

2015

Pharma and Biotech Half-Year Review

Jonathan Gardner & Lisa Urquhart – July 2015



Pharma & Biotech Half-Year Review 2015

This year there was only a minor March wobble, no worries over drug pricing, and no indications that the US government would seek to further constrain M&A through tax-law changes. Instead investors drove the sector's valuations ever higher at an almost uninterrupted pace by mid-2015, magnifying the view that the biotech party is never going to end.

For those who have waited for years to call the top, there have been few signs on which to make such a judgement. A key measure of R&D productivity – the number of new drug approvals in the US – appears to be sustaining recent trends as 2015 looks to be on track for up to 50 new drugs, with \$18.6bn in forecast fifth-year sales, to hit the world's biggest drug market by the year's end.

The durability of this biotech boom has made fools of doubters, who point to the fact that amid this furry preclinical companies like Blueprint Medicines have successfully floated; that a private R&D company like Intarcia Therapeutics is valued at more than \$5bn; that enthusiasm for projects with a chequered past like solanezumab is farfetched; and that drug spending trends might simply be unsustainable. The party cannot go on forever, of course – but on the other hand the bartender has not yet called for last orders.

As we enter the second half of the year, signs that the bull market will persist should be closely monitored. Will the eagerness to invest in early-stage biotechs continue, or will there be a series of sentiment-damaging setbacks? Will IPOs still get away, above their estimated range, offering a valuable exit for VCs, or has the appetite for risk been satisfied? And will new drug approvals and launches meet lofty expectations, or will there be an unexpected setback that harms the financiers' views of the sector? With this in mind, EP Vantage has reviewed the first half of 2015 to set the stage for the remainder of the year.

Unless stated, all data are sourced to EvaluatePharma and were compiled in July 2015



Up is the only way for biopharma shares

When it comes to reviewing the climate in the publicly traded biopharma market, one can sound a bit like a broken record: all indices were up on the year, with the key Nasdaq Biotechnology measure rising another 22% by June 30. That index has climbed an incredible 270% since the beginning of 2012, the generally agreed upon start of the current bull market, and is closing in on triple its previous high from the genomics boom of 2000.

Stock Index

| Stock index | % Change in H1 2015 |
|------------------------------------|---------------------|
| NASDAQ Biotechnology (US) | 22% |
| S&P Pharmaceuticals (US) | 5% |
| Dow Jones Pharma and Biotech (US) | 9% |
| DJIA | (1%) |
| Dow Jones STOXX Healthcare (EU) | 15% |
| Euro STOXX 50 | 9% |
| FTSE-100 | (1%) |
| TOPIX Pharmaceutical Index (Japan) | 23% |

But even the less volatile, larger-cap US indices showed a good gain on the year, not to mention their European and Japanese counterparts. Japanese pharmaceuticals avoided the broader regional Pacific Rim woes of China and Korea and finished the first half up 23%.

The most prominent individual winner of 2015's first half had to be Eli Lilly, whose 21% rise was built around expectations of success with a new analysis of data from the failed Expedition 1 and 2 trials of solanezumab – shares have been flat since these data were unveiled at the Alzheimer's Association International Conference. Sanofi and Bristol-Myers Squibb also performed well, the latter helped along by launch of cancer immunotherapy Opdivo and sellside upgrades, and the former by hopes for the cholesterol drug Praluent.

Big pharma companies: top risers and fallers in H1 2015

Source: EvaluatePharma* July 2015

| | Share price (local currency) | | | Market capitalisation (\$bn) | |
|----------------------|------------------------------|---------|--------|------------------------------|-----------|
| | YE 2014 | H1'15 | Change | H1'15 | 6M change |
| Top 3 risers | | | | | |
| Eli Lilly | \$68.99 | \$83.49 | 21% | 92.8 | 15.9 |
| Sanofi | €75.66 | €88.24 | 17% | 125.0 | (2.2) |
| Bristol-Myers Squibb | \$59.03 | \$66.54 | 13% | 110.9 | 13.0 |
| Top 3 fallers | | | | | |
| AstraZeneca | \$70.38 | \$63.71 | (9%) | 80.5 | (8.4) |
| Johnson & Johnson | \$104.57 | \$97.46 | (7%) | 270.3 | (22.4) |
| GlaxoSmithKline | £13.76 | £13.23 | (4%) | 96.3 | (11.3) |



AstraZeneca and GlaxoSmithKline have suffered on the year as their respective respiratory franchises have come under pricing pressure. Between them was Johnson & Johnson, which is confronting a biosimilar threat to its biggest seller, Remicade.

It will come as no surprise that an acquisitive speciality pharma was the biggest market success outside the realm of traditional big pharma. Valeant Pharmaceuticals has grown by buying, and after missing out on Allergan last year it enlivened investors' interest by taking out the gastrointestinal play Salix.

