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April 2017

Update Call: Biotechnology Sector

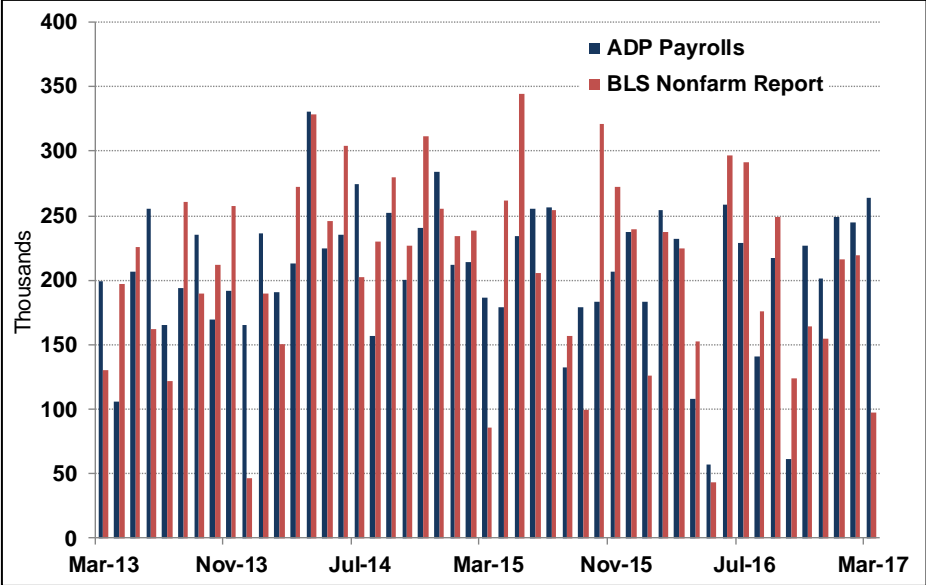
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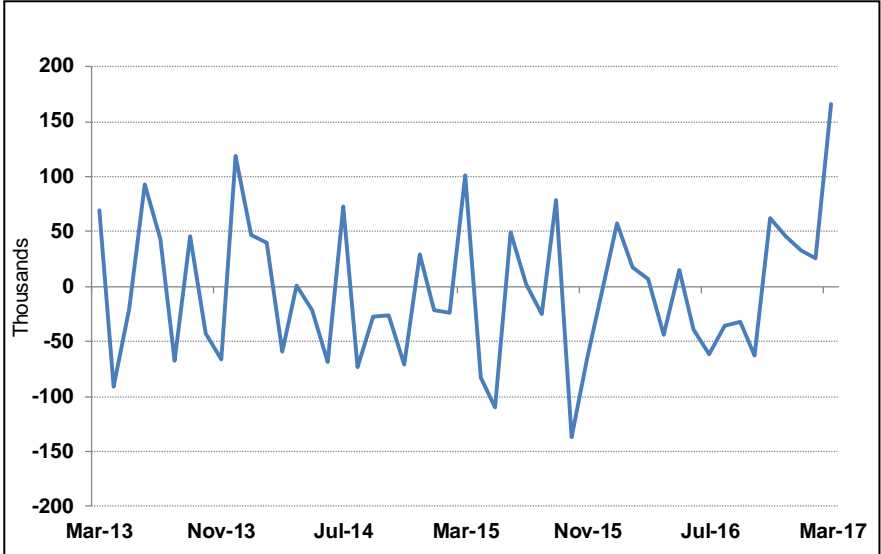
Market Strategy – A Brief Look at Markets and the Economy

John Stoltzfus, Chief Investment Strategist

ADP Payrolls vs BLS Nonfarm Report



Monthly Difference in ADP Payrolls vs BLS Nonfarm Report



Source: Automatic Data Processing, US Dept. of Labor, Bureau of Labor Statistics and Oppenheimer Asset Management Research.

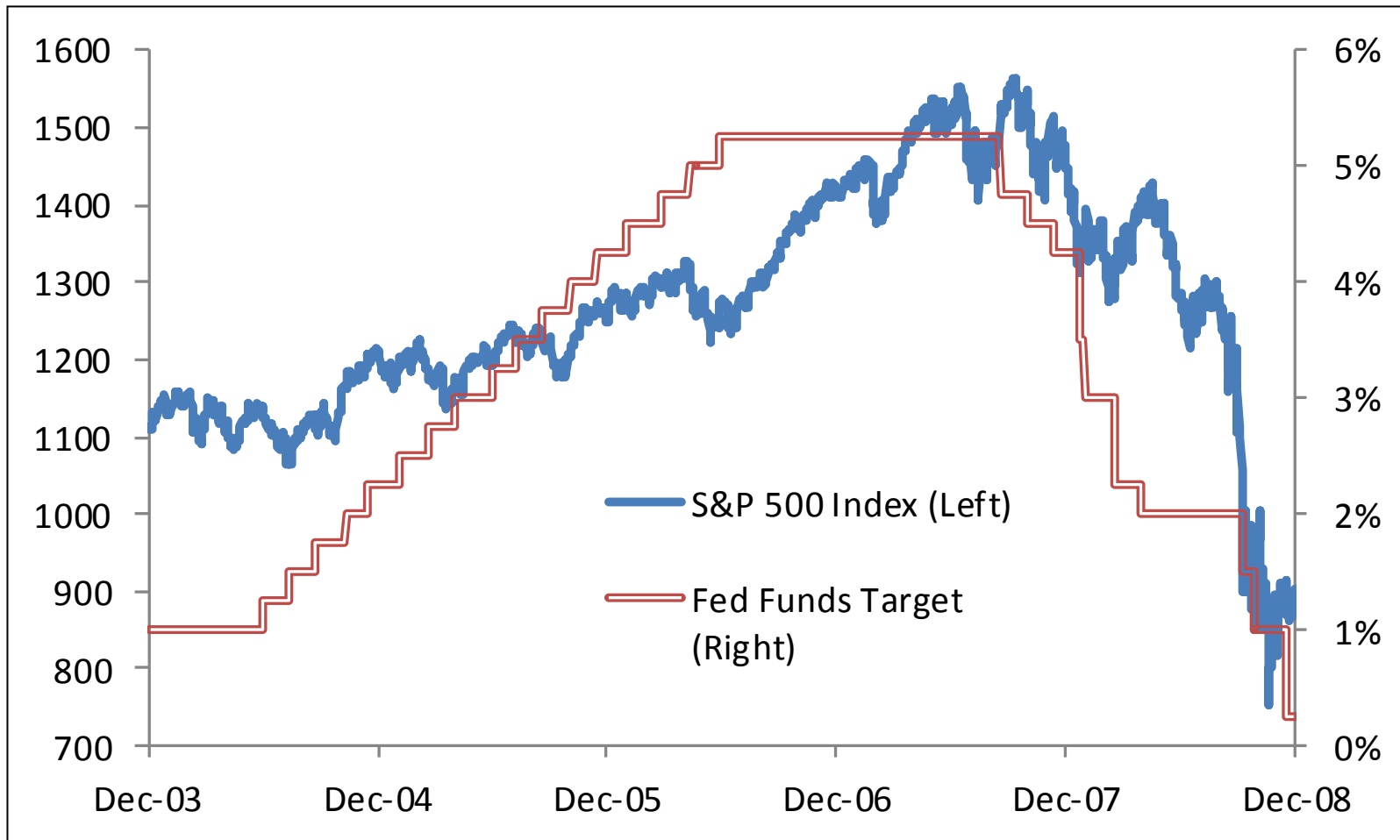
10-Yr Treasury Yield



Source: Federal Reserve Board, Oppenheimer Asset Management and Bloomberg. Data are month-end (except for most recent); yield is constant maturities basis through 3/31/2017.

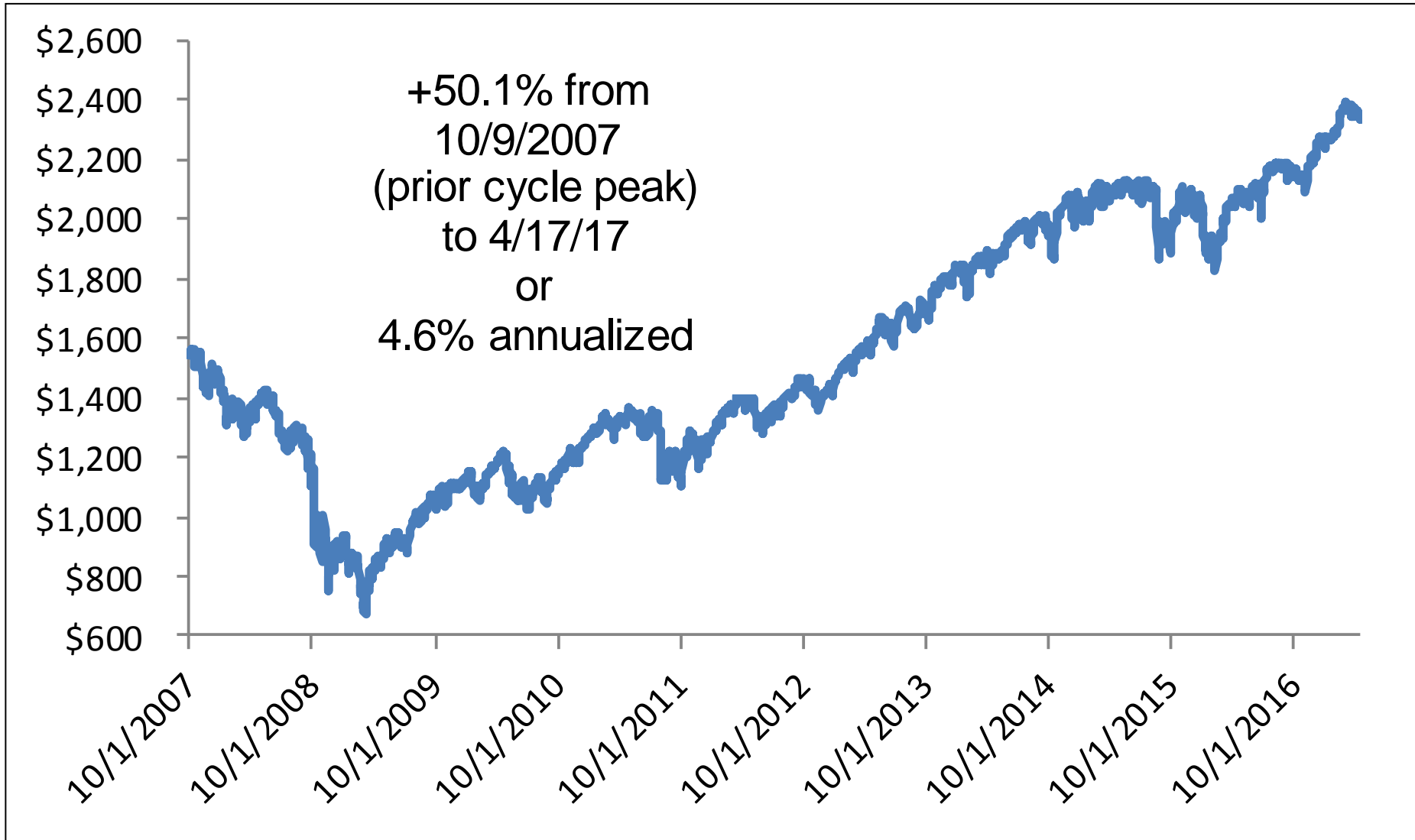
Interest rate normalization in the 2004-06 period didn't thwart the rise in stock prices.

Fed Funds Rate and the S&P 500 Index

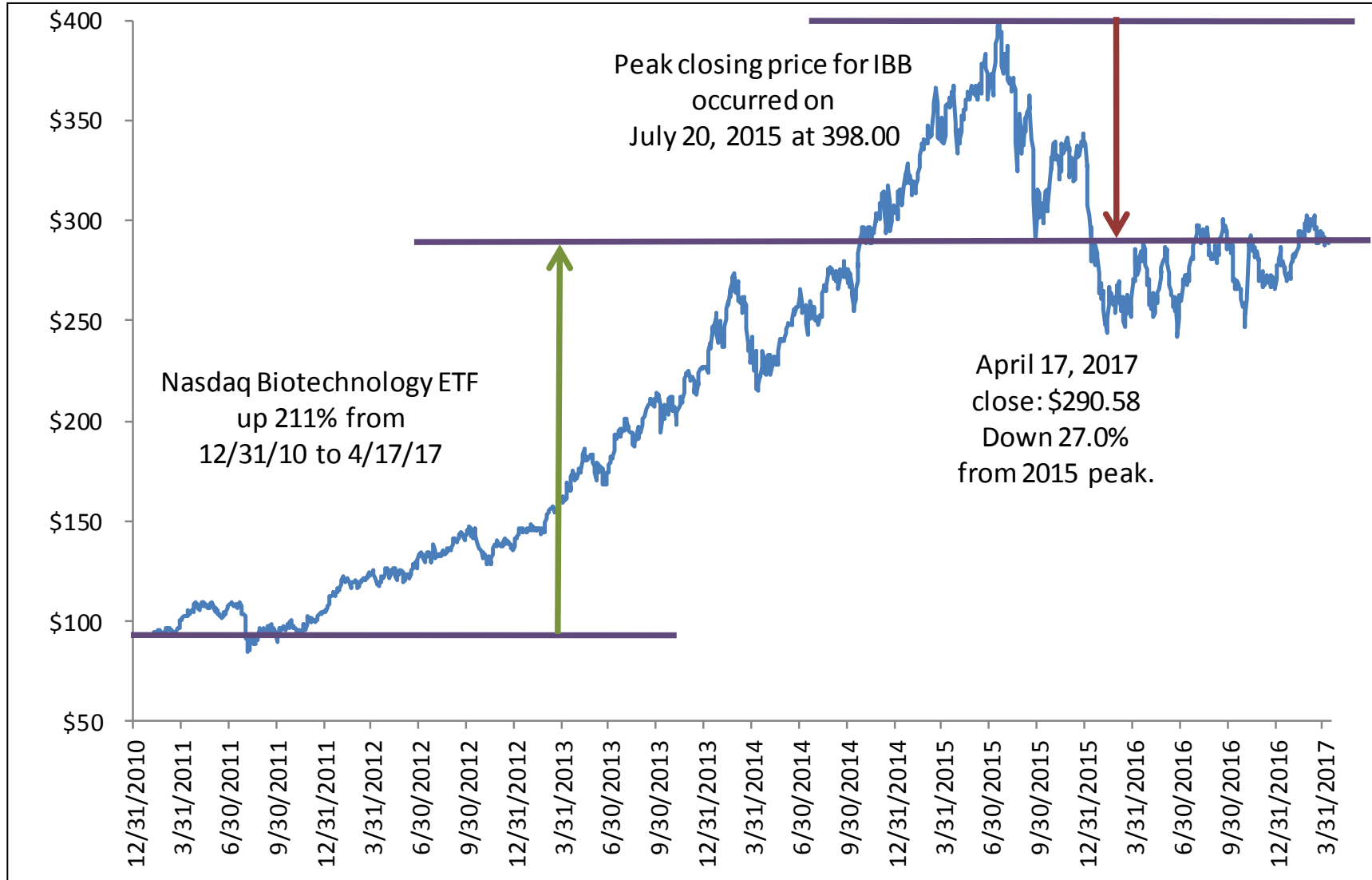


Source: Bloomberg LP and Oppenheimer Asset Management Research.

