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Portfolio Strategy January 2017

The Consumer Cycle: Rate Sensitivity and Duration

This Time is (Somewhat) Different

- In the years following the financial crisis the interest-rate sensitivity of the consumer part of the economy has declined, and some of that change has been echoed in the behavior of the durables stocks. Still, their valuations embody the expectation that the cycle has peaked, more-or-less coincident with the trough in rates. There are reasons to think otherwise, and we believe that this expansion could turn out to be different from its predecessors, with tightening initially posing a smaller threat than usual. Here are five of them:
  - Reason 1: The Income/Demand Cycle. It took nine years for the real earnings of the bottom 80% of the income distribution to regain their 2007 level. Much of the recovery took place in the last two years when that group's wage gains shot higher prompting their spending on big-ticket items to finally take off. The demand cycle looks to be a drawn-out affair and arguments citing pent-up demand have merit.
  - Reason 2: People Who Need Money Couldn't Get It. Credit standards have been tight, especially in the mortgage market, and the role of debt in consumption has declined by two-thirds. Mortgage and credit card balances are now tilted toward those nearer the top of the income distribution, and the multiplier effects that come from giving credit to those in need of money haven't played out. All of that augers fewer credit problems ahead. A reliance on cheap credit, often a source of difficult comparisons, is this time a no-show.
  - Reason 3: The Borrower Base is Old. The distribution of debt is now skewed toward Baby Boomers, who own big homes with big mortgages. Millennials, on the other hand, have borrowed little outside of student debt. The older demographics have more stable financial situations and have been decidedly less rate sensitive in their behaviors than those in earlier stages of their careers.
  - Reason 4: The Debt is Largely Fixed Rate. ARMs represented more than a third of mortgage originations during the housing boom, and since then their share has fallen to around 5%. Repricing isn't a risk and the record-low level of the household debt-service ratio is a real virtue.
  - Reason 5: The Rate Exposure is Through Bond Funds. Rich older people used to ladder individual bonds and hold them to maturity. Now their exposure to the bond market is primarily through mutual funds and ETFs that are marked to market continuously. Half of all the inflows into those vehicles have come in since 2010, most when the 10-year Treasury bond yielded less than 2%. Fortunately, the duration of the mutual funds is only about 70% of the bond market itself. The election result set off another retreat from those funds as investors fled from municipal bonds. The propensity to consume of the older demographic that accounts for the bulk of bond fund assets is low.

Less Rate Sensitivity, Fewer Credit Problems, A Longer Cycle

- Putting all of the above together, we think it will take a meaningful amount of tightening to derail the consumer's cycle and that of the equity market. The loss content of the loan book should be less than normal, and we expect this expansion to turn out to be a long one. Given that, we have some interest in the low-multiple consumer durables stocks and think that lenders would benefit as well from the scenario we've laid out. Appendix 1 on page 12 ranks stocks drawn from those industries using our core model and highlights the correlation of each issue's relative returns to moves in the bond market.

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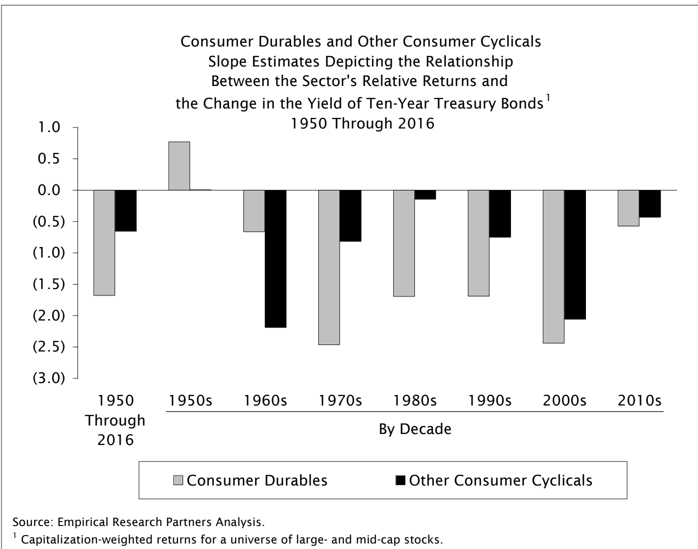
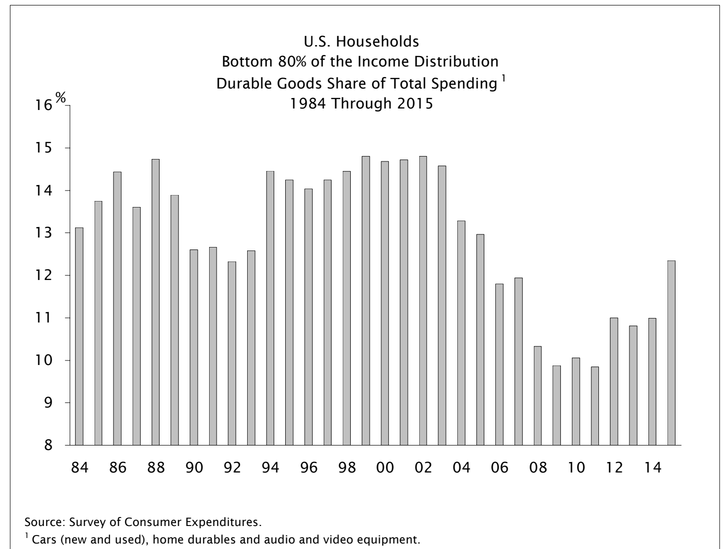
Conclusions in Brief

- The rate sensitivity of consumer durables stocks is down:



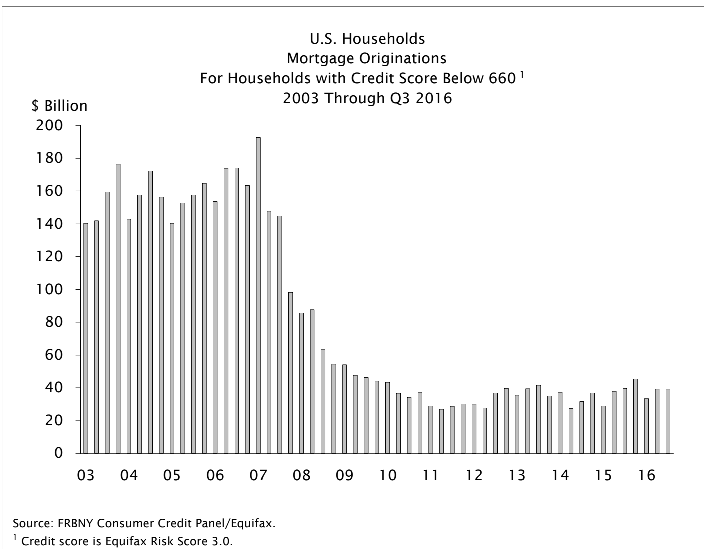
Source: Empirical Research Partners Analysis.
[1] Capitalization-weighted returns for a universe of large- and mid-cap stocks.

- For lower-income households the recovery was long delayed:



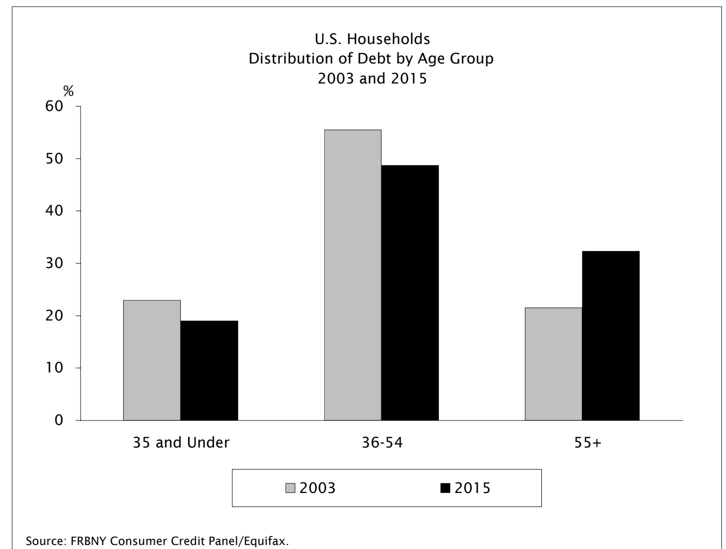
Source: Survey of Consumer Expenditures.
[1] Cars (new and used), home durables and audio and video equipment.

- Those with lower credit scores were shut out of the housing market:



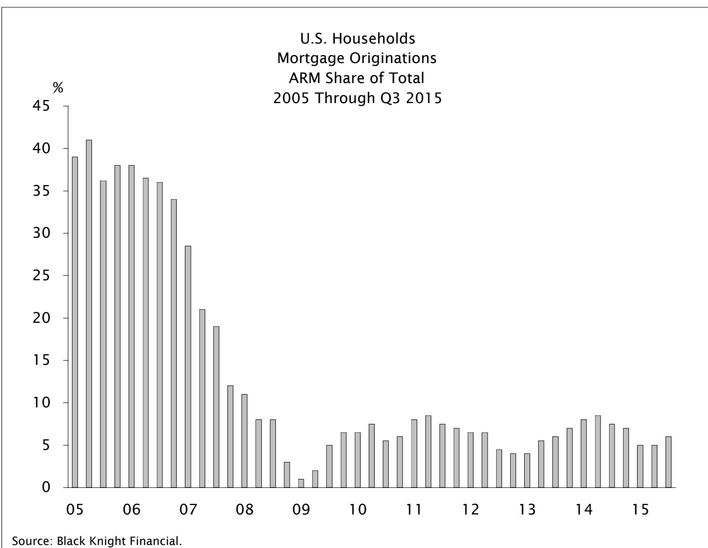
Source: FRBNY Consumer Credit Panel/Equifax.
[1] Credit score is Equifax Risk Score 3.0.

- The stock of debt is skewed toward older demographics…



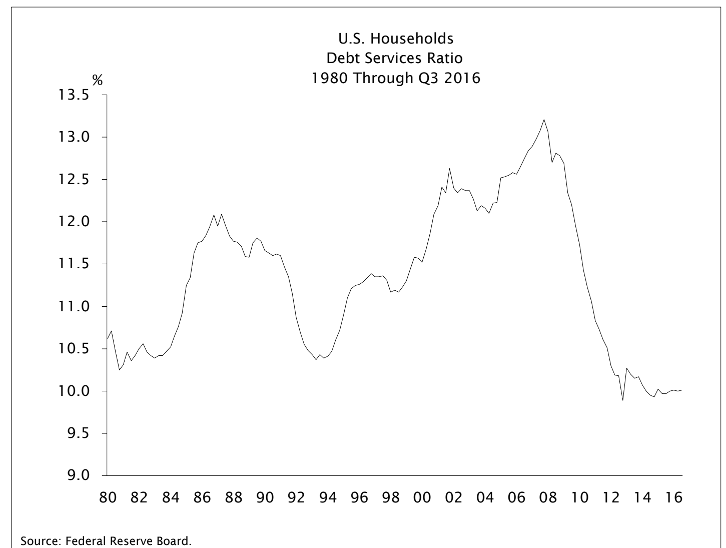
Source: FRBNY Consumer Credit Panel/Equifax.

- …And little of it is variable rate:



Source: Black Knight Financial.

- The decline in the debt service ratio is real and is consistent with a drawn-out cycle:



Source: Federal Reserve Board.

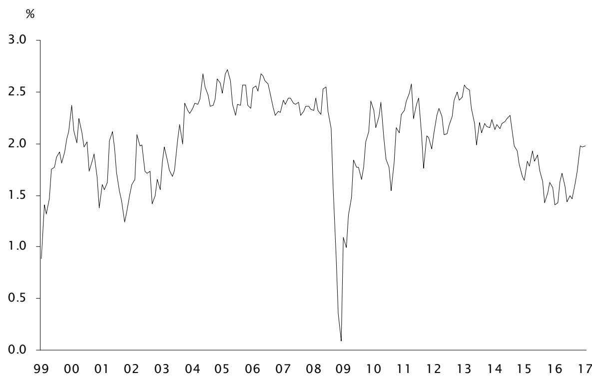
The Consumer Cycle: Rate Sensitivity and Duration

This Time is (Somewhat) Different

There are some good reasons to believe that consumer behavior will prove less interest-rate sensitive in this expansion than in its predecessors. Given that, we think that the cycle for big-ticket durables, including homes and autos, could have legs. Those reasons include the upwardly-skewed mix of income gains, seen from 2009 up until two years ago, that impeded the big-ticket spending of less-well-off households. The lackluster pace of debt creation, in part the byproduct of tougher credit standards, was a second factor, and it fostered significant changes in the demographics of the borrower base. What's important is that high-powered stimulus comes from lending money to the people who need it most, and little of that has gone on. Even though the expansion is technically 7½ years old, debt creation hasn't been a big part of it, and in light of that, increases in the cost of borrowing will hurt less than usual. In assessing the outlook for the consumer durables stocks, pattern recognition may not be the right approach this time around.

Donald Trump's plans for the tax cuts and fiscal stimulus have thrown gasoline on a fire that was already smoldering. The labor market began to show signs of tightening early last year, and this expansion is finally starting to resemble those of the past. The market has recognized that and the ten-year breakeven inflation rate priced into the Treasury market has moved up by +40 basis points since the end of the third-quarter, while the forward expectation for the Fed Funds rate has stepped up by +50 basis points (see Exhibits 1 and 2). The yield curve has steepened by +60 basis points, taking it back to where it had been a year earlier (see Exhibit 3). Fears of stagnation, that reached their zenith a year ago have abated, and we've moved back to pricing in a weak(ish) expansion.

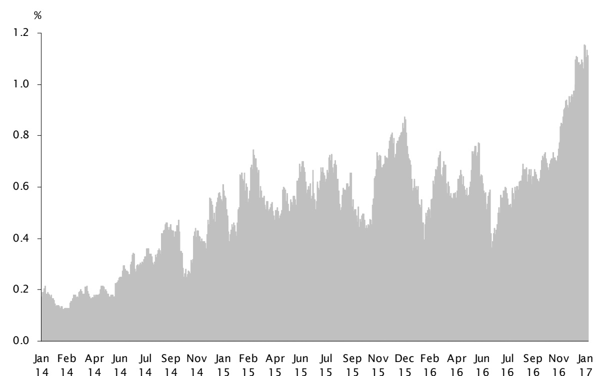
Exhibit 1: The Treasury Market
Ten-Year Breakeven Rate[1]
1999 Through Early-January 2017



Source: Bloomberg L.P.

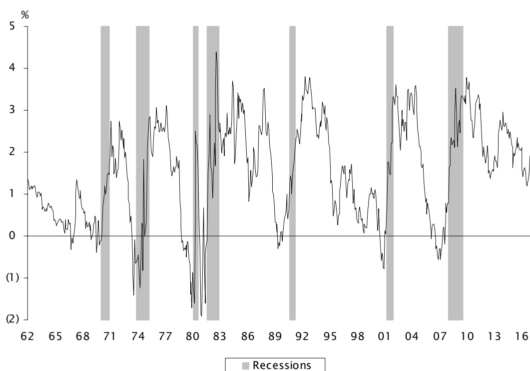
[1]Based on yields on inflation-linked and nominal Treasury securities.

Exhibit 2: The Fed Funds Rate
Year-Ahead Expectations from the Futures
2014 Through Early-January 2017



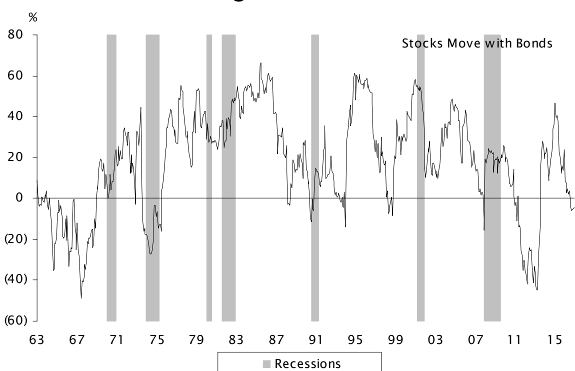
Source: Bloomberg L.P.

Exhibit 3: The Treasury Yield Curve
Ten-Year Bond Yield Less the Three-Month Bill Rate
1962 Through Early-January 2017



Source: Bloomberg L.P., National Bureau of Economic Research, Empirical Research Partners Analysis.

Exhibit 4: Homebuilder Stocks[1]
Correlation of Relative Returns with the
Total Returns of Ten-Year Treasury Bonds[2]
1963 Through 2016



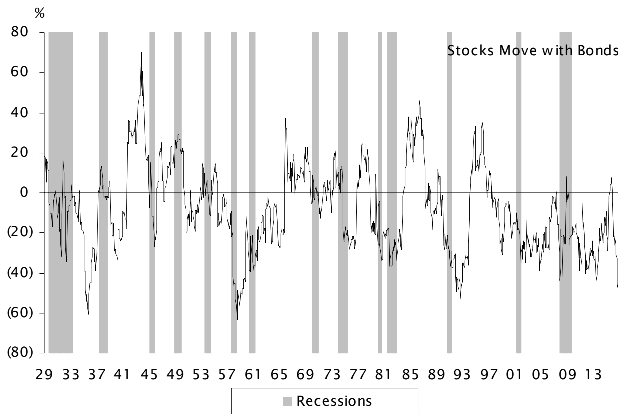
Source: National Bureau of Economic Research, Empirical Research Partners Analysis.

[1]Drawn from the largest 1,500 stock universe.
[2]Constructed using trailing two-year capitalization-weighted returns.

The Stocks Change Their Stripes

The consumer durable stocks (i.e., homebuilders, autos and auto parts, and other big-ticket items) have a reputation for being among the market's most rate sensitive, because the bulk of those purchases are debt financed. For example, the relative returns of homebuilders have long been correlated with the performance of the Treasury bond market, with the post-Crisis and New Economy periods two notable exceptions (see Exhibit 4 overleaf). The evidence for autos and household durables like appliances and furniture is less clear cut (see Exhibits 5 and 6). In the past 2+ months, as rate expectations have moved higher, the durables sector has produced a positive relative return, with autos, auto parts and household durables ahead (see Exhibit 7).

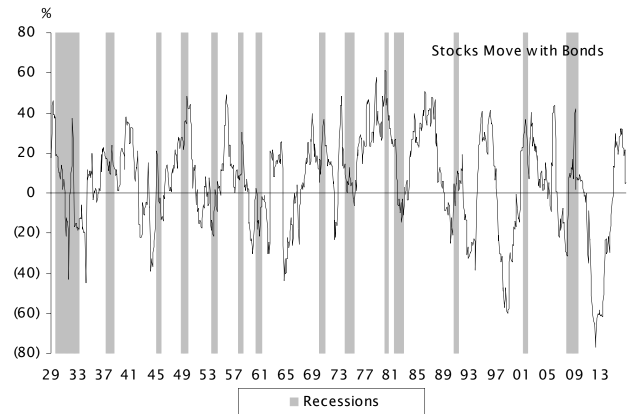
Exhibit 5: Auto OEM Stocks[1]
Correlation of Relative Returns with the Total Returns of Ten-Year Treasury Bonds[2]
1929 Through Late-December 2016



Source: Empirical Research Partners Analysis, National Bureau of Economic Research.

[1]Drawn from the largest 1,500 stock universe.
[2]Constructed using trailing two-year capitalization-weighted returns.

Exhibit 6: Household Durables Stocks[1]
Correlation of Relative Returns with the Total Returns of Ten-Year Treasury Bonds[2]
1929 Through Late-December 2016

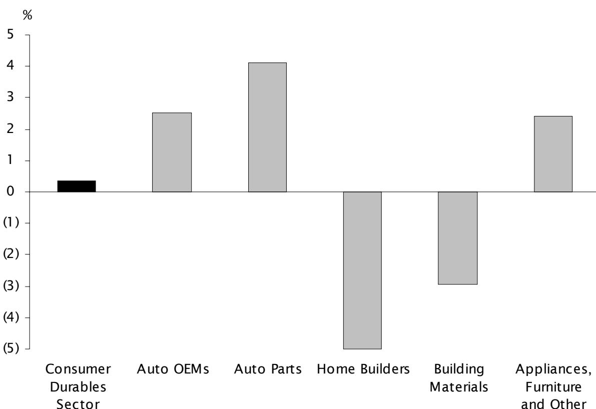


Source: Empirical Research Partners Analysis, National Bureau of Economic Research.

[1]Drawn from the largest 1,500 stock universe. Comprised of building products, home furnishings and household appliances.
[2]Constructed using trailing two-year capitalization-weighted returns.

We did work to quantify the relationship between the relative returns of the durables stocks and those of other consumer cyclicals with the change in ten-year Treasury bond yields. Exhibit 8 presents the slope of the regression lines for a 66-year period and by decade. What it tells us that the rate-sensitivity of the durables was greatest in the 1970s and 2000s, first when interest rates skyrocketed, and then again when they collapsed in a setting of loose credit standards. In the 2010s their rate sensitivity has been less than before, as lower rates didn't spur much new activity, instead, weak demand and credit availability called the tune. The market though remains skeptical that this cycle is different from its predecessors (see Exhibits 9 and 10).

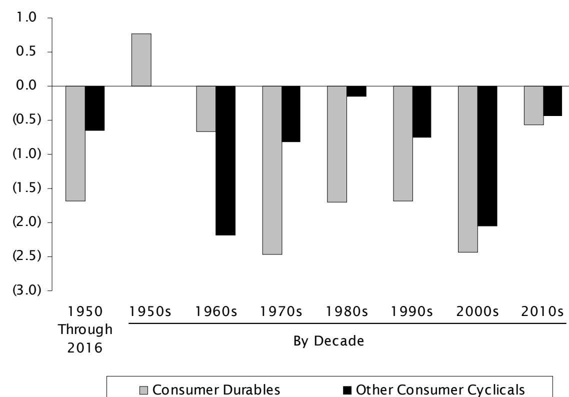
Exhibit 7: Consumer Durables Stocks
Relative Returns[1]
November 2016 Through Early-January 2017



Source: Empirical Research Partners Analysis.

[1]Equally-weighted data relative to the returns of the large-cap universe.

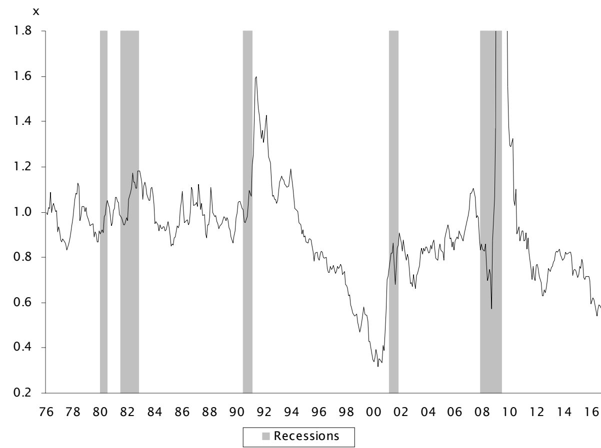
Exhibit 8: Consumer Durables and Other Consumer Cyclicals
Slope Estimates Depicting the Relationship Between the Sector's Relative Returns and the Change in the Yield of Ten-Year Treasury Bonds[1]
1950 Through 2016



Source: Empirical Research Partners Analysis.

[1]Capitalization-weighted returns for a universe of large- and mid-cap stocks.

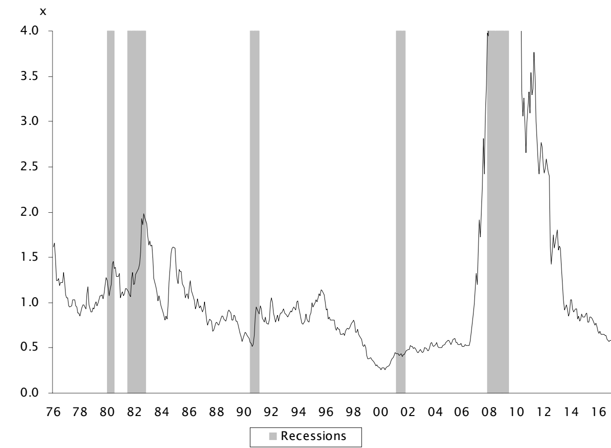
Exhibit 9: Auto Parts Stocks[1]
Relative Forward-P/E Ratios
1976 Through Early-January 2017



Source: Corporate Reports, National Bureau of Economic Research, Empirical Research Partners Analysis.

[1]Drawn from the 1,500 stock universe; capitalization-weighted data.

Exhibit 10: Homebuilder Stocks[1]
Relative Forward-P/E Ratios
1976 Through Early-January 2017



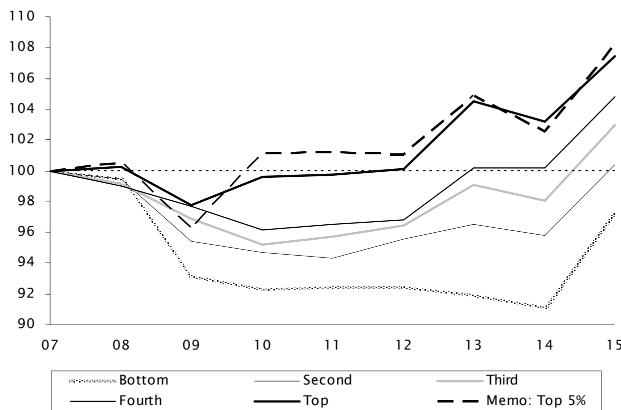
Source: Corporate Reports, National Bureau of Economic Research, Empirical Research Partners Analysis.

[1]Drawn from the 1,500 stock universe; capitalization-weighted data.

What's Different This Time, Part 1: The Income/Demand Cycle

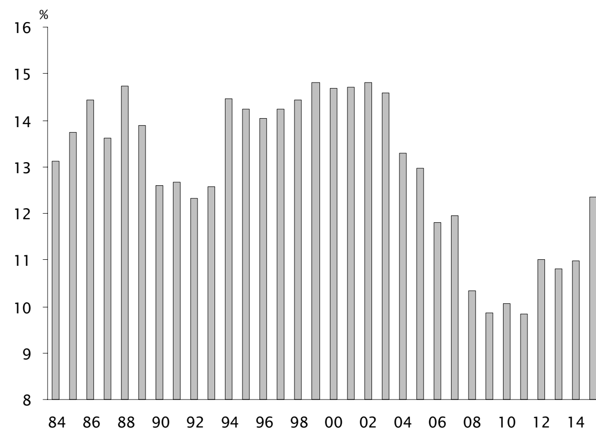
We'll now describe five ways in which this cycle differs from its predecessors. First, throughout the post-Crisis years there's been a marked divide between the income growth enjoyed by those at the top of the distribution and that seen by everyone else. That's been true for decades and what distinguishes this period is that for a long stretch real growth was negative for most people. By the end-of-2014, 5½ years after the bottom of the cycle, the real earnings of those in the bottom-half of the income distribution were still below where they had been at the 2007 peak, and only last year did they probably finally exceed that level (see Exhibit 11). It's hardly surprising then to discover that the durable goods outlays of those in the bottom-four quintiles remained depressed for a long time (see Exhibit 12). That group accounts about 60% of that spending, making them key to the big picture.

Exhibit 11: U.S. Households
Real Earnings Indices by Income Quintile
(2007=100)
2007 Through 2015



Source: U.S. Census Bureau, Empirical Research Partners Analysis.

Exhibit 12: U.S. Households
Bottom 80% of the Income Distribution
Durable Goods Share of Total Spending[1]
1984 Through 2015

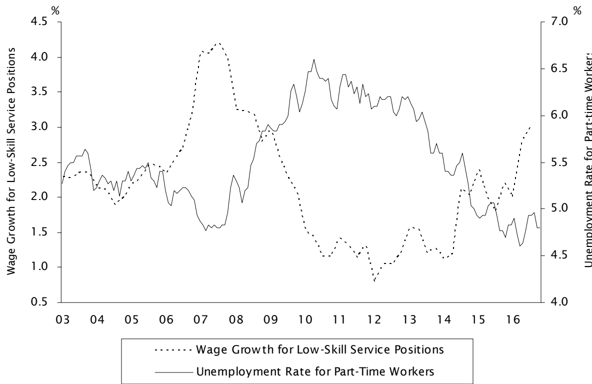


Source: Survey of Consumer Expenditures.

[1]Cars (new and used), home durables and audio and video equipment.

The tide finally turned about two years ago and wage gains for lower-paid positions have moved up sharply (see Exhibit 13). The tightness of the labor market is apparent in the construction and manufacturing categories, while the effects of increases in the minimum wage have shown up in the leisure and hospitality industries (see Exhibit 14). For most people the recovery only began in the last couple of years and we think the arguments for pent-up demand have some validity. This time around consulting the calendar may prove misleading.

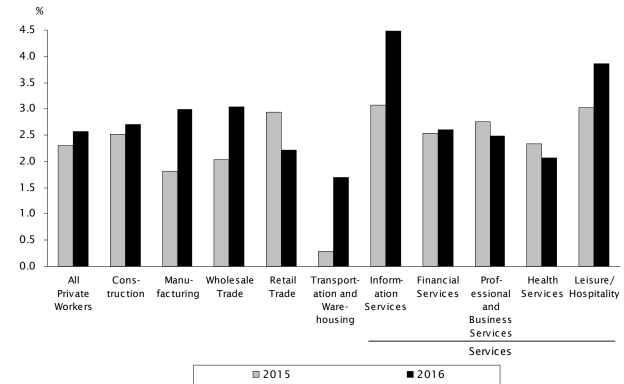
Exhibit 13: U.S. Households
Wage Growth for Low-Skill Service Positions[1]
and Unemployment Rate for Part-Time Workers
2003 Through 2016



Source: Bureau of Labor Statistics, Empirical Research Partners Analysis.

[1]Wage growth through Q3 2016. Unemployment rate smoothed on a trailing three-month basis.

Exhibit 14: U.S. Households
Average Hourly Earnings
Year-over-Year Changes in Select Industries
2015 Through 2016



Source: Bureau of Labor Statistics.

What's Different This Time, Part 2: Who Can Borrow Money

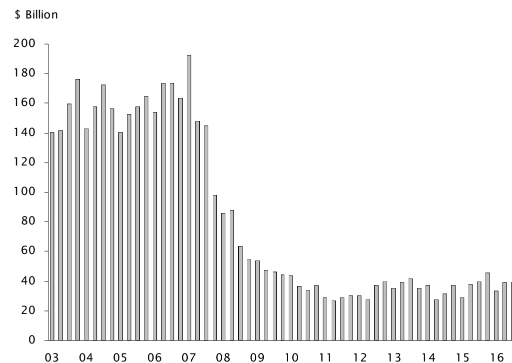
Lending standards have been tight since the financial crisis, especially in the mortgage arena. Looking at mortgage originations, the FICO score seen at the 25th percentile of the distribution has topped 700, while from 2002 through 2007 it averaged 659 (see Exhibit 15). The volume of mortgages issued to those with credit scores below the 660 level has declined by three-quarters (see Exhibit 16). Most of the collapse in the growth rate of mortgage debt had to do with weak demand and tougher credit standards that translated into less origination activity (see Exhibit 17). Charge-offs played a role too and borrowers paid down their loans faster than they had before. Elsewhere, in auto lending and credit cards, the volume of lending to those with lower FICO scores eventually recovered (see Exhibits 18 and 19). A long stretch of conservatism has meant that the stock of mortgage debt has become skewed to the top of the income distribution, as has that for credit card debt (see Exhibits 20 and 21). The distribution for student debt has shifted in the opposite direction.

Exhibit 15: U.S. Households
Mortgage Originations' FICO Scores[1]
Median and 25th Percentiles
1999 Through Q3 2016

Source: FRBNY Consumer Credit Panel/Equifax.

[1]Credit score is Equifax Risk Score 3.0; mortgages include first-liens only.

Exhibit 16: U.S. Households
Mortgage Originations
For Households with Credit Score Below 660[1]
2003 Through Q3 2016



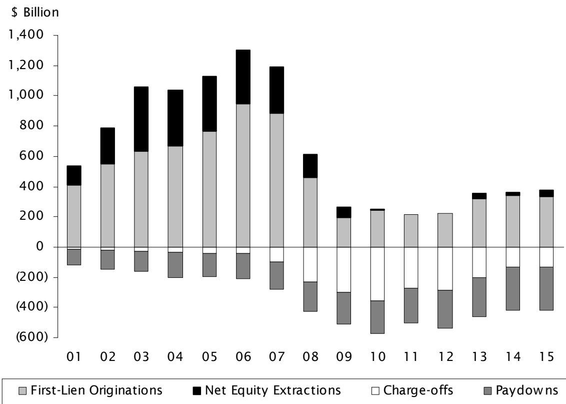
Source: FRBNY Consumer Credit Panel/Equifax.

[1]Credit score is Equifax Risk Score 3.0.

Putting it all together, overall debt creation has been weak, in large part because the stock of mortgages barely grew (see Exhibit 22). For example, since 2014 the consumer has taken out 44¢ of new debt per dollar of new disposable income, a third the average that prevailed from 1980 through 2007.

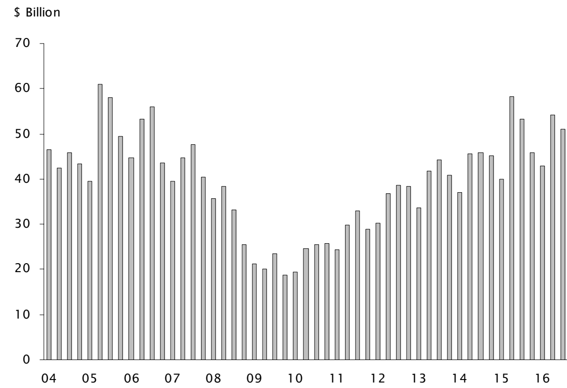
Credit standards not only impacted the volume of lending but also the propensity of borrowers to draw down credit lines, and eventually, the loss content of the loans. Exhibit 23 depicts the propensity to borrow, over three years, out of a dollar increase in credit card limits, depending on the borrower's FICO score. The likelihood of doing so for those with scores below 660 is twice that of the rest of the population. The effect of a credit-line increase on delinquency rates follows the expected pattern (see Exhibit 24).

Exhibit 17: U.S. Households
Decomposition of Changes in Mortgage Balances
2001 Through 2015



Source: FRBNY Consumer Credit Panel /Equifax, Internal Revenue Service. Haughwout, A., Lee, D., Scally, J. and Wilbert Von Der Klaauw, 2016. "Whither Mortgages?" Liberty Street Economics.

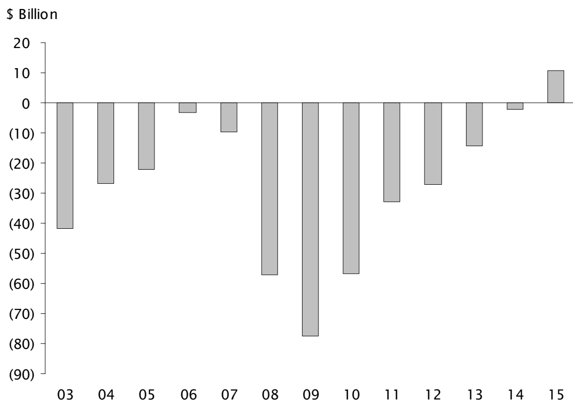
Exhibit 18: U.S. Households
Auto Loan Originations
For Those with Credit Scores Below 660[1]
2004 Through Q3 2016



Source: FRBNY Consumer Credit Panel/Equifax.

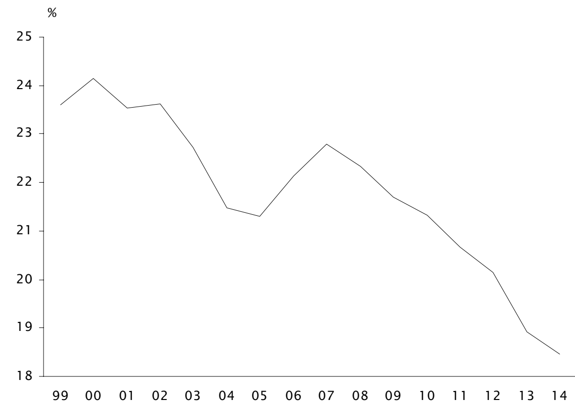
[1]Credit score is Equifax Risk Score 3.0.

Exhibit 19: U.S. Households
Net Credit Card Limit Extensions
For Those With Credit Scores Below 660
2003 Through 2015



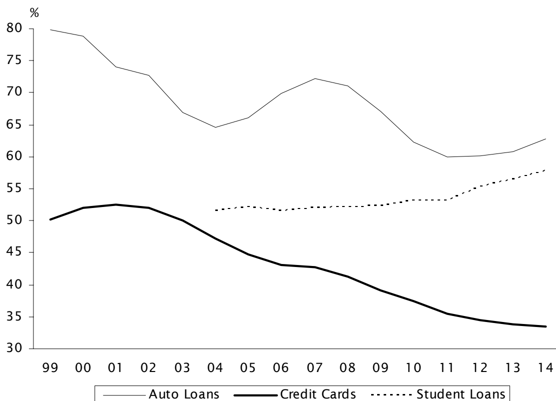
Source: FRBNY Consumer Credit Panel /Equifax.

Exhibit 20: U.S. Households
Mortgage Balances
Ratio of the Bottom to the Top Income Quintiles
1999 Through 2014



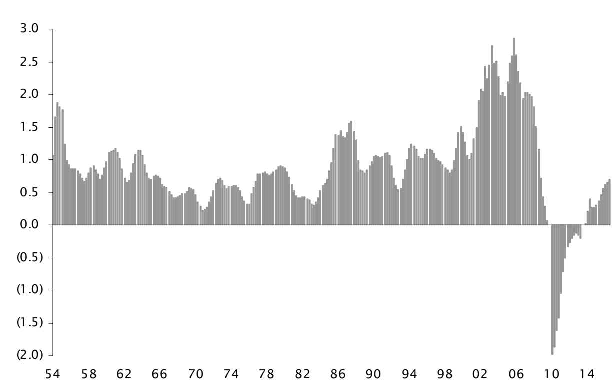
Source: FRBNY Consumer Credit Panel/Equifax, Internal Revenue Service, Lee, D., Mazewski, M., Scally, J. and Basit Zafar, 2015. "Trends in Debt Concentration in the United States by Income," Liberty Street Economics.

Exhibit 21: U.S. Households
Auto, Credit Card and Student Loans
Ratio of the Bottom to the Top Income Quintiles
1999 Through 2014



Source: FRBNY Consumer Credit Panel/Equifax, Internal Revenue Service, Lee, D., Mazewski, M., Scally, J. and Basit Zafar, 2015. "Trends in Debt Concentration in the United States by Income," Liberty Street Economics.

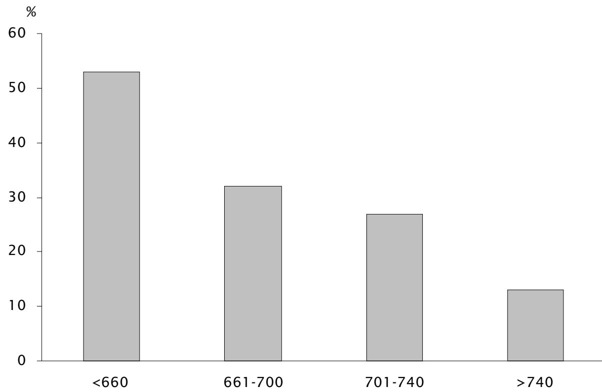
Exhibit 22: U.S. Households
Ratio of Dollar Growth in Consumer Debt
to That in Disposable Personal Income[1]
1954 Through Q3 2016



Source: Federal Reserve Board, U.S. Department of Commerce, Empirical Research Partners Analysis.

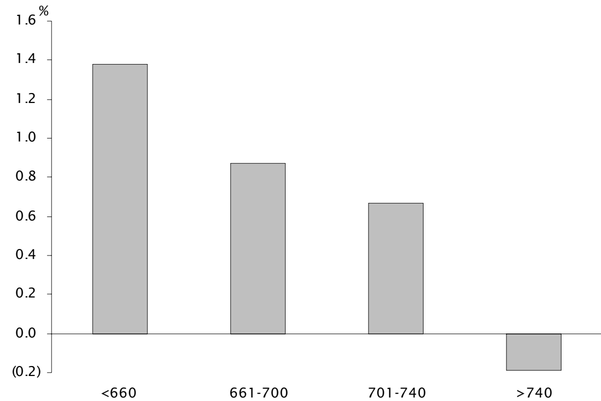
[1]Measured on a year-over-year basis and smoothed on a trailing one-year basis.

Exhibit 23: Credit Cards
The Marginal Propensity to Borrow Out of a $1 Increase in Credit Limits
Effects on Balances Over Three Years Depending on FICO Scores
2008 Through 2014



Source: Agarwal, S., Chomsisengphet, S., Mahoney, N. and Johannes Stroebel, 2015. "Do Banks Pass Through Credit Expansions? The Marginal Profitability of Consumer Lending During the Great Recession," Working Paper.

Exhibit 24: Credit Cards
Rise in 60+ Day Delinquency Rates Associated With a $1 Increase in Credit Limits
Effects Seen Over Five Years
2008 Through 2014



Source: Agarwal, S., Chomsisengphet, S., Mahoney, N. and Johannes Stroebel, 2015. "Do Banks Pass Through Credit Expansions? The Marginal Profitability of Consumer Lending During the Great Recession," Working Paper.

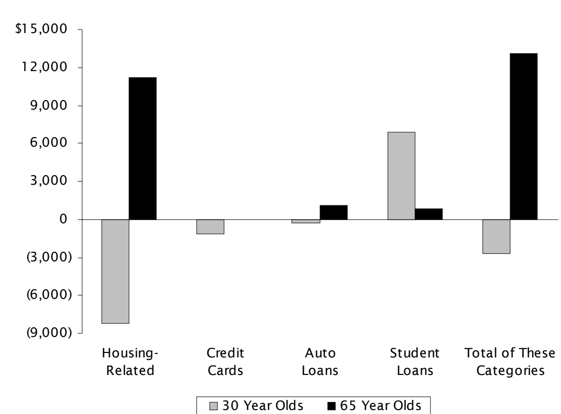
What's Different This Time, Part 3: Who Has the Debt?

There's also been a sizeable change in the age profile of borrowers, with Baby Boomers more indebted than their predecessors while Millennials carry far less debt. We can see how the distribution has evolved in Exhibit 25 that compares the balances by age group in 2015 to those in 2003, with both series normalized by *aggregate* disposable personal income. For 30 year olds, student debt has been substituted for mortgages, while mortgage debt is up substantially for house-rich 65 year olds (see Exhibit 26). A change in behavior was the biggest factor in explaining the debt build-up in the older groups, not simply aging (see Exhibit 27).

Exhibit 25: U.S. Households
Debt Balances by Age of Borrower
As a Share of Aggregate Disposable Personal Income
2003 and 2015

Source: FRBNY Consumer Credit Panel/Equifax, Bureau of Economic Analysis, Empirical Research Partners Analysis.

Exhibit 26: U.S. Households
Change in Real Debt Per Capita
For Ages 30 and 65
2015 Compared to 2003



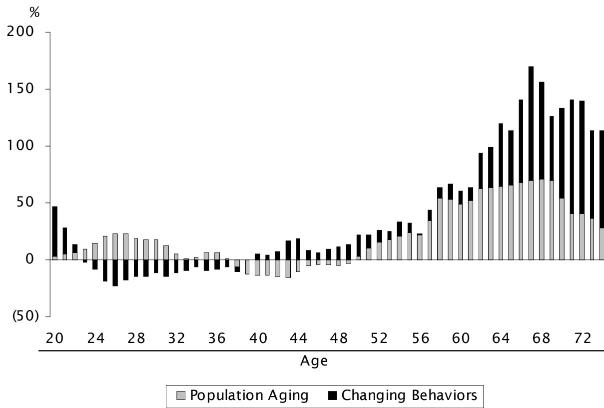
Source: FRBNY Consumer Credit Panel/Equifax, U.S. Bureau of the Census.

The fact that the borrower base has become considerably older in all likelihood reduces the rate sensitivity of the system. The largest hit to consumption associated with an increase in short rates has historically come in the younger-age groups, that typically have smaller financial cushions and less-stable situations (see Exhibit 28).

What's Different This Time, Part 4: It's Mostly Fixed-Rate Debt

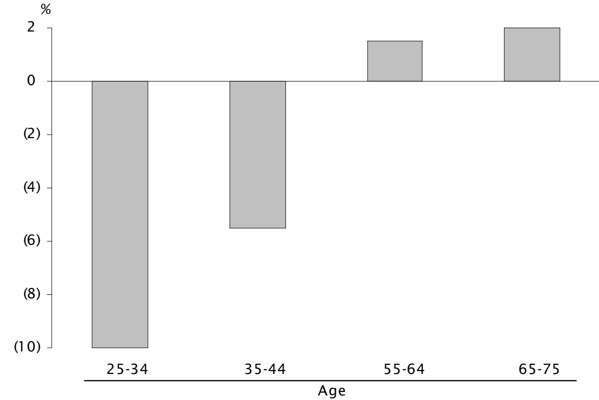
In the post-Crisis years only about 5% of the mortgages issued have been ARMs, and they now represent only around 7% of the number of loans outstanding (see Exhibits 29 and 30). What used to be variable-rate debt is now 30-year fixed rate loans. Repricing is no longer a big risk, rather, the vulnerability is to the volume of originations as the era of bargain-basement financing draws to a close.

Exhibit 27: U.S. Households
Changes in Debt Balances by Age
Attributable to Population Aging and Changing Behaviors
2015 Versus 2003



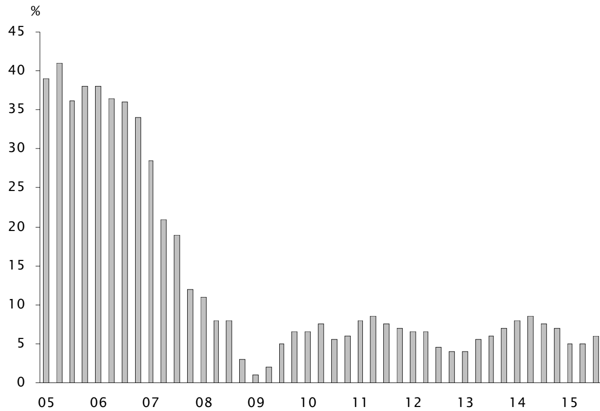
Source: FRBNY Consumer Credit Panel/Equifax.

Exhibit 28: U.S. Households
Change in Expenditures by Age Group
Four Quarters After a +1 Percentage Point Increase in Short-Term Rates
1960 Through 2007



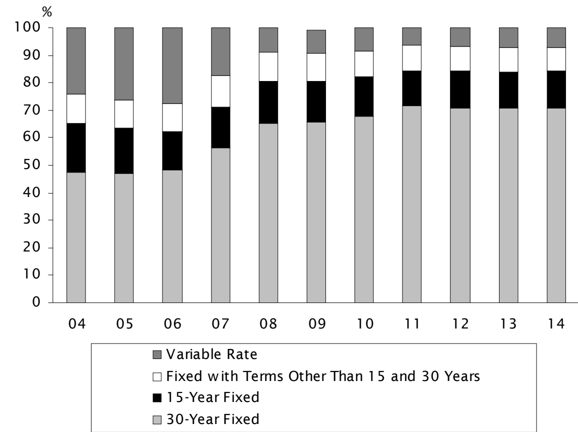
Source: Arlene Wong, 2014. "Population Aging an the Aggregate Effects of Monetary Policy," Working Paper.

Exhibit 29: U.S. Households
Mortgage Originations
ARM Share of Total
2005 Through Q3 2015



Source: Black Knight Financial.

Exhibit 30: U.S. Households
Mortgages Outstanding
Distribution by Terms
2004 Through 2014



Source: Bureau of Labor Statistics, Consumer Expenditure Surveys.

What's Different This Time, Part 5: Bond Fund Exposure

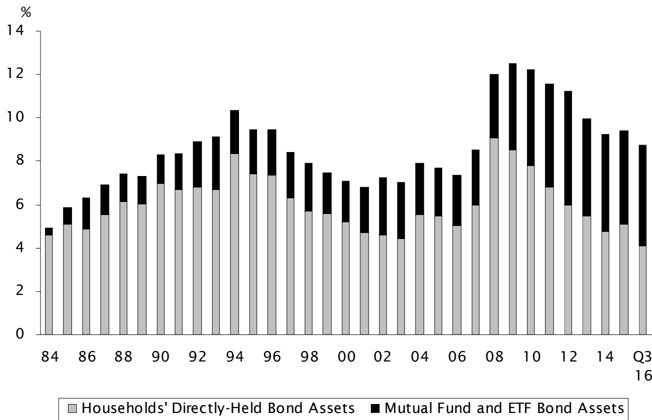
The majority of households' asset exposure to the bond market now comes via bond funds and ETFs rather than through individual bonds held in brokerage accounts (see Exhibit 31). That means that unlike in the past, bonds can't be held to maturity. Almost half of all net inflows into those open-ended vehicles occurred during the 2010s, and two-thirds of that total came in when the ten-year Treasury Bond yielded 2% or less (see Exhibit 32). What's happened in recent months is that the expectation for lower tax rates has created an exodus from muni bond funds, while flows into taxable vehicles have been on balance positive (see Exhibit 33). Putting the two together, the outflows have been far smaller than those experienced during the 2013 taper tantrum.

The risk from rising interest rates is mitigated by the fact that the bond funds have a much-shorter duration than the bond market itself (see Exhibit 34). The sharp rise in duration that occurred in the period of ultra-low rates was never transmitted to the asset side of the consumer's balance sheet.

Conclusion: Less Rate Sensitivity, Fewer Credit Problems, A Longer Cycle

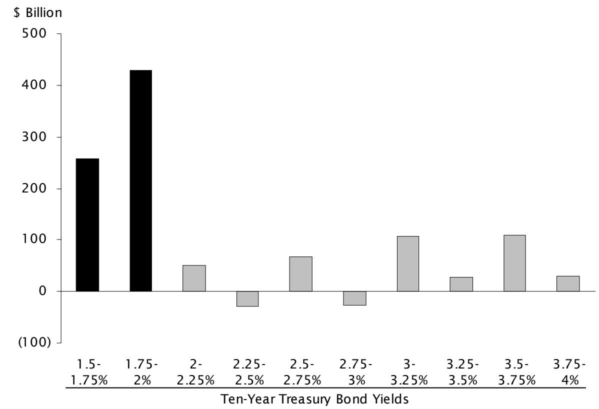
This cycle looks considerably different than the last few because households that needed credit most couldn't get it, with the exception of those buying cars. As a result of that, more of the debt is held by an older, house-rich demographic (see Exhibit 35). The vast bulk of it is fixed-rate, making the sector's low debt-service ratio a legitimate economic indicator (see Exhibit 36). Student loans have replaced mortgages for the younger demographics, impairing the stimulative effects that traditionally come from credit creation.

Exhibit 31: U.S. Households
Bond Mutual Fund and ETF Assets
and Directly-Held Bond Assets
as a Share of Net Worth
1984 Through Q3 2016



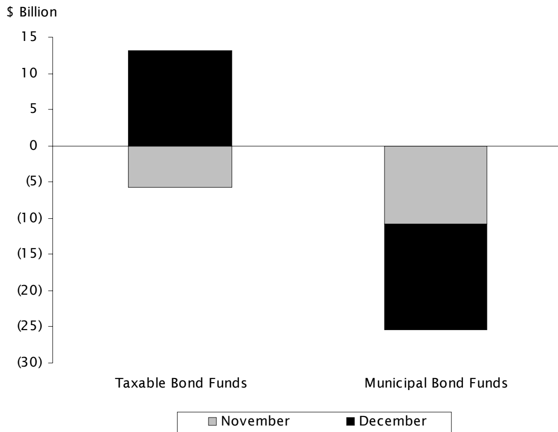
Source: Investment Company Institute, Federal Reserve Board, Empirical Research Partners Analysis.

Exhibit 32: Bond Mutual Funds and ETFs
Net Flows By Ten-Year Treasury Bond Yields
2010 Through November 2016



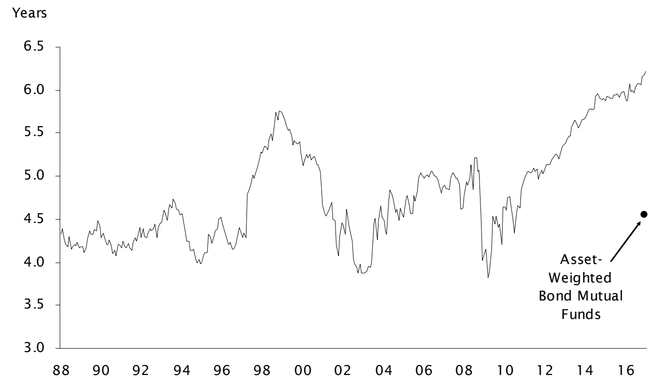
Source: Investment Company Institute, Federal Reserve Board, Empirical Research Partners Analysis.

Exhibit 33: Taxable and Municipal Bond Mutual Funds
Net Flows
November and December 2016



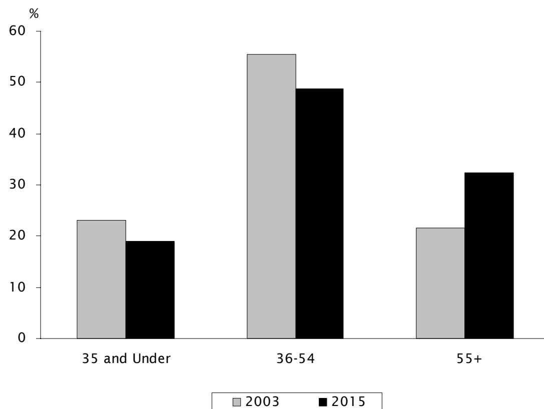
Source: Investment Company Institute, Empirical Research Partners Analysis.

Exhibit 34: The U.S. Bond Market
Estimated Duration (in Years)
1988 Through Early-January 2017



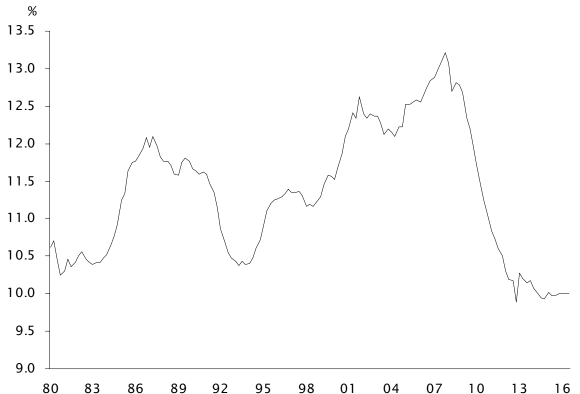
Source: Bloomberg L.P., Strategic Insight Simfund.

Exhibit 35: U.S. Households
Distribution of Debt by Age Group
2003 and 2015



Source: FRBNY Consumer Credit Panel/Equifax.

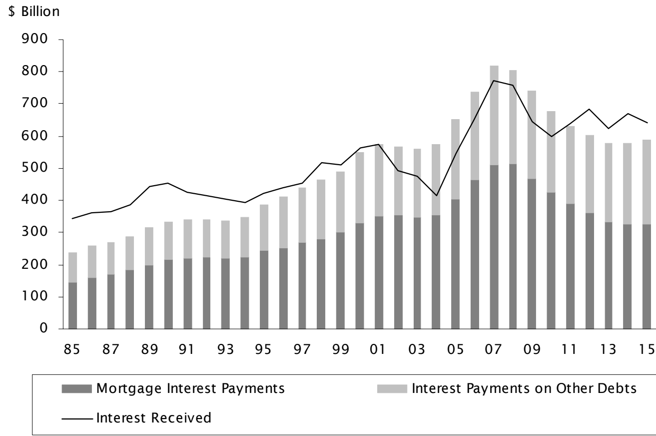
Exhibit 36: U.S. Households
Debt Services Ratio
1980 Through Q3 2016



Source: Federal Reserve Board.

The interest received by households equates to the interest that they pay on their debts (see Exhibit 37). Of course the vast bulk of bonds are owned by those 55 and older, who sit at the top of the income distribution (see Exhibit 38). They have a much lower propensity to consume than the rest of the population, which is why financial repression works. That said, this time around, tight credit standards have offset much of the stimulus from low rates.

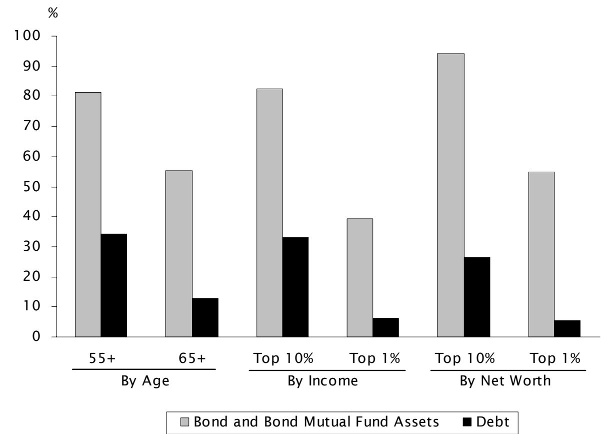
Exhibit 37: U.S. Households
Interest Paid and Received[1]
1985 Through 2015



Source: Department of Commerce, Empirical Research Partners Analysis.

[1]Interest received includes dividends received from bond mutual funds and bond portion of balanced and target-date funds.

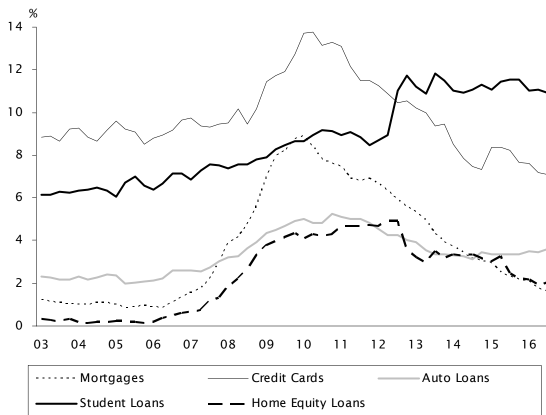
Exhibit 38: U.S. Households
The Distribution of Bond Holdings and Debt
By Age, Income and Net Worth
2013



Source: Federal Reserve Board: Survey of Consumer Finances.

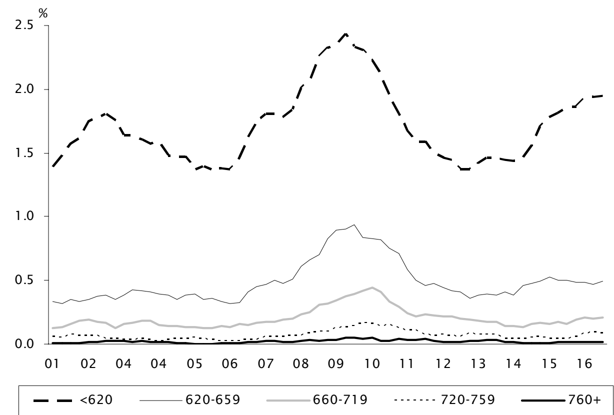
It looks to us that all in all the rate sensitivity of the consumer sector has come down, and that should work to extend the durables cycle and more broadly that for the market. Low rates were locked in by older demographics that also own the vast majority of the bonds. The traditional vehicles, especially mortgages, should demonstrate better credit quality than in the last few cycles because lending standards were so tight for so long (see Exhibit 39). Student and sub-prime auto loans are another matter altogether (see Exhibit 40).

Exhibit 39: U.S. Households
Share of Loans by Type 90+ Days Delinquent
2003 Through Q3 2016



Source: FRBNY Consumer Credit Panel/Equifax.

Exhibit 40: Auto Loans
Flow into 90+ Days Delinquency by Credit Score at Origination
2001 Through Q3 2016



Source: FRBNY Consumer Credit Panel/Equifax.

The work we've done on the borrowing and rate sensitivity of the consumer sector appears constructive for both the consumer durable and financial parts of the market as it foretells a longer expansion and perhaps a steeper yield curve. The financials, the obvious beneficiaries of a reflationary episode, now sell at relative multiples that approach the long-term average for one of the few times in the last decade.

Appendix 1 on page 12 presents the rankings of the consumer durable and lender issues in our core model. The column third from the right contains statistics that relate each stock's relative return to the total return of the ten-year Treasury bond over the past two years. While the financials are certainly anti-bond proxies the durables haven't been their opposite numbers and they've had an uncertain relationship with the bond market.

Appendix 1: Large-Capitalization Consumer Durables and Lenders
Core Model Ranking Report
Sorted by Capitalization With Model Rank
As of Early-January 2017

			Quintile Ranks (1=Best; 5=Worst)						Memo:		
			Super Factors								
Symbol	Company	Price	Valuation	Capital Deployment	Earnings Quality and Trend	Market Reaction	Core Model Rank	Free Cash Flow Yield	Correlation With 10 Year Treasury Bond Return[1]	Forward-P/E Ratio	Market Capitalization ($ Billion)
Consumer Durables											
GM	GENERAL MOTORS CO	$35.99	1	2	3	3	1	5	(42) %	6.0 x	$54.9
FCAU	FIAT CHRYSLER AUTOMOBILES NV	10.42	1	1	2	1	1	1	(18)	5.6	13.5
HOG	HARLEY-DAVIDSON INC	59.10	2	1	3	1	1	1	(9)	14.1	10.4
LEA	LEAR CORP	136.90	1	1	1	1	1	1	(29)	9.3	9.6
F	FORD MOTOR CO	12.76	1	1	3	5	2	1	(23)	7.7	50.7
MGA	MAGNA INTERNATIONAL INC	45.06	1	3	4	2	2	2	(23)	7.9	17.3
GRMN	GARMIN LTD	49.04	3	2	1	2	2	2	24	18.5	9.2
PHM	PULTEGROUP INC	18.46	1	1	1	4	2	5	15	8.9	6.1
GNTX	GENTEX CORP	20.52	3	3	1	1	2	3	(30)	17.0	5.9
WHR	WHIRLPOOL CORP	186.10	2	1	3	3	3	3	8	13.2	14.0
RACE	FERRARI NV	58.94	5	3	2	1	3	2	(33)	26.2	11.2
ALV	AUTOLIV INC	113.28	3	2	2	3	3	3	(22)	16.6	10.0
BWA	BORGWARNER INC	41.10	2	2	5	1	3	2	(31)	12.6	8.8
GT	GOODYEAR TIRE & RUBBER CO	31.84	1	1	5	4	3	4	(30)	8.1	8.3
DLPH	DELPHI AUTOMOTIVE PLC	69.17	2	2	4	4	4	2	(32)	10.9	18.8
HAS	HASBRO INC	82.87	4	2	2	4	4	3	13	20.1	10.4
LEG	LEGGETT & PLATT INC	48.53	4	3	2	3	4	2	16	18.3	6.5
NVR	NVR INC	1,678.10	3	3	1	5	4	3	25	14.3	6.4
TSLA	TESLA MOTORS INC	229.01	5	5	4	5	5	5	(13)	NM	36.9
NWL	NEWELL BRANDS INC	46.86	4	5	5	4	5	4	9	16.3	22.6
MHK	MOHAWK INDUSTRIES INC	204.44	4	5	4	4	5	3	5	16.3	15.2
MAT	MATTEL INC	30.47	4	4	5	5	5	4	(2)	23.6	10.4
DHI	D R HORTON INC	27.85	3	2	5	5	5	2	8	10.5	10.4
LEN	LENNAR CORP	43.69	3	5	3	5	5	2	(6)	10.6	10.0
Lenders											
JPM	JPMORGAN CHASE & CO	$86.12	1	2	na	1	1	na	(85) %	13.4 x	$308.2
BAC	BANK OF AMERICA CORP	22.68	1	1	na	1	1	na	(81)	13.8	229.6
C	CITIGROUP INC	60.55	1	1	na	1	1	na	(83)	11.5	172.6
PNC	PNC FINANCIAL SERVICES GROUP INC	119.05	2	2	na	1	1	na	(65)	15.6	58.1
COF	CAPITAL ONE FINANCIAL CORP	88.60	1	1	na	2	1	na	(80)	11.2	43.3
SYF	SYNCHRONY FINANCIAL	37.13	2	2	na	1	1	na	(45)	12.2	30.6
DFS	DISCOVER FINANCIAL SERVICES INC	72.06	2	1	na	1	1	na	(82)	11.8	28.6
STI	SUNTRUST BANKS INC	55.53	1	2	na	1	1	na	(71)	14.8	27.5
FITB	FIFTH THIRD BANCORP	26.87	1	2	na	1	1	na	(88)	15.4	20.3
CFG	CITIZENS FINANCIAL GROUP INC	35.91	1	1	na	1	1	na	(75)	16.3	18.6
RF	REGIONS FINANCIAL CORP	14.48	1	1	na	1	1	na	(84)	15.0	17.9
ALLY	ALLY FINANCIAL INC	19.89	1	2	na	4	1	na	(45)	9.4	9.5
ZION	ZIONS BANCORPORATION	43.37	2	2	na	1	1	na	(88)	18.5	8.8
BBT	BB&T CORP	47.04	2	4	na	1	2	na	(74)	15.2	38.2
KEY	KEYCORP	18.32	3	5	na	1	2	na	(71)	14.1	19.8
BAP	CREDICORP LTD	164.69	2	3	na	1	2	na	23	11.7	13.1
CMA	COMERICA INC	70.27	3	2	na	1	2	na	(82)	17.8	12.1
EWBC	EAST WEST BANCORP INC	50.73	3	4	na	1	2	na	(78)	16.6	7.3
WFC	WELLS FARGO & CO	55.04	1	3	na	4	3	na	(52)	13.3	276.5
USB	U S BANCORP	51.30	3	2	na	3	3	na	(53)	14.9	87.5
AXP	AMERICAN EXPRESS CO	75.47	3	1	na	3	3	na	(56)	13.4	69.2
MTB	M & T BANK CORP	156.56	2	5	na	1	3	na	(50)	18.2	24.3
HBAN	HUNTINGTON BANCSHARES	13.29	2	5	na	1	3	na	(71)	14.0	14.4
FRC	FIRST REPUBLIC BANK	92.75	4	4	na	1	3	na	(24)	20.8	13.9
SIVB	SVB FINANCIAL GROUP	177.52	5	4	na	1	3	na	(74)	21.1	9.2
PACW	PACWEST BANCORP	55.81	2	5	na	1	3	na	(67)	18.5	6.8
PBCT	PEOPLE'S UNITED FINL INC	19.42	3	4	na	2	3	na	(62)	20.3	6.0
SBNY	SIGNATURE BANK/NY	150.50	4	5	na	3	5	na	(61)	16.7	8.2
NYCB	NEW YORK COMMUNITY BANCORP INC	15.91	4	5	na	5	5	na	(24)	15.0	7.7

Source: Empirical Research Partners Analysis.

[1]Constructed using trailing two-year returns.