Other large cap (>\$25bn): top risers and fallers in H1 2015

Source: EvaluatePharma⁷ July 2015

| Top 3 risers | Share price (local currency) | | | Market capitalisation (\$bn) | |
|---------------|------------------------------|------------|--------|------------------------------|-----------|
| | YE 2014 | H1'15 | Change | H1'15 | 6M change |
| Valeant | \$143.11 | \$222.15 | 55% | 76.1 | 28.0 |
| Novo Nordisk | DKr 260.30 | DKr 364.60 | 40% | 108.9 | 15.3 |
| Fresenius | €43.03 | €57.82 | 34% | 34.0 | 4.4 |
| Top 3 fallers | | | | | |
| Baxter | \$73.29 | \$69.93 | (5%) | 38.0 | (1.7) |
| Amgen | \$159.29 | \$153.52 | (4%) | 116.7 | (4.4) |
| Alexion | \$185.03 | \$180.77 | (2%) | 40.5 | (3.8) |

Novo Nordisk prefers to grow organically, and its plan to resubmit the long-acting insulin Tresiba this year helped renew investor sentiment. On the negative side of the ledger, Baxter sank in advance of its spinout of Baxalta, Amgen is battling a biosimilar threat and a perception of an unproven pipeline, and Alexion's use of shares to finance the buyout of Synageva diluted its current shareholders.

When it comes to big share moves, the place to look is by their nature the medium and small-cap players. Heron Therapeutics had the good fortune of announcing positive results for chemotherapy-induced vomiting drug Sustol in the run-up to the Asco cancer meeting; Galapagos rose in anticipation of positive results for its rheumatoid arthritis project and AbbVie's expected opt-in; Synergy made itself a takeout candidate as it became the last unattached late-stage constipation project to report pivotal data; Eisai was pulled along by encouraging data from partner Biogen's phase I Alzheimer's project; and BioMarin showed that it has multiple orphan drug options with mid-stage success for its achondroplasia project.



Other Significant Risers and Fallers in H1 2014

Source: EvaluatePharma[®] July 2015

| Risers | Share price (local currency) | | | Market capitalisation (\$bn) | |
|---------------------------|------------------------------|----------|--------|------------------------------|-----------|
| | YE 2014 | H1'15 | Change | H1'15 | 6M change |
| Heron Therapeutics | \$10.06 | \$31.16 | 210% | 1072.7 | 779.2 |
| Galapagos | €16.00 | €45.80 | 186% | 1925.7 | 1311.1 |
| Synergy Pharmaceuticals | \$3.05 | \$8.30 | 172% | 830.4 | 535.7 |
| Eisai | ¥4672.00 | ¥8216.00 | 76% | 20383.1 | 7558.6 |
| BioMarin Pharmaceutical | \$90.40 | \$136.80 | 51% | 21930.9 | 8600.0 |
| Fallers | | | | | |
| Celladon | \$19.53 | \$1.26 | (94%) | 30.1 | (425.0) |
| Avalanche Biotechnologies | \$54.00 | \$16.24 | (70%) | 414.6 | (798.8) |
| Calithera Biosciences | \$20.20 | \$7.14 | (65%) | 128.1 | (234.1) |
| Puma Biotechnology | \$189.27 | \$116.75 | (38%) | 3753.6 | (1952.5) |
| Isis Pharmaceuticals | \$61.74 | \$57.55 | (7%) | 6889.5 | (404.5) |

Risers

Heron Therapeutics
Galapagos
Synergy Pharmaceuticals
Eisai
BioMarin Pharmaceutical

EP Vantage Comment and Analysis

Heron works Magic to conjure trial win
Galapagos moves towards RA deal but a dark horse remains on the horizon
Synergy relaxes with positive constipation data
Biogen clears one Alzheimer's hurdle; now comes the tricky bit
BioMarin stands tall with positive achondroplasia data

Fallers

Celladon
Avalanche Biotechnologies
Calithera Biosciences
Puma Biotechnology
Isis Pharmaceuticals

EP Vantage Comment and Analysis

Celladon spoils the gene therapy party
Avalanche crashes down as gene therapy disappoints
Asco Event Analyzer – 2015's winners and losers
Asco Event Analyzer – 2015's winners and losers
Weekly Market Movers (to 6 Feb 2015)

The losers were largely guided by binary events – leading the way down were two gene therapy plays in Celladon and Avalanche Biotechnologies, just as investors were growing comfortable with the technology again. Calithera Biosciences and Puma Biotechnology saw their shares collapse after Asco, although only the latter had truly disappointing data to report. Isis Pharmaceuticals' 7% drop in six months defies what ought to be seen as encouraging news for antisense, although the underperformance of the marketed product Kynamro might have something to do with its woes.

