Biopharma, Biotech and Medtech in Q2: The only way is up… or is it?

BY AMY BROWN, EDWIN ELMHIRST, ELIZABETH CAIRNS, JACOB PLIETH AND MADELEINE ARMSTRONG | JULY 2022

eBOOK

Evaluate Vantage

Introduction

The first half of 2022 is behind us and for most in the industry, it was a six month period to forget. Have we hit the bottom or will we plummet still further in the second half of the year? In this ebook we'll dig into the business side of the biotech, pharma and medtech markets to look hard for any glimmers of hope to sustain us as we crack on with the remainder of 2022.

We'll kick off with the biotech and pharma side of things. It's heartening to see some M&A activity back on the menu at last, but it's more a light buffet than a feast at this stage. There are less positive signs in the IPO market, however, which is seeing something of a famine as it hits a 10-year low for the second quarter.

Of course, we have to look at share price performance and ask the question of whether we have finally hit the bottom of the market. It's not looking like big pharma has remained the safe haven we saw in the earliest part of the year, but there are a few winners which give us that glimmer of hope – probably.

We'll also look into the medtech market where matters are looking pretty shaky as well. In fact, with our report featuring words like "despair" and "bloodbath", you might need a stiff drink before you dive into this section. A combination of Covid and general market malaise have led to the fewest acquisitions closing for over 20 years.

There are hints of a marginally brighter future lurking if we look hard enough but we have to remember the context. All markets are in a pretty gruesome state and biotech and pharma are, if anything, slightly ahead of the curve. With increasing private equity interest in the life sciences market and plenty of private money still available (with ever more due diligence attached) there is hope of better things to come.

On we go...!

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Takeout spend ticks up

BY EDWIN ELMHIRST AND MADELEINE ARMSTRONG
JULY 05, 2022

M&A is back on the menu, but there are still reasons to be cautious.

After a dire first quarter for biopharma deals, investors will be hoping that a recent flurry of M&A activity – albeit largely on buyers' terms – could signal the start of better times for the space.

A look at the second-quarter numbers, compiled by Evaluate Pharma, shows that a respectable $25bn was committed in the period, with the Pfizer-Biohaven deal counting for a big chunk of that figure. In terms of deal count, however, the quarter saw one of the lowest tallies in recent memory.

The final chart below shows that the second quarter is often the quietest three-month period of the year, so perhaps a pick up is on the way.

There are other reasons for optimism among those hoping for a resurgence in acquisitions, to reinvigorate investor interest in the sector.

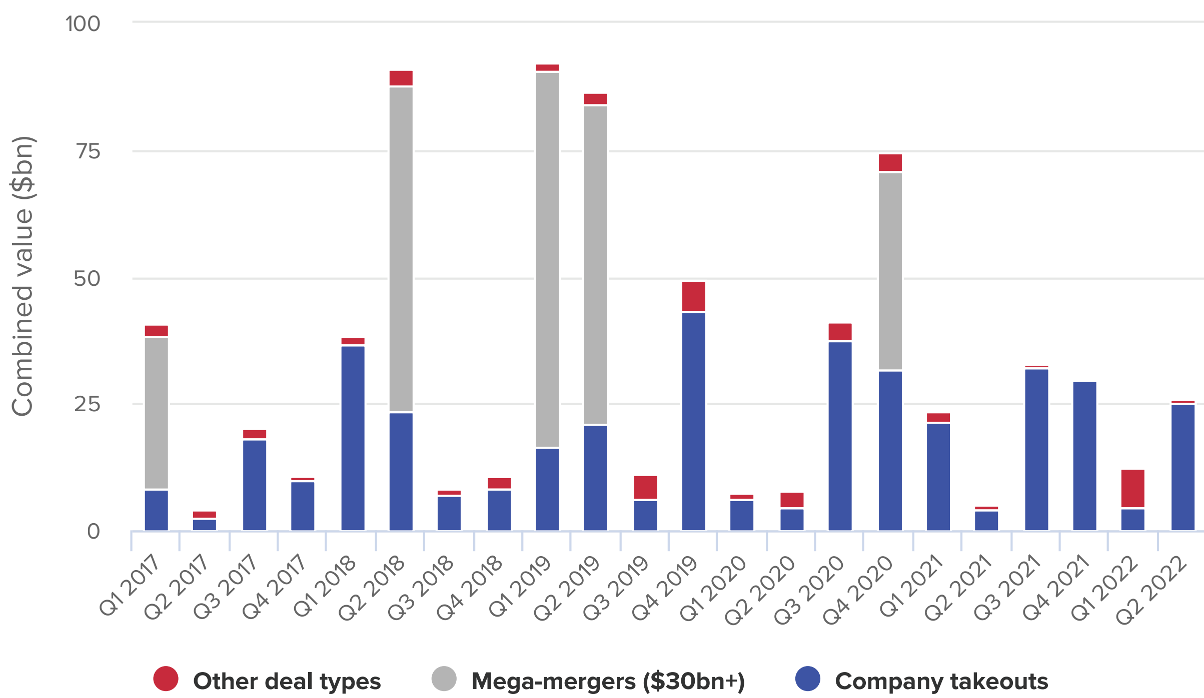
For one, the second quarter was dominated by full company takeovers, unlike the prior period, which saw a large contribution from other deal types such as majority and minority stake purchases and business unit buys (Takeover-driven resurgence fails to materialise for biotech, April 13, 2022).

The second quarter also saw numerous public companies get picked up, which could help lure would-be shareholders back to biotech. True, some of these were low-ball purchases, with certain targets seemingly having accepted the new reality.

But there were still some big deals, at least by recent standards. The largest was Pfizer's $11.6bn purchase of Biohaven, with the big pharma predicting that the latter's migraine franchise could bring in $6bn at peak. This currently seems high but Pfizer, flush from its Covid success, will be easily able to absorb such a bolt-on.

This analysis does not concern licensing deals, or takeouts of companies involved in medtech or digital health. Only acquisitions of pureplay developers are considered.

Combined M&A deal values



Source: Evaluate

Biggest biopharma M&A deals announced in Q2 2022			
Acquirer	**Target**	**Status**	**Deal terms**
Pfizer	Biohaven Pharmaceutical Holding	Open	$11.6bn in cash up front
Bristol Myers Squibb	Turning Point Therapeutics	Open	$4.1bn in cash up front
GSK	Affinivax	Open	$2.1bn in cash up front (total deal value $3.3bn)
GSK	Sierra Oncology	Open	$1.9bn in cash up front
Halozyme Therapeutics	Antares Pharma	Closed	$960m in cash up front

Source: Evaluate Pharma.

Bristol's move for Turning Point also looks expensive, assuming that the $4.1bn price tag was based solely on that target's lead asset, repotrectinib.

And GSK faced suggestions that it had overpaid for Sierra Oncology; the UK group has been trying to buy itself a better pipeline ahead of its consumer spinout, but it will no longer look so desperate if its respiratory syncytial virus vaccine can live up to expectations.

One conclusion that could be drawn from these criticisms of overpaying is that pharma remains happy to spend big on desired assets. This should be reassuring for investors in smaller developers.

