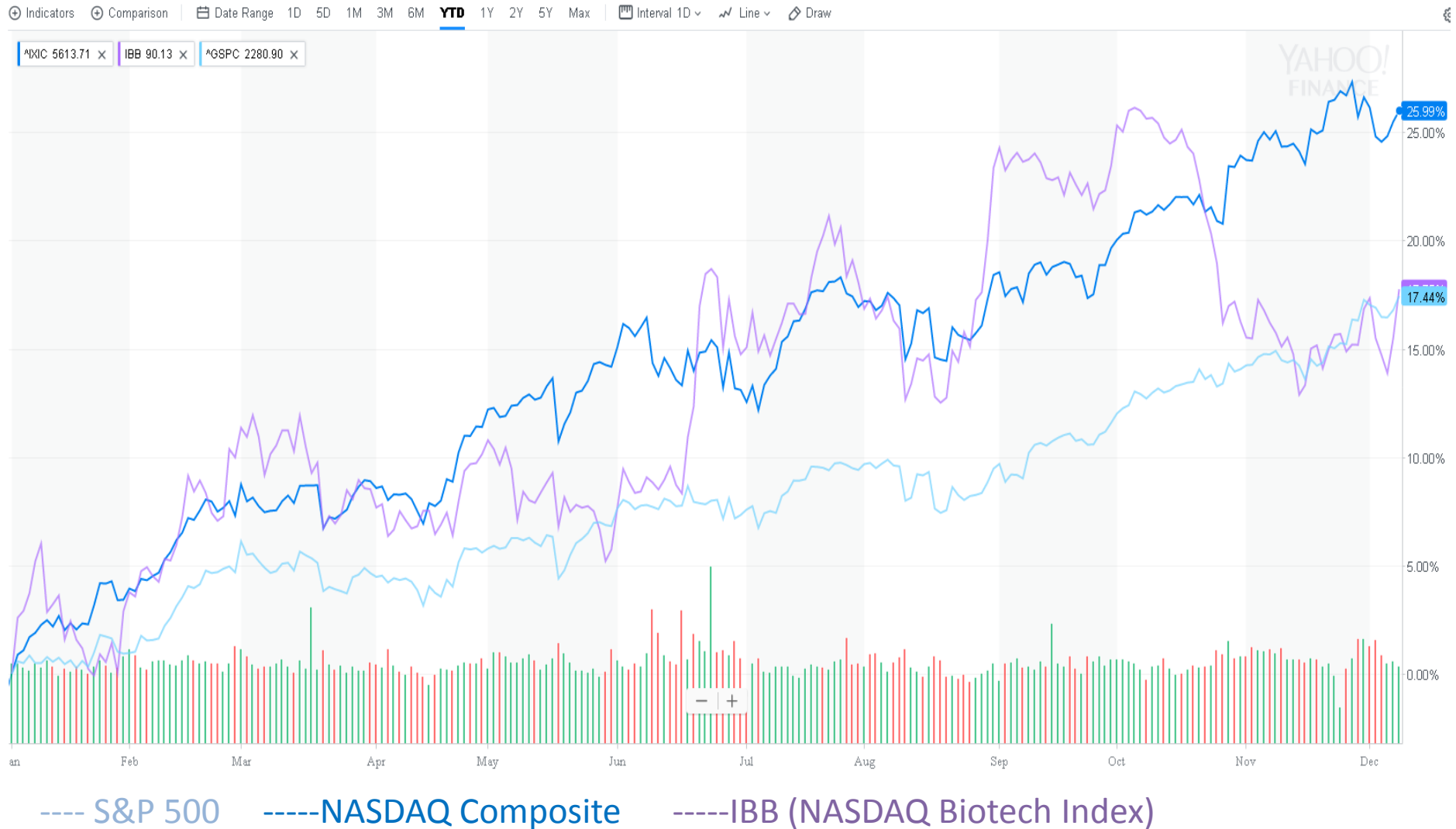




Market Overview

December 2017

2017 Market Performance



Market Analysis

- Market improved steadily throughout year
 - S&P 500: +17.5% YTD
 - NASDAQ Composite: +25.99% YTD
 - IBB: More volatile and peaked in September/October timeframe, but still +17.75% YTD
- US Market has become extremely attractive to foreign investors
 - Invested \$66.4 billion into U.S. stocks through September – largest amount since 2012¹
 - Reversal after four years of foreign investor outflows
 - Foreign investors own ~14% of US stock market, and could become an increasingly important factor moving forward¹