The resilience of this bull run is surprising compared with the last major biotech boom, and there does not appear to be any looming catalyst that could cause a deflation. What could bring it to a halt? A safety worry, multiple failures in heralded areas like immuno-oncology, or fizzling sales in a red-hot sector like hepatitis C. None of these events can necessarily be predicted, so those calling the top remain in the minority.

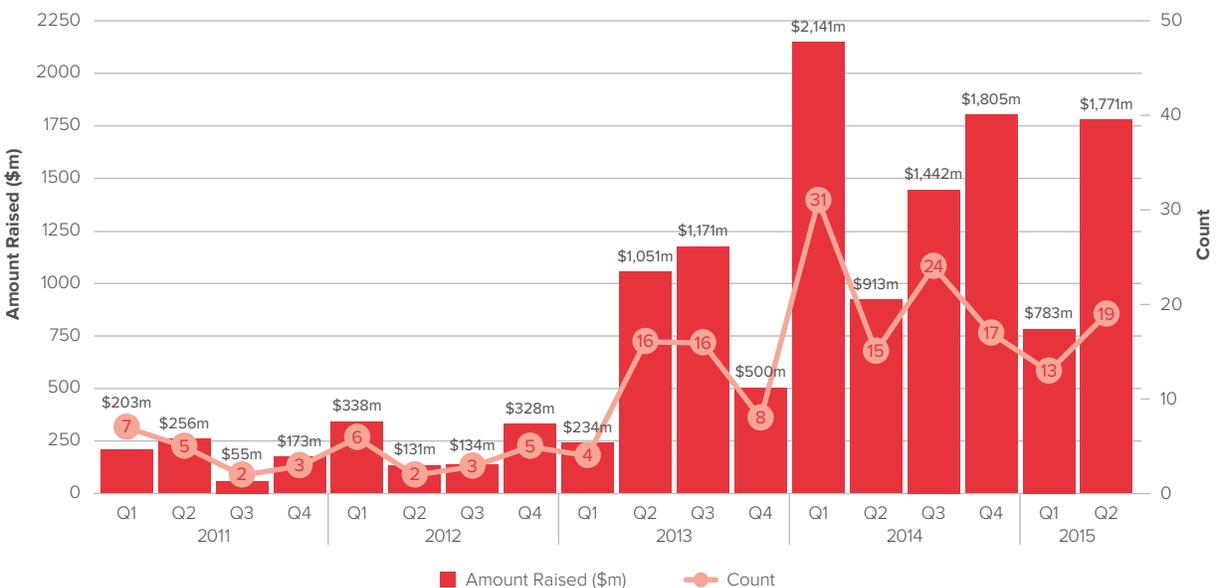


Striking for the publicly traded markets

One measure of the enthusiasm for biotech investments has been flotations on the public markets, and the meagre totals for the first quarter of the year certainly ought to have given many in the sector pause. A better second quarter got things back on track, but IPO proceeds for the first half of 2015 trail those of 2014 by a half-billion dollars, so bankers will need to work overtime between now and Christmas if they want to match or exceed the lofty benchmark set by last year's market premieres.

Initial Public Offerings by Quarter on Western Exchange

Source: EvaluatePharma[®] July 2015



The biggest of those that have got away come with some surprising, high-risk/high-reward investment theses: Axovant's \$362m IPO supports an Alzheimer's disease candidate that Glaxo had discontinued; Adaptimmune is working on T-cell based cancer therapies, while Spark is exploring gene therapy for ophthalmic indications; and Blueprint Medicines has yet to put a candidate into the clinic.

Still, even though IPOs in the first half of 2015 have been a disappointment in terms of amount raised compared with 2014, the signs are that investors view them as roughly the same quality bets: the 32 floats this year on average yielded only a 3% discount from the listed range, and increased in value by 23% since their IPOs. Last year's 46 money-raising were at an average 10% haircut and rose 22% by the end of the first half.



TOP 10 Biotech IPOs on Western Stock Exchanges in H1 2015

Source: EvaluatePharma[®] July 2015

| Company | Date | Amount raised | Offering price | Range | Discount/premium | Exchange | H1 change since float |
|-----------------------------------|----------|------------------|----------------|-----------------|------------------|-----------------------------|-----------------------|
| Axovant | 11/06/15 | \$362m | \$15.00 | \$13.00-\$15.00 | 7% | NYSE | 36% |
| Adaptimmune | 06/04/15 | \$191m | \$17.00 | \$15.00-\$17.00 | 6% | Nasdaq | 8% |
| Spark Therapeutics | 30/01/15 | \$185m | \$23.00 | \$19.00-\$21.00 | 15% | Nasdaq | 162% |
| Blueprint Medicines | 30/04/15 | \$147m | \$18.00 | \$15.00-\$17.00 | 13% | Nasdaq | 47% |
| Seres Therapeutics | 26/06/15 | \$134m | \$18.00 | \$15.00-\$17.00 | 13% | Nasdaq | 131% |
| Ascendis Pharma | 28/01/15 | \$124m | \$18.00 | \$16.00-\$18.00 | 6% | Nasdaq | (2%) |
| Aduro BioTech | 15/04/15 | \$119m | \$17.00 | \$14.00-\$16.00 | 13% | Nasdaq | 78% |
| Verseon | 07/05/15 | £66m (\$102m) | £2.02 | - | - | London Stock Exchange (LSE) | 9% |
| FlexPharma | 29/01/15 | \$99m | \$16.00 | \$12.00-\$14.00 | 23% | Nasdaq | 8% |
| Nivalis Therapeutics | 17/06/15 | \$77m | \$14.00 | \$13.00-\$15.00 | 0% | Nasdaq | 8% |
| Average across all 32 IPOs | | \$80m | | | (3%) | | 23% |

