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Stock Selection: Research and Results August 2016

August 15, 2016

Value Investing: Paradise Lost? Big Growth or Big Disappointment?

Not the Good Old Days

- These days conversations about value investing come with more than a little whiff of nostalgia. Back in the good old days, or so the narrative goes, finding value opportunities was all about rolling up your sleeves and digging for underappreciated stocks with the right stuff to be rewarded. Diligently combing through obscure footnotes in annual reports and scrutinizing assembly lines didn't guarantee success, but at least it gave you a fighting chance. Now, the lament goes, the only thing that matters is parsing Yellen's latest words.
- That's a compelling storyline, and one that's easy to believe in the topsy-turvy post-Crisis world, but is it actually true? It large part it is, and the universe of value opportunities is dominated by cyclical businesses to a degree usually only seen in recessions. The Dollar has played a key role in getting us to this point. Since it took off in mid-2014 it's been the lynchpin behind a long list of vulnerabilities, ranging from a run on the Chinese bank to an emerging markets debt crisis. Ultimately though, the Dollar's most direct impact on value strategies turned out to be its mundane drag on domestic economic activity; the U.S. economic surprise index was almost permanently negative in the two years following the currency's spike.
- Over the long-run the trajectory of the economy has been critical to value's performance. From the 1970s to the end of the New Economy era the surprises were predominantly positive, but in the past two cycles economic growth has more often than not come in lower than expected. As the surprises flipped, so too did the performance of value strategies. It's not so much that value is more economically-sensitive than it used to be; rather it's that a tailwind became a headwind.

Anomaly Watch: Value, Contains Juice from Concentrate

- The force of that headwind has been such that the share of the value basket's capitalization that's sourced from its three largest sectors is now 75%, the highest concentration since the mid-1960s. Value stocks are also antithetical to the market; the sector-level active share of a portfolio of value stocks is in the top quintile of history. Moreover the magnitude of the active weight in financials is now similar to that of technology stocks in the New Economy era, albeit in the opposite direction. Historically when the rubber band has been stretched this far it's been favorable for value strategies because they're so starting point dependent.
- In the post-Crisis era stocks that screen as cheap have outperformed when they've also seen a decline in arbitrage risk, a measure of controversy. With value so highly concentrated one runs the risk of making the same bet over and over again so it's not irrational that investors want to see the fight is abating before wading in. Appendix 1 on page 9 screens value stocks for those with declining arbitrage risk. IBM, BHP Billiton, Manulife Financial, Viacom, and CenturyLink feature, among others.

Reporting Season: Big Growth or Big Disappointment?

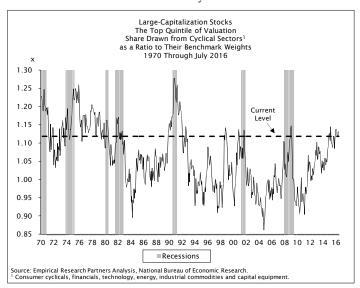
- More than three-quarters of the Big Grower have now reported their 2Q numbers, and about a third delivered enough good news to convince analysts to raise their 2016 growth expectations. That's right on par with the share of Big Growers that have beaten the market this year. However, less than 10% got a bump to their 2017 growth rates, a reflection of the tough batting average in this rarefied space. Meanwhile the value stocks are benefiting from a low bar, particularly for next year.
- Appendixes 2 and 3 on pages 10 and 11 screen the Big Growers and value stocks for issues where the analysts have increased their FY 2016E and FY 2017E growth expectations following the announcement.

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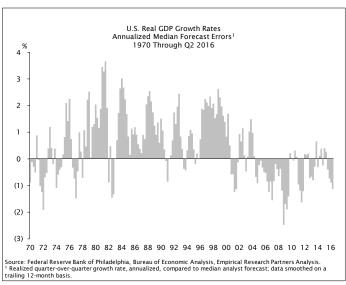
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Conclusions in Brief

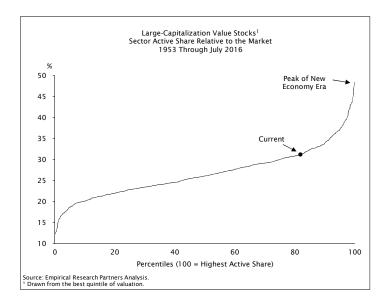
Stocks that screen as value are cyclical businesses...



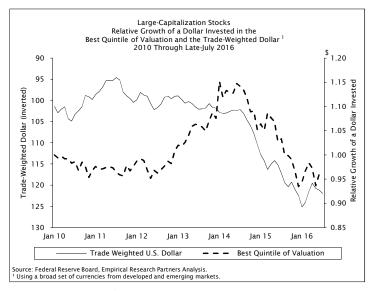
Over the last two cycles the economy has disappointed...



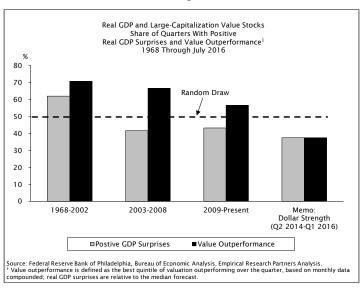
The value basket is antithetical to the market...



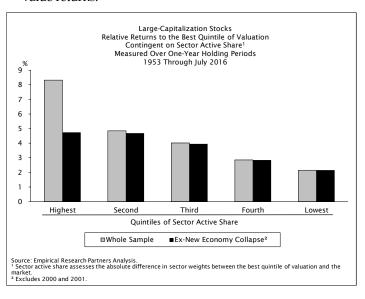
• ... That have suffered during the Dollar's two year ascent:



...A headwind for value strategies:



...Which has historically been followed by above-average value returns:



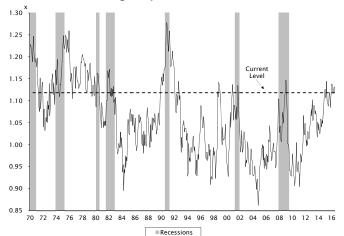
Value Investing: Paradise Lost?

Not the Good Old Days

Most of us have sepia-tinted memories of childhood summers, a magical time when the days where lazy and endless and the beach seemed to stretch to infinity. Back then ice cream never melted and the water was always warm enough for swimming. We've started to notice a similar whiff of nostalgia in our conversations with clients about value investing. The oft-repeated refrain is that back in the good old days value was all about sniffing out underappreciated companies where, after rolling up the sleeves and doing some old fashioned digging, one had a fighting chance of sorting the bargains from the lemons. Now, the lament goes, it's all just one big macro bet; counting bottle caps on the factory assembly line and poring over footnotes in the annual report has been replaced by parsing every word in Chairwomen Yellen's latest missive.

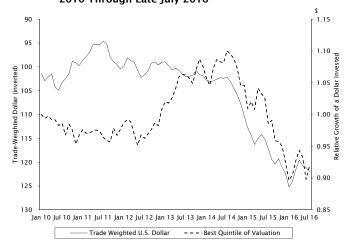
It's a compelling storyline, and one that's easy to believe given value's travails in recent years, but is it actually true? Certainly value stocks, as defined by our valuation framework, have a strong cyclical flavor currently (see Exhibit 1). In fact, today's reading is consistent with levels of cyclicality last seen in the past two recessions. Part of what's gone on is that the Dollar's meteoric ascent, beginning in mid-2014, set off a two-year sequence of macro events that weighted heavily on the performance of value strategies (see Exhibit 2).