Healthcare Sector

- Healthcare investors continue to invest selectively despite macro uncertainty
 - YTD inflows of \$491MM
 - Sources of continued volatility/uncertainty:
 - ACA
 - Drug pricing/Medicare reimbursement
 - Factors resulting in overall positive outlook for 2018:
 - Analysts expect sector earnings to increase ~24% in 2018 (partially driven by new technologies)²
 - FDA Commissioner, Scott Gottlieb, has prioritized initiatives to speed drug approvals²

2017 IPO Performance



Company	Ticker	Market Cap (MM)	Price Range	Price	Current	Trade (up/down)	IPO Date	Amount (MM)
Denali	DNLI		17.00 - 19.00	\$18.00			12/08/17	\$250.00
scPharmaceuticals	SCPH	\$257	14.00 - 16.00	\$14.00	\$13.86	-1%	11/16/17	\$89.60
Arsanis	ASNS	\$193	15.00 - 17.00	\$10.00	\$13.50	35%	11/15/17	\$40.00
Erytech	ERYP	\$505	N/A	\$23.26	\$27.94	20%	11/09/17	\$109.00
Apellis Pharma	APLS	\$689	13.00 - 15.00	\$14.00	\$13.99	0%	11/08/17	\$150.00
InflaRx NV	IFRX	\$423	14.00 - 16.00	\$15.00	\$18.05	20%	11/07/17	\$100.00
Allena	ALNA	\$306	14.00 - 16.00	\$14.00	\$14.85	6%	11/01/17	\$75.00
Spero	SPRO	\$151	14.00 - 16.00	\$14.00	\$10.51	-25%	11/01/17	\$83.60
Ablynx	ABLX	\$1,750	N/A	\$17.50	\$23.49	34%	10/27/17	\$200.00
OptiNose	OPTN	\$678	15.00-17.00	\$16.00	\$17.93	12%	10/12/17	\$120.00
Restoration Robotics	HAIR	\$161	7.00-9.00	\$7.00	\$5.58	-20%	10/11/17	\$25.00
Rhythm	RYTM	\$771	14.00 - 16.00	\$17.00	\$28.25	66%	10/04/17	\$138.00
Deciphera	DCPH	\$572	15.00 -17.00	\$17.00	\$17.54	3%	09/28/17	\$127.50
NuCana	NCNA	\$363	14.00 - 16.00	\$15.00	\$11.60	-23%	09/28/17	\$100.00
Nightstar	NITE	\$772	13.00 - 15.00	\$14.00	\$17.70	26%	09/28/17	\$75.00
Krystal Biotech	KRYS	\$108	9.00 - 11.00	\$10.00	\$10.50	5%	09/20/17	\$39.60
Celcuity	CELC	\$182	8.00 - 10.00	\$9.50	\$18.00	89%	09/20/17	\$22.80
Zai Lab	ZLAB	\$1,287	16.00 - 18.00	\$18.00	\$25.55	42%	09/20/17	\$150.00
Clementia	CMTA	\$534	13.00 - 15.00	\$15.00	\$16.83	12%	08/21/17	\$137.90
Zealand	ZEAL	\$418	N/A	\$17.87	\$14.29	-20%	08/14/17	\$78.81
Sienna	SNNA	\$398	14.00 - 16.00	\$15.00	\$19.77	32%	08/01/17	\$74.70
Calyxt	CLXT	\$541	8.00 - 10.00	\$8.00	\$19.85	148%	07/25/17	\$64.40
Kala	KALA	\$465	14.00 - 16.00	\$15.00	\$19.02	27%	07/20/17	\$103.50
Akcea	AKCA	\$1,164	12.00 - 14.00	\$8.00	\$17.80	123%	07/19/17	\$143.80