The migration of European companies to US exchanges – and their specialist investors – has slowed somewhat as biotech fever has crossed the Atlantic. Although the second-biggest float of 2015 was of a UK-headquartered company, Adaptimmune, debuting in the US, the first quarter saw nearly half of its floats on European exchanges. Major European IPOs included Verseon, Nordic Nanovector and Cerenis.

As long as there is enthusiasm for biotech investment IPOs have a decent chance of getting away and in their estimated range or above. An early sign of waning interest in biotech could be an IPO window that appears to be swinging closed, as the appetite for risk in early-stage companies is met.



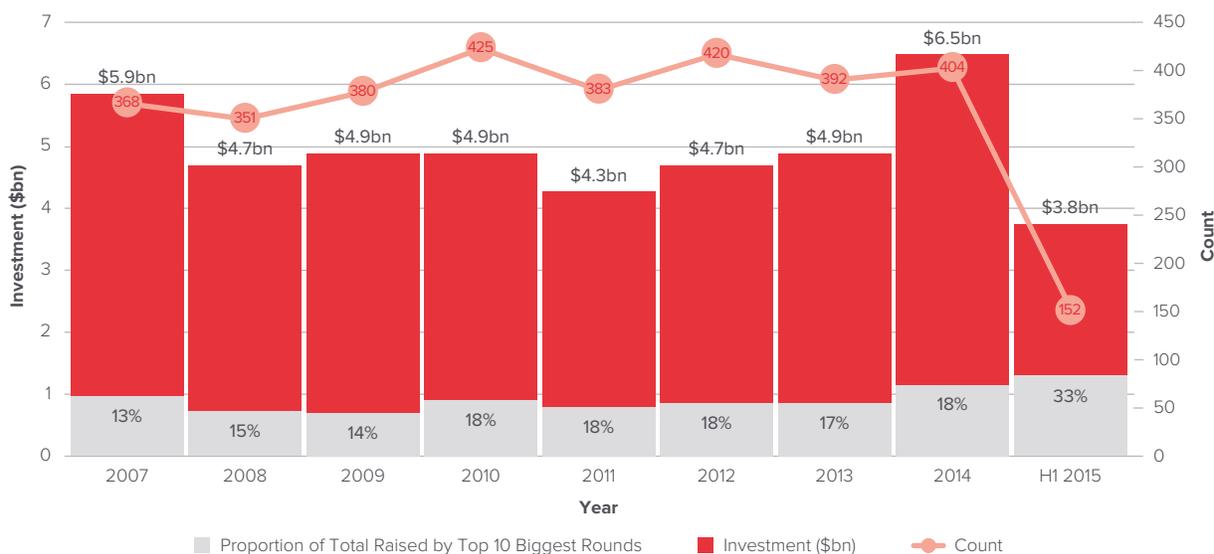
VC funding powers ahead helped by exits

It is said that venture capital funding is the lifeblood of the industry, and if the recent trend of strong finishes to the year continues then this year's total VC funding haul could beat the unprecedented \$6.5bn raised in 2014. The \$3.8bn already gifted to companies at the half-year point and the \$320m handed out to Immunocore in July are signs that 2015 could once again raise the bar in terms of funding totals.

Much of the venture activity in the sector has been driven by the ever clearer paths to exits for VCs, as both acquisitions and floats have kept up the furious pace that began in 2013.

Annual VC Investments with 10 Biggest Rounds Shown as Proportion of Total Raised

Source: EvaluatePharma[®] July 2015



Alongside the sheer sums of money raised, the most dramatic observation, however, is the drop in number of funding rounds. The number of investments in the first half of 2015 was just 152, compared with 404 for the whole of 2014. If the same number of investments occur in the second half of the year it would represent a 25% fall in funding rounds.

This decline continues the fashion for VCs to invest larger sums of money in an ever diminishing pool of companies. As can be seen from the graph, in the first six months of the year the top 10 VC rounds received 33% of all the money raised in the half-year, up from 18% during the whole of 2014.

However, the 152 fund-raising averaged \$25m each, an \$8m jump from the mid-year point in 2014, and a huge improvement on previous post-crash years.