Still, none of the above acquisitions falls into mega-merger territory, and it might take something bigger to convince the markets that M&A really is back on the menu.

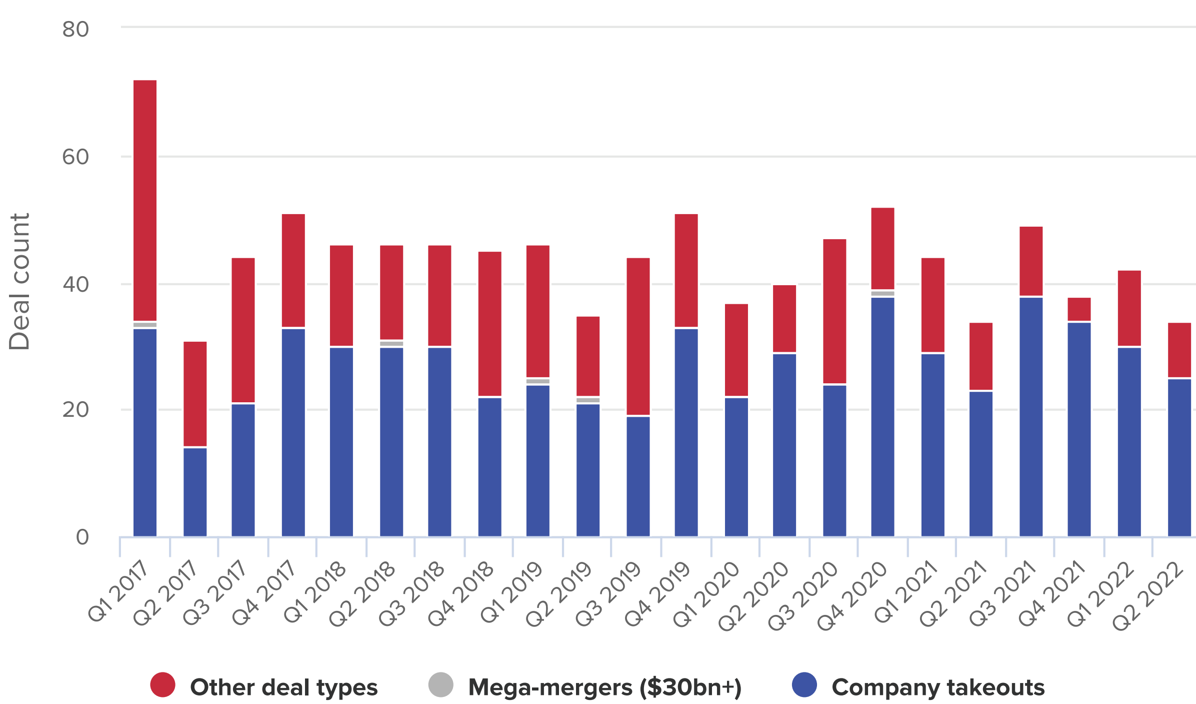
One such example would be a takeout of Seagen, with Merck & Co said to be in the frame. Seagen currently has a market cap of $33bn, so if this deal happens it would more than double the total spent on M&A so far this year.

After a long weekend in the US, biotech watchers hoping for news on that front were disappointed (at least by time of press). A small $100m deal by Astrazeneca concerning a spin out of Teneobio failed to whet whistles.

Jefferies analysts, for one, hope that the worst of the bear market has now passed, and that things should "perk up" towards the end of this year. They reckon that if big binary readouts from the likes of Alnylam and Karuna are positive, and if there's more M&A, generalists could start to return to biotech.

At the moment, though, these look like fairly big ifs.

Quarterly M&A deal counts



Source: Evaluate

Biotech flotations plunge to a 10-year low

BY AMY BROWN AND EDWIN ELMHIRST
JULY 07, 2022

The sector must hope that the bottom has been reached.

Not since 2012 has the biotech sector seen such a dismal period for initial public offerings. With sentiment so terrible, perhaps it is surprising that as many as three groups managed to get away in the second quarter.

Two of these, Hillevax and Pepgen, even managed to upsize offerings, meaning that they sold more shares than expected. Valuation bumps are a thing of the past, however, and like the rest of biotech these new arrivals are struggling. Eight of this year's 13 drug developer IPOs are already trading under water.

The third developer captured in this analysis, Belite Bio, raised only $36m, and its parent company, Lin Biosciences, heavily backed the deal, buying almost half of the new shares. This show of support seems to have worked, with the stock surging fivefold since floating in March, giving the group an almost $1bn valuation.

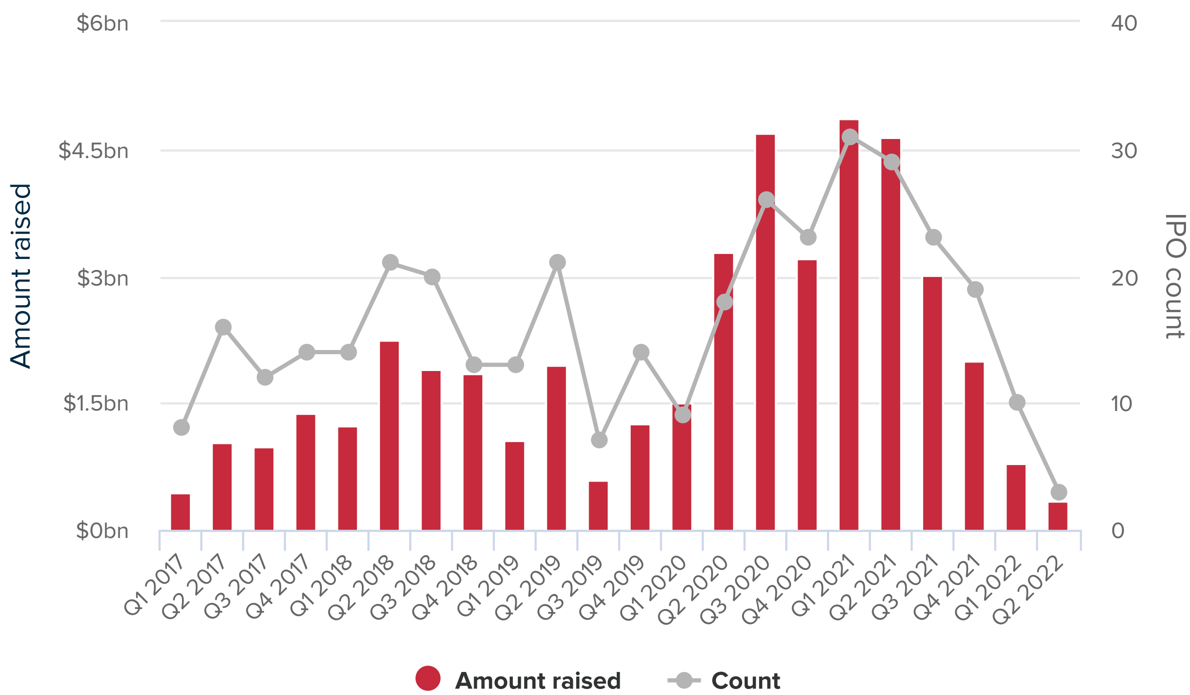
It is hard to know what has prompted the interest, which certainly bucks broader trends right now. The company is in getting a pivotal trial of its lead asset, tinlarebant for Stargardt disease, under way, though data are unlikely to emerge for several years.

