12 803-7945 212 803-7942

The U.S. Consumer: The Consumer Lens *A Theme-Based Portfolio*

The Right Side of Supply and Demand

- We are launching a portfolio of consumer-oriented stocks. While we do not cover individual issues, highlighting those that express our research themes and findings is a natural output of our process. Our goal is to generate alpha with a slate of 15-20 names that may or may not resemble the large-capitalization consumer stock benchmark we are trying to beat. The current portfolio, presented in Appendix 1 on page 10, has a tracking error of ±6.5% versus the relevant sectors of the S&P 500. We call it the Consumer Lens reflecting the varied angles we deploy to study the consumer and the related stocks.
- To understand what makes consumer stocks tick, we have analyzed the efficacy of 20 factors within eight consumer industries dating back to 1952. These range from incremental ROE to gross profit yield and earnings stability. Consumer stocks used to march to the beat of the same drum, but even the most intuitive valuation and fundamental metrics have not been great predictors of performance now that the forces of disruption have taken center stage. Capital deployment, that measures capital spending, M&A activity, dividend policy, buybacks and financing decisions, has remained a determinant of performance.
- Aggregate demand is shifting as economic progress and demographics take hold. The base of supply, or capacity is shifting concurrently, not only because disruptive models are scaling rapidly, but also because reactions from incumbent operators have magnified the risk of accelerating capacity. This applies to retail, media and to a lesser extent, lodging. Our themes try to find stocks on the right side of supply and demand.

Age and Income Filter

• The consumer is at a crossroads. With incomes and age profiles on the move, we have identified categories that stand to benefit most -- and least -- from the convergence of these two powerful forces. Entertainment, homeownership and home improvement look to be winners on both fronts. This bodes well for stocks such as Sherwin-Williams, NVR, Rollins, Live Nation and Disney, to a lesser extent.

Disruption Filter

• Given a high level of disruption across the retail industry, companies need to be either fast or vertical in order to compete. Amazon is our largest stake, but we think Wal-Mart and CVS are fast and cheap enough to stay relevant. Tiffany and Nike are good examples of companies that control their brand by striving to get vertical. Amazon is hard to value, but we believe the story is underpinned by a growing pool of recurring revenue streams that are likely to reach \$60 billion in 2017.

Pricing Power Filter

• Our work on pricing power indicates that hotels, restaurants and entertainment companies have it. This augurs well for McDonald's, Dunkin Brands, Las Vegas Sands and Wyndham Worldwide. In order to best capitalize on the theme favoring entertainment without embracing too much disruption risk, we borrow Activision Blizzard and Nintendo from neighboring sectors.

Homeownership, Entertainment, Experiences and Fast-Turn Retailers

• Our fundamental work has anchored the Consumer Lens in themes that include homeownership, live entertainment, vertical experiences, vertical brands and fast-turning retailers. The portfolio we are fielding is long-only in nature, though an under-weight in consumer staples is hard to miss. We will attempt to identify short themes in our research, but investors looking for short ideas would do well to rely on Empirical's failure model, which has generated around (7) percentage points of alpha per annum in the last 13 years.

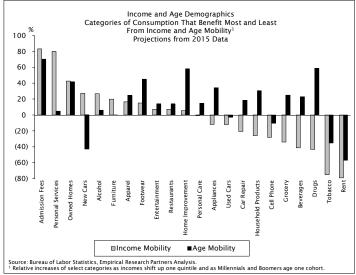
Nicole Price 212 803-7935 Sungsoo Yang 212 803-7925 Yu Bai 212 803-7919 Longying Zhao 212 803-7940 Iwona Scanzillo 212 803-7915

© 2017, Empirical Research Partners LLC, 565 Fifth Avenue, New York, NY 10017. All rights reserved. The information contained in this report has been obtained from sources believed to be reliable, and its accuracy and completeness is not guaranteed. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information and opinions contained herein. The views and other information provided are subject to change without notice. This report is issued without regard to the specific investment objectives, financial situation or particular needs of any specific recipient and is not to be construed as a solicitation or an offer to buy or sell any securities or related financial instruments. Past performance is not necessarily a guide to future results.