While this does mean that the lucky beneficiaries of the larger rounds can often get to market without further cash – meaning less dilution for investors and lower re-financing risk – those not in the charmed circles are finding it harder and harder to access capital.

The monster start to 2015 has at its roots one of the biggest venture rounds ever, the \$450m Moderna Therapeutics managed to secure from its investors in January. This might have set the tone for big investments going to innovative technologies, as Immunocore is working in the highly fashionable area of engineered T-cell receptors.

Biggest VC Rounds of H1 2015

Source: EvaluatePharma⁷ July 2015

| Company | Investment (\$m) | Financing Round | Date |
|----------------------|------------------|-----------------|------|
| Moderna Therapeutics | 450.0 | Series D | Jan |
| Nabriva Therapeutics | 120.0 | Series B | Apr |
| Innovent Biologics | 100.0 | Series C | Jan |
| BeiGene | 97.0 | Series B | May |
| Allergen Research | 80.0 | Series B | Mar |
| aTyr Pharma | 76.0 | Series E | Mar |
| CureVac | 76.0 | Series E | Mar |
| REGENXBIO | 70.5 | Series D | May |
| CytomX Therapeutics | 70.0 | Series D | Jun |
| Chiasma | 70.0 | Series E | Feb |

That said, the next biggest VC funding round went to the Austrian company Nabriva, which is developing pleuromutilins, a new class of antibiotics. Antibiotics are coming back to the forefront of investors' minds, but Nabriva also helped itself by gaining qualified infectious disease product status from the FDA and filing to sell American depository shares on Nasdaq, guaranteeing a speedy exit for its VC backers.

Innovent Biologics' inclusion in the third spot is thanks to the interest the China-based company has generated in those looking for a possible way into the Chinese biosimilar market. Eli Lilly's venture arm joined the \$100m fund-raising and, to cement its burgeoning relationship, signed an asset swap agreement with Innovent over two immunology projects including a biosimilar version of Rituxan.

Fellow Chinese oncology company BeiGene also made it into the top 10, as did other groups focusing on cancer care, including CytomX Therapeutics. The industry's continuing fascination for rare diseases ensured that Regenxbio hauled in \$70m and aTyr Pharma \$76m.

So far what the first half of 2015 tells us is that biotechs working in hot therapy areas, or that have an interesting story to tell, can still get funding – step forward Moderna and Immunocore. But if the recent wealth generated by VCs investing in later-stage companies near to IPO is not shared between more early-stage start-ups the industry could be storing up future productivity problems.



M&A takes a breather – but do not expect it to rest for long

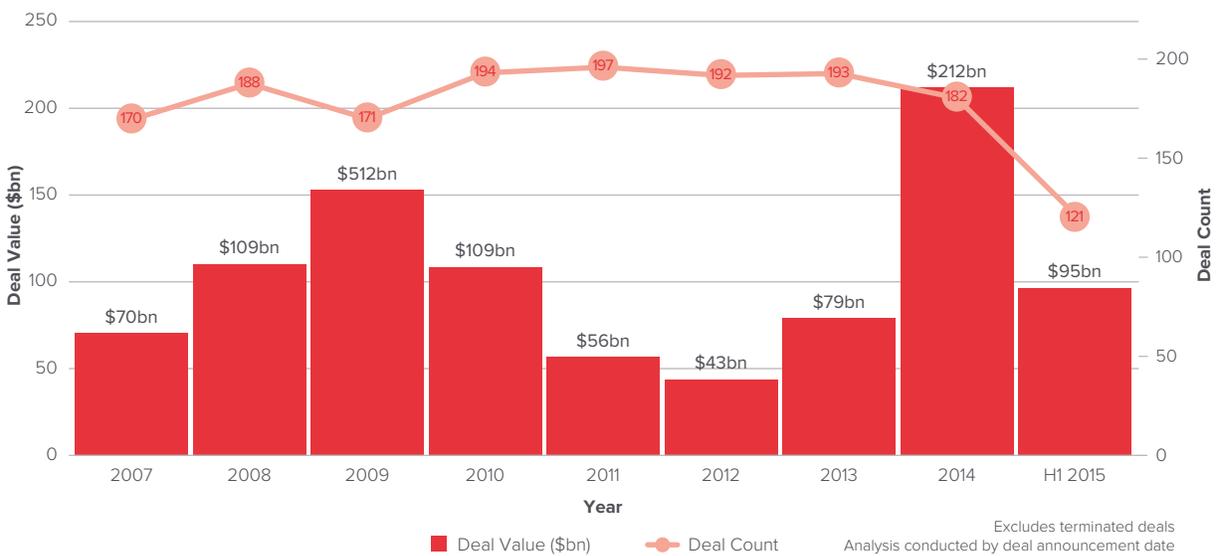
Only in the midst of a biotech bull run could \$95bn of pharma and biotech deals at the half year look a little disappointing. 2015, however, is up against some stiff competition from the record breaking 2014, when an incredible \$212bn in acquisitions was carried out.

It should, however, be remembered that 2014 owes a lot of its champion status to Allergan, nee Actavis, going on one of the sector's biggest ever spending sprees.

This analysis only comprises transactions struck by pharma and biotech companies, excluding medtech.

Pharma and Biotech M&A Activity

Source: EvaluatePharma[®] July 2015



However, 2015 still might win the day if we see more big ticket deals like Teva's decision to pay \$40.5bn for Allergan's generics business. The 2015 tally will also be helped along if the growing list of hostile takeovers actually reaches some form of resolution.

With Teva formally withdrawing its bid for Mylan, the Pennsylvania-based company is now free to continue its pursuit of reluctant Perrigo. Shire also has a \$30.5bn unrequited bid for Baxalta on the table, and Horizon's \$3bn bid for Depomed could all add to the 2015 tally if the targeted management teams decided to give in.

One area where 2015 might outstrip last year is in the sheer number of deals number of deals, 121 and counting when this analysis was run. This compares with 182 for the whole of 2014, indicating that, while the deal amounts might have fallen from last year, activity remains strong.



Top 5 Pharma/Biotech M&A deals in H1 2014 and 2015

Source: EvaluatePharma[®] July 2015

| Year | Acquirer | Target | Deal status | Value (\$bn) |
|----------------|-------------------------|--------------------------------------|-------------|--------------|
| H1 2015 | AbbVie | Pharmacyclics | Closed | 21.0 |
| | Pfizer | Hospira | Open | 17.0 |
| | Valeant | Salix Pharmaceuticals | Closed | 11.4 |
| | Alexion Pharmaceuticals | Synageva BioPharma | Closed | 8.4 |
| | Endo International | Par Pharmaceutical Companies | Open | 8.1 |
| 2014 | Actavis | Allergan | Closed | 66.0 |
| | Actavis | Forest Laboratories | Closed | 28.0 |
| | Novartis | Oncology business of GlaxoSmithKline | Closed | 16.0 |
| | Merck & Co | Cubist Pharmaceuticals | Closed | 9.5 |
| | Roche | InterMune | Closed | 8.3 |

What is interesting about the current spate of merger-mania is that much of it is still being conducted by speciality pharma groups.

While some transactions have been driven by the current mantra of “acquire or be acquired” for mid-sized groups, former large generic companies seeking to turn themselves into speciality pharma groups through M&A have provided good returns for investors, which has driven interest in doing further deals.

Big pharma is, however, starting to get back in on the act, with AbbVie’s \$21bn bid for Pharmacyclics leading the agreed bids announced in the half and Pfizer spending £17bn on Hospira.

Pfizer’s move on Hospira was essentially a bit of housecleaning, allowing it to pump up its established products unit ahead of any future spin out of the business.

AbbVie’s purchase of Pharmacyclics was a completely different kettle of fish. Some argued that with its bid for Shire falling through and the genericisation of Humira just round the corner the group needed a defensive move, and quick.

Spending \$21bn on essentially half of the economic interest of one product, Imbruvica, might not, however, have been the play investors were looking for.

But the Pharmacyclics deal shows how fierce competition is becoming for assets and how much big pharma is being forced to pay for assets they regards as core.



US approvals come at a torrid pace

Top five FDA approvals of 2015 to date (to July 10)

Source: EvaluatePharma[®] July 2015

| Rank | Product | Pharmacology class | Company | Approval date | US sales 2020 (\$m) |
|------|--------------------------|--|------------------------|---------------|---------------------|
| 1 | Orkambi | CFTR corrector | Vertex Pharmaceuticals | 02/07/15 | 3,222 |
| 2 | Ibrance | CDK 4 & 6 inhibitor | Pfizer | 03/02/15 | 2,084 |
| 3 | Entresto | AT1 antagonist & ARNI | Novartis | 07/07/15 | 1,793 |
| 4 | Cosentyx | IL-17A MAb | Novartis | 21/01/15 | 1,016 |
| 5 | Rexulti (Brexipiprazole) | 5-HT1A & D2 partial agonist & 5-HT2 antagonist | Otsuka Holdings | 10/07/15 | 737 |

Underlying all the enthusiasm for biopharma companies is the rate at which new products are approved and launched in the world's biggest drug markets – without this pull-through there is nothing to replace products lost to patent expiry. This year has sustained recent trends, and is on track for 50 new small-molecule and biological product approvals in the US, with \$18.6bn in sales expected from these newly launched assets in 2020.