S&P 500 Index



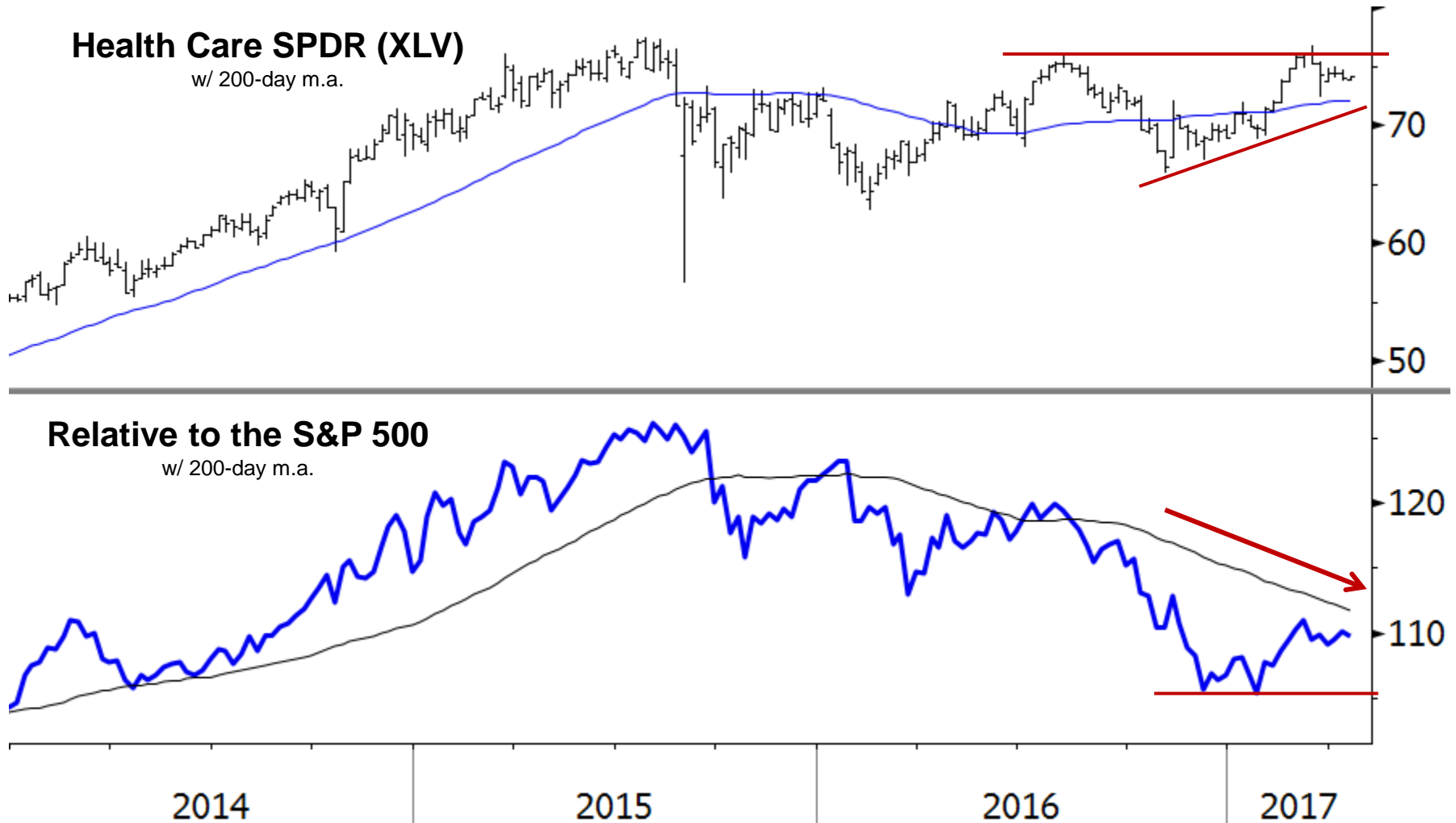
iShares Nasdaq Biotechnology ETF (Ticker: IBB)

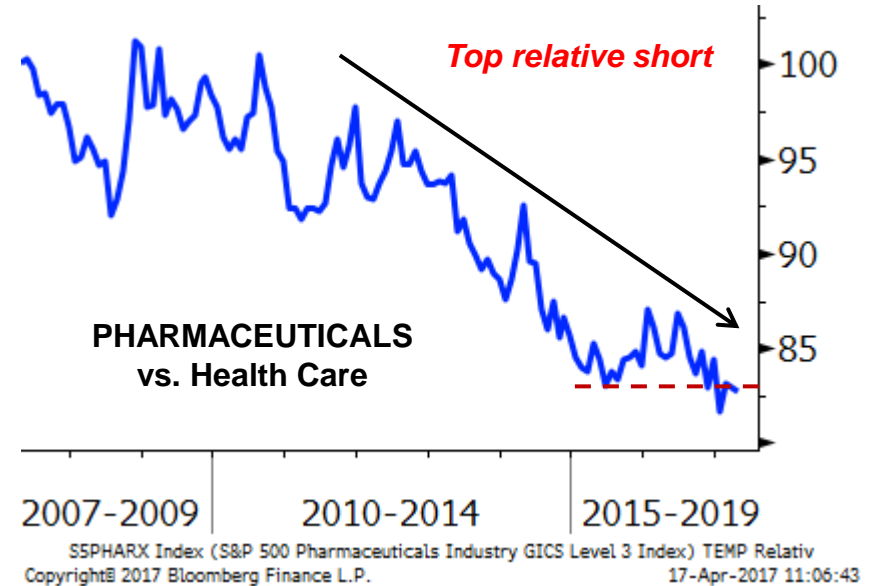
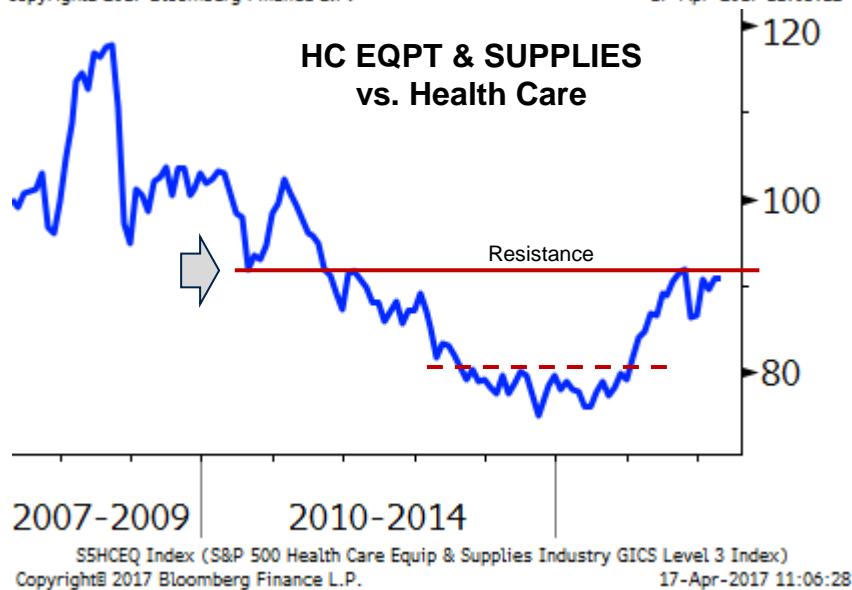
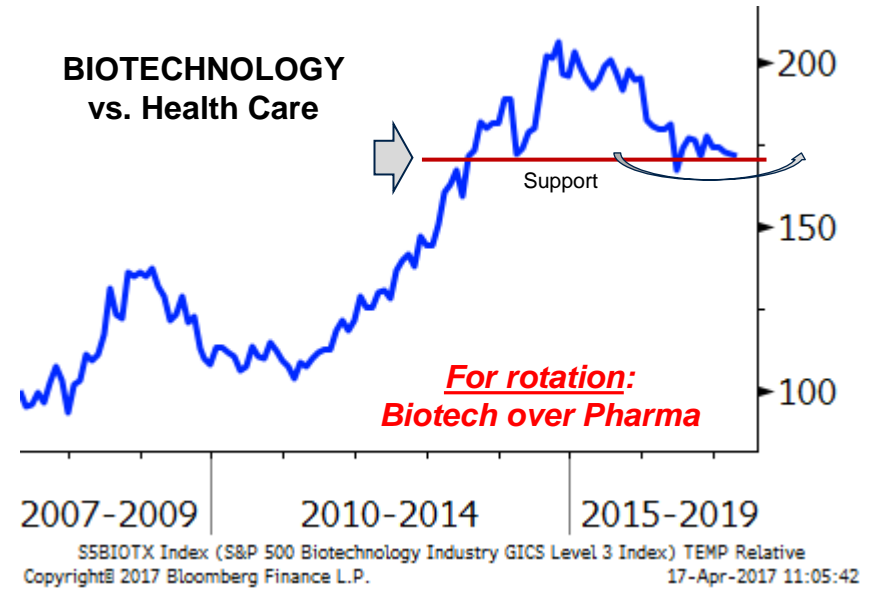
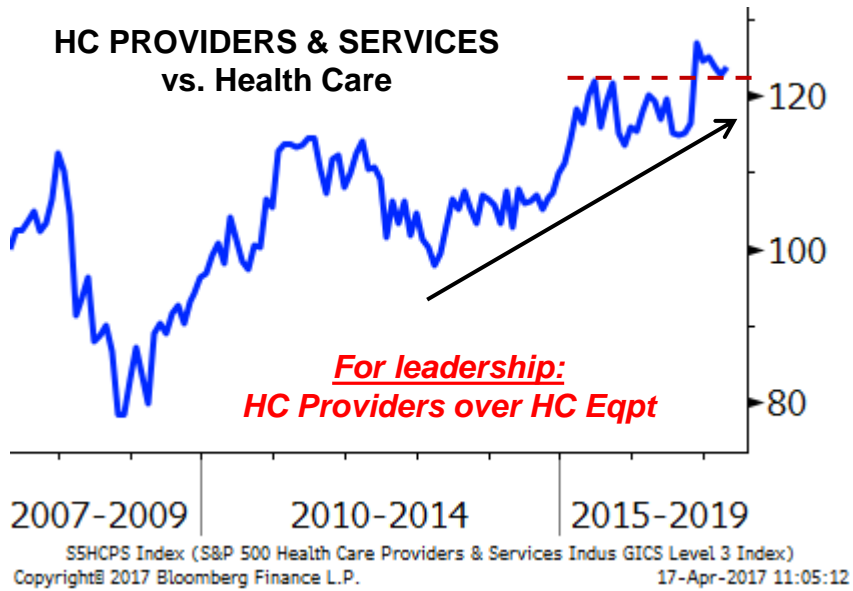


Biotechnology – Technical Analysis & Outlook

Ari Wald, CFA, CMT, Head of Technical Analysis

➤ **XLV**: Stronger absolute than relative equates to a *Market Weight* ranking, in our view.

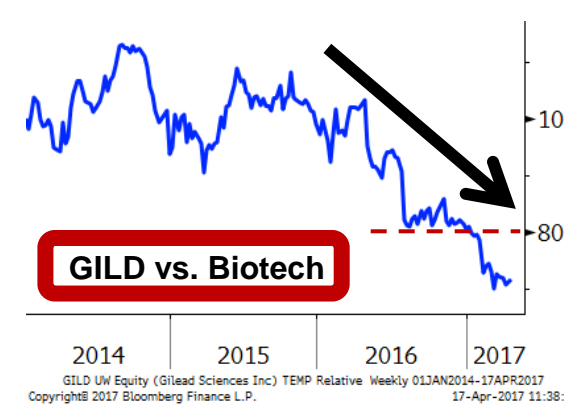
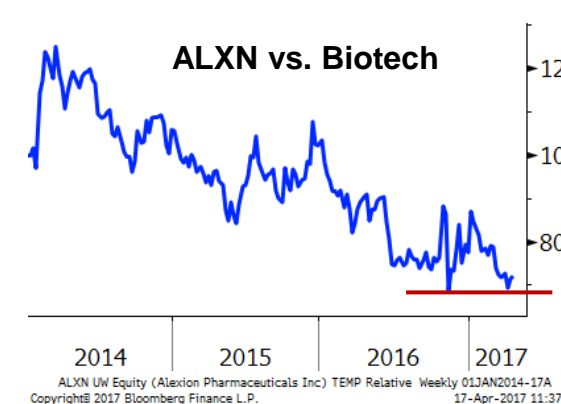
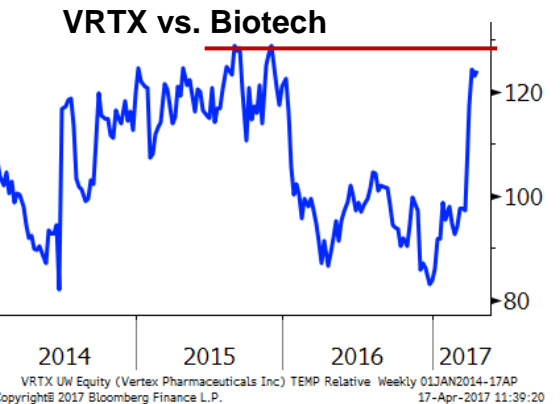
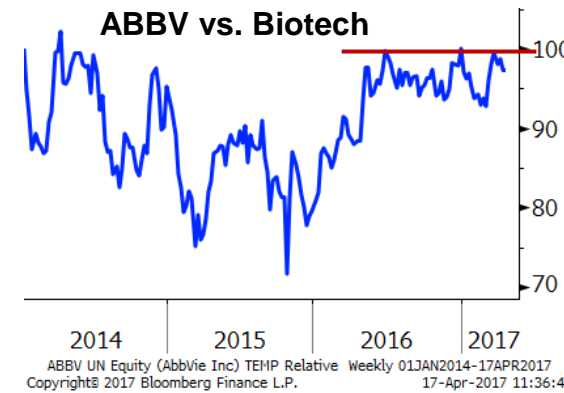
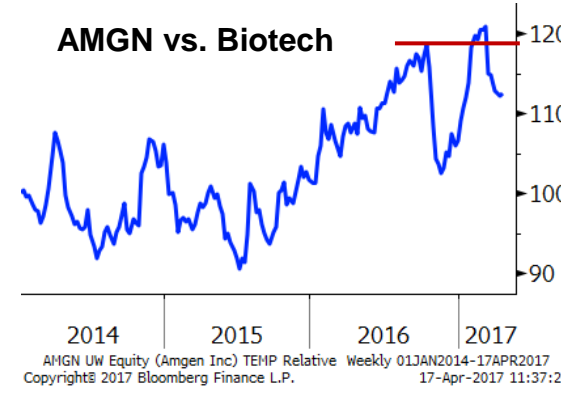
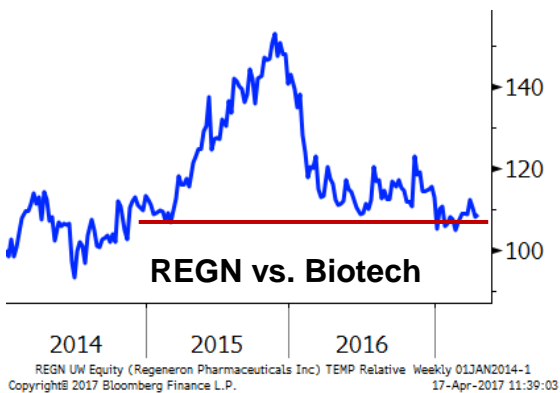
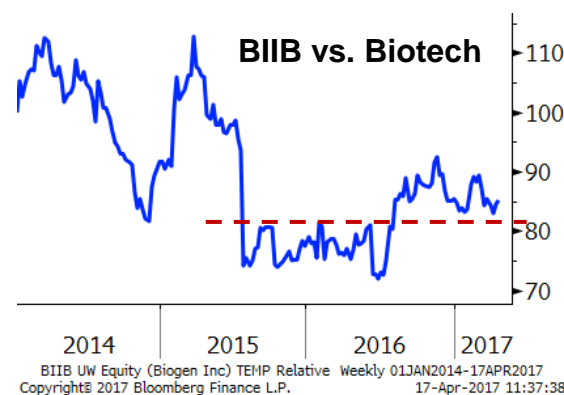
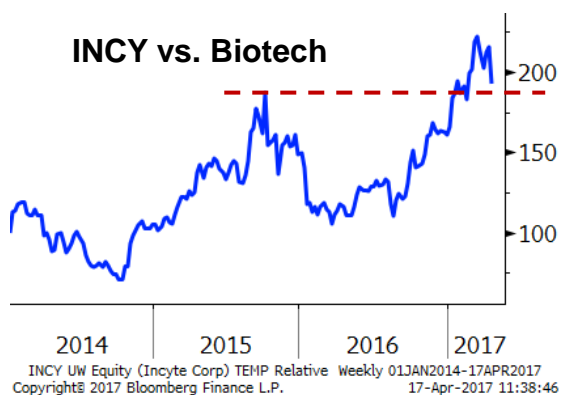
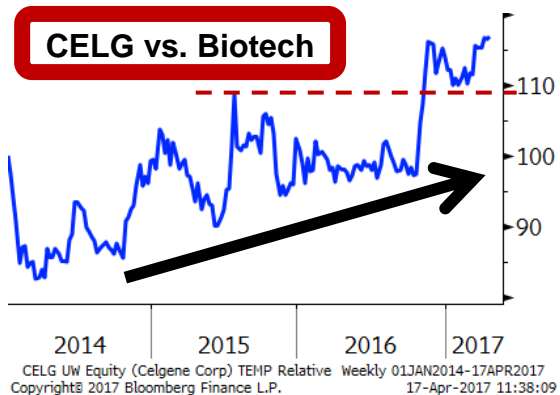




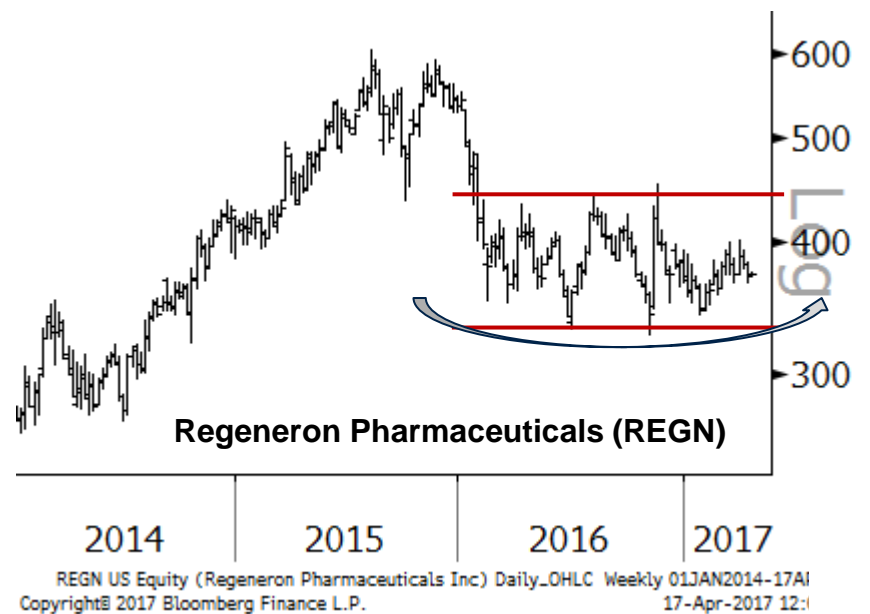
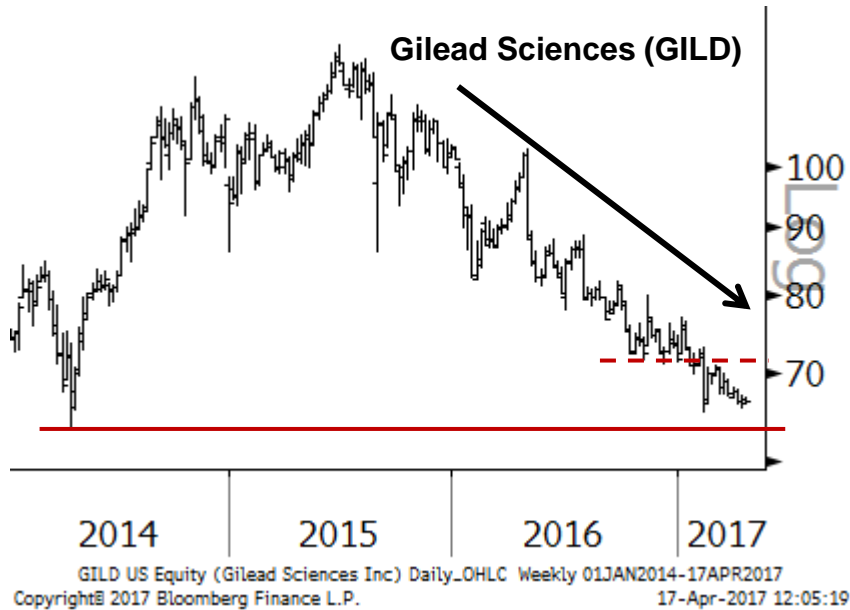
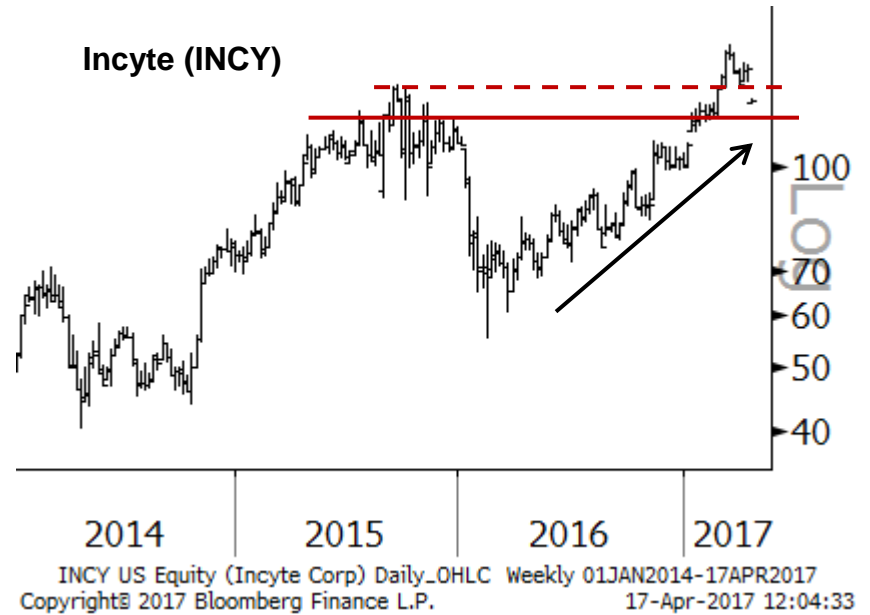
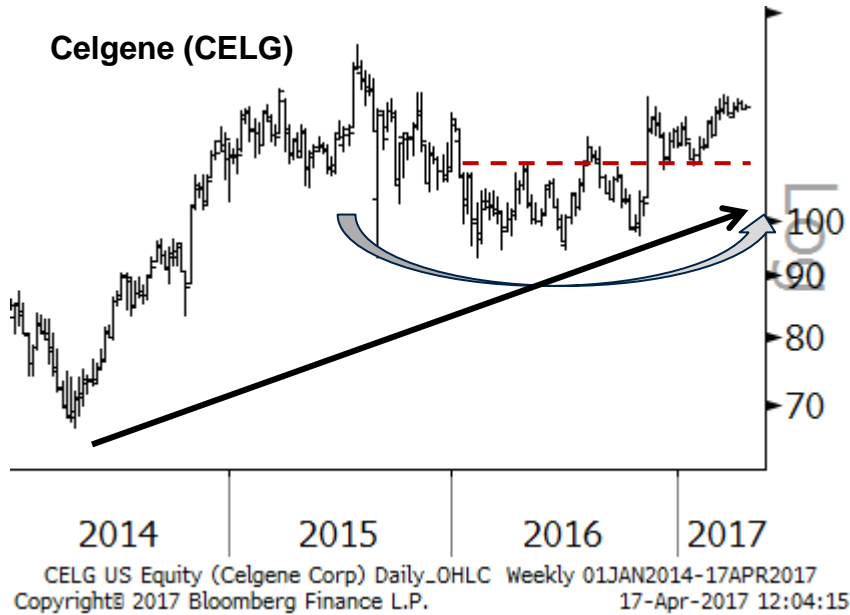
➤ **XBI**: Basing relative to the S&P 500 and seasonally strong between May and July, by our analysis.



Technical Analysis: S&P 500 Biotech Stocks



Technical Analysis: CELG, GILD, INCY, REGN



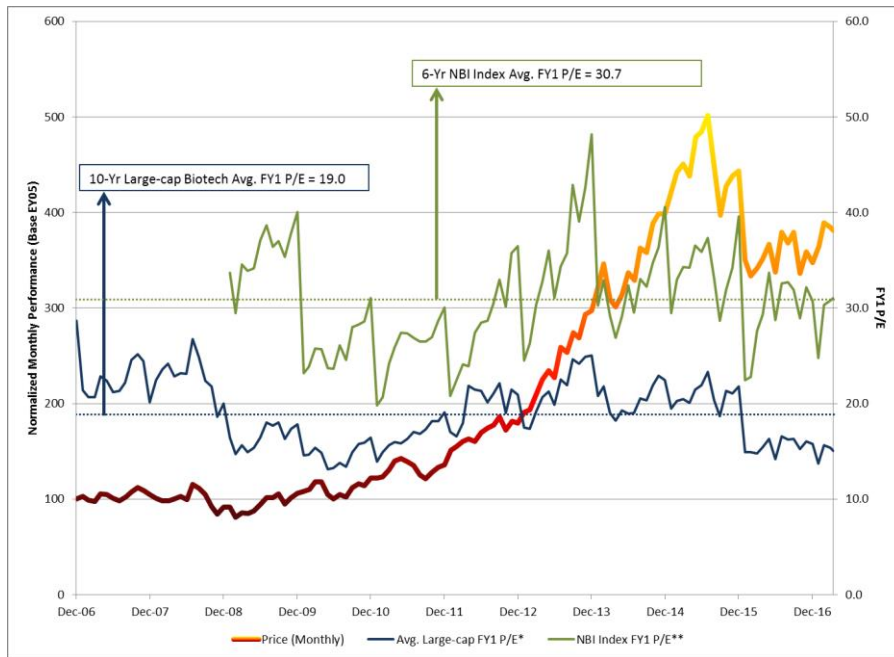
Biotechnology – Sector Fundamentals & Top Ideas

Hartaj Singh, Biotechnology Analyst

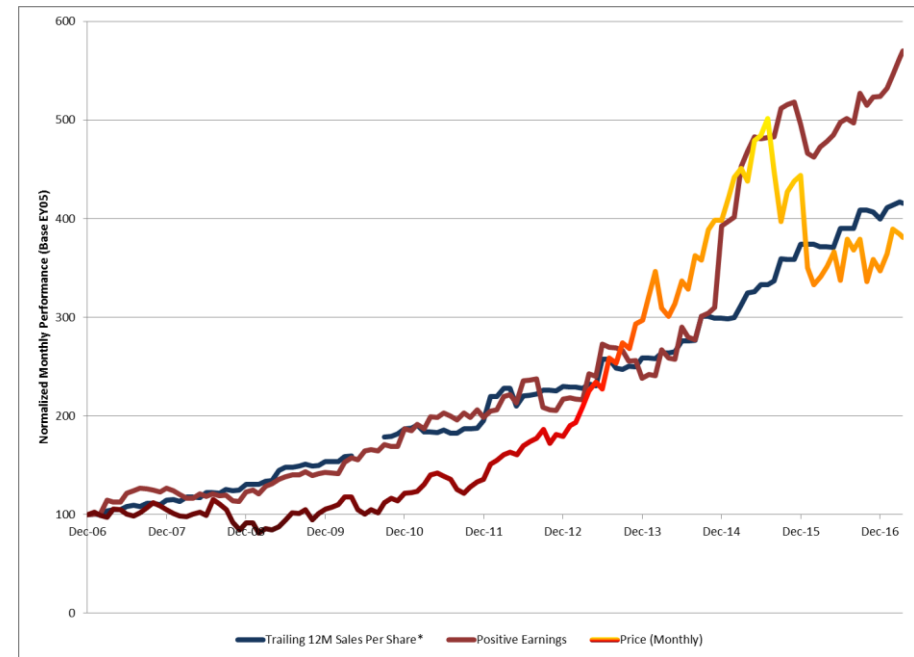
Massive run-up in the sector, has given some back since 2H15 — NBI Index

1. Accelerating sales and earnings of the sector over the last 10 years. Secular shift in sales/earnings power.
2. Quality margin structure among profitable, large-cap biotechnology companies which allows for superior operating leverage as companies launch new products.

Monthly Performance (Normalized) vs. FY1 P/E Ratios



Monthly Performance (Normalized) vs. Sales/Positive EPS

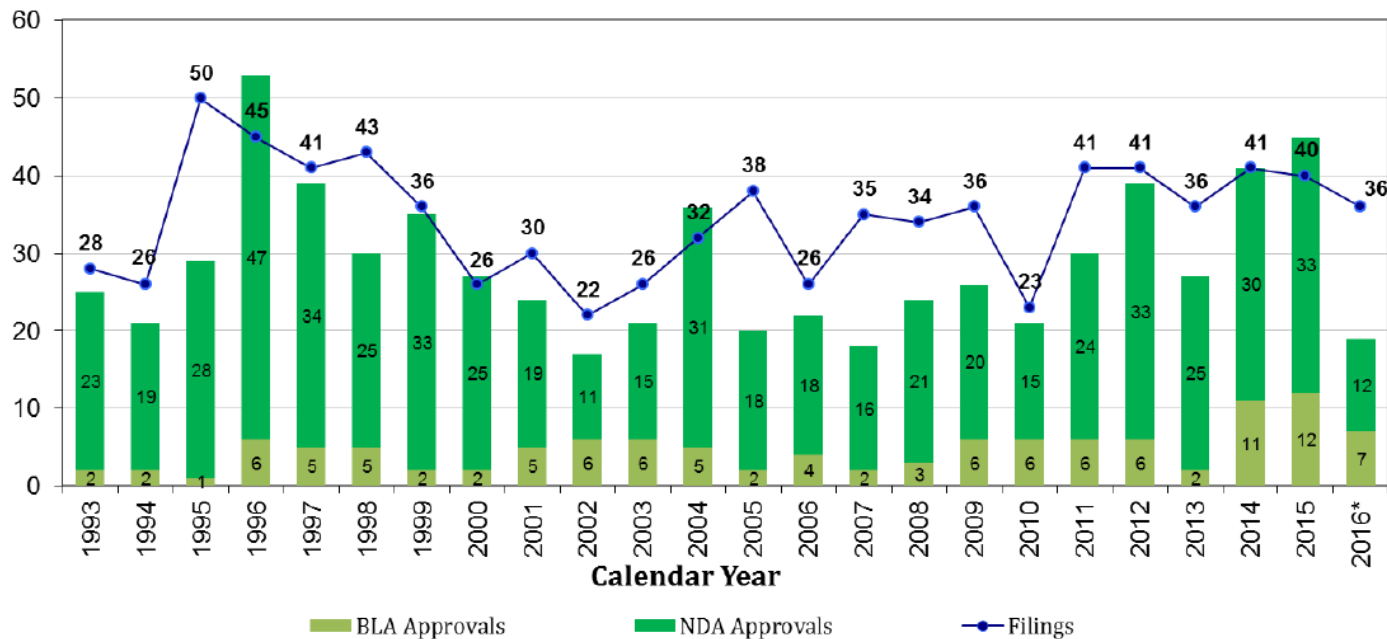


Source: Bloomberg, Oppenheimer & Co., *ALXN, AMGN, BIIB, CELG, GILD, REGN **Data not available prior to 2009

Pipelines—lifeblood of industry—achieving more success and becoming fuller

1. FDA approvals are increasing; in current decade, up a third over 2000-2010.
2. Drug pipelines success rates potentially improving.
3. Target discovery and clinical development rates are also becoming better/faster.

FDA Approvals—Yearly NME/BLA Approvals & Filings



Source: FDA, *2016 data as of 12/09/16

Industry's sales/earnings growth and margin structure are enviable, M&A on-tap

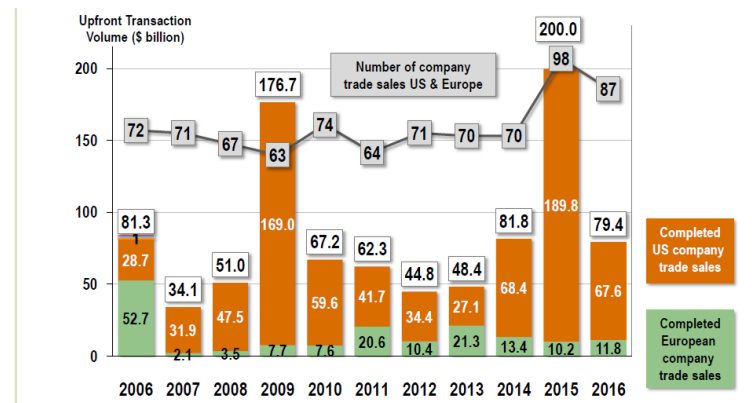
1. With increases in sales and earnings power and improving product approval rates, large-cap biotech has stuck to its knitting, i.e., developing products for smaller, more focused disease areas with high unmet needs.
2. 2015 was a banner year for worldwide biopharma M&A. After downturns, such as seen in 2016, M&A typically picks up as valuations become realistic.
3. Drug pricing, recent slowdown in large-cap sales/earnings momentum, many companies between product cycles and some clinical disappointments, are all still overhangs.

Large-cap Biotech Profile (Bloomberg Consensus Estimates)

S&P 500 Biotech Constituents	2015-18E Sales Growth		Gross Margin		Net Income Margin		2015-18E
	2015	2018E	2015	2018E	2015	2018E	Adj. EPS Growth
ALXN	64.5%	91.1%	91.7%	41.6%	40.0%	49.3%	
AMGN	9.3%	85.4%	87.0%	35.7%	40.9%	30.1%	
BIIB	19.3%	88.7%	87.5%	41.6%	38.7%	38.5%	
CELG	65.3%	95.6%	95.8%	41.9%	44.6%	84.1%	
GILD	-18.3%	90.1%	88.4%	58.7%	49.1%	-13.8%	
REGN	63.4%	92.2%	96.0%	34.2%	32.9%	44.3%	
VRTX	183.0%	89.1%	88.0%	NM	52.6%	NM	
Median =	63.4%	90.1%	88.4%	41.6%	40.9%	41.4%	
Average =	55.2%	90.3%	90.6%	42.3%	42.7%	38.7%	

Source: Bloomberg, Oppenheimer & Co. estimates

US and European Biopharma Company Trade Sales (Upfront Deal Values)



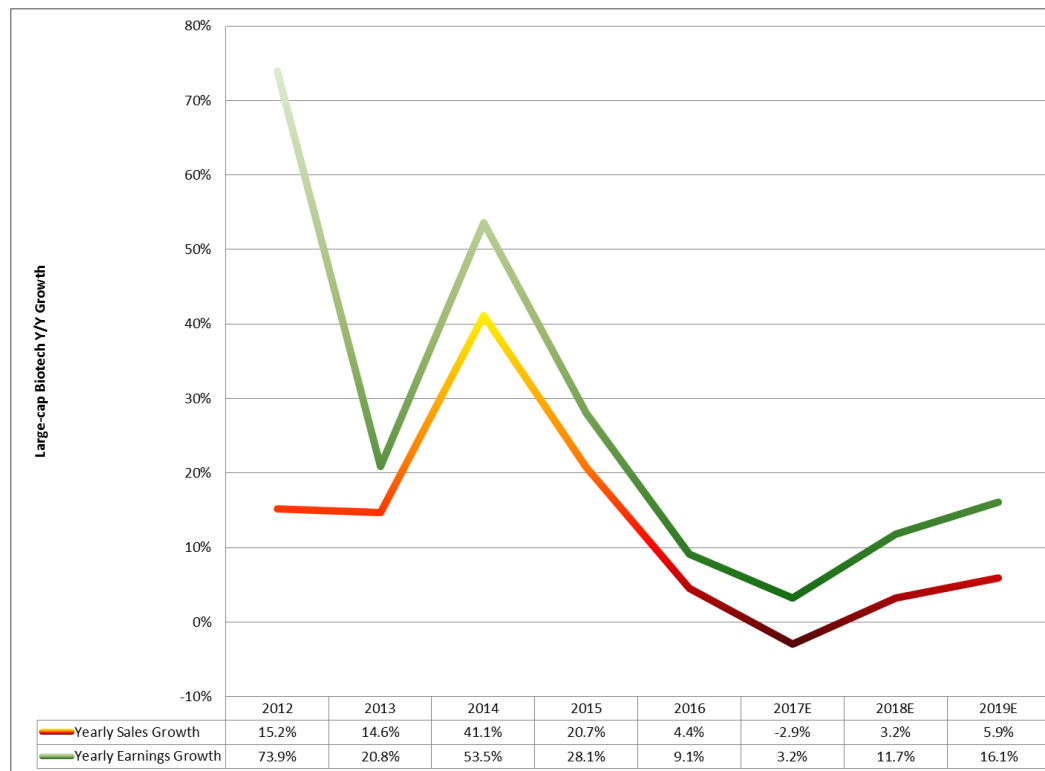
Completed trade sales of public and private US and European biopharma companies, not including asset deals or purchase of divisions

Source: HBM Partners, Oppenheimer & Co.

Industry's sales/earnings growth and margin structure are enviable, M&A on tap

1. Sales/earnings growth deceleration following peak sales/earnings in 2014 for the large-cap companies.
2. Has led to generalist and momentum money reducing exposure/abandoning the sector.
3. This deceleration in sales/earnings growth to trough in 2017, then rapidly start accelerating again.
4. Currently GILD is the laggard in its peer group for expected sales/earnings growth over the next three years.

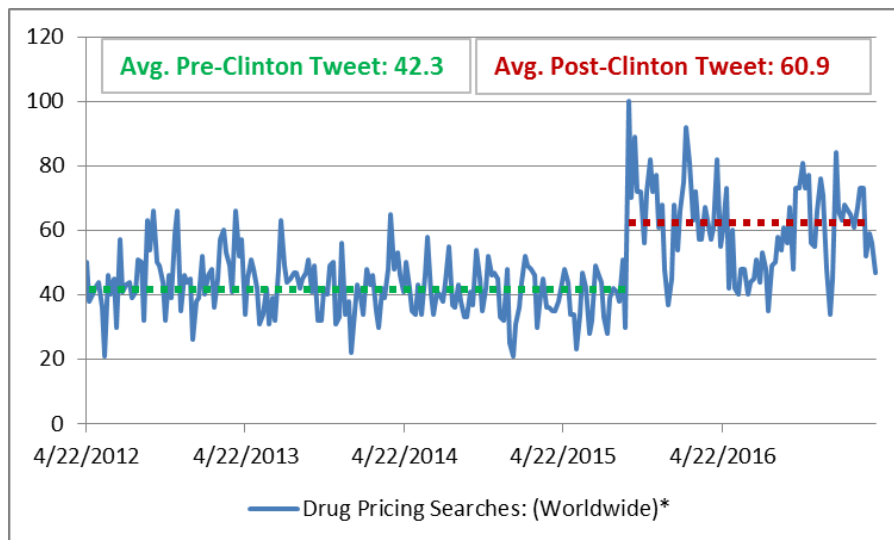
Large-cap Biotech Sales/Earnings Growth (Y/Y)



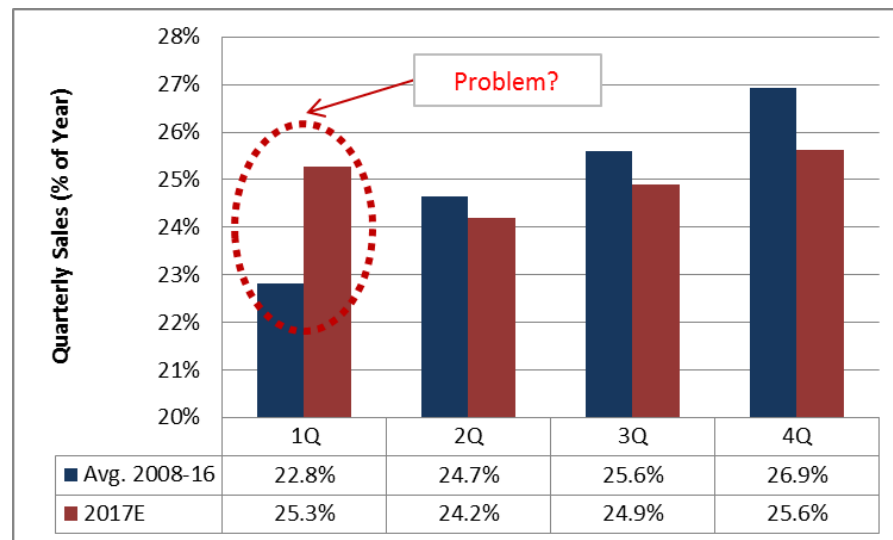
There are some headwinds to the sector

1. Drug pricing concerns still the biggest headwind, but seems to be receding from investors' minds for the moment.
2. We would caution that the unpredictable nature of the drug pricing debates makes this overhang difficult to model.
3. Seasonality is an issue for biotech companies, and probably a major reason biotech tends to be weak toward the middle of the year.

Drug Pricing Concerns (seem to be) Abating



Seasonality an Issue in 1Q/2Q for Biotech



Names we like over the next 2-3 months

1. **Sarepta (SRPT):** We view as a "value play" at a market cap of \$1.7B as the company executes on the US launch and potential EU approval (1H18) of Exondys 51.
2. **Syndax (SNDX):** We await further updates on the Encore 601 lung cancer cohorts and continuing progress on the pivotal E2112 HR+ breast cancer for entinostat (readout in YE17–mid-2018).
3. **Affimed (AFMD):** We expect that safety/efficacy updates on the mid/high AFM13/ pembrolizumab dose cohorts in Hodgkin's lymphoma could start occurring in May 2017.
4. **Cellectis (CLLS):** A name that continues to have a high rate of positive news flow in the summer regarding its UCART123 trials in AML and BPDCN and Calyxt strategic review.

Names we are cautious on into 1Q17 earnings:

1. **United Therapeutics (UTHR):** Company has a historically weak 1Q sales/earnings following, especially in light of a recent rough few weeks.
2. **Alexion (ALXN):** Company is facing FX and macro headwinds, especially in the EU/Britain, Soliris competition is developing and new management has a steep learning curve.
3. **Regeneron (REGN):** Company is facing Praluent litigation and complex Dupixent atopic dermatitis launch headwinds.

Biotechnology – Sector Fundamentals & Top Ideas

Jay Olson, Biopharmaceutical Analyst

Names we like over the next 12 months

- 1. Axovant (AXON):** We see AXON as underappreciated by many investors due to read-across from numerous recently failed AD clinical trials. AXON is positioned to deliver the first new symptomatic AD drug approved by the FDA in over a decade. New CEO David Hung intends to broaden the pipeline and position AXON as the premier company in CNS.
- 2. Neurocrine (NBIX):** Our base-case sales forecast for Ingrezza in tardive dyskinesia reaches \$1.3B in 2025. Potential sources of upside to our model include success for Ingrezza in Tourette syndrome (TS), opicapone in Parkinson's and Elagolix in endometriosis and uterine fibroids.
- 3. Portola (PTLA):** We view betrixaban as an important innovation for prevention of VTE (venous thromboembolism) in acute medically ill patients. We are bullish on the June 24 PDUFA. We believe andexanet provides an important antidote for Factor Xa inhibitors when patients experience episodes of acute bleeding. PTLA plans to resubmit in 2Q.

Key questions we get on these names:

- 1. Axovant (AXON):** What can new CEO David Hung do differently to change the future of AXON?
- 2. Neurocrine (NBIX):** With the stock up significantly since Ingrezza approval, what is the next important catalyst?
- 3. Portola (PTLA):** Why would the FDA approve betrixaban when APEX missed on the primary endpoint?

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Rating	IB Serv/Past 12 Mos.			
	Count	Percent	Count	Percent
OUTPERFORM [O]	303	56.32	110	36.30
PERFORM [P]	230	42.75	72	31.30
UNDERPERFORM [U]	5	0.93	3	60.00

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