The numbers here concern IPOs of pure-play drug developers only; secondary listings are not included.

Hillevax is 2022's biggest IPO so far in terms of sums raised; perhaps investors considered the group a relatively safe bet. It is developing a vaccine that has the potential to become the first to market for norovirus. The project is licensed from Takeda, which had already completed a lot of clinical work, and should generate confirmatory efficacy data late next year.

Pepgen was the last developer to get away, almost eight weeks ago. It had to slice its valuation to do so and has already dipped below its IPO price. The company has one asset in phase 1 development, for Duchenne muscular dystrophy, a risky proposition for investors right now.

Biotech IPOs by quarter on Western exchanges



Source: Evaluate

Second-quarter IPOs				
Company	**Primary focus**	**Amount raised**	**Premium/(discount); float price to initial offer**	**Share price change since float to end Q2**
Hillevax	Norovirus vaccine	$200m	0%	-36%
Pepgen	Neuromuscular diseases	$106m	-14%	-17%
Belite Bio	Retinal degeneration	$36m	0%	419%

Source: Evaluate Pharma.

In Europe the situation feels even more dire, with only one developer, Aelis Farma, managing to float this year, on Euronext back in February.

IPO hopefuls will be nervously watching the next brave biotech to test these markets. There are at least nine that have filed documents with Nasdaq. Two joined the Nasdaq queue in June, Genelux and Shuttle Pharmaceuticals, the first biotechs to do so since April, so perhaps there are glimmers of hope. The closely followed biotech ETF the XBI has recovered slightly since hitting a six-year low in early June.

But this “recovery” is hanging on by its fingernails amid broader market malaise. The second quarter was the slowest for US flotations, across all sectors, since 2009, according to the IPO specialists Renaissance Capital. No wonder the high-risk biotech space is suffering.

The retrenchment begins for venture funding

BY EDWIN ELMHIRST, MADELEINE ARMSTRONG AND AMY BROWN
JULY 08, 2022

The gloomy climate for biotech is now taking its toll on private companies too.

Until recently, venture-backed biotech companies had largely managed to shrug off the malaise that has been hurting the industry for some time. Now the inevitable has happened, with both the number of venture rounds and the amount raised taking a dive in the second quarter.

True, the numbers do not look so bad when compared against pre-2020 figures, the latest analysis of data compiled by Evaluate Pharma show. But, with the current downturn showing no sign of bottoming out, the question is how bad it might become for young private groups.

In hindsight, the signs of a downturn were already there in first-quarter figures that, on the surface, looked respectable. But the total sum deployed was propped up by a huge $3bn round for the anti-ageing specialist Altos, which is on the fringes of what can be classed as drug developer (Venture funding stays strong despite the gloom, April 6, 2022).

It is important to remember that this analysis concerns only companies involved in drug development. Sectors like medtech and digital health are excluded, as are manufacturing and services companies; groups in this latter category, with ostensibly better chances of generating cash flow than developers, are still raising large financing rounds.

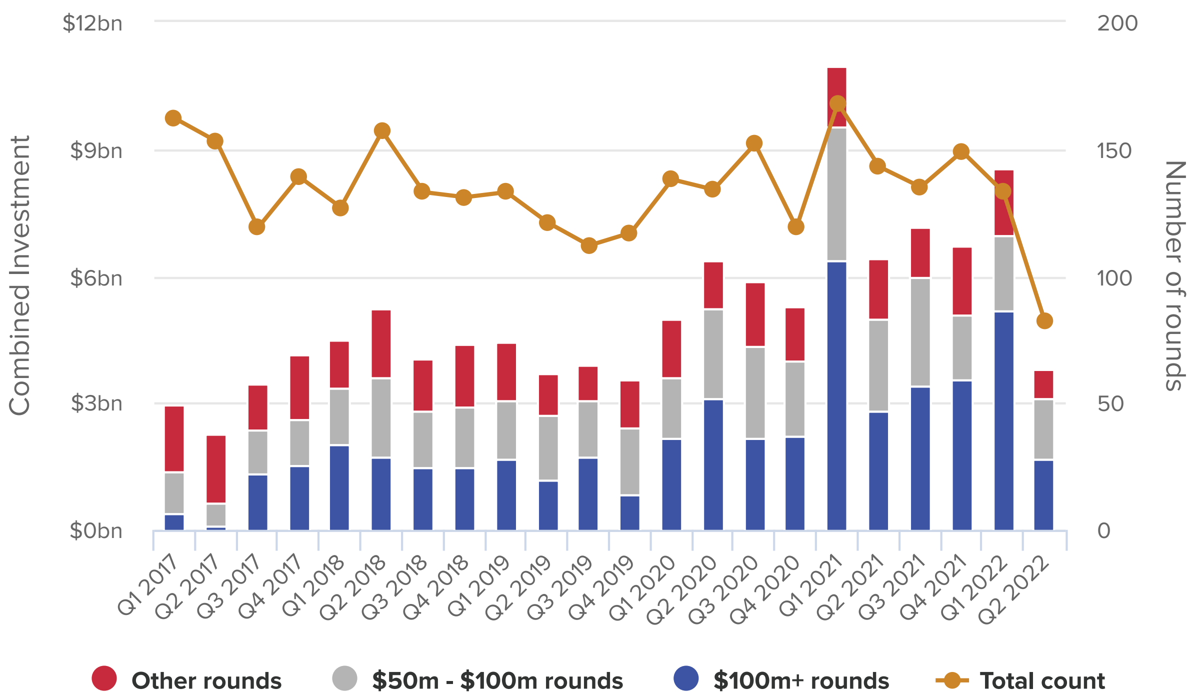
Resilience, for example, which raised $625m in the second quarter but is not included under our definitions of a developer; the group offers cell and gene therapy manufacturing services to biotech companies. Analyses of biopharma venture funding that throw the net wider will capture these sorts of companies – our analysis, however, provides a snap shot of the sector's highest-risk area.

The chart above shows that the incidence of mega-rounds of $100m+ dropped to pre-pandemic levels last quarter for this group of high-risk developers. It is no secret that valuations are being compressed in the private space, as well on the public markets, which will have contributed to this drop.

The closing of the IPO markets has also removed crossover rounds – large financings done ahead of a flotation – from this picture.

How bad have things become? Stat News recently painted a dire picture of private companies unable to go public and desperate for cash, and having to

Quarterly biopharma VC rounds



Source: Evaluate

Top five rounds of Q2 2022			
Company	**Investment ($m)**	**Financing round**	**Description**
Kriya Therapeutics	270	Series C	Gene therapies
Upstream Bio	200	Series A	Inflammation
Frontera Therapeutics	160	Series B	Gene therapies
Aspen Neuroscience	148	Series B	Personalised cell therapies
Tessa Therapeutics	126	Series A	Cancer immunotherapies

Source: Evaluate Pharma.

accept the reality of down rounds: raising money at a lower valuation than their previous one.