Exhibit 1: Large-Capitalization Stocks
The Top Quintile of Valuation
Share Drawn from Cyclical Sectors'
as a Ratio to Their Benchmark Weights
1970 Through July 2016



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

Exhibit 2: Large-Capitalization Stocks
Relative Growth of a Dollar Invested in the
Best Quintile of Valuation and the
Trade-Weighted Dollar¹
2010 Through Late-July 2016



Source: Federal Reserve Board, Empirical Research Partners Analysis.

To paraphrase our past work on the topic, a strong Dollar is the lynchpin behind a long list of cosmic threats, real and imaginary, that call into question this cycle's duration. That list includes a run on the Chinese bank triggered by declining export competitiveness that forces a drastic Yuan devaluation, an emerging markets debt crisis caused by spending too many borrowed Dollars too far up the cost curve in commodity-linked industries, and anemic U.S. earnings growth dragged down by translation effects. The U.S. economic surprise index starkly depicts the latter point; it's been almost exclusively negative since the Dollar took off two years ago (see Exhibit 3). No wonder William Dudley is borderline flirting with Dollar targeting.¹

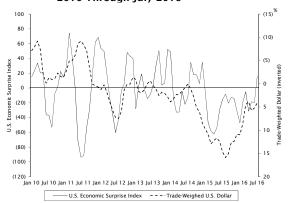
The upshot is that the stocks that fall into the value basket mostly got there because their fates are tied to the pulse of this cycle, and as the Dollar shock worked its way through the system that pulse faltered, leaving them cheap for a reason. To get a longer-term perspective we looked at real GDP growth surprises relative to the median expectation of economists (see Exhibit 4). In the chart it's quite clear that even in the last cycle, from 2003 to the Crisis, economic growth was starting to disappoint more often than in prior decades.

¹ Consumer cyclicals, financials, technology, energy, industrial commodities and capital equipment.

Using a broad set of currencies from developed and emerging markets.

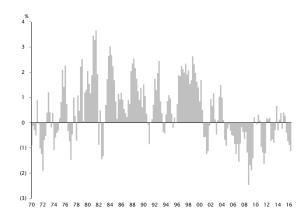
¹ https://www.newyorkfed.org/newsevents/speeches/2016/dud160731a.

Exhibit 3: Large-Capitalization Stocks
U.S. Economic Surprise Index and the
Year-over-Year Change in the Trade-Weighted Dollar'
2010 Through July 2016



Source: Citigroup, Federal Reserve Board, Empirical Research Partners Analysis.

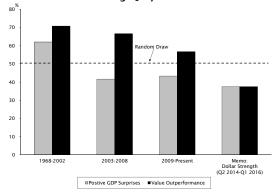
Exhibit 4: U.S. Real GDP Growth Rates
Annualized Median Forecast Errors
1970 Through Q2 2016



Source: Federal Reserve Bank of Philadelphia, Bureau of Economic Analysis, Empirical Research Partners Analysis.

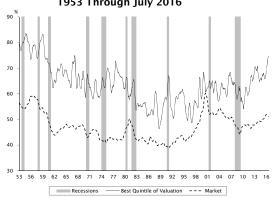
That trend has continued this cycle and as the number of quarters with positive economic surprises has declined so too has the frequency of value outperformance (see Exhibit 5). The two year run of Dollar strength has been particularly tough, with economic activity and value stocks winning less that 40% of the time, see the bars on the right of the chart. So in a way value investing has always had a macro element, but when it's providing a steady tailwind no one really notices. From 1970 through to the end of the New Economy era economic activity consistently surprised on the upside so buying a basket of cheapness worked because on average things weren't as gloomy as what the stocks were discounting. But since the early-2000s, as structural issues like aging populations and weak productivity growth took root, that tailwind turned into a headwind.

Exhibit 5: Real GDP and Large-Capitalization Value Stocks Share of Quarters With Positive Real GDP Surprises and Value Outperformance¹ 1968 Through July 2016



Source: Federal Reserve Bank of Philadelphia, Bureau of Economic Analysis, Empirical Research Partners Analysis.

Exhibit 6: Large-Capitalization Stocks
Share of Market Capitalization Sourced from
Three Largest Sectors'
1953 Through July 2016



Source: Empirical Research Partners Analysis.

Anomaly Watch: Value, Contains Juice from Concentrate

As the Dollar whipped that headwind into a full-blown gale the share of the value basket's capitalization that's sourced from the three largest sectors has reached the highest level since the mid-1960s (see Exhibit 6). Those sectors are financials, consumer cyclicals, and technology, and they account for three-quarters of the capitalization of value stocks compared to their 50% share of the market's capitalization. Of the three sectors, financials is the big overweight relative to the market, the other two feature mostly because they're just big overall. Energy and commodities issues have a small weight because in our valuation framework their lack of earnings and cash flow works against them. Overall, a portfolio of value stocks currently looks very different from the market; in fact the cheapest quintile of value has a sector-level active share that's in the top quintile of historical readings (see Exhibit 7).

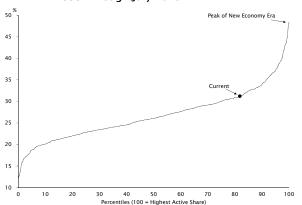
¹ Using a broad set of currencies from developed and emerging markets.

¹ Realized quarter-over-quarter growth rate, annualized, compared to median analyst forecast; data smoothed on a trailing 12-month basis.

¹ Value outperformance is defined as the best quintile of valuation outperforming over the quarter, based on monthly data compounded; real GDP surprises are relative to the median forecast.

¹ Data smoothed on a trailing six-month basis.

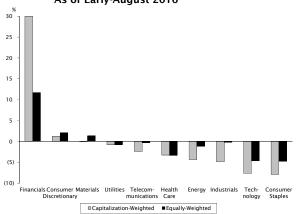
Exhibit 7: Large-Capitalization Value Stocks Sector Active Share Relative to the Market 1953 Through July 2016



Source: Empirical Research Partners Analysis.

1 Drawn from the best quintile of valuation.

Exhibit 8: Large-Capitalization Value Stocks Sector Active Weight Relative to Benchmark As of Early-August 2016

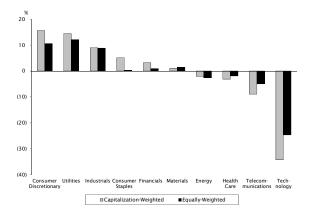


Source: Empirical Research Partners Analysis.

¹ Drawn from the best quintile of valuation.

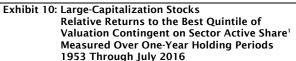
As we've discussed in recent work, the financials sector is by far the biggest contributor to value's high active share (see Exhibit 8).² The magnitude of the financials' active exposure is comparable to that of the technology stocks back at the peak of the New Economy era, albeit in the opposite direction (see Exhibit 9). Historically when value has become this concentrated and this antithetical to the market the future returns to value investing have been better-than-average (see Exhibit 10). That's true even if we exclude the bursting of the New Economy bubble, although in our view that's not necessarily the right thing to do; the whole point of the exercise is to capture periods of extreme dislocation where a segment of the market is trading at unprecedented, and potentially unsustainable, multiples. Back then it was the tech stocks and today it's the financials, in opposite directions.