As of early July, 25 had been approved, representing \$11bn in sales in forecast 2020 sales. Several of these have been highly anticipated, high-value assets that ought to be widely embraced as they address significant unmet needs such as Vertex Pharmaceuticals' cystic fibrosis therapy Orkambi. At a forecast of \$3.2bn in 2020, according to EvaluatePharma's consensus, Vertex's combination is likely to be the biggest-selling drug approved in 2015.

FDA Approval Count vs. Total USA Product Sales 5 Years After Launch

Source: EvaluatePharma[®] July 2015

2004 – Avastin (Roche), Cymbalta (LLY), Spiriva (BI/PFE), Lyrica (PFE)

2010 – Plevnar 13 (PFE), Victoza (Novo N), Prolia/Xgeva (AMGN)

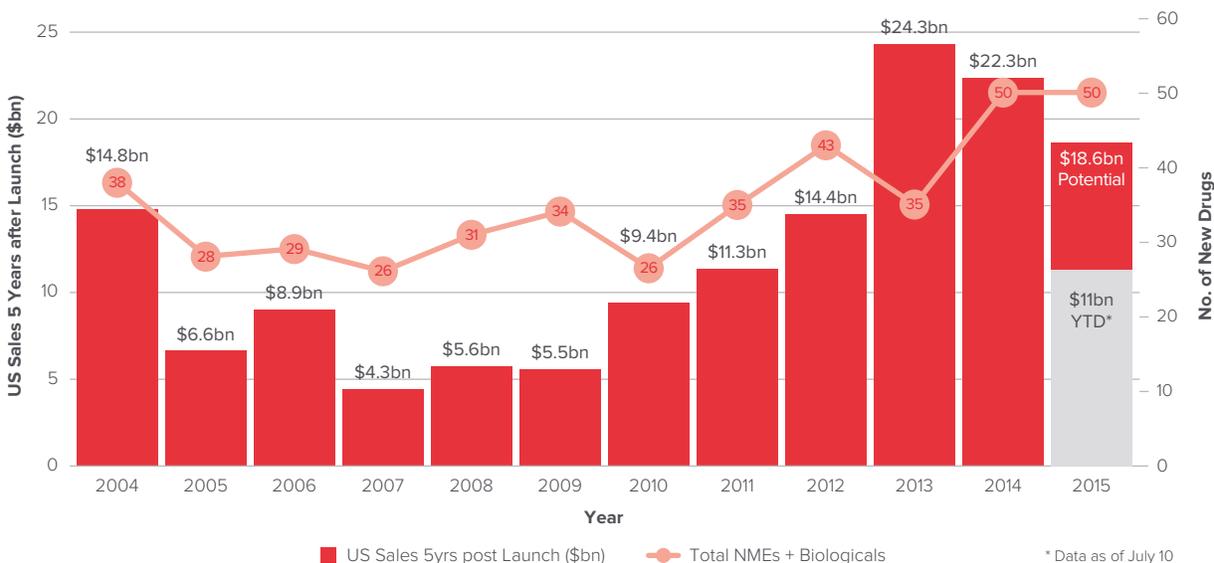
2011 – Xarelto (J&J/BAY), Eylea (REGN/BAY)

2012 – Eliquis (BMS/PFE), Stribild (GILD)

2013 – Sovaldi (GILD), Tecfidera (BIIB)

2014 – Opdivo (BMY), Harvoni (GILD)

2015 – Orkambi (VRTX), Ibrance (PFZ)





In terms of number of approvals, the class of 2015 is on track to equal 2014, which was the best year in more than a decade, although it will fall short in terms of fifth-year sales. The top sales crown belongs to the incredible class of 2013, which featured the Gilead Sciences' hepatitis C drug Sovaldi and Biogen's multiple sclerosis agent Tecfidera.

The remainder of the year will see FDA decision dates for Amgen's cholesterol agent Repatha, Glaxo's asthma drug Nucala and Actelion's pulmonary hypertension project Upravi. While all of them have met expectations in the clinic, they also present interesting case studies for the durability of the biotech bubble. Repatha will go into direct competition with a recently launched product from the same class, Sanofi's Praluent, and announcements about pricing and payer formularies are likely to be closely watched by investors.

Top five potential FDA approvals of 2015

Source: EvaluatePharma⁷ July 2015

| Rank | Product | Pharmacology class | Company | Approval date | US sales 2020 (\$m) |
|------|--------------|----------------------------------|-----------------|---------------|---------------------|
| 1 | Upravi | Prostacyclin receptor stimulator | Actelion | 23/12/15 | 1,198 |
| 2 | Praluent | PCSK9 MAb | Sanofi | 24/07/15 | 1,099 |
| 3 | Repatha | PCSK9 MAb | Amgen | 27/08/15 | 1,058 |
| 4 | Patiomer FOS | Potassium binder | Relypsa | 21/10/15 | 686 |
| 5 | Nucala | IL-5 MAb | GlaxoSmithKline | 04/11/15 | 594 |

The same is true with Nucala, a biological to treat severe asthma, and Upravi, which would join Actelion's other pulmonary hypertension drugs Opsumit and Tracleer on the US market. Payer announcements about on which tiers they will be placed, or indeed whether they might be excluded from coverage, will certainly shape investors' views about whether the pharma sector's pricing expectations are realistic – which in turn, ought to affect sentiment about biotech valuations.



Potential FDA NME approvals

Source: EvaluatePharma[®] July 2015

| Rank | Product | Biological ? | Pharmacology Class | Company | PDUFA Date | US sales 2020 (\$m) |
|------|--------------------------|--------------|---------------------------------------|-------------------------|------------------|---------------------|
| 1 | Uptravi | No | Prostacyclin receptor stimulator | Actelion | 23/12/15 | 1,198 |
| 2 | Praluent | Yes | PCSK9 MAb | Sanofi | 24/07/15 | 1,099 |
| 3 | Repatha | Yes | PCSK9 MAb | Amgen | 27/08/15 | 1,058 |
| 4 | Patiromer FOS | No | Potassium binder | Relypsa | 21/10/15 | 686 |
| 5 | Nucala | Yes | IL-5 MAb | GlaxoSmithKline | 04/11/15 | 594 |
| 6 | Rolapitant | No | NK-1 receptor antagonist | TESARO | 04/09/15 | 462 |
| 7 | Cariprazine | No | Dopamine D3/D2 agonist | Allergan | September 2015 | 379 |
| 8 | Kanuma | Yes | Lysosomal acid lipase | Synageva BioPharma | 08/09/15 | 323 |
| 9 | Necitumumab | Yes | Anti-EGFr MAb | Eli Lilly | Q4 2015 | 296 |
| 10 | Lesinurad | No | SURI | AstraZeneca | Q4 2015 | 292 |
| 11 | Strensiq | Yes | Alkaline phosphatase enzyme therapy | Alexion Pharmaceuticals | July/August 2015 | 286 |
| 12 | Lonsurf | No | Thymidine phosphorylase inhibitor | Otsuka Holdings | 18/12/15 | 238 |
| 13 | Brivaracetam | No | MEK inhibitor | UCB | 20/11/15 | 148 |
| 14 | BAX 111 | Yes | Von Willebrand factor | Baxter International | 22/12/15 | 100 |
| 15 | Talimogene Laherparepvec | Yes | Oncolytic virus | Amgen | 27/10/15 | 97 |
| 16 | Sonidegib | No | SMO inhibitor | Novartis | September 2015 | 95 |
| 17 | Dengvaxia | Yes | Dengue vaccine | Sanofi | YE 2015 | 92 |
| 18 | V419 | Yes | DTP, hepatitis B, Hib & polio vaccine | Merck & Co | Q4 2015 | 84 |
| 19 | Cobimetinib | No | MEK inhibitor | Roche | Q4 2015 | 24 |
| 20 | Nuwiq | Yes | Factor VIII | Octapharma | Q4 2015 | - |
| 21 | CSL654 | Yes | Factor IX | CSL | 16/12/15 | - |
| 22 | Kovaltry | Yes | Factor VIII | Bayer | 17/12/15 | - |
| 23 | Xadago | No | MAOB inhibitor | Zambon | 29/12/15 | - |
| 24 | Addyi | No | 5-HT1A agonist & 5-HT2A antagonist | Sprout Pharma | 17/12/15 | - |
| 25 | Idarucizumab | Yes | Anti-dabigatran MAb | Boehringer | 02/11/15 | - |



Second half outlook

The first half of 2015 has continued to confound the naysayers of the industry, with deal making, venture funding, and share price indices all showing no signs of slowing down. If the trends set in the first half continue then 2015 could give the record-breaking 2014 a run for its money.

The big question as ever with the industry is how much is too much? So far it looks as if 2015 will not be the year when the bottom falls out of the market.

Those searching for any signs of wobbles in the industry due to lack of productivity might have to look elsewhere, following the launch of 25 drugs, including Orkambi and Ibrance.

But with successful innovation has come increasing clamour from payers looking for healthcare companies to provide evidence that their ever-higher priced drugs are providing substantial value to patients and reducing healthcare budgets. However, it is unlikely that the increasing push-back from payers will be what eventually pricks the biotech bubble.

We might, however, already be seeing the first signs of a gentle deceleration with some of the heat coming out of the IPO market. And rightly so, some might argue, having witnessed companies like Axovant with few real assets to speak of achieve billion-dollar valuations overnight.

But with cheap money still available and pharma willing to deploy it, areas like M&A and licensing are likely to keep up their frenetic pace. Among the mid-tier speciality companies, defensive deal-making could continue to help pay the salaries of bankers. Their larger counterparts also seem determined to keep paying top dollar for assets they perceive they need.

It looks for now like the sector is heading for what will hopefully be a gentle slowdown rather than a full-blown crash.

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