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## US Equity Strategy | North America

# Following Our Recession Playbook: Embracing Cyclicity

Following our Recession Playbook by adding more cyclicity. Accelerating GDP & inflation with rising yields, PMIs & consumer confidence all favor cyclicals. A new primary trend has begun from generational lows. Industrials & Materials to OW, Staples & Utes to UW, Discretionary to EW.

**We're moving to the next stage of our [Recession Playbook](#) — more cyclicity.**

Markets have generally been playing out according to the playbook, with early cycle Consumer Discretionary stocks leading off the trough. We think it is time to move on to the next chapter of the playbook, which means rotating even more cyclically. Near term, cyclicals may be a bit extended, but we think the primary trend is higher and are looking to add exposure, particularly on dips. Even with recent moves, the cumulative relative performance of cyclicals is still near all-time lows, but we think that is changing.

**We expect accelerating GDP growth, inflation & income growth, along with bottoming rates, PMIs, and consumer sentiment to support cyclicals.** We

examined cyclical performance over the last 35 years to see what conditions have historically lined up with *sustained* outperformance by testing for statistically significant differences in macro economic variables between periods of cyclical out- vs. underperformance. Cyclicals outperform when inflation, personal income, & GDP growth are accelerating and while PMIs, consumer sentiment, & rates are rising. A V-shaped economic recovery is looking more likely, implying that the necessary conditions for cyclical outperformance are falling into place.

**Industrials & Materials to OW, Staples & Utes to UW.** Our screens for cheap stocks with high sensitivity to changes in PMIs and inflation favored Financials, Autos, Energy, Capital Goods, Transports, Materials & Consumer Durables/Apparel (see [Exhibit 37- Exhibit 40](#)). Defensive sectors screen poorly, suggesting the unwind of the defensives > cyclicals trade has further room to run. To date, our cyclical exposure has been in Financials, small caps, and our Fresh Money Buy List, but we're moving to overweight Industrials & Materials (from equal-weight) and underweight Staples (from overweight) and Utilities (from equal-weight) and to equal-weight Discretionary (from underweight).

**More cautious on "new economy cyclicals."** The Price/ Book of new economy cyclicals (Tech HW & Semis) is now at levels last seen in the early stages of the tech bubble while multiples for the old economy cyclicals are near generational lows. Notwithstanding the structural trends supporting the new economy cyclicals, we think valuations and positioning, weaken the investment case, or at least cap the relative upside the tech cyclicals are likely to achieve with growth and inflation rising.

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## Executive Summary

**We're following our [Recession Playbook](#), which means continuing to rotate cyclically.**

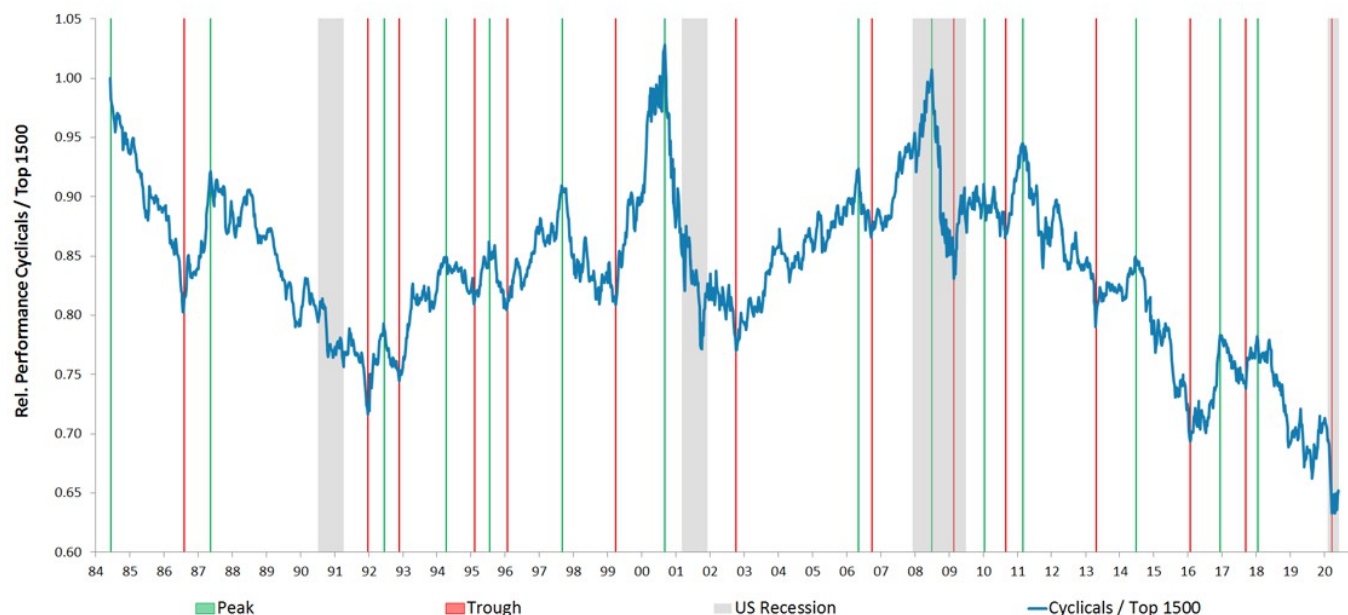
We noted in our playbook that a recession is not only the end of one cycle, but the beginning of another, meaning leadership changes as markets bottom and rebound. To date, our preferred methods of cyclicality have been to stick with the early cycle plays like Financials, while upgrading small caps and adding selective cyclical to our Fresh Money Buy List (CFG, PVH, LIN, SPGI). Such changes have been accretive to the performance of our Fresh Money Buy List, where the average stock's performance from the current list is 20.6% ahead of the S&P 500 (9.5% for the all time list). While cyclicals may be a bit extended tactically, we think the state of the world going forward will be one that normally lines up with cyclical outperformance. With cyclical relative performance at generational lows, we're leaning into the primary trend, upgrading Industrials and Materials to overweight. We downgrade Consumer Staples to underweight.

**We think an economic recovery and large-scale stimulus are likely to bring accelerating GDP growth and inflation — a recipe for cyclical outperformance.**

After 10+ years of relative underperformance, a recent bout of outperformance from the cohort has more investors questioning if the trend can be sustained or if the late cycle playbook of high quality, growth, and defensives will reassert leadership. The answer matters for most active managers given heavy investor positioning away from cyclicals and general skepticism due to multiple false starts of cyclical outperformance in the post-crisis period. Our review of history says that acceleration in key variables — inflation, consumer confidence, PMIs, and GDP growth — will be needed to sustain upside, and we think that the recovery from this recession and the associated policy response may bring that state of the world into being.

**A historic period of cyclical underperformance**

**Cyclicals have underperformed the market for most of the last decade.** Cyclical performance ebbs and flows with economic activity, but underperformance has been persistent post crisis. In that time, cyclicals have seen lower lows and lower highs ([Exhibit 1](#)). Over the last 20 years, successive periods of cyclical outperformance have generally been trending lower but the downward trend has been more a function of duration rather than magnitude — periods of underperformance last longer, but average monthly returns during those periods aren't any more extreme than in the past.

**Exhibit 1:** Cyclical Relative Performance Near Multi-Generational Lows

Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

### What Is a Cyclical?

**We determine "cyclicality" using a simple approach that assesses fundamental and market volatility.** *Cyclical* is a word that most investors intuitively understand, but in practice, the exact definition might actually be a little amorphous. For our analysis, we assessed cyclicality of fundamentals and market returns. We opted for a simple screen to label GICS level 3 industries as "cyclical," focusing on 1) the volatility of sales growth (25-year standard deviation of sales growth more than 25% above the S&P 1500's) and 2) the market beta of each industry > 1.05. For a few industries that were on the edge of inclusion, we used some discretion to account for limitations of GICS classification that may have underestimated cyclicality. For a full discussion of our cyclical definition, see [Appendix 1: Defining Our "Cyclical" Universe](#).

### What will it take to change the cyclical underperformance trend?

**Our work shows that *sustained accelerations* in (1) inflation, (2) personal income growth, and (3) GDP growth along with continued moves higher in (4) PMIs, (5) consumer sentiment, and (6) rates will be needed to provide fundamental support and change the market's mindset on cyclical stocks.** To see what could change the trend off of generational lows, we examined the last 35 years to see what conditions have historically lined up with sustained cyclical outperformance. Testing for statistically significant differences in macro economic variables and their rates of change between periods of cyclical outperformance and underperformance, we isolated a few key variables that tie to cyclical outperformance. Cyclicals tend to outperform when inflation, personal income growth, and GDP growth are all accelerating and while PMIs, consumer sentiment, and rates are rising sequentially. When these variables stop

accelerating/growing, cyclical outperformance turns as well. [Exhibit 2](#) shows the periods of cyclical underperformance and outperformance, [Exhibit 3](#) shows which variables have statistically significant ( $P < 0.05$ ) differences in means across those outperformance periods vs underperformance periods and [Exhibit 4](#) shows these results graphically. *We think this list should be familiar to cyclical investors, but the important point is that periods of cyclical outperformance are not about any specific level so much as a continued positive rates of change in these variables.* Calling inflections helps, but continued positive momentum across these indicators has typically been necessary to sustain outperformance.

Exhibit 2: Prior Periods of Cyclical Outperforming the Market

Cyclicals Relative Outperformance Periods						
Trough	Peak	Months	Cyclicals Return	Top 1500 Return	Cyclicals - Top 1500 Rtn	Annlzd Rtn Spread
08/01/86	05/15/87	9.6	40.4%	22.3%	18.1%	22.7%
12/20/91	06/12/92	5.8	18.8%	7.3%	11.5%	23.6%
11/20/92	04/08/94	16.8	24.7%	9.3%	15.3%	11.0%
02/03/95	07/14/95	5.4	26.1%	18.4%	7.7%	17.3%
01/19/96	08/29/97	19.6	70.2%	50.6%	19.7%	12.0%
03/26/99	09/01/00	17.5	60.9%	26.6%	34.3%	23.5%
10/04/02	05/05/06	43.6	120.2%	83.6%	36.6%	10.1%
09/22/06	06/27/08	21.5	19.6%	2.9%	16.8%	9.4%
02/20/09	01/08/10	10.7	68.4%	53.6%	14.8%	16.5%
08/27/10	02/25/11	6.1	38.1%	26.5%	11.7%	23.1%
04/19/13	06/20/14	14.2	40.0%	30.2%	9.7%	8.2%
01/22/16	12/09/16	10.7	37.8%	22.0%	15.8%	17.7%
09/08/17	01/12/18	4.2	20.9%	14.0%	6.9%	19.8%
03/20/20	05/29/20	2.3	38.2%	34.1%	4.1%	21.0%
<b>Average</b>		<b>14.3</b>	<b>45.1%</b>	<b>28.2%</b>	<b>16.8%</b>	<b>16.5%</b>

Cyclicals Relative Underperformance Periods						
Peak	Trough	Months	Cyclicals Return	Top 1500 Return	Cyclicals - Top 1500 Rtn	Annlzd Rtn Spread
06/08/84	08/01/86	26.1	31.7%	64.0%	-32.4%	-14.9%
05/15/87	12/20/91	56.0	12.0%	44.0%	-32.0%	-6.9%
06/12/92	11/20/92	5.4	0.5%	7.0%	-6.5%	-14.6%
04/08/94	02/03/95	10.0	3.0%	8.0%	-5.1%	-6.1%
07/14/95	01/19/96	6.3	2.9%	10.3%	-7.4%	-14.1%
08/29/97	03/26/99	19.1	25.2%	40.8%	-15.6%	-9.8%
09/01/00	10/04/02	25.4	-61.0%	-48.0%	-13.0%	-6.2%
05/05/06	09/22/06	4.7	-7.2%	-1.0%	-6.2%	-16.0%
06/27/08	02/20/09	7.9	-50.0%	-39.4%	-10.6%	-16.1%
01/08/10	08/27/10	7.7	-9.7%	-5.0%	-4.7%	-7.4%
02/25/11	04/19/13	26.1	2.6%	22.6%	-20.1%	-9.2%
06/20/14	01/22/16	19.4	-19.6%	-1.5%	-18.1%	-11.2%
12/09/16	09/08/17	9.1	3.7%	10.1%	-6.4%	-8.5%
01/12/18	03/20/20	26.6	-31.6%	-15.4%	-16.2%	-7.3%
<b>Average</b>		<b>17.9</b>	<b>-7.0%</b>	<b>6.9%</b>	<b>-13.9%</b>	<b>-10.6%</b>

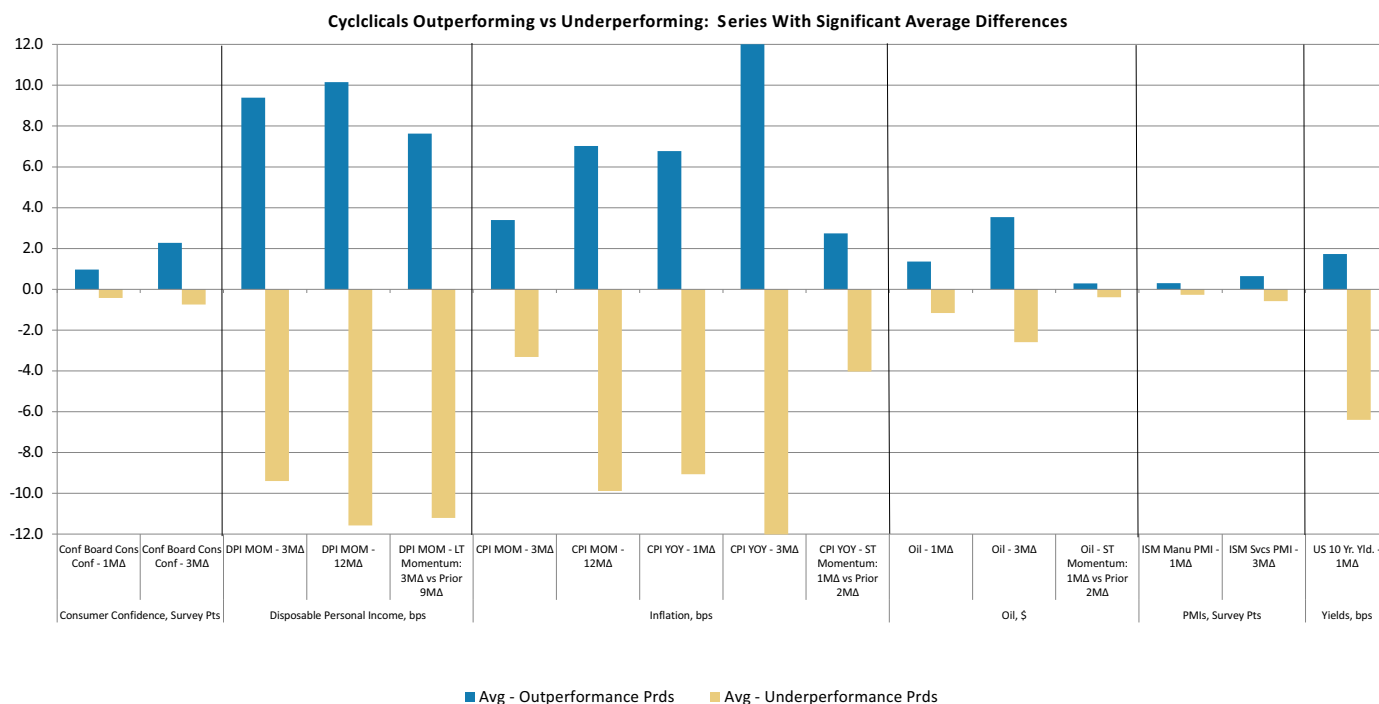
Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

Exhibit 3: Key Variables for Cyclical Outperformance - The Numbers

Macro Category, Units	Item	Avg - Outperformance Prds	Avg - Underperformance Prds
Consumer Confidence, Survey Pts	Conf Board Cons Conf - 1MΔ	1.0	-0.4
	Conf Board Cons Conf - 3MΔ	2.3	-0.7
Disposable Personal Income, bps	DPI MOM - 3MΔ	9.4	-9.4
	DPI MOM - 12MΔ	10.2	-11.6
	DPI MOM - LT Momentum: 3MΔ vs Prior 9MΔ	7.6	-11.2
GDP, bps	US Real GDP, Q/Q SaaR - LT Momentum: 3MΔ vs Prior 9MΔ	29.5	-60.4
Inflation, bps	CPI MOM	24.4	14.9
	CPI MOM - 3MΔ	3.4	-3.3
	CPI MOM - 12MΔ	7.0	-9.9
	CPI YOY - 1MΔ	6.8	-9.1
	CPI YOY - 3MΔ	17.7	-19.1
	CPI YOY - ST Momentum: 1MΔ vs Prior 2MΔ	2.7	-4.0
Oil, \$	Oil - 1MΔ	1.4	-1.2
	Oil - 3MΔ	3.5	-2.6
	Oil - ST Momentum: 1MΔ vs Prior 2MΔ	0.3	-0.4
PMIs, Survey Pts	ISM Manu PMI - 1MΔ	0.3	-0.3
	ISM Svcs PMI - 3MΔ	0.6	-0.6
Yields, bps	US 10 Yr. Yld. - 1MΔ	1.7	-6.4

Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

Exhibit 4: Key Variables for Cyclical Underperformance



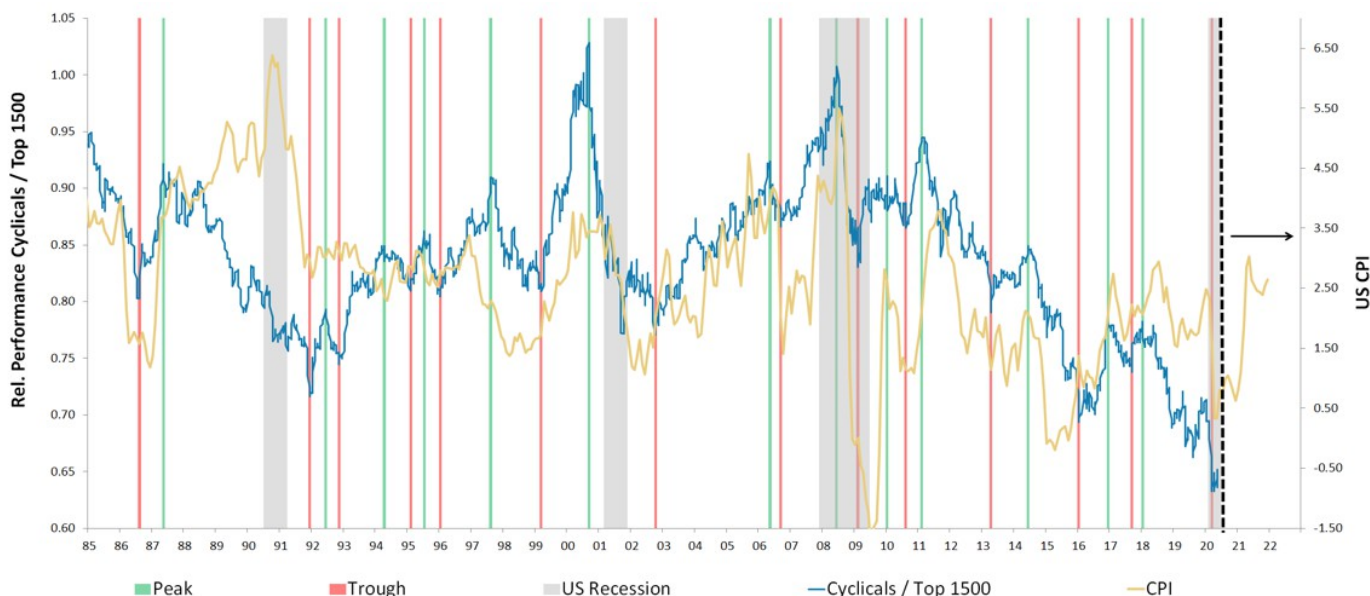
Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Key variables driving cyclical outperformance should accelerate over the coming year**

**Exiting the deepest and fastest US recession in modern history means many of these key variables are in the process of inflecting higher — a good sign for cyclicals.** Our strategy and economics teams have both been positive on the path to recovery from the current recession. The depths of this recession create strong base effects for growth while massive monetary and fiscal stimulus provide an effective bridge to support reacceleration. On Morgan Stanley's forecasts, we expect a continued rise in GDP through 1H21, which should bring higher inflation, PMIs back to the high 50s/low 60s, and consumer confidence rising. We suspect bond yields will follow higher as well.

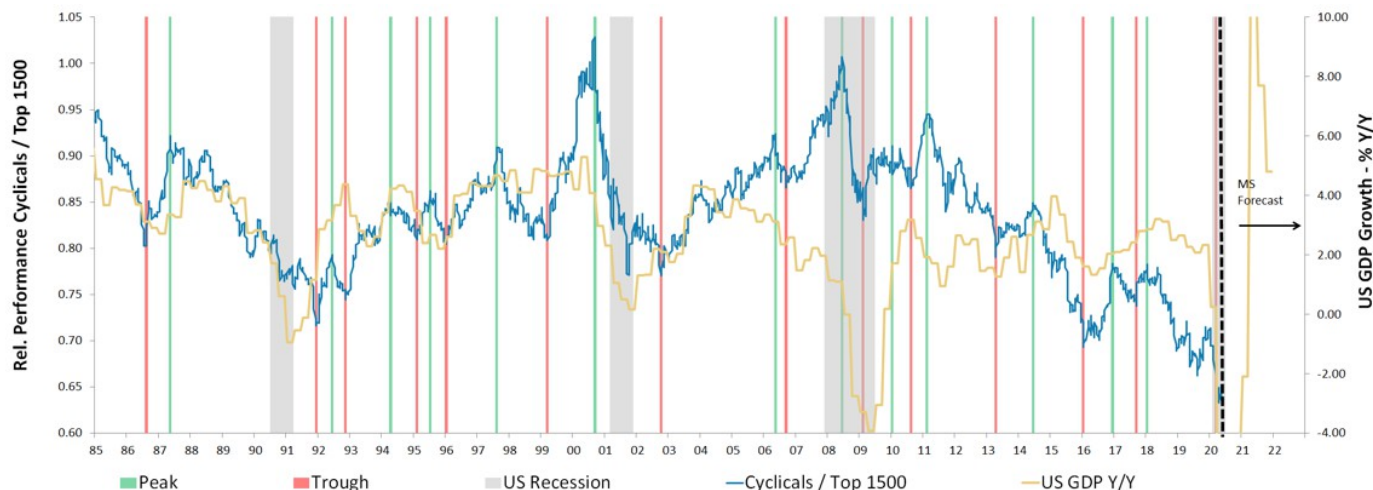
**If we take the historical cyclical playbook, our expected V-shaped recovery implies a sustained period of cyclical outperformance ahead.** We expect inflation (Exhibit 5) and US GDP growth (Exhibit 6) to rebound strongly through 2021. While we do not forecast PMIs, our global GDP growth forecast strongly implies US manufacturing PMIs are headed near 60 over the next year (Exhibit 7), which is a good sign for cyclicals (Exhibit 9). We expect that this state of the world means that consumer confidence will move higher along with bond yields. Indeed, both are already showing signs of moving off the bottom — our AlphaWise consumer surveys have shown continued consumer optimism and major consumer surveys have bottomed (Exhibit 9). Bond yields are also well off the low and look to have broken out last week (Exhibit 10). In other words, we're expecting the major coincident indicators of cyclical outperformance to move materially higher off of current levels, and the trend is just getting started.

**Exhibit 5: Rising Inflation Favors Cyclicals**



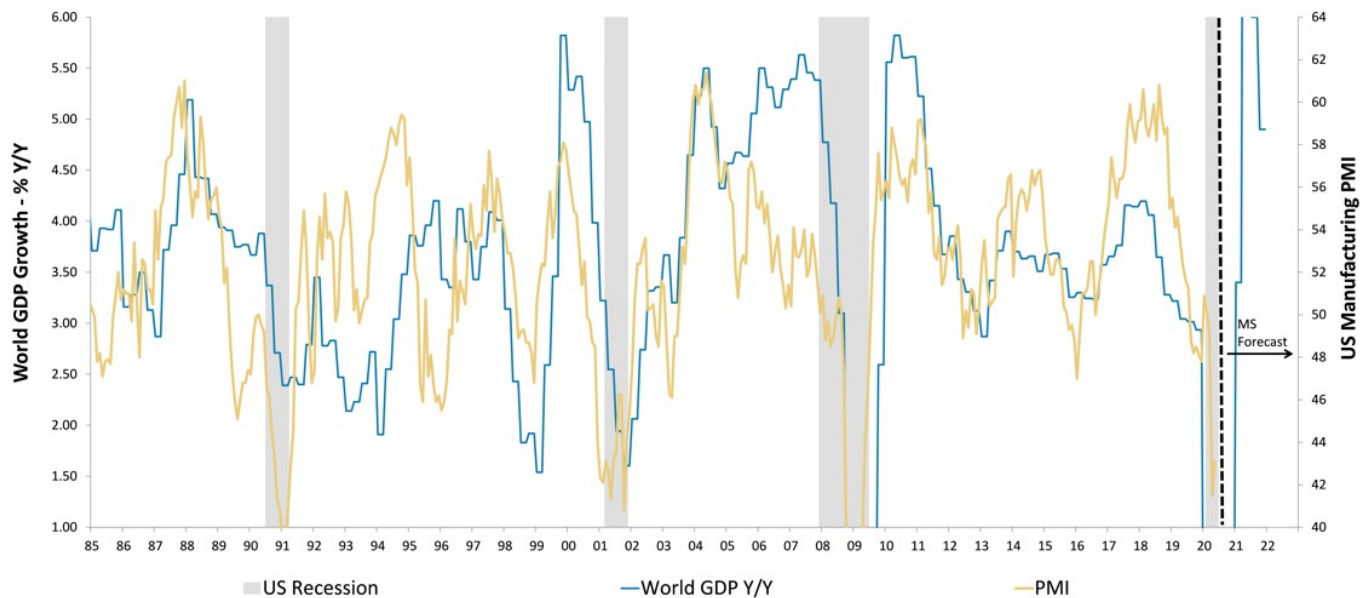
Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Exhibit 6: Cyclical Outperform With Accelerating GDP Growth**



Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

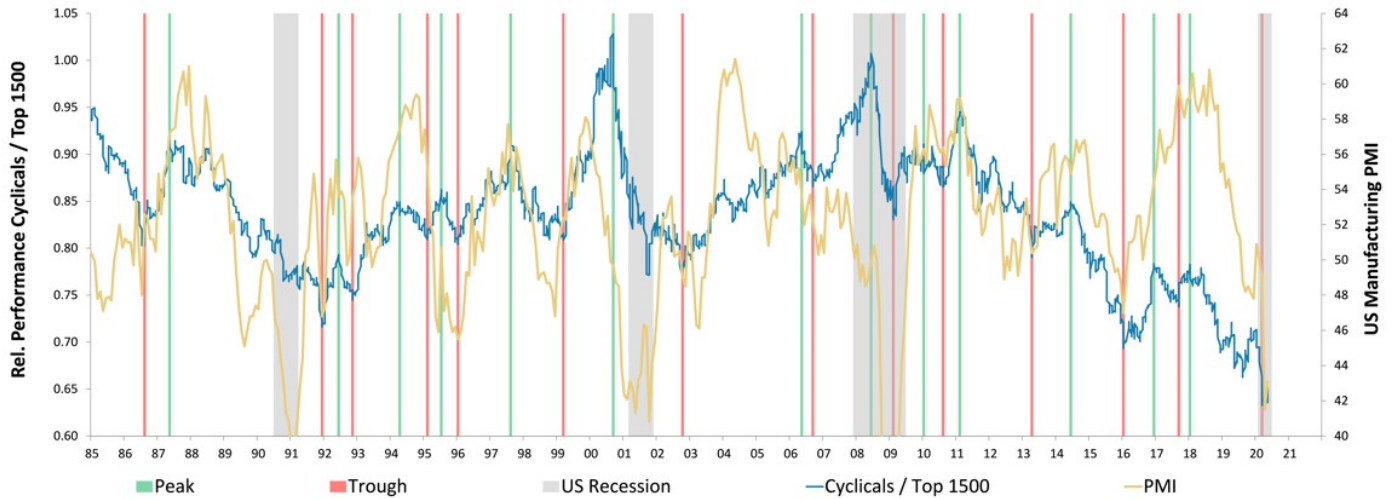
**Exhibit 7: A V-shaped Recovery Means PMIs Are Heading Higher**



Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.



**Exhibit 8: A Continued Rise In PMIs Will Benefit Cyclicals**



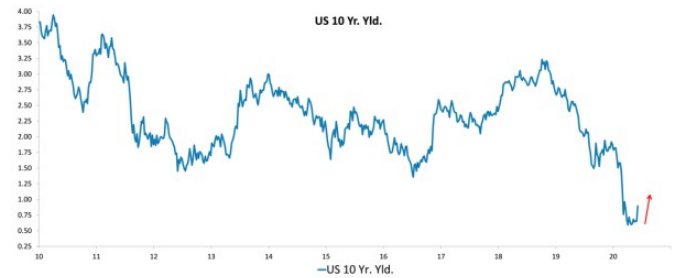
Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Exhibit 9: Consumer Confidence Is Moving Off the Lows ...**



Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Exhibit 10: ... And Bond Yields Are Moving Again**

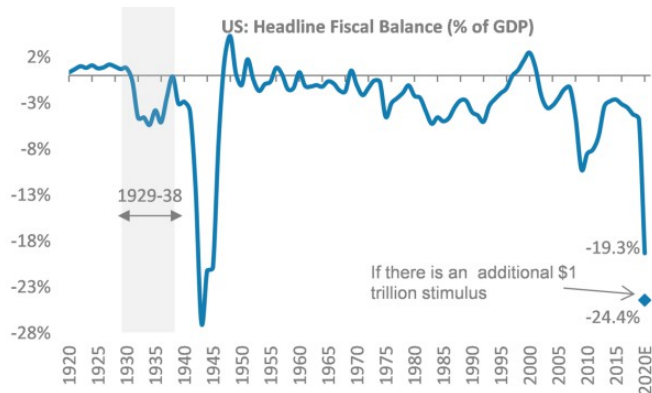


Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Policy support and a reopening of the economy are a powerful combination for growth.**

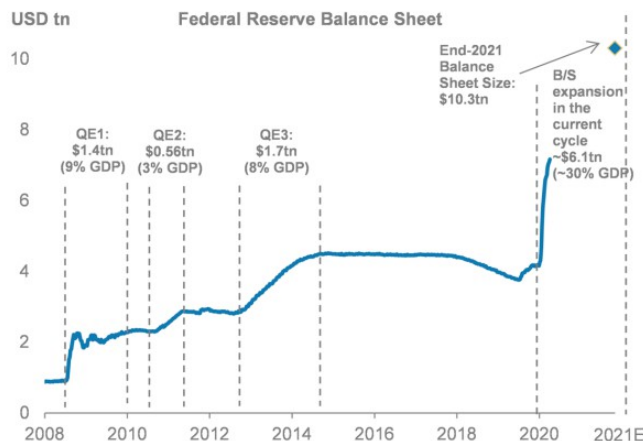
Underlying our bullish assumptions on growth and inflation are consistent upside surprises to data and a positive view on the timing, scale, and coordination of fiscal (Exhibit 11) and monetary (Exhibit 12) stimulus around the world. As a department, we have made these arguments in a number of publications — see [Two Upside Surprises Confirm the V](#), [Global High Frequency Activity Tracker \(#10\)](#), [The Return of Inflation](#), [Follow the Money - QE & Fiscal Stimulus Growing Money Supply](#), and [Bear Markets End with the Cycle; Time to Employ a Recession Playbook](#) — so here we'll only note that as the economy reopens faster than consensus expects, the combination of fiscal stimulus and QE have created a powerful acceleration of growth in the money supply and financial support to the US consumer which should support a robust recovery and lay the groundwork for a reflationary regime.

**Exhibit 11: US Headline Fiscal Balance**



Source: BEA, Federal Reserve, Historical Statistics of the United States, Morgan Stanley Research

**Exhibit 12: Fed's Balance Sheet to Expand by More Than QE1, 2, and 3 combined in this cycle**



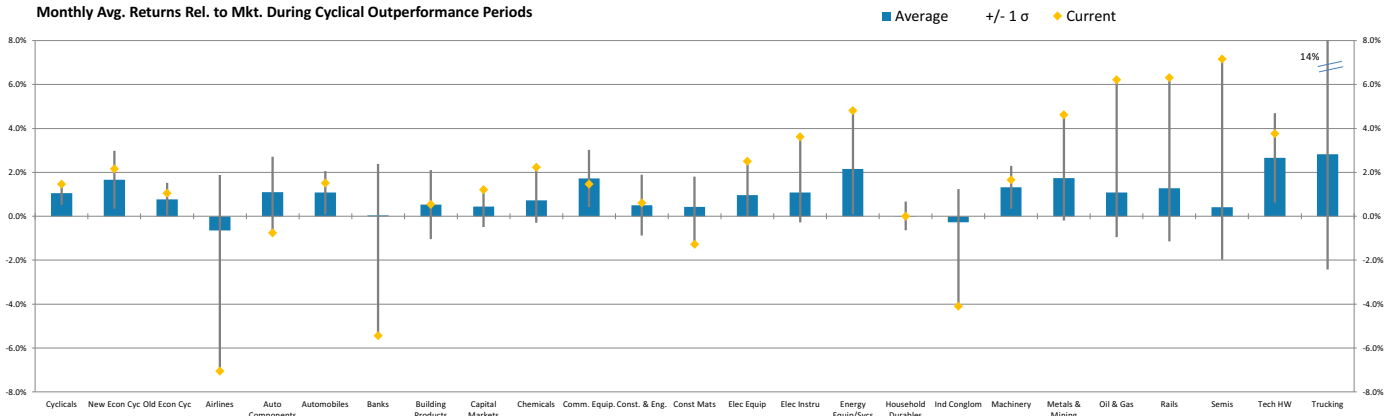
Source: Federal Reserve Board, Federal Reserve Bank of New York, Morgan Stanley Research

**The market is firmly in "show me" mode.** The recent cyclical led bounce off the trough has been strong for a relatively short period, but the relative performance of the group has barely moved from a longer term perspective. Given the last 10 years, there is not much willingness to underwrite this sustained inflection in cyclicals. Across most of the key variables we isolate the response function from cyclical stocks has been more muted than in past cycles, leading to the downtrend we noted above. For example, 2016 saw a powerful post-crisis surge in cyclical performance as the "synchronous global recovery" narrative took hold, but even this rebound left cyclicals well below prior relative highs as the growth rebound was fairly short lived and of lower amplitude than the prior recovery. US fiscal stimulus in 2018 ultimately failed to sustain the momentum key variables and cyclicals. Overcoming the bias toward assuming a low growth world we think will require a period of sustained upside surprises and a changed outlook on trend growth going forward.

### What to own within cyclicals

**Haven't cyclicals already outperformed?** Yes and no. Cyclicals broadly have outperformed from the market trough and have already outperformed the market by > 2x as much as they did in their entire last major relative upcycle. Given the speed of the rally for cyclicals and broader risk, most of the industries in this universe are tracking at the high end of their historical range for monthly average outperformance during relative cyclical upcycles (Exhibit 13). This time around, Trucking, Semis, Rails, and Energy have been the clear relative winners, which is not surprising given higher beta, even within the cyclicals universe. However, one look at Exhibit 1 shows that in a longer term context the outperformance has barely gotten off the ground, especially for non-Tech cyclicals (a topic we address below). **From a tactical perspective, the convexity off the bottom may be priced, but the longer term trend toward GDP growth, inflecting PMIs, and higher inflation all mean that investors should use pullbacks to add cyclicity.**

**Exhibit 13:** Cyclical Tracking at High End of Typical Avg Monthly Outperformance Rapid Move Off the Bottom; We're Structural Buyers on Dips

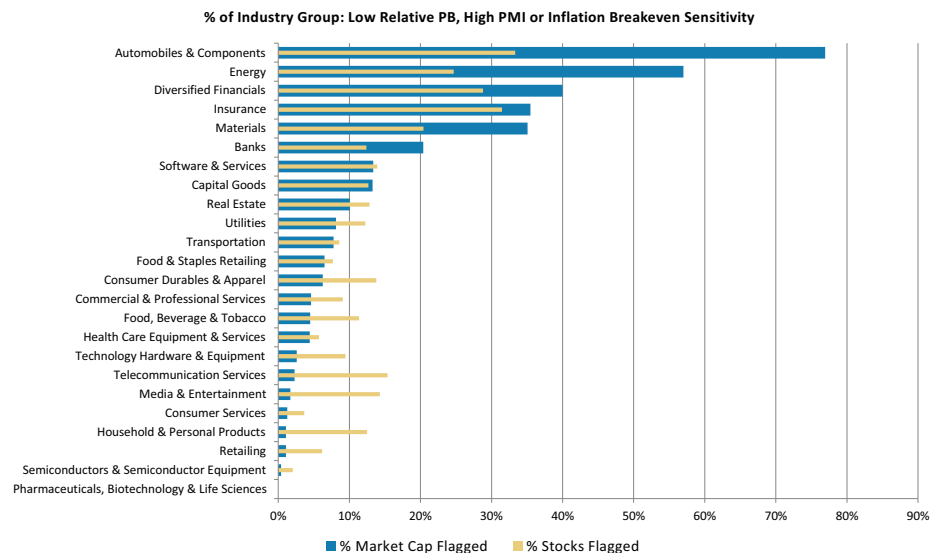


Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Screening for inflation and PMI levered plays with room to rerate ...** Before we see sales revisions or GDP and CPI prints, we'd expect to see PMIs and inflation breakevens move higher. Focusing on our key variables that support cyclical outperformance, we took a bottom up approach, looking for stocks with (1) high correlations to PMI changes, (2) high correlations to inflation breakevens, and (3) low relative valuations. Specifically we screened US equities for stocks in the top quartile of correlation to either PMI or breakeven changes, with Price to Book relative to the market in the lowest quartile of their own history.

**... favored Financials, Autos, Energy, Capital Goods, Transports, Materials & Consumer Durables/Apparel.** The results of our screens favored the sectors noted above, most of which fit squarely into our cyclical universe. [Exhibit 14](#) shows the percentage of stocks that fit our screens, both as a % of the market cap and as a % of the stocks in the groups. [Exhibit 15](#) shows the stocks fitting our screen that are also rated Overweight by Morgan Stanley analysts, and [Exhibit 38 - Exhibit 41](#) later in this report show the full screen results. Notably, defensive sectors tend to screen poorly here.

**Exhibit 14:** Industry Groups By % Flagging as PMI or Breakeven Levered with Valuation Upside



Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

Exhibit 15: MS OW-Rated Value Plays Levered to Inflecting PMIs and Inflation Expectations

Ticker	Company	Sector	Ind Group	Market Cap	Curr Rel PB	Avg Rel PB	Breakevens Correlation	PMI Correlation
TDS	Telephone and Data Systems, Inc.	Communication Services	Telecommunication Services	\$2,399	0.2	0.4	28.6%	18.5%
APTV	Aptiv PLC	Consumer Discretionary	Automobiles & Components	\$21,331	1.5	2.4	40.5%	-1.8%
F	Ford Motor Company	Consumer Discretionary	Automobiles & Components	\$26,129	0.3	1.8	26.9%	21.9%
GM	General Motors Company	Consumer Discretionary	Automobiles & Components	\$41,730	0.3	0.5	41.6%	9.6%
HOG	Harley-Davidson, Inc.	Consumer Discretionary	Automobiles & Components	\$3,826	0.7	1.7	29.6%	14.6%
PVH	PVH Corp.	Consumer Discretionary	Consumer Durables & Apparel	\$4,053	0.2	0.8	26.8%	13.7%
FIVE	Five Below, Inc.	Consumer Discretionary	Retailing	\$5,898	2.5	6.0	31.0%	9.2%
URBN	Urban Outfitters, Inc.	Consumer Discretionary	Retailing	\$2,001	0.4	1.8	15.8%	16.6%
CVX	Chevron Corporation	Energy	Energy	\$179,753	0.4	0.7	34.4%	2.2%
XEC	Cimarex Energy Co.	Energy	Energy	\$2,964	0.3	0.8	41.9%	6.1%
COP	ConocoPhillips	Energy	Energy	\$47,948	0.5	0.6	34.2%	5.9%
HP	Helmerich & Payne, Inc.	Energy	Energy	\$2,684	0.2	0.7	34.7%	1.5%
MPC	Marathon Petroleum Corporation	Energy	Energy	\$24,736	0.3	0.7	49.5%	-10.0%
NBL	Noble Energy, Inc.	Energy	Energy	\$4,864	0.2	0.8	35.5%	-11.9%
PSX	Phillips 66	Energy	Energy	\$36,301	0.5	0.7	47.0%	-14.0%
PXD	Pioneer Natural Resources Compan	Energy	Energy	\$17,072	0.5	0.9	35.1%	7.3%
SLB	Schlumberger NV	Energy	Energy	\$28,214	0.4	1.6	35.0%	7.8%
FTI	TechnipFMC Plc	Energy	Energy	\$3,853	0.2	0.3	62.8%	-27.2%
C	Citigroup Inc.	Financials	Banks	\$115,853	0.2	0.5	32.1%	14.1%
CFG	Citizens Financial Group, Inc.	Financials	Banks	\$12,142	0.2	0.3	56.2%	3.7%
SBNY	Signature Bank	Financials	Banks	\$6,090	0.4	0.9	33.8%	3.1%
AXP	American Express Company	Financials	Diversified Financials	\$85,762	1.2	1.6	28.2%	20.4%
DFS	Discover Financial Services	Financials	Diversified Financials	\$17,845	0.5	0.8	40.8%	21.1%
EVR	Evercore Inc Class A	Financials	Diversified Financials	\$2,562	0.9	1.4	32.7%	19.1%
AIG	American International Group, Inc.	Financials	Insurance	\$30,326	0.2	0.5	22.4%	18.6%
HIG	Hartford Financial Services Group, I	Financials	Insurance	\$15,856	0.3	0.4	27.9%	18.7%
LNC	Lincoln National Corporation	Financials	Insurance	\$8,405	0.2	0.4	34.0%	21.7%
MET	MetLife, Inc.	Financials	Insurance	\$35,705	0.2	0.4	39.1%	12.2%
CI	Cigna Corporation	Health Care	Health Care Equipment & Services	\$74,678	0.5	0.9	20.0%	20.3%
FTV	Fortive Corp.	Industrials	Capital Goods	\$22,724	1.0	1.7	50.1%	-7.1%
IR	Ingersoll Rand Inc.	Industrials	Capital Goods	\$12,781	0.8	1.1	50.0%	-4.1%
OSK	Oshkosh Corp	Industrials	Capital Goods	\$5,510	0.7	0.9	26.7%	21.6%
SWK	Stanley Black & Decker, Inc.	Industrials	Capital Goods	\$22,742	0.7	1.0	31.3%	17.2%
NLSN	Nielsen Holdings Plc	Industrials	Commercial & Professional Services	\$5,686	0.8	1.1	30.3%	10.3%
CRM	salesforce.com, inc.	Information Technology	Software & Services	\$154,467	1.4	5.0	30.0%	11.1%
SAIC	Science Applications International C	Information Technology	Software & Services	\$5,165	1.1	1.9	39.5%	8.1%
EMN	Eastman Chemical Company	Materials	Materials	\$9,962	0.5	1.0	39.3%	12.6%
FCX	Freeport-McMoRan, Inc.	Materials	Materials	\$14,810	0.5	3.0	35.9%	18.6%
LIN	Linde plc	Materials	Materials	\$111,633	0.8	1.9	30.7%	4.3%
LYB	LyondellBasell Industries NV	Materials	Materials	\$24,678	1.0	1.5	53.8%	1.8%

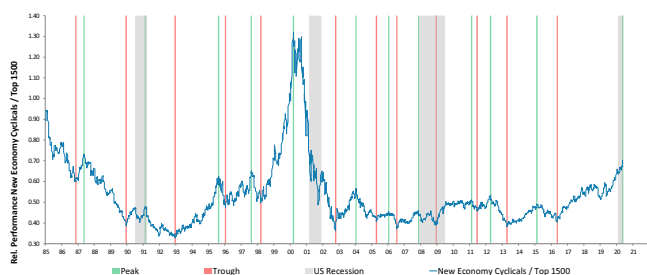
Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

New economy vs old economy cyclicals

**Our screens above tend to favor old economy cyclicals over new economy cyclicals ...**

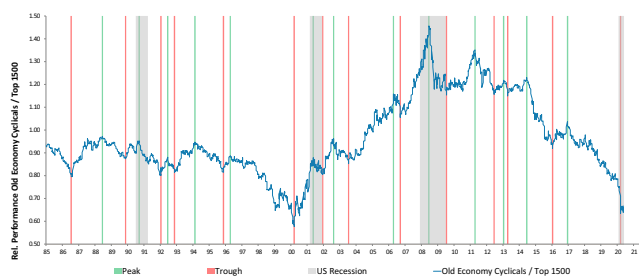
While new economy cyclicals (Tech HW and Semis) are levered to many of the same variables as the broader cyclical universe, relative valuations largely kept them out of our "what to buy" screens. Disaggregating new economy vs old economy within our cyclicals universe shows that the market has been more willing to underwrite growth tied to more structural themes (data centers, AI, consumer tech) than what most investors think of as traditional GDP-driven cyclicals (Exhibit 16 vs Exhibit 17). After their rally in 2016, old economy cyclicals have persistently trailed the market and have now given up all their relative gains vs the market from the 00s and BRIC era while new economy cyclicals have actually outperformed over that period.

**Exhibit 16: New Economy Cyclicals Have Boosted the Overall group**



Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

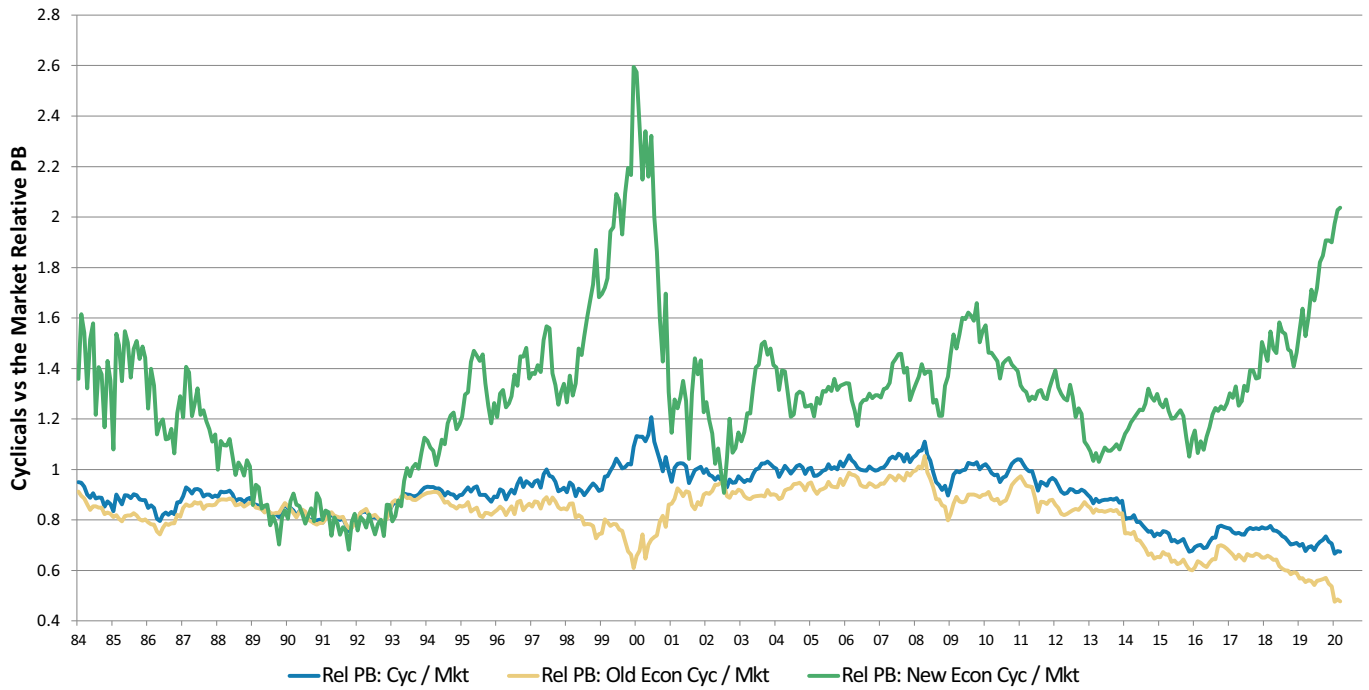
**Exhibit 17: ... While Old Economy Cyclicals Continue to Lag**



Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**... as valuations make new economy cyclicals less attractive.** Notwithstanding the structural trends supporting the new economy cyclicals, we think valuations weaken the investment case. The relative Price/ Book of new economy cyclicals is now at levels last seen in the early stages of the tech bubble while relative multiples for the old economy cyclicals are near generational lows (Exhibit 18). While relative multiples could continue to appreciate in a world of low rates, we think the upside is increasingly speculative while the potential downside in the multiple should economic growth disappoint creates outsized risk for investors. In contrast, the rest of the cyclical group trades at a robust discount to the market. "Cheap" valuations can stay cheap but the risk-reward profile of old economy cyclicals has a bigger upside skew with some potential for a catchup trade and lower relative downside.

**Exhibit 18:** Relative Valuations on New Economy Cyclical Are High vs History



Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

# When Do Cyclical Outperform and Which Macro Data Matters?

## Relative Returns of Cyclical Over Time

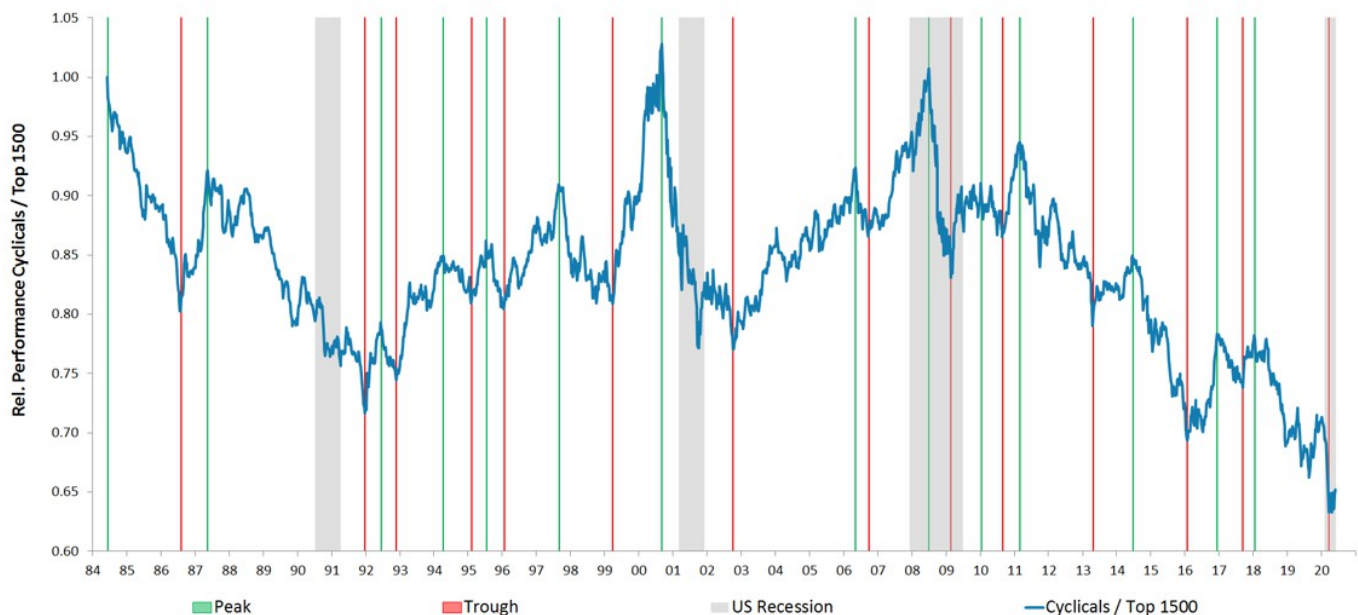
### Identifying Peaks and Troughs in Relative Performance

**To understand what drives the outperformance of cyclical, we broke down their return history into periods of outperformance and underperformance vs. the market.**

Exhibit 19 gives the visual history, showing the ratio of a cumulative total return index of cyclical over a total return index of the top 1500 stocks by market cap over the last 35 years. Vertical red bars indicate a local trough in the relative performance and vertical green bars a local peak. The gray shaded areas show US recessions.

**To systematically identify peaks and troughs in the relative series, we adopted a few rules:** (1) a peak/trough needed to be the highest/lowest point within 39 weeks (3 quarters) in either direction, (2) a peak could only be followed by a trough as the next data point and vice versa (e.g., no successive peaks or troughs), and (3) a peak/trough had to be at least 2% higher/lower than the prior trough/peak (i.e., the move higher or lower from the last trough or peak was at least 2%). Given the multi-quarter look back, the peak/trough will miss shorter lived oscillations in relative returns, but generally does an excellent job capturing major trends. Given that many economic data series are only available monthly or quarterly, the longer time periods for analysis also allowed us to better test for differences between periods of outperformance and underperformance in economic data series and their rates of change.

**Exhibit 19:** Historical Peaks and Troughs in Cyclical Relative to the Market



Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

Downtrend, Treading Water, Boom, Bust, Boom, Last Gasp, Downtrend

While there are quite a few periods of outperformance and underperformance, the bigger trends fall into 7 periods. We briefly touch on each below.

**Downtrend 1 — the 80s/early 90s.** Based on [Exhibit 19](#), the 80s and early 90s, were a difficult time to be a cyclical investor. The broader cyclicals index underperformed the market by ~30% from mid-84 to late 1991. Over this time period there was one major countertrend outperformance period (July 86 - May 87). While investors typically think that cyclicals can outperform following a recession, after the recession of the early 90s, the recovery in cyclicals relative to the market remained muted and they didn't really show signs of life until early 1992.

**Choppy Outperformance — the mid-90s.** From the end of 1991 to the summer of 1997, cyclicals outperformed the market by ~27%, though in fits and starts. In the summer of 1997, the Asian Financial Crisis ended the run of outperformance for cyclicals with decisive relative underperformance through March 1999.

**Boom 1 — the Tech Bubble.** Cyclicals found their bottom around the bailout of Long Term Capital in 1998 and retested this bottom in March of 1999. From this bottom through August of 2000, they outperformed the market by a stunning 34%, a 23.5% annualized return spread. Given the outperformance was in a more or less straight line, we would guess this pair's performance over the period was among the all time standouts for absolute and risk adjusted returns. The outperformance during the "tech bubble" may surprise some, but as we defined cyclicals — high volatility of revenue growth and higher beta to the market — there is a heavy weighting of tech firms like Semis, Tech HW, and Comm Equipment in the cyclicals universe. Most "old economy" sectors did underperform (in many cases modestly) during this period, but some, like Electrical Equipment, Industrial Conglomerates, & Energy Services also participated in the outperformance.

**The Bust — early 2000s.** Following the Tech bubble, the relative performance of the broader cyclical index gave back all its gains and then some, underperforming the market by around 13% over a period of a little more than 2 years. The composition of leadership within cyclicals was more or less the reverse of the Tech bubble - "old economy" outperformed while tech lagged.

**Boom 2 — the 00s.** Cyclicals outperformed nicely through much of the 00s with a short (4 month) relative dip in the middle of 2006. From late 2002 to December 2008, they outperformed the market by about 31% as global emerging markets and a credit driven US consumer drove GDP growth. commodity prices, PMIs and inflation expectations in synchrony.

**Last Gasp — post Crisis.** The boom for cyclicals ended with the great financial crisis and they quickly gave back a little more than half of their relative outperformance over the prior decade. From the start of 2009 through the start of 2011, cyclicals had another strong run of outperformance as the economy exited and began to recover from recession, but after this they entered a downtrend that has defined the last decade.

**Downtrend 2 — 2011-20?** And our narrative ends back where it began - in a downtrend that has lasted the better part of a decade. While there have been periods of cyclical outperformance since the start of 2011, the relative highs and lows have continually been lower and the duration of periods of outperformance longer. We go into more



detail about the states of the world that supported outperformance periods below, but generally we note that the last decade has looked similar to the 80s and early 90s in that GDP growth has generally stayed within a fairly narrow band and the market seems to see little risk of an upside breakout.

## Macro Data That Lines Up With Cyclical Outperformance

### Backtesting Period of Cyclical Outperformance

**Economic data tends to be stronger in periods of cyclical outperformance vs underperformance.** We don't think this is a controversial statement and appreciate the intuition that cyclicals should outperform in anticipation of (or coincident with) stronger economic data. We wanted to be more specific about this, so we set out to see which economic variables tend to more reliably define states of the world where cyclicals outperform or underperform. We identified the mean values of over 50 variables during periods of cyclical outperformance and during periods of underperformance and tested the differences of means between the periods for statistical significance. [Exhibit 20](#) lists (1) the dates of the periods we identified, (2) the length of each period, (3) the absolute returns of cyclicals and the market during those periods as well as the annualized return spread between cyclicals and the market. For variables showing clear differences in periods of out- vs underperformance ( $p \leq 0.05$ ), we show the average level of that variable in each period in [Exhibit 21](#).

Exhibit 20: Prior Periods of Cyclical Outperforming the Market

Cyclicals Relative Outperformance Periods						
Trough	Peak	Months	Cyclicals Return	Top 1500 Return	Cyclicals - Top 1500 Rtn	Annlzd Rtn Spread
08/01/86	05/15/87	9.6	40.4%	22.3%	18.1%	22.7%
12/20/91	06/12/92	5.8	18.8%	7.3%	11.5%	23.6%
11/20/92	04/08/94	16.8	24.7%	9.3%	15.3%	11.0%
02/03/95	07/14/95	5.4	26.1%	18.4%	7.7%	17.3%
01/19/96	08/29/97	19.6	70.2%	50.6%	19.7%	12.0%
03/26/99	09/01/00	17.5	60.9%	26.6%	34.3%	23.5%
10/04/02	05/05/06	43.6	120.2%	83.6%	36.6%	10.1%
09/22/06	06/27/08	21.5	19.6%	2.9%	16.8%	9.4%
02/20/09	01/08/10	10.7	68.4%	53.6%	14.8%	16.5%
08/27/10	02/25/11	6.1	38.1%	26.5%	11.7%	23.1%
04/19/13	06/20/14	14.2	40.0%	30.2%	9.7%	8.2%
01/22/16	12/09/16	10.7	37.8%	22.0%	15.8%	17.7%
09/08/17	01/12/18	4.2	20.9%	14.0%	6.9%	19.8%
03/20/20	05/29/20	2.3	38.2%	34.1%	4.1%	21.0%
<b>Average</b>		<b>14.3</b>	<b>45.1%</b>	<b>28.2%</b>	<b>16.8%</b>	<b>16.5%</b>

Cyclicals Relative Underperformance Periods						
Peak	Trough	Months	Cyclicals Return	Top 1500 Return	Cyclicals - Top 1500 Rtn	Annlzd Rtn Spread
06/08/84	08/01/86	26.1	31.7%	64.0%	-32.4%	-14.9%
05/15/87	12/20/91	56.0	12.0%	44.0%	-32.0%	-6.9%
06/12/92	11/20/92	5.4	0.5%	7.0%	-6.5%	-14.6%
04/08/94	02/03/95	10.0	3.0%	8.0%	-5.1%	-6.1%
07/14/95	01/19/96	6.3	2.9%	10.3%	-7.4%	-14.1%
08/29/97	03/26/99	19.1	25.2%	40.8%	-15.6%	-9.8%
09/01/00	10/04/02	25.4	-61.0%	-48.0%	-13.0%	-6.2%
05/05/06	09/22/06	4.7	-7.2%	-1.0%	-6.2%	-16.0%
06/27/08	02/20/09	7.9	-50.0%	-39.4%	-10.6%	-16.1%
01/08/10	08/27/10	7.7	-9.7%	-5.0%	-4.7%	-7.4%
02/25/11	04/19/13	26.1	2.6%	22.6%	-20.1%	-9.2%
06/20/14	01/22/16	19.4	-19.6%	-1.5%	-18.1%	-11.2%
12/09/16	09/08/17	9.1	3.7%	10.1%	-6.4%	-8.5%
01/12/18	03/20/20	26.6	-31.6%	-15.4%	-16.2%	-7.3%
<b>Average</b>		<b>17.9</b>	<b>-7.0%</b>	<b>6.9%</b>	<b>-13.9%</b>	<b>-10.6%</b>

Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Our work shows that sustained accelerations in (1) inflation, (2) personal income growth, and (3) GDP growth along with continued moves higher in (4) PMIs, (5) consumer sentiment, and (6) rates define periods of cyclical outperformance.** Cyclicals

tend to outperform when inflation, personal income growth, and GDP growth are all accelerating and while PMIs, consumer sentiment, and rates are rising sequentially. When these variables stop accelerating/growing, cyclical outperformance turns as well.

**The key point: rate of change and continued growth matter most.** We think this list of key variables should be familiar to cyclical investors, but the important point is that periods of cyclical outperformance are not about any specific level so much as a continued positive rates of change in these variables. Calling inflections helps, but continued positive momentum across these indicators has typically been necessary to sustain outperformance. Looking at the results in [Exhibit 21](#), in many cases the differences between outperformance and underperformance periods are small — a few survey points or 10s of basis points, but these are averages of high frequency data series taken over long periods and we would expect some noise. As these small average values accrue over a number of months, it generally means strong increases in growth, inflation, PMIs, consumer confidence, etc.

**Exhibit 21:** Key Variables for Cyclical Outperformance - The Numbers

Macro Category, Units	Item	Avg - Outperformance Prds	Avg - Underperformance Prds
Consumer Confidence, Survey Pts	Conf Board Cons Conf - 1MΔ	1.0	-0.4
	Conf Board Cons Conf - 3MΔ	2.3	-0.7
Disposable Personal Income, bps	DPI MOM - 3MΔ	9.4	-9.4
	DPI MOM - 12MΔ	10.2	-11.6
	DPI MOM - LT Momentum: 3MΔ vs Prior 9MΔ	7.6	-11.2
GDP, bps	US Real GDP, Q/Q SaaR - LT Momentum: 3MΔ vs Prior 9MΔ	29.5	-60.4
Inflation, bps	CPI MOM	24.4	14.9
	CPI MOM - 3MΔ	3.4	-3.3
	CPI MOM - 12MΔ	7.0	-9.9
	CPI YOY - 1MΔ	6.8	-9.1
	CPI YOY - 3MΔ	17.7	-19.1
	CPI YOY - ST Momentum: 1MΔ vs Prior 2MΔ	2.7	-4.0
Oil, \$	Oil - 1MΔ	1.4	-1.2
	Oil - 3MΔ	3.5	-2.6
	Oil - ST Momentum: 1MΔ vs Prior 2MΔ	0.3	-0.4
PMIs, Survey Pts	ISM Manu PMI - 1MΔ	0.3	-0.3
	ISM Svcs PMI - 3MΔ	0.6	-0.6
Yields, bps	US 10 Yr. Yld. - 1MΔ	1.7	-6.4

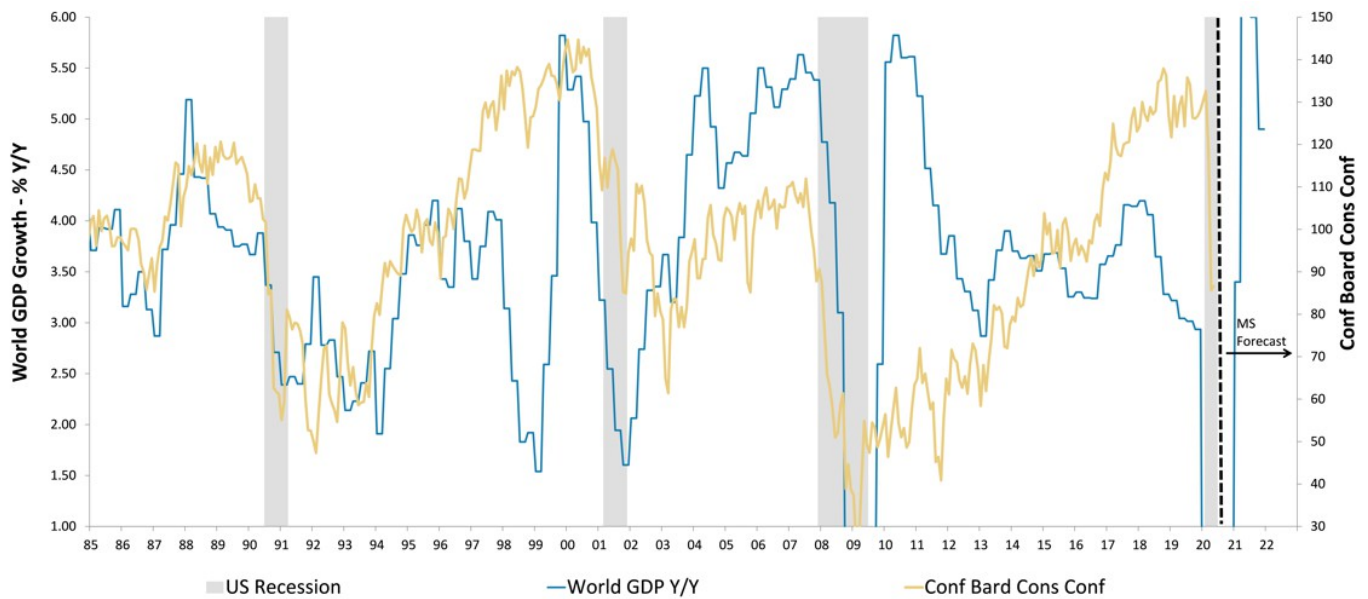
Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

### Consumer Confidence

**Consumer Confidence — What History Says.** During periods of cyclical outperformance, the Conference Board Consumer Confidence survey is, on average, increasing by about 1 point/month and in underperformance periods falling by about 40 bps/month on average. The instance of rising consumer confidence not giving rise to cyclical outperformance are limited to 4/14 underperformance periods we identify.

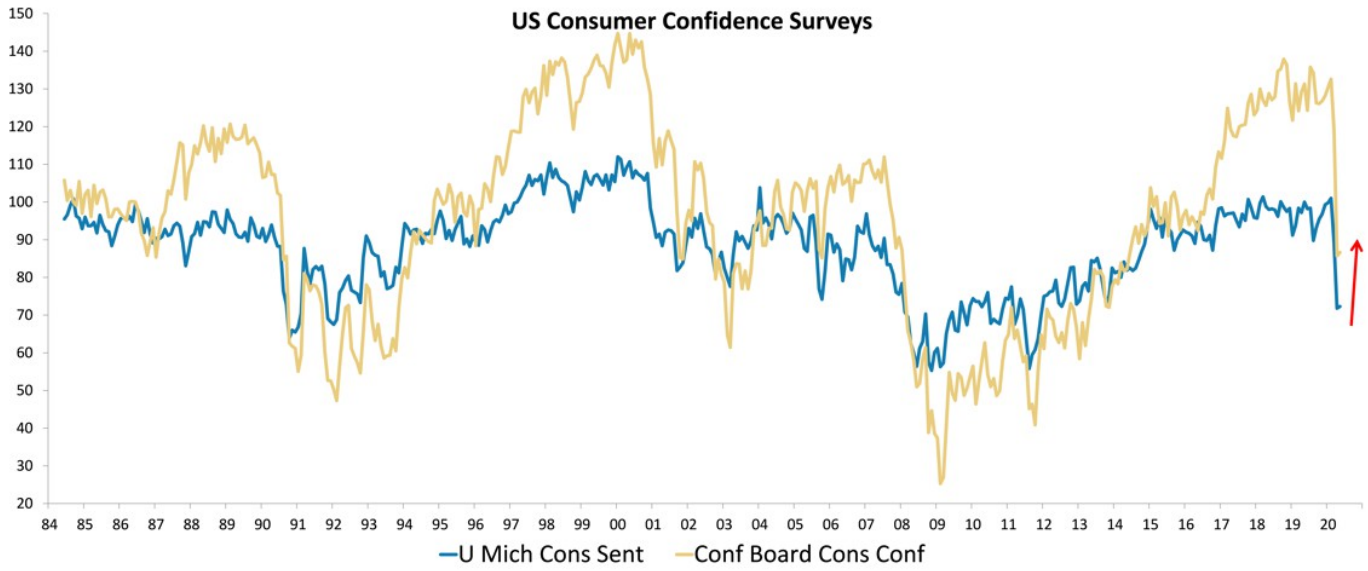
**Consumer Confidence — What We Expect.** We do not forecast Consumer Confidence outright, but note its strong relationship with US and global GDP growth. Rising GDP growth tends to line up with rising consumer confidence - [Exhibit 22](#). Given our expectation for a strong growth rebound into next year, we would expect consumer confidence to follow. The latest data points from major consumer surveys like the Conference Board's and the University of Michigan's showed a small sequential uptick in the most recent prints ([Exhibit 23](#)), and our own AlphaWise surveys of US consumers have been noting sequential upticks in attitudes about the economy and personal finances for several weeks now (see - [US Equity Strategy: AlphaWise US Consumer Pulse Survey Wave 10](#)). While past down trends in consumer confidence have lasted longer than what we are forecasting in this episode, we strongly believe that the stimulus aimed directly at the consumer in this recession combined with the observation that the US consumer came into this recession in decent shape will help confidence find a durable bottom faster than in prior cycles, especially the GFC.

**Exhibit 22:** Consumer Confidence Tends to Follow GDP Growth



Source: ClariFi, Bloomberg, FactSet, Morgan Stanley Research.

**Exhibit 23:** Consumer Confidence Is Moving Off the Lows



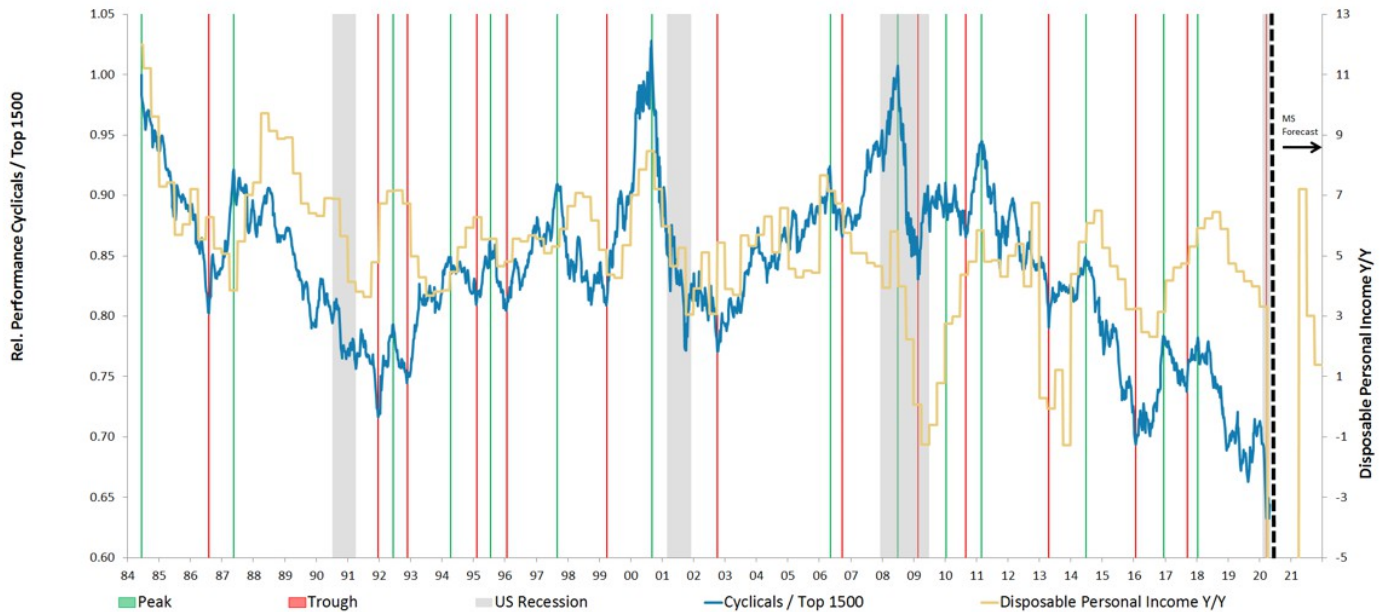
Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

Disposable Personal Income

**Disposable Personal Income — What History Says.** During periods of cyclical outperformance, the month on month change in disposable personal income is, on average, increasing on a 3 month and y/y basis by ~10 bps. So disposable income is not only growing, but the growth rate is gradually moving higher as well. During underperformance periods the growth rate is falling by about 10 bps on average. The instance of rising disposable personal income growth not giving rise to cyclical outperformance are limited to 2/14 underperformance periods we identify.

**Disposable Personal Income — What We Expect.** Our forecasts for disposable personal income are done on a quarterly basis, so the metric shown below is not an exact comparison with the m/m seasonally adjusted series tested, but nevertheless the sharp rise we expect in disposable personal income over the next year strongly implies cyclical outperformance through 2Q21 ([Exhibit 24](#)).

**Exhibit 24:** Rising Disposable Personal Income Growth Suggests Cyclical Outperformance Ahead



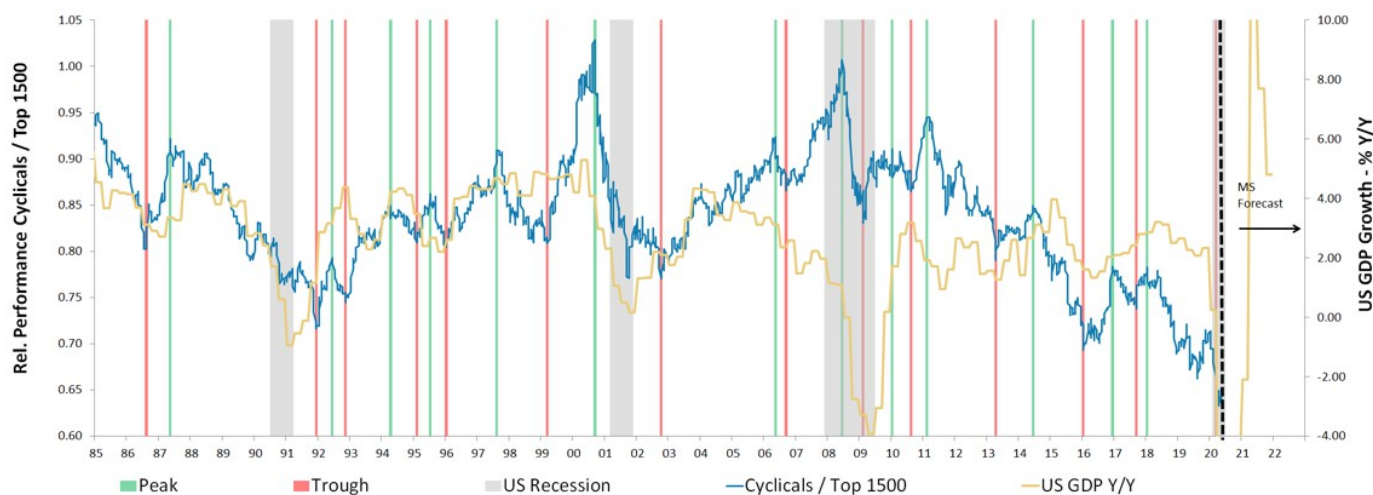
Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**GDP**

**GDP Growth — What History Says.** The only GDP series that shows up in our mean difference tests is a measure of GDP momentum, or accelerating growth. Given the GDP series are only available quarterly and the cyclical relative performance can be much more volatile, we suspect the frequency of data availability mask the importance of GDP growth, which ultimately feeds the other indicators we discuss here.

**GDP Growth — What We Expect.** As shown in charts throughout and in [Exhibit 25](#), we expect a material rebound in GDP growth going forward, with a peak in y/y growth in 2Q21.

**Exhibit 25:** Cyclical Outperform With Accelerating GDP Growth



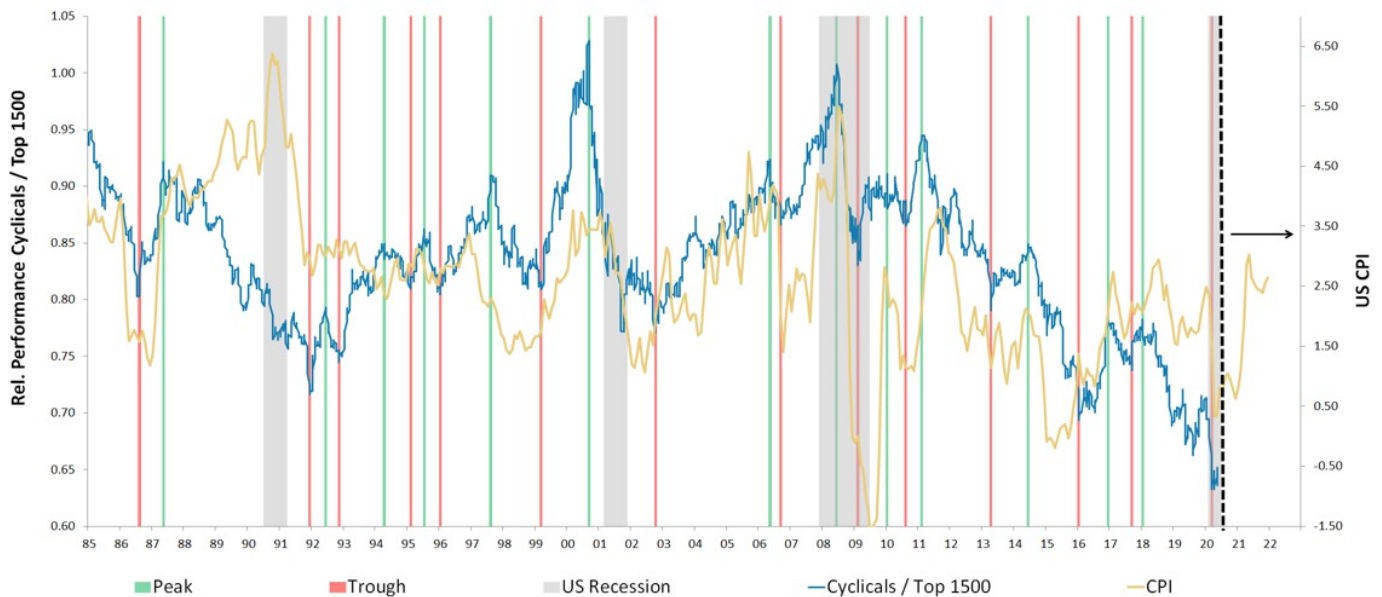
Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

Inflation

**Inflation — What History Says.** Inflation series showed up more commonly than any other macro series in our data set as coincident with cyclical outperformance. We think there are likely multiple feedback loops here. Accelerating GDP growth is a variable that influences both inflation and cyclical fundamentals and inflation also benefits cyclical industries, many of which carry debt loads, commodity exposure, and are more cash generative in a rising inflation environment than less cyclical and more growth oriented pockets of the market. There are a few too many relevant inflation series to summarize succinctly here, but generally, an accelerating rate of CPI inflation on a 1-month, 3-month, and 12-month basis are all consistent with cyclical outperformance and in only 3/14 underperformance periods have these inflation signals given false positives cyclical outperformance.

**Inflation — What We Expect.** We think the policy response function to this crisis changes the inflation dynamic. As we exit recession, we predict the natural rebound in inflationary forces (Exhibit 26), but beyond that forecast horizon, our Global Economics team recently did a deep dive on why inflation will make a comeback in this cycle. Aggressive, coordinated expansion of monetary and fiscal policy will be reflationary. We see a high risk that policy-makers will prolong this response and also disrupt the structural disinflationary forces (tech, trade and titans) of the last 30 years. Inflationary pressures will emerge from 2022, preceded by concerns about the outlook. See [Global Economics: The Return of Inflation \(11 May 2020\)](#). In our view, the inflation outlook is key to the debate for cyclical performance — a reversal of longer term trends toward lower inflation will be a primary factor in driving cyclical outperformance.

Exhibit 26: Rising Inflation Favors Cyclical



Source: ClariFi, Bloomberg, FactSet, Morgan Stanley Research.



## Oil

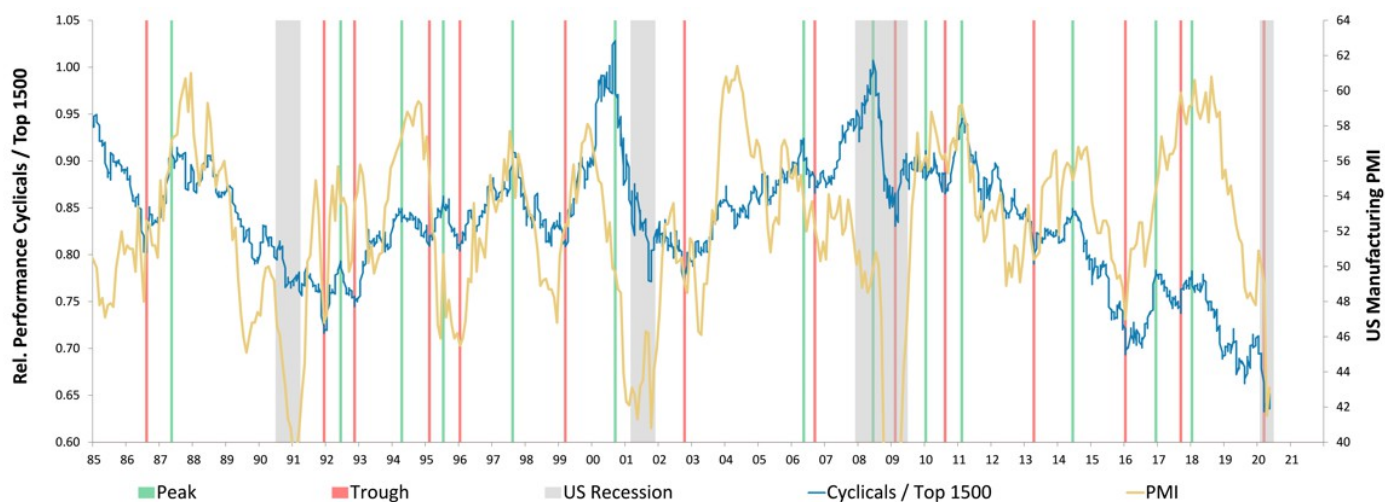
**Oil — What History Says.** During periods of cyclical outperformance, the price of Brent Crude is rising, on average, about \$1.40/month and in underperformance periods falling by about \$1.20/month. The instance of rising consumer confidence not giving rise to cyclical outperformance are limited to 4/14 underperformance periods we identify. In underperformance periods, oil has historically still risen about half the time, but not as quickly. While helpful context we don't put much stock in this signal. Growth and demand dynamics that drive the price of oil will typically also help cyclical stocks but additional dynamics on the supply side can obscure the strength of this signal.

## PMIs

**PMIs — What History Says.** During periods of cyclical outperformance, the ISM Manufacturing PMI is, on average, increasing by about 0.3 points/month and in underperformance periods falling by an equal amount. The instance of rising PMIs not giving rise to cyclical outperformance are limited to 3/14 underperformance periods we identify. Non-manufacturing PMIs also tend to be rising during cyclical outperformance periods on a 3-month basis. See [Exhibit 27](#).

**PMIs — What We Expect.** We do not forecast PMIs, but our global GDP growth forecasts strongly imply PMIs rising to the high 50s/low 60s over the next year. See [Exhibit 28](#).

**Exhibit 27: A Continued Rise In PMIs Will Benefit Cyclical**



**Exhibit 28:** A V-shaped Recovery Means PMIs Are Heading Higher



Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

### US 10 Year Yield

**US 10 Year Yield — What History Says.** During periods of cyclical outperformance, the US 10 year yield is, on average, increasing by about 2 basis points/month and in underperformance periods falling by about 6 bps/month on average. The instance of rising yields not giving rise to cyclical outperformance is limited to 1/14 underperformance periods we identify.

**US 10 Year Yield — What We Expect.** The yield dynamic may be complicated by the size of QE this time around, but we're positioning our equity recommendations in line with a move toward our rates strategy team's bond bear case of 145 on the 10 year by year end. We view the breakout in 10 year yields last week as an important signal in this regard - [Exhibit 29](#). Ultimately we think investors embracing the recovery and cyclical, along with the prospects for higher inflation, will lead to reallocation flows that contribute to a backup in yields.

**Exhibit 29:** ...Bond Yields Are Moving Again

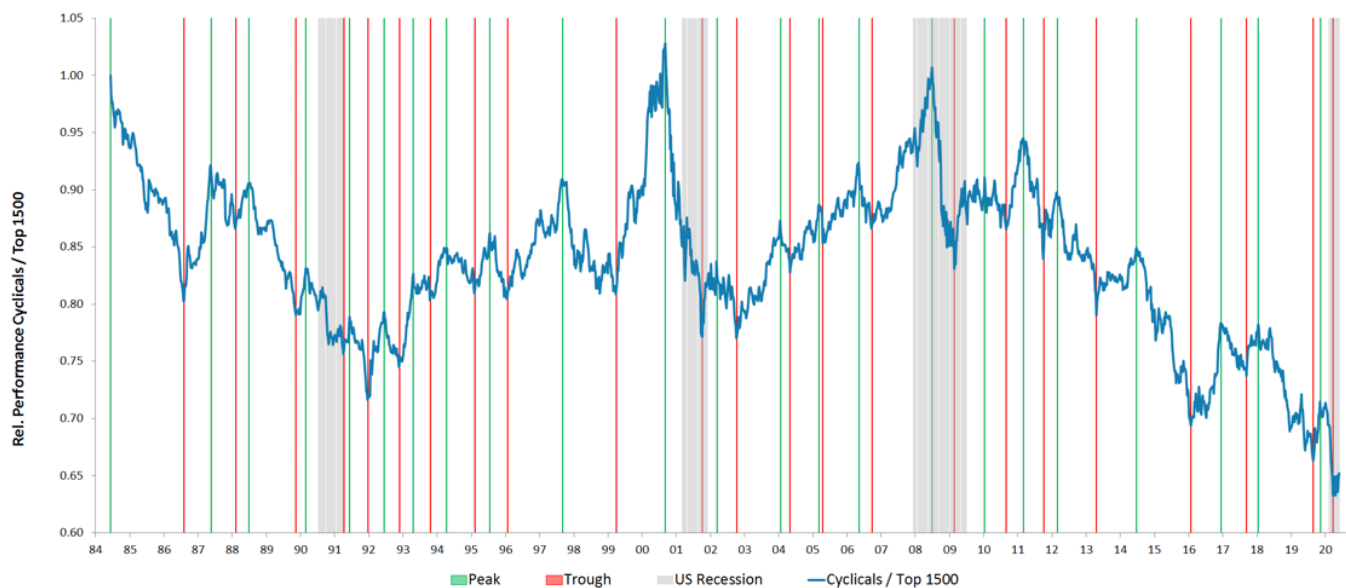


Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

## Outperformance Testing — A Higher Frequency

Adjusting our mean differencing models for shorter out/underperformance periods largely yields the same variables as significant. Our mean differencing models above are based on peaks and troughs that are a minimum of 3 quarters apart to catch longer trend. Scaling this peak/trough distance back to 2 quarters gives a largely similar list of variables over a greater number of smaller outperformance and underperformance periods. We summarize the results are in [Exhibit 30](#) & [Exhibit 31](#).

**Exhibit 30:** Our Peak/Trough Model on a 2 Quarter Distance Minimum



Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Exhibit 31:** Key Variables for Cyclical Outperformance - The Numbers (2 Quarter Peak/Trough Min)

Macro Category, Units	Item	Avg - Outperformance Prds	Avg - Underperformance Prds
Consumer Confidence, Survey Pts	U Mich Cons Sent - 1MΔ	0.4	-0.5
	U Mich Cons Sent - 3MΔ	1.6	-1.2
	Conf Board Cons Conf - 1MΔ	0.8	-0.8
	Conf Board Cons Conf - 3MΔ	2.8	-1.8
Disposable Personal Income, bps	DPI MOM - 1MΔ	3.9	-2.0
	DPI MOM - 3MΔ	10.2	-12.8
	DPI MOM - LT Momentum: 3MΔ vs Prior 9MΔ	7.5	-13.9
	DPI YOY - LT Momentum: 3MΔ vs Prior 9MΔ	15.8	-20.8
GDP, bps	US Real GDP, Q/Q SaaR - 3MΔ	77.5	-65.1
	US Real GDP, Q/Q SaaR - LT Momentum: 3MΔ vs Prior 9MΔ	55.0	-57.9
Inflation, bps	CPI MOM - 12MΔ	3.9	-5.4
PMIs, Survey Pts	ISM Manu PMI - 1MΔ	0.4	-0.3
	ISM Manu PMI - 3MΔ	1.0	-0.6
	ISM Manu PMI - ST Momentum: 1MΔ vs Prior 2MΔ	0.2	-0.1
	ISM Svcs PMI - 1MΔ	0.7	-0.4
	ISM Svcs PMI - 3MΔ	0.7	-0.6
	ISM Svcs PMI - LT Momentum: 3MΔ vs Prior 9MΔ	0.9	-0.4
Yields, bps	US 10 Yr. Yld. - 1MΔ	2.7	-6.3
	US 10 Yr. Yld. - ST Momentum: 1MΔ vs Prior 2MΔ	3.7	-1.7
	US 3M Yield - ST Momentum: 1MΔ vs Prior 2MΔ	1.8	-1.4

Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

# What to Own Within Cyclical

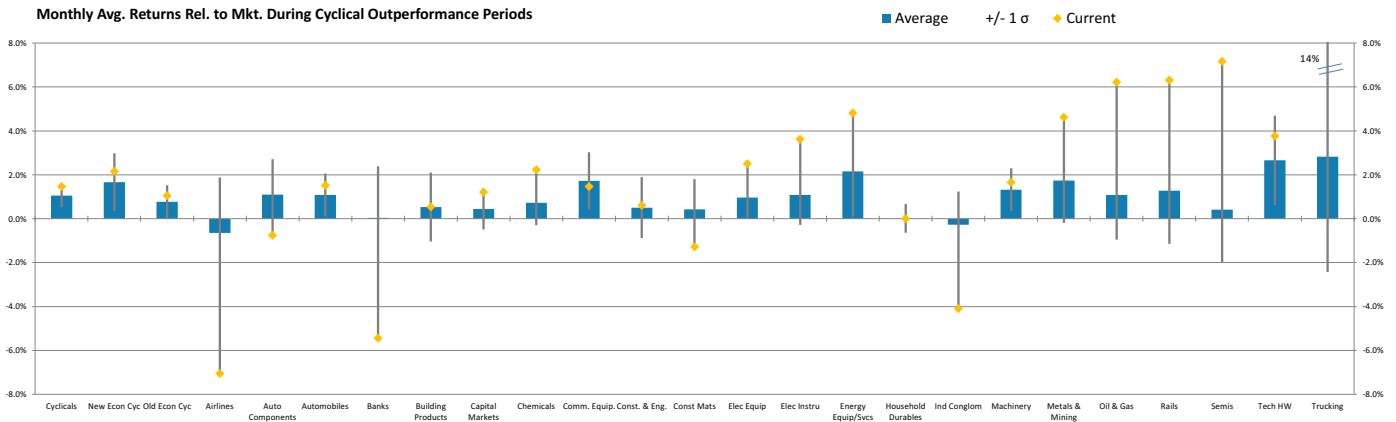
## Haven't cyclicals already outperformed?

**Cyclicals have outperformed strongly on a short-term basis, meaning a short-term dip is possible, but we're buyers on dips as we think this cycle is just getting started.**

Cyclicals broadly have outperformed from the market trough and have already outperformed the market by 2x as much as they did in their entire last major relative upcycle. Given the speed of the rally for cyclicals and broader risk, most of the industries in this universe are tracking at the high end of their historical range for monthly average outperformance during relative cyclical upcycles (Exhibit 32). This time around, Trucking, Semis, Tech HW, Rails, Metals/Mining, and Energy have been the clear relative winners, which is not surprising given their higher beta, even within the cyclicals universe. However, one look at Exhibit 1 shows that in a longer term context the outperformance has barely gotten off the ground, especially for non-Tech cyclicals (a topic we address below).

**From a tactical perspective, the convexity off the bottom may be priced, but the longer term trend toward GDP growth, inflecting PMIs, and higher inflation all mean that investors should use pullbacks to add cyclical. The question is what cyclicals to own?**

**Exhibit 32:** Cyclicals Tracking At High End of Typical Avg Monthly Outperformance Rapid Move Off the Bottom; We're Structural Buyers on Dips



Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

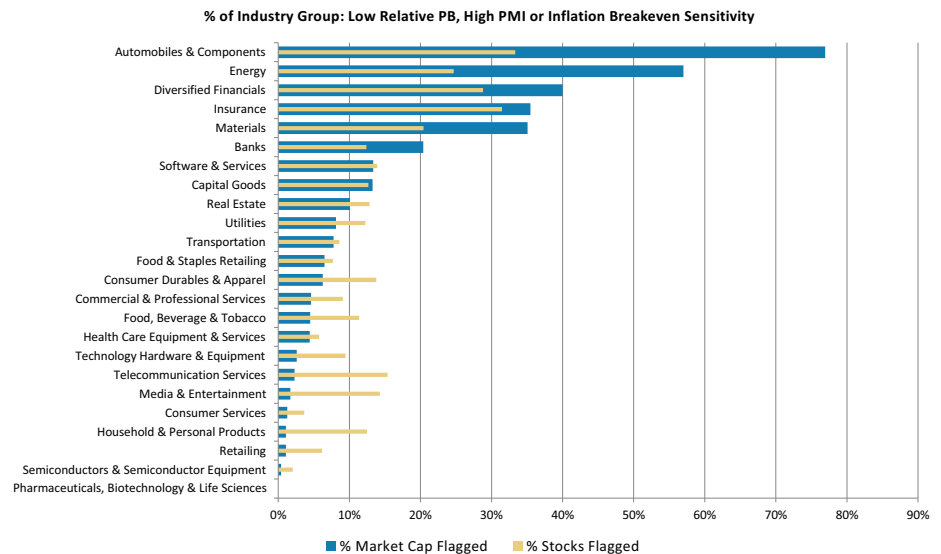
## Stocks & Industry Groups to Own

### Screening for Cyclical to Own

**Screening for inflation and PMI levered plays with room to rerate ...** Before we see sales revisions or GDP and CPI prints, we'd expect to see PMIs and inflation breakevens move higher. Focusing on our key variables that support cyclical outperformance, we took a bottom up approach, looking for stocks with (1) high correlations to PMI changes, (2) high correlations to inflation breakevens, and (3) low relative valuations. Specifically we screened US equities for stocks in the top quartile of correlation to either PMI or breakeven changes, with Price to Book relative to the market in the bottom quartile of their own history.

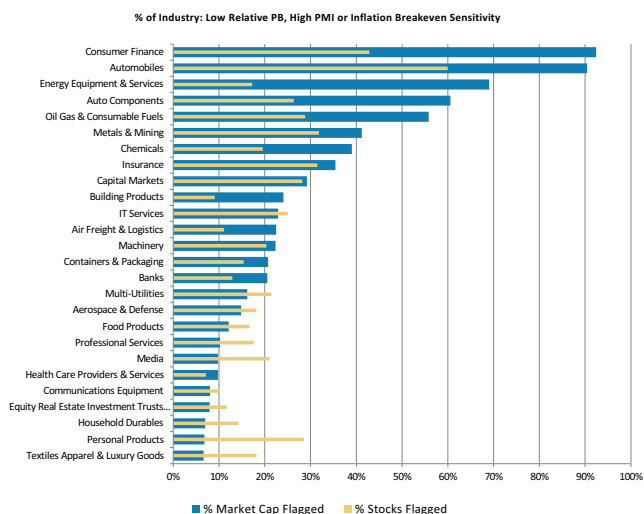
**... favored Financials, Autos, Energy, Capital Goods, Transports, Materials, & Consumer Durables/Apparel.** The results of our screens favored the sectors noted above, most of which fit squarely into our cyclicals universe. [Exhibit 33](#) shows the percentage of stocks that fit our screens, both as a % of the market cap and the # of stocks within each industry group. [Exhibit 34](#) and [Exhibit 35](#) show the same for the bigger GICS level 3 industries. [Exhibit 36](#) shows the stocks fitting our screen that are also rated Overweight by Morgan Stanley analysts, and [Exhibit 37 - Exhibit 40](#) show the full screen results for the S&P 1500 members with at least 3 years of correlation history. We note that more defensive sectors tend to screen poorly here, suggesting the unwind of the defensives > cyclicals trade that had been in play from 2018 on has further room to unwind.

**Exhibit 33: Industry Groups By % Flagging as PMI or Breakeven Levered with Valuation Upside**



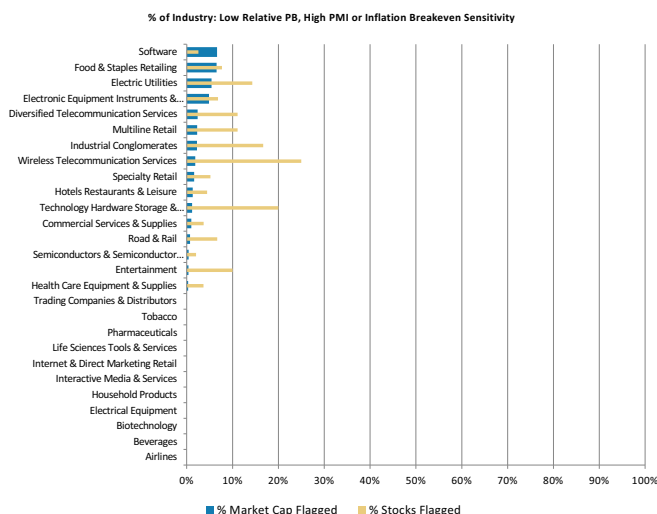
Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Exhibit 34: Industries By % Flagging as PMI or Breakeven Levered with Valuation Upside (1/2)**



Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Exhibit 35: Industries By % Flagging as PMI or Breakeven Levered with Valuation Upside (2/2)**



Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Exhibit 36: MS OW Rated Value Plays Levered to Inflecting PMIs and Inflation Expectations**

Ticker	Company	Sector	Ind Group	Market Cap	Curr Rel PB	Avg Rel PB	Breakevens Correlation	PMI Correlation
TDS	Telephone and Data Systems, Inc.	Communication Services	Telecommunication Services	\$2,399	0.2	0.4	28.6%	18.5%
APTV	Aptiv PLC	Consumer Discretionary	Automobiles & Components	\$21,331	1.5	2.4	40.5%	-1.8%
F	Ford Motor Company	Consumer Discretionary	Automobiles & Components	\$26,129	0.3	1.8	26.9%	21.9%
GM	General Motors Company	Consumer Discretionary	Automobiles & Components	\$41,730	0.3	0.5	41.6%	9.6%
HOG	Harley-Davidson, Inc.	Consumer Discretionary	Automobiles & Components	\$3,826	0.7	1.7	29.6%	14.6%
PVH	PVH Corp.	Consumer Discretionary	Consumer Durables & Apparel	\$4,053	0.2	0.8	26.8%	13.7%
FIVE	Five Below, Inc.	Consumer Discretionary	Retailing	\$5,898	2.5	6.0	31.0%	9.2%
URBN	Urban Outfitters, Inc.	Consumer Discretionary	Retailing	\$2,001	0.4	1.8	15.8%	16.6%
CVX	Chevron Corporation	Energy	Energy	\$179,753	0.4	0.7	34.4%	2.2%
XEC	Cimarex Energy Co.	Energy	Energy	\$2,964	0.3	0.8	41.9%	6.1%
COP	ConocoPhillips	Energy	Energy	\$47,948	0.5	0.6	34.2%	5.9%
HP	Helmerich & Payne, Inc.	Energy	Energy	\$2,684	0.2	0.7	34.7%	1.5%
MPC	Marathon Petroleum Corporation	Energy	Energy	\$24,736	0.3	0.7	49.5%	-10.0%
NBL	Noble Energy, Inc.	Energy	Energy	\$4,864	0.2	0.8	35.5%	-11.9%
PSX	Phillips 66	Energy	Energy	\$36,301	0.5	0.7	47.0%	-14.0%
PXD	Pioneer Natural Resources Compan	Energy	Energy	\$17,072	0.5	0.9	35.1%	7.3%
SLB	Schlumberger NV	Energy	Energy	\$28,214	0.4	1.6	35.0%	7.8%
FTI	TechnipFMC Plc	Energy	Energy	\$3,853	0.2	0.3	62.8%	-27.2%
C	Citigroup Inc.	Financials	Banks	\$115,853	0.2	0.5	32.1%	14.1%
CFG	Citizens Financial Group, Inc.	Financials	Banks	\$12,142	0.2	0.3	56.2%	3.7%
SBNY	Signature Bank	Financials	Banks	\$6,090	0.4	0.9	33.8%	3.1%
AXP	American Express Company	Financials	Diversified Financials	\$85,762	1.2	1.6	28.2%	20.4%
DFS	Discover Financial Services	Financials	Diversified Financials	\$17,845	0.5	0.8	40.8%	21.1%
EVR	Evercore Inc Class A	Financials	Diversified Financials	\$2,562	0.9	1.4	32.7%	19.1%
AIG	American International Group, Inc.	Financials	Insurance	\$30,326	0.2	0.5	22.4%	18.6%
HIG	Hartford Financial Services Group, I	Financials	Insurance	\$15,856	0.3	0.4	27.9%	18.7%
LNC	Lincoln National Corporation	Financials	Insurance	\$8,405	0.2	0.4	34.0%	21.7%
MET	MetLife, Inc.	Financials	Insurance	\$35,705	0.2	0.4	39.1%	12.2%
CI	Cigna Corporation	Health Care	Health Care Equipment & Services	\$74,678	0.5	0.9	20.0%	20.3%
FTV	Fortive Corp.	Industrials	Capital Goods	\$22,724	1.0	1.7	50.1%	-7.1%
IR	Ingersoll Rand Inc.	Industrials	Capital Goods	\$12,781	0.8	1.1	50.0%	-4.1%
OSK	Oshkosh Corp	Industrials	Capital Goods	\$5,510	0.7	0.9	26.7%	21.6%
SWK	Stanley Black & Decker, Inc.	Industrials	Capital Goods	\$22,742	0.7	1.0	31.3%	17.2%
NLSN	Nielsen Holdings Plc	Industrials	Commercial & Professional Services	\$5,686	0.8	1.1	30.3%	10.3%
CRM	salesforce.com, inc.	Information Technology	Software & Services	\$154,467	1.4	5.0	30.0%	11.1%
SAIC	Science Applications International C	Information Technology	Software & Services	\$5,165	1.1	1.9	39.5%	8.1%
EMN	Eastman Chemical Company	Materials	Materials	\$9,962	0.5	1.0	39.3%	12.6%
FCX	Freeport-McMoRan, Inc.	Materials	Materials	\$14,810	0.5	3.0	35.9%	18.6%
LIN	Linde plc	Materials	Materials	\$111,633	0.8	1.9	30.7%	4.3%
LYB	LyondellBasell Industries NV	Materials	Materials	\$24,678	1.0	1.5	53.8%	1.8%

Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.



Exhibit 37: Value Plays Levered to Inflecting PMIs and Inflation Expectations (1/4)

Ticker	Company	Sector	Ind Group	Market Cap	Curr Rel PB	Avg Rel PB	Breakevens Correlation	PMI Correlation
AMCX	AMC Networks Inc. Class A	Communication Services	Media & Entertainment	\$1,674	0.6	8.7	25.8%	21.9%
CNK	Cinemark Holdings, Inc.	Communication Services	Media & Entertainment	\$1,966	0.5	1.0	35.5%	12.6%
DISH	DISH Network Corporation Class A	Communication Services	Media & Entertainment	\$18,209	0.5	44.7	24.9%	13.3%
IPG	Interpublic Group of Companies, Inc.	Communication Services	Media & Entertainment	\$7,251	0.8	1.1	26.1%	16.7%
VIAC	ViacomCBS Inc. Class B	Communication Services	Media & Entertainment	\$14,843	0.3	1.0	31.9%	11.7%
CTL	CenturyLink, Inc.	Communication Services	Telecommunication Services	\$11,634	0.3	0.5	13.0%	14.3%
TDS	Telephone and Data Systems, Inc.	Communication Services	Telecommunication Services	\$2,399	0.2	0.4	28.6%	18.5%
APTV	Aptiv PLC	Consumer Discretionary	Automobiles & Components	\$21,331	1.5	2.4	40.5%	-1.8%
BWA	BorgWarner Inc.	Consumer Discretionary	Automobiles & Components	\$7,250	0.5	0.9	28.9%	13.3%
DAN	Dana Incorporated	Consumer Discretionary	Automobiles & Components	\$2,065	0.4	0.7	44.3%	26.3%
F	Ford Motor Company	Consumer Discretionary	Automobiles & Components	\$26,129	0.3	1.8	26.9%	21.9%
GM	General Motors Company	Consumer Discretionary	Automobiles & Components	\$41,730	0.3	0.5	41.6%	9.6%
GT	Goodyear Tire & Rubber Company	Consumer Discretionary	Automobiles & Components	\$2,080	0.2	1.6	28.7%	10.3%
HOG	Harley-Davidson, Inc.	Consumer Discretionary	Automobiles & Components	\$3,826	0.7	1.7	29.6%	14.6%
LEA	Lear Corporation	Consumer Discretionary	Automobiles & Components	\$6,916	0.5	0.9	49.4%	14.2%
CPRI	Capri Holdings Limited	Consumer Discretionary	Consumer Durables & Apparel	\$2,993	0.3	2.8	33.7%	1.9%
HBI	Hanesbrands Inc.	Consumer Discretionary	Consumer Durables & Apparel	\$4,156	1.2	3.7	36.5%	2.9%
IRBT	iRobot Corporation	Consumer Discretionary	Consumer Durables & Apparel	\$2,250	1.1	1.5	29.1%	0.9%
PVH	PVH Corp.	Consumer Discretionary	Consumer Durables & Apparel	\$4,053	0.2	0.8	26.8%	13.7%
TMHC	Taylor Morrison Home Corporation	Consumer Discretionary	Consumer Durables & Apparel	\$2,580	0.3	0.4	36.0%	4.2%
TPX	Tempur Sealy International Inc	Consumer Discretionary	Consumer Durables & Apparel	\$3,560	3.5	10.3	34.9%	11.8%
TPH	TRI Pointe Group Inc	Consumer Discretionary	Consumer Durables & Apparel	\$1,935	0.3	0.5	41.2%	0.8%
UAA	Under Armour, Inc. Class A	Consumer Discretionary	Consumer Durables & Apparel	\$4,727	0.8	3.0	29.0%	0.4%
NCLH	Norwegian Cruise Line Holdings Ltd.	Consumer Discretionary	Consumer Services	\$5,022	0.3	0.9	43.9%	-5.1%
SHAK	Shake Shack, Inc. Class A	Consumer Discretionary	Consumer Services	\$2,246	2.1	4.2	32.2%	-9.3%
DKS	Dick's Sporting Goods, Inc.	Consumer Discretionary	Retailing	\$3,296	0.6	1.4	29.2%	2.0%
FIVE	Five Below, Inc.	Consumer Discretionary	Retailing	\$5,898	2.5	6.0	31.0%	9.2%
LKQ	LKQ Corporation	Consumer Discretionary	Retailing	\$9,254	0.6	1.2	28.7%	9.7%
JWN	Nordstrom, Inc.	Consumer Discretionary	Retailing	\$3,349	1.2	2.1	24.1%	15.2%
URBN	Urban Outfitters, Inc.	Consumer Discretionary	Retailing	\$2,001	0.4	1.8	15.8%	16.6%
WBA	Walgreens Boots Alliance Inc	Consumer Staples	Food & Staples Retailing	\$38,773	0.5	1.4	12.6%	21.5%
BGS	B&G Foods, Inc.	Consumer Staples	Food, Beverage & Tobacco	\$1,555	0.5	1.2	24.2%	20.7%
CAG	Conagra Brands, Inc.	Consumer Staples	Food, Beverage & Tobacco	\$16,225	0.6	0.9	8.8%	12.9%
PPC	Pilgrim's Pride Corporation	Consumer Staples	Food, Beverage & Tobacco	\$4,573	0.6	1.1	7.5%	24.7%
SAFM	Sanderson Farms, Inc.	Consumer Staples	Food, Beverage & Tobacco	\$2,764	0.6	0.8	5.8%	12.9%
TSN	Tyson Foods, Inc. Class A	Consumer Staples	Food, Beverage & Tobacco	\$22,893	0.5	0.6	13.8%	14.5%
COTY	Coty Inc. Class A	Consumer Staples	Household & Personal Products	\$3,693	0.2	2.2	31.1%	0.8%
NUS	Nu Skin Enterprises, Inc. Class A	Consumer Staples	Household & Personal Products	\$2,039	0.8	1.8	14.4%	14.1%
CVX	Chevron Corporation	Energy	Energy	\$179,753	0.4	0.7	34.4%	2.2%
XEC	Cimarex Energy Co.	Energy	Energy	\$2,964	0.3	0.8	41.9%	6.1%
CXO	Concho Resources Inc.	Energy	Energy	\$12,654	0.3	1.1	48.3%	12.8%
COP	ConocoPhillips	Energy	Energy	\$47,948	0.5	0.6	34.2%	5.9%
DVN	Devon Energy Corporation	Energy	Energy	\$4,868	0.3	0.7	33.8%	-7.5%
FANG	Diamondback Energy, Inc.	Energy	Energy	\$7,525	0.2	0.9	49.0%	-19.4%
EOG	EOG Resources, Inc.	Energy	Energy	\$32,100	0.5	1.1	36.2%	-5.7%
HAL	Halliburton Company	Energy	Energy	\$11,571	0.5	1.3	34.8%	3.8%
HP	Helmerich & Payne, Inc.	Energy	Energy	\$2,684	0.2	0.7	34.7%	1.5%
KMI	Kinder Morgan Inc Class P	Energy	Energy	\$36,704	0.3	0.8	33.3%	7.2%
MRO	Marathon Oil Corporation	Energy	Energy	\$4,924	0.1	0.4	31.2%	-1.4%
MPC	Marathon Petroleum Corporation	Energy	Energy	\$24,736	0.3	0.7	49.5%	-10.0%
NOV	National Oilwell Varco, Inc.	Energy	Energy	\$5,342	0.3	0.6	34.5%	3.9%
NBL	Noble Energy, Inc.	Energy	Energy	\$4,864	0.2	0.8	35.5%	-11.9%
OXY	Occidental Petroleum Corporation	Energy	Energy	\$13,995	0.2	0.8	34.1%	0.4%
PSX	Phillips 66	Energy	Energy	\$36,301	0.5	0.7	47.0%	-14.0%
PXD	Pioneer Natural Resources Company	Energy	Energy	\$17,072	0.5	0.9	35.1%	7.3%
SLB	Schlumberger NV	Energy	Energy	\$28,214	0.4	1.6	35.0%	7.8%
FTI	TechnipFMC Plc	Energy	Energy	\$3,853	0.2	0.3	62.8%	-27.2%
WPX	WPX Energy, Inc.	Energy	Energy	\$3,815	0.2	0.4	45.2%	-16.2%

Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

Exhibit 38: Value Plays Levered to Inflecting PMIs and Inflation Expectations (2/4)

Ticker	Company	Sector	Ind Group	Market Cap	Curr Rel PB	Avg Rel PB	Breakevens Correlation	PMI Correlation
CIT	CIT Group Inc.	Financials	Banks	\$2,292	0.1	0.4	46.3%	15.0%
C	Citigroup Inc.	Financials	Banks	\$115,853	0.2	0.5	32.1%	14.1%
CFG	Citizens Financial Group, Inc.	Financials	Banks	\$12,142	0.2	0.3	56.2%	3.7%
CMA	Comerica Incorporated	Financials	Banks	\$5,965	0.3	0.5	28.3%	13.5%
FITB	Fifth Third Bancorp	Financials	Banks	\$16,164	0.3	0.7	16.6%	14.1%
FRC	First Republic Bank	Financials	Banks	\$20,203	0.7	0.7	35.6%	-0.3%
GWB	Great Western Bancorp, Inc.	Financials	Banks	\$884	0.2	0.4	44.6%	15.2%
HOMB	Home BancShares, Inc.	Financials	Banks	\$2,594	0.3	0.8	28.7%	-1.3%
KEY	KeyCorp	Financials	Banks	\$13,197	0.3	0.5	29.0%	3.8%
SFBS	ServisFirst Bancshares Inc	Financials	Banks	\$1,989	0.7	0.9	50.4%	9.9%
SBNY	Signature Bank	Financials	Banks	\$6,090	0.4	0.9	33.8%	3.1%
USB	U.S. Bancorp	Financials	Banks	\$60,357	0.4	0.9	15.5%	13.0%
WD	Walker & Dunlop, Inc.	Financials	Banks	\$1,487	0.4	0.6	25.6%	20.7%
AMG	Affiliated Managers Group, Inc.	Financials	Diversified Financials	\$3,609	0.4	1.3	33.7%	6.5%
AXP	American Express Company	Financials	Diversified Financials	\$85,762	1.2	1.6	28.2%	20.4%
COF	Capital One Financial Corporation	Financials	Diversified Financials	\$35,127	0.2	0.6	18.7%	18.7%
DFS	Discover Financial Services	Financials	Diversified Financials	\$17,845	0.5	0.8	40.8%	21.1%
EV	Eaton Vance Corp.	Financials	Diversified Financials	\$4,691	1.2	3.3	30.9%	11.9%
EVR	Evercore Inc Class A	Financials	Diversified Financials	\$2,562	0.9	1.4	32.7%	19.1%
FHI	Federated Hermes, Inc. Class B	Financials	Diversified Financials	\$2,517	0.8	2.5	27.3%	16.3%
FG	FGL Holdings Class A	Financials	Diversified Financials	\$1,860	0.3	0.4	33.6%	-4.9%
BEN	Franklin Resources, Inc.	Financials	Diversified Financials	\$10,694	0.3	1.1	29.3%	18.6%
GS	Goldman Sachs Group, Inc.	Financials	Diversified Financials	\$73,874	0.3	0.6	30.6%	11.0%
IVZ	Invesco Ltd.	Financials	Diversified Financials	\$4,387	0.1	1.1	32.9%	4.4%
JEF	Jefferies Financial Group Inc.	Financials	Diversified Financials	\$4,258	0.2	0.2	30.3%	13.5%
NAVI	Navient Corp	Financials	Diversified Financials	\$1,593	0.2	0.4	25.5%	18.9%
RJF	Raymond James Financial, Inc.	Financials	Diversified Financials	\$10,862	0.5	0.7	34.9%	11.6%
SLM	SLM Corp	Financials	Diversified Financials	\$3,046	0.4	1.3	45.3%	14.6%
STT	State Street Corporation	Financials	Diversified Financials	\$24,296	0.4	0.8	29.9%	14.3%
SYF	Synchrony Financial	Financials	Diversified Financials	\$14,202	0.4	0.6	44.5%	2.1%
TROW	T. Rowe Price Group	Financials	Diversified Financials	\$28,751	1.4	1.7	24.2%	14.4%
ALL	Allstate Corporation	Financials	Insurance	\$31,996	0.4	0.5	21.0%	13.3%
AEL	American Equity Investment Life Holding Compa	Financials	Insurance	\$2,101	0.2	0.4	36.2%	26.0%
AIG	American International Group, Inc.	Financials	Insurance	\$30,326	0.2	0.5	22.4%	18.6%
CINF	Cincinnati Financial Corporation	Financials	Insurance	\$10,486	0.4	0.5	19.3%	13.9%
CNO	CNO Financial Group, Inc.	Financials	Insurance	\$2,232	0.2	0.3	30.2%	25.7%
EIG	Employers Holdings, Inc.	Financials	Insurance	\$973	0.2	0.4	33.8%	30.8%
FAF	First American Financial Corporation	Financials	Insurance	\$5,999	0.4	0.5	29.7%	9.9%
GNW	Genworth Financial, Inc. Class A	Financials	Insurance	\$1,672	0.0	0.2	34.4%	15.3%
GL	Globe Life Inc.	Financials	Insurance	\$8,796	0.5	0.6	28.8%	11.2%
HIG	Hartford Financial Services Group, Inc.	Financials	Insurance	\$15,856	0.3	0.4	27.9%	18.7%
HMN	Horace Mann Educators Corporation	Financials	Insurance	\$1,572	0.3	0.4	29.6%	15.5%
LNC	Lincoln National Corporation	Financials	Insurance	\$8,405	0.2	0.4	34.0%	21.7%
MET	MetLife, Inc.	Financials	Insurance	\$35,705	0.2	0.4	39.1%	12.2%
PFG	Principal Financial Group, Inc.	Financials	Insurance	\$12,225	0.3	0.6	42.2%	19.7%
PRU	Prudential Financial, Inc.	Financials	Insurance	\$25,857	0.2	0.5	46.2%	23.6%
UNM	Unum Group	Financials	Insurance	\$3,552	0.1	0.4	25.9%	16.8%
WLTW	Willis Towers Watson Public Limited Company	Financials	Insurance	\$26,269	0.8	1.3	29.9%	16.3%

Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

Exhibit 39: Value Plays Levered to Inflecting PMIs and Inflation Expectations (3/4)

Ticker	Company	Sector	Ind Group	Market Cap	Curr Rel PB	Avg Rel PB	Breakevens Correlation	PMI Correlation
ACHC	Acadia Healthcare Company, Inc.	Health Care	Health Care Equipment & Services	\$2,565	0.3	1.0	34.3%	5.5%
MDRX	Allscripts Healthcare Solutions, Inc.	Health Care	Health Care Equipment & Services	\$1,115	0.3	1.0	31.5%	13.4%
AVNS	Avanos Medical, Inc.	Health Care	Health Care Equipment & Services	\$1,380	0.3	0.6	32.8%	10.5%
CI	Cigna Corporation	Health Care	Health Care Equipment & Services	\$74,678	0.5	0.9	20.0%	20.3%
GKOS	Glaukos Corp	Health Care	Health Care Equipment & Services	\$1,890	1.5	3.2	19.3%	28.2%
HQY	HealthEquity Inc	Health Care	Health Care Equipment & Services	\$4,162	1.2	3.5	40.2%	23.3%
ALLE	Allegion PLC	Industrials	Capital Goods	\$9,784	3.9	19.2	34.9%	4.8%
B	Barnes Group Inc.	Industrials	Capital Goods	\$2,155	0.5	0.8	28.2%	17.2%
CSL	Carlisle Companies Incorporated	Industrials	Capital Goods	\$7,180	0.9	1.0	23.5%	16.3%
CFX	Cofax Corporation	Industrials	Capital Goods	\$3,556	0.4	1.0	42.6%	21.0%
CR	Crane Co.	Industrials	Capital Goods	\$3,638	0.8	1.1	35.7%	18.9%
CUB	Cubic Corporation	Industrials	Capital Goods	\$1,490	0.6	0.9	20.3%	18.5%
FLS	Flowserve Corporation	Industrials	Capital Goods	\$3,853	0.7	1.3	36.6%	9.4%
FTV	Fortive Corp.	Industrials	Capital Goods	\$22,724	1.0	1.7	50.1%	-7.1%
GGG	Graco Inc.	Industrials	Capital Goods	\$8,458	2.7	3.4	26.0%	13.9%
HWM	Howmet Aerospace Inc.	Industrials	Capital Goods	\$6,773	0.5	0.7	45.5%	30.1%
IR	Ingersoll Rand Inc.	Industrials	Capital Goods	\$12,781	0.8	1.1	50.0%	-4.1%
JBT	John Bean Technologies Corporation	Industrials	Capital Goods	\$2,927	1.5	17.0	44.0%	28.2%
JCI	Johnson Controls International plc	Industrials	Capital Goods	\$25,596	0.4	0.7	26.0%	20.2%
KMT	Kennametal Inc.	Industrials	Capital Goods	\$2,416	0.6	0.7	33.3%	10.2%
OSK	Oshkosh Corp	Industrials	Capital Goods	\$5,510	0.7	0.9	26.7%	21.6%
PCAR	PACCAR Inc	Industrials	Capital Goods	\$26,168	0.9	1.2	28.4%	12.9%
RTX	Raytheon Technologies Corporation	Industrials	Capital Goods	\$58,475	0.5	1.3	17.0%	16.2%
SWK	Stanley Black & Decker, Inc.	Industrials	Capital Goods	\$22,742	0.7	1.0	31.3%	17.2%
TXT	Textron Inc.	Industrials	Capital Goods	\$8,416	0.5	0.9	28.6%	29.0%
HCSG	Healthcare Services Group, Inc.	Industrials	Commercial & Professional Services	\$1,800	1.3	2.5	12.3%	15.2%
KFY	Korn Ferry	Industrials	Commercial & Professional Services	\$1,760	0.4	0.8	30.7%	14.3%
MAN	ManpowerGroup Inc.	Industrials	Commercial & Professional Services	\$4,362	0.5	0.8	29.7%	8.3%
NLSN	Nielsen Holdings Plc	Industrials	Commercial & Professional Services	\$5,686	0.8	1.1	30.3%	10.3%
FDX	FedEx Corporation	Industrials	Transportation	\$36,369	0.6	1.0	25.5%	18.7%
KEX	Kirby Corporation	Industrials	Transportation	\$3,331	0.3	0.9	29.2%	7.5%
R	Ryder System, Inc.	Industrials	Transportation	\$2,135	0.3	0.6	30.0%	13.2%
FSLR	First Solar, Inc.	Information Technology	Semiconductors & Semiconductor Equipment	\$5,254	0.3	1.6	33.3%	2.1%
ADS	Alliance Data Systems Corporation	Information Technology	Software & Services	\$2,597	0.6	5.9	28.8%	10.0%
FIS	Fidelity National Information Services, Inc.	Information Technology	Software & Services	\$84,192	0.5	1.6	30.8%	15.9%
FISV	Fiserv, Inc.	Information Technology	Software & Services	\$70,798	0.7	1.4	22.6%	14.4%
IT	Gartner, Inc.	Information Technology	Software & Services	\$11,644	3.8	23.9	26.9%	13.6%
GPB	Global Payments Inc.	Information Technology	Software & Services	\$54,889	0.5	1.7	24.5%	15.4%
IBM	International Business Machines Corporation	Information Technology	Software & Services	\$114,440	1.6	3.0	28.7%	6.5%
PAYX	Paychex, Inc.	Information Technology	Software & Services	\$26,613	3.0	3.8	18.6%	16.8%
SABR	Sabre Corp.	Information Technology	Software & Services	\$2,485	1.2	6.9	40.8%	-6.6%
CRM	salesforce.com, inc.	Information Technology	Software & Services	\$154,467	1.4	5.0	30.0%	11.1%
SAIC	Science Applications International Corp.	Information Technology	Software & Services	\$5,165	1.1	1.9	39.5%	8.1%
WEX	WEX Inc.	Information Technology	Software & Services	\$7,068	1.1	1.5	40.9%	22.2%
ANET	Arista Networks, Inc.	Information Technology	Technology Hardware & Equipment	\$17,311	1.9	2.9	26.8%	26.3%
BDC	Belden Inc.	Information Technology	Technology Hardware & Equipment	\$1,668	0.5	0.9	36.5%	13.0%
HPE	Hewlett Packard Enterprise Co.	Information Technology	Technology Hardware & Equipment	\$13,464	0.3	0.4	50.8%	16.0%
IPGP	IPG Photonics Corporation	Information Technology	Technology Hardware & Equipment	\$8,553	1.1	1.7	29.0%	9.2%
KN	Knowles Corp.	Information Technology	Technology Hardware & Equipment	\$1,499	0.4	0.5	30.7%	1.3%
LITE	Lumentum Holdings, Inc.	Information Technology	Technology Hardware & Equipment	\$5,730	1.0	1.4	21.5%	17.4%
XRX	Xerox Holdings Corporation	Information Technology	Technology Hardware & Equipment	\$3,765	0.2	0.7	26.8%	16.5%

Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Exhibit 40:** Value Plays Levered to Inflecting PMIs and Inflation Expectations (4/4)

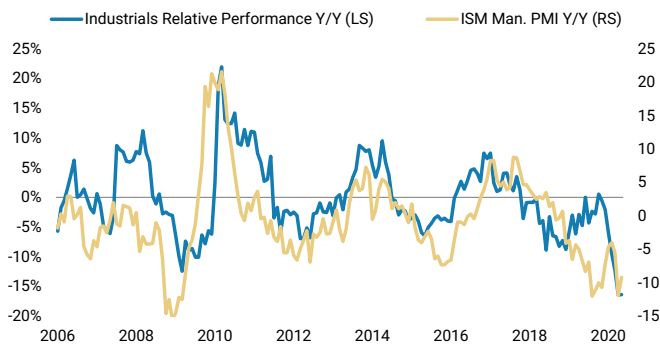
Ticker	Company	Sector	Ind Group	Market Cap	Curr Rel PB	Avg Rel PB	Breakevens Correlation	PMI Correlation
ALB	Albemarle Corporation	Materials	Materials	\$8,502	0.7	1.1	32.0%	11.9%
CE	Celanese Corporation	Materials	Materials	\$11,396	1.4	3.4	52.3%	20.6%
CF	CF Industries Holdings, Inc.	Materials	Materials	\$6,788	0.8	1.1	32.5%	15.3%
CMC	Commercial Metals Company	Materials	Materials	\$2,287	0.4	0.6	30.8%	22.7%
CMP	Compass Minerals International, Inc.	Materials	Materials	\$1,729	1.1	6.5	31.5%	-9.5%
UFS	Domtar Corporation	Materials	Materials	\$1,325	0.2	0.4	38.9%	24.3%
DD	DuPont de Nemours, Inc.	Materials	Materials	\$40,344	0.3	0.9	31.7%	10.4%
EMN	Eastman Chemical Company	Materials	Materials	\$9,962	0.5	1.0	39.3%	12.6%
FCX	Freeport-McMoRan, Inc.	Materials	Materials	\$14,810	0.5	3.0	35.9%	18.6%
IP	International Paper Company	Materials	Materials	\$14,869	0.6	0.9	26.1%	18.7%
LIN	Linde plc	Materials	Materials	\$111,633	0.8	1.9	30.7%	4.3%
LYB	LyondellBasell Industries NV	Materials	Materials	\$24,678	1.0	1.5	53.8%	1.8%
MTX	Minerals Technologies Inc.	Materials	Materials	\$1,746	0.4	0.7	31.1%	10.7%
MOS	Mosaic Company	Materials	Materials	\$5,253	0.2	1.0	42.1%	16.7%
NUE	Nucor Corporation	Materials	Materials	\$13,443	0.4	0.9	28.6%	3.0%
RS	Reliance Steel & Aluminum Co.	Materials	Materials	\$6,434	0.4	0.6	36.1%	25.7%
STLD	Steel Dynamics, Inc.	Materials	Materials	\$5,923	0.5	0.8	32.8%	12.9%
WRK	WestRock Company	Materials	Materials	\$7,957	0.2	0.5	16.5%	16.6%
WOR	Worthington Industries, Inc.	Materials	Materials	\$1,931	0.7	0.9	30.9%	21.3%
AVB	AvalonBay Communities, Inc.	Real Estate	Real Estate	\$22,358	0.7	0.9	20.8%	12.9%
CBRE	CBRE Group, Inc. Class A	Real Estate	Real Estate	\$16,896	0.9	1.8	38.7%	16.9%
HST	Host Hotels & Resorts, Inc.	Real Estate	Real Estate	\$9,207	0.4	0.7	24.7%	17.2%
JLL	Jones Lang LaSalle Incorporated	Real Estate	Real Estate	\$6,019	0.4	0.9	26.3%	14.6%
KRC	Kilroy Realty Corporation	Real Estate	Real Estate	\$7,381	0.5	0.7	23.1%	17.7%
CLI	Mack-Cali Realty Corporation	Real Estate	Real Estate	\$1,545	0.3	0.5	24.5%	15.2%
MPW	Medical Properties Trust, Inc.	Real Estate	Real Estate	\$10,260	0.4	0.5	36.7%	19.6%
OPI	Office Properties Income Trust	Real Estate	Real Estate	\$1,343	0.3	0.5	28.2%	26.3%
PK	Park Hotels & Resorts, Inc.	Real Estate	Real Estate	\$2,818	0.1	0.3	52.5%	-7.3%
PCH	PotlatchDeltic Corporation	Real Estate	Real Estate	\$2,436	0.7	2.1	23.4%	15.4%
RYN	Rayonier Inc.	Real Estate	Real Estate	\$3,351	0.7	1.0	24.2%	17.6%
SLG	SL Green Realty Corp.	Real Estate	Real Estate	\$3,962	0.3	0.6	29.7%	10.1%
VNO	Vornado Realty Trust	Real Estate	Real Estate	\$7,895	0.4	0.9	25.7%	13.2%
WRE	Washington Real Estate Investment Trust	Real Estate	Real Estate	\$1,952	0.5	0.9	19.8%	13.9%
XHR	Xenia Hotels & Resorts, Inc.	Real Estate	Real Estate	\$1,216	0.2	0.4	44.8%	23.7%
ALE	ALLETE, Inc.	Utilities	Utilities	\$3,137	0.4	0.6	11.1%	23.2%
EIX	Edison International	Utilities	Utilities	\$22,321	0.5	0.7	17.2%	13.5%
HE	Hawaiian Electric Industries, Inc.	Utilities	Utilities	\$4,246	0.6	0.6	12.7%	12.9%
MDU	MDU Resources Group Inc	Utilities	Utilities	\$4,472	0.5	0.7	30.3%	18.0%
NWE	NorthWestern Corporation	Utilities	Utilities	\$3,068	0.5	0.6	31.1%	17.4%
SRE	Sempra Energy	Utilities	Utilities	\$37,657	0.6	0.7	17.4%	15.0%

Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

# Upgrading Industrials & Materials to Overweight

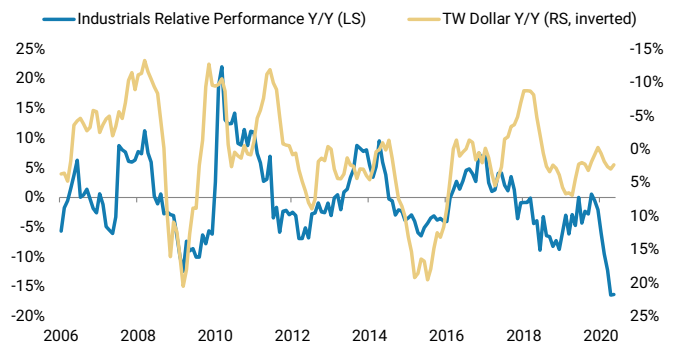
**We're upgrading Industrials to overweight from equal weight.** The analysis above shows a heavy concentration of stocks in Industrials (particularly Capital Goods) & Materials (particularly Metals & Mining) tied to the coming moves in PMIs, growth, and inflation we expect to drive cyclicals higher. We also note that the sectors have diverged from some historical relationships we track and we expect reversions to normal relationships will likely lead to outperformance (Exhibit 41- Exhibit 50). Taken together, we upgrade the groups to overweight from equal-weight and move to underweight on Consumer Staples (from overweight) as we adjust more cyclically

**Exhibit 41: PMIs Inflecting Should Lead Industrials Relative Performance Higher**



Source: Bloomberg, Morgan Stanley Research as of May 2020.

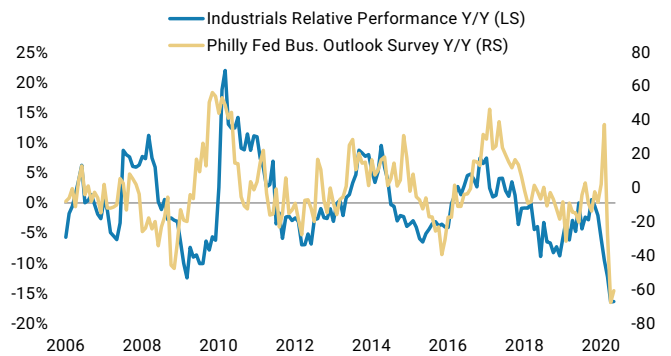
**Exhibit 42: We Expect Dollar Weakness - Another Positive for Industrials vs the Market**



Source: Bloomberg, Morgan Stanley Research as of May 2020.

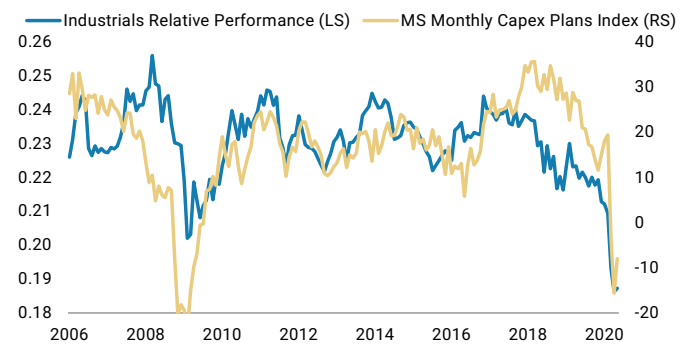
**Exhibit 43: Philly Fed Survey Finding A Bottom Is Good for Industrials**

...



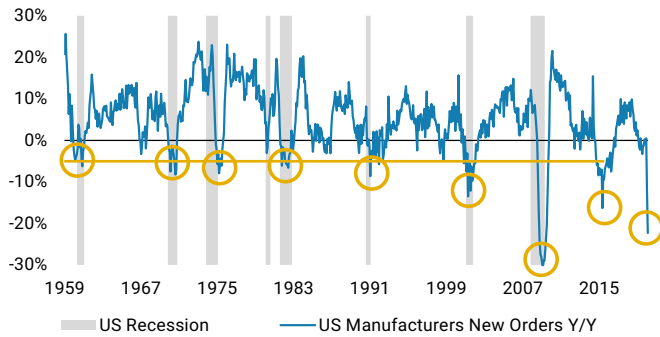
Source: Bloomberg, Morgan Stanley Research as of May 2020.

**Exhibit 44: ... As Is A Bottom in Our Capex Plans Index**



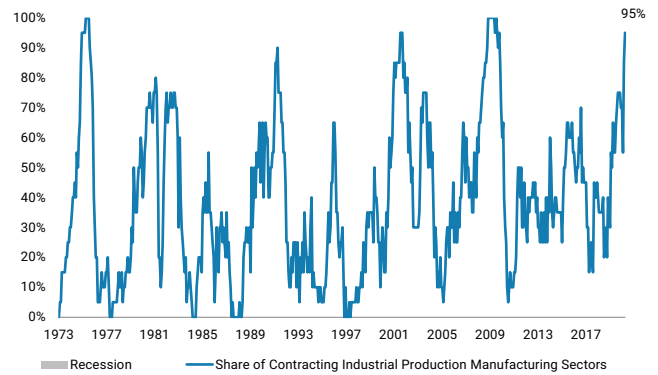
Source: Bloomberg, Morgan Stanley Research as of May 2020.

**Exhibit 45: Manufacturing New Orders Have Likely Found a Low ...**



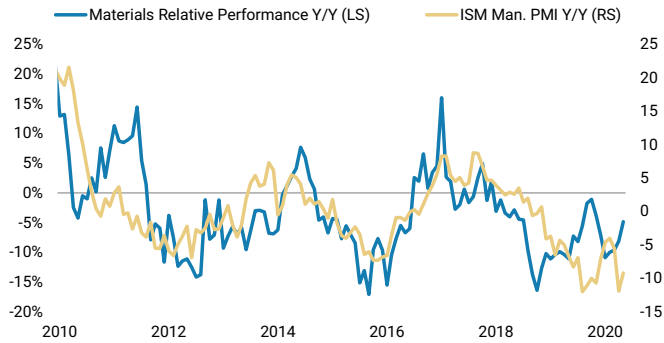
Source: Bloomberg, Morgan Stanley Research as of May 2020.

**Exhibit 46: ... As Has the Share of Industries Seeing Contracting Manufacturing**



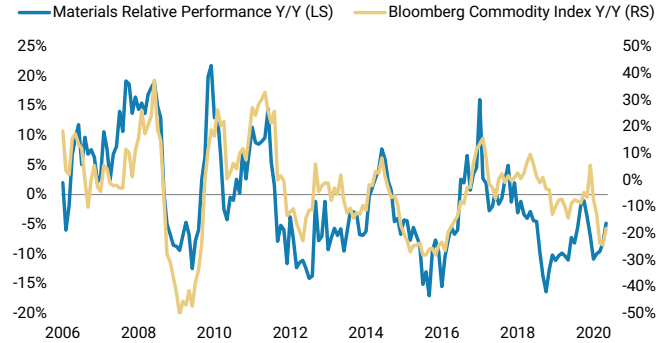
Source: Bloomberg, Morgan Stanley Research as of April 2020.

**Exhibit 47: PMIs Inflecting Should Lead Materials Relative Performance Higher**



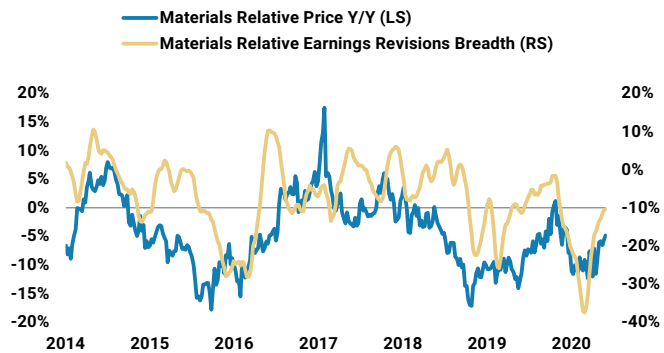
Source: Bloomberg, Morgan Stanley Research as of May 2020.

**Exhibit 48: Inflecting Commodities in the Recovery Should Favor Materials**



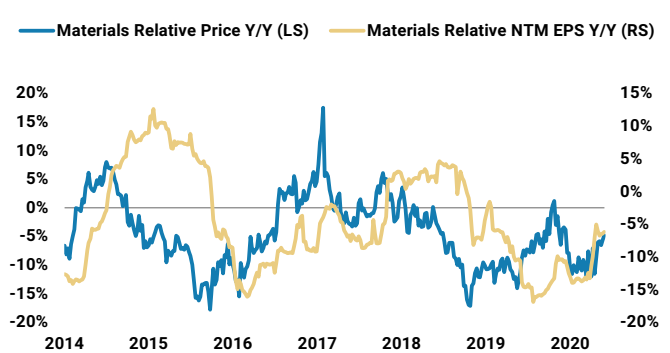
Source: Bloomberg, Morgan Stanley Research as of May 2020.

**Exhibit 49: Materials Revisions Breadth Suggests Relative Upside...**



Source: FactSet, Morgan Stanley Research as of May 29, 2020.

**Exhibit 50: ... As Do Relative NTM Earnings Estimates**



Source: FactSet, Morgan Stanley Research as of May 29, 2020.

# New Economy vs Old Economy Cyclical

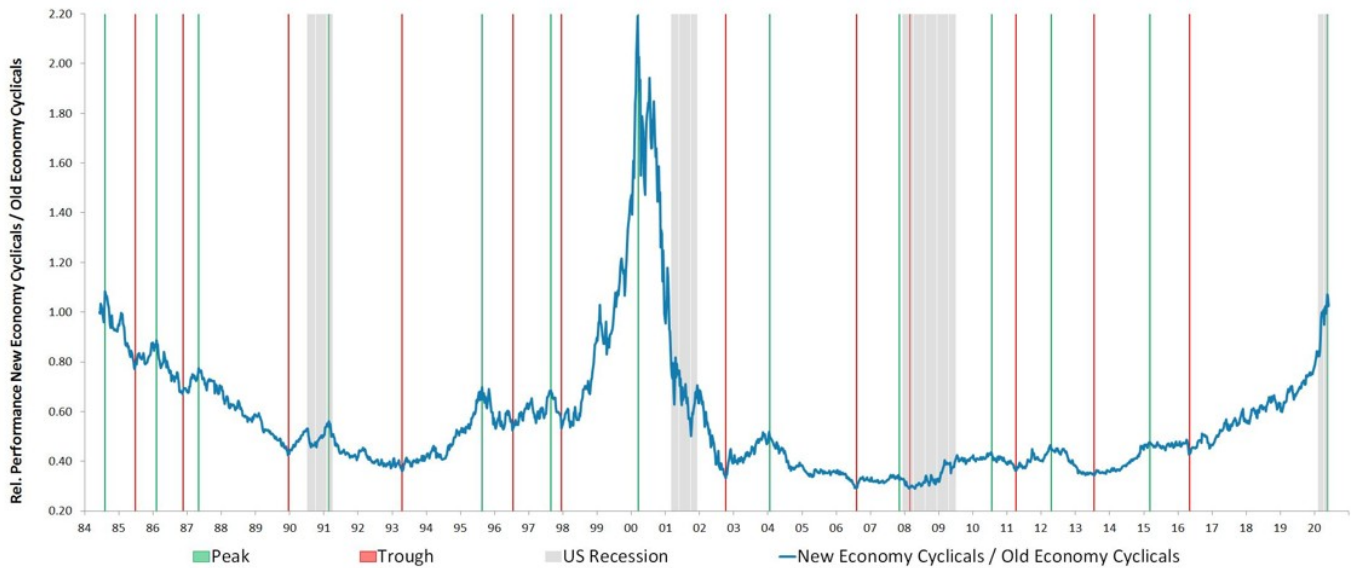
**Not all "cyclicals" trade the same way.** Divergences in the performance of cyclical cohorts is most obvious when comparing the tech based cyclicals ("new economy cyclicals") vs the non-tech group ("old economy cyclicals") (Exhibit 51). For the better part of the last decade new economy cyclicals have handily outperformed their old economy counterparts, and while the cumulative outperformance has not reached tech bubble levels, it is quite notable (see Exhibit 52- Exhibit 54).

**Exhibit 51: New Economy vs Old Economy Cyclicals**

New Economy Cyclicals	Old Economy Cyclicals	
Communications Equipment	Airlines	Electrical Equipment
Electronic Equipment & Instruments	Auto Components	Energy Equipment & Services
Semis & Semi Equipment	Automobiles	Household Durables
Tech Hardware, Storage & Peripherals	Banks	Industrial Conglomerates
	Building Products	Machinery
	Capital Markets	Metals & Mining
	Chemicals	Oil, Gas & Consumable Fuels
	Construction & Engineering	Road & Rail
	Construction Materials	
11.5% of S&P 1500	18.85% of S&P 1500	

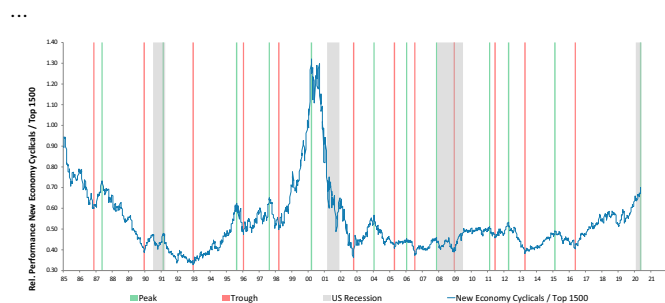
Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Exhibit 52: New Economy Cyclicals Have Been Outperforming Old Economy Cyclicals**



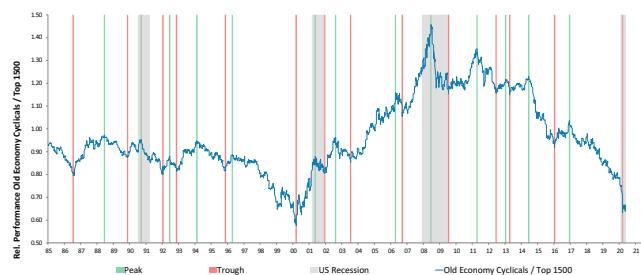
Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Exhibit 53: New Economy Cyclicals Have Boosted the Overall group**



Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Exhibit 54: ... While Old Economy Cyclicals Continue to Lag**



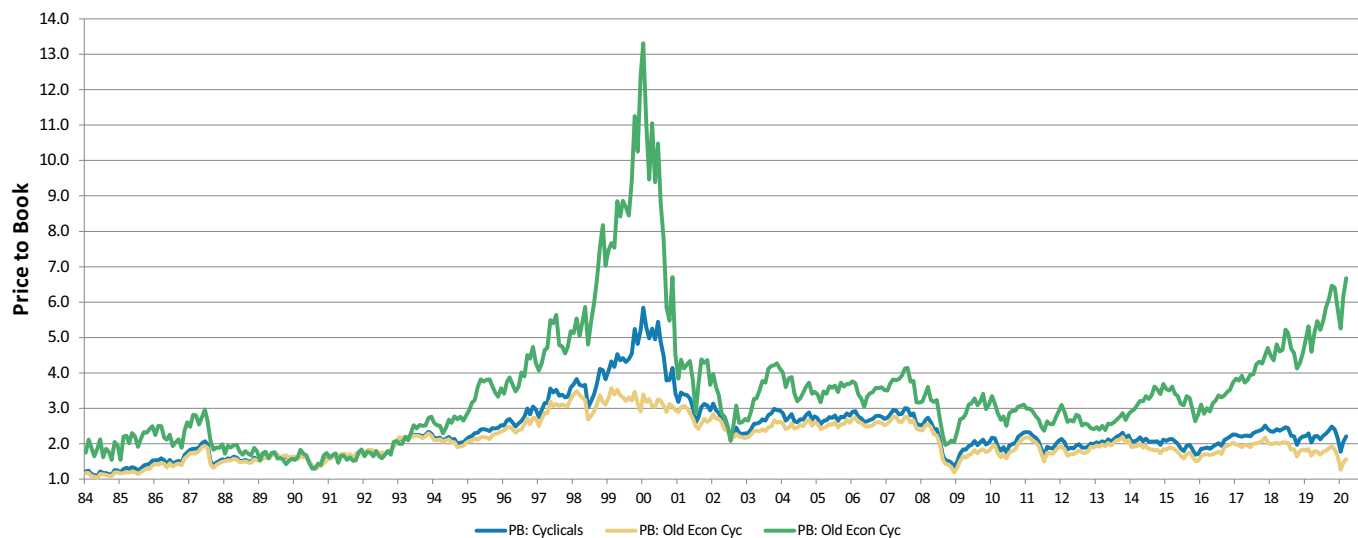
Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Our screens tend to favor old economy cyclicals over new economy cyclicals ...** While new economy cyclicals are levered to many of the same variables as the broader cyclical universe, relative valuations largely kept them out of our "what to buy" screens. Disaggregating new economy vs old economy within our cyclicals universe shows that the market has been more willing to underwrite growth tied to more structural themes (data centers, AI, consumer tech) than what most investors think of as traditional GDP-driven cyclicals. After their rally in 2016, old economy cyclicals have persistently trailed the market and have now given up all their relative gains vs the market from the 00s and BRIC era while new economy cyclicals have actually outperformed the market over that period.

**... as valuations make new economy cyclicals less attractive.** Notwithstanding the structural trends supporting the new economy cyclicals, we think valuations weaken the investment case. The Price/ Book of new economy cyclicals is now at levels last seen in the early stages of the tech bubble while multiples for the old economy cyclicals are near generational lows (Exhibit 55 shows absolute PB multiples for the groups while Exhibit 56 shows PB multiple relative to the market). While relative multiples could continue to appreciate in a world of low rates, we think the upside is increasingly speculative while the potential downside in the multiple should economic growth disappoint creates outsized risk for investors. In contrast, the rest of the cyclical group trades at a robust discount to the market. "Cheap" valuations can stay cheap but the risk-reward profile of old economy cyclicals has a bigger upside skew with some potential for a catchup trade and lower relative downside.

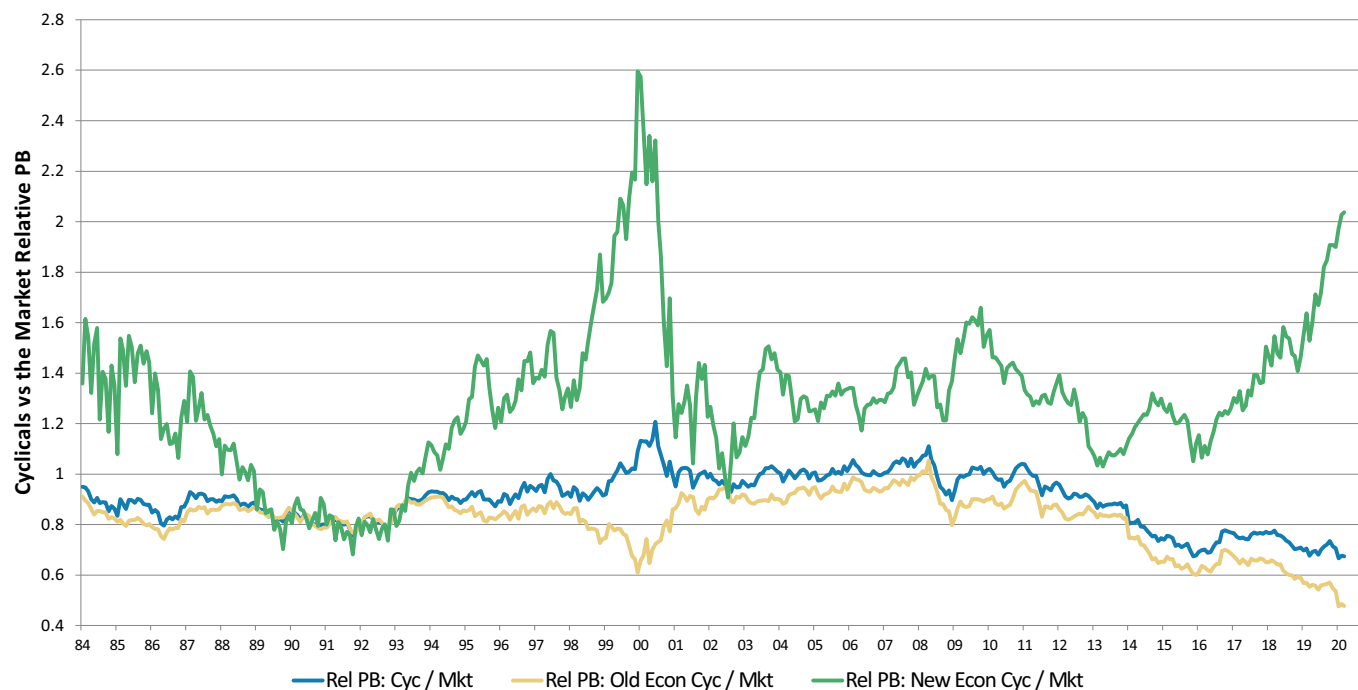


**Exhibit 55:** Absolute Valuations on New Economy Cyclicals Are High vs History



Source: Clarifi, Morgan Stanley Research.

**Exhibit 56:** Relative Valuations on New Economy Cyclicals Are High vs History



Source: Clarifi, Morgan Stanley Research.

## Appendix 1: Defining Our "Cyclical" Universe

Cyclical = High Sales Volatility + High Beta

**We determine "cyclicality" using a simple approach that assesses fundamental and market volatility.** "Cyclical" is a word that most investors intuitively understand, but in practice, the exact definition might actually be a little amorphous. For our analysis of cyclicals, we thought it made sense to assess the risk of cyclicality at the fundamental level as well as the market return level. We opted for a simple, two variable screen to label GICS level 3 industries as "cyclical" which focuses on 1) the volatility of sales growth and 2) the market beta of each industry. We screened S&P 1500 industries on the following criteria:

- 25 year standard deviation of last 12 month sales growth at least 25% greater than the S&P 1500's
- Avg trailing 5-year beta to the market over the last 25 years and for the most recent 5 year period > 1.05
- S&P 1500 industry market cap > 0.1% of overall index cap

**To assess fundamental risk — sales growth.** While equity holders care about profits and the bottom line, we base our analysis on the volatility of sales growth given that (a) growth in profits is in large part determined by growth in top line sales and (b) we wanted to avoid possible distortions to our read of end market cyclicality from factors such as the ability of companies to countercyclically manage costs and expenditures, changes to accounting rules over time, and different leverage profiles. Specifically we looked at the volatility in the growth of trailing 12 month sales on the GICS level 3 S&P 1500 industries over the last ~25 years and selected industries where the standard deviation of annual sales growth was at least 25% greater than the market's sales growth volatility.

**To assess market risk — market beta.** Since fundamental risks and market risks are not necessarily one and the same, we also wanted to incorporate a measure of market risk in our assessment of cyclicality. By adding market risk to the calculation, we can also account for some of the below the line distortions that are missed by only focusing on sales growth on the fundamental side (like leverage). Specifically, we looked at the average trailing 5 year weekly beta of the S&P 1500 industries to the broader S&P 1500 over the last 25 years and selected those industries with betas greater than 1.05. To better account for current industry mix we ruled out some industries where the most recent 5 year beta had fallen considerably from longer term averages.

**A bit of discretion.** Based on the criteria above we were generally happy with the list produced, but in a few cases we used our discretion to add Chemicals, Communication Equipment, Industrial Conglomerates, Oil/Gas/Consumable Fuels, and Road and Rail to our overall cyclical index. We also felt it was appropriate to include commodity heavy industries like Chemicals and Oil & Gas, despite certain period betas missing the cutoff. For Industrial Conglomerates, while the current rolling 5 year beta to the market is just

below our cutoff, the longer term historical beta has been above our cutoff. Communication Equipment has seen its beta fall in recent years, but historically has a very high beta and does have high growth in sales volatility. Road and Rail may have a lower beta due to its mix of industries where moves may offset to aa degree and its most recent trailing beta is just below our cutoff, but given gearing to the manufacturing economy, we included. Given the overall tilt of the industries to the Industrials and Materials sectors, we also thought that including these large industries was practically important in helping investors looking across these spaces in a complete way.

**Our high beta cyclicals universe — Industrials, Financials, Materials, Old Tech.** Exhibit 57 shows the results of our exercise to isolate the more cyclical industries in the public equities. Overall, the list skews toward Industrials, Financials, Materials and the more tangible and the areas of Tech with tangible products and higher capital intensity. The current market cap of this group is ~30% of the overall cap of the S&P 1500.

**Exhibit 57:** High Beta Cyclicals - Our Component Industries

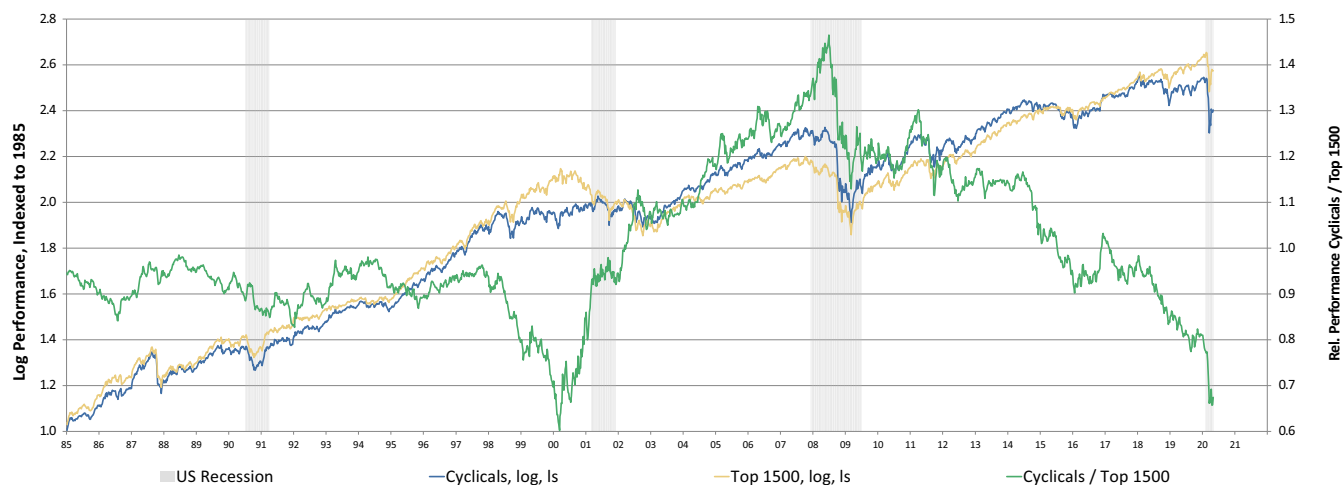
Industry	Std. Dev. Sales Growth (1984 - Current)	5 Yr. Weekly Beta to S&P 1500	5 Yr. Weekly Beta to S&P 1500	% of Cap
Airlines	8.7	1.17	1.64	0.2%
Auto Components	8.5	1.25	1.48	0.2%
Automobiles	7.8	1.37	1.46	0.3%
Banks	11.8	1.21	1.29	4.3%
Building Products	13.8	1.16	1.21	0.5%
Capital Markets	17.1	1.46	1.16	2.8%
Chemicals	9.4	0.98	1.09	1.9%
Communications Equipment	12.0	1.33	0.96	1.0%
Construction & Engineering	9.6	1.31	1.33	0.1%
Construction Materials	9.2	1.13	1.17	0.1%
Electrical Equipment	8.1	1.16	1.21	0.5%
Electronic Equipment & Instruments	12.7	1.38	1.18	0.8%
Energy Equipment & Services	18.3	1.17	1.40	0.3%
Household Durables	10.9	1.17	1.39	0.5%
Industrial Conglomerates	8.0	1.12	1.03	1.1%
Machinery	10.3	1.15	1.21	1.8%
Metals & Mining	14.9	1.17	1.18	0.4%
Oil, Gas & Consumable Fuels	21.3	0.89	1.18	2.7%
Road & Rail	7.3	1.01	1.07	1.0%
Semis & Semi Equipment	12.2	1.39	1.19	4.6%
Tech Hardware, Storage & Peripherals	8.4	1.16	1.08	5.1%
<b>S&amp;P 1500</b>	<b>5.8</b>	<b>--</b>	<b>--</b>	<b>--</b>
<b>Sum</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>30.3%</b>

Source: FactSet, Morgan Stanley Research.

## Constructing A Cyclical Index

**Avoid the big drops.** By design, our grouping of higher beta cyclicals has price returns that move more than a broad index of equities. [Exhibit 58](#) plots a market cap weighted index of our high beta cyclicals from the top 1500 stocks by market cap (blue line) and the same broad universe of equities (yellow line), both indexed to 1 as of the start of 1985 and rebalanced based on market cap monthly. While the two indices tend to move together, the drawdowns in the cyclical series tend to be much larger than coincident drawdowns in the broader equities index such that even when the cyclicals enjoy periods of relative outperformance, they never quite make up for all the aggregate losses incurred in drawdowns. The green line shows the ratio of the cyclicals index to the broader market to better identify periods of relative out/underperformance. The relative drawdowns of the cyclicals around recessions in particular stand out for their volatility as does the fairly persistent downtrend in relative performance seen post crisis.

**Exhibit 58:** Cyclical Investing Is About Avoiding The Swings Lower



Source: ClariFi, Bloomberg, FactSet, Morgan Stanley Research.

## Component Excess Return Correlations with the Overall Cyclical Index

**Market relative returns of most cyclical groups are positively correlated to cyclicals broadly, but relationships between the group pairs are not as consistent.** [Exhibit 59](#) shows cross correlations for weekly excess returns (relative to the overall market) among the cyclical groups we have identified. The first column shows that the correlation between the groups and their aggregate is quite high as all subgroups show a positive correlation with cyclicals generally and 14 of our 22 have correlations at/above 20% (a level we'd generally look at as showing statistical significance).

**Tech focused groups have the highest correlation to cyclicals overall.** Among the groups with the strongest correlation to cyclicals broadly are Autos, Comm Equip, Electrical Equip, Electronic Equipment/Components, Energy Equipment/Services, Household Durables, and Tech Hardware. The heavy weighting of these groups within the overall cyclicals universe and with relatively high cross correlations among them are likely the main drivers for this high correlation.

**Financials, Transports (ex-Trucking), and Conglomerates show fairly little correlation**

**to cyclical excess returns overall.** These groups shows relatively less correlation of excess returns to cyclicals with correlations ranging from 0.02 to 0.13. The business models may also explain some of the divergence. Financials are more consumer/rate drive, transportation companies may simply be a bit "earlier cycle" and so out of phase with the rest of the groups, and Conglomerates diversity of business lines may make them less prone to cyclical of results.

**Exhibit 59: Cross Correlation Matrix of Market Excess Returns Among Cyclical Groups**

	Cyclical	Old Economy Cyclical	New Economy Cyclical	Air/Rail	Auto Components	Automobiles	Banks	Building Products	Capital Markets	Chemicals	Comm Equip	Construction & Engineering	Construction Materials	Electrical Equipment	Elec Equip & Comp	Energy Equipment & Services	Household Durables	Industrial Conglomerates	Machinery	Metal & Mining	Oil, Gas & Consumer Products	Railroads	Services	Tech/HW	Trucking
Cyclicals	1.00																								
Old Economy Cyclical	0.45	1.00																							
New Economy Cyclical	0.15	-0.27	1.00																						
Air/Rail	0.13	0.21	-0.01	1.00																					
Auto Components	0.21	0.31	-0.01	0.14	1.00																				
Automobiles	0.39	-0.34	0.73	-0.02	-0.03	1.00																			
Banks	0.12	0.47	-0.38	0.16	0.24	-0.22	1.00																		
Building Products	0.12	0.38	-0.15	0.28	0.28	-0.17	0.27	1.00																	
Capital Markets	0.09	0.21	-0.16	0.11	0.13	-0.14	0.30	0.10	1.00																
Chemicals	0.20	0.37	-0.20	0.20	0.18	-0.22	0.06	0.32	0.04	1.00															
Comm Equip	0.39	-0.30	0.80	-0.02	-0.01	0.42	-0.35	-0.11	-0.13	-0.14	1.00														
Construction & Engineering	0.30	0.31	0.02	0.15	0.14	0.02	0.06	0.20	0.08	0.20	-0.02	1.00													
Construction Materials	0.11	0.37	-0.17	0.23	0.20	-0.17	0.31	0.42	0.14	0.29	-0.15	0.28	1.00												
Electrical Equipment	0.41	0.27	0.16	0.17	0.13	0.11	-0.04	0.23	0.03	0.25	0.05	0.29	0.19	1.00											
Elec Equip & Comp	0.10	-0.24	0.83	0.04	0.02	0.57	-0.20	-0.07	-0.10	-0.10	0.44	0.02	-0.10	0.18	1.00										
Energy Equipment & Services	0.42	0.14	-0.08	0.06	0.07	-0.09	-0.01	0.11	-0.03	0.22	-0.04	0.24	0.10	0.18	-0.01	1.00									
Household Durables	0.19	-0.30	0.80	-0.02	-0.01	0.42	-0.23	-0.11	-0.13	-0.14	1.00	-0.02	-0.15	0.03	0.48	-0.04	1.00								
Industrial Conglomerates	0.10	0.31	-0.13	0.06	0.30	-0.12	0.31	0.15	0.07	0.16	-0.10	0.03	0.09	0.07	-0.10	-0.01	-0.10	1.00							
Machinery	0.36	0.45	-0.09	0.29	0.27	-0.11	0.14	0.46	0.11	0.56	-0.08	0.38	0.18	0.44	0.00	0.29	-0.08	0.18	1.00						
Metal & Mining	0.17	0.11	-0.04	0.13	0.15	-0.07	-0.04	0.20	0.05	0.40	-0.02	0.31	0.16	0.25	0.00	0.15	-0.02	0.03	0.50	1.00					
Oil, Gas & Consumer Products	0.24	0.42	-0.33	-0.03	-0.01	-0.32	-0.05	0.04	0.00	0.26	-0.12	0.17	0.12	0.07	-0.26	0.44	-0.22	-0.04	0.23	0.35	1.00				
Railroads	0.02	0.10	0.00	0.22	0.21	0.00	0.33	0.22	0.12	0.11	-0.02	0.05	0.15	0.07	0.02	-0.13	-0.02	0.11	0.17	-0.02	-0.21	1.00			
Services	0.16	-0.40	-0.15	0.30	0.30	-0.13	0.12	0.27	0.04	0.36	-0.14	0.13	0.19	0.17	-0.07	0.17	-0.14	0.09	0.40	0.25	0.19	0.11	1.00		
Tech/HW	0.42	-0.38	0.40	0.03	0.01	0.43	-0.14	-0.02	-0.10	-0.09	0.30	0.30	-0.03	0.26	0.46	0.00	0.30	-0.07	0.01	0.00	-0.23	0.04	-0.07	1.00	
Trucking	0.18	0.42	-0.03	0.29	0.43	-0.07	0.20	0.46	0.15	0.29	-0.02	0.22	0.30	0.27	0.02	0.14	-0.02	0.15	0.52	0.25	0.07	0.24	0.28	0.04	1.00

Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**Machinery tends to have the highest average correlation to other cyclical groups.**

Exhibit 60 looks at cross correlation among the groups a bit differently — it shows the average correlation of excess returns for each group with all the others as well as which pairs are most/least correlated. The first column simply looks at the average correlation of excess returns across all 22 cyclical groups while the second looks at what % of the pairings with a particular group show correlations > 20%. Machinery stands out as having the highest average correlation with all other groups (24%) and almost 60% of those pairings show correlations above 20%. The third column shows the highest correlation pair for any group (minimum 20% correlation to minimize noise), and Machinery stands out here as well. Autos and Energy stand out for having among the lowest correlations with many of the other groups.

**Exhibit 60:** Average, Highest & Lowest Excess Return Correlations Across Cyclical Groups

Cyclical Group	Avg Correl Across Cyc Groups	% Groups: Cross-Correl ≥ 20%	Most Correlated With (Min 20% Correl)	Least Correlated With (Max 0% Correl, Red = Correl < -20%)
Cyclicals	26%	59%	Electronic Equipment, Instruments & Components	--
Machinery	24%	57%	Chemicals	Automobiles
Old Economy Cyclicals	24%	73%	Oil, Gas & Consumable Fuels	Automobiles
Trucking	20%	57%	Machinery	Automobiles
Building Products	17%	57%	Machinery	Automobiles
Electrical Equipment	16%	33%	Machinery	Banks
Metals & Mining	16%	48%	Machinery	Automobiles
Chemicals	16%	52%	Machinery	Automobiles
Construction & Engineering	14%	38%	Machinery	Communications Equipment
Construction Materials	14%	38%	Building Products	Automobiles
Airlines	13%	33%	Semiconductors & Semiconductor Equipment	Oil, Gas & Consumable Fuels
Auto Components	13%	24%	Trucking	Automobiles
Semiconductors & Semiconductor Equipment	13%	29%	Machinery	Communications Equipment
Energy Equipment & Services	10%	24%	Oil, Gas & Consumable Fuels	Railroads
New Economy Cyclicals	10%	23%	Electronic Equipment, Instruments & Components	Oil, Gas & Consumable Fuels
Railroads	8%	24%	Trucking	Oil, Gas & Consumable Fuels
Electronic Equipment, Instruments & Components	6%	19%	Automobiles	Oil, Gas & Consumable Fuels
Technology Hardware, Storage & Peripherals	6%	24%	Electronic Equipment, Instruments & Components	Oil, Gas & Consumable Fuels
Banks	5%	33%	Capital Markets	Communications Equipment
Industrial Conglomerates	5%	5%	Banks	Automobiles
Capital Markets	4%	5%	Banks	Automobiles
Household Durables	3%	19%	Communications Equipment	Banks
Communications Equipment	3%	19%	Household Durables	Banks
Oil, Gas & Consumable Fuels	3%	19%	Energy Equipment & Services	Automobiles
Automobiles	1%	19%	Electronic Equipment, Instruments & Components	Oil, Gas & Consumable Fuels

Source: Clarifi, Bloomberg, FactSet, Morgan Stanley Research.

**No obvious pairwise lead/lags.** We also tested for leading and lagging pair relationships across the cyclical groups, but generally found that contemporaneous excess returns showed the highest correlations. Specifically we tested weekly leads/lags up to a year in either direction and in the few instances where the correlation moved higher or lower than contemporaneous returns with a lead or a lag, that correlation was very close to 0, indicating an absence of a consistent lead/lag relationship.

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In the next 3 months, Morgan Stanley expects to receive or intends to seek compensation for investment banking services from 3M Co., 8x8 Inc, Abbott Laboratories, Abercrombie & Fitch Co., Abiomed, Acadia Healthcare Company Inc, Acceleron Pharma Inc, Acushnet Holdings Corp, Adobe Inc., ADT Inc, Advance Auto Parts Inc, Advanced Disposal Services, Inc., Advanced Drainage Systems Inc, Affiliated Managers Group Inc., Aftec, AGCO Corp, Air Products and Chemicals Inc., Akamai Technologies, Inc., Akebia Therapeutics Inc, Albemarle Corporation, Alcoa Corp, Alcon Inc, Alector Inc, Alexion Pharmaceuticals, Algonquin Power & Utilities Corp, Allegion PLC, Allele Inc., Allison Transmission Holdings Inc, Allscripts Healthcare Solutions Inc., Allstate Corporation, Ally Financial Inc, Alnylam Pharmaceuticals Inc, AMC Networks, Inc., Ameren Corp, American Assets Trust Inc., American Axle & Manufacturing Holdings Inc, American Equity Investment Life Holding, American Express Company, American Homes 4 Rent, American Int'l Grp, Ameriprise Financial, Inc., Ametek Inc., Amgen Inc., Anaplan Inc, Anterix Inc, Antero Resources Corp, Anthem Inc, Aon PLC, Apache Corp., Apollo Global Management Inc, Appian Corp, Aprea Therapeutics Inc, Aptiv Plc, Aramark Holdings Corporation, Arch Capital Group Ltd., Ares Management Corp, argenx SE, Arista Networks, Arthur J. Gallagher, Ascendis Pharma A/S, Assurant Inc., AT&T, Inc., Athene Holding Ltd, Atlassian Corporation PLC, Atmos Energy Corp., Autodesk, AutoZone Inc., AvalonBay Communities Inc., Avanos Medical Inc, Avis Budget Group Inc, AVROBIO Inc, Axalta Coating Systems Ltd, Axis Capital Holdings, Axonics Modulation Technologies Inc., B&G Foods Inc., Baker Hughes Co, Bank of America, Bank OZK, Barnes Group Inc., Baxter International, BCE Inc., Becton Dickinson, Bed Bath & Beyond Inc., BeiGene Ltd, Belden Inc., Berkshire Hathaway Inc, Best Buy Co Inc, Biogen Inc, Biohaven Pharmaceutical Holding Company, Biomarin Pharmaceutical Inc, BJS Wholesale Club, BlackRock Inc., Bloom Energy Corp., Bluebird Bio Inc, Blueprint Medicines Corporation, BNY Mellon, BOK Financial Corp, BorgWarner Inc., Boston Properties, Inc., Boston Scientific, Box Inc, Boyd Gaming Corporation, Bright Horizons Family Solutions Inc, BrightHouse Financial Inc, BrightSphere Investment Group INC, Brinker International Inc., Brown & Brown Inc., Cabaletta Bio Inc, Cabot Oil & Gas Corp., Cactus Inc, Cadence Bancorp, Caesars Entertainment Corp, Callon Petroleum Company, Capital One Financial Corporation, Capri Holdings Ltd, Carlisle Companies Inc, Carlyle Group Inc, Carrier Global Corporation, Carvana Co, Caterpillar Inc., CBL & Associates Properties Inc, CDK Global Inc, Celanese Corp., Centene Corp, CenterPoint Energy Inc, CenturyLink, Inc., CF Industries, Charah Solutions Inc, Charles Schwab Corp, Chart Industries, Check Point Software Technologies Ltd., Chegg Inc, Chesapeake Energy Corp, Chevron Corporation, Chipotle Mexican Grill, Inc., Choice Hotels International Inc, Chubb LTD, Church & Dwight Co., Inc., Cigna Corp, Cimarex Energy Co., Cincinnati Bell Inc., Cinemark Holdings, Inc., CIT Group Inc., Citigroup Inc., Citizens Financial Group, Inc, Citrix Systems Inc, Clorox Co, Cloudera Inc, Cloudflare Inc, CMS Energy Corp, CNH Industrial NV, CNO Financial Group Inc., Cognex Corp, Colfax Corp, Colgate-Palmolive Co, Columbia Property Trust Inc, Comerica Inc, Commerce Bancshares, Compass Minerals International, Inc., Concho Resources Inc., ConocoPhillips, Consolidated Edison Inc, Continental Resources Inc., Corteva Inc., Costco Wholesale Corp, Coty Inc, Coupa Software Inc, Covia Holdings Corp, Cubic Corp., Cullen/Frost Bankers, Cummins Inc., CyberArk Software Ltd, Cytokinetics Inc, Darden Restaurants Inc., Datadog, Inc., DBV Technologies SA, Deere & Co., Delphi Technologies PLC, Denali Therapeutics Inc, Devon Energy Corp, DexCom Inc, DHC US, Diamondback Energy Inc, DiamondRock Hospitality Co, Dick's Sporting Goods, Discover Financial Services, Discovery Inc., DocuSign Inc, Dollar General Corporation, Dollar Tree Inc, Dominos Pizza Inc., Domtar Corporation, Dover, DraftKings Inc, Dril Quip Inc., Duke Energy Corp, Duke Realty Corp., Dunkin Brands Group Inc, DuPont De Nemours Inc., E\*Trade Financial Corp, East West Bancorp, Inc., EastGroup Properties Inc., Eastman Chemical Co, Eaton Corporation PLC, Eaton Vance Corp, Ecolab Inc., Edgewell Personal Care, Edison International, Editas Medicine, Edwards Lifesciences, Element



Solutions Inc, elf Beauty, Emerson Electric Co, Enbridge, Energizer Holdings Inc., Energy Transfer LP, Entergy Corp, Enterprise Products LP, Envista Holdings Corporation, EOG Resources Inc, Epizyme Inc, Equifax Inc, Equitable Holdings Inc, Equity Residential, Essex Property Trust, Inc., Estee Lauder Companies Inc, Evelo Biosciences Inc, Evercore Inc, Everest Re Group, Ltd., Eversource Energy, Exelixis Inc., Extended Stay America Inc, Extra Space Storage Inc., Exxon Mobil Corporation, FactSet Research Systems Inc., Fastenal Co., Ferrari NV, Fiat Chrysler Automobiles NV, Fifth Third Bancorp, FireEye Inc, First Horizon National, First Quantum Minerals Ltd, First Republic Bank, First Solar Inc, FirstEnergy Corp, Five9 Inc, Floor & Decor Holdings Inc, Flowserve Corp, FMC Corporation, Foot Locker Inc, Ford Motor Company, ForeScout Technologies Inc, Fortinet Inc., Fortive Corp, Forum Energy Technologies Inc, Fox Corporation, Franklin Resources Inc., Freeport-McMoRan Inc, FTS International Inc, Fulcrum Therapeutics Inc, Galapagos NV, Gaming and Leisure Properties Inc, Gap Inc, Garrett Motion Inc, Gartner Inc., Gates Industrial Corporation plc, General Electric Co., General Motors Company, Genmab A/S, Gilead Sciences Inc., Global Blood Therapeutics Inc, Global Payments Inc, Globalstar Inc, Globe Life Inc, Globus Medical Inc, Gogo Inc, Goldman Sachs Group Inc, Goodyear Tire & Rubber Company, Graco Inc., Great Western Bancorp Inc., Grocery Outlet Holding Corp, Gulfport Energy Corp, Haemonetics Corporation, Halliburton Co, Hamilton Lane Incorporated, Hanesbrands Inc., Hannon Armstrong, Harley-Davidson Inc, Hartford Fin. Services Grp., Hawaiian Electric Industries Inc., Healthcare Realty Trust Inc., Healthcare Trust of America Inc, Healthequity Inc, Healthpeak Properties Inc, Helios Technologies Inc, Helmerich & Payne Inc, Hess Corp., Hewlett Packard Enterprise, Highwoods Properties, Hill-Rom Holdings Inc., Hilton Worldwide Holdings Inc, Hologic, Inc., Home Depot Inc, Honeywell International Inc, Host Hotels & Resorts, Inc., Houghton Mifflin Harcourt Co, Houlihan Lokey Inc, Hubbell Inc., HubSpot, Inc., Hudson Pacific Properties, Humana Inc, Huntington Bancshares, Huntsman Corp, Hyatt Hotels Corporation, IBM, iHeartMedia Inc, IHS Markit Ltd, Illinois Tool Works, Imara Inc, Immunomedics Inc, Incyte Corp, Independence Contract Drilling, Inc., Ingersoll Rand Inc, Innovia Inc, Insmad Inc, Insulet Corp., Intact Financial Corp, Intelsat S.A., International Flavors & Fragrances, Interpublic Group, Intrepid Potash, Intuit, Intuitive Surgical Inc., Invesco, Invitation Homes Inc, Ionis Pharmaceuticals Inc, IPG Photonics Corp, IRHYTHM TECHNOLOGIES INC, Ironwood Pharmaceuticals, Inc., Israel Chemicals Ltd., J.P.Morgan Chase & Co., Jack in the Box Inc., JOHN BEAN TECH, Johnson & Johnson, Johnson Controls International Plc, Jones Lang LaSalle Inc, Kaleido Biosciences Inc., Kennametal Inc., KeyCorp, Kilroy Realty Corp., Kimberly-Clark Corp, Kimco Realty Corp., Kinder Morgan Inc., Kirby Corporation, KKR & CO. Inc, Kodiak Sciences Inc, Kohl's, Korn/Ferry International, Kroger Co., Lamar Advertising Co., Largo Resources Ltd, Las Vegas Sands Corp., Laureate Education Inc, Lear Corporation, Legg Mason Inc., Lennox International Inc, Levi Strauss & Co, Liberty Oilfield Services Inc, Lincoln National Corp, Lions Gate Entertainment Corp., Live Nation Entertainment Inc., Liveramp Holdings Inc, Lowe's Companies Inc, LPL Financial Holdings Inc., Lululemon Athletica Inc., Lumentum Holdings Inc, LyondellBasell Industries N.V., M&T Bank Corp., Mack-Cali Realty, Macy's Inc., Madison Square Garden Co, Magellan Midstream Partners LP, Magna International Inc., Manulife Financial Corp., Marathon Oil Corporation, Marathon Petroleum Corporation, Marriott International Inc., Marsh & McLennan Cos, McDonald's Corporation, MDU Resources Group, Inc., Medtronic PLC, MetLife Inc., MGM Growth Properties LLC, MGM Resorts International, Microsoft, Moderna Inc, Moelis & Co, Molina Healthcare Inc, MongoDB Inc, Moody's Corp, Mosaic Company, MPLX LP, MSCI Inc., MSG Networks Inc, MyoKardia Inc, Nabors Industries Inc., Nabriva Therapeutics PLC, National Oilwell Varco Inc., National Retail Properties Inc, National Storage Affiliates Trust, Navient Corp, Netflix Inc, Neurocrine Biosciences Inc, Nevro Corp, New Relic Inc, New Senior Investment Group Inc, New York Community Bancorp, Inc, Newell Brands Inc., NextCure Inc., Nextier Oilfield Solutions Inc, NICE Ltd., Nielsen Holdings NV, Nike Inc., Noble Corporation PLC, Noble Energy Inc., Nordstrom, Northern Trust Corp., NorthWestern Corp., NortonLifeLock Inc, Norwegian Cruise Line Holdings Ltd, Nu Skin Enterprises Inc., Nuance Communications Inc., NuVasive Inc, O'Reilly Automotive Inc, Oasis Petroleum Inc., Occidental Petroleum Corp, Office Properties Income Trust, Oil States International Inc., Okta, Inc., Olin Corp., Omnicom Group Inc., ONE Gas Inc, Oneok Inc., Oracle Corporation, Oshkosh Corp., OUTFRONT MEDIA INC, PACCAR Inc, PagerDuty, Inc., Palo Alto Networks Inc, Paramount Group Inc., PARK HOTELS & RESORTS INC, Parker-Hannifin Corp, Parsley Energy Inc, Party City Holdco Inc, Paychex Inc, PBF Energy Inc, Penn National Gaming, Inc., Pentair plc, People's United Financial, Inc., PG&E Corp, Phillips 66, Physicians Realty Trust, Pilgrims Pride, Pinnacle West Capital Corp, Pioneer Natural Resources Co., Plains All American Pipeline LP, Plug Power Inc., Pluralsight Inc., PNC Financial Services, PolyOne Corporation, Portola Pharmaceuticals Inc, PPG Industries Inc., PPL Corp, PQ Group Holdings Inc, Precision Drilling Corp, Prevail Therapeutics Inc, Principal Financial Group, Procter & Gamble Co., Progressive Corp, Prologis, Inc., Proofpoint Inc, PROS Holdings Inc, Prosperity Bancshares Inc, Prudential Financial, Public Storage, PVH Corp., Qualys Inc, Radius Health Inc, Range Resources Corp., Rapid7 Inc, Raymond James Financial Inc., Realty Income Corp, Regency Centers Corp, Regeneron Pharmaceuticals Inc., Regenxbio Inc, Regions Financial Corp, Reinsurance Group of America, Restaurant Brands International, Inc., Retail Value Inc, REV Group Inc., Revolve Group Inc, Rhythm Pharmaceuticals Inc, RingCentral Inc, Rockwell Automation, Rogers Communications, Inc., Roku Inc., Rubius Therapeutics Inc., Ryder System Inc., S&P Global Inc, Sabre Corp, SAGE Therapeutics Inc, SailPoint Technologies Holdings Inc, Salesforce.com, Sanderson Farms, Santander Consumer USA Holdings Inc, Sarepta Therapeutics Inc, Schlumberger NV, Schrodinger Inc., Science Applications International Corp, Seattle Genetics Inc., Sempra Energy, ServiceMaster Global Holdings Inc., ServiceNow Inc, Shake Shack Inc, Sherwin-Williams Co., Shockwave Medical Inc., SH-BONE Inc., Signature Bank, Simon Property Group Inc, Site Centers Corp, Skechers USA Inc., SL Green Realty Corporation, Slack Technologies, Inc., Smartsheet Inc, Solarwinds Corp, South Jersey Industries Inc, Southern Company, Southwestern Energy Co, Spire Inc, Spirit Realty Capital, Splunk Inc, Spotify Technology SA, Sprout Social Inc, Stanley Black & Decker, Starbucks Corp., State Street Corporation, STORE Capital Corp, Stryker Corporation, Sun Life Financial Inc., SunPower Corp, Sunrun Inc, Sunstone Hotel Investors Inc, Superior Energy Services Inc., SVB Financial Group, Synchrony Financial, Syndax Pharmaceuticals Inc, Synovus Financial Corp., T-Mobile US, Inc., T. Rowe Price Group, Inc., TAPESTRY INC, Targa Resources Corp., Target Corp, Taubman Centers Inc, TC Energy Corp, TCF Financial Corp., TD Ameritrade Holding Corp., TECHNIPFMC, Teck Resources Limited, Teleflex Inc., Telephone & Data Systems, TELUS Corp., Tempur-Pedic International Inc., Tenable Holdings Inc, Tenaris SA, Tenneco Inc., Terex Corp., Tesla Inc, Textron Inc., The Blackstone Group Inc, The Cheesecake Factory, Inc., The Michaels Companies, Inc., The Travelers Companies, Inc., The Wendy's Company, Thomson Reuters Corp., Tiffany & Co., Timken Co, TPI Composites Inc., Tractor Supply Co, Tradeweb Markets Inc, Trane Technologies PLC, Transmedics Group Inc, Transocean Ltd., TransUnion, Trinseo S.A., Truist Financial Corp, Twilio Inc, Tyson Foods, U.S. Bancorp, U.S. Silica Holdings, Inc., UDR, Inc., Ulta Beauty Inc, Ultragenyx Pharmaceutical Inc, Under Armour Inc., United Rentals Inc., UnitedHealth Group Inc, Unity Biotechnology Inc., Unum Group, Urban Edge Properties, Urban Outfitters Inc., Valaris PLC, Valero Energy Corporation, Valley National Bancorp, Valvoline Inc., Varonis Systems, Inc., Veeva Systems Inc, Ventas Inc, Vereit Inc, Verisk Analytics, Inc., Verizon Communications, Vertex Pharmaceuticals, ViacomCBS Inc, ViaSat Inc, VICI Properties Inc, Victory Capital Holdings Inc, Viela Bio, ViewRay Inc, Virtu Financial Inc, Virtus Investment Partners, Visteon Corporation, VMware Inc, Vonage Holdings Corp, Vornado Realty Trust, Voya Financial Inc, Voyager Therapeutics Inc, W.R. Berkley Corp., W.W. Grainger Inc., Waddell & Reed Financial Inc, Walker & Dunlop Inc., Walmart Inc, Walt Disney Co, Washington REIT, Watsco Inc., Webster Financial Corp, Wells Fargo & Co., Welltower Inc., Westinghouse Air Brake Technologies Corp, Westlake Chemical Corp, Westrock Co, Williams Companies Inc, Williams-Sonoma Inc, Willis Towers Watson PLC, WillScot Corporation, Wingstop Inc, WisdomTree Investments, Inc., Workday Inc, Workiva Inc, World Wrestling Entertainment Inc, Worthington Industries Inc, WPX Energy Inc, Wynn Resorts, Limited, Xcel Energy Inc, Xenia Hotels & Resorts Inc, Xerox Corp, Y-mAbs Therapeutics Inc., Yeti Holdings Inc., Yext Inc, Yum! Brands, Inc., Zealand Pharma A/S, Zendesk, Inc, Zentalis Pharmaceuticals Inc, Zimmer Biomet Holdings Inc, Zions Bancorp, Zoom Video Communications Inc, Zscaler Inc, Zuora Inc.

Within the last 12 months, Morgan Stanley has received compensation for products and services other than investment banking services from 3M Co., Abbott Laboratories, Adobe Inc., Advance Auto Parts Inc, Advanced Disposal Services, Inc., Affiliated Managers Group Inc., Aflac, AGCO Corp, Akamai Technologies, Inc., Albemarle Corporation, Alcoa Corp, Algonquin Power & Utilities Corp, Allison Transmission Holdings Inc, Allstate Corporation, Ally Financial Inc, AMC Networks, Inc., Ameren Corp, American Axle & Manufacturing Holdings Inc, American Equity Investment Life Holding, American Express Company, American Int'l Grp, Ameriprise Financial, Inc., Amgen Inc., Antero Resources Corp, Anthem Inc, Aon PLC, Apache Corp., Apollo Global Management Inc, Aptiv PLC, Aramark Holdings Corporation, Arch Capital Group Ltd., Ares Management Corp, Assurant Inc., AT&T, Inc., Athene Holding Ltd, Atmos Energy Corp., Autodesk, AvalonBay Communities Inc., Avis Budget Group Inc, Axalta Coating Systems Ltd, Baker Hughes Co, Bank of America, Bank OZK, BankUnited Inc, Baxter International, BCE Inc., Becton Dickinson, Berkshire Hathaway Inc, Biogen Inc, BlackRock Inc., Bloom Energy Corp., BNY Mellon, BOK Financial Corp, BorgWarner Inc., Boston Properties, Inc., Boston Scientific, Bright Horizons Family Solutions Inc, Brighthouse Financial Inc, Brightsphere Investment Group INC, Cabot Oil & Gas Corp., Cadence Bancorp, Caesars Entertainment Corp, Capital One Financial Corporation, Carlyle

Group Inc, Carrier Global Corporation, Caterpillar Inc., Celanese Corp., Centene Corp, CenterPoint Energy Inc, CenturyLink, Inc., CF Industries, Charles Schwab Corp, Chart Industries, Check Point Software Technologies Ltd., Chemours Co, Chesapeake Energy Corp, Chipotle Mexican Grill, Inc., Chubb LTD, Church & Dwight Co., Inc., Cigna Corp, Cincinnati Bell Inc., Cinemark Holdings, Inc., CIT Group Inc., Citigroup Inc., Citizens Financial Group, Inc, Clorox Co, Cloudera Inc, CMS Energy Corp, CNH Industrial NV, CNO Financial Group Inc., Colgate-Palmolive Co, Comerica Inc, Commerce Bancshares, Compass Minerals International, Inc., Concho Resources Inc., ConocoPhillips, Consolidated Edison Inc, Continental Resources Inc., Coty Inc, Cullen/Frost Bankers, Delek US Holdings Inc, Devon Energy Corp, DHC US, Discover Financial Services, Discovery Inc., Dollar General Corporation, Dominos Pizza Inc., Domtar Corporation, Dover, Dow Inc., Duke Energy Corp, Duke Realty Corp., Dunkin Brands Group Inc, DuPont De Nemours Inc., E\*Trade Financial Corp, East West Bancorp, Inc., Eastman Chemical Co, Eaton Corporation PLC, Eaton Vance Corp, Ecolab Inc., Edgewell Personal Care, Edison International, Edwards Lifesciences, Element Solutions Inc, elf Beauty, Enbridge, Energy Transfer LP, Entergy Corp, Enterprise Products LP, EOG Resources Inc, EQT Corp., Equitable Holdings Inc, Equity Residential, Evercore Inc, Eversource Energy, Exxon Mobil Corporation, Ferrari NV, Fiat Chrysler Automobiles NV, Fifth Third Bancorp, First Horizon National, First Republic Bank, FirstEnergy Corp, Flowserve Corp, FMC Corporation, Ford Motor Company, Fortinet Inc., Fox Corporation, Franklin Resources Inc., Freeport-McMoRan Inc, FTS International Inc, Galapagos NV, Gates Industrial Corporation plc, General Electric Co., General Motors Company, Gilead Sciences Inc., Globe Life Inc, Goldman Sachs Group Inc, Goodyear Tire & Rubber Company, Gulfport Energy Corp, H&R Block, Hanesbrands Inc., Harley-Davidson Inc, Hartford Fin. Services Grp., Helmerich & Payne Inc, Hess Corp., Hewlett Packard Enterprise, Hilton Worldwide Holdings Inc, Hologic, Inc., Home Depot Inc, Honeywell International Inc, Houghton Mifflin Harcourt Co, Hubbell Inc., Humana Inc, Huntington Bancshares, Huntsman Corp, Hyatt Hotels Corporation, IBM, iHeartMedia Inc, IHS Markit Ltd, Illinois Tool Works, Independence Contract Drilling, Inc., Ingersoll Rand INC, Intact Financial Corp, Intelsat S.A., Interpublic Group, Intuit, Invesco, Israel Chemicals Ltd., J.P.Morgan Chase & Co., Jack in the Box Inc., Johnson & Johnson, Johnson Controls International Plc, Jones Lang LaSalle Inc, KeyCorp, Kimberly-Clark Corp, Kimco Realty Corp., Kinder Morgan Inc., KKR & CO. Inc, Kohl's, Kroger Co., Lamar Advertising Co., Las Vegas Sands Corp., Laureate Education Inc, Lear Corporation, Legg Mason Inc., Levi Strauss & Co, Lincoln National Corp, Live Nation Entertainment Inc., LKQ Corp, Lowe's Companies Inc, LPL Financial Holdings Inc., LyondellBasell Industries N.V., M&T Bank Corp., Macerich Co, Mack-Cali Realty, Macy's Inc., Magellan Midstream Partners LP, Manulife Financial Corp., Marathon Oil Corporation, Marathon Petroleum Corporation, Marriott International Inc., Marsh & McLennan Cos, McDonald's Corporation, Medtronic PLC, MetaLife Inc., MGM Resorts International, Microsoft, Molina Healthcare Inc, Moody's Corp, Mosaic Company, MPLX LP, MSCI Inc., National Retail Properties Inc, Navient Corp, Netflix Inc, New Senior Investment Group Inc, New York Community Bancorp, Inc, Newell Brands Inc., NICE Ltd., Nielsen Holdings NV, Noble Corporation PLC, Noble Energy Inc., Nordstrom, Northern Trust Corp., NorthWestern Corp., NortonLifeLock Inc, Nuance Communications Inc., Nutrien Ltd, O'Reilly Automotive Inc, Oasis Petroleum Inc., Occidental Petroleum Corp, ONE Gas Inc, Oneok Inc., Oracle Corporation, Oshkosh Corp., Palo Alto Networks Inc, Parker-Hannifin Corp, Parsley Energy Inc, Party City Holdco Inc, Paychex Inc, PBF Energy Inc, Penn National Gaming, Inc., People's United Financial, Inc., PG&E Corp, Pinnacle West Capital Corp, Pioneer Natural Resources Co., Plains All American Pipeline LP, PNC Financial Services, PolyOne Corporation, Potlatch Corp., PPG Industries Inc., PPL Corp, PQ Group Holdings Inc, Principal Financial Group, Procter & Gamble Co., Progressive Corp, Prologis, Inc., Prudential Financial, Public Storage, PVH Corp., Qualys Inc, Range Resources Corp., Raymond James Financial Inc., Realty Income Corp, Regions Financial Corp, Reinsurance Group of America, Restaurant Brands International, Inc., Rogers Communications, Inc., Roku Inc., S&P Global Inc, Sabre Corp, Salesforce.com, Schlumberger NV, Science Applications International Corp, Secureworks Corp, Sempra Energy, ServiceMaster Global Holdings Inc., Signature Bank, Simon Property Group Inc, Site Centers Corp, SL Green Realty Corporation, Solarwinds Corp, Southern Company, Southwestern Energy Co, Spire Inc, Spirit Realty Capital, Spotify Technology SA, Stanley Black & Decker, Starbucks Corp., State Street Corporation, STORE Capital Corp, Stryker Corporation, Sun Life Financial Inc., Superior Energy Services Inc., SVB Financial Group, Synchrony Financial, T-Mobile US, Inc., T. Rowe Price Group, Inc., Targa Resources Corp., TCF Financial Corp., TD Ameritrade Holding Corp., TECHNIPFMC, Teleflex Inc., TELUS Corp., Tenneco Inc., Terex Corp., Textron Inc., The Blackstone Group Inc, The Michaels Companies, Inc., The Travelers Companies, Inc., The Wendy's Company, Thomson Reuters Corp., Timken Co, Tradeweb Markets Inc, Transocean Ltd., Truist Financial Corp, Tyson Foods, U.S. Bancorp, UDR, Inc., United Rentals Inc., UnitedHealth Group Inc, Unum Group, Valaris PLC, Valero Energy Corporation, Valley National Bancorp, Ventas Inc, Verisk Analytics, Inc., Verizon Communications, Vertex Pharmaceuticals, ViaSat Inc, Victory Capital Holdings Inc, Virtu Financial Inc, Virtus Investment Partners, Visteon Corporation, Vornado Realty Trust, Voya Financial Inc, W.R. Berkley Corp., W.W. Grainger Inc., Waddell & Reed Financial Inc, Walmart Inc, Walt Disney Co, Wells Fargo & Co., Welltower Inc., Westlake Chemical Corp, Westrock Co, Williams Companies Inc, Willis Towers Watson PLC, WillScot Corporation, WisdomTree Investments, Inc., WPX Energy Inc, Wynn Resorts, Limited, Xcel Energy Inc, Xerox Corp, Yum! Brands, Inc., Zimmer Biomet Holdings Inc, Zions Bancorp.

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Inc., Estee Lauder Companies Inc, Evelo Biosciences Inc, Evercore Inc, Everest Re Group, Ltd., Eversource Energy, Exelixis Inc., Extended Stay America Inc, Extra Space Storage Inc., Exxon Mobil Corporation, FactSet Research Systems Inc., Fastenal Co., Ferrari NV, Fiat Chrysler Automobiles NV, Fifth Third Bancorp, FireEye Inc, First Horizon National, First Quantum Minerals Ltd, First Republic Bank, First Solar Inc, FirstEnergy Corp, Five9 Inc, Floor & Decor Holdings Inc, Flowserve Corp, FMC Corporation, Foot Locker Inc, Ford Motor Company, ForeScout Technologies Inc, Fortinet Inc., Fortive Corp, Forum Energy Technologies Inc, Fox Corporation, Franklin Resources Inc., Freeport-McMoRan Inc, FTS International Inc, Fulcrum Therapeutics Inc, Galapagos NV, Gaming and Leisure Properties Inc, Gap Inc, Garrett Motion Inc, Gartner Inc., Gates Industrial Corporation plc, General Electric Co., General Motors Company, Genmab A/S, Gilead Sciences Inc., Global Blood Therapeutics Inc, Global Payments Inc, Globalstar Inc, Globe Life Inc, Globus Medical Inc, Gogo Inc, Goldman Sachs Group Inc, Goodyear Tire & Rubber Company, Graco Inc., Great Western Bancorp Inc., Grocery Outlet Holding Corp, Gulfport Energy Corp, Haemonetics Corporation, Halliburton Co, Hamilton Lane Incorporated, Hanesbrands Inc., Hannon Armstrong, Harley-Davidson Inc, Hartford Fin. 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Inc, Kodiak Sciences Inc, Kohl's, Korn/Ferry International, Kroger Co., Lamar Advertising Co., Largo Resources Ltd, Las Vegas Sands Corp., Laureate Education Inc, Lear Corporation, Legg Mason Inc., Lennox International Inc, Levi Strauss & Co, Liberty Oilfield Services Inc, Lincoln National Corp, Lions Gate Entertainment Corp., Live Nation Entertainment Inc., Liveramp Holdings Inc, Lowe's Companies Inc, LPL Financial Holdings Inc., Lululemon Athletica Inc., Lumentum Holdings Inc, LyondellBasell Industries N.V., M&T Bank Corp., Mack-Cali Realty, Macy's Inc., Madison Square Garden Co, Magellan Midstream Partners LP, Magna International Inc., Manulife Financial Corp., Marathon Oil Corporation, Marathon Petroleum Corporation, Marriott International Inc., Marsh & McLennan Cos, McDonald's Corporation, MDU Resources Group, Inc., Medtronic PLC, MetLife Inc., MGM Growth Properties LLC, MGM Resorts International, Microsoft, Modema Inc, Moelis & Co, Molina Healthcare Inc, MongoDB Inc, Moody's Corp, Mosaic Company, MPLX LP, MSCI Inc., MSG Networks Inc, MyoKardia Inc, Nabors Industries Inc., Nabriva Therapeutics PLC, National Oilwell Varco Inc., National Retail Properties Inc, National Storage Affiliates Trust, Navient Corp, Netflix Inc, Neurocrine Biosciences Inc, Nevro Corp, New Relic Inc, New Senior Investment Group Inc, New York Community Bancorp, Inc, Newell Brands Inc., NextCure Inc., Nextier Oilfield Solutions Inc, NICE Ltd., Nielsen Holdings NV, Nike Inc., Noble Corporation PLC, Noble Energy Inc., Nordstrom, Northern Trust Corp., NorthWestern Corp., NortonLifeLock Inc, Norwegian Cruise Line Holdings Ltd, Nu Skin Enterprises Inc., Nuance Communications Inc., NuVasive Inc, O'Reilly Automotive Inc, Oasis Petroleum Inc, Occidental Petroleum Corp, Office Properties Income Trust, Oil States International Inc., Okta, Inc., Olin Corp., Omnicom Group Inc., ONE Gas Inc, Oneok Inc., Oracle Corporation, Oshkosh Corp., OUTFRONT MEDIA INC, PACCAR Inc, PagerDuty, Inc., Palo Alto Networks Inc, Paramount Group Inc., PARK HOTELS & RESORTS INC, Parker-Hannifin Corp, Parsley Energy Inc, Party City Holdco Inc, Paychex Inc, PBF Energy Inc, Penn National Gaming, Inc., Penske Automotive Group, Inc, Pentair plc, People's United Financial, Inc., PG&E Corp, Phillips 66, Physicians Realty Trust, Pilgrims Pride, Pinnacle West Capital Corp, Pioneer Natural Resources Co., Plains All American Pipeline LP, Plug Power Inc., Pluralsight Inc., PNC Financial Services, PolyOne Corporation, Portola Pharmaceuticals Inc, PPG Industries Inc., PPL Corp, PQ Group Holdings Inc, Precision Drilling Corp, Prevail Therapeutics Inc, Principal Financial Group, Procter & Gamble Co., Progressive Corp, Prologis, Inc., Proofpoint Inc, PROS Holdings Inc, Prosperity Bancshares Inc, Prudential Financial, Public Storage, PVH Corp., Qualys Inc, Radius Health Inc, Range Resources Corp., Rapid7 Inc, Raymond James Financial Inc., Realty Income Corp, Regency Centers Corp, Regeneron Pharmaceuticals Inc., Regenxbio Inc, Regions Financial Corp, Reinsurance Group of America, Restaurant Brands International, Inc., Retail Value Inc, REV Group Inc., Revolve Group Inc, Rhythm Pharmaceuticals Inc, RingCentral Inc, Rockwell Automation, Rogers Communications, Inc., Roku Inc., Rubius Therapeutics Inc., Ryder System Inc., S&P Global Inc, Sabre Corp, SAGE Therapeutics Inc, SailPoint Technologies Holdings Inc, Salesforce.com, Sanderson Farms, Santander Consumer USA Holdings Inc, Sarepta Therapeutics Inc, Schlumberger NV, Schrodinger Inc., Science Applications International Corp, Seattle Genetics Inc., Sempra Energy, ServiceMaster Global Holdings Inc., ServiceNow Inc, Shake Shack Inc, Sherwin-Williams Co., Shockwave Medical Inc., SI-BONE Inc., Signature Bank, Simon Property Group Inc, Site Centers Corp, Skechers USA Inc., SL Green Realty Corporation, Slack Technologies, Inc., Smartsheet Inc, Solarwinds Corp, South Jersey Industries Inc, Southern Company, Southwestern Energy Co, Spire Inc, Spirit Realty Capital, Splunk Inc, Spotify Technology SA, Sprout Social Inc, Stanley Black & Decker, Starbucks Corp., State Street Corporation, STORE Capital Corp, Stryker Corporation, Sun Life Financial Inc., SunPower Corp, Sunrun Inc, Sunstone Hotel Investors Inc, Superior Energy Services Inc., SVB Financial Group, Synchrony Financial, Syndax Pharmaceuticals Inc, Synovus Financial Corp., T-Mobile US, Inc., T. Rowe Price Group, Inc., TAPESTRY INC, Targa Resources Corp., Target Corp, Taubman Centers Inc, TC Energy Corp, TCF Financial Corp., TD Ameritrade Holding Corp., TECHNIPFMC, Teck Resources Limited, Teleflex Inc., Telephone & Data Systems, TELUS Corp., Tempur-Pedic International Inc., Tenable Holdings Inc, Tenaris SA, Tenneco Inc., Terex Corp., Tesla Inc, Textract Inc., The Blackstone Group Inc, The Cheesecake Factory, Inc., The Michaels Companies, Inc., The Travelers Companies, Inc., The Wendy's Company, Thomson Reuters Corp., Tiffany & Co., Timken Co, TPI Composites Inc., Tractor Supply Co, Tradeweb Markets Inc, Trane Technologies PLC, Transmedics Group Inc, Transocean Ltd., TransUnion, Trinseo S.A., Truist Financial Corp, Twilio Inc, Tyson Foods, U.S. Bancorp, U.S. Silica Holdings, Inc., UDR, Inc., Ulta Beauty Inc, Ultragenyx Pharmaceutical Inc, Under Armour Inc., United Rentals Inc., UnitedHealth Group Inc, Unity Biotechnology Inc., Unum Group, Urban Edge Properties, Urban Outfitters Inc., Valaris PLC, Valero Energy Corporation, Valley National Bancorp, Valvoline Inc., Varonis Systems, Inc., Veeva Systems Inc, Ventas Inc, Vereit Inc, Verisk Analytics, Inc., Verizon Communications, Vertex Pharmaceuticals, ViacomCBS Inc, ViaSat Inc, VICI Properties Inc, Victory Capital Holdings Inc, Viela Bio, ViewRay Inc, Virtu Financial Inc, Virtus Investment Partners, Visteon Corporation, VMware Inc, Vonage Holdings Corp, Vornado Realty Trust, Voya Financial Inc, Voyager Therapeutics Inc, W.R. Berkley Corp., W.W. Grainger Inc., Waddell & Reed Financial Inc, Walker & Dunlop Inc., Walmart Inc, Walt Disney Co, Washington REIT, Watsco Inc., Webster Financial Corp, Wells Fargo & Co., Welltower Inc., Westinghouse Air Brake Technologies Corp, Westlake Chemical Corp, Westrock Co, Williams Companies Inc, Williams-Sonoma Inc, Willis Towers Watson PLC, WillScot Corporation, Wingstop Inc, WisdomTree Investments, Inc., Workday Inc, Workiva Inc, World Wrestling Entertainment Inc, Worthington Industries Inc, WPX Energy Inc, Wynn Resorts, Limited, Xcel Energy Inc, Xenia Hotels & Resorts Inc, Xerox Corp, Y-mAbs Therapeutics Inc., Yeti Holdings Inc., Yext Inc, Yum! Brands, Inc., Zealand Pharma A/S, Zendesk, Inc, Zentalis Pharmaceuticals Inc, Zimmer Biomet Holdings Inc, Zions Bancorp, Zoom Video Communications Inc, Zscaler Inc, Zuora Inc.

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INC, Cabot Oil & Gas Corp., Cadence Bancorp, Caesars Entertainment Corp, Capital One Financial Corporation, Carlyle Group Inc, Carrier Global Corporation, Caterpillar Inc., CDK Global Inc, Celanese Corp., Centene Corp, CenterPoint Energy Inc, CenturyLink, Inc., CF Industries, Charles Schwab Corp, Chart Industries, Check Point Software Technologies Ltd., Chegg Inc, Chemours Co, Chesapeake Energy Corp, Chevron Corporation, Chipotle Mexican Grill, Inc., Chubb LTD, Church & Dwight Co., Inc., Cigna Corp, Cincinnati Bell Inc., Cincinnati Financial Corp., Cinemark Holdings, Inc., CIT Group Inc., Citigroup Inc., Citizens Financial Group, Inc, Citrix Systems Inc, Clorox Co, Cloudera Inc, CMS Energy Corp, CNH Industrial NV, CNO Financial Group Inc., Colgate-Palmolive Co, Columbia Property Trust Inc, Comerica Inc, Commerce Bancshares, Compass Minerals International, Inc., Concho Resources Inc., ConocoPhillips, Consolidated Edison Inc, Continental Resources Inc., Coty Inc, Coupa Software Inc, Cullen/Frost Bankers, CyberArk Software Ltd, Cytokinetics Inc, DBV Technologies SA, Deere & Co., Delek US Holdings Inc, Devon Energy Corp, DHC US, Diamondback Energy Inc, Discover Financial Services, Discovery Inc., DocuSign Inc, Dollar General Corporation, Dominos Pizza Inc., Domtar Corporation, Dover, Dow Inc., Duke Energy Corp, Duke Realty Corp., Dunkin Brands Group Inc, DuPont De Nemours Inc., E\*Trade Financial Corp, East West Bancorp, Inc., Eastman Chemical Co, Eaton Corporation PLC, Eaton Vance Corp, Ecolab Inc., Edgewell Personal Care, Edison International, Edwards Lifesciences, Element Solutions Inc, elf Beauty, Emerson Electric Co, Enbridge, Energy Transfer LP, Entergy Corp, Enterprise Products LP, EOG Resources Inc, EQT Corp., Equitable Holdings Inc, Equity Residential, Evercore Inc, Eversource Energy, Exxon Mobil Corporation, Ferrari NV, Fiat Chrysler Automobiles NV, Fifth Third Bancorp, FireEye Inc, First American Financial Corp, First Horizon National, First Republic Bank, First Solar Inc, FirstEnergy Corp, Five9 Inc, Flowserve Corp, FMC Corporation, Ford Motor Company, Fortinet Inc., Fortive Corp, Fox Corporation, Franklin Resources Inc., Freeport-McMoRan Inc, FTS International Inc, Galapagos NV, Gates Industrial Corporation plc, General Electric Co., General Motors Company, Genmab A/S, Gilead Sciences Inc., Globe Life Inc, Goldman Sachs Group Inc, Goodyear Tire & Rubber Company, Great Western Bancorp Inc., Gulfport Energy Corp, H&R Block, Haemonetics Corporation, Halliburton Co, Hanesbrands Inc., Harley-Davidson Inc, Hartford Fin. Services Grp., Hawaiian Electric Industries Inc., Healthpeak Properties Inc, Helmerich & Payne Inc, Hess Corp., Hewlett Packard Enterprise, Highwoods Properties, Hilton Worldwide Holdings Inc, Hologic, Inc., Home Depot Inc, Honeywell International Inc, Houghton Mifflin Harcourt Co, Hubbell Inc., HubSpot, Inc., Humana Inc, Huntington Bancshares, Huntsman Corp, Hyatt Hotels Corporation, IBM, iHeartMedia Inc, IHS Markit Ltd, Illinois Tool Works, Independence Contract Drilling, Inc., Ingersoll Rand INC, Insulet Corp., Intact Financial Corp, Intelsat S.A., International Flavors & Fragrances, Interpublic Group, Intuit, Invesco, Invitation Homes Inc, Israel Chemicals Ltd., J.P.Morgan Chase & Co., Jack in the Box Inc., Johnson & Johnson, Johnson Controls International Plc, Jones Lang LaSalle Inc, KeyCorp, Kimberly-Clark Corp, Kimco Realty Corp., Kinder Morgan Inc., Kirby Corporation, KKR & CO. 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Berkley Corp., W.W. Grainger Inc., Waddell & Reed Financial Inc, Walmart Inc, Walt Disney Co, Wayfair Inc, Webster Financial Corp, Wells Fargo & Co., Welltower Inc., Westlake Chemical Corp, Westrock Co, Whiting Petroleum Corporation, Williams Companies Inc, Willis Towers Watson PLC, WillScot Corporation, WisdomTree Investments, Inc., Workday Inc, World Wrestling Entertainment Inc, WPX Energy Inc, Wynn Resorts, Limited, Xcel Energy Inc, Xenia Hotels & Resorts Inc, Xerox Corp, Yum! Brands, Inc., Zimmer Biomet Holdings Inc, Zions Bancorp.