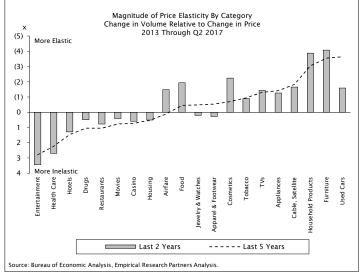
August 24, 2017

Conclusions in Brief

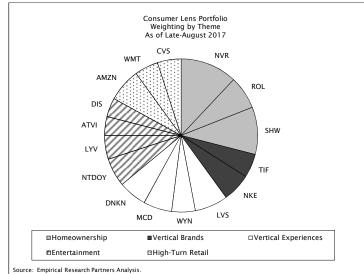
Demand is shifting as the forces of both income and age demography unite:



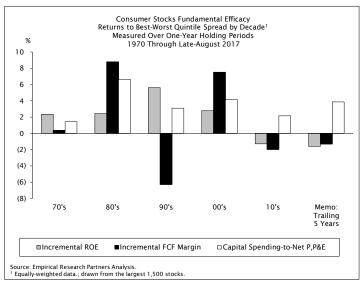
In the end, a proper balance of supply and demand • drives pricing power:

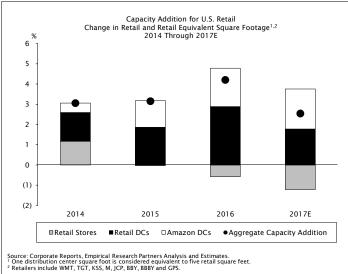


Our portfolio is weighted towards homeownership, • entertainment, fast-turning retailers and vertical experiences:

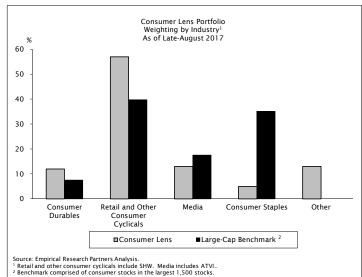


Supply is also shifting, which has made capital deployment an all-weather factor for consumer stocks:





- We have borrowed from "other" sectors to compensate for • an underweight in consumer staples:



An imbalance of supply and demand can be treacherous: ٠

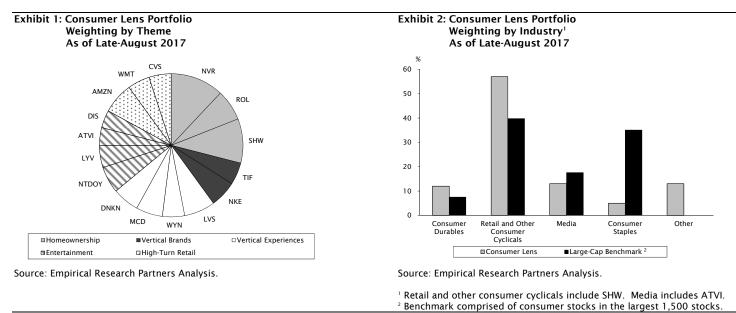
The Consumer Lens

A Theme-Based Portfolio

We are launching a portfolio of consumer-oriented stocks that express the themes and findings of our fundamental research. We have recently explored a handful of important topics ranging from income and age demography to consumer debt, pricing power and business model disruption. Our findings on these and other subjects are intended to be cumulative, clarifying our understanding of the U.S. consumer and consumer stocks.

While we do not cover individual issues, highlighting those that express our research themes and findings is a natural output of our process.¹ The goal is to generate alpha with a slate of 15-20 names that may or may not resemble the large-capitalization consumer stock benchmark we are trying to beat. Our fundamental filters will be the driving force behind our stock selection process, but we will also rely on Empirical's vast toolbox of quantitative data in order to help adapt to changing market regimes, among other things. We call the portfolio the Consumer Lens reflecting the varied angles we deploy to study the consumer and related stocks.

