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The U.S. Consumer: From Turnaround to Growth

The Tail of the Whip

Reasons for Optimism

- Consumers behave a lot like the companies we invest in. The U.S. consumer has engineered a turnaround. It has achieved healthy free cash flow margins thanks to a diet that was light on big-ticket items. This enabled them to eke out enough free cash flow to deleverage and subsequently rebuild the savings rate. Their prize was to reclaim the status quo. The next thing for the consumer and their corporate counterparts to do is…grow.
- We recognize that when stocks transition from turnaround stories to growth stories, the outcome is far from assured. In this case though, we are beginning to see a number of developments that cause us to be optimistic about revenue prospects. Big-ticket spending has rebounded from maintenance levels and incomes are beginning to rebalance. The top 1% ensnared 100% of real income gains from 2009 through 2013, but the tables turned in 2015.

With High Fixed Costs, the Consumer's Operating Leverage Can Turn Positive

- The labor pool is growing as discouraged applicants rejoin the fray; the gap in wage growth between high and low-skill jobs is narrowing and income gains by quintile are equalizing. Consumer sentiment at the low-end is also showing promise. This has implications for stock price movement. Not all is rosy, of course. Fixed expenses like health care are weighty and there is not enough room in the consumer's wallet for every would-be claimant. In this way the consumer operates like a levered enterprise.
- Senior claimants on the consumer's wallet like health care, mobile phone and car repair bills get paid first, while discretionary spending on new cars and apparel can often feel like the tail of the whip. We estimate that the consumer operates with fixed cost coverage of only 2 times and 60% of them would be rated as junk if they were bonds. Strategically, it is wise for businesses to gain seniority in the consumer's capital structure, but at times like this investors can find leverage in the tail. Some consumer discretionary stocks should exhibit this form of operating leverage.

Income Growth Should Begin to Translate into Revenue Growth

- Part of the reason for our optimism is that the marginal propensity to consume (MPC) and the marginal propensity to borrow (MPB) are strongest in the lower-income groups. Consumers with FICO scores under 700 convert over 50% of increased liquidity into spending. Top FICO scores convert less than half as well. Similarly, we calculate an annual MPC north of 60% for lower quintiles of income as compared with the top quintile at 48%.
- Having analyzed dozens of categories over a 20-year horizon, we created a framework to pick winners and losers when it comes to the top-line. Layering Empirical's valuation framework on top indicates that consumer discretionary stocks are likely to outperform their staples peers. Specifically, autos, housing and restaurants show promise. We see no obvious winners in consumer staples. More complete screens are in Appendix 1 and 2 on page 14.
- *Autos*: This controversial group is currently implying the least forward earnings growth of all consumer sectors. There are risks on the horizon, but we shouldn't ignore that spending on new cars is usually the top beneficiary of income mobility. Fully 42% of the sector's constituents score in the top quintile of Empirical's stock selection model.
- *Housing*: Home builders should benefit strongly from balanced income growth yet valuation multiples imply modest earnings growth of only 3.5% over the next five years. Home builders and the rest of consumer durables also tend to perform well when consumer sentiment spreads are narrow as they are today. In expressing a housing theme we would avoid muti-family operators as rent expenses are high by historical standards.
- *Restaurants*: Food-away-from-home is a notable beneficiary of income mobility. The stocks are not cheap in absolute, but the sector's free cash flow yield qualifies as the 90th percentile of values dating back to 1968. Pitting them against tobacco and other staples stocks that offer less operating leverage and less value might be a good idea.

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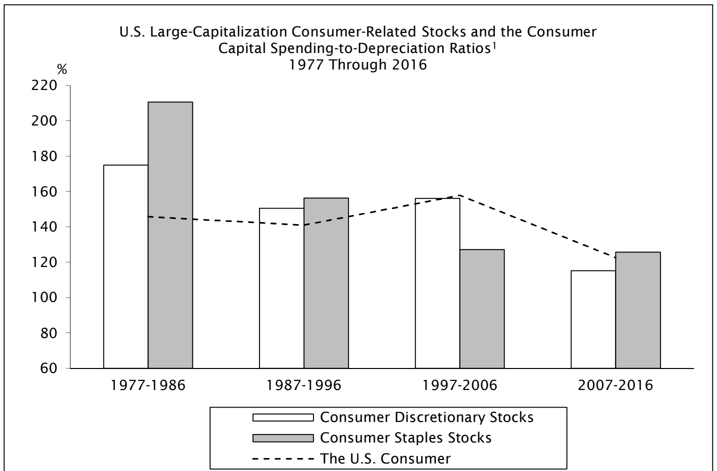
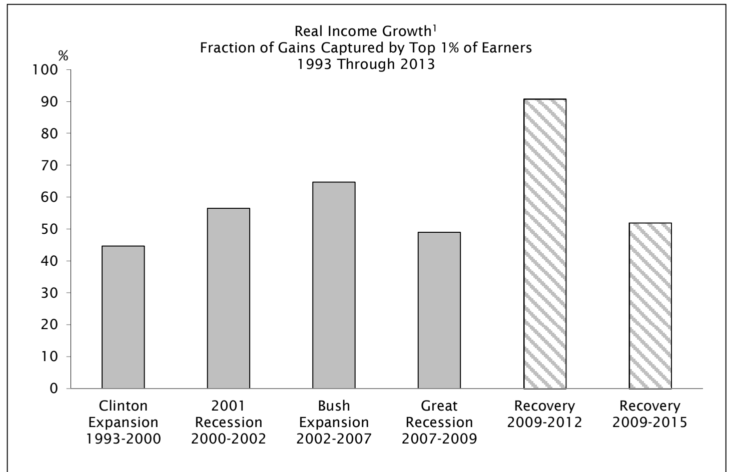
Conclusions in Brief

- The top-line suffered as consumers and companies cut big-ticket spending….



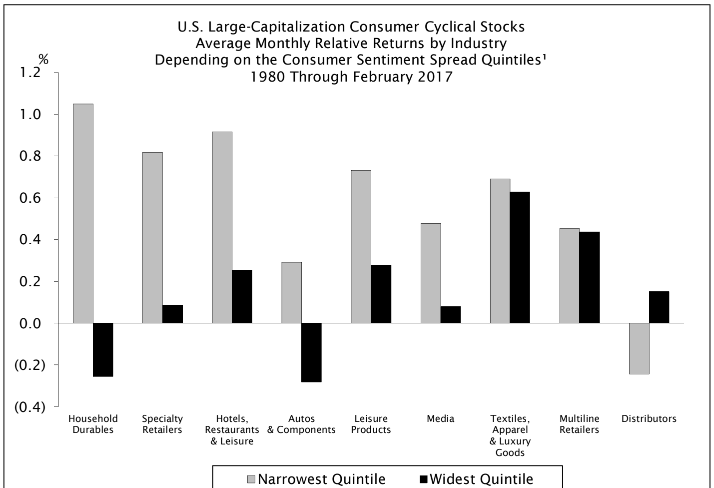
Source: Federal Reserve Board of Governors Flow of Funds Accounts, Corporate Reports, Empirical Research Partners Analysis.
[1] U.S. consumer depreciation refers to consumption of fixed capital.

- …But healthier balance sheets and more level income distribution bode well for growth:



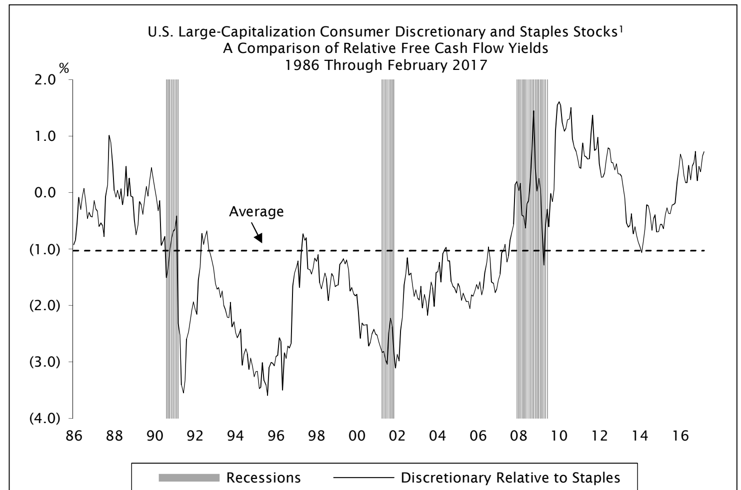
Source: Emmanuel Saez, 2016. "Striking it Richer: The Evolution of Top Incomes in the United States (Updated with 2015 Preliminary Estimates)".
[1] Incomes exclude government transfers (such as unemployment insurance and social security) and non-taxable fringe benefits.

- Broader economic participation is good for the stocks…



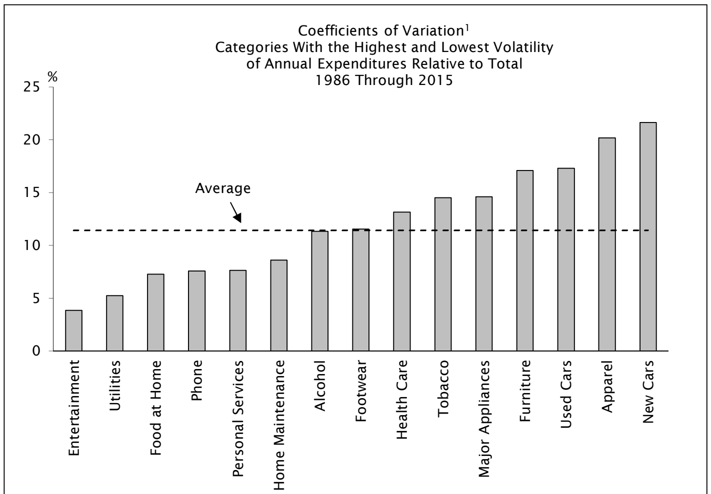
Source: University of Michigan, Empirical Research Partners Analysis.
[1] Consumer sentiment index spread between top tercile minus bottom tercile. Equally-weighted data..