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Chipotle Mexican Grill, Inc., Choice Hotels International Inc, Chubb LTD, Church & Dwight Co., Inc., Cigna Corp, Cimarex Energy Co., Cincinnati Bell Inc., Cincinnati Financial Corp., Cinemark Holdings, Inc., Cintas Corp, Citigroup Inc., Citizens Financial Group, Inc, Citrix Systems Inc, Clorox Co, CMS Energy Corp, CNO Financial Group Inc., Cognex Corp, Colfax Corp, Colgate-Palmolive Co, Columbia Property Trust Inc, Comerica Inc, Commerce Bancshares, Commercial Metals Company, Compass Minerals International, Inc., Concho Resources Inc., ConocoPhillips, Consolidated Edison Inc, Continental Resources Inc., Costco Wholesale Corp, Coty Inc, Crane Co., Cubic Corp., Cummins Inc., CyberArk Software Ltd, Cytokinetics Inc, Darden Restaurants Inc., Datadog, Inc., Deere & Co., Delphi Technologies PLC, Devon Energy Corp, DexCom Inc, DHC US, Diamondback Energy Inc, DiamondRock Hospitality Co, Dick's Sporting Goods, Discover Financial Services, Discovery Inc., DocuSign Inc, Dollar General Corporation, Dollar Tree Inc, Domo Inc, Domtar Corporation, Dover, Drill Quip Inc., Duke Energy Corp, Duke Realty Corp., Dunkin Brands Group Inc, East West Bancorp, Inc., EastGroup Properties Inc., Eastman Chemical Co, Eaton Corporation PLC, Eaton Vance Corp, Ecolab Inc., Edgewell Personal Care, Edison International, Edwards Lifesciences, Eldorado Resorts Inc., Emerson Electric Co, Enbridge, Energizer Holdings Inc., Energy Transfer LP, Entergy Corp, Enterprise Products LP, EOG Resources Inc, Epizyme Inc, EQT Corp., Equifax Inc, Equitable Holdings Inc, Equity Residential, Estee Lauder Companies Inc, Evelo Biosciences Inc, Evercore Inc, Eversource Energy, Exelixis Inc., Extended Stay America Inc, Extra Space Storage Inc., Exxon Mobil Corporation, Fastenal Co., Fifth Third Bancorp, FireEye Inc, First American Financial Corp, First Horizon National, First Republic Bank, First Solar Inc, FirstEnergy Corp, Five Below Inc, Flowserve Corp, FMC Corporation, Foot Locker Inc, Ford Motor Company, ForeScout Technologies Inc, Fortinet Inc., Forum Energy Technologies Inc, Fox Corporation, Franklin Resources Inc., Freeport-McMoRan Inc, Fulcrum Therapeutics Inc, Gaming and Leisure Properties Inc, Gap Inc, Gartner Inc., General Electric Co., General Motors Company, Gilead Sciences Inc., Global Blood Therapeutics Inc, Global Payments Inc, Globalstar Inc, Globe Life Inc, Globus Medical Inc, Gogo Inc, Goldman Sachs Group Inc, Goodyear Tire & Rubber Company, Graco Inc., Great Western Bancorp Inc., Grocery Outlet Holding Corp, Group 1 Automotive, Inc, Gulfport Energy Corp, H&R Block, Halliburton Co, Hanesbrands Inc., Hannon Armstrong, Harley-Davidson Inc, Hartford Fin. 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Rowe Price Group, Inc., TAPESTRY INC, Targa Resources Corp., Target Corp, Taubman Centers Inc, Taylor Morrison Home Corp, TC Energy Corp, TCF Financial Corp., TD Ameritrade Holding Corp., Teck Resources Limited, Telephone & Data Systems, TELUS Corp., Tempur-Pedic International Inc., Tenable Holdings Inc, Tenneco Inc., Terex Corp., Tesla Inc, Texas Roadhouse, Inc., Textron Inc., The Blackstone Group Inc, The Cheesecake Factory, Inc., The Michaels Companies, Inc., The Travelers Companies, Inc., The Wendy's Company, Thomson Reuters Corp., Tiffany & Co., Timken Co, Tractor Supply Co, Trane Technologies PLC, Transocean Ltd., TransUnion, Trinseo S.A., Tronox Holdings Plc-Class A, Truist Financial Corp, Tyson Foods, U.S. Silica Holdings, Inc., UDR, Inc., Ulta Beauty Inc, Ultragenyx Pharmaceutical Inc, Under Armour Inc., United Rentals Inc., UnitedHealth Group Inc, Unum Group, Urban Edge Properties, Urban Outfitters Inc., US Cellular Corporation, Valaris PLC, Valero Energy Corporation, Valley National Bancorp, Varonis Systems, Inc., Veeva Systems Inc, Ventas Inc, Vereit Inc, Verisk Analytics, Inc., Verizon Communications, Vertex Pharmaceuticals, ViacomCBS Inc, ViaSat Inc, Virtu Financial Inc, Visteon Corporation, VMware Inc, Vonage Holdings Corp, Vornado Realty Trust, Voya Financial Inc, W.R. Berkley Corp., Waddell & Reed Financial Inc, Walker & Dunlop Inc., Walmart Inc, Walt Disney Co, Washington REIT, Wayfair Inc, Webster Financial Corp, Wells Fargo & Co., Welltower Inc., Westinghouse Air Brake Technologies Corp, Westlake Chemical Corp, Westrock Co, Whiting Petroleum Corporation, Williams Companies Inc, Williams-Sonoma Inc, Willis Towers Watson PLC, Wingstop Inc, Workday Inc, World Wrestling Entertainment Inc, Worthington Industries Inc, WPX Energy Inc, Wynn Resorts, Limited, Xcel Energy Inc, Xenia Hotels & Resorts Inc, Xerox Corp, Yum! Brands, Inc., Zealand Pharma A/S, Zendeck, Inc, Zentaris Pharmaceuticals Inc, Zimmer Biomet Holdings Inc, Zions Bancorp, Zoom Video Communications Inc, Zscaler Inc.

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## Global Stock Ratings Distribution

(as of May 31, 2020)

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STOCK RATING CATEGORY	COVERAGE UNIVERSE		INVESTMENT BANKING CLIENTS (IBC)			OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC)	
	COUNT	% OF TOTAL	COUNT	% OF TOTAL IBC	% OF RATING CATEGORY	COUNT	% OF TOTAL OTHER MISC
<b>Overweight/Buy</b>	<b>1220</b>	<b>38%</b>	<b>317</b>	<b>43%</b>	<b>26%</b>	<b>550</b>	<b>37%</b>
<b>Equal-weight/Hold</b>	<b>1433</b>	<b>45%</b>	<b>336</b>	<b>46%</b>	<b>23%</b>	<b>687</b>	<b>47%</b>
<b>Not-Rated/Hold</b>	<b>5</b>	<b>0%</b>	<b>1</b>	<b>0%</b>	<b>20%</b>	<b>4</b>	<b>0%</b>
<b>Underweight/Sell</b>	<b>554</b>	<b>17%</b>	<b>79</b>	<b>11%</b>	<b>14%</b>	<b>227</b>	<b>15%</b>
<b>TOTAL</b>	<b>3,212</b>		<b>733</b>			<b>1468</b>	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

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Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Not-Rated (NR). Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

## Analyst Industry Views

Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.

Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.

Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

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## INDUSTRY COVERAGE: Midcap Banks

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Ken A Zerbe, CFA</b>		
Bank OZK (OZK.O)	E (10/19/2018)	\$27.78
BankUnited Inc (BKU.N)	E (09/18/2018)	\$22.73
BOK Financial Corp (BOKF.O)	E (06/20/2011)	\$63.89
Cadence Bancorp (CADE.N)	E (09/25/2018)	\$9.86
CIT Group Inc. (CIT.N)	E (03/27/2017)	\$26.50
Citizens Financial Group, Inc (CFG.N)	O (11/03/2014)	\$29.25
Comerica Inc (CMAN)	E (11/26/2019)	\$45.52
Commerce Bancshares (CBSH.O)	U (09/20/2016)	\$68.25
Cullen/Frost Bankers (CFR.N)	U (11/12/2018)	\$82.79
East West Bancorp, Inc. (EWBC.O)	O (07/01/2019)	\$40.84
Fifth Third Bancorp (FITB.O)	E (07/05/2016)	\$23.49
First Horizon National (FHN.N)		\$11.53
First Republic Bank (FRC.N)	E (11/16/2016)	\$120.11
Huntington Bancshares (HBAN.O)	E (12/10/2015)	\$10.99
KeyCorp (KEY.N)	E (04/07/2020)	\$14.56
M&T Bank Corp. (MTB.N)	E (04/04/2011)	\$123.30
New York Community Bancorp, Inc (NYCB.N)	U (03/11/2019)	\$10.94
People's United Financial, Inc. (PBCT.O)	E (06/05/2017)	\$13.45
Prosperity Bancshares Inc (PB.N)	E (06/05/2017)	\$70.50
Signature Bank (SBNY.O)	O (07/01/2019)	\$115.57
SVB Financial Group (SVB.O)	O (11/11/2015)	\$235.20
Synovus Financial Corp. (SNV.N)	O (11/12/2018)	\$23.39
TCF Financial Corp. (TCF.O)	E (08/16/2019)	\$35.10
Valley National Bancorp (VLY.O)	E (08/07/2012)	\$9.20
Webster Financial Corp (WBS.N)	E (07/01/2019)	\$33.32
Zions Bancorp (ZION.O)	E (11/16/2016)	\$38.61

Stock Ratings are subject to change. Please see latest research for each company.

\* Historical prices are not split adjusted.

## INDUSTRY COVERAGE: Branded Apparel &amp; Footwear

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Kimberly C Greenberger</b>		
Foot Locker Inc (FL.N)	E (08/08/2019)	\$33.40
Levi Strauss & Co (LEVI.N)	E (04/15/2019)	\$16.07
Nike Inc. (NKE.N)	O (08/01/2018)	\$102.71
PVH Corp. (PVH.N)	O (04/09/2019)	\$62.75
Skechers USA Inc. (SKXN)	E (08/01/2018)	\$35.52
Under Armour Inc. (UAAN)	E (08/01/2018)	\$11.10
Yeti Holdings Inc. (YETI.N)	E (03/29/2019)	\$35.82

Stock Ratings are subject to change. Please see latest research for each company.

\* Historical prices are not split adjusted.

## INDUSTRY COVERAGE: Chemicals

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Angel Castillo</b>		
Trinseo S.A. (TSE.N)	U (05/28/2020)	\$25.35
<b>Lisa H De Neve</b>		
International Flavors & Fragrances (IFF.N)	++	\$137.86
<b>Neel Kumar, CFA</b>		
Element Solutions Inc (ESI.N)	E (01/30/2017)	\$11.75
Huntsman Corp (HUN.N)	E (09/25/2018)	\$19.72
Olin Corp. (OLN.N)	E (07/19/2019)	\$14.53
Westlake Chemical Corp (WLK.N)	E (01/09/2018)	\$58.25
<b>Vincent Andrews</b>		
Air Products and Chemicals Inc. (APD.N)	O (02/09/2020)	\$248.58
Albemarle Corporation (ALB.N)	U (02/26/2018)	\$84.31
Axalta Coating Systems Ltd (AXTAN)	E (12/09/2015)	\$24.70
Celanese Corp. (CE.N)	E (10/08/2012)	\$97.72
CF Industries (CF.N)	E (05/25/2016)	\$32.72
Chemours Co (CC.N)	E (01/30/2018)	\$16.52
Corteva Inc. (CTV.N)	E (06/03/2019)	\$30.65
Dow Inc. (DOW.N)	E (12/01/2019)	\$43.97
DuPont De Nemours Inc. (DD.N)	++	\$56.14
Eastman Chemical Co (EMN.N)	O (01/17/2019)	\$76.92
Ecolab Inc. (ECL.N)	E (08/15/2017)	\$229.56
FMC Corporation (FMC.N)	E (05/20/2019)	\$103.21
Intrepid Potash (IPI.N)	U (10/03/2013)	\$1.30
Israel Chemicals Ltd. (ICL.N)	E (11/03/2014)	\$3.70
Linde PLC (LIN.N)	O (02/09/2020)	\$221.28
LyondellBasell Industries N.V. (LYB.N)	O (12/01/2019)	\$74.87
Mosaic Company (MOS.N)	E (03/16/2016)	\$14.10
Nutrien Ltd (NTR.N)	E (12/11/2018)	\$38.23
PolyOne Corporation (POL.N)	O (05/28/2020)	\$28.85
PPG Industries Inc. (PPG.N)	E (11/01/2019)	\$113.95
PQ Group Holdings Inc (PQG.N)	E (10/24/2017)	\$14.36
RPM International Inc. (RPM.N)	O (03/19/2014)	\$78.60
Sherwin-Williams Co. (SHW.N)	O (03/19/2014)	\$585.29
Tronox Holdings Plc-Class A (TROXN)	E (01/30/2018)	\$8.46
Venator Materials PLC (VNTR.N)	E (01/30/2018)	\$2.24

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\* Historical prices are not split adjusted.

## INDUSTRY COVERAGE: Business &amp; Education Services

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Javier Martínez de Olcoz Cerdan</b>		
Laureate Education Inc (LAUR.O)	E (04/07/2020)	\$11.45
<b>Jeffrey D Goldstein, CFA</b>		
H&R Block (HRB.N)	E (06/27/2019)	\$18.97
Houghton Mifflin Harcourt Co (HMHC.O)	E (02/23/2018)	\$2.75
<b>Toni Kaplan</b>		
ADT Inc (ADT.N)	E (05/13/2019)	\$8.37
Advanced Disposal Services, Inc. (ADSW.N)	E (10/12/2018)	\$31.79
Aramark Holdings Corporation (ARMK.N)	E (08/10/2016)	\$30.46
Bright Horizons Family Solutions Inc (BFAM.N)	E (10/08/2019)	\$136.34
Charah Solutions Inc (CHRA.N)	E (08/15/2019)	\$1.73
Cintas Corp (CTAS.O)	U (07/20/2016)	\$286.50
Equifax Inc (EFX.N)	E (01/18/2017)	\$177.01
FactSet Research Systems Inc. (FDS.N)	U (07/16/2019)	\$317.00
Gartner Inc. (IT.N)	E (09/24/2015)	\$135.00
IHS Markit Ltd (INFO.N)	U (07/14/2016)	\$73.56
Moody's Corp (MCO.N)	E (01/07/2020)	\$279.69
MSCI Inc. (MSCI.N)	E (03/24/2014)	\$330.88
Nielsen Holdings NV (NLSN.N)	O (12/14/2016)	\$16.26
S&P Global Inc (SPGI.N)	O (01/07/2020)	\$333.37
ServiceMaster Global Holdings Inc. (SERV.N)	O (04/02/2020)	\$32.29
Thomson Reuters Corp. (TRI.N)	++	\$70.95
TransUnion (TRU.N)	O (01/07/2020)	\$93.21
Verisk Analytics, Inc. (VRSK.O)	O (01/07/2020)	\$166.13

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## INDUSTRY COVERAGE: Telecom Services

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Simon Flannery</b>		
Anterix Inc (ATEX.O)	E (11/11/2019)	\$56.13
AT&T, Inc. (T.N)	O (06/27/2018)	\$32.77
BCE Inc. (BCE.TO)	U (12/17/2019)	C\$59.50
CenturyLink, Inc. (CTL.N)	E (12/17/2019)	\$10.81
Cincinnati Bell Inc. (CBB.N)		\$14.76
Globalstar Inc (GSAT.A)	E (04/11/2018)	\$0.35
Gogo Inc (GOGO.O)	U (11/15/2013)	\$3.17
Intelsat S.A. (INTEQ.PK)	E (11/12/2018)	\$0.62
Rogers Communications, Inc. (RCIb.TO)	E (12/17/2015)	C\$58.75
Telephone & Data Systems (TDS.N)	O (06/18/2019)	\$21.10
TELUS Corp. (T.TO)	O (04/30/2018)	C\$24.95
T-Mobile US, Inc. (TMUS.O)	O (04/17/2020)	\$101.13
US Cellular Corporation (USMN)	O (06/18/2019)	\$33.01
Verizon Communications (VZ.N)	E (12/12/2018)	\$57.74
ViaSat Inc (VSAT.O)	E (12/15/2017)	\$45.39

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## INDUSTRY COVERAGE: Autos &amp; Shared Mobility

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Adam Jonas, CFA</b>		
Avis Budget Group Inc (CAR.O)	E (05/21/2020)	\$31.43
Ferrari NV (RACE.N)	O (05/09/2019)	\$170.85
Fiat Chrysler Automobiles NV (FCHAM)	++	€9.31
Fiat Chrysler Automobiles NV (FCAU.N)	++	\$10.40
Ford Motor Company (F.N)	O (08/06/2019)	\$7.34
General Motors Company (GM.N)	O (04/09/2018)	\$30.61
Harley-Davidson Inc (HOG.N)	O (05/06/2013)	\$25.42
Hertz Global Holdings Inc (HTZ.N)	NR (05/29/2020)	\$2.57
Tesla Inc (TSLA.O)	E (03/19/2020)	\$885.66
<b>Armintas Sinkevicius, CFA, CPA</b>		
Adient PLC (ADNT.N)	E (02/12/2020)	\$21.39
American Axle & Manufacturing Holdings Inc (AXL.N)	E (03/30/2020)	\$8.75
Aptiv Plc (APTIV.N)	O (03/30/2020)	\$85.85
Asbury Automotive Group Inc (ABG.N)	E (07/10/2018)	\$81.50
AutoNation Inc. (AN.N)	U (07/10/2018)	\$43.47
BorgWarner Inc. (BWA.N)	E (03/30/2020)	\$37.29
Carmax Inc (KMX.N)	O (07/10/2018)	\$95.93
Carvana Co (CVNA.N)	U (01/14/2019)	\$115.87
Delphi Technologies PLC (DLPH.N)	E (10/15/2018)	\$15.21
Garrett Motion Inc (GTX.N)	U (09/09/2019)	\$6.49
Goodyear Tire & Rubber Company (GT.O)	E (08/13/2018)	\$9.89
Group 1 Automotive, Inc (GPI.N)	O (05/06/2019)	\$77.19
Lear Corporation (LEAN)	E (03/30/2020)	\$123.77
Lithia Motors Inc. (LAD.N)	O (07/10/2018)	\$146.51
Magna International Inc. (MGAN)	E (03/30/2020)	\$46.82
Penske Automotive Group, Inc (PAG.N)	O (07/10/2018)	\$43.62
Sonic Automotive Inc (SAH.N)	E (11/14/2019)	\$32.17
Tenneco Inc. (TEN.N)	U (03/30/2020)	\$10.23
Visteon Corporation (VC.O)	U (03/22/2018)	\$81.67

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## INDUSTRY COVERAGE: Hardline/Broadline/Food Retail

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Simeon Gutman, CFA</b>		
Advance Auto Parts Inc (AAP.N)	O (06/23/2014)	\$146.10
At Home Group Inc (HOME.N)	E (06/10/2019)	\$6.88
AutoZone Inc. (AZO.N)	O (03/16/2020)	\$1,153.93
Bed Bath & Beyond Inc. (BBBY.O)	U (03/16/2020)	\$9.32
Best Buy Co Inc (BBY.N)	E (01/19/2016)	\$82.53
BJ'S Wholesale Club (BJ.N)	E (07/23/2018)	\$34.72
Costco Wholesale Corp (COST.O)	O (03/16/2020)	\$312.04
Dick's Sporting Goods (DKS.N)	E (05/20/2016)	\$38.44
Dollar General Corporation (DG.N)	O (02/16/2016)	\$185.66
Dollar Tree Inc (DLTR.O)	E (02/16/2016)	\$92.90
Five Below Inc (FIVE.O)	O (06/30/2019)	\$110.05
Floor & Decor Holdings Inc (FND.N)	E (11/12/2018)	\$56.00
Grocery Outlet Holding Corp (GO.O)	E (07/15/2019)	\$34.63
Home Depot Inc (HD.N)	O (02/23/2017)	\$254.90
Kroger Co. (KR.N)	E (06/19/2017)	\$32.48
Lowe's Companies Inc (LOW.N)	O (01/21/2015)	\$130.97
Lumber Liquidators Holdings Inc (LL.N)	U (01/21/2020)	\$11.23
National Vision Holdings Inc. (EYE.O)	O (11/20/2017)	\$31.79
O'Reilly Automotive Inc (ORLY.O)	O (04/01/2020)	\$422.70
Ollie's Bargain Outlet Holdings Inc (OLLI.O)	E (09/25/2017)	\$95.93
Party City Holdco Inc (PRTY.N)	E (01/19/2016)	\$1.78
Sally Beauty Holdings Inc (SBH.N)	U (11/08/2017)	\$15.64
Target Corp (TGT.N)	E (05/20/2019)	\$121.53
The Michaels Companies, Inc. (MK.O)	U (12/20/2019)	\$5.51
Tractor Supply Co (TSCO.O)	O (01/21/2020)	\$122.13
Ulta Beauty Inc (ULTA.O)	E (08/29/2019)	\$252.08
Valvoline Inc. (VV.N)	E (10/18/2016)	\$19.61
Walmart Inc (WMT.N)	O (01/23/2019)	\$121.56
Wayfair Inc (W.N)	U (02/24/2020)	\$170.76
Williams-Sonoma Inc (WSMN)	U (01/23/2019)	\$85.53

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## INDUSTRY COVERAGE: Retail, Specialty Retail

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Kimberly C Greenberger</b>		
Abercrombie & Fitch Co. (ANF.N)	U (02/26/2015)	\$13.83
Acushnet Holdings Corp (GOLF.N)	E (10/23/2019)	\$35.61
American Eagle Outfitters, Inc. (AEO.N)	E (06/04/2020)	\$12.98
Capri Holdings Ltd (CPRI.N)	E (11/14/2016)	\$20.86
Gap Inc (GPS.N)	E (04/22/2020)	\$12.31
L Brands Inc (LB.N)	E (08/23/2018)	\$18.68
Lululemon Athletica Inc. (LULU.O)	E (09/02/2016)	\$319.78
Revolve Group Inc (RVLV.N)	E (02/26/2020)	\$17.46
TAPESTRY INC (TPR.N)	E (10/17/2018)	\$17.31
Tiffany & Co. (TIF.N)	E (11/04/2011)	\$121.99
Urban Outfitters Inc. (URBN.O)	O (01/09/2019)	\$20.93

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## INDUSTRY COVERAGE: Integrated Oil

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Devin McDermott</b>		
Chevron Corporation (CVX.N)	O (04/01/2019)	\$100.81
Exxon Mobil Corporation (XOM.N)	E (04/01/2019)	\$53.08

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## INDUSTRY COVERAGE: Exploration &amp; Production

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Devin McDermott</b>		
Apache Corp. (APAN)	E (01/13/2020)	\$16.07
Callon Petroleum Company (CPE.N)	E (12/09/2019)	\$1.38
Chesapeake Energy Corp (CHK.N)	NR (04/15/2020)	\$24.80
Cimarex Energy Co. (XEC.N)	O (03/16/2020)	\$32.25
Concho Resources Inc. (CXO.N)	E (01/13/2020)	\$70.25
ConocoPhillips (COP.N)	O (07/12/2018)	\$48.59
Continental Resources Inc. (CLR.N)	U (03/16/2020)	\$18.43
Devon Energy Corp (DVN.N)	E (07/12/2018)	\$14.60
Diamondback Energy Inc (FANG.O)	E (03/16/2020)	\$52.21
EOG Resources Inc (EOG.N)	E (07/12/2018)	\$59.31
Gulfport Energy Corp (GPOR.O)	U (12/09/2019)	\$1.69
Hess Corp. (HES.N)	O (07/12/2018)	\$57.03
Marathon Oil Corporation (MRO.N)	U (05/19/2020)	\$7.32
Murphy Oil Corporation (MUR.N)	U (07/12/2018)	\$16.96
Noble Energy Inc. (NBL.O)	O (01/09/2019)	\$11.26
Oasis Petroleum Inc. (OAS.O)	NR (05/19/2020)	\$1.26
Occidental Petroleum Corp (OXY.N)	U (03/16/2020)	\$20.79
Parsley Energy Inc (PE.N)	O (05/19/2020)	\$12.22
Pioneer Natural Resources Co. (PXD.N)	O (07/12/2018)	\$110.89
Whiting Petroleum Corporation (WLL.N)	NR (04/15/2020)	\$1.38
<b>Mark Carlucci, CFA</b>		
Antero Resources Corp (AR.N)	U (04/30/2020)	\$3.22
Cabot Oil & Gas Corp. (COG.N)	E (04/30/2020)	\$20.42
EQT Corp. (EQT.N)	E (04/30/2020)	\$15.03
Range Resources Corp. (RRC.N)	U (04/30/2020)	\$6.59
Southwestern Energy Co (SWN.N)	U (04/30/2020)	\$3.34

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## INDUSTRY COVERAGE: Oil Services, Drilling &amp; Equipment

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Connor Lynagh</b>		
Baker Hughes Co (BKR.N)	O (09/18/2018)	\$17.75
Cactus Inc (WHD.N)	O (09/18/2018)	\$22.14
Chart Industries (GTL.S.O)	O (06/27/2019)	\$46.54
Core Laboratories NV (CLB.N)	E (09/18/2018)	\$26.86
Covia Holdings Corp (CVA.N)	U (10/11/2018)	\$0.88
Dril Quip Inc. (DRQ.N)	E (03/16/2020)	\$35.96
Forum Energy Technologies Inc (FET.N)	U (03/16/2020)	\$0.52
FTS International Inc (FTSI.A)	U (03/16/2020)	\$9.48
Halliburton Co (HAL.N)	E (03/16/2020)	\$14.52
Helmerich & Payne Inc (HP.N)	O (03/16/2020)	\$26.84
Independence Contract Drilling, Inc. (ICD.N)	E (06/21/2017)	\$6.70
Liberty Oilfield Services Inc (LBRT.N)	O (02/06/2018)	\$7.01
Nabors Industries Inc. (NBR.N)	E (03/16/2020)	\$65.62
National Oilwell Varco Inc. (NOV.N)	E (09/18/2018)	\$15.03
Nextier Oilfield Solutions Inc (NEX.N)	O (11/13/2019)	\$3.60
Noble Corporation PLC (NE.N)	U (09/18/2018)	\$0.28
Oil States International Inc. (OIS.N)	E (09/18/2018)	\$7.57
Patterson-UTI Energy (PTEN.O)	E (03/16/2020)	\$5.79
Precision Drilling Corp (PDS.N)	E (03/16/2020)	\$0.86
RPC (RES.N)	E (03/16/2020)	\$4.16
Schlumberger NV (SLB.N)	O (09/10/2019)	\$21.99
Superior Energy Services Inc. (SPN.N)	U (07/12/2018)	\$1.46
Tenaris SA (TS.N)	O (03/16/2020)	\$15.14
Transocean Ltd. (RIG.N)	O (09/18/2018)	\$2.50
U.S. Silica Holdings, Inc. (SLCAN)	U (10/11/2018)	\$4.10
Valaris PLC (VAL.N)	U (03/16/2020)	\$0.93
<b>Sasikanth Chilukuru, CFA</b>		
TECHNIPFMC (FTI.N)	O (01/14/2013)	\$9.59
TECHNIPFMC (FTI.PA)	O (01/17/2017)	€8.50

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## INDUSTRY COVERAGE: Refining &amp; Marketing

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Benny Wong</b>		
Delek US Holdings Inc (DK.N)	E (01/09/2019)	\$23.35
HollyFrontier Corporation (HFC.N)	E (02/12/2019)	\$36.77
Marathon Petroleum Corporation (MPC.N)	O (12/14/2016)	\$41.56
PBF Energy Inc (PBF.N)	E (03/16/2020)	\$14.15
Phillips 66 (PSX.N)	O (03/16/2020)	\$87.40
Valero Energy Corporation (VLO.N)	O (05/16/2018)	\$74.64

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## INDUSTRY COVERAGE: Large Cap Banks &amp; Consumer Finance

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Betsy L. Graseck, CFA</b>		
Ally Financial Inc (ALLY.N)	O (05/28/2020)	\$22.64
American Express Company (AXP.N)	O (04/25/2019)	\$109.73
Bank of America (BAC.N)	O (04/23/2013)	\$28.11
BNY Mellon (BK.N)	U (07/08/2019)	\$42.30
Capital One Financial Corporation (COF.N)	E (09/08/2017)	\$79.02
Citigroup Inc. (C.N)	O (11/14/2016)	\$58.86
Discover Financial Services (DFS.N)	O (01/28/2014)	\$60.62
Goldman Sachs Group Inc (GS.N)	E (11/21/2018)	\$217.92
J.P.Morgan Chase & Co. (JPM.N)	O (07/05/2017)	\$111.23
Northern Trust Corp. (NTRS.O)	U (11/28/2011)	\$90.70
PNC Financial Services (PNC.N)	E (07/25/2013)	\$128.03
Regions Financial Corp (RF.N)	E (02/11/2016)	\$13.33
Santander Consumer USA Holdings Inc (SC.N)	E (12/20/2016)	\$21.20
State Street Corporation (STT.N)	U (07/08/2019)	\$70.70
Synchrony Financial (SYF.N)	E (09/08/2017)	\$25.52
Truist Financial Corp (TFC.N)	E (01/07/2018)	\$44.31
U.S. Bancorp (USB.N)	U (11/14/2016)	\$42.37
Wells Fargo & Co. (WFC.N)	E (07/02/2018)	\$31.67

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## INDUSTRY COVERAGE: Midcap Advisors

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Manan Gosalia</b>		
Evercore Inc (EVR.N)	O (11/20/2019)	\$64.62
Houlihan Lokey Inc (HLI.N)	E (11/20/2019)	\$60.13
Lazard Ltd (LAZN)	U (11/20/2019)	\$32.69
Moelis & Co (MC.N)	E (06/21/2018)	\$37.85
Raymond James Financial Inc. (RJF.N)	E (11/20/2019)	\$81.34

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## INDUSTRY COVERAGE: Insurance - Property &amp; Casualty

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Michael W. Phillips</b>		
Allstate Corporation (ALL.N)	E (07/06/2010)	\$105.47
American Int'l Grp (AIG.N)	O (05/16/2017)	\$36.36
Aon PLC (AON.N)	E (03/06/2019)	\$200.20
Arch Capital Group Ltd. (ACGL.O)	E (07/06/2010)	\$34.98
Arthur J. Gallagher (AJG.N)	E (05/31/2012)	\$100.45
Assurant Inc. (AIZ.N)	O (07/10/2018)	\$114.88
Axis Capital Holdings (AXS.N)	E (08/14/2015)	\$41.05
Berkshire Hathaway Inc (BRKb.N)	E (03/20/2017)	\$200.66
Brown & Brown Inc. (BRO.N)	E (12/05/2019)	\$42.73
Chubb LTD (CB.N)	E (04/17/2019)	\$140.67
Everest Re Group, Ltd. (RE.N)	E (05/16/2013)	\$226.15
Hartford Fin. Services Grp. (HIG.N)	O (04/14/2020)	\$46.67
Intact Financial Corp (IFC.TO)	O (05/23/2016)	C\$133.87
Marsh & McLennan Cos (MMC.N)	E (02/09/2015)	\$111.49
Progressive Corp (PGR.N)	O (04/14/2020)	\$81.87
RenaissanceRe (RNR.N)	E (03/09/2015)	\$190.31
The Travelers Companies, Inc. (TRV.N)	U (01/05/2017)	\$124.36
W.R. Berkley Corp. (WRB.N)	E (01/21/2016)	\$63.86
Watford Holdings Ltd. (WTRE.O)	E (11/06/2019)	\$18.08
Willis Towers Watson PLC (WLTW.O)	E (02/14/2020)	\$206.81

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## INDUSTRY COVERAGE: Insurance - Life/Annuity

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Nigel Dally</b>		
Aflac (AFL.N)	E (05/27/2011)	\$40.53
Ameriprise Financial, Inc. (AMP.N)	E (01/07/2020)	\$155.57
Athene Holding Ltd (ATH.N)	O (04/03/2017)	\$35.57
BrightHouse Financial Inc (BHF.O)	E (08/14/2017)	\$35.58
CNO Financial Group Inc. (CNO.N)	E (05/17/2018)	\$16.54
Equitable Holdings Inc (EQH.N)	O (06/04/2018)	\$22.19
Globe Life Inc (GL.N)	U (08/13/2015)	\$85.92
Lincoln National Corp (LNC.N)	O (01/07/2020)	\$47.27
Manulife Financial Corp. (MFC.TO)	E (11/13/2014)	C\$19.52
MetLife Inc. (MET.N)	O (01/07/2020)	\$40.74
Principal Financial Group (PFG.O)	E (06/09/2014)	\$47.05
Prudential Financial (PRU.N)	E (12/13/2016)	\$69.23
Reinsurance Group of America (RGAN)	U (08/11/2014)	\$100.09
Sun Life Financial Inc. (SLF.TO)	E (05/25/2012)	C\$52.80
Unum Group (UNMN)	E (02/17/2010)	\$18.57
Voya Financial Inc (VOYA.N)	O (11/11/2015)	\$52.11

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## INDUSTRY COVERAGE: Healthcare Facilities &amp; Managed Care

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Ricky R Goldwasser</b>		
Anthem Inc (ANTM.N)	O (09/04/2018)	\$287.89
Centene Corp (CNC.N)	O (06/06/2017)	\$65.11
Cigna Corp (CI.N)	O (12/13/2018)	\$209.48
Humana Inc (HUM.N)	O (07/12/2018)	\$389.86
Molina Healthcare Inc (MOH.N)	O (08/17/2017)	\$171.03
UnitedHealth Group Inc (UNH.N)	O (06/06/2017)	\$311.85

Stock Ratings are subject to change. Please see latest research for each company.

\* Historical prices are not split adjusted.

## INDUSTRY COVERAGE: Multi-Industry

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Joshua C Pokrzywinski</b>		
3M Co. (MMM.N)	E (08/20/2018)	\$167.41
Advanced Drainage Systems Inc (WMS.N)	E (12/19/2019)	\$48.89
Allegion PLC (ALLE.N)	E (08/20/2018)	\$115.35
Ametek Inc. (AME.N)	O (12/18/2018)	\$96.99
Carrier Global Corporation (CARR.N)	E (04/08/2020)	\$23.56
Cognex Corp (CGNX.O)	U (03/23/2020)	\$57.96
Colfax Corp (CFX.N)	E (08/20/2018)	\$31.52
Dover (DOV.N)	O (03/23/2020)	\$107.60
Eaton Corporation PLC (ETN.N)	E (08/20/2018)	\$95.43
Emerson Electric Co (EMR.N)	E (03/23/2020)	\$67.10
Fastenal Co. (FAST.O)	E (12/18/2018)	\$42.66
Flowserve Corp (FLS.N)	E (05/22/2020)	\$31.59
Fortive Corp (FTV.N)	O (05/19/2020)	\$70.61
Gates Industrial Corporation plc (GTES.N)	E (12/18/2018)	\$11.37
General Electric Co. (GE.N)	O (01/23/2020)	\$7.88
Helios Technologies Inc (HLIO.O)	E (05/29/2020)	\$40.47
Honeywell International Inc (HON.N)	E (03/23/2020)	\$161.37
Hubbell Inc. (HUBB.N)	E (12/18/2018)	\$137.80
Illinois Tool Works (ITW.N)	E (03/23/2020)	\$182.87
Ingersoll Rand INC (IR.N)	O (11/09/2018)	\$33.24
Johnson Controls International Plc (JCI.N)	E (08/20/2018)	\$36.05
Lennox International Inc (LII.N)	U (08/20/2018)	\$235.88
Parker-Hannifin Corp (PH.N)	O (04/29/2020)	\$195.45
Pentair plc (PNR.N)	O (03/23/2020)	\$41.86
Rockwell Automation (ROK.N)	E (12/11/2019)	\$227.39
Stanley Black & Decker (SWK.N)	O (08/20/2018)	\$146.64
Trane Technologies PLC (TT.N)	O (08/20/2018)	\$102.01
W.W. Grainger Inc. (GWW.N)	E (12/11/2019)	\$322.83
Watsco Inc. (WSO.N)	E (12/18/2018)	\$177.36

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## INDUSTRY COVERAGE: Machinery

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Courtney Yakovonis, CFA</b>		
AGCO Corp (AGCO.N)	E (12/16/2019)	\$63.01
Allison Transmission Holdings Inc (ALSN.N)	E (07/17/2019)	\$41.04
Caterpillar Inc. (CAT.N)	U (04/27/2020)	\$135.12
CNH Industrial NV (CNHI.N)	++	\$7.60
Cummins Inc. (CMI.N)	E (03/02/2018)	\$180.01
Deere & Co. (DE.N)	O (03/02/2018)	\$166.72
Oshkosh Corp. (OSK.N)	O (03/17/2020)	\$83.51
PACCAR Inc (PCAR.O)	U (03/02/2018)	\$77.95
REV Group Inc. (REVG.N)	U (12/16/2019)	\$7.97
Terex Corp. (TEX.N)	E (03/02/2018)	\$20.64
Timken Co (TKR.N)	E (06/10/2019)	\$48.10
United Rentals Inc. (URI.N)	E (04/27/2020)	\$161.36
Westinghouse Air Brake Technologies Corp (WAB.N)	O (03/17/2020)	\$70.68
WillScot Corporation (WSC.O)	++	\$15.64

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\* Historical prices are not split adjusted.

## INDUSTRY COVERAGE: Software

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Josh Baer, CFA</b>		

CDK Global Inc (CDK.O)	E (12/05/2019)	\$43.70
Chegg Inc (CHGG.N)	O (11/25/2019)	\$58.54
Pluralsight Inc. (PS.O)	E (11/25/2019)	\$21.01
Sabre Corp (SABR.O)	E (12/05/2019)	\$10.35

**Keith Weiss, CFA**

Adobe Inc. (ADBE.O)	O (04/29/2019)	\$392.90
Akamai Technologies, Inc. (AKAM.O)	E (04/29/2020)	\$99.00
Atlassian Corporation PLC (TEAM.O)	O (01/13/2020)	\$174.26
Autodesk (ADSK.O)	E (01/15/2019)	\$233.71
Box Inc (BOX.N)	O (03/25/2020)	\$18.31
Check Point Software Technologies Ltd. (CHKP.O)	U (01/13/2020)	\$111.67
Cloudflare Inc (NET.N)	U (04/14/2020)	\$29.14
CyberArk Software Ltd (CYBR.O)	O (09/27/2018)	\$105.40
FireEye Inc (FEYE.O)	E (12/13/2018)	\$12.86
ForeScout Technologies Inc (FSCT.O)	++	\$23.10
Fortinet Inc. (FTNT.O)	E (04/10/2018)	\$140.48
Intuit (INTU.O)	E (02/04/2019)	\$288.11
Microsoft (MSFT.O)	O (01/13/2016)	\$187.20
NortonLifeLock Inc (NLOK.O)	O (03/25/2020)	\$21.05
Okta, Inc. (OKTA.O)	E (02/04/2019)	\$180.60
Oracle Corporation (ORCL.N)	E (01/15/2019)	\$53.98
Palo Alto Networks Inc (PANW.N)	O (10/10/2017)	\$231.39
Proofpoint Inc (PFPT.O)	E (01/13/2020)	\$109.28
Qualys Inc (QLYS.O)	E (10/10/2017)	\$108.54
Rapid7 Inc (RPD.O)	E (08/11/2015)	\$49.92
SailPoint Technologies Holdings Inc (SAIL.N)	E (12/12/2017)	\$22.52
Salesforce.com (CRM.N)	O (05/23/2011)	\$173.88
Secureworks Corp (SCWX.O)	E (12/10/2018)	\$12.31
ServiceNow Inc (NOW.N)	E (10/16/2019)	\$390.46
Slack Technologies, Inc. (WORK.N)	E (07/16/2019)	\$32.56
Splunk Inc (SPLK.O)	O (11/18/2019)	\$183.12
Tenable Holdings Inc (TENB.O)	O (01/15/2019)	\$29.60
Varonis Systems, Inc. (VRNS.O)	O (01/13/2020)	\$84.23
VMware Inc (VMW.N)	E (01/15/2019)	\$149.77
Workday Inc (WDAY.O)	O (04/14/2020)	\$178.67
Zscaler Inc (ZS.O)	U (01/15/2019)	\$99.31

**Meta A Marshall**

8x8 Inc (EGHT.N)	E (01/13/2020)	\$14.74
Five9 Inc (FIVN.O)	E (09/19/2019)	\$97.24
RingCentral Inc (RNG.N)	E (07/19/2017)	\$252.88
Twilio Inc (TWLO.N)	O (09/19/2019)	\$196.71
Vonage Holdings Corp (VG.O)	O (03/25/2020)	\$10.71
Zoom Video Communications Inc (ZMO)	E (05/13/2019)	\$207.60

**Sanjit K Singh**

Appian Corp (APPN.O)	U (04/14/2020)	\$53.61
Citrix Systems Inc (CTXS.O)	O (03/24/2020)	\$139.15
Cloudera Inc (CLDR.N)	O (06/03/2020)	\$9.86
Datadog, Inc. (DDOG.O)	E (10/14/2019)	\$70.66
Domo Inc (DOMO.O)	O (07/24/2018)	\$32.19
MongoDB Inc (MDB.O)	E (11/13/2017)	\$197.98
New Relic Inc (NEWR.N)	E (04/14/2020)	\$66.93
NICE Ltd. (NICE.O)	E (05/08/2018)	\$184.73
Nuance Communications Inc. (NUAN.O)	O (01/13/2020)	\$22.57
PagerDuty, Inc. (PD.N)	E (05/06/2019)	\$26.27
Solarwinds Corp (SW.N)	E (11/13/2018)	\$19.29

**Stan Zotsky, CFA**

Anaplan Inc (PLAN.N)	E (11/06/2018)	\$43.95
Coupa Software Inc (COUP.O)	O (04/14/2020)	\$216.94
DocuSign Inc (DOCU.O)	E (01/13/2020)	\$139.64
HubSpot, Inc. (HUBS.N)	O (03/25/2020)	\$211.76
Liveramp Holdings Inc (RAMP.N)	O (07/15/2019)	\$47.10
PROS Holdings Inc (PRO.N)	E (02/18/2020)	\$43.11
Smartsheet Inc (SMAR.N)	O (05/22/2018)	\$44.54
Sprout Social Inc (SPT.O)	O (01/07/2020)	\$32.24
Veeva Systems Inc (VEEV.N)	O (01/13/2020)	\$202.80
Workiva Inc (WK.N)	U (09/18/2018)	\$43.26
Yext Inc (YEXT.N)	U (01/15/2019)	\$16.31
Zendesk, Inc (ZEN.N)	O (09/10/2015)	\$82.73
Zuora Inc (ZUO.N)	U (04/14/2020)	\$12.75

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## INDUSTRY COVERAGE: Metals &amp; Mining

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Carlos De Alba</b>		
Alcoa Corp (AA.N)	E (11/07/2019)	\$12.07
Freeport-McMoRan Inc (FCX.N)	O (11/07/2019)	\$10.86
Largo Resources Ltd (LGO.TO)	E (11/07/2019)	C\$1.00
Teck Resources Limited (TECK.N)	O (11/07/2019)	\$11.66
<b>Ioannis Masvoulas</b>		
First Quantum Minerals Ltd (FMTO)	E (02/24/2020)	C\$9.52

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## INDUSTRY COVERAGE: Media

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Benjamin Swinburne, CFA</b>		
AMC Networks, Inc. (AMCX.O)	E (06/22/2016)	\$33.31
Cinemark Holdings, Inc. (CNK.N)	E (10/05/2017)	\$17.64
Discovery Inc. (DISCK.O)	E (07/20/2009)	\$22.35
Fox Corporation (FOXA.O)	O (10/15/2018)	\$30.85
iHeartMedia Inc (IHRT.O)	E (08/26/2019)	\$10.61
Interpublic Group (IPG.N)	E (10/15/2018)	\$19.35
Lamar Advertising Co. (LAMR.O)	E (07/30/2014)	\$75.64
Liberty Braves Group (BATR.K.O)	E (05/09/2018)	\$22.17
Liberty Formula One (FWONK.O)	E (04/13/2020)	\$36.91
Lions Gate Entertainment Corp. (LGFb.N)	E (01/30/2018)	\$8.52
Live Nation Entertainment Inc. (LYV.N)	E (10/08/2019)	\$56.96
Madison Square Garden Co (MSG.S.N)	E (12/05/2017)	\$177.46
MSG Networks Inc (MSGN.N)	U (10/31/2017)	\$13.60
Netflix Inc (NFLX.O)	O (06/17/2014)	\$419.60
Omnicom Group Inc. (OMC.N)	U (10/16/2017)	\$60.78
OUTFRONT MEDIA INC (OUT.N)	E (04/20/2020)	\$19.51
Roku Inc. (ROKU.O)	U (12/02/2019)	\$104.38
Spotify Technology SA (SPOT.N)	O (04/30/2018)	\$184.28
ViacomCBS Inc (VAC.O)	E (01/24/2020)	\$24.82
Walt Disney Co (DIS.N)	O (01/30/2017)	\$124.82
World Wrestling Entertainment Inc (WWE.N)	E (01/31/2020)	\$48.19

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\* Historical prices are not split adjusted.

## INDUSTRY COVERAGE: Cruise Lines

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Thomas Allen</b>		
Norwegian Cruise Line Holdings Ltd (NCLH.N)	U (06/03/2020)	\$22.43

Stock Ratings are subject to change. Please see latest research for each company.

\* Historical prices are not split adjusted.

## INDUSTRY COVERAGE: Restaurants

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>John Glass</b>		
BJ's Restaurants, Inc. (BJRI.O)	E (09/16/2015)	\$27.31
Bloomin' Brands Inc (BLMN.O)	E (12/19/2018)	\$13.72
Brinker International Inc. (EAT.N)	U (01/17/2017)	\$28.87
Chipotle Mexican Grill, Inc. (CMG.N)	E (04/17/2019)	\$1,053.46
Darden Restaurants Inc. (DRI.N)	E (10/30/2014)	\$85.59
Dominos Pizza Inc. (DPZ.N)	O (04/17/2019)	\$376.41
Dunkin Brands Group Inc (DNKN.O)	E (09/06/2011)	\$68.38
Jack in the Box Inc. (JACK.O)	E (05/21/2019)	\$72.90
McDonald's Corporation (MCD.N)	O (11/29/2018)	\$197.16
Red Robin Gourmet Burgers, Inc. (RRGB.O)	E (01/09/2013)	\$17.89
Restaurant Brands International, Inc. (QSR.N)	O (03/26/2018)	\$59.40
Shake Shack Inc (SHAK.N)	E (12/07/2017)	\$59.79
Starbucks Corp. (SBUX.O)	E (06/20/2018)	\$82.14
Texas Roadhouse, Inc. (TXRH.O)	E (01/17/2017)	\$61.19
The Cheesecake Factory, Inc. (CAKE.O)	U (01/17/2020)	\$28.20
The Wendy's Company (WEN.O)	E (01/08/2015)	\$22.85
Wingstop Inc (WING.O)	E (10/18/2018)	\$119.99
Yum! Brands, Inc. (YUMN)	O (01/17/2020)	\$96.52

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\* Historical prices are not split adjusted.

## INDUSTRY COVERAGE: Retail, Department Stores

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Kimberly C Greenberger</b>		
Kohl's (KSS.N)	U (03/19/2013)	\$26.58
Macy's Inc. (MN)	U (05/10/2018)	\$8.77
Nordstrom (JWN.N)	E (01/08/2019)	\$22.62

Stock Ratings are subject to change. Please see latest research for each company.

\* Historical prices are not split adjusted.

## INDUSTRY COVERAGE: Household &amp; Personal Care

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Dara Mohsenian, CFA</b>		
Church & Dwight Co., Inc. (CHD.N)	E (02/05/2019)	\$73.79
Clorox Co (CLX.N)	U (04/19/2018)	\$197.57
Colgate-Palmolive Co (CL.N)	O (03/22/2020)	\$72.40
Coty Inc (COTY.N)	E (11/07/2018)	\$5.08
Edgewell Personal Care (EPC.N)	E (06/04/2015)	\$31.71
elf Beauty (ELF.N)	O (12/16/2019)	\$17.63
Energizer Holdings Inc. (ENR.N)	O (05/18/2020)	\$47.92
Estee Lauder Companies Inc (EL.N)	E (04/06/2020)	\$205.17
Kimberly-Clark Corp (KMB.N)	E (01/24/2019)	\$139.28
Newell Brands Inc. (NWL.O)	E (01/25/2018)	\$16.40
Procter & Gamble Co. (PG.N)	O (12/13/2018)	\$118.33

Stock Ratings are subject to change. Please see latest research for each company.

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## INDUSTRY COVERAGE: MLPs &amp; Midstream Energy Infrastructure

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Devin McDermott</b>		
Energy Transfer LP (ET.N)	E (03/16/2020)	\$9.16
Enterprise Products LP (EPD.N)	O (01/06/2020)	\$20.95
Magellan Midstream Partners LP (MMP.N)	O (03/16/2020)	\$47.92
Oneok Inc. (OKE.N)	U (01/06/2020)	\$45.35
Plains All American Pipeline LP (PAAN)	U (03/16/2020)	\$11.36
Plains GP Holdings, L.P. (PAGP.N)	U (03/16/2020)	\$11.77
Targa Resources Corp. (TRGP.N)	U (03/16/2020)	\$23.41
<b>Stephen C Byrd</b>		
Enbridge (ENB.TO)	E (01/06/2020)	C\$44.84
Kinder Morgan Inc. (KMI.N)	E (03/16/2020)	\$16.72
MPLX LP (MPLX.N)	O (01/06/2020)	\$20.95
TC Energy Corp (TRP.TO)	O (06/01/2020)	C\$63.19
Williams Companies Inc (WMB.N)	E (01/06/2020)	\$21.14

Stock Ratings are subject to change. Please see latest research for each company.

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## INDUSTRY COVERAGE: Biotechnology

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>David N Lebowitz, CFA, MPH</b>		
Akebia Therapeutics Inc (AKBA.O)	E (09/07/2018)	\$11.96
Anylam Pharmaceuticals Inc (ALNY.O)	O (03/05/2019)	\$127.59
Ascendis Pharma A/S (ASND.O)	O (10/11/2019)	\$140.98
AVROBIO Inc (AVRO.O)	O (07/16/2018)	\$22.84
Blueprint Medicines Corporation (BPMC.O)	O (04/03/2019)	\$71.17
Epizyme Inc (EPZM.O)	O (12/05/2019)	\$17.18
Ionis Pharmaceuticals Inc (IONS.O)	U (11/07/2019)	\$57.56
Ironwood Pharmaceuticals, Inc. (IRWD.O)	E (03/27/2019)	\$9.94
MacroGenics Inc (MGNX.O)	U (11/21/2019)	\$19.97
Nabriva Therapeutics PLC (NBRV.O)	E (03/17/2020)	\$0.79
Rhythm Pharmaceuticals Inc (RYTM.O)	O (09/07/2018)	\$20.37
Schrodinger Inc. (SDGR.O)	E (03/02/2020)	\$63.59
Syndax Pharmaceuticals Inc (SNDX.O)	E (10/29/2018)	\$16.89
Y-mAbs Therapeutics Inc. (YMAB.O)	E (04/29/2020)	\$43.04
Zealand Pharma A/S (ZEAL.O)	O (09/12/2018)	\$39.55
<b>Jeffrey Hung</b>		
Acceleron Pharma Inc (XLRN.O)	O (02/03/2020)	\$91.54
Apria Therapeutics Inc (APRE.O)	E (10/28/2019)	\$27.01
Cytokinetics Inc (CYTK.O)	O (04/09/2020)	\$20.24
Exelixis Inc. (EXEL.O)	E (03/18/2019)	\$22.37
MyoKardia Inc (MYOK.O)	O (09/10/2018)	\$98.23
Neurocrine Biosciences Inc (NBIX.O)	O (09/10/2018)	\$115.86
NextCure Inc. (NXTC.O)	O (06/03/2019)	\$25.46
Prevail Therapeutics Inc (PRVL.O)	O (07/15/2019)	\$15.94
Ultragenyx Pharmaceutical Inc (RARE.O)	O (03/27/2019)	\$69.92
Vela Bio (VE.O)	O (10/28/2019)	\$49.73
Voyager Therapeutics Inc (VYGR.O)	E (09/10/2018)	\$12.02
<b>Matthew Harrison</b>		

Alector Inc (ALEC.O)	O (03/04/2019)	\$29.99
Alexion Pharmaceuticals (ALXN.O)	E (12/17/2019)	\$115.21
Amgen Inc. (AMGN.O)	O (12/17/2019)	\$225.67
argenx SE (ARGX.O)	O (01/04/2019)	\$225.95
BeiGene Ltd (6160.HK)	O (01/17/2020)	HK\$104.30
BeiGene Ltd (BGNE.O)	O (01/17/2020)	\$172.03
Biogen Inc (BIIB.O)	U (03/22/2019)	\$306.72
Biohaven Pharmaceutical Holding Company (BHMN.N)	E (04/09/2019)	\$68.15
Biomarin Pharmaceutical Inc (BMRN.O)	O (02/07/2017)	\$105.80
Bluebird Bio Inc (BLUE.O)	E (11/03/2017)	\$70.98
Cabaletta Bio Inc (CABA.O)	O (11/19/2019)	\$8.47
Denali Therapeutics Inc (DNLI.O)	O (01/02/2018)	\$25.93
Editas Medicine (EDIT.O)	E (02/29/2016)	\$26.66
Evelo Biosciences Inc (EVLO.O)	E (05/21/2020)	\$4.03
Fulcrum Therapeutics Inc (FULC.O)	O (08/12/2019)	\$19.04
Galapagos NV (GLPG.O)	E (12/17/2019)	\$199.13
Genmab A/S (GMAB.CO)	O (08/12/2019)	DKr 1,913.50
Genmab A/S (GMAB.O)	O (08/12/2019)	\$29.08
Gilead Sciences Inc. (GILD.O)	E (10/01/2015)	\$76.75
Global Blood Therapeutics Inc (GBT.O)	E (03/21/2018)	\$63.58
Imara Inc (IMRA.O)	O (04/06/2020)	\$47.12
Immunomedics Inc (IMMU.O)	E (01/22/2019)	\$30.69
Innoviva Inc (INVA.O)	U (08/14/2014)	\$13.90
Insmed Inc (INSMO)	O (03/21/2018)	\$25.83
Kaleido Biosciences Inc. (KLDO.O)	E (05/21/2020)	\$7.05
Kodiak Sciences Inc (KOD.O)	O (10/29/2018)	\$61.35
Moderna Inc (MRNA.O)	O (01/02/2019)	\$58.19
Regeneron Pharmaceuticals Inc. (REGN.O)	E (10/01/2015)	\$597.00
Regenxbio Inc (RGNX.O)	O (11/09/2017)	\$37.34
Rubius Therapeutics Inc. (RUBY.O)	E (03/13/2020)	\$6.38
SAGE Therapeutics Inc (SAGE.O)	O (02/26/2018)	\$36.21
Sarepta Therapeutics Inc (SRPT.O)	O (08/01/2018)	\$147.99
Seattle Genetics Inc. (SGEN.O)	E (12/10/2019)	\$148.39
Unity Biotechnology Inc. (UBX.O)	O (05/29/2018)	\$8.03
Vertex Pharmaceuticals (VRTX.O)	O (10/01/2015)	\$265.69
Zentalis Pharmaceuticals Inc (ZNTL.O)	O (04/28/2020)	\$45.60

**Vikram Purohit**

DBV Technologies SA (DBVT.O)	E (10/23/2017)	\$5.46
Incyte Corp (INCY.O)	E (04/29/2020)	\$93.51
Portola Pharmaceuticals Inc (PTLA.O)	E (09/05/2019)	\$17.91
Radius Health Inc (RDUS.O)	E (05/13/2020)	\$13.28

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**INDUSTRY COVERAGE: Brokers & Asset Managers**

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Michael J. Cyprys, CFA, CPA</b>		
Apollo Global Management Inc (APO.N)	E (11/14/2018)	\$53.15
Ares Management Corp (ARES.N)	E (12/15/2014)	\$39.66
BlackRock Inc. (BLK.N)	O (09/18/2015)	\$556.53
BrightSphere Investment Group INC (BSIG.N)	E (05/12/2020)	\$9.74
Carlyle Group Inc (CG.O)	E (11/14/2018)	\$29.66
Charles Schwab Corp (SCHW.N)	O (09/26/2016)	\$42.82
E*Trade Financial Corp (ETFC.O)	++	\$51.06
Franklin Resources Inc. (BEN.N)	++	\$22.70
Hamilton Lane Incorporated (HLNE.O)	O (04/11/2019)	\$68.54
Invesco (IVZ.N)	E (01/03/2018)	\$10.41
KKR & CO. Inc (KKR.N)	E (02/17/2016)	\$30.36
Legg Mason Inc. (LMN)	++	\$50.05
LPL Financial Holdings Inc. (LPLA.O)	E (01/03/2018)	\$82.06
T. Rowe Price Group, Inc. (TROW.O)	E (10/05/2017)	\$128.28
TD Ameritrade Holding Corp. (AMTD.O)	E (07/11/2019)	\$46.23
The Blackstone Group Inc (BX.N)	O (12/15/2014)	\$58.95
Tradeweb Markets Inc (TW.O)	++	\$62.17
Victory Capital Holdings Inc (VCTR.O)	U (04/08/2020)	\$17.91
Virtu Financial Inc (VRT.O)	E (08/08/2018)	\$21.78
Virtus Investment Partners (VRTS.O)	E (06/01/2017)	\$111.25
Waddell & Reed Financial Inc (WDR.N)	U (09/18/2015)	\$15.38
WisdomTree Investments, Inc. (WETF.O)	O (02/12/2020)	\$3.66

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## INDUSTRY COVERAGE: Medical Technology

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>David R. Lewis</b>		
Abbott Laboratories (ABT.N)	O (01/02/2018)	\$89.86
Abiomed (ABMD.O)	U (02/11/2020)	\$249.81
Alcon Inc (ALC.N)	O (04/09/2019)	\$63.04
Avanos Medical Inc (AVNS.N)	U (10/12/2015)	\$33.15
Axonics Modulation Technologies Inc. (AXNX.O)	O (11/26/2018)	\$39.53
Baxter International (BAXN)	E (12/17/2019)	\$89.19
Becton Dickinson (BDXN)	E (01/04/2016)	\$242.01
Boston Scientific (BSXN)	O (10/16/2015)	\$38.83
DexCom Inc (DXCM.O)	E (01/03/2017)	\$364.49
Edwards Lifesciences (EW.N)	O (07/06/2015)	\$74.37
Envista Holdings Corporation (NVST.N)	E (10/14/2019)	\$23.35
Globus Medical Inc (GMED.N)	E (01/02/2019)	\$55.61
Haemonetics Corporation (HAE.N)	O (01/02/2018)	\$99.09
Hill-Rom Holdings Inc. (HRC.N)	O (12/17/2019)	\$104.84
Hologic, Inc. (HOLX.O)	E (03/27/2020)	\$52.41
Insulet Corp. (PODD.O)	E (11/02/2015)	\$179.03
Intuitive Surgical Inc. (ISRG.O)	O (01/04/2016)	\$592.76
IRHYTHM TECHNOLOGIES INC (IRTC.O)	O (11/14/2016)	\$120.09
Johnson & Johnson (JNJ.N)	O (12/17/2019)	\$147.30
Medtronic PLC (MDT.N)	E (01/03/2017)	\$102.04
Nevro Corp (NVRO.N)	O (03/20/2019)	\$126.91
NuVasive Inc (NUVA.O)	E (09/14/2015)	\$66.11
Shockwave Medical Inc. (SWAV.O)	E (04/01/2019)	\$45.00
SI-BONE Inc. (SIBN.O)	O (11/12/2018)	\$18.46
Stryker Corporation (SYK.N)	O (01/08/2010)	\$207.03
Teleflex Inc. (TFXN)	O (09/06/2017)	\$376.58
Transmedics Group Inc (TMDX.O)	E (05/28/2019)	\$15.00
ViewRay Inc (VRAY.O)	U (03/27/2020)	\$2.38
Zimmer Biomet Holdings Inc (ZBH.N)	O (01/05/2015)	\$137.40

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## INDUSTRY COVERAGE: Clean Tech

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Stephen C Byrd</b>		
Bloom Energy Corp. (BE.N)	O (08/20/2018)	\$8.14
First Solar Inc (FSLR.O)	E (02/07/2011)	\$51.38
Hannon Armstrong (HASI.N)	E (02/03/2016)	\$30.18
Plug Power Inc. (PLUG.O)	E (04/09/2015)	\$4.88
SunPower Corp (SPWR.O)	U (09/27/2017)	\$8.00
Sunrun Inc (RUN.O)	E (08/03/2018)	\$18.69
TPI Composites Inc. (TPIC.O)	O (10/29/2018)	\$22.39

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## INDUSTRY COVERAGE: Gaming &amp; Lodging

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Thomas Allen</b>		
Boyd Gaming Corporation (BYD.N)	O (12/20/2018)	\$24.61
Caesars Entertainment Corp (CZR.O)	E (06/25/2019)	\$12.20
Choice Hotels International Inc (CHH.N)	E (05/05/2017)	\$90.70
DiamondRock Hospitality Co (DRH.N)	U (09/26/2016)	\$7.38
DraftKings Inc (DKNG.O)	O (04/30/2020)	\$39.34
Eldorado Resorts Inc. (ERI.O)	O (11/18/2019)	\$43.77
Extended Stay America Inc (STAY.O)	E (08/09/2019)	\$12.10
Gaming and Leisure Properties Inc (GLPI.O)	O (07/24/2018)	\$39.88
Hilton Worldwide Holdings Inc (HLT.N)	E (01/17/2018)	\$87.20
Host Hotels & Resorts, Inc. (HST.N)	U (12/20/2018)	\$14.01
Hyatt Hotels Corporation (H.N)	E (03/07/2017)	\$63.49
Las Vegas Sands Corp. (LVS.N)	E (01/21/2020)	\$52.97
Marriott International Inc. (MAR.O)	E (07/24/2018)	\$107.96
MGM Growth Properties LLC (MGP.N)	E (01/21/2020)	\$29.09
MGM Resorts International (MGMN)	E (01/21/2020)	\$21.72
Penn National Gaming, Inc. (PENN.O)	O (05/09/2019)	\$36.04
Sunstone Hotel Investors Inc (SHO.N)	U (09/26/2016)	\$9.86
VICI Properties Inc (VICI.N)	O (08/26/2019)	\$22.99
Wynn Resorts, Limited (WYNN.O)	E (02/09/2018)	\$101.61
Xenia Hotels & Resorts Inc (XHR.N)	U (12/20/2018)	\$12.34

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## INDUSTRY COVERAGE: Real Estate Investment Trusts

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Richard Hill</b>		
American Assets Trust Inc. (AAT.N)	E (05/18/2020)	\$32.83
American Homes 4 Rent (AMH.N)	E (11/15/2018)	\$27.19
AvalonBay Communities Inc. (AVB.N)	E (12/10/2013)	\$172.69
CBL & Associates Properties Inc (CBL.N)	U (05/16/2016)	\$0.34
Equity Residential (EQR.N)	E (12/12/2016)	\$66.40
Essex Property Trust, Inc. (ESS.N)	E (04/01/2020)	\$262.52
Invitation Homes Inc (INVH.N)	E (04/16/2020)	\$28.66
Kimco Realty Corp. (KIM.N)	E (12/17/2019)	\$15.22
Macerich Co (MAC.N)	E (03/02/2020)	\$11.16
Regency Centers Corp (REG.O)	E (12/17/2019)	\$50.80
Retail Value Inc (RVI.N)	E (08/02/2019)	\$15.51
Simon Property Group Inc (SPG.N)	E (05/16/2016)	\$88.60
Site Centers Corp (SITC.N)	E (04/27/2020)	\$8.83
Taubman Centers Inc (TCO.N)	E (11/26/2018)	\$44.08
UDR, Inc. (UDR.N)	U (04/01/2020)	\$41.70
Urban Edge Properties (UE.N)	U (12/17/2019)	\$12.93
<b>Ronald Kamdem, CFA</b>		
Extra Space Storage Inc. (EXR.N)	U (09/16/2019)	\$103.34
National Storage Affiliates Trust (NSAN)	E (08/07/2018)	\$32.76
Public Storage (PSAN)	U (04/28/2020)	\$206.37
<b>Vikram Malhotra</b>		
Boston Properties, Inc. (BXP.N)	E (09/10/2019)	\$102.04
Columbia Property Trust Inc (CXP.N)	E (03/03/2016)	\$15.60
DHC US (DHC.O)	E (09/05/2019)	\$6.10
Duke Realty Corp. (DRE.N)	E (10/07/2019)	\$36.81
EastGroup Properties Inc. (EGP.N)	E (04/12/2017)	\$122.59
Healthcare Realty Trust Inc. (HR.N)	E (08/15/2018)	\$31.62
Healthcare Trust of America Inc (HTAN)	E (08/15/2018)	\$27.53
Healthpeak Properties Inc (PEAK.N)	E (03/20/2017)	\$29.35
Highwoods Properties (HIW.N)	E (05/12/2016)	\$44.11
Hudson Pacific Properties (HPP.N)	O (12/04/2015)	\$28.84
National Retail Properties Inc (NNN.N)	E (05/16/2016)	\$39.89
New Senior Investment Group Inc (SNR.N)	E (10/29/2018)	\$3.77
Office Properties Income Trust (OPI.O)	U (12/13/2019)	\$29.36
Paramount Group Inc. (PGRE.N)	O (10/10/2019)	\$9.21
Physicians Realty Trust (DOC.N)	E (07/24/2017)	\$18.15
Prologis, Inc. (PLD.N)	O (02/12/2020)	\$95.71
Realty Income Corp (O.N)	O (05/04/2020)	\$62.21
SL Green Realty Corporation (SLG.N)	E (05/28/2020)	\$55.04
Spirit Realty Capital (SRC.N)	E (05/04/2020)	\$37.36
STORE Capital Corp (STOR.N)	E (05/04/2020)	\$24.91
Ventas Inc (VTR.N)	E (03/27/2019)	\$43.27
Vereit Inc (VER.N)	E (08/02/2019)	\$6.88
Vornado Realty Trust (VNO.N)	U (05/28/2020)	\$43.76
Welltower Inc. (WELL.N)	O (03/20/2017)	\$61.60

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## INDUSTRY COVERAGE: Regulated Utilities

COMPANY (TICKER)	RATING (AS OF)	PRICE* (06/05/2020)
<b>Stephen C Byrd</b>		
Algonquin Power & Utilities Corp (AQN.N)	E (03/10/2020)	\$14.42
Ameren Corp (AEE.N)	E (04/14/2020)	\$75.58
Atmos Energy Corp. (ATO.N)	E (03/23/2020)	\$104.53
CenterPoint Energy Inc (CNP.N)	E (06/05/2019)	\$18.25
CMS Energy Corp (CMS.N)	E (07/31/2017)	\$59.44
Consolidated Edison Inc (ED.N)	U (01/09/2017)	\$75.33
Duke Energy Corp (DUK.N)	E (08/25/2014)	\$89.49
Edison International (EIX.N)	E (01/12/2015)	\$60.88
Entergy Corp (ETR.N)	E (09/06/2019)	\$103.73
Eversource Energy (ES.N)	U (03/10/2020)	\$86.52
FirstEnergy Corp (FE.N)	O (03/23/2020)	\$43.27
ONE Gas Inc (OGS.N)	U (03/18/2016)	\$82.99
PG&E Corp (PCG.N)	E (11/15/2018)	\$12.52
Pinnacle West Capital Corp (PNW.N)	E (03/23/2020)	\$79.38
PPL Corp (PPL.N)	E (07/16/2013)	\$30.04
Sempra Energy (SRE.N)	E (08/10/2018)	\$133.79
Southern Company (SO.N)	U (08/13/2014)	\$58.45
South Jersey Industries Inc (SJI.N)	U (01/08/2020)	\$28.54
Spire Inc (SR.N)	U (01/12/2016)	\$74.28
Xcel Energy Inc (XEL.O)	U (05/13/2020)	\$65.26

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