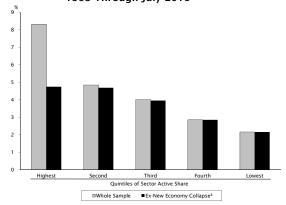
Exhibit 9: Large-Capitalization Value Stocks1 Sector Active Weight Relative to Benchmark As of March 2000



Source: Empirical Research Partners Analysis

¹ Drawn from the best quintile of valuation.





Source: Empirical Research Partners Analysis.

1 Sector active share assesses the absolute difference in sector weights between the best quintile of valuation and the market.

² Excludes 2000 and 2001.

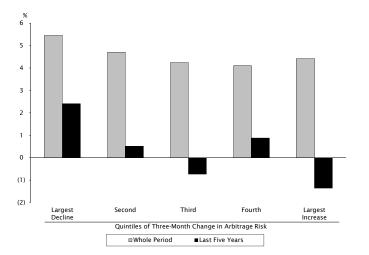
Safe Value: Oxymoron?

An interesting question that's related to all of this is whether value stocks need to become less risky before investors will touch them? Exhibit 11 shows the relative returns over one-year holding periods to stocks in the best quintile of our valuation super factor, contingent on their change in arbitrage risk over the past three months. We use arbitrage risk as a proxy for controversy, so stocks in the bars to the left are those that are cheap and getting less controversial while those on the right are also cheap but are getting more controversial. We've used change in arbitrage risk as a factor in our tactical model since we launched it in 2013.

² Stock Selection: Research and Results August 2016. "Anomaly Watch: Correlations Gone Wild."

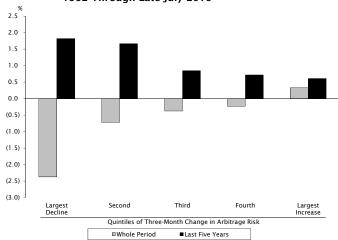
Over the long-run, the grey bars, the change in arbitrage risk hasn't mattered too much; on average the low starting multiple carried the day and cheap stocks outperformed across the board. However, in the post-Crisis period it's been a different story: cheap stocks with declining controversy have done considerably better than just buying value wholesale. Indeed putting value aside for a moment it's telling that stocks with a low *level* of arbitrage risk where that risk is declining even further have outperformed in the past five years, exactly opposite the long-run result (see Exhibit 12).

Exhibit 11: Large-Capitalization Stocks
Relative Returns to the Best Quintile of Valuation
Contingent on the Three-Month Change in Arbitrage Risk
Measured Over One-Year Holding Periods
1952 Through Late-July 2016



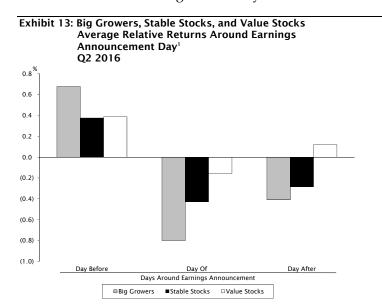
Source: Empirical Research Partners Analysis.

Exhibit 12: Large-Capitalization Stocks
Relative Returns to the Lowest Quintile of
Arbitrage Risk Contingent on the Three-Month
Change in Arbitrage Risk¹
Measured Over One-Year Holding Periods
1952 Through Late-July 2016



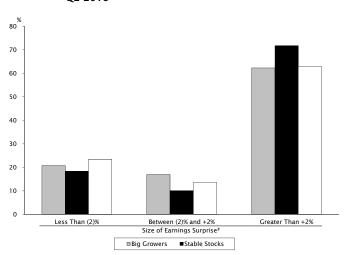
Source: Empirical Research Partners Analysis.

When value is highly concentrated, as it is today, one runs the risk of making the same bet over and over again so it's not irrational that investors want to see some signs that the fight is abating before wading in Appendix 1 on page 9 screens large-cap value stocks based on their three-month change in arbitrage risk. Those at the top of the screen have seen declining controversy in recent months.



Source: Empirical Research Partners Analysis.

Exhibit 14: Big Growers. Stable Stocks, and Value Stocks Distribution of Earnings Surprises¹ O2 2016



Source: Empirical Research Partners Analysis.

¹ Level of arbitrage risk is lagged three months, i.e. these are stocks that were in the lowest quintile of arbitrage risk three months ago.

¹ For companies reporting after the market close Day Of is the next trading day; includes the approximately 75% of each universe that has reported to date.

¹ Includes the approximately 75% of each universe that has reported to date.

 $^{^{2}}$ A threshold of $\pm 1\%$ is used for the Stable Stocks due to their lower earnings volatility.

Reporting Season: Big Growth or Big Disappointment?

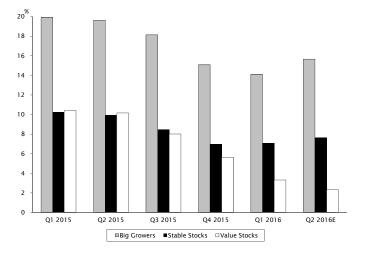
Big Growth, No Growth, and the In-Betweeners

So far reporting season has looked a lot like last quarter with a top-line growth rate of around +2%, excluding commodities and financials.³ To get a better sense of what's going on beneath the surface we took at look at the results through the lens of three groups that appear often in our work: Big Growers, stable stocks, and value stocks. Currently they represent three points on the growth continuum: the value stocks are mostly stocks with low or negative trailing growth that have had a rough time of late (e.g., financials, cyclicals); the stable stocks sit in the middle of the growth-rate distribution, offering predictable if unspectacular growth (e.g., staples, utilities); and the Big Growers are the elite, highest-growth stocks provided they don't crash and burn.

On average the announcement-day reaction to earnings has been muted across the three groups, suggesting the results by and large have met expectations (see Exhibit 13 overleaf). Earnings surprises have been running at about 70% positive, but that's really par for the course in a world where companies guide analysts towards something they can beat (see Exhibit 14 overleaf).

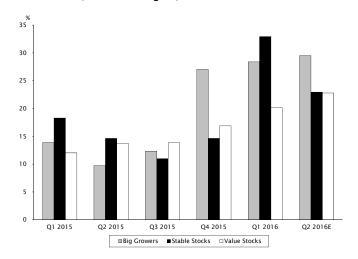
Keeping tabs on the evolution of future growth expectations is probably a better way to gauge the information content in a reporting season, particularly for the Big Growers where the here-and-now is a lot less important than the future. FY 2016E earnings growth expectations for the Big Growers were marked down during the Q4 2015 reporting season, although those results were mostly reported in mid-April right after the Big Growers took their tumble and China-implosion fears peaked (see Exhibit 15). This quarter analysts have increased their current-year growth expectations for just under a third of the Big Growers following their announcements (see Exhibit 16). That's right on par with the 32% of Big Growers that have outperformed the market this year and is another reflection of the tough odds in the world of high growth.