- …And favors consumer discretionary over consumer staples:



Source: Corporate Reports, Empirical Research Partners Analysis.
[1] Capitalization-weighted data. Drawn from the largest 1,500 stocks.

- As fixed expenses are leveraged it should pay to invest in the tail of the whip:



Source: Consumer Expenditure Survey, Empirical Research Partner Analysis.
[1] Standard deviation divided by the mean.

- Our research finds both winners and losers:

Survey Results
Consumer Expenditure Categories Likely to Benefit
That Should Benefit the Most and Least from Income Mobility

From Bottom to Second Quintile	From Second to Third Quintile	From Third to Fourth Quintile	From Fourth to Top Quintile
	Winners		
New Cars	New Cars	Homeownership	Furniture
Used Cars	Homeownership	New Cars	Personal Services
Personal Services	Personal Services	Personal Services	New Cars
Furniture	Alcohol	Furniture	Entertainment
Homeownership	Entertainment	Entertainment	Apparel
Home Maintenance	Restaurants	Restaurants	Alcohol
	Losers		
Tobacco	Food at Home	Healthcare	Used Cars
Rent	Healthcare	Tobacco	Tobacco
Education	Rent	Rent	Rent

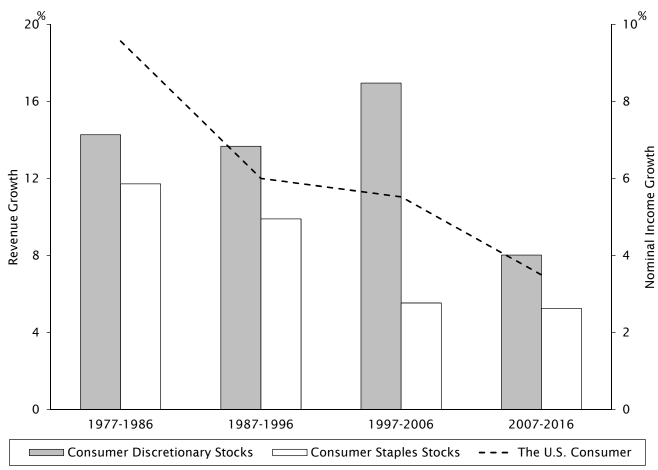
Source: Consumer Expenditure Survey, Empirical Research Partners Analysis.

The Tail of the Whip

The U.S. Consumer, from Turnaround to Growth

Consumers behave a lot like the companies we invest in. Both have nursed themselves back to health after a grueling recession, having done so without benefitting from much revenue growth. To illustrate the point, we show in Exhibit 1 how growth in personal income compares with the revenue growth seen by large-capitalization consumer discretionary and staples businesses. The story is the same across broader segments of the market as well. In the absence of a robust top-line, fundamentals and valuation have rested on the shoulders of free cash flow. Exhibit 2 depicts free cash flow margins in ten year increments across the consumer discretionary and consumer staples sectors. We compare them to our estimate of the U.S. consumer's free cash flow margin, which showed the sharpest cyclicality of the three series.

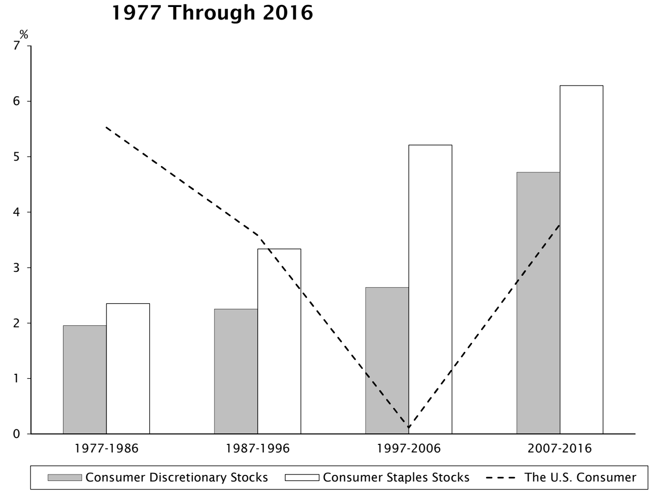
Exhibit 1: U.S. Large-Capitalization Consumer Stocks and the Consumer Year-over-Year Top-Line Growth[1] 1977 Through 2016



Source: Federal Reserve Board of Governors Flow of Funds Accounts, Corporate Reports, Empirical Research Partners Analysis.

[1] Personal income growth used as a proxy for revenue growth for the U.S. consumer.

Exhibit 2: U.S. Large-Capitalization Consumer Stocks and the Consumer Free Cash Flow Margin[1] 1977 Through 2016



Source: Federal Reserve Board of Governors Flow of Funds Accounts, Corporate Reports, Empirical Research Partners Analysis.

[1] U.S. consumer's free cash flow equals gross savings less government transfers and gross fixed investments including new homes and consumer durable goods.

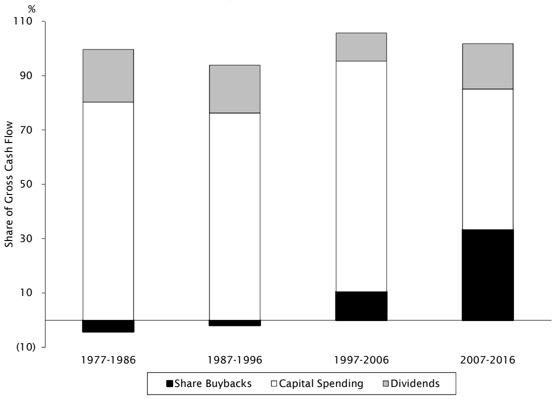
A capital expenditure diet has underpinned the rebound in cash flow. As a share of gross cash flow, capital expenditures at consumer discretionary companies fell to 40% in 2016 from a 10-year average of 60% and a 40-year average of 75% (see Exhibit 3). The U.S. consumer has done the same. In Exhibit 4 it is clear that healthy free cash flow was achieved entirely thanks to a diet that restricted spending on big-ticket items. It enabled the consumer to maintain discretionary spending while at the same time eking out enough free cash flow to deleverage and subsequently rebuild the savings rate (see Exhibits 5 and 6). In a way, the U.S. consumer has succeeded in engineering a turnaround. Their prize was to reclaim the status quo. Now what? The restructuring phase may be necessary for a bit longer, but it is not sustainable for two reasons.

The first is that capital investment at the consumer level is already low by historical standards. Most investors like to see companies invest at least in line with depreciation, maintaining the capital stock, and we'd expect the same from the consumer. In Exhibit 7 we show that the U.S. consumer and consumer-oriented businesses are confronting this same decision contemporaneously. Exhibit 8 shows that the consumer's big-ticket outlays fell towards parity with depreciation at the bottom of the cycle in 2008, and at the end of 2016 were barely above the lows of past business cycles.

The second factor impeding a sustained recovery in consumer spending is the well-publicized imbalance of income growth across cohorts. According to a paper (Saez, E., 2016), the top 1% of earners took home 100% of the gains in real income from 2009 through 2012.[1] Increasing income dispersion is like a market rally without any breadth.

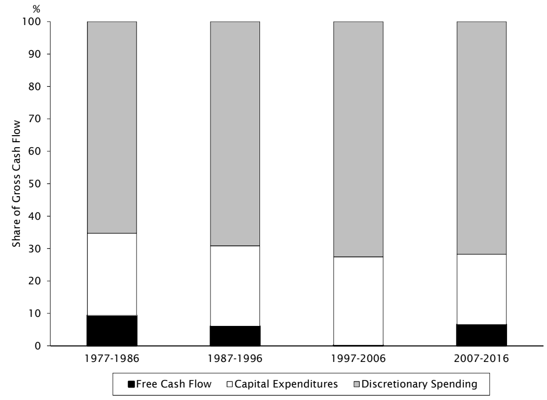
[1] Picketty, T. and Emmanuel Saez, 2003 with data series updated to 2015. "Income Inequality in the United States," *The Quarterly Journal of Economics*, Vol.118.

**Exhibit 3: U.S. Large-Capitalization Consumer Discretionary Stocks
Disposition of Gross Cash Flow
1977 Through 2016**



Source: Corporate Reports, Empirical Research Partners Analysis.

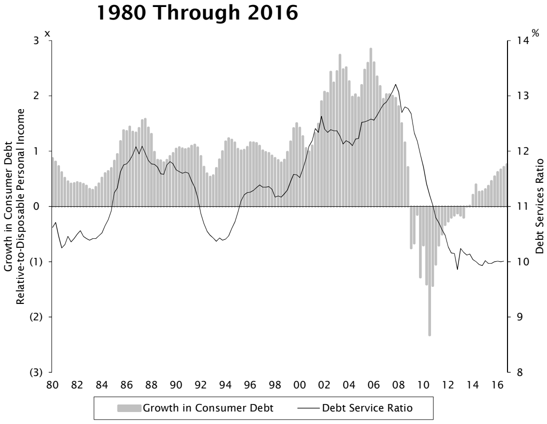
**Exhibit 4: The U.S. Consumer
Disposition of Gross Cash Flow[1]
1977 Through 2016**



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

[1] Gross cash flow defined as disposable personal income after adding back implied depreciation and deducting personal expenditures on necessities including health care, food, utilities and energy.