2017 IPO Performance



Company	Ticker	Market Cap (MM)	Price Range	Price	Current	Trade (up/down)	IPO Date	Amount (MM)
Avenue	ATXI	\$41	5.00 - 7.00	\$6.00	\$4.02	-33%	6/30/2017	\$37.95
Dova	DOVA	\$773	15.00 - 17.00	\$17.00	\$29.86	76%	6/28/2017	\$75.10
Aileron	ALRN	\$148	15.00 - 17.00	\$15.00	\$10.10	-33%	6/28/2017	\$56.25
Mersana	MRSN	\$375	14.00 - 16.00	\$15.00	\$16.00	7%	6/27/2017	\$75.00
Athenex	ATNX	\$921	11.00 - 13.00	\$11.00	\$15.81	44%	6/19/2017	\$75.90
G1 Therapeutics	GTHX	\$564	15.00 - 17.00	\$15.00	\$19.53	30%	5/23/2017	\$108.60
Argenx	ARGX	\$791	N/A	\$17.00	\$30.40	79%	5/23/2017	\$114.70
Biohaven	BHVN	\$739	14.00 - 16.00	\$17.00	\$20.79	22%	5/11/2017	\$193.50
Urogen	URGN	\$520	12.00 - 14.00	\$13.00	\$39.26	202%	5/10/2017	\$66.90
Ovid	OVID	\$286	15.00 - 17.00	\$15.00	\$11.98	-20%	5/4/2017	\$75.00
Zymeworks	ZYME	\$220	13.00 - 16.00	\$13.00	\$8.58	-34%	5/3/2017	\$58.50
Tocagen	TOCA	\$214	10.00 - 12.00	\$10.00	\$10.80	8%	4/19/2017	\$97.80
Beyond Spring	BYSI	\$722	20.00 - 22.00	\$20.00	\$31.60	58%	3/9/2017	\$54.31
AnaptsBio	ANAB	\$2,042	14.00 - 16.00	\$15.00	\$86.90	479%	1/31/2017	\$86.25
Jounce	JNCE	\$470	13.00 - 15.00	\$16.00	\$14.48	-10%	1/26/2017	\$101.84
Obseva	OBSV	\$357	14.00 - 16.00	\$15.00	\$9.48	-37%	1/25/2017	\$111.30

Average 2017 IPO Trading Performance 44%

Healthcare Business Development in 2017 & 2018

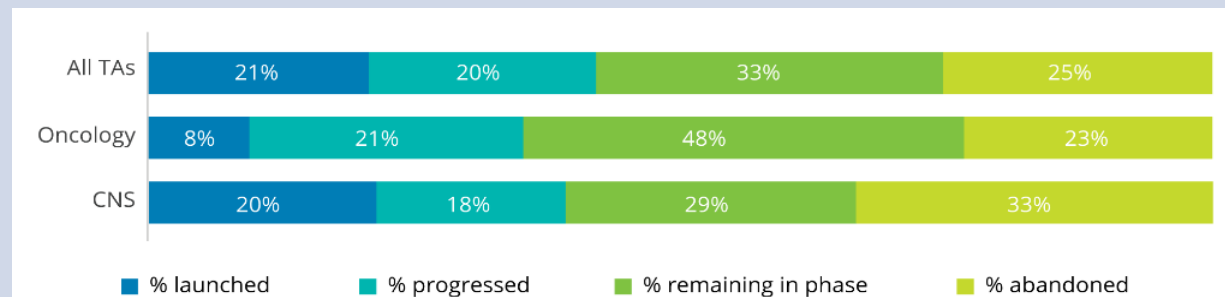


Overview

- Regulatory and political uncertainty in 2017 (including tax reform, drug pricing, ACA) resulted in significantly less blockbuster M&A activity than originally anticipated¹ Notable transactions include:
 - J&J acquired Actelion for \$30 billion
 - Gilead Sciences' acquisition of Kite Pharma for \$11.9 billion
- Large Pharma BD strategy is shifting towards:
 - Focusing on specific therapeutic areas and building market-leading franchises in those disease states
 - De-prioritizing development of products outside core competencies
 - Enhancing product portfolios by executing smaller deals with less risk¹

CNS & Oncology Deal Performance

- Central nervous system (CNS) treatment and oncology have consistently been two of the top therapeutic areas (TAs) for deal-making activity²
- As a result of challenging biology related to CNS and oncology disease states, companies often hedge against clinical failure by employing a licensing strategy. Data also shows that oncology and CNS deals underperformed compared to other therapeutic areas in terms of rates of launch and progression, further supporting the rationale for licensing strategies²



Note: Includes all deal types across all phases for all TAs (n=1,699), oncology (n=331), and CNS (n=206).

Source: Deloitte analysis of Cortellis Deals Intelligence (March 2017).

Deloitte Insights | deloitte.com/insights

Deal Timeframe: 2007-2012

Recent Notable CNS Catalysts



Positive Sage Data Readout

December 7, 2017: Sage Therapeutics Reports Positive Top-line Results from Phase 2 Placebo-Controlled Trial of SAGE-217 in Major Depressive Disorder

- SAGE-217 met primary endpoint and provided rapid, profound and durable effects through 2-week treatment period and additional 4-week follow-up
- Well-tolerated and demonstrated highly statistically significant mean reduction in the HAM-D score compared to placebo at 15 days ($p < 0.0001$) beginning after one dose and maintained through Week 4 with numerical superiority through Week 6
- All secondary endpoints were consistent with primary endpoints at Day 15, including remission in 64% of SAGE-217 patients versus 23% of placebo patients ($p = 0.0005$)
- Data support further development of SAGE-217 for MDD and related disorders

Pricing of Denali \$250MM IPO

December 7, 2017: Denali Therapeutics Inc. (NASDAQ:DNLI) announced the pricing of its initial public offering of 13,888,888 shares of its common stock at a price to the public of \$18.00 per share. IPO offering raised \$250MM

Axovant Clinical Setback

September 26, 2017: Axovant Sciences announced that the Phase 3 MINDSET clinical trial of its investigational drug intepirdine in patients with mild to moderate Alzheimer's disease (AD) who were receiving background donepezil therapy did not meet its co-primary efficacy endpoints

- At 24 weeks, patients treated with 35 mg of intepirdine did not experience improvement in cognition or in measures of activities of daily living as measured by the Alzheimer's Disease Assessment Scale-Cognitive Subscale (ADAS-Cog) and by the Alzheimer's Disease Cooperative Study-Activities of Daily Living scale (ADCS-ADL), respectively, compared to patients treated with placebo. In the study, intepirdine was generally well tolerated.
- After 24 weeks of treatment, change from baseline in cognition was non-significantly improved in the intepirdine arm versus the placebo arm (0.36 ADAS-Cog points; p -value = 0.22). In addition, there was essentially no difference between the intepirdine and placebo arms in change from baseline in activities of daily living (0.09 ADCS-ADL points; p -value = 0.83). Of the endpoints analyzed to date, the only endpoint in which any significant improvement was seen in the intepirdine arm versus the placebo arm was in the first key secondary endpoint, the Clinician Interview-Based Impression of Change plus caregiver interview.

Overview

The failure rate for Alzheimer's over the past decade has been a staggering 99%—for a disease that affects an estimated 5.4 million Americans and will eventually prove fatal¹

Despite the clinical setbacks, Alzheimer's remains an area of unmet medical need, and continues to attract significant investor and business development interest:

Merck:

- In February, the company ended a phase 2/3 Alzheimer's disease trial for its BACE inhibitor, verubecestat. The trial failed to demonstrate efficacy in 2,000 patients with mild-to-moderate Alzheimer's Disease
- Despite this setback, 3 months later Merck announced a licensing deal with Tokyo's Teijin Pharma for its investigational tau-targeting antibody candidate in Alzheimer's

Biogen:

- In April, Biogen announced that the company will pay \$300 million upfront and up to \$410 million in potential milestone awards to license an experimental drug from Bristol-Myers Squibb Co. Biogen will get worldwide rights to an antibody called BMS-986168, which targets the tau protein that forms deposits in the brain associated with Alzheimer's and other neurodegenerative diseases

AbbVie:

- In October, AbbVie and Alector announced a global strategic collaboration to develop and commercialize medicines to treat Alzheimer's disease and other neurodegenerative disorders, using an immunotherapy approach. AbbVie will pay \$205 million upfront and could make a further \$20 million equity investment in Alector. Scientists at AbbVie and Alector believe there is growing evidence that immune deficiencies within the central nervous system play an important role in the progression of neurodegenerative disorders like Alzheimer's

Attractive Funding Targets

- Novel mechanisms and approaches are garnering more interest than reformulations/repurposing of drugs
- Non-Scheduled medications – addiction risk and abuse potential are substantial regulatory concerns
- Products that target significant areas of unmet medical need and rare diseases
- Companies led by management teams with a strong track record of driving shareholder value
- Programs that are able to demonstrate commercial viability. Must be able to address questions related to prevalence, positioning relative to current therapies, penetration potential, patient compliance, and access to reimbursement

Considerations When Preparing for a Capital Raise or BD Transaction

- Use of Proceeds/ Funding:
 - Clear and precise communication regarding the use of proceeds is extremely important
 - Investors generally prefer funding the company through key value inflection points and a budget that demonstrates the business is viable for at least 2 years
 - Must effectively balance the company's capital requirements and sensitivity to dilution
- Clinical Trials:
 - Raise sufficient capital to execute a robust clinical program
 - Investors prefer traditional trial designs -- hunting for a signal in a few patients is historically not an effective initial strategy
- The most common reasons for failed deals (from both a BD and capital markets perspective) are: valuation disputes and unreasonable buyer/seller demands. Therefore a thorough valuation analysis and realistic expectations are crucial throughout any transaction process



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