Exhibit 15: Big Growers, Stable Stocks, and Value Stocks Median Full-Year 2016E Earnings Growth Expectations Following Reporting Season¹ Q1 2015 Through Q2 2016E



 $Source: Empirical\ Research\ Partners\ Analysis.$

Exhibit 16: Big Growers, Stable Stocks, and Value Stocks Share of Companies with Increases in Full-Year 2016E Earnings Growth Expectations Following Reporting Seasons¹ Q1 2015 Through Q2 2016E



Source: Empirical Research Partners Analysis.

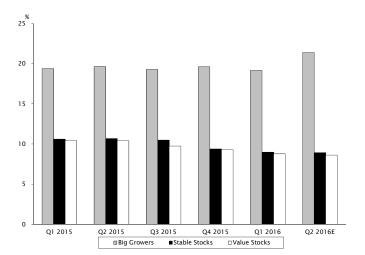
Meanwhile, expectations for FY 2017E growth rates have largely been left intact over past six quarters, with the Big Growers expected to deliver high-teens growth, double that of the stable and value stocks (see Exhibit 17). However, as usual the distribution for the Big Growers is skewed; less than 10% of companies reporting so far have done enough to convince analysts to bump up their 2017 growth rates post-announcements (see Exhibit 18). On the other hand, the value stocks have the advantage of a low bar, particularly for next year.

¹ Current and past quarters only include the 75% of stocks that have reported to date for consistency of comparison over time.

¹ Increases are defined as a growth rate increase of +2 percentage points or greater for Big Growers and Value Stocks, and +1 point or greater for Stable Stocks; Q2 2016E includes the approximately 75% of each universe that has reported to date.

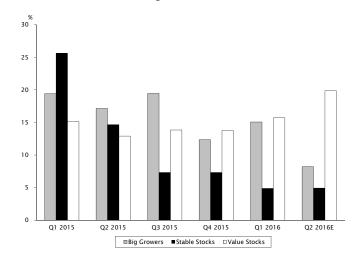
³ Stock Selection: Research and Results August 2016. "Earnings, The Same Story."

Exhibit 17: Big Growers, Stable Stocks, and Value Stocks'
Median Full-Year 2017E Earnings Growth Expectations
Following Reporting Season'
Q1 2015 Through Q2 2016E



Source: Empirical Research Partners Analysis.

Exhibit 18: Big Growers, Stable Stocks, and Value Stocks
Share of Companies with Increases in
Full-Year 2017E Earnings Growth Expectations
Following Reporing Seasons¹
Q1 2015 Through Q2 2016E

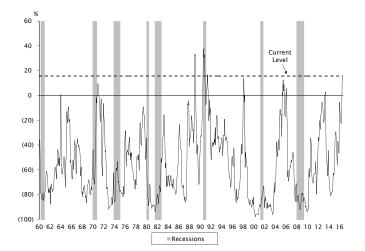


Source: Empirical Research Partners Analysis.

We pointed out last week that value stocks and Big Growers stock returns are positively correlated, an unusual result for two groups that are usually (50)% negatively correlated (see Exhibit 19). Both groups suffered as the strong Dollar raised questions about the durability of the cycle, but both could also benefit as its effects wear off. Historically when the anti-correlation between Big Growers and value has been this low, it's been a favorable starting point for both groups (see Exhibit 20). Appendix 2 on page 10 presents value stocks with rising earnings growth expectations and Appendix 3 on page 11 does the same for Big Growers. Both lists are limited to companies that have reported their 2Q numbers.

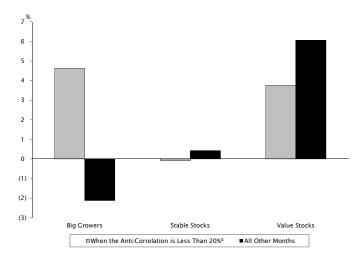
Exhibit 19: Big Growers

Correlation of Relative Returns with Those of the Value Stocks'
1960 Through Early-August 2016



Source: Empirical Research Partners Analysis.

Exhibit 20: Big Growers, Stable Stocks, and Value Stocks
Relative Returns in the Following 12 Months
When the Anti-Correlation Between Big Growers and
Value Stocks is Less Than 20%¹
Monthly Data Compounded to Annual Periods
1952 Through Early-August 2016



Source: Empirical Research Partners Analysis.

¹ Current and past quarters only include the 75% of stocks that have reported to date for consistency of comparison over time.

¹ Increases are defined as a growth rate increase of +2 percentage points or greater for Big Growers and Value Stocks, and +1 point or greater for Stable Stocks; Q2 2016E includes the approximately 75% of each universe that has reported to date.

¹ Computed over a trailing 12-month window; value stocks are drawn from the top quintile of valuation.

Correlation computed over a trailing 12-month window.

² Includes 111 months representing 15% of the sample.

Appendix 1: Large-Capitalization Stocks Best Quintile of Valuation and Lowest Three Quintiles of Change in Arbitrage Risk Sorted by Change in Arbitrage Risk and Capitalization
As of Early-August 2016

	As of Early-August 2016	,	Quintiles (1=Best; 5=Worst)							
			Change in		Super Factors					
			Arbit rage Risk¹			Earnings Quality		Core		Market
			(1=Biggest		Capital	and	Market	Model	YTD	Capitalization
Symbol IBM	Company INTERNATIONAL BUSINESS MACHINES CORP	Price \$161.77	Decrease)	Valuation D	eployment 3	Trend 4	Reaction 2	Rank 1	Return 20.9 %	(\$ Billion) \$154.6
BHP	BHP BILLITON GROUP (AUS)	31.24	i	i	1	2	5	i	22.7	83.1
MFC	MANULIFE FINANCIAL CORP	13.31	1	1	5	na	5	2	(9.3)	26.3
VIAB CTL	VIACOM INC CENTURYLINK INC	42.29 30.15	1	1	3	5 2	4 2	2	4.8 24.4	17.0 16.5
FE	FIRSTENERGY CORP	32.84	i	i	4	2	3	1	6.9	14.0
NOV	NATIONAL OILWELL VARCO INC	34.18	1	1	1	1	4	1	3.7	12.9
XRX MOS	XEROX CORP MOSAIC CO	9.94 28.21	1	1	1	3 5	1 5	1 2	(5.0) 4.4	10.1 9.9
STX	SEAGATE TECHNOLOGY PLC	32.49	i	i	i	4	2	1	(6.6)	9.7
MNK	MALLINCKRODT PLC	79.97	1	1	2	1	1	1	7.2	8.6
AR CPG	ANTERO RESOURCES CORP CRESCENT POINT ENERGY CORP	27.14 15.79	1	1	5 4	4 3	1	2	24.5 38.4	8.3 8.0
RL	POLO RALPH LAUREN CORP -CL A	95.07	i	i	2	3	4	2	(13.8)	7.9
TRGP	TARGA RESOURCES CORP	41.96	1	1	5	2	3	2	69.0	7.0
KSS HLF	KOHL'S CORP HERBALIFE LTD	37.70 67.25	1	1	1 2	4 2	4 2	1	(19.0) 25.4	7.0 6.3
SPLS	STAPLES INC	9.10	i	i	3	4	5	2	(1.4)	5.9
FTR	FRONTIER COMMUNICATIONS CORP	4.95	1	1	2	5	4	2	10.5	5.8
UTHR HRB	UNITED THERAPEUTICS CORP BLOCK H & R INC	125.37 23.77	1	1	1	1	3 5	1	(19.9) (27.5)	5.5 5.3
IM	INGRAM MICRO INC	34.33	i	i	2	3	1	i	13.0	5.1
ENDP	ENDO PHARMACEUTICALS HOLDINGS	22.16	1	1	2	3	5	1	(63.8)	4.9
AFSI SC	AMTRUST FINANCIAL SERVICES SANTANDER CONSUMER USA HLDGS	26.35 11.27	1 1	1	3 4	na na	5 5	2	(13.4) (28.9)	4.6 4.0
RIG	TRANSOCEAN LTD	11.01	i	i	4	5	5	2	(11.1)	4.0
JBL	JABIL CIRCUIT INC	20.62	1	1	2	3	4	1	(10.7)	3.9
OI DO	OWENS-ILLINOIS INC	18.69 21.42	1	1	2	3 2	4	1	7.3	3.0 2.9
ESV	DIAMOND OFFSHRE DRILLING INC ENSCO PLC	8.98	1	1	4	1	3 5	1	1.5 (41.5)	2.9
JPM	JPMORGAN CHASE & CO	65.87	2	i	2	na	4	1	2.0	237.9
BA	BOEING CO	132.62	2	1	1	1	4	1	(6.7)	83.0
BNS ESRX	BANK OF NOVA SCOTIA EXPRESS SCRIPTS HOLDING CO	50.98 76.44	2	1	3 2	na 2	2 5	2	28.9 (12.6)	61.3 48.2
MCK	MCKESSON CORP	196.29	2	i	1	1	3	1	(0.2)	44.3
KR	KROGER CO	32.29	2	1	3	3	5	3	(22.4)	30.6
CAH DFS	CARDINAL HEALTH INC DISCOVER FINANCIAL SVCS INC	83.80 57.91	2	1	2	2 na	4	2	(5.1) 9.8	27.3 23.5
STI	SUNTRUST BANKS INC	42.58	2	i	3	na	3	1	0.7	21.4
ABC	AMERISOURCEBERGEN CORP	88.62	2	1	2	2	4	1	(13.8)	19.0
WRK TSO	WESTROCK CO TESORO CORP	43.83 76.49	2	1	5 1	5 3	4 5	2 1	8.8 (26.5)	11.1 9.1
NWSA	NEWS CORP	13.32	2	i	i	1	4	i	0.6	7.8
NTAP	NETAPP INC	27.68	2	1	1	3	5	1	6.6	7.8
JWN GT	NORDSTROM INC GOODYEAR TIRE & RUBBER CO	43.52 27.96	2	1	2 1	2 5	5 4	1 2	(11.2) (13.8)	7.5 7.3
FLR	FLUOR CORP	51.99	2	i	i	5	2	2	11.0	7.2
CIT	CIT GROUP INC	35.11	2	1	5	na	5	2	(10.7)	7.1
ARW RNR	ARROW ELECTRONICS INC RENAISSANCERE HOLDINGS LTD	66.31 117.97	2	1	4 1	5 na	2	2 1	22.4 4.8	6.1 4.9
RHI	ROBERT HALF INTERNATIONAL INC	37.42	2	i	4	2	5	2	(19.7)	4.9
WSM	WILLIAMS-SONOMA INC	52.30	2	1	3	3	5	3	(8.7)	4.7
HFC CPN	HOLLYFRONTIER CORP CALPINE CORP	26.38 12.67	2	1	4 2	4 3	5 5	1 2	(32.4) (12.4)	4.7 4.6
LAZ	LAZARD LTD	34.87	2	i	3	na	5	3	(16.8)	4.5
NAVI	NAVIENT CORP	14.21	2	1	1	na	2	1	27.4	4.5
TDC NRG	TERADATA CORP NRG ENERGY INC	31.62 12.83	2 2	1	1	1	1 5	1	19.7 11.0	4.1 4.0
HTZ	HERTZ GLOBAL HOLDINGS INC	44.96	2	i	i	2	2	i	(21.1)	3.8
R	RYDER SYSTEM INC	65.40	2	1	4	3	2	2	16.6	3.5
URBN AB	URBAN OUTFITTERS INC ALLIANCE CAP MGMT HOLDINGS -LP	29.33 21.67	2	1	1	1 na	4	1 2	28.9 (3.3)	3.4 2.1
WFC	WELLS FARGO & CO	48.93	2 3	i	3	na	5	2	(7.8)	247.0
GILD	GILEAD SCIENCES INC	79.33	3	1	2	5	5	1	(20.8)	105.6
BP TD	BP PLC TORONTO DOMINION BANK	33.38 43.67	3	1	1	2	4	1 2	13.1 14.8	104.5 81.0
MS	MORGAN STANLEY	29.34	3 3	i	3	na na	4	1	(6.1)	56.3
BMO	BANK OF MONTREAL	63.87	3	1	3	na	2	1	16.8	41.2
PRU EXC	PRUDENTIAL FINANCIAL INC EXELON CORP	77.48 35.85	3 3	1	1 5	na 5	5 2	1	(2.9) 31.6	34.0 33.1
LYB	LYONDELLBASELL INDUSTRIES NV	74.55	3	i	4	3	5	2	(12.4)	31.3
BBT	BB&T CORP	38.00	3	1	5	na	3	2	2.2	31.0
CM	CANADIAN IMPERIAL BANK	76.52	3	1	2	na	4	2	19.0	30.2
AFL HCA	AFLAC INC HCA HOLDINGS INC	73.11 76.14	3 3	1	2	na 3	2	1	23.7 12.6	30.0 28.9
VLO	VALERO ENERGY CORP	52.49	3	i	1	4	5	i	(23.3)	24.3
MPC	MARATHON PETROLEUM CORP	41.03	3	1	4	4	5	2	(19.3)	21.7
IP MGA	INTERNATIONAL PAPER CO MAGNA INTERNATIONAL INC	46.06 40.50	3	1 1	1 2	2	2 5	1 2	25.1 1.1	18.9 15.8
FITB	FIFTH THIRD BANCORP	19.40	3	i	2	na	3	1	(2.0)	14.9
ETR	ENTERGY CORP	78.86	3	1	3	5	4	1	19.3	14.1
ADS WDC	ALLIANCE DATA SYSTEMS CORP WESTERN DIGITAL CORP	220.40	3	1	2	2 5	5 5	1	(20.3)	12.9
RF.	REGIONS FINANCIAL CORP	45.28 9.37	3 3	1 1	3 1	na	5 4	2 1	(22.9) (1.0)	12.7 11.8
LNC	LINCOLN NATIONAL CORP	46.11	3	i	i	na	5	i	(6.5)	10.7
WU	WESTERN UNION CO	20.95	3	1	3	2	3	1	19.0	10.2
CNA RE	CNA FINANCIAL CORP EVEREST REINSURANCE GROUP LTD	32.92 190.97	3	1	4 1	na na	4	2 1	1.8 5.6	8.9 8.0
AES	AES CORP	12.07	3	1	1	1	3	i	30.0	8.0
SNI	SCRIPPS NETWORKS INTERACTIVE	61.47	3	1	3	3	1	1	12.3	7.9
PV H WYN	PVH CORP WYNDHAM WORLDWIDE CORP	96.59 69.45	3	1 1	3 1	3	2	2 1	31.3 (3.0)	7.8 7.6
BBBY	BED BATH & BEYOND INC	44.55	3 3	1	1	1	5	1	(7.4)	6.9
WLK	WESTLAKE CHEMICAL CORP	47.81	3	1	2	5	5	3	(11.2)	6.2
JBLU	JETBLUE AIRWAYS CORP	17.00	3	1	2	1	5	1	(24.9)	5.5
AMCX LM	AMC NETWORKS INC LEGG MASON INC	54.16 33.81	3 3	1 1	2 1	2 na	5 5	2 1	(27.5) (12.7)	3.9 3.5
			,	*	•		-	•		3.5

Source: Empirical Research Partners Analysis.

¹ Change in arbitrage risk computed over a trailing three-month period.

Appendix 2: Large-Capitalization Stocks Best Quintile of Valuation and Growth Expectation Score of 3 or Less'
Sorted by Post-Reporting Season Change in Growth Expectations and Capitalization As of Early-August 2016

			Quintiles (1=Best; 5=Worst) Following 2Q 2016 Reporting Season ² Super Factors									
			Change in	Change in	Season*	-	Super Fa	ctors				
			2016E Growth Expectations	2017E Growth Expectations	Average			Earnings Quality		Core		Market
			(1=Biggest	(1=Biggest	Of The		Capital	and	Market		YTD	Capitalization
Symbol URI	Company UNITED RENTALS INC	Price \$78.84	Increase)	Increase)	Two 1.0	Valuation 1	Deployment 1	Trend 1	Reaction 2	Rank 1	Return 8.7 %	(\$ Billion) \$6.8
RIG	TRANSOCEAN LTD	11.01	1	i	1.0	i	4	5	5	2	(11.1)	4.0
NOV MGA	NATIONAL OILWELL VARCO INC MAGNA INTERNATIONAL INC	34.18 40.50	2	1 2	1.5 2.0	1	1 2	1 4	4 5	1 2	3.7 1.1	12.9 15.8
STX	SEAGATE TECHNOLOGY PLC	32.49	1	3	2.0	i	ī	4	2	1	(6.6)	9.7
CNA MNK	CNA FINANCIAL CORP MALLINCKRODT PLC	32.92 79.97	2 1	2	2.0 2.0	1	4 2	na 1	4 1	2	1.8 7.2	8.9 8.6
LEA	LEAR CORP	114.06	i	3	2.0	i	1	i	4	1	(6.6)	8.2
HLF OI	HERBALIFE LTD OWENS-ILLINOIS INC	67.25 18.69	3 2	1 2	2.0 2.0	1	2	2	2	1	25.4 7.3	6.3 3.0
DO	DIAMOND OFFSHRE DRILLING INC	21.42	3	1	2.0	i	3	2	3	1	1.5	2.9
INTC BAC	INTEL CORP BANK OF AMERICA CORP	34.92 15.19	1 3	4 2	2.5 2.5	1	2	5 na	3 5	2 1	3.9 (9.1)	165.2 155.2
IBM	INTERNATIONAL BUSINESS MACHINES CORP	161.77	3	2	2.5	1	3	4	2	1	20.9	154.6
AIG TEVA	AMERICAN INTERNATIONAL GROUP TEVA PHARMACEUTICAL INDUSTRIES -ADR	59.27 53.45	1	4 2	2.5 2.5	1	1 2	na 5	5 4	1 2	(3.2)	64.2 54.2
HMC	HONDA MOTOR CO LTD	29.22	1	4	2.5	1	1	5	4	1	(7.2)	53.2
ESRX MCK	EXPRESS SCRIPTS HOLDING CO MCKESSON CORP	76.44 196.29	3	2	2.5 2.5	1	2 1	2	5 3	2	(12.6)	48.2 44.3
AET	AETNA INC	119.54	3	2	2.5	i	2	2	4	2	11.3	41.9
AFL STT	AFLAC INC STATE STREET CORP	73.11 67.81	2 1	3 4	2.5 2.5	1	2	na na	2	1	23.7 3.4	30.0 26.4
DFS	DISCOVER FINANCIAL SVCS INC	57.91	2	3	2.5	i	1	na	4	2	9.8	23.5
SYF MPC	SYNCHRONY FINANCIAL	27.88 41.03	2	3	2.5	1	4	na 4	5	2	(8.3)	23.2 21.7
ABC	MARATHON PETROLEUM CORP AMERISOURCEBERGEN CORP	41.03 88.62	4 2	1 3	2.5 2.5	1	4 2	4 2	4	2 1	(19.3) (13.8)	19.0
IP	INTERNATIONAL PAPER CO	46.06	2	3	2.5	1	1	2	2	1	25.1	18.9
ADS CFG	ALLIANCE DATA SYSTEMS CORP CITIZENS FINANCIAL GROUP INC	220.40 23.49	3 1	2 4	2.5 2.5	1	2	2 na	5 3	1	(20.3) (8.9)	12.9 12.4
XRX	XEROX CORP	9.94	i	4	2.5	i	1	3	1	1	(5.0)	10.1
DISCA FCAU	DISCOVERY COMMUNICATIONS INC	25.65 6.87	1 2	4 3	2.5	1	2	3	3 5	1	(3.9) (24.9)	9.9 8.9
UNM	FIAT CHRYSLER AUTOMOBILES NV UNUM GROUP	34.34	2	3	2.5 2.5	i	i	2 na	2	i	5.1	8.1
AES	AES CORP	12.07	3	2	2.5	1	1	1	3	1	30.0	8.0
GT BWA	GOODYEAR TIRE & RUBBER CO BORGWARNER INC	27.96 33.71	1	4 2	2.5 2.5	1	1 2	5 5	4 5	2	(13.8) (21.4)	7.3 7.2
WLK	WESTLAKE CHEMICAL CORP	47.81	4	1	2.5	i	2	5	5	3	(11.2)	6.2
ARW ZION	ARROW ELECTRONICS INC ZIONS BANCORPORATION	66.31 28.80	3 1	2	2.5 2.5	1	4	5 na	2	2	22.4 6.0	6.1 5.9
VOYA	VOYA FINANCIAL INC	27.70	3	2	2.5	i	1	na	5	i	(24.9)	5.5
RS	RELIANCE STEEL & ALUMINUM CO AVNET INC	75.54	1 4	4 1	2.5	1	1 1	5 4	1 5	1 1	32.0	5.5 5.3
AVT RNR	RENAISSANCERE HOLDINGS LTD	41.48 117.97	4	i	2.5 2.5	i	i	na	3	i	(2.4) 4.8	4.9
MAN	MANPOWERGROUP	68.99	2	3	2.5	1	1	2	4	1	(17.3)	4.8
NAVI JPM	NAVIENT CORP JPMORGAN CHASE & CO	14.21 65.87	2	3 4	2.5 3.0	1	1 2	na na	2 4	1	27.4	4.5 237.9
C	CITIGROUP INC	45.90	1	5	3.0	1	3	na	5	1	(10.8)	133.4
BP GS	BP PLC GOLDMAN SACHS GROUP INC	33.38 163.44	5 1	1 5	3.0 3.0	1	1 2	2 na	4 5	1	13.1 (8.6)	104.5 69.7
MS	MORGAN STANLEY	29.34	1	5	3.0	i	3	na	4	1	(6.1)	56.3
GM MET	GENERAL MOTORS CO METLIFE INC	31.07 41.28	1 5	5 1	3.0	1	4	4 na	5 5	2	(6.3) (11.9)	49.7 45.4
COF	CAPITAL ONE FINANCIAL CORP	67.78	5	i	3.0 3.0	i	1	na	5	i	(4.4)	34.3
PRU	PRUDENTIAL FINANCIAL INC	77.48	5	1	3.0	1	1	na	5	1	(2.9)	34.0
LYB HCA	LYONDELLBASELL INDUSTRIES NV HCA HOLDINGS INC	74.55 76.14	4 2	2 4	3.0 3.0	1	4 2	3	5 2	2 1	(12.4) 12.6	31.3 28.9
VLO	VALERO ENERGY CORP	52.49	5	1	3.0	1	1	4	5	1	(23.3)	24.3
STI HIG	SUNTRUST BANKS INC HARTFORD FINANCIAL SERVICES	42.58 40.40	2 5	4 1	3.0 3.0	1	3 1	na na	3 5	1	0.7 (6.2)	21.4 15.7
FITB	FIFTH THIRD BANCORP	19.40	2	4	3.0	1	2	na	3	1	(2.0)	14.9
ETR FE	ENTERGY CORP FIRSTENERGY CORP	78.86 32.84	1 4	5 2	3.0 3.0	1	3 4	5 2	4	1	19.3 6.9	14.1 14.0
WDC	WESTERN DIGITAL CORP	45.28	5	1	3.0	i	3	5	5	2	(22.9)	12.7
WRK LNC	WESTROCK CO LINCOLN NATIONAL CORP	43.83 46.11	4 3	2	3.0	1	5 1	5 na	4 5	2	8.8 (6.5)	11.1 10.7
WU	WESTERN UNION CO	20.95	2	4	3.0 3.0	i	3	2	3	i	19.0	10.7
MOS	MOSAIC CO	28.21	5	1	3.0	1	1	5	5	2	4.4	9.9
TSO ALLY	TESORO CORP ALLY FINANCIAL INC	76.49 18.66	4 2	2 4	3.0 3.0	1	1 4	3 na	5 3	1	(26.5) 0.6	9.1 9.0
SNI	SCRIPPS NETWORKS INTERACTIVE	61.47	4	2	3.0	i	3	3	1	i	12.3	7.9
RL HBAN	POLO RALPH LAUREN CORP -CL A HUNTINGTON BANCSHARES	95.07 9.70	2	4 3	3.0 3.0	1	2 1	3 na	4 5	2	(13.8) (11.0)	7.9 7.8
WYN	WYNDHAM WORLDWIDE CORP	69.45	3	3	3.0	i	i	3	3	i	(3.0)	7.6
FLR CIT	FLUOR CORP	51.99 35.11	5 5	1 1	3.0	1 1	1 5	5	2 5	2	11.0 (10.7)	7.2 7.1
TRGP	CIT GROUP INC TARGA RESOURCES CORP	41.96	5	i	3.0 3.0	1	5	na 2	3	2	69.0	7.1
RGA	REINSURANCE GROUP OF AMERICA INC	101.86	1	5	3.0	1	1	na	2	1	20.5	6.5
SPR UTHR	SPIRIT AEROSYSTEMS HOLDINGS UNITED THERAPEUTICS CORP	43.88 125.37	3 1	3 5	3.0 3.0	1 1	2 1	2 1	5 3	2 1	(12.4) (19.9)	5.7 5.5
CF	CF INDUSTRIES HOLDINGS INC	22.12	5	1	3.0	i	4	5	5	3	(44.7)	5.2
IM AXS	INGRAM MICRO INC AXIS CAPITAL HOLDINGS LTD	34.33	1 1	5	3.0	1	2 1	3 na	1	1 1	13.0 1.9	5.1 5.1
ENDP	ENDO PHARMACEUTICALS HOLDINGS	56.55 22.16	3	5 3	3.0 3.0	1	2	na 3	5	1	(63.8)	4.9
UMC	UNITED MICROELECTRONICS CORP -ADR	1.93	5	1	3.0	1	1	5	3	1	5.8	4.8
HFC CPN	HOLLYFRONTIER CORP CALPINE CORP	26.38 12.67	5 1	1 5	3.0 3.0	1	4 2	4	5 5	1 2	(32.4) (12.4)	4.7 4.6
TGNA	TEGNA INC	21.11	4	2	3.0	i	3	3	5	3	(16.3)	4.5
TDC	TERADATA CORP	31.62	1	5 1	3.0	1	1	1	1	1	19.7	4.1
NRG AMCX	NRG ENERGY INC AMC NETWORKS INC	12.83 54.16	5 4	2	3.0 3.0	1	1 2	1 2	5 5	1 2	11.0 (27.5)	4.0 3.9
HTZ	HERTZ GLOBAL HOLDINGS INC	44.96	5	1	3.0	1	1	2	2	1	(21.1)	3.8
PWR LM	QUANTA SERVICES INC LEGG MASON INC	24.79 33.81	5 1	1 5	3.0 3.0	1	1	4 na	2 5	1	22.4 (12.7)	3.7 3.5
R	RYDER SYSTEM INC	65.40	4	2	3.0	i	4	3	2	2	16.6	3.5

Source: Empirical Research Partners Analysis.

1 Excludes companies that have not yet reported 2Q 2016 results.

2 Quintiles computed relative to stocks in the best quintile of valuation that have reported 2Q 2016 results.

Appendix 3: Big Growers¹ Sorted by Post-Reporting Season Change in Growth Expectations and Capitalization As of Early-August 2016

			Quintiles (1=Best; 5=Worst)									
				Q 2016 Reporting			Super Fac	tors				
			Change in	Change in								
			2016E Growth Expectations		_			Earnings		Core		Market
			(1=Biggest	Expectations (1=Biggest	Average Of The		Capital	Quality and	Market		YTD	Capitalization
Symbol	Company	Price	Increase)	Increase)	Two	Valuation	Deployment	Trend	Reaction		Return	(\$ Billion)
AMZN	AMAZON.COM INC	\$768.31	1	1	1.0	5	4	5	1	5	13.7 %	\$364.2
EW	EDWARDS LIFESCIENCES CORP	113.39	1	2	1.5	5	5	4	1	5	43.6	24.1
MELI	MERCADOLIBRE INC	170.21	2	1	1.5	5	3	1	1	2	49.2	7.5
DPZ	DOMINO'S PIZZA INC	144.92	2	1	1.5	5	2	1	1	2	31.0	7.0
FB	FACEBOOK INC	125.06	1	3	2.0	5	5	2	1	4	19.5	359.0
PCLN	PRICELINE GROUP INC	1,407.01	2	2	2.0	4	5	2	2	4	10.4	69.6
BIIB	BIOGEN INC	314.42	1	3	2.0	3	4	4 5	1	1	2.6	68.9
SHPG EA	SHIRE PHARMACEUTICALS GROUP -ADR ELECTRONIC ARTS INC	198.90 78.69	2	2 2	2.0	4	5 2	4	3 2	4 3	(2.6) 14.5	59.7 23.7
ADS	ALLIANCE DATA SYSTEMS CORP	220.40	3	1	2.0 2.0	1	2	2	5	3 1	(20.3)	12.9
MIDD	MIDDLEBY CORP	121.77	3	i	2.0	5	5	4	3	5	12.9	7.0
TARO	TARO PHARMACEUTICL INDS LTD	145.20	3	i	2.0	2	1	4	3	2	(6.0)	6.2
TYL	TYLER TECHNOLOGIES INC	162.17	2	2	2.0	5	5	5	2	5	(7.0)	5.9
CELG	CELGENE CORP	113.80	2	3	2.5	4	5	2	4	3	(5.0)	88.2
ATVI	ACTIVISION BLIZZARD INC	41.25	1	4	2.5	3	4	4	1	3	7.4	30.6
MNST	MONSTER BEVERAGE CORP	159.12	4	1	2.5	5	3	4	3	5	6.8	30.3
ISRG	INTUITIVE SURGICAL INC	696.68	2	3	2.5	5	3	4	1	4	27.6	26.8
LNKD	LINKEDIN CORP	191.90	1	4	2.5	5	5	4	3	5	(14.7)	25.9
ZTS	ZOETIS INC	50.93	2	3	2.5	5	4	3	2	4	7.0	25.2
ILMN	ILLUMINA INC	165.59	1	4	2.5	5	5	3 1	1	4	(13.7)	24.3
CERN APH	CERNER CORP AMPHENOL CORP	66.91 60.15	3 3	2 2	2.5 2.5	4 5	4 4	5	4 2	4 5	11.2 15.7	22.6 18.6
TDG	TRANSDIGM GROUP INC	287.04	2	3	2.5	5	5	1	1	3	25.6	15.2
CMG	CHIPOTLE MEXICAN GRILL INC	395.10	4	1	2.5	5	4	5	5	5	(17.7)	11.5
ULTI	ULTIMATE SOFTWARE GROUP INC	210.34	4	i	2.5	5	5	4	2	5	7.6	6.1
ATHN	ATHENAHEALTH INC	125.80	4	i	2.5	5	5	4	5	5	(21.8)	4.9
SBUX	STARBUCKS CORP	55.20	3	3	3.0	5	3	3	4	5	(7.1)	81.0
CHTR	CHARTER COMMUNICATIONS INC	255.76	1	5	3.0	5	5	5	3	5	26.3	68.2
PYPL	PAYPAL HOLDINGS INC	38.10	3	3	3.0	3	3	3	5	3	5.2	46.0
EXPE	EXPEDIA INC	113.78	5	1	3.0	3	5	5	5	5	(8.1)	17.0
INCY	INCYTE CORP	86.48	1	5	3.0	5	5	1	5	4	(20.3)	16.2
BMRN	BIOMARIN PHARMACEUTICAL INC	95.15	5	1	3.0	5	5	4	5	5	(9.2)	15.6
VRSK SWKS	VERISK ANALYTICS INC SKYWORKS SOLUTIONS INC	81.73 67.00	4	2	3.0	4 2	4 3	1 3	2 5	3 2	6.3 (11.7)	13.8 12.6
NOW	SERVICENOW INC	75.00	1	5 5	3.0 3.0	5	5 5	5	2	5	(13.4)	12.8
CNC	CENTENE CORP	70.41	i	5	3.0	2	5	5	1	4	7.0	12.0
TSCO	TRACTOR SUPPLY CO	85.74	4	2	3.0	5	4	4	4	5	0.8	11.5
MDVN	MEDIVATION INC	63.45	5	1	3.0	5	5	4	1	3	31.3	10.5
MBLY	MOBILEYE NV	46.50	1	5	3.0	5	5	2	1	4	10.0	10.2
JAZZ	JAZZ PHARMACEUTICALS PLC	150.01	5	1	3.0	2	2	1	4	2	6.7	9.1
N	NETSUITE INC	108.73	2	4	3.0	5	5	4	1	5	28.5	8.8
CSGP	COSTAR GROUP INC	207.47	2	4	3.0	5	3	1	2	3	0.4	6.8
AGN	ALLERGAN PLC	251.10	4	3	3.5	5	4	5	5	5	(19.6)	99.4
CTSH	COGNIZANT TECH SOLUTIONS	57.67	3	4	3.5	3	2	4	5 5	3	(3.9)	35.0
ALXN UA	ALEXION PHARMACEUTICALS INC UNDER ARMOUR INC	135.00 39.31	5 3	2 4	3.5 3.5	5 5	5 5	5	5	5 5	(29.2) (5.6)	30.3 17.2
CHKP	CHECK POINT SOFTWARE TECHNOLOGIES INC	74.91	5 4	3	3.5 3.5	2	4	1	5	3	(8.0)	17.2
FAST	FASTENAL CO	42.48	5	2	3.5	5	5	5	4	5	6.3	12.3
IT	GARTNER INC	94.25	3	4	3.5	4	4	2	3	3	3.9	7.8
REGN	REGENERON PHARMACEUTICALS	419.24	3	5	4.0	5	5	1	5	5	(22.8)	44.1
NXPI	NXP SEMICONDUCTORS NV	86.37	4	4	4.0	5	5	5	4	5	2.5	29.9
GPN	GLOBAL PAYMENTS INC	74.89	4	4	4.0	4	5	5	3	5	16.1	11.5
TRIP	TRIPADVISOR INC	61.10	5	3	4.0	4	4	2	5	5	(28.3)	8.9
NFLX	NETFLIX INC	93.99	4	5	4.5	5	2	5	5	5	(17.8)	40.3
VRTX	VERTEX PHARMACEUTICALS INC	102.83	4	5	4.5	5	3	1	5	4	(18.3)	25.5
AKAM	AKAMAI TECHNOLOGIES INC	50.22	5	4	4.5	2	3	1	5	3	(4.6)	8.8
SRCL	STERICYCLE INC	87.67	5	4	4.5	2	5	5	5	5	(27.3)	7.4
TSLA LNG	TESLA MOTORS INC CHENIERE ENERGY INC	229.08 42.20	5 5	5 5	5.0 5.0	5 5	5 5	5 5	4 4	5 5	(4.6) 13.3	34.1 9.9
DXCM	DEXCOM INC	91.10	5	5	5.0 5.0	5	5	5	4	5	11.2	9.9 7.6
DACIVI	DECOM INC	31.10	J	J	3.0	ر	,	ر	4	,	11.4	7.0

Source: Empirical Research Partners Analysis.

¹ Excludes companies that have not yet reported 2Q 2016 results. ² Quintiles computed relative to Big Growers that have reported 2Q 2016 results.