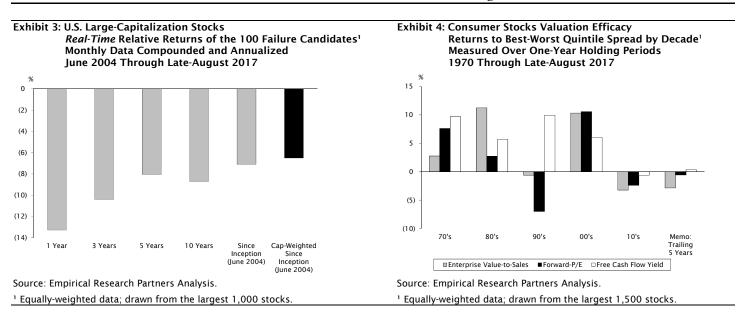
We show the constituents of the Consumer Lens in Exhibit 1 shaded by the themes they represent. Homeownership, entertainment and vertical business models are well-represented, consistent with our research findings. Exhibit 2 depicts how our industry weightings vary from the market's overall composition of consumer stocks, which account for 22% of the S&P 500's capitalization. Our positive outlook on consumer spending is evident in our overweight of cyclicals. Our concern about the ubiquity and pricing power of food and household products is evident in our underweight of consumer staples.



Consumer companies earn lower margins than more manufacturing-based sectors of the market. The variance in incremental margins is even more significant. This means that buying consumer stocks may not always be the best way to invest in the U.S. consumer. Other upstream businesses may at times be better positioned to cash in on the level and composition of consumer demand. Our portfolio therefore borrows from neighboring sectors in order to exploit relevant themes without veering too far from the consumer core. Even after reclassifying Sherwin Williams and Activision as de facto consumer stocks, our Consumer Lens carries a 13% weight in other industries. This is likely to yield a tracking error against large-capitalization consumer stocks of roughly 6%.

The portfolio we are fielding is long-only in nature. We will attempt to identify short themes in our research, but investors looking for short ideas would do well to rely on Empirical's failure model. This time-tested approach to detecting underperformers has generated around (7) percentage points of alpha per annum across the broader market in the last 13 years (see Exhibit 3). When applied to consumer stocks, the failure model has worked well over time.

¹Our research qualifies as commentaries on market conditions under FINRA Rule 2241.

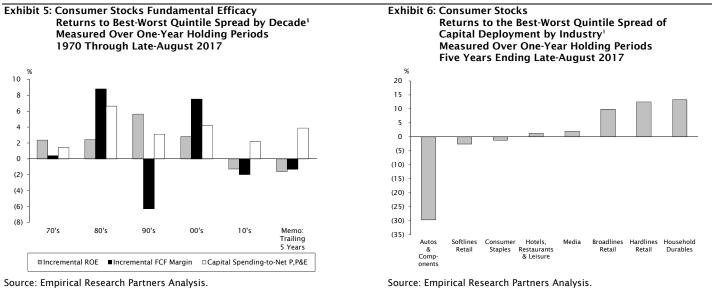


What Makes Consumer Stocks Tick?

In order to understand what really makes the stocks tick we have analyzed the efficacy of 20 factors within eight consumer industries dating back to 1952. The factors we analyzed at the sector level covered broad topics like earnings quality, valuation, capital deployment and price momentum. Others were more nuanced like incremental ROE, gross profit yield, capital spending relative to net P,P&E and earnings stability.

Consumer stocks used to march to the beat of the same drum. For example, in four of the past five decades, returns to stocks with the most attractive free cash flow yield outpaced those with the worst by 5-10 percentage points per annum (see Exhibit 4). Fundamental factors have also been useful in stock selection over time, but even some of the most intuitive metrics like incremental ROE and incremental free cash flow margins have not been great predictors of outperformance in recent years. We think this is attributable to the fact that cyclicality and business model disruption have taken center stage, leading to a more idiosyncratic risk and return profile.

Exhibit 5 shows that the most durable indicator across time has been capital spending relative to net P,P&E. The market has consistently rewarded the most judicious quintile of spenders relative to the most spendthrift with 2-5 percentage points of outperformance per annum. Investor's preferences however, are not uniform across all industries (see Exhibit 6). Empirical's capital deployment super-factor, which accounts for cash flow, dividend growth, share repurchases, acquisitions and financing decisions in addition to capital spending patterns, has been most useful in durables, retail and media. This factor is likely to remain important for sectors where demand and supply are both in flux.



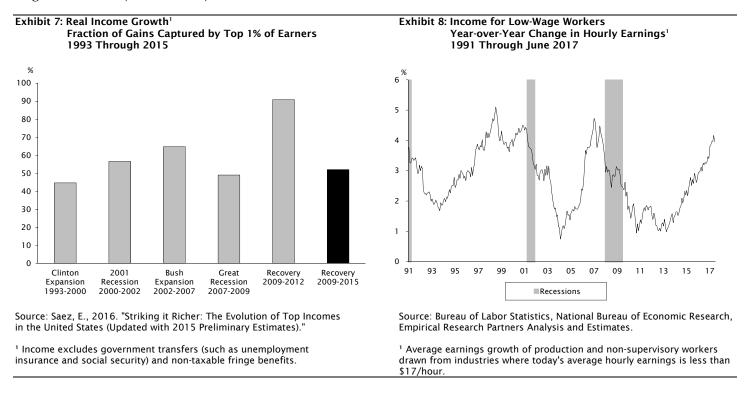
' Equally-weighted data; drawn from the largest 1,500 stocks

¹ Equally-weighted data; drawn from the largest 1,500 stocks.

There is no silver bullet when it comes to investing in consumer stocks, but both our fundamental work and our quantitative work indicate a need to focus on supply and demand. Demand is shifting as economic progress and demographics take hold. Supply growth is also shifting in large part due to disruptive business models that are scaling rapidly. Reactions from incumbent operators can magnify the risk of accelerating capacity. For this reason, our themes try to find stocks on the right side of the delicate balance between supply and demand.

The Age and Income Filter

The U.S. consumer is at a crossroads. That is because change in both income and age demography is occurring simultaneously. After stagnating for the better part of 20 years, lower income households have begun to participate in economic growth. Exhibit 1 shows that this phenomenon began in the 2013-2015 timeframe. Up until then, the top 1% of earners had accounted for 90% of the recovery in real income (see Exhibit 7). Broader participation in more recent years has reshaped this recovery to look more like others that preceded it. This trend has continued in 2016 and 2017. Wages for jobs paying under \$17 per hour have been rising more strongly than the broad and often-cited gain of +2.5%. Recent growth rates for wages in limited-skill jobs qualify in the top quartile of historical growth dating back to 1991 (see Exhibit 8).

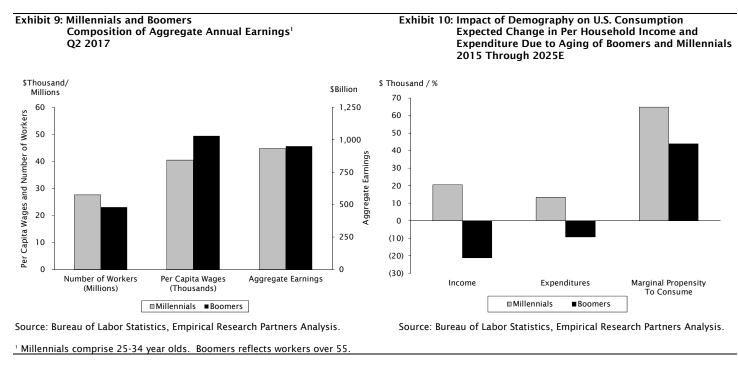


The age profile of the U.S. consumer is also shifting. Many investors are quick to dismiss demographic trends as either distant or opaque, but the reality is that the shift is already on. Millennials are not only bigger than Boomers by 5 million in the overall population, but they have recently begun to outnumber Boomers in the workforce as well (see Exhibit 9). They earn lower weekly wages, but the sheer size of the cohort means Millennials' share of aggregate income is just beginning to eclipse that of their elders. As they mature in the coming decade, Millennials should see incomes rise by \$20,000 per household. Boomer's incomes should fall by the same amount if historical patterns hold. When it comes to spending, Millennials are likely to be spend \$13,000 more per household per year, which should more than offset Boomers that are expected to spend \$9,000 less than they do today (see Exhibit 10). After accounting for their greater numbers, this favorable trend would be slightly more pronounced.

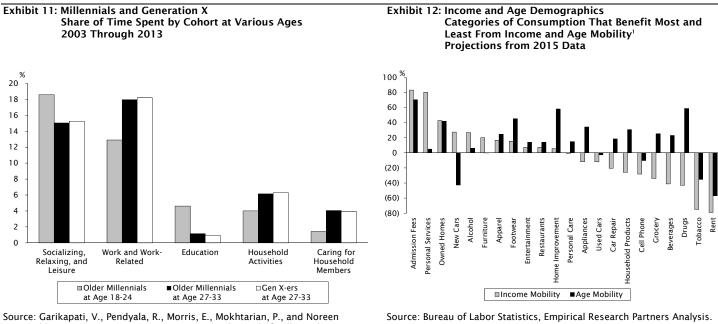
Are Millennials from Mars?

Extrapolating past trends to predict future patterns is a useful starting point, but it can be misleading if spending at the cohort level shifts to reflect generational change. Almost everybody has an opinion on whether the Millennials will ultimately conform to historical trends or not. The story is still developing, but Exhibit 11 tells us that the apple is not likely to fall too far from the proverbial tree. By using microdata from the American Time Use Survey, researchers have split the Millennial generation into an older and a younger cohort. When the older group was aged 18-24, they spent their time in a relatively leisurely manner. This may be consistent with many investors' impres-

sions of the cohort overall. However, as the same group aged into the 27-33 bracket, their patterns converged to match those of their Gen-X elders. In other words, older cohorts of Millennials are already acting more grown-up. Our view is that Millennials are likely to represent more of an evolutionary development than a revolutionary one when it comes to broad consumption patterns.



With incomes and age profiles on the move, we have identified categories that stand to benefit most -- and least -- from these two powerful forces. The majority of categories in Exhibit 12 fare well on one trend or the other, but not both. The auto sector for example, thrives on upward income mobility, but is disadvantaged when it comes to age mobility. Conversely, prescription drugs stand to benefit from age, but not income mobility. A few standouts benefit from both trends. These include admission fees, home ownership, footwear, home improvement, restaurants and apparel. Winning companies are likely to include: Sherwin-Williams, Live Nation, NVR, Rollins, and Nike. The themes of homeownership, entertainment and live experiences will recur throughout this report.

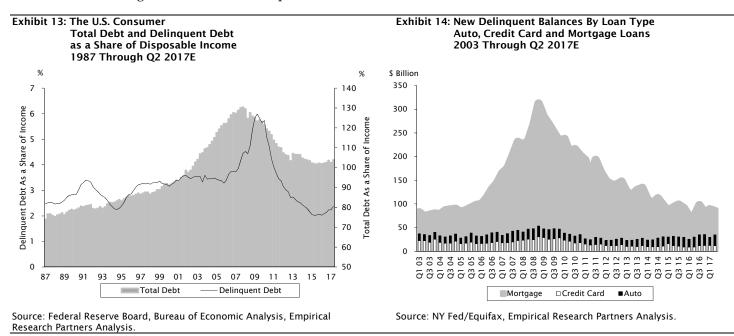


Source: Garikapati, V., Pendyala, R., Morris, E., Mokhtarian, P., and Noreen McDonald, 2016. "Activity Patterns, Time Use, and Travel of Millennials: A Generation in Transition," American Time Use Survey, Bureau of Labor Statistics, Empirical Research Partners Analysis.

¹ Relative increases of select categories as incomes shift up one quintile and as Millennials and Boo<u>mers age one cohort.</u>

The Debt Filter

Rising delinquencies on automotive and credit card loans have left investors wondering whether consumers will have enough firepower to fuel the natural consumption pattern we outlined above. Delinquency trends in auto are concerning, but we do not see this as a serious risk. In our view, the consumer's balance sheet is in good shape overall. Exhibit 13 indicates that consumer debt relative to income is just off of a 15-year low. Meanwhile, delinquent debt as a share of income is coming off a 30-year low. There is an awkward confluence in the auto space that will take time to correct, but the risk of spillover is low. Automotive debt represents only 10% of all consumer debt. Mortgage debt comprises 68% of outstanding debt and 75% of all delinquent debt, and trends in this "deep end" of the debt pool are continuing to improve (see Exhibit 14). This serves to reinforce our view that the consumer's balance sheet has the necessary firepower to enable a healthy spending outlook. It also reinforces our positive disposition towards housing-related names in the portfolio.



The Disruption Filter

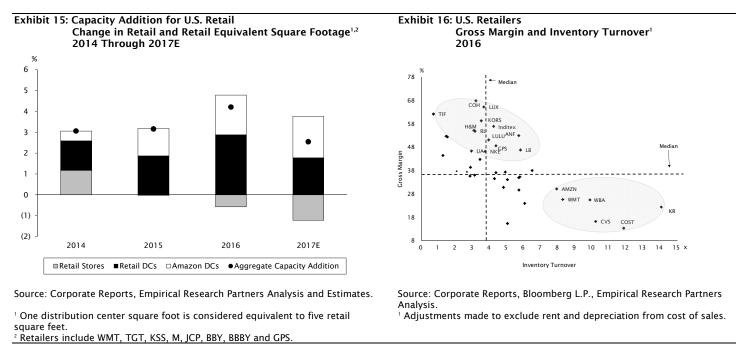
In the past, retail and media stocks might have been logical expression of our pro-cyclical view. But the risk of fishing in these ponds is elevated thanks to business model disruption, which is creeping as ominously as ever. When it comes to disruption, retailers are in the most precarious position. That is partly because they lack original content. For the most part, they resell other companies products, which makes them vulnerable to lower-cost, lower-margin competitors like Amazon. They are also at the mercy of upstream vendors that might seek to disintermediate retail in order to secure a direct relationship with the consumer.

Despite facing an acute and existential threat, retailers are making matters worse by adding more capacity to an already over-stored situation. By adding an abundance of distribution centers to enable e-commerce they are actually adding more capacity to the industry than they are closing at the store level (see Exhibit 15). The way we see it, retail capacity effectively grew by over +4% in 2016 even as retailers were aiming for a square footage decline of (0.6)%. Said another way, they cannot close stores fast enough.

Inventory turnover is the retail sector's Achilles Heel. Historically, retailers that sell low-turning goods have compensated for that weakness by charging higher prices in order to earn gross margins that yield an acceptable ROIC. The fact that Amazon sells a broad and deep array of goods while turning its overall inventory 9x per year means that the gig is up for low-turn retailers. Barnes & Noble historically charged a 40% gross margin to compensate for a 3x turnover rate. This allowed it to make a 120% GMROI. But by turning its book inventory at 10x, Amazon could conceptually operate with gross margins as low as 12% and still earn the same product-level economics.

In plotting this balance of margins and turns, we detect two areas worthy of investment. The first pool reflects companies that can survive in a low-margin world by turning inventory fast. These are shown in the shaded area at the bottom-right. The second pool represents companies that are vertically integrated and sell original content.

These are depicted in the upper left-hand area of the graph. So long as these brands are properly nourished, this strategy represents both the best defense and the best offense in an increasingly disrupted world.



Our exposure to retail is very deliberate. We invest in businesses that are fast or tall (vertical). We think Wal-Mart and CVS are fast enough to stay relevant and they are cheap enough to add alpha if and when investor anxiety ebbs. We think Tiffany and Nike are good examples of companies that control their brand proposition through innovation and/or vertical integration. Sherwin Williams is not technically a consumer stock but it is a good model for others to emulate because it is both fast and vertical. Inventory turns 6-times per year, allowing it operate with zero net inventory. At the same time, vertical integration supports high margins of over 50% at retail (see Exhibit 16).

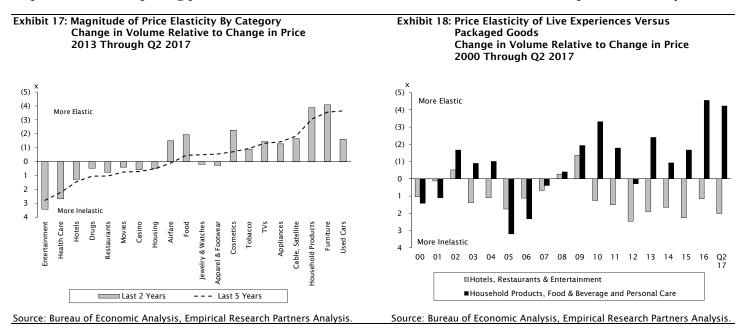
Amazon and the Act of Omission

Investors expend great energy and countless hours looking for stocks to own that are Amazon-proof. In some cases, exposure to Amazon might be a unifying factor dictating both the long and the short side of a portfolio. This posture helps to avoid sins of commission. But by failing to invest in Amazon itself some investors risk counteracting their best intentions. Amazon is likely to generate roughly \$60 billion in recurring revenue in 2017. This is comprised of third party fees, prime subscription income and AWS. Other profit streams are emerging. Advertising for example, is still nascent. Alexa can be commercialized and might one day serve as the backbone for call centers around the globe. Amazon Go can be monetized and supplant cashiers in thousands of stores, including its own. We also think odds are high that Amazon will reinforce its position as the world's largest franchisor by offering third party sellers rights to open a vast network of Amazon-branded stores in exchange for yet another recurring revenue fee. The company's expertise in payments and in freight can be a catalyst for new revenue streams in the financial and industrial realms. Traditional valuation techniques are always hard to apply here, but our view is that large and stable sources of recurring revenue will offer enough support.

Pricing Power Filter

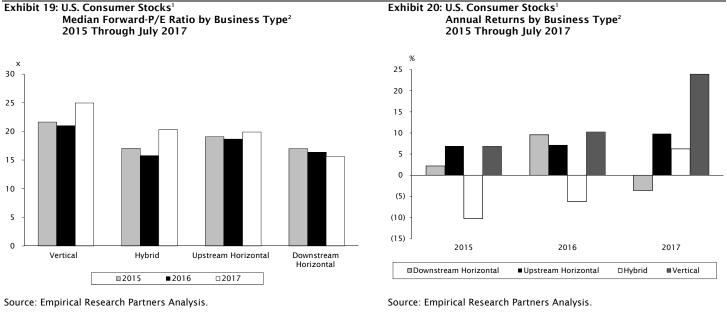
"The single most important decision in evaluating a business is pricing power." Warren Buffet offered this remark in the wake of the last recession. Measuring pricing power across consumer categories is a valuable litmus test that can validate existing investment ideas as well as generate new ones. Exhibit 17 shows how various categories of consumption fare on this important measure. The left hand side of the graph shows categories with pricing power as evidenced by inelastic demand. Entertainment, health care, hotels, casinos and housing appear to have accumulated pricing power. Positive readings below the x-axis indicate that volume has been moving in the same direction as price – up. The same cannot be said for categories at the right hand side of the graph where changes in volumes are more sensitive to changes in price. Surprisingly, this group is heavy with consumer staples, which have longbeen market darlings in part due to their perceived pricing power.

By adding a time series to Exhibit 18, we can see that hotels, restaurants and entertainment companies have been exhibiting increased pricing power over time. This does not mean they are worry-free, but it augurs well for McDonald's, Dunkin Brands, Las Vegas Sands and Wyndham Worldwide. Given how poorly traditional consumer staples show on our pricing power framework, we have decided to exclude them from our portfolio entirely.

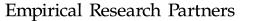


Let's Get Vertical!

A common theme across our work is the need for businesses to get vertical, which lets them control the entire brand experience from soup to nuts. Tiffany for example, stopped selling to wholesalers in the 1990's choosing instead to sell exclusively in its own stores. Sherwin Williams came to the same conclusion at around the same time. Its eponymous brand of paint is formulated internally and is sold exclusively through 4,000 company-owned outlets. Others, like Nike, are striving to get incrementally more vertical by selling direct to the consumer. Horizontal operators such as traditional retailers, media distributors and consumer products companies do not have the same ability to control their own destiny. Exhibits 19 and 20 show that the market is beginning to prefer vertical business models over horizontal ones. We expect that will continue.



¹ Constituents are drawn from the largest 1,500 stocks. ² Vertical operators include: WYNN, LVS, CCL, RCL, NCL, WYN, H, HLT, MGM, MAR, VAIL, SIX, MCD, CMF, YUM, YUMC, DPZ, DRI, PNRA, QSR, SBUX, TIF, GPS, COH, LULU, LB, LUX, TSLA, HOG, RACE, HLF.



Constituents are drawn from the largest 1,500 stocks.

SBUX, TIF, GPS, COH, LULU, LB, LUX, TSLA, HOG, RACE, HLF

² Vertical operators include: WYNN, LVS, CCL, RCL, NCL, WYN, H, HLT, MGM, MAR, VAIL, SIX, MCD, CMF, YUM, YUMC, DPZ, DRI, PNRA, QSR,

Conclusion: Homeownership, Entertainment, Vertical Brands and Live Experiences

The stocks included in our Consumer Lens express our work on demography, pricing power, debt and disruption. Consistent winners across these themes include homeownership, entertainment and live experiences. Not surprisingly, stocks in these domains carry a big weighting in our portfolio. Despite a strong consumer backdrop, our exposure to retailing is focused on owning the disruptor over the disrupted. We include Amazon in our portfolio at the expense of other more physical retailers. Those that do make the cut are either fast or vertical. The names in the portfolio are listed in Appendix 1 below.

Appendix 1: Consumer Lens Portfolio Growth Model Ranking Report¹ Sorted by Theme and Growth Model Rank As of Late-August 2017

			Quintile Ranks (1=Best; 5=Worst)										
			-	Super Factors Management Behavior				-					
			-					Currente		Memo:			Mauliat
		Portfolio		Capital	Earnings Quality	Market		Growth Model	Core Model	Forward- P/E	YTD		Market Capitalization
Symbol	Company	Weight		Deployment	and Trend	Reaction	Valuation	Rank	Rank	Ratio	Return		(\$ Billion)
	vnership	weight		Deployment	anu rrenu	Reaction	valuation	Kdlik	Kalik	Kallo	Return		(\$ DIIIOII)
NVR	NVR INC	12.0	%	2	1	1	2	1	1	19.1 x	61.9	%	\$10.1
ROL	ROLLINS INC	7.0	/0	3	2	1	5	2	2	49.9	31.8	70	9.6
SHW	SHERWIN-WILLIAMS CO	10.0		4	5	2	4	4	4	20.9	23.6		30.8
Vertical		10.0			5	-	•	•	•	20.5	25.0		50.0
TIF	TIFFANY & CO	6.0	%	1	2	2	3	1	1	20.2 x	14.6	%	\$10.9
NKE	NIKE INC	5.0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	3	3	4	4	3	4	19.6	6.2	,,,	88.1
	Experience	5.0		2	5	•	•	5	•	1510	0.2		0011
MCD	MCDONALD'S CORP	6.0	%	2	1	1	5	1	2	23.9 x	31.9	%	\$128.3
LVS	LAS VEGAS SANDS CORP	7.0		2	1	2	3	1	1	21.9	15.6		47.7
WYN	WYNDHAM WORLDWIDE CORP	5.0		1	2	1	1	1	1	15.1	28.2		9.9
DNKN	DUNKIN' BRANDS GROUP INC	6.0		1	1	2	4	1	1	21.1	1.3		4.8
Entertai	nment												
ATVI	ACTIVISION BLIZZARD INC	4.0	%	2	3	1	4	1	1	28.2 x	72.1	%	\$46.6
LYV	LIVE NATION ENTERTAINMENT	5.0		2	2	1	3	1	1	142.4	46.5		8.0
DIS	DISNEY (WALT) CO	4.0		3	4	4	3	4	3	15.9	(2.2)		161.9
NTDOY	NINTENDO CO LTD	6.0		1	5	2	5	na	4	25.2	58.7		46.1
High-Tu	rnover Retail												
CVS	CVS HEALTH CORP	5.0	%	1	4	4	1	1	1	13.0 x	0.3	%	\$78.9
WMT	WAL-MART STORES INC	5.0		1	5	2	1	2	1	17.1	17.7		241.0
AMZN	AMAZON.COM INC	7.0		5	5	2	5	5	5	193.5	27.1		457.9
	Empirical Research Partners An		on	Model.									