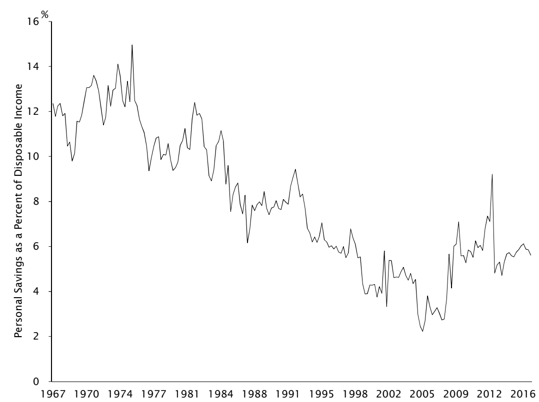
**Exhibit 5: The U.S. Consumer
Ratio of Dollar Growth in
Debt Relative-to-Disposable Personal Income[1]
and the Debt Service Ratio
1980 Through 2016**



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

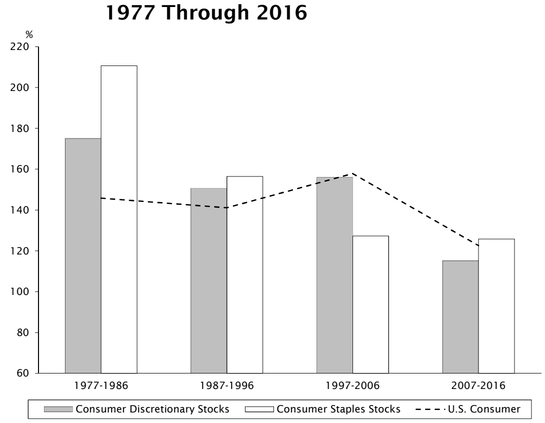
[1] Measured on a year-over-year basis and smoothed on a trailing one-year basis.

**Exhibit 6: The U.S. Consumer
Personal Savings Rate
1967 Through 2016**



Source: Federal Reserve Board of Governors Flow of Funds Accounts, Corporate Reports, Empirical Research Partners Analysis.

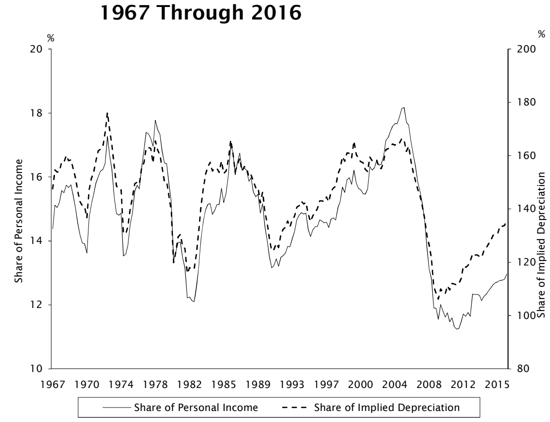
**Exhibit 7: U.S. Large-Capitalization Consumer Stocks
and the Consumer
Capital Spending-to-Depreciation Ratios[1]
1977 Through 2016**



Source: Federal Reserve Board of Governors Flow of Funds Accounts, Corporate Reports, Empirical Research Partners Analysis.

[1] U.S. consumer depreciation refers to consumption of fixed capital.

**Exhibit 8: The U.S. Consumer
Capital Spending as a Share of Personal Income
and Implied Depreciation[1]
1967 Through 2016**



Source: Federal Reserve Board of Governors Flow of Funds Accounts, Empirical Research Partners Analysis.

[1] Capital spending equals gross fixed investment including outlays for new homes and durable goods. Implied depreciation is an estimate of the consumption of fixed capital.

The good news is that these two constraining factors – anemic capital spending and high levels of income disparity – seem to be reversing course (see Exhibits 8, overleaf, and 9). That should give the recovery another shot in the arm and it has implications for investors in consumer-related stocks. Essentially, it means that the next thing for the consumer and their corporate counterparts to do is…grow.

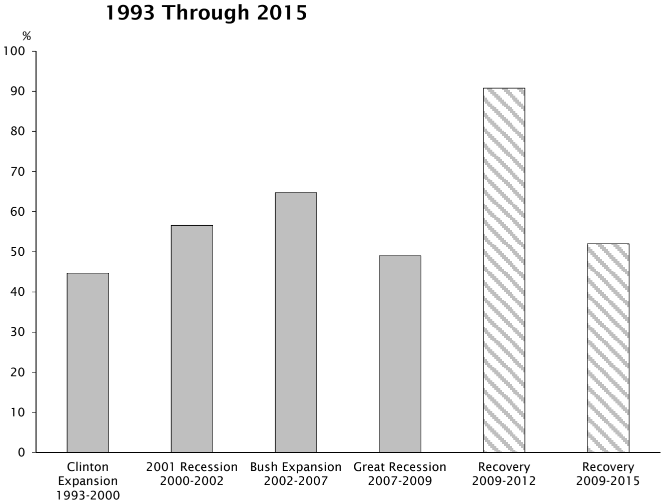
We recognize that when stocks transition from turnaround stories to growth stories, the outcome is far from assured. In this case though, we are beginning to see a number of developments that cause us to be optimistic about revenue prospects. To pick the winners in that environment – and avoid possible losers – we combine fundamental and quantitative frameworks in the pages that follow.

Our conclusion is that the top-line at consumer discretionary companies is likely to outperform that of their peers in consumer staples. Autos, housing and restaurants show promise. Retailers (food and multiline) screen as attractive on our valuation framework too, but do not fare as well in our top-line analysis. When it comes to consumer staples we see no obvious winners.

Reasons for Optimism

Incomes are beginning to rebalance. While the top quintile of earners garnered more than half of real income growth for the better part of 15 years – and nearly all of it during the early part of recovery – the tables turned in 2015. In Exhibit 9 we can infer that the share of real income garnered by the top 1% has waned considerably. This broader participation in income growth in 2015 and 2016 is apparent in Exhibits 10 and 11. We think this pattern is likely to persist given the current state of the labor market.

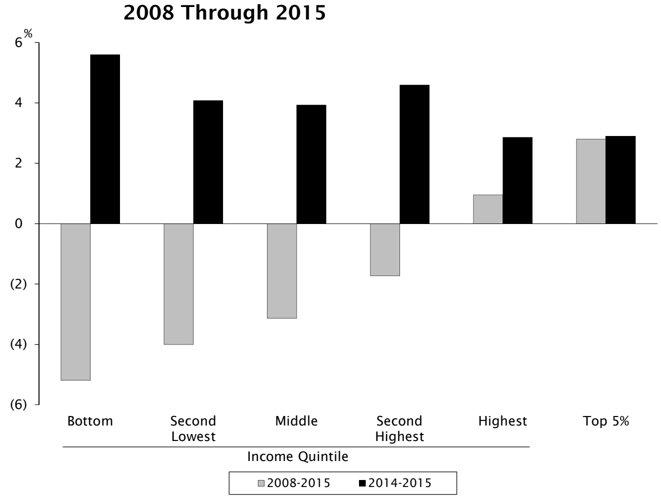
**Exhibit 9: Real Income Growth[1]
Share of Gains Captured by Top 1% of Earners
1993 Through 2015**



Source: Emmanuel Saez, 2016. "Striking it Richer: The Evolution of Top Incomes in the United States (Updated with 2015 Preliminary Estimates)."

[1] Incomes exclude government transfers (such as unemployment insurance and social security) and non-taxable fringe benefits.

**Exhibit 10: Real Income Growth
by Income Cohort
2008 Through 2015**

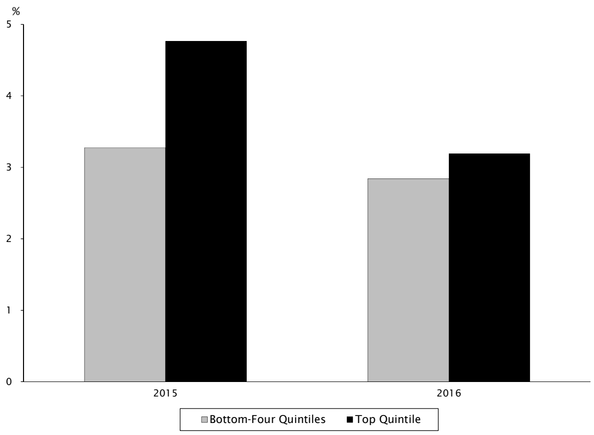


Source: U.S. Department of Commerce, Census Bureau, Empirical Research Partners Analysis.

Discouraged workers, which are typically excluded from the labor force, have been re-entering the fray with some zeal. The portion of people that want a job, but are not currently in the labor force has fallen by 10% since 2013. Similarly, those that are working part-time for economic reasons have decreased by 28% since 2013 (see Exhibit 12). With the transitory component of part-time workers getting cleaned up, we're beginning to see wages for part-timers rise. This is consistent with a trend towards stronger wages at low-skill level jobs that we depict in Exhibit 13. The net effect is that the consumer is feeling more confident at lower income levels (see Exhibit 14 overleaf).

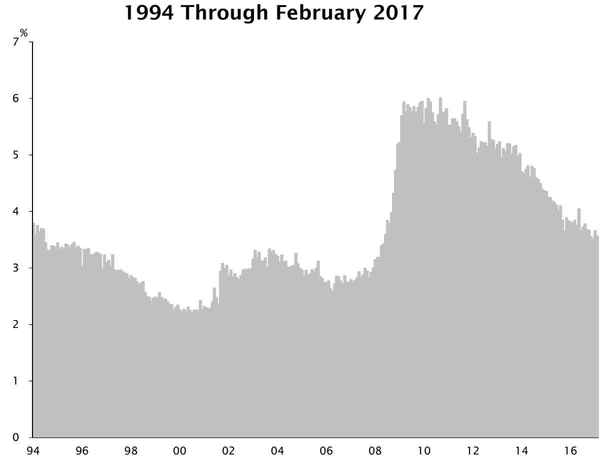
What would further tilt the scales is increased access to credit. So far we have seen mixed performance on this front. The Federal Reserve's last report on credit card account openings and closings showed a net issuance of +15.6 million credit cards to people with Equifax risk scores below 720. This is far greater than net issuance of +1.5 million cards for those with a risk score of 720 or higher. On a dollar basis, credit limits were expanded in 2015 by a net of $57 billion for people with scores under 720. This is a far better balance than the survey showed in prior years (see Exhibit 15). Mortgage lending has also seen some modest loosening per Exhibit 16. On balance though, banks are cautious as evidenced by a net tightening of lending standards in the latest Senior Loan Officer Survey from the Federal Reserve.

Exhibit 11: Median Wage Growth
Bottom-Four and Top Quintile of Earners
2015 and 2016



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

Exhibit 12: The U.S.
Working Part-Time for Economic Reasons
Share of the Labor Force
1994 Through February 2017



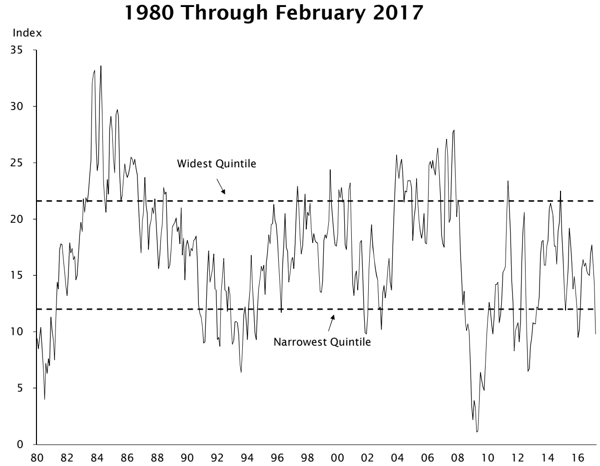
Source: Bureau of Labor Statistics, Empirical Research Partners Analysis.

Exhibit 13: Median Wage Growth by Skill Level[1]
1998 Through February 2017

Source: Federal Reserve Bank of Atlanta, Empirical Research Partners Analysis.

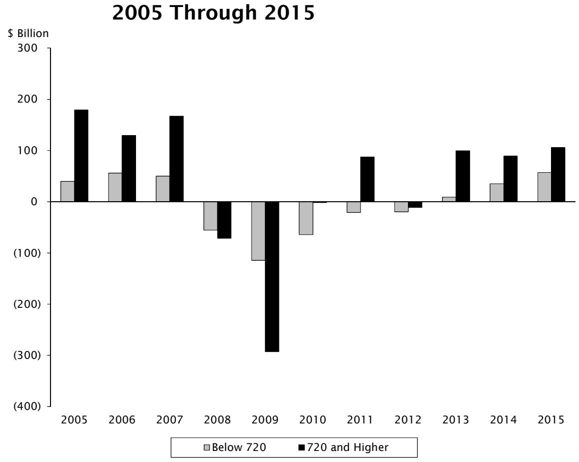
[1] Twelve-month moving averages. High-skill includes managers, professionals and technicians. Middle-skill includes office and administration, operators, production and sales. Low-skill includes food preparation and serving, cleaning and personal care services.

Exhibit 14: University of Michigan
Consumer Sentiment Spread
Top Tercile Less Bottom Tercile of Income
1980 Through February 2017



Source: University of Michigan, Empirical Research Partners Analysis.

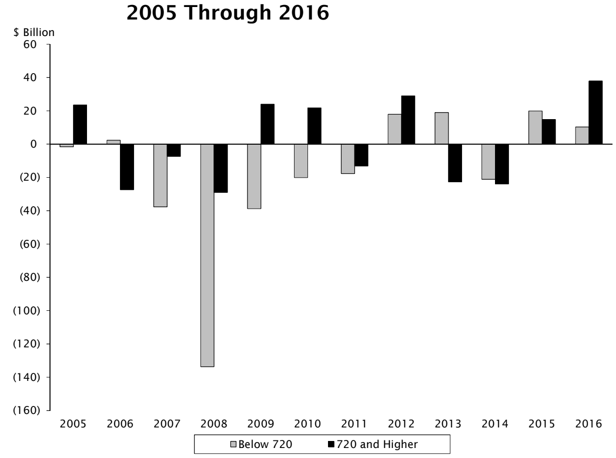
Exhibit 15: Net Change in Credit Limits
by Credit Score[1]
2005 Through 2015



Source: New York Fed Consumer Credit Panel/Equifax, Empirical Research Partners Analysis.

[1] Equifax Riskscore

Exhibit 16: Mortgage Originations
by Credit Score[1]
2005 Through 2016



Source: New York Fed Consumer Credit Panel/Equifax.

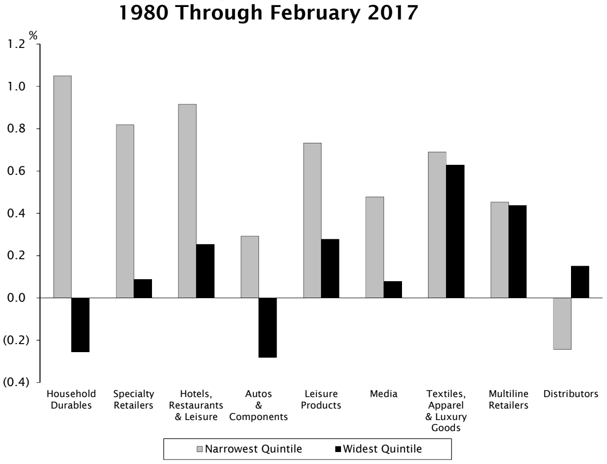
[1] Equifax Riskscore

The stars and the moon will rarely align, but progress is clear enough that the consumer herself is beginning to feel greater confidence. The University of Michigan's overall index of consumer sentiment is widely followed, but the underlying trajectory of sentiment by income tercile gets relatively little attention. We believe that the spread in sentiment between the top and bottom tercile is a useful factor in determining stock price movement, especially now that the spread has entered its narrowest quintile (see Exhibit 14 overleaf). When sentiment spreads are at their narrowest, consumer discretionary stock outperform the market on a monthly basis by +0.3% to +1.1%. In Exhibit 17 we show how sensitive consumer discretionary stocks are to changes in sentiment spreads. Household durables like home builders and automotive businesses respond to changes in both directions. Conversely, Exhibit 18 shows that every component of the consumer staples group has under-performed the market since 1980 when sentiment spreads were at their narrowest. They tended to out-perform when spreads were at their widest.

How to Convert Income Growth into Revenue Growth

Balanced income growth and improved access to credit are critical determinants of future corporate revenue gains since those factors tend to stimulate the lower rungs of the economy disproportionately. In other words, both the marginal propensity to borrow (MPB) and the marginal propensity to consume (MPC) are bigger swing factors at lower income levels. Those multipliers will be useful in converting income growth into tangible revenue growth for the companies dependent on spending.

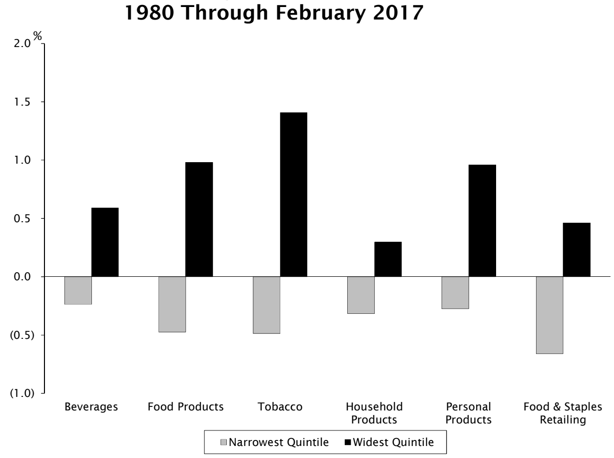
Exhibit 17: U.S. Large-Capitalization Consumer Cyclical Stocks Average Monthly Relative Returns by Industry Depending on Consumer Sentiment Spread Quintiles[1] 1980 Through February 2017



Source: University of Michigan, Empirical Research Partners Analysis.

[1] Consumer sentiment index spread between top tercile and bottom tercile.

Exhibit 18: U.S. Large-Capitalization Consumer Staples Stocks Average Monthly Relative Returns by Industry Depending on Consumer Sentiment Spread Quintiles[1] 1980 Through February 2017



Source: University of Michigan, Empirical Research Partners Analysis.

[1] Consumer sentiment index spread between top tercile and bottom tercile. Equally-weighted data.

Researchers have found that a dollar of marginal willingness to lend (i.e., higher credit card limits) translates into a fairly sustainable 58% flow-through to spending at lower FICO scores[2]. For higher FICO scores, this marginal propensity to borrow is much smaller and tends to fade rapidly (see Exhibit 19). The marginal propensity to consume is much like that to borrow and we've developed estimates of it by income level. Our methodology begins with the Consumer Expenditure Survey. When it comes to measuring income and its dispositions, many researchers prefer to use the National Income and Products Accounts (NIPA) since it corresponds most accurately with GDP figures. But when it comes to understanding spending data at the category level, there is no better tool than the Consumer Expenditure Survey. We analyzed the data by income quintile over a twenty year period, though a more current five year survey indicates that our findings are still applicable. The analysis let us calculate a reasonable estimate of the marginal propensity to consume (MPC) over a long period of time. We believe this will help predict consumer spending patterns in an economy underpinned by job growth.

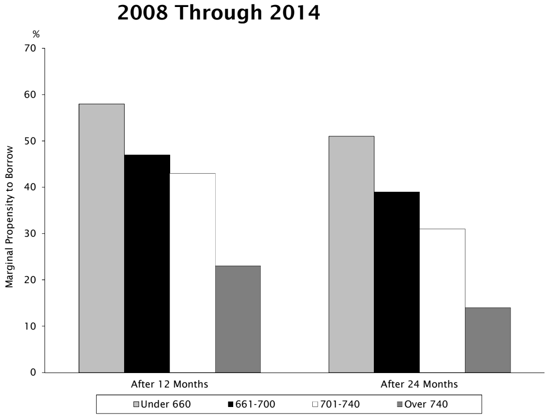
We calculate an overall MPC for the U.S. consumer of 58% using data from 1986 through 2015. We arrive at this by dividing the dollar change in consumer expenditures from one quintile to the next in a given year. We then divide that into the corresponding change in household income. Much like the related borrowing statistics, the results vary by income strata, ranging from 50% at the upper quintiles to 65% at the bottom. To be clear, we are measuring

[2] Agarwal, S., Chomsisengphet, S., Mahoney, N. and Johannes Stroebel, 2015. "Do Banks Pass Through Credit Expansion to Consumers Who Want to Borrow?" NBER Working Paper 21567.

the sensitivity to income, not wealth. The outlays associated with increased wealth (home values and equities) are generally far more muted, around a tenth to a twentieth of those coming from income gains. Also, we're measuring movements across income quintiles because studying jumps in household income helps us visualize the impact job growth would have on spending.

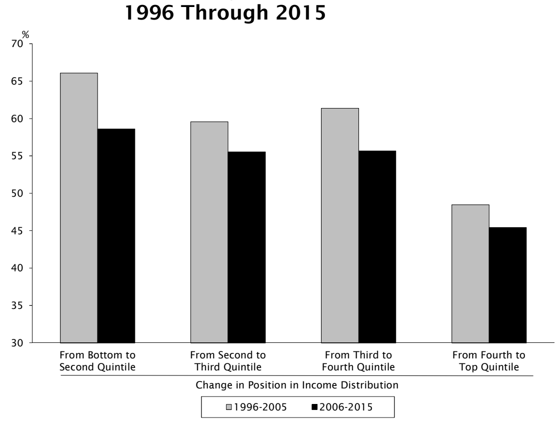
Over time, we have seen our MPC metric moderate across the board (see Exhibit 20). This is a reminder that the consumer is far from ebullient. Their balance sheets might be saved, but they are still faced with significant pressures. And like their corporate counterparts, what goes on their income statement can often be more deterministic than the state of their balance sheet. As an example, out-of-pocket health care expenditures have raised the consumer's fixed cost burden (see Exhibit 21). The consumer has no choice but to fund it just as retailers must pay rent to keep the lights on and Nike must pay Lebron James to keep customers happy. Health care is not the only off-balance sheet obligation.

Exhibit 19: Marginal Propensity to Borrow
Increased Spending Seen by FICO Score Cluster
12- and 24-Months After Credit Extension
2008 Through 2014



Source: Agarwal, S., Chomsisengphet, S., Mahoney, N. and Johannes Stroebel, 2015. "Do Banks Pass Through Credit Expansions to Consumers Who Want To Borrow?"

Exhibit 20: Marginal Propensity to Consume by Income Level
Change in Consumer Expenditures Associated with Rising Incomes[1]
1996 Through 2015

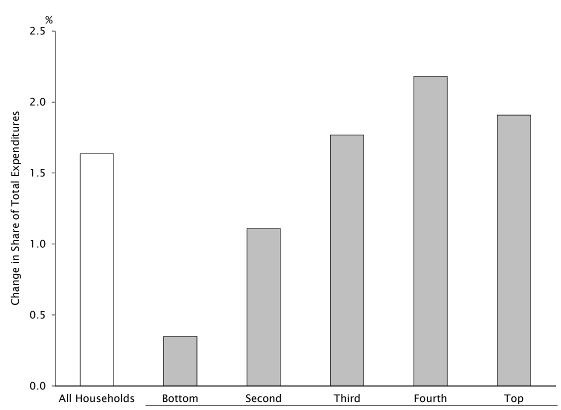


Source: Consumer Expenditure Survey, Empirical Research Partners Analysis.

[1] Change in annual household expenditures across income quintiles divided by the corresponding change in pre-tax income.

We find that a broader measure of fixed expenses has been taxing consumers across all income quintiles, claiming 56% of overall spending over the past three years compared with 52% over a longer history. We show how this burden was shouldered disproportionately by the bottom four income quintiles in Exhibit 22. To counteract that encroachment on the consumer's wallet, something else had to give.

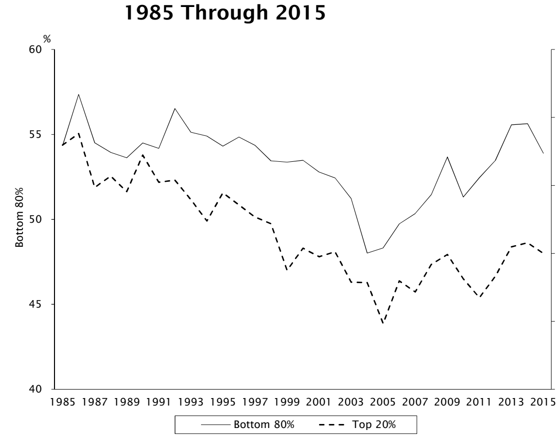
Exhibit 21: Health Care Expenditures
Change in Share of Total Expenditures by Quintile[1]
2012 Through 2015 Versus 1986 Through 2015 Average



Source: Consumer Expenditure Survey, Empirical Research Partners Analysis.

[1] Three-year share of spending compared with twenty-year share.

Exhibit 22: The U.S. Consumer
Fixed Expenses Share of Pre-tax Income[1]
Bottom 80% of Earners Versus the Top 20%
1985 Through 2015



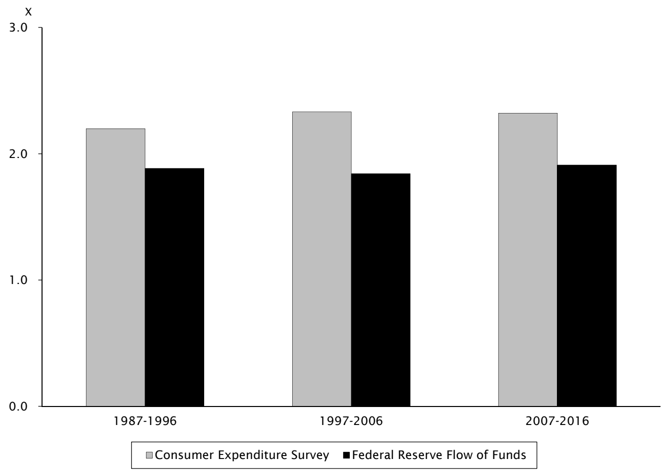
Source: Consumer Expenditure Survey, Empirical Research Partners Analysis.

[1] Fixed expenses include: Health care, education, rent, mortgage interest, property taxes, utilities, auto insurance and repair, gasoline, food-at-home, half of food-away-from-home, tobacco and alcohol and telephone service.

The Consumer's Capital Structure

To put this predicament into perspective we have compiled a fixed charge coverage ratio for the U.S. consumer. This is similar to the calculation used by bondholders and ratings agencies in assessing the creditworthiness of an enterprise. We find that the U.S. consumer's coverage ratio has historically struggled to stay much above 2.0x – a level that Moody's and others ask of their investment grade issuers. The two calculations we use average out to exactly 2.0x. The bottom 60% of U.S. consumers however, exhibit coverage of 1.0x or less (see Exhibits 23 and 24). Can you say, *junk*?

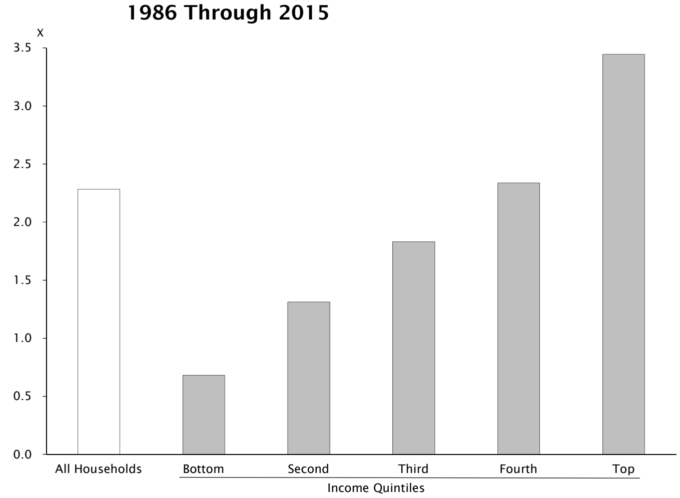
Exhibit 23: The U.S. Consumer
Fixed Charge Coverage Ratio[1,2]
1987 Through 2016



Source: Consumer Expenditure Survey, Federal Reserve Board of Governors Flow of Funds Accounts, Empirical Research Partners Analysis.

[1] Fixed expenditures in Consumer Expenditure Survey include: Health care, education, rent, mortgage interest, property taxes, utilities, auto insurance and repair, gasoline, food-at-home, half of food-away-from home, tobacco and alcohol and telephone service.
[2] Fixed charge coverage in Federal Reserve series is determined by dividing disposable income plus consumption of fixed assets as a proxy for depreciation over fixed expenses, including: capital expenditures, health care, housing and utilities, food-at-home and half of food-away-from-home.

Exhibit 24: The U.S. Consumer
Fixed Charge Coverage Ratio[1]
Historical Average by Income Quintile
1986 Through 2015



Source: Consumer Expenditure Survey, Empirical Research Partners Analysis.

[1] Fixed expenditures in Consumer Expenditure Survey include: Health care, education, rent, mortgage interest, property taxes, utilities, auto insurance and repair, gasoline, food-at-home, half of food-away-from-home, tobacco and alcohol and telephone service.

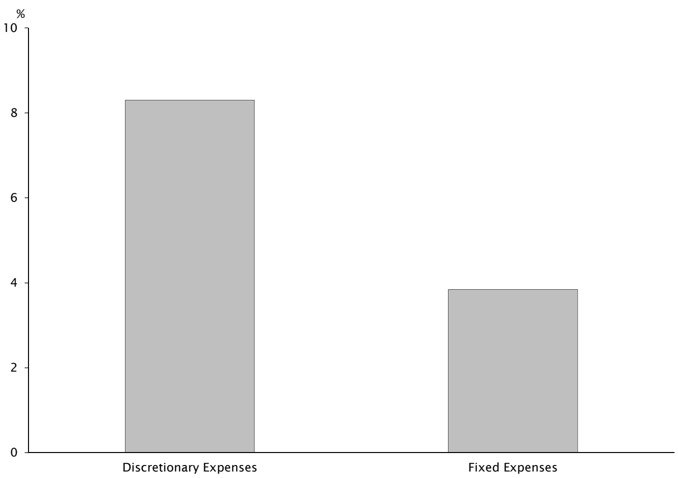
Like the equity holder of a leveraged enterprise, purveyors of discretionary goods have no seniority in the consumer's capital structure. To be sure, we calculate that fixed expenditures have historically exhibited a coefficient of variation that is half the volatility seen in more discretionary categories (see Exhibit 25). And peeling back the onion a little further makes it clear that not every discretionary category is likely to flex. Categories like entertainment and personal services for example, are rather sticky as a share of overall consumption, and they've exhibited average coefficients of variation since 1986 of 4% and 7%, respectively. Mobile phone service is hardly expendable either. Autos and apparel are at the opposite end of the curve with coefficients of 22% and 20%, respectively (see Exhibit 26). They represent the tail of the whip.

Strategically, the best practice for businesses at the bottom of the consumer's capital structure is to climb in relevance to become a more senior claimant. Some of the most ingrained retailers and consumer products companies have found a way to do just that. With a low monthly fee, Netflix has succeeded in elevating its status to a subscription, or fixed cost. The same can be said of Amazon and even Costco, whose member renewal rate is over 90%. The problem is that joining that club requires a business to offer an indispensable product or service.

In This Much-Delayed Recovery, the Whip is of Interest

Over the course of a cycle however, there are times that it pays to be the tail of the whip, or to own the equity of such a leveraged enterprise. Usually this occurs early in a cycle when employment and incomes turn and monetary policy is expansive. The dynamics of this cycle though, look decidedly different from previous ones. In some ways the real recovery is just beginning and we see reasons to add some of these so-called stubs into portfolios today. We do not recommend wantonly adding beta for the sake of taking risk. Our view is to increase exposure to stocks that: (i) benefit disproportionately from stronger and more balanced income growth, (ii) offer attractive free cash flow yields, and (iii) score well on the firm's core stock selection model. We prefer consumer discretionary to consumer staples stocks given higher relative free cash flow yields and a historical penchant to outperform in growing economies (see Exhibits 27 and 28). This impact might become more pronounced as investors shed stable issues in favor of anti-bond proxies more broadly.

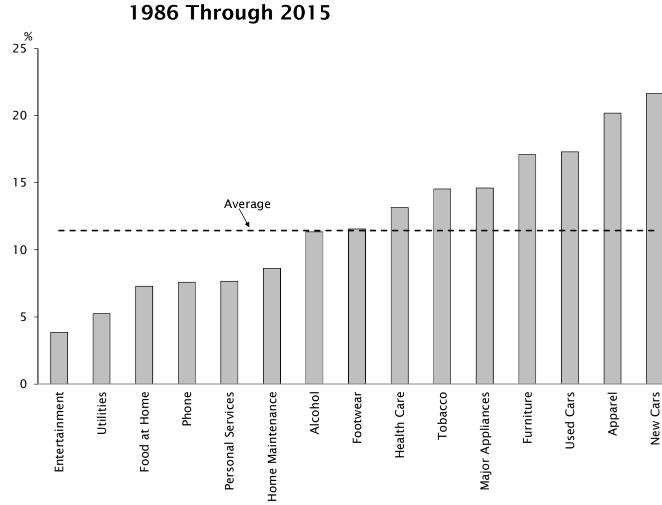
Exhibit 25: Annual Coefficients of Variation by Category[1]
Discretionary and Fixed Expenses[2]
1986 Through 2015



Source: Consumer Expenditure Survey, Empirical Research Partners Analysis.

[1] Standard deviation divided by the mean.
[2] Fixed expenses include: Health care, education, rent, mortgage interest, property taxes, utilities, auto insurance and repair, gasoline, food-at-home, half of food-away-from-home, tobacco and alcohol and telephone service.

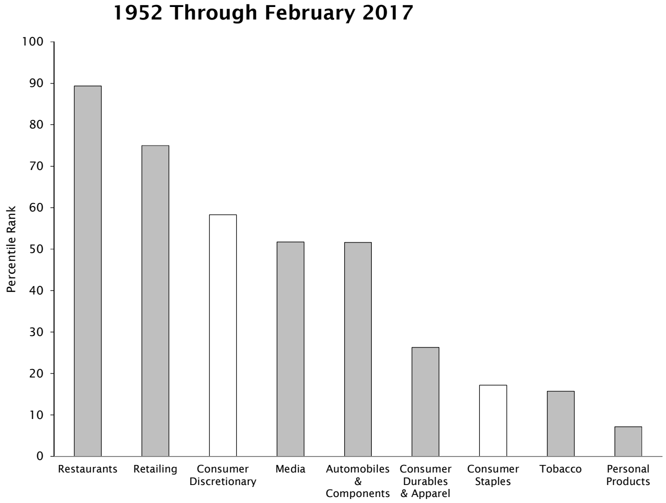
Exhibit 26: Coefficients of Variation[1]
Categories With the Highest and Lowest Volatility of Annual Expenditures Relative to Total
1986 Through 2015



Source: Consumer Expenditure Survey, Empirical Research Partner Analysis.

[1] Standard deviation divided by the mean.

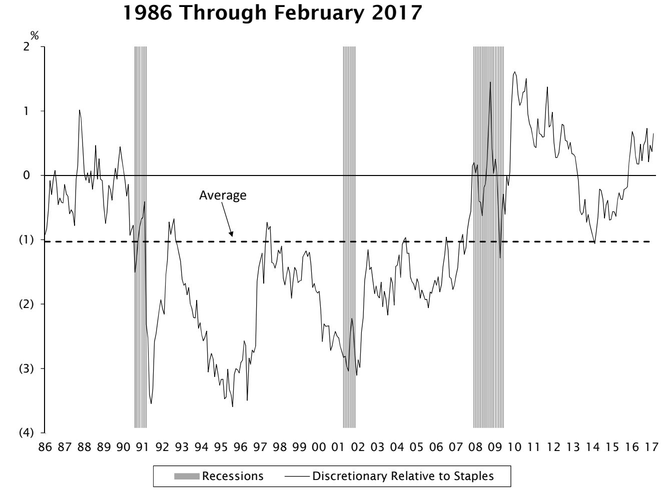
Exhibit 27: U.S. Large-Capitalization Consumer Stocks
Relative Free Cash Flow Yields by Industry Group[1]
Percentile Rank Versus History
1952 Through February 2017



Source: Corporate Reports, Empirical Research Partners Analysis.

[1] Capitalization-weighted data.

Exhibit 28: U.S. Large-Capitalization Consumer Discretionary and Staples Stocks[1]
A Comparison of Relative Free Cash Flow Yields
1986 Through February 2017



Source: Corporate Reports, Empirical Research Partners Analysis.

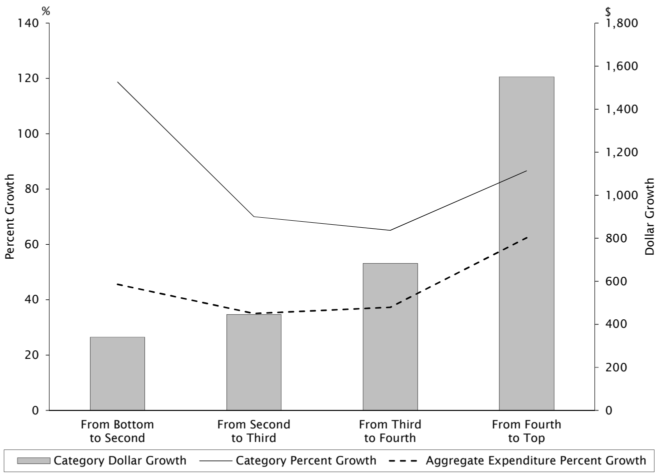
[1] Capitalization-weighted data. Drawn from the largest 1,500 stocks.

Autos, Housing and Restaurants are Likely to be Top-Line Winners

Autos: One of the clearest beneficiaries of income mobility is the auto industry and new cars, in particular. In Exhibit 29 we show how spending on new cars increases sharply as consumers shift from one income quintile to the next. The outperformance for the industry is sharpest at the lowest quintiles, but it sustains strength across all cohorts. For context, we show the same chart for used cars in Exhibit 30. This category behaves in a very different yet intuitive manner. Dollar gains are strong at the lowest quintiles for used cars, but gains fade once income mobility takes hold.

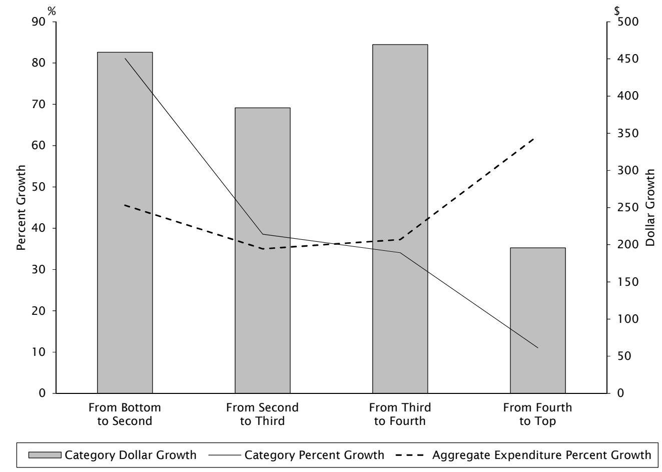
From a valuation perspective, the automotive sector currently implies negligible growth using our internal framework that matches historical valuations against future earnings growth dating back to 1977 (see Exhibit 31). There are reasons to be skeptical. Auto manufacturers are wrestling with increased incentives, credit losses and the potential for new competitive entrants. An improved top-line however, can cure many ills and tempts us to take the other side.

Exhibit 29: Spending on New Cars
Dollar Growth Tied to Income Mobility
Percentage Growth Versus Average Household Expenditure
1986 Through 2015



Source: Consumer Expenditure Survey, Empirical Research Partners Analysis.

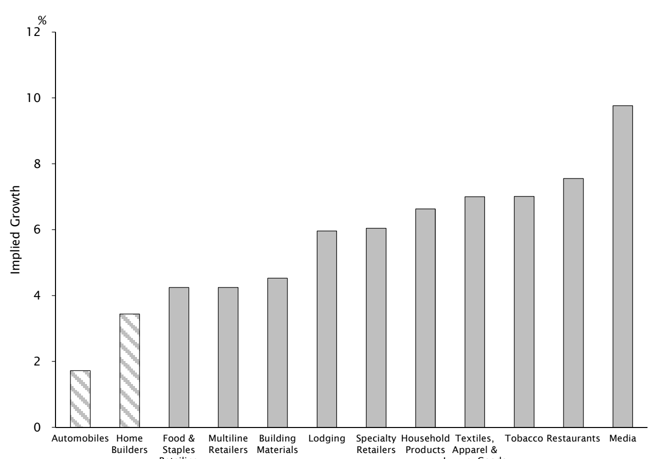
Exhibit 30: Spending on Used Cars
Dollar Growth Tied to Income Mobility
Percentage Growth Versus Average Household Expenditure
1986 Through 2015



Source: Consumer Expenditure Survey, Empirical Research Partners Analysis.

While the business has been turbulent over time, our view is that a top-line opportunity coupled with an assist from free cash flow yields will validate the auto sector's prominence in Empirical's core model. Fully 42% of the sector's constituents appear in the top quintile of this time-tested model (see Exhibit 32).

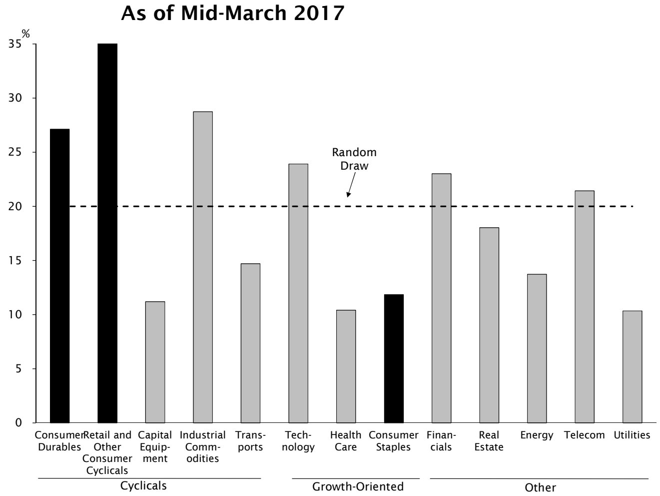
Exhibit 31: U.S. Large-Capitalization Consumer Stocks[1]
Five-Year Forward Implied Earnings Growth Rates
As of Late-March 2017



Source: Corporate Reports, Empirical Research Partners Analysis.

[1] Capitalization-weighted data.

Exhibit 32: U.S. Large-Capitalization Stocks
Share of Stocks in the Best Quintile of Core Model by Sector[1]
As of Mid-March 2017



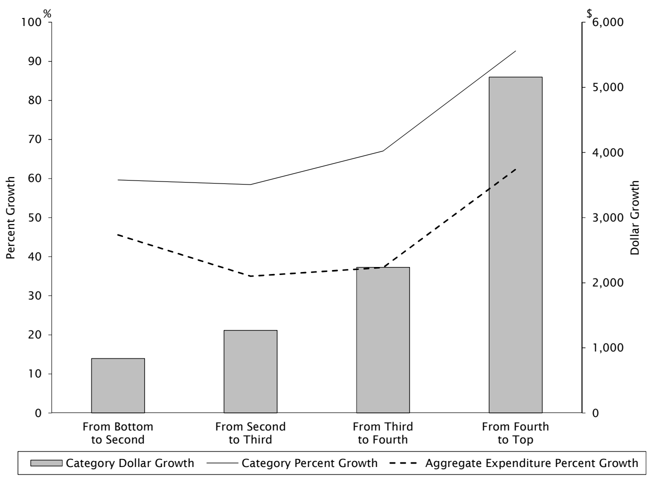
Source: Empirical Research Partners Analysis.

[1] Equally-weighted data.

Housing: Home builders look like compelling investments. Fundamentally speaking, housing is likely to be a strong sector in any upwardly mobile income environment, though it should be strongest when incomes grow from already high levels (see Exhibit 33). Market expectations are also quite low with earnings growth of only 3.4% implied by current multiples (see Exhibit 31). The impact of rising interest rates is probably weighing on the group. We will explore this more deeply in a future report, but for now we believe that movement off of such low levels is likely to be tolerable. Recall, last time the Federal Reserve was raising rates (2004 through 2006) the consumer had extracted $233 billion in proceeds from their homes in the preceding year thanks to heavy use of cash-out refinancing and home equity borrowing. This time around, the hangover associated with rising rates is apt to be far smaller since only $77 billion has been extracted in the past year according to the Federal Housing Finance Agency. Less frequent use of adjustable-rate mortgages should further limit potential damage to the sector.

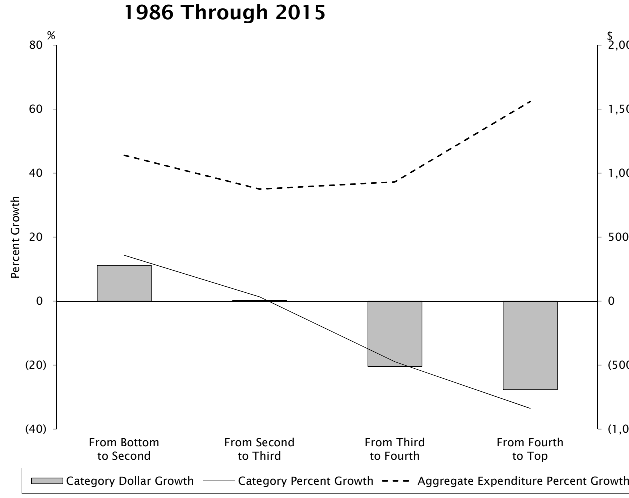
We must however, distinguish between homeownership and home 'rentership'. That is because rent, which corresponds to the Consumer Expenditure category of rented dwellings, tells a completely different story from owned dwellings, or homeownership (see Exhibit 34). Rent is a default proposition for the most basic income earners. It isn't an aspiration. Incremental dollars devoted to rent from increased income flatten out quickly and turn negative as incomes reach the median. For this reason, investors should be mindful of how they express a housing theme in their portfolios. We submit that single-family home builders or building products companies have far better prospects than multi-family operators. The rents are simply too high! Consumer expenditures on rent reached 61% of ownership expenditures in 2015. This is up from a ratio of only 44% back in 2000 and a historical average of 49% dating back to 1985.

**Exhibit 33: Spending on Homeownership
Dollar Growth Tied to Income Mobility
Percentage Growth Versus Average Household Expenditure
1986 Through 2015**



Source: Consumer Expenditure Survey, Empirical Research Partners Analysis.

**Exhibit 34: Spending on Rent
Dollar Growth Tied to Income Mobility
Percentage Growth Versus Average Household Expenditure
1986 Through 2015**



Source: Consumer Expenditure Survey, Empirical Research Partners Analysis.

Restaurants: Another winning category that is broadly investable is restaurants. The food-away-from-home category responds well to added income, especially at or near the median income level. It keeps pace with or outperforms aggregate spending growth at all stages of income mobility. On a valuation basis, it is hard to make an absolute case for the stocks since implied growth of 8% is still demanding. Free cash flow yields are equal to the market overall, but that still qualifies as the 90th percentile of values for the sector dating back to 1968 (see Exhibits 35 and 36). Other winning sectors and stocks can be found in Exhibit 38 and in Appendix 1 on page 14.

Tobacco and Staples Are Poorly Positioned

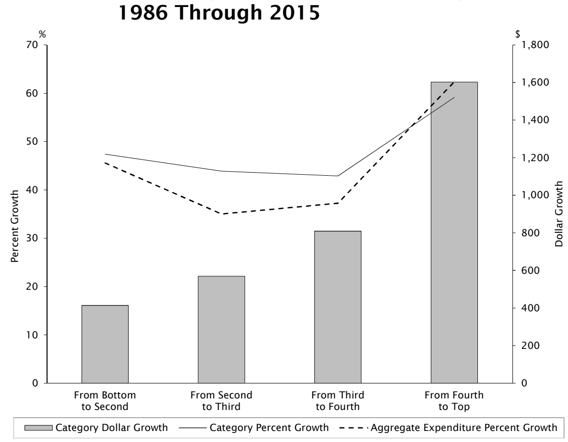
Categories likely to cede ground include the tobacco sector and other stable components of spending like household products and personal products. The latter fail to see leverage as incomes expand, but tobacco's woes stand out with nominal spending that experiences decay at higher income levels (see Exhibit 37). Despite that fact, tobacco stocks are still highly valued in our historical framework with relative free cash flow yields that rank in only the 15th percentile of historical values.

Conclusion: Buy Discretionary…the Consumer Will

Studying the U.S. consumer is a lot like analyzing a stock or a bond. The consumer has an income statement, a balance sheet and a cash flow account. For the most part these are released on a quarterly basis, albeit without a prolonged conference call. Our analysis points to the fact that both the consumer and related stock price movements can act like the equity stub of a leveraged enterprise, especially when it comes to discretionary spending.

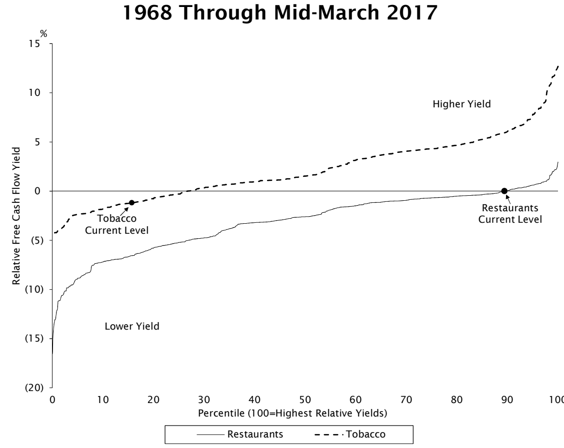
Strategically, it behooves companies to gain seniority in the capital structure in order to ensure longevity, but there is simply not enough room for every business to access the consumer's wallet equally. Discretionary providers may have been crowded out in recent years, but our view from this point forward is that income growth will remain firm and broad. In that case, investors might benefit most from owning the tail of the whip.

Exhibit 35: Spending on Restaurants
Dollar Growth Tied to Income Mobility
Percentage Growth Versus Average Household Expenditure
1986 Through 2015



Source: Consumer Expenditure Survey, Empirical Research Partner Analysis.

Exhibit 36: U.S. Large-Capitalization Restaurant and Tobacco Stocks
Relative Free Cash Flow Yields[1]
1968 Through Mid-March 2017

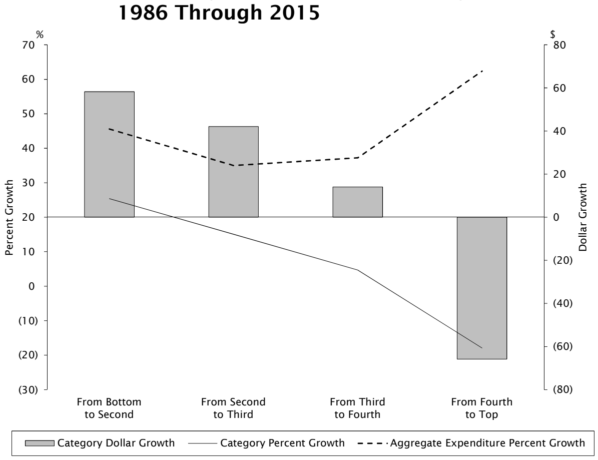


Source: Corporate Reports, Empirical Research Partners Analysis.

[1] Capitalization-weighted data.

The net effect is that we think the consumer discretionary sector is poised to outperform consumer staples broadly speaking. To add some precision we look for sectors that intersect in both our fundamental and valuation frameworks. Winners will score well in both and losers will score poorly in both. Exhibit 38 tells us that it makes sense to own the auto sector, home builders, restaurants and a few retailers. We would underweight consumer staples and in particular, tobacco and personal products which show poorly in our top-line growth and our firm's valuation framework. A bigger list of unattractive stocks is presented in Appendix 2 on page 14. Several also appear in our Failure screen.

Exhibit 37: Spending on Tobacco
Dollar Growth Tied to Income Mobility
Percentage Growth Versus Average Household Expenditure
1986 Through 2015



Source: Consumer Expenditure Survey, Empirical Research Partner Analysis.

Exhibit 38: Survey Results
Consumer Expenditure Categories Likely to Benefit Most and Least from Income Mobility

From Bottom to Second Quintile	From Second to Third Quintile	From Third to Fourth Quintile	From Fourth to Top Quintile
	Winners		
New Cars	New Cars	Homeownership	Furniture
Used Cars	Homeownership	New Cars	Personal Services
Personal Services	Personal Services	Personal Services	New Cars
Furniture	Alcohol	Furniture	Entertainment
Homeownership	Entertainment	Entertainment	Apparel
Home Maintenance	Restaurants	Restaurants	Alcohol
	Losers		
Tobacco	Food at Home	Healthcare	Used Cars
Rent	Healthcare	Tobacco	Tobacco
Education	Rent	Rent	Rent

Source: Consumer Expenditure Survey, Empirical Research Partners Analysis.

A Key Topic to Explore in Future Reports

A final note of caution is that interest rates, food prices and oil prices can spoil the party if they spike. Gasoline, mortgage interest, car finance and food (at home) have been very stable components of the fixed cost equation. These components however, are known to be volatile and unpredictable. And since they sum to 20% of overall consumption, it follows that a 5% upward move in prices would eat away at an additional 1% of the consumer's wallet. So,…what's in your wallet?

Appendix 1: Autos, Restaurants and Home Builders Stocks
Core Model Ranking Report
Top Quintile of the Core Model
Sorted by Industry and Market Capitalization
As of Late-March 2017

			Quintile Ranks (1=Best; 5=Worst)							
			Super Factors							
Symbol	Company	Price	Valuation	Capital Deployment	Earnings Quality and Trend	Market Reaction	**Core Model Rank**	Forward P/E-Ratio	YTD Returns	Market Capitalization ($ Million)
Auto and Auto Components										
FCAU	FIAT CHRYSLER AUTOMOBILES NV	$11.13	1	5	4	1	**1**	5.6 x	22.0 %	$21,639
MGA	MAGNA INTERNATIONAL INC	43.59	1	2	4	2	**1**	7.7	1.1	16,674
HOG	HARLEY-DAVIDSON INC	60.69	2	1	2	1	**1**	15.8	4.7	10,678
LEA	LEAR CORP	140.51	1	1	1	1	**1**	9.0	6.5	9,756
GT	GOODYEAR TIRE & RUBBER CO	36.51	1	1	3	2	**1**	9.1	18.6	9,198
BWA	BORGWARNER INC	41.75	2	2	2	1	**1**	12.2	6.2	8,887
GNTX	GENTEX CORP	21.12	3	3	1	2	**1**	16.1	7.7	6,077
TEN	TENNECO INC	62.90	1	2	2	1	**1**	9.8	1.1	3,416
DAN	DANA INC	18.65	1	2	3	1	**1**	10.7	(1.4)	2,687
CTB	COOPER TIRE & RUBBER CO	44.00	1	1	4	1	**1**	11.3	13.6	2,332
CPS	COOPER-STANDARD HOLDINGS INC	110.40	1	1	3	1	**1**	10.2	6.8	1,954
Restaurants										
DNKN	DUNKIN' BRANDS GROUP INC	$56.11	5	1	1	2	**1**	23.7 x	7.6 %	$5,166
WEN	WENDY'S CO	13.46	5	1	2	1	**1**	29.3	0.1	3,324
CAKE	CHEESECAKE FACTORY INC	62.46	2	2	2	2	**1**	20.6	4.7	2,981
BLMN	BLOOMIN' BRANDS INC	19.21	1	1	4	4	**1**	13.6	7.0	1,996
Home Builders										
PHM	PULTEGROUP INC	$23.73	2	2	1	2	**1**	10.6 x	29.6 %	$7,572

Source: Empirical Research Partners Analysis.

Appendix 2: Consumer Staples and Residential REIT Stocks
Core Model Ranking Report
Bottom Quintile of the Core Model
Sorted by Industry and Market Capitalization
As of Late-March 2017

			Quintile Ranks (1=Best; 5=Worst)								
			Super Factors								
Symbol	Company	Price	Valuation	Capital Deployment	Earnings Quality and Trend	Market Reaction	**Core Model Rank**	Failure Candidate (1=Yes)	Forward P/E-Ratio	YTD Returns	Market Capitalization ($ Million)
Beverages											
STZ	CONSTELLATION BRANDS	$162.43	4	5	2	4	**5**	-	21.8 x	6.2 %	$32,328
MNST	MONSTER BEVERAGE CORP	46.99	5	5	3	5	**5**	1	31.3	6.0	26,625
TAP	MOLSON COORS BREWING CO	96.30	4	5	3	5	**5**	1	15.3	(0.6)	20,701
CCE	COCA-COLA EUROPEAN PARTNERS	37.92	3	5	4	2	**5**	-	18.2	20.8	18,318
BF.B	BROWN FORMAN CORP	46.82	5	3	4	4	**5**	1	25.5	4.6	18,111
Food and Staples Retailing											
CASY	CASEYS GENERAL STORES INC	$110.48	3	5	4	5	**5**	-	22.2 x	(6.9) %	$4,331
PFGC	PERFORMANCE FOOD GROUP CO	23.20	2	5	5	5	**5**	-	17.8	(3.3)	2,401
Food Products											
MDLZ	MONDELEZ INTERNATIONAL INC	$43.70	5	4	1	5	**5**	1	20.8 x	(1.4) %	$66,790
HRL	HORMEL FOODS CORP	34.34	4	5	3	4	**5**	-	20.6	(0.9)	18,163
WWAV	WHITEWAVE FOODS CO	55.53	5	5	5	3	**5**	-	35.9	(0.1)	9,843
THS	TREEHOUSE FOODS INC	84.89	2	5	5	5	**5**	-	23.4	17.6	4,822
BUFF	BLUE BUFFALO PET PRODUCTS	23.00	5	5	4	3	**5**	1	25.0	(4.3)	4,521
HAIN	HAIN CELESTIAL GROUP INC	37.38	2	5	3	5	**5**	1	19.2	(4.2)	3,867
LNCE	SNYDERS-LANCE INC	40.14	4	5	4	1	**5**	-	29.2	5.1	3,866
BGS	B&G FOODS INC	41.35	1	5	3	5	**5**	-	18.8	(5.6)	2,749
CALM	CAL-MAINE FOODS INC	37.55	5	5	3	5	**5**	-	61.8	(15.0)	1,824
Household and Personal Products											
PG	PROCTER & GAMBLE CO	$90.76	4	3	4	4	**5**	-	23.0 x	8.8 %	$232,026
COTY	COTY INC	18.57	4	5	5	5	**5**	-	21.7	2.1	13,874
Tobacco											
MO	ALTRIA GROUP INC	$73.19	4	2	5	3	**5**	1	22.2 x	9.1 %	$142,228
Residential REITs											
ACC	AMERICAN CAMPUS COMMUNITIES	$47.55	5	5	4	5	**5**	-	54.3 x	(3.6) %	$6,345
SUI	SUN COMMUNITIES INC	80.10	4	5	5	3	**5**	1	74.9	4.6	5,888
EDR	EDUCATION REALTY TRUST INC	39.87	4	5	5	5	**5**	-	63.0	(4.9)	2,917

Source: Empirical Research Partners Analysis.