Some venture capitalists are more optimistic. Bruce Booth of Atlas Venture struck a more upbeat tone in his recent blog, stressing that although the current financing market was "jittery" the private biotech space remained "awash" with capital.

This is certainly true – only recently, the US VC Arch Venture Partners closed a $3bn fund. And this money needs to be put to work.

But it seems almost inevitable that this cash will gravitate, where it can, to relatively safe havens within the biopharma space. The chart above suggests that those at the clinical coal face are already seeing the purse strings tightened, a situation that is unlikely to change any time soon.

Are we there yet?

BY JACOB PLIETH AND EDWIN ELMHIRST
JULY 12, 2022

Second-quarter share price movements give another glimpse of the dire state of the markets, but there might be reasons for optimism.

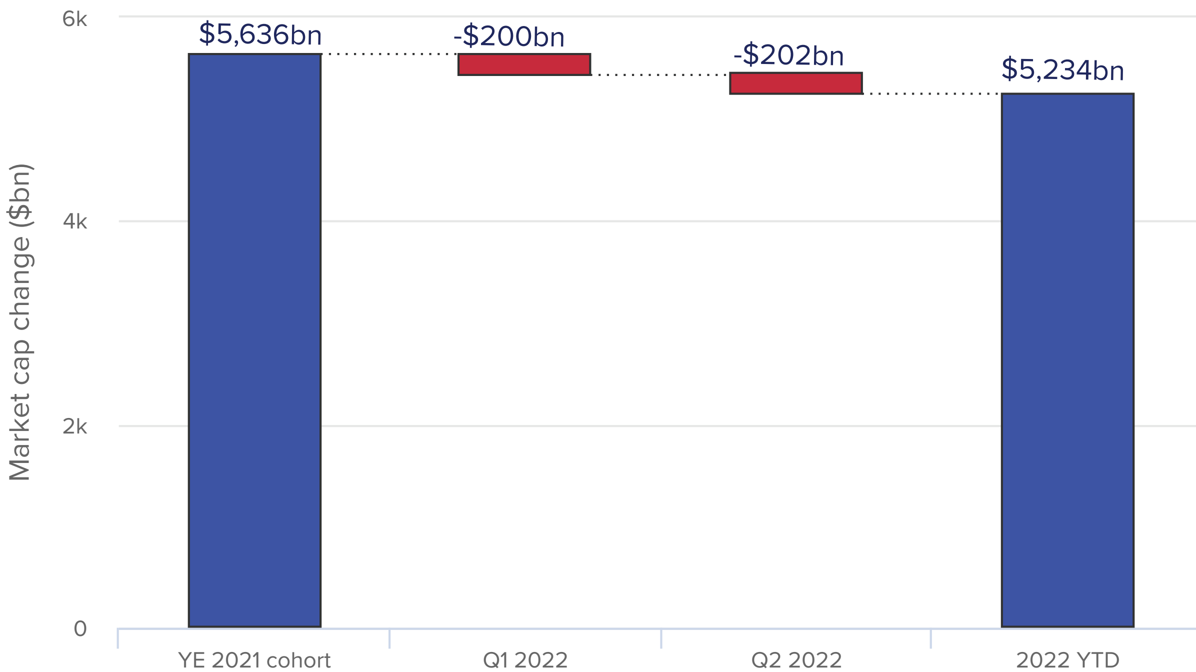
On the face of it global biopharma shed another $200bn of value in the second quarter, matching the $200bn it had lost in the first three months of the year. Look beyond the numbers, however, and there are at least two reasons to suggest that the pain might nearly be over.

The final two weeks of June and the start of the third quarter reveal an uptick that many will find hard to ignore, and on top of this comes increased talk of takeovers. As much of the industry departs for the summer shutdown some will say the bottom has been hit at last, though given the extent of investors' losses it would be premature to expect a bull market to come roaring back just yet.

A recent Evaluate Vantage analysis found a significant amount of cash being deployed on M&A. True, this was largely in terms of absolute numbers, and the deal values remain restrained, but many will now look to Merck & Co and Seagen to seal a takeover deal that would drive more investors back into the sector.

In many ways this is a predictable cycle: valuations reach an unrealistic peak, followed by a selloff that causes some groups to be valued so low that their takeout becomes inevitable, M&A picks up, and valuations rise again. The usual caveats apply: trying to catch a falling knife is dangerous, and it cannot be denied that most of this year's M&A has been on buyers' terms.

The shifting valuation of global drug makers



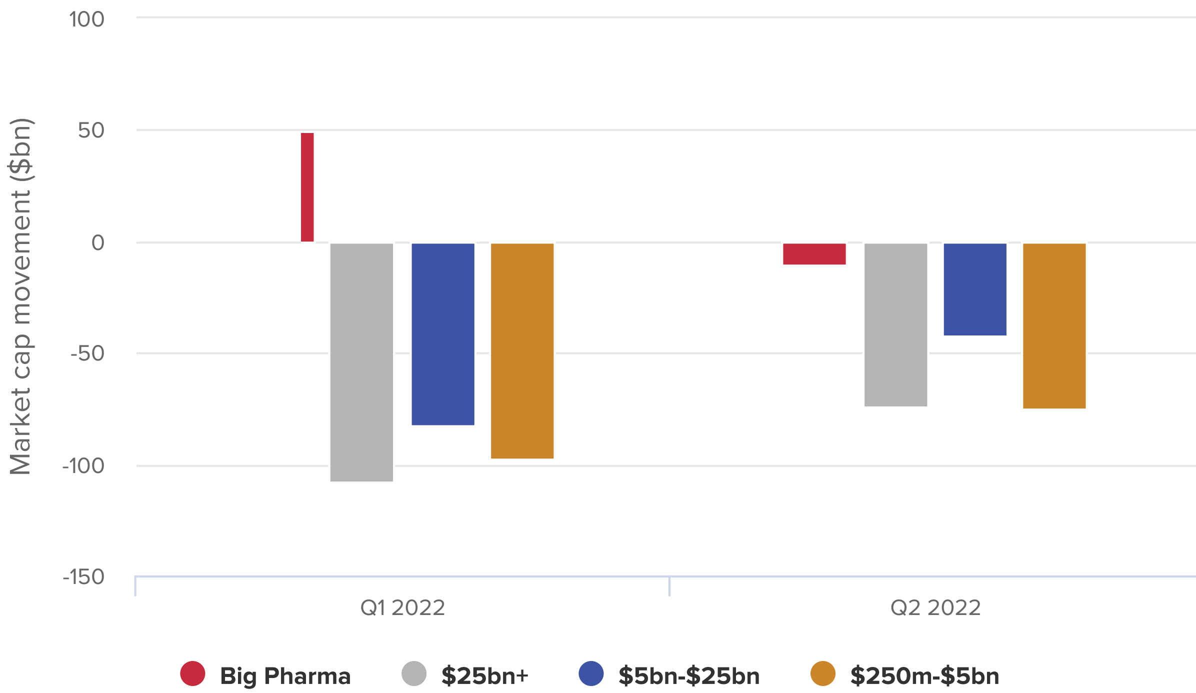
Source: Evaluate

Still, share prices have responded, albeit cautiously. While overall global drug makers lost 3.5% and 3.7% of their market caps in the first two quarters respectively, the Nasdaq biotech market crept up 11% between June 16 and the mid-year point. The following 11 days saw a further 7% gain.

