. However, it accounts for only about 1.2 percent of the rise in total real household debt over this same period.⁹

⁸ The November 2002 *Nilson Report* suggests convenience use may have been even higher in 2001. According to this report, an average of \$134.35 billion in revolving consumer credit outstandings were paid off in full each month in 2001, equivalent to 18.6 percent of credit card outstandings (*Nilson Report*, 2002). In order to maintain the most conservative approach possible to this analysis, I have used Johnson's smaller figures.

⁹ Real revolving consumer credit outstanding grew by \$406.4 billion in 2004 dollars from 1992 to the fourth quarter of 2004. The \$62.5 billion increase in outstandings due to convenience use, using Johnson's calculations on the share of convenience use, represents 15.4 percent of that total.

C. The housing market and consumer debt

Local housing markets have been booming for a number of years. Sparked by historically low mortgage rates, house prices nationally, as measured by the OFHEO repeat-purchase home price index, were up 13 percent on a yearly basis in the fourth quarter of 2005 and have now risen 70 percent since 1999. Meanwhile, home mortgage debt grew more than 10 percent in real terms in 2005, marking the fourth straight year of double-digit gains.



For those homeowners who owned their dwellings prior to the surge in home prices, this housing boom has been particularly beneficial. Using the 1968-1993 waves of the Panel Study of Income Dynamics, Andreas Lehnert finds that passive house-price gains¹⁰ have the biggest consumption impact on households age 52 to 62 followed by households age 25 to 34 (Lehnert, 2004). Overall, the nationwide gain in house prices

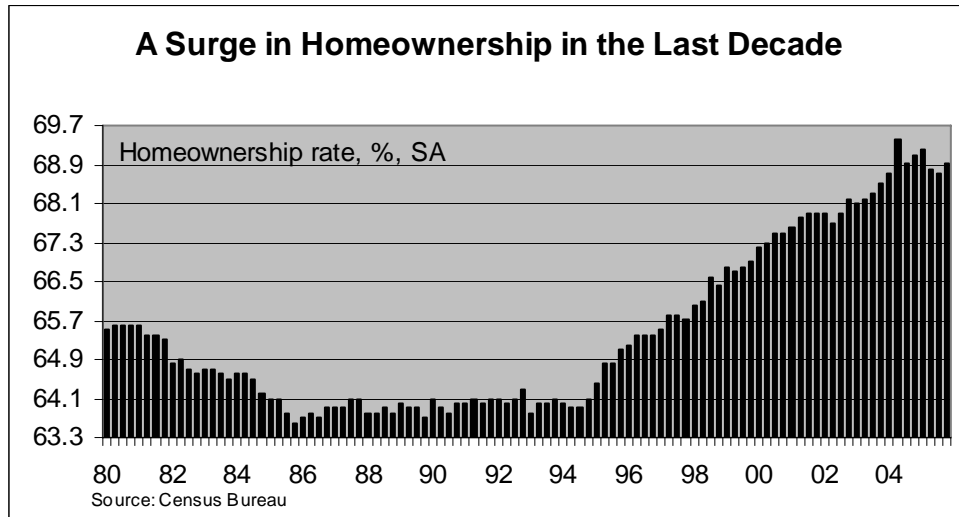
¹⁰ Passive house-price gains are gains that households realize through a natural rise in the value of their home. Active house wealth gains, conversely, are gains realized through an actual sale or refinancing (Lehnert, 2004).

was often cited as a key factor sustaining consumer spending during the sluggish economic recovery.

Nonetheless, there has been much concern, particularly in the popular press, that the nation may now be in the midst of a housing bubble. If this is true, a burst in the bubble resulting in a fall in house prices would curtail construction activity (Duca, 2004) and generate losses in the financial sector through a rise in delinquencies and foreclosures (McCarthy and Peach, 2004).

Naturally, a sharp correction in house prices could also financially squeeze highly leveraged homeowners. According to the flow of funds data released by the Federal Reserve Board, real estate holdings accounted for a record high of nearly 34 percent of total household assets in the fourth quarter of 2005. Comparatively, Americans' stake in corporate equities and mutual fund shares accounted for only 25 percent of total assets at the height of the stock-market bubble. The homeownership rate is also higher than the proportion of Americans owning stock, so a collapse of housing prices would likely have a broader impact than the recent financial market downturn (McCarthy and Peach, 2004). Of course, real estate holdings are most significant for actual homeowners. Using the 2001 Survey of Consumer Finances, Wenli Li finds that home values represent 55 percent of total assets for the average homeowner and greater than 80 percent of assets for more than half of homeowners (Li, 2005). Furthermore, since local house prices and wages and salaries are positively correlated, a downturn in a particular local economy could result in a double hit to homeowners (Li, 2005).

Meanwhile, the number of Americans who are homeowners continues to swell. Overall, the homeownership rate has jumped roughly five percentage points in the last decade.



Most households are taking on new debt to become homeowners, but this does not mean that they are necessarily extended financially.¹¹ As Alan Greenspan stated:

One can scarcely argue that those previous renters are less well off since becoming homeowners; yet, all else being equal, the overall household debt as a percentage of income is 8 percentage points higher currently than it presumably would have been had the homeownership ratio been stable since 1992 (Greenspan, October 2004).

One can use Greenspan’s remarks to approximate the impact of rising homeownership on consumer debt. In the third quarter of 2004, household liabilities represented 113 percent of disposable income. So if this ratio were the same for all homeowners and the homeownership rate were at the 1992 rate, household liabilities in real terms would be

¹¹ This distinction demonstrates why the financial obligations ratio is superior to the debt service ratio as a tool for economic analysis. Because the debt service ratio is based solely on outstanding mortgage and consumer debt, changes in the homeownership rate will invariably influence the ratio. Conversely, because the financial obligations ratio includes renter payments, this ratio is much less affected when the homeownership rate changes notably.

\$693.7 billion lower than they were in the third quarter of 2004.¹² This indicates that the jump in the homeownership rate from 64 percent to 69 percent from 1992 to 2004 accounts for 13.8 percent of the overall real growth in household debt.

Mortgage debt has risen rapidly in recent years in part because for many home sales, a small mortgage based on the old house price is replaced by a larger mortgage reflecting the current higher market price. One homeowner is substituted for another, and despite the rise in mortgage debt, mortgage payments may stay roughly the same because of the drop in interest rates. The question remains, however, whether the new sales price is inflated as a result of a housing market bubble that will eventually collapse.

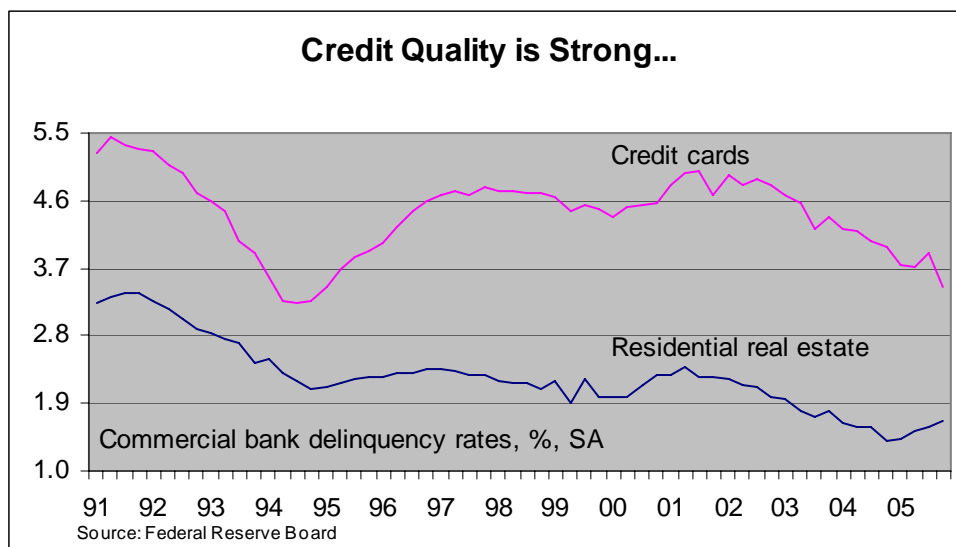
A recent working paper by Todd Sinai and Nicholas Souleles offers an interesting perspective on the risk of homeownership. Sinai and Souleles argue that although buying a home is certainly risky, so too is renting, particularly since a renter is subject to the annual changes in rent (Sinai and Souleles, 2004). Homeowners, the authors point out, effectively avoid this rent uncertainty by locking in a fixed asset for a predetermined price. The homebuyer is still subject to asset-price risk, but only when the home must be sold. Consequently, Sinai and Souleles believe that demand for homeownership should be viewed as the tradeoff between the asset-price risk of homeownership and the risk of fluctuations in rents. The authors find empirical evidence that the probability of owning a home increases significantly for homeowners with long horizons where rent risk is high (Sinai and Souleles, 2004). While this analysis fails to address recent house-price trends, it suggests that homeownership may be less risky than assumed, particularly for families with long horizons.

¹² If household liabilities were only \$9.16 trillion in the third quarter of 2004 rather than the \$9.86 trillion they actually were, the ratio of household liabilities to disposable income would be 105 percent or eight percentage points lower than the actual ratio at that time.

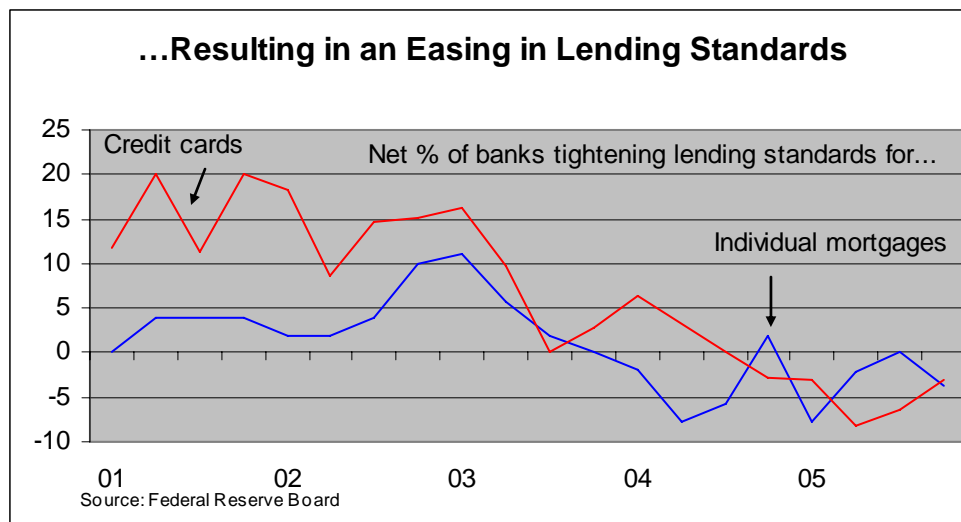
D. The impact of consumer debt growth on the banking industry

One potential concern for the banking industry is that the democratization of credit has increased the proportion of high-risk loans, potentially leaving lenders vulnerable to greater unexpected losses. In fact, subprime lending as a share of total loans is on the rise. Subprime mortgages, for example, now account for approximately 13 percent of the number of total mortgages originations, up from 4 percent just over a decade ago (Li, 2005).

This increase in subprime lending has not had a notable impact on delinquency rates, however. The still-minor size of the subprime market and the fact that these loans are likely smaller than the national average means that they do not as yet significantly influence broad credit quality trends. In fact, residential real estate delinquency rates, while on the rise in 2005, are still low historically. Meanwhile, the delinquency rate on credit cards fell to a nearly 11-year low in the fourth quarter of 2005.



As a result of the overall improvement in credit quality since 2001, lenders have eased their lending standards, a further indication that, at least at present, the financial industry is not anticipating significant distress from the current level of consumer debt. According to the Senior Loan Officer Opinion Survey, the net share of banks tightening lending standards for both credit cards and mortgages showed declines in the fourth quarter of 2005, meaning that the share of banks easing lending standards outweighed the share of banks tightening standards.



Of course, it is always possible that the financial industry's outlook is too sanguine. In particular, many are concerned that consumers are willing to take on more debt and risk because the stigma of filing for bankruptcy has weakened. To address the issue of bankruptcy, David Gross and Nicholas Souleles, in a study separate from their analysis on credit lines, used data from several different credit card issuers to track delinquencies and bankruptcy rates for credit card accounts from 1995 to 1997. Their analysis finds that the democratization of credit is unable, empirically, to fully explain the rise in personal bankruptcy filings (Gross and Souleles, Spring 2002). Instead, Gross and Souleles's work suggested that individuals have become more willing to default than in

the past. The authors posit several factors potentially driving this trend, including a reduction in social stigma, increased public information on how to file for bankruptcy, and reduced legal costs to file (Gross and Souleles, Spring 2002).

Kartik Athreya's study of the issue of stigma, using a theoretical model rather than empirical analysis, offers an interesting counterpoint to the work by Gross and Souleles. Athreya designed a model of unsecured borrowing into which he could introduce a shock by abolishing the stigma of bankruptcy to study how consumers and lenders would respond. The model was calibrated to replicate bankruptcy rates, debt discharged in bankruptcy, and chargeoff rates in 1991, with Athreya testing whether a reduced stigma properly predicted the higher level of these statistics in 1997. To support the theory that reduced stigma is the main factor behind the increase in bankruptcy filings, the model would need to show that reducing stigma generates large increases in debt held by households along with a large increase in debt discharged through bankruptcy. In fact, when stigma was eliminated, the bankruptcy rate naturally soared, but borrowing declined sharply. Essentially, prices for consumer loans surged because lenders started charging much higher rates for credit, discouraging households from borrowing (Athreya, 2004). Athreya's model suggests that if the stigma of filing for bankruptcy indeed declines, the financial industry would respond by raising the cost of loans to match the greater risk of default, curbing consumer debt growth. Of course, this model assumes that lenders are aware of changes in stigma and adjust lending standards appropriately, minimizing any long-term impact on earnings. In the short run, however, changes in consumer perceptions about bankruptcy might not be known and thus could have a real impact on credit quality.

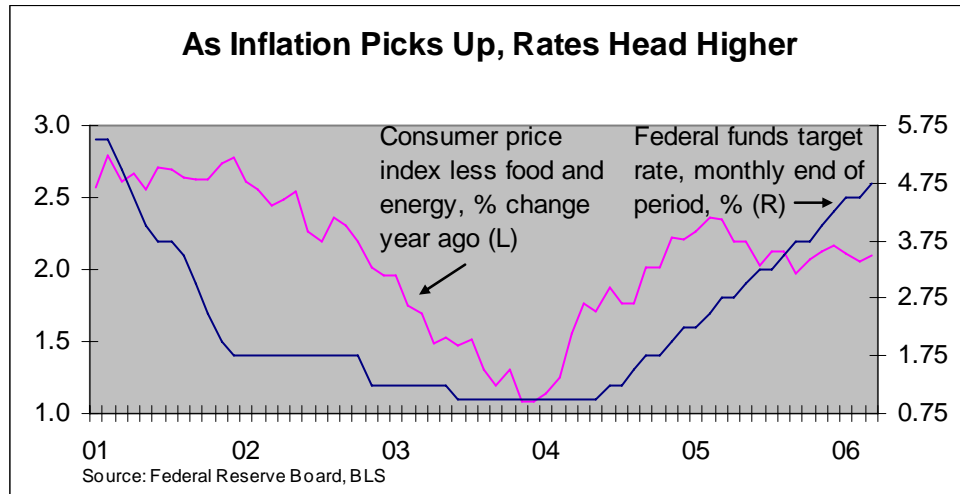
One way to reconcile the findings of Athreya with those of Gross and Souleles is to suggest that perhaps consumption spending is less sensitive to interest rates than in Athreya's model. Thus, a decision by banks to raise interest rates would not have as significant an impact on consumer debt holdings as the model indicates. Like Gross and Souleles, Athreya also suggests that the democratization of credit has at least played some role in raising the bankruptcy rate. When he reduced transaction costs in his model, for example, the bankruptcy results were far closer to the actual historical trend in the last decade than the model results with stigma effects (Athreya, 2004).

Even if consumers are more inclined now to file for bankruptcy than in the past, the new bankruptcy reform law that took effect last October may provide some protection for the financial industry. The new law requires individuals who earn more than the median income in their state and can pay at least \$6,000 over a five-year period to file for Chapter 13 bankruptcy, which requires a repayment plan, rather than the more lenient Chapter 7, which allows debtors to more easily eliminate their debts (Labaton, 2005). To avoid these more stringent requirements, an estimated half million Americans filed for bankruptcy in the two weeks before the new law was enacted on October 17, 2005. This figure compares to an average of 60,000 to 70,000 bankruptcy filings in a typical two-week period (Weston, 2005). Overall, personal bankruptcy filings in the fourth quarter of 2005 were up 80 percent from the fourth quarter of 2004.

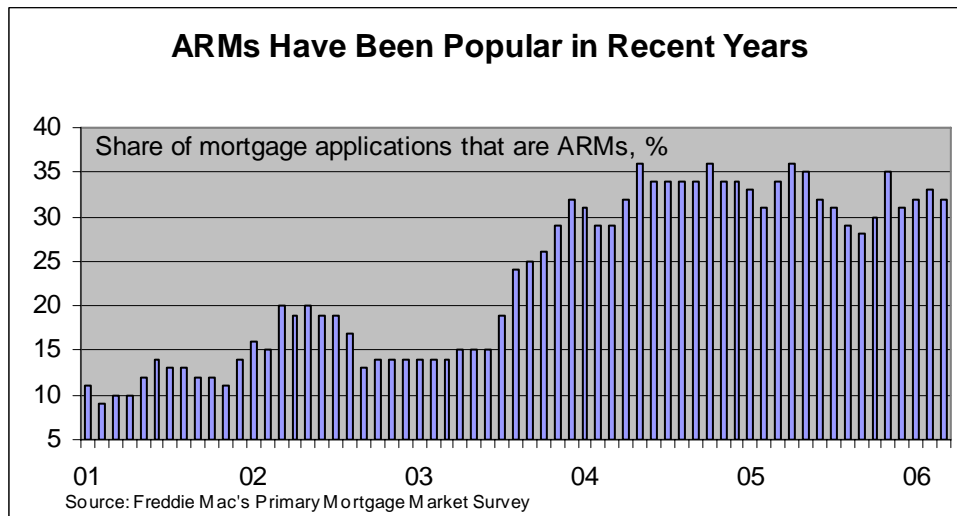
E. The rising interest rate environment and consumer debt

The interest rate on a 30-year fixed rate mortgage has risen, up 50 basis points in February 2006 from one year earlier. Core inflation, which excludes the volatile energy

and food components, has accelerated since the end of 2003, prompting the FOMC to hike interest rates by 25 basis points in 15 consecutive meetings between June 2004 and March 2006.



Rising interest rates appear to be a threat to the large number of homeowners who elected to finance their homes with adjustable-rate mortgages (ARMs) in recent years. Indeed, since 2004, ARMs have accounted for roughly one-third of mortgage applications, according to a monthly survey conducted by Freddie Mac.



Most adjustable rate mortgages are structured with an initial fixed interest rate for some period of time so that rising rates will not have an immediate impact on household budgets. However, the rising rate environment does threaten to raise costs for many homeowners in the coming years, cutting into other forms of spending.

ESTIMATED AMOUNT OF MORTGAGE DEBT THAT SWITCHES TO ADJUSTABLE INTEREST RATES

	Mortgage debt (Bil. \$)	% of 2005 mortgage debt
2005	\$80	0.9
2006	\$300	3.5
2007	\$1,000	11.5

Sources: "The Trillion-Dollar Bet" *New York Times* June 16, 2005, Deutsche Bank, Federal Reserve Board

However, just as consumers build up debt in a low interest rate environment, they are likely, where possible, to shed some debt in a high interest rate environment, moderating the impact of rising rates on the financial obligations ratio. In their study discussed earlier, Gross and Souleles's analysis of several hundred thousand credit card accounts showed that a one-percentage-point rise in interest rates resulted in an average \$70 drop in total credit card debt after one month. Higher rates also induced consumers to conduct some balance-shifting between cards to minimize interest payments (Gross and Souleles, February 2002).

Section III. Conclusion

The growth in consumer credit over time stems from myriad factors. Fortunately, research in this field has made it possible to quantify the impact of at least some of the more popularly cited reasons for the growth in consumer debt. As discussed earlier, the rising homeownership rate is responsible for roughly 13.8 percent of the overall growth in household debt from 1992 to 2004. The convenience use of credit cards, studied by

Kathleen Johnson, appears to represent only 1.2 percent of the rise in consumer debt since 1992, but it accounts for a more notable 15.4 percent of the gain in credit card outstandings over the same period. Finally, while it is difficult to accurately quantify the impact of the democratization of credit, the Survey of Consumer Finances data suggest that the two lowest income quintiles accounted for 13.4 percent of the growth in household liabilities from 1989 to 2004.¹³ Of course, this final calculation overstates the impact of the democratization of credit for the two lowest income quintiles, since not all of the growth can be attributed to liquidity-constrained households in these cohorts. This caveat is perhaps offset, however, by the fact that this calculation ignores the broadening of credit lending to other important groups, such as minorities and young and elderly consumers, who only partially overlap with the income cohorts.

These three explanations—rising homeownership, increasing convenience use of credit, and the democratization of credit—likely overlap to some extent. For example, the democratization of credit has likely played some role in increasing homeownership. Consequently, the combination of the growing convenience use of credit cards, rising homeownership rate, and democratization of credit at most accounts for 28.4 percent of the growth in household liabilities since 1992. That clearly leaves a significant portion of the rise in consumer debt to be explained. While difficult to quantify, two other factors have likely played a large role in driving debt growth: improved expectations regarding future income and low interest rates.

¹³ Obviously, the time period used here, 1989 to 2004, is different from the 1992 to 2004 period referenced for the calculations of the impact of rising homeownership and convenience credit card use. However, conducting a similar calculation using the Survey of Consumer Finances for the 1992 to 2004 period produces similar results. The two lowest income quintiles accounted for 12 percent of the growth in consumer debt from 1992 to 2004.

If consumers are more confident about their future incomes, they are more willing to take on additional debt. While down from the heights of 2000, the Conference Board's consumer confidence index was up 71 percent in the first quarter of 2006 relative to 1992. As noted earlier, high-wealth Americans in their peak earning years are responsible for a significant share of the growth in consumer debt. If income expectations in this cohort in particular have risen, perhaps because of the stock market or house-price appreciation over the last decade, it could be a major factor behind the rise in household liabilities.

The low interest rate environment also played a key role in the growth in consumer debt, since it allowed consumers to take on more debt, especially in the case of home mortgages, while keeping interest payments manageable. However, there is some risk that consumers with repayment plans that are manageable today could have difficulty making payments on their debts as interest rates rise. Moreover, homeowners that have taken advantage of low interest rates to assume a highly leveraged position in their homes could experience problems if local housing markets are subject to the risk of substantial price declines.

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