This analysis is constructed from the almost 700 globally listed drug makers covered by Evaluate Pharma, sorted into four cohorts based on year-end 2021 valuations (nano-caps worth less than $250m are not considered).

A casual glance at this more detailed breakdown could give further reason for optimism: in the second quarter big pharma was apparently no longer the safe haven it was in the first, and suffered a net loss of value along with its smaller brethren, whose own market cap losses were somewhat more restrained than in the first three months of 2022.

Absolute market cap gains and losses, by size bracket



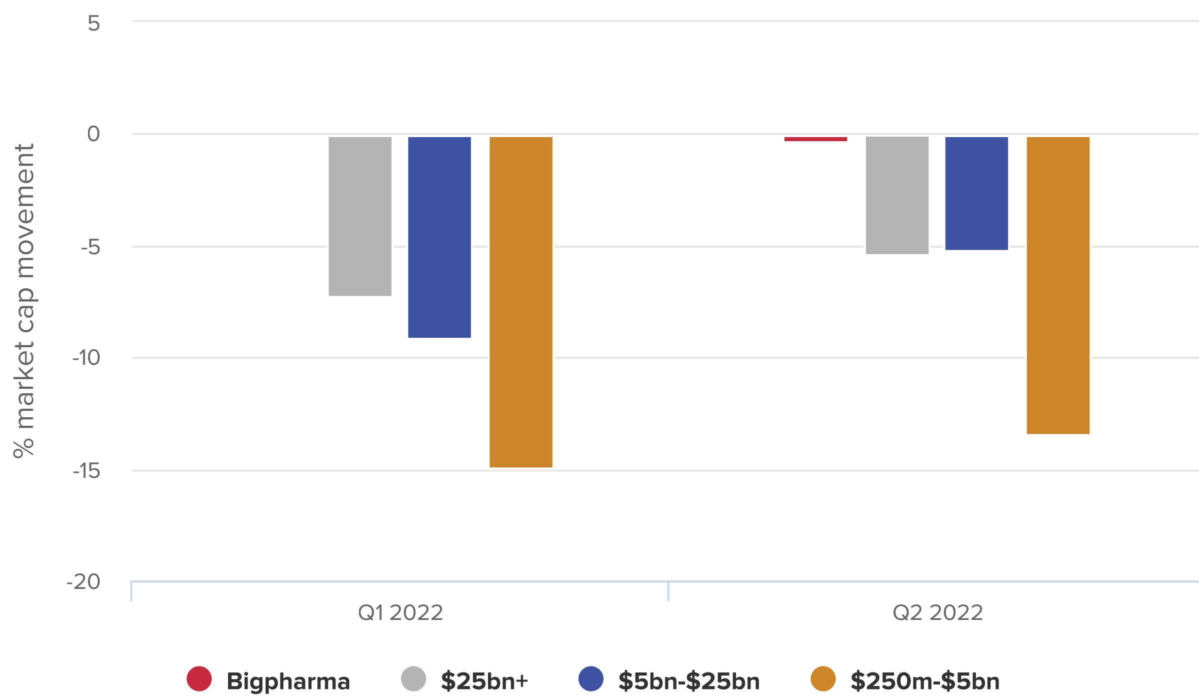
Source: Evaluate

However, it would clearly be premature to suggest that risk was suddenly back on investors' agendas. Indeed, big pharma's second-quarter valuation fall was largely down to three companies, Roche, Novartis and Abbvie, experiencing significant market cap declines; Abbvie had put on 20% in the first quarter.

Meanwhile, on the big biotech side of the equation, Q2 was about containing Q1's losses rather than making huge gains. The Covid vaccine players Moderna and Biontech illustrate this, falling "only" 18% and 12% respectively in April to June, after haemorrhaging 33% and 34% of their market caps in the year to March. Gilead, a stock with which Wall Street has fallen out of love, put on 3% after falling 18% in the first quarter.

The dangers of picking bottoms notwithstanding, some investors might now be excused for wondering whether biopharma valuations do not have much further to fall.

Percentage market cap gains and losses, by size bracket



Source: Evaluate

Few biopharma risers stand out at the half year

BY AMY BROWN AND EDWIN ELMHIRST
JULY 13, 2022

A look for winners and losers finds a sector laid low by poor sentiment and Covid fatigue, with Lantheus, Vertex and Jazz providing a few bright spots.

Hopes that the bottom has been reached might be rising, but there is little to cheer in a close look at biopharma share price performances over the first half of 2022.

Only a fifth of the 660 global drug developers tracked by Evaluate Vantage ended June in positive territory. Among the winners Lantheus stands out as the only stock to produce a triple-digit gain, excluding takeover targets, while Covid fatigue caused valuations at the big pandemic plays to continue ebbing away.

Pfizer, Moderna, Biontech, Novavax and Curevac registered some of the biggest declines in their respective market cap brackets. Covid is far from over, but questions about the durability of revenues from vaccines and other treatments is causing investors to look for new growth stories.

The broader market declines no doubt exacerbated these losses. As our previous article looking at the sector-wide performance reported yesterday, global biopharma stocks shed another $200bn of value in the second quarter, matching the $200bn they had lost in the first three months of the year (Are we there yet?, July 12, 2022).

This latest analysis was constructed from the listed, global biopharma companies covered by Evaluate Pharma that were worth at least $250m at the start of 2022. These stocks, sorted into four cohorts based on year-end 2021 valuations, will be tracked by Evaluate Vantage over the year.

Biopharma's biggest stock market winners in H1 2022			
Company	**H1 share price chg**	**H1 market cap chg ($bn)**	**Market cap at June 30, 2022 ($bn)**
Big pharma			
Bristol Myers Squibb	23%	25.5	163.9
Merck & Co	19%	37.0	230.6
Lilly	17%	43.8	308.1
Large cap ($25bn+ market cap)			
Vertex	28%	16.2	72.1
Takeda	22%	8.9	52.4
Bayer	21%	10.9	63.8
Mid cap ($5-25bn market cap)			
Yakult Honsha	31%	2.6	11.6
Jazz Pharmaceuticals	22%	1.9	9.7
Ono Pharmaceutical	22%	2.4	15.6
Small cap ($250m-5bn market cap)			
Lantheus	129%	2.6	4.5
Veru	92%	0.4	0.9
Pharmaessentia	77%	2.3	5.2

Source: Evaluate Pharma. Companies were assigned these groups based on year-end 2021 market caps, and will remain in the same groups for the rest of the year.

Several recovery stories feature in the risers. One example is Bristol Myers Squibb, which has struggled to keep up with other pharma stocks in recent years amid concerns about its sales-replacement powers.

Strong data on its Tyk2 project deucravacitinib, which is expected to gain approval in September, have contributed to the recent uplift, though a major readout awaits in the form of milvexian data in the second half. The novel anticoagulant is pegged as a replacement for Eliquis.

Among the large caps, Vertex has staged quite the comeback after concerns about its pipeline sent the stock to two-year lows in late 2021. Impressive data for its Crispr-originated sickle cell and beta-thalassaemia asset, exa-cel, have provided a boost.

The mid-cap gainers are dominated by Asian risers, though Jazz is an exception. The speciality pharma group has managed to keep investors on board with a strong performance from its handful of neurology and oncology products.

Lantheus has done well all year, largely thanks to the hugely successful launch of a novel prostate cancer diagnostic, Pylarify. The company is also active in radiopharmaceuticals, a space that has seen a fair amount of deal-making over the past 12 months or so.

Taiwan's Pharmaessentia has also ballooned on a successful launch. Besremi, a long-acting interferon for polycythemia vera, won US approval late last year. And finally Veru shows that there are still gains to be made from success in Covid; the company filed an EUA last month, so it will soon be known what the FDA makes of the data.

Biopharma's biggest stock market losers in H1 2022			
Company	**H1 share price chg**	**H1 market cap chg ($bn)**	**Market cap at June 30, 2022 ($bn)**
Big pharma			
Roche	-16%	-75.0	285.1
Pfizer	-11%	-37.3	294.2
Novartis	-3%	-8.6	187.0
Large cap ($25bn+ market cap)			
Moderna	-44%	-46.2	56.8
Biontech	-42%	-26.3	36.2
Beigene	-40%	-11.0	16.7
Mid cap ($5-25bn market cap)			
Bausch Health	-70%	-6.9	3.0
Novavax	-64%	-6.8	4.0
Curevac	-60%	-3.9	2.5
Small cap ($250m-5bn market cap)			
Spero Therapeutics	-95%	-0.5	0.0
Mezzion Pharma	-92%	-1.3	0.4
Rubius Therapeutics	-91%	-0.8	0.1

Source: Evaluate Pharma. Companies were assigned these groups based on year end 2021 market caps, and will remain in the same groups for the rest of the year.

Among the fallers, Roche can thank the collapse of confidence in the Tigit anticancer mechanism for its demise. Data at Asco this year laid bare the disappointment.

Beigene has been hurt by the FDA's reluctance to use China-only data in approvals, as well as the broader malaise around high-risk biotechs. Bausch Health, meanwhile, became a smaller company after IPO'ing its large eyecare division, Bausch + Lomb, in May.

Among the tiddlers, FDA decisions hobbled Spero and Mezzion. The US regulator turned down Spero's antibiotic and told South Korea's Mezzion that it needed to run another trial of its project for a rare heart condition. Finally, any lingering hopes around Rubius's red blood cell platform were erased by a disappointing update at AACR.

The other shoe finally drops for device dealmaking

BY ELIZABETH CAIRNS
JULY 20, 2022

A combination of Covid and market gloom results in the fewest acquisitions closing for over 20 years.

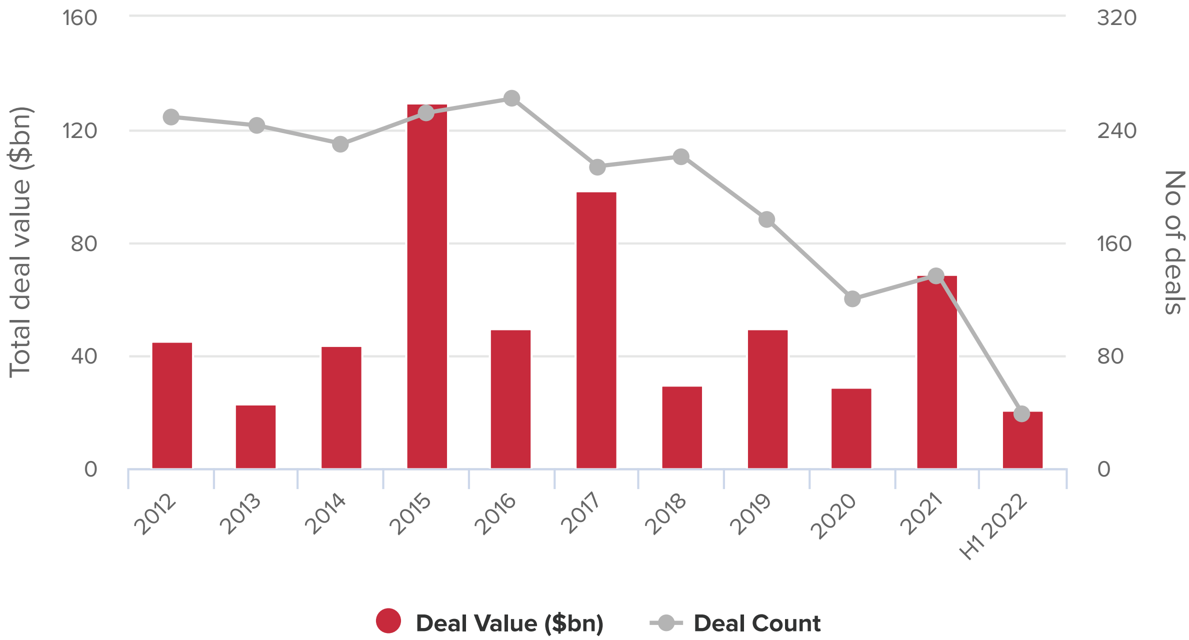
Perhaps the biggest surprise in Evaluate Vantage's analysis of mergers and acquisitions in the medtech sphere is how well deal values have held up in one of the darkest periods in recent years. Deals worth $20.7bn were closed in the first half of 2022; should the second half unfold in a similar way the year-end total will beat the figure recorded in three of the past 10 years.

The story is very different, however, when the number of deals is reckoned up. Just 38 mergers and acquisitions were closed in the first six months of 2022, putting the sector on course for its lowest annual deal count for more than 20 years.

Partly, of course, this is a hangover from the pandemic. Several companies, such as Teladoc and Siemens Healthineers, that raked in cash thanks to technologies useful in combating Covid have already placed large bets. Others have opted to fund R&D or return cash to shareholders. With one major exception, of which more later, Covid-cash deals have largely dried up.

Medtech M&As over the past decade

Number and value of deals closed



Source: Evaluate

Uncertainty over supply chains, which hugely increased across last year, has also probably added to companies' reluctance to buy.

FEWER, BIGGER BUYS

Still, some companies have put their hands in their pockets. Quidel's move on Ortho-Clinical Diagnostics was the last big Covid cash deal the sector has seen. The resulting group, Quidelortho, has become the world's seventh largest diagnostics company, with 2022 test sales forecast to reach $4.4bn, according to Evaluate Medtech.

Top 5 deals closed in H1 2022

Completion date	Acquirer	Target	Value ($bn)	M&A focus
May 27	Quidelortho	Ortho-Clinical Diagnostics	6.0	In vitro diagnostics
Jan 31	Coloplast	Atos Medical	2.4	Ear, nose & throat; general hospital & healthcare supply
Jan 6	ICU Medical	Smiths Medical, business of Smiths Group	2.4	Anaesthesia & respiratory; patient monitoring
Feb 14	Boston Scientific	Cardiology business of Baylis Medical Company	1.8	Cardiology
Mar 29	Owens & Minor	Apria	1.5	Anaesthesia & respiratory

Source: Evaluate Medtech.

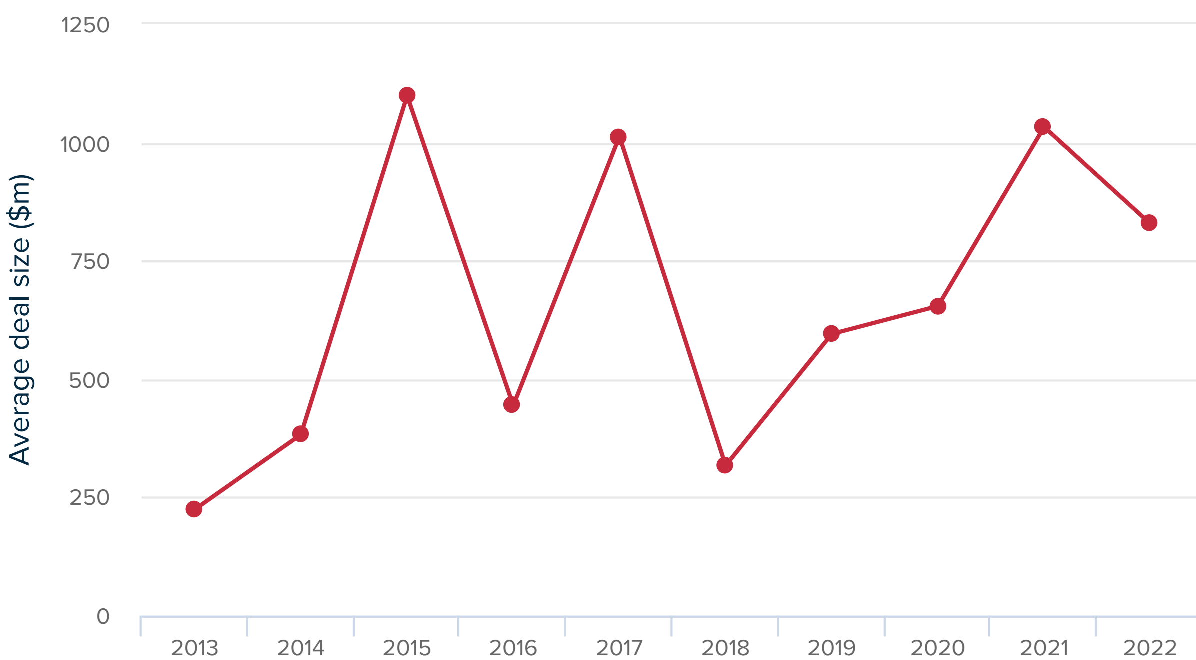
The other deals in the top five have all been about consolidation in the hospital sector. Atos is the leader of the laryngectomy device market, adding a new area to Coloplast's business, which largely centres on incontinence and would healing. Smiths Medical supplies things like syringes, drug pumps and pulse oximeters, a logical fit with ICU's intravenous drug delivery specialism.

As for the average size of 2022's mergers and acquisitions, the upward trend of recent years has been thrown sharply into reverse, suggesting that companies found themselves forced to accept lower valuations than might have been the case even a year earlier.

Perhaps things might pick up a little in the second half of this year. Several of the big groups – Abbott, Medtronic, Johnson & Johnson – have specifically stated their interest in acquiring. They are mostly focused on sub-$1bn tuck-in deals rather than huge transformational moves, but at this point, new deals of any size will help.

Average deal size

Deals closed over the past decade



Source: Evaluate

Device approvals drop, but the FDA has a plan

BY ELIZABETH CAIRNS
JULY 25, 2022

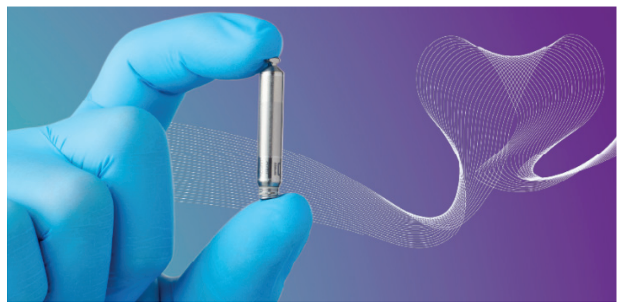
Increased headcount should allow the FDA to up the number of approvals – but not quite yet.

The FDA did a pretty good job of keeping the approvals coming for medical devices during the Covid crisis. Now, however, as the pressure is easing, the agency is slowing down: only 24 innovative devices gained approval or clearance in the first half of this year, the lowest six-month total since the first half of 2013.

Hopefully the lull should be short-lived. Having been forced in early 2021 to limit its traditional approvals to prioritise emergency authorisations for Covid diagnostics and devices, the FDA's leadership said at the end of May that it would now accept all non-Covid IVD pre-submissions, though timelines would still be longer than usual.

The future looks bright, then, but the present is somewhat overcast. So far this year the agency has awarded just 12 premarket approvals – the route used by high-risk devices unlike anything yet approved – and 12 de novo clearances – the pathway for similarly novel low-risk products.

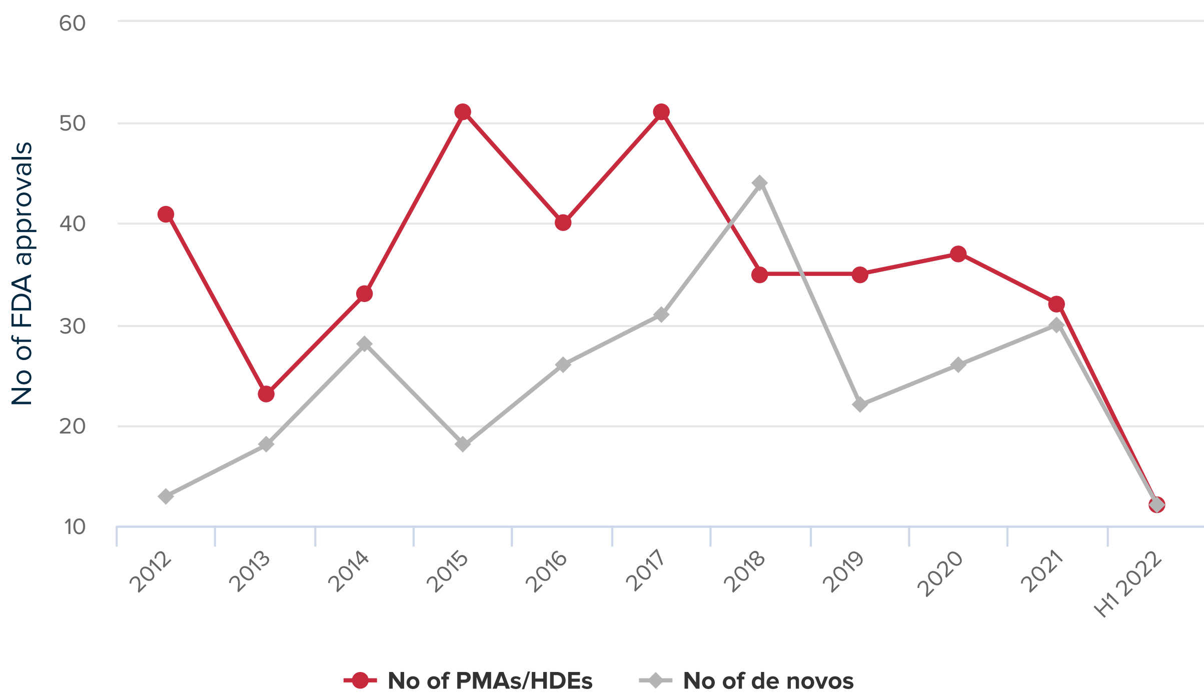
If this rate of approvals does not pick up in the second half, 2022 will see the fewest new devices hit the US market since 2013. And the slowest approvals for some time, too: the first half's de novos were granted in an average of 13.3 months, the greatest lag between submission and approval since 2016. The PMAs were even worse, taking an astonishing 20.9 months on average.



Perhaps this last figure is not quite as bad as it seems. It is distorted somewhat by an outlier: Aveir VR, the leadless pacemaker brought to market by Abbott Laboratories after an approval process lasting six and a half years.

In fact the submission for Aveir VR was the same one that was filed for Nanostim, the leadless pacemaker developed by St Jude Medical. That device had a number of design problems, which have subsequently been ironed out. St Jude was bought by Abbott in 2017.

Medtech approvals over the past decade



Source: Evaluate

H1 2022's approvals by therapy area				
Evaluate Medtech classification	**Number of PMAs/ HDEs**	**Avg approval time (mths)**	**Number of de novos**	**Avg approval time (mths)**
Anaesthesia & respiratory	2	14.9	-	-
Cardiology	4	33.0	-	-
Endoscopy	-	-	1	4.9
General hospital & healthcare supply	-	-	1	16.0
In vitro diagnostics	2	10.3	4	17.9
Neurology	1	37.2	2	8.3
Ophthalmics	-	-	1	19.0
Orthopaedics	2	6.3	1	7.6
Patient monitoring	-	-	1	-21.1
Urology	1	18.7	1	2.5
Total	**12**	**-**	**12**	**-**
Average	**-**	**20.9**	**-**	**13.3**

Source: Evaluate Medtech.

This analysis arguably does not give a true picture of the medtech industry's marketed products, even in the US, however. Many in vitro diagnostics are sold in the US under Clia waivers, meaning the sites at which they are used are regulated, rather than the tests themselves, and the regulatory body is the Centers for Medicare and Medicaid, not the FDA. They would not be captured by this analysis.

An example is Guardant Health's Shield colorectal screening test, launched in May as a lab-developed test under a Clia waiver. This is in a large pivotal trial, however, and Guardant intends to seek FDA approval in the next year or so.

Then, of course, there are the many digital health products that also fall outside the FDA's purview. The agency does oversee certain products, such as prescription apps. But technologies such as artificial intelligence software used to detect diseases from medical images, or telemedicine interfaces, reach the market without ever troubling the FDA's staff.

This analysis of the FDA's activity is a decent benchmark for the health of the more traditional end of the device market. This is looking iffy at the moment; perhaps by the end of the year the agency's efforts to increase its device throughput will allow the situation to improve.

Venture financing holds steady for device makers

BY ELIZABETH CAIRNS
JULY 22, 2022

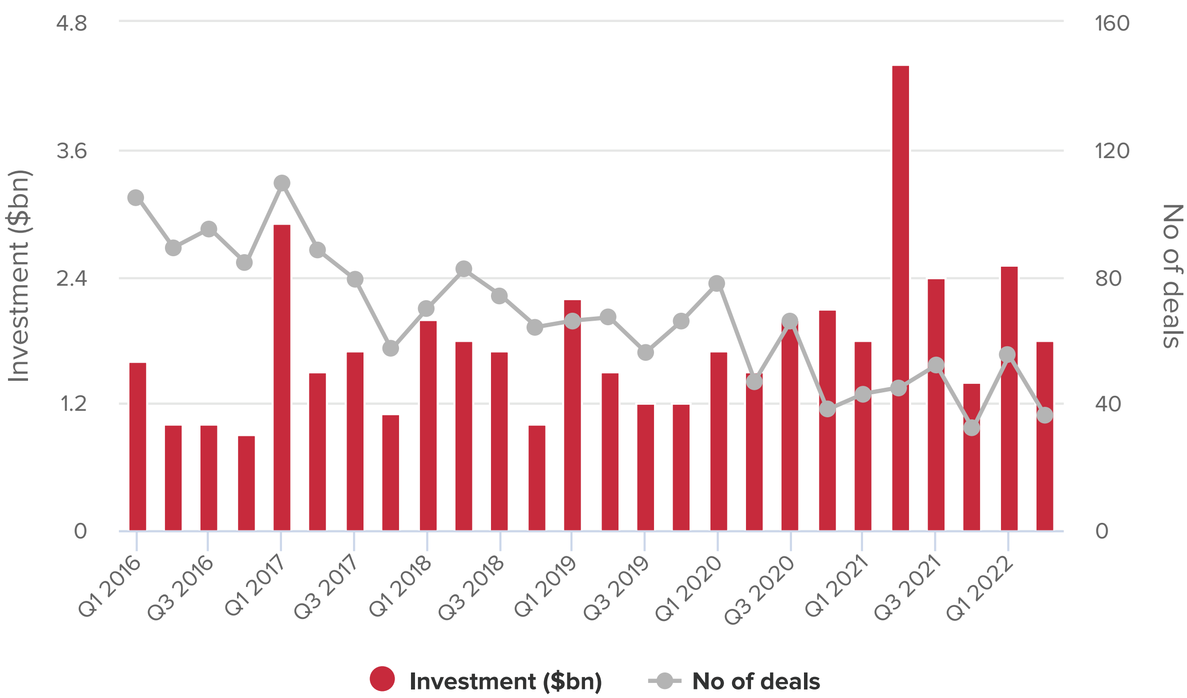
Medtech VCs have plenty of cash, which is just as well because the IPO window is shut and locked.

So far, so average. In the first half of 2022 private medical device companies raised $4.4bn in venture funding, putting the year's total on course to fall neatly between what was raised in the past two years.

The picture is very different when it comes to the other main means of raising cash available to private groups: IPOs. Only three medtechs have braved the falling markets, and the biggest such deal, the spinout of Bausch & Lomb, priced at a heavy discount.

While VCs are not throwing money at the medtech sector with the same abandon as they were a year ago, they are still backing device makers in a major way. Partly this is a consequence of the dire state of the IPO market; venture firms must fund their portfolio companies for longer than they might otherwise, as floating them is not a realistic option.

Medtech VC investment, 2016-2022



Source: Evaluate

But that perhaps does the sector a disservice. The most common investment rounds so far this year have been A and B rounds, and companies at these early stages are unlikely candidates for flotation.

While these rounds were, naturally, smaller than the sums raised in later rounds, their popularity is heartening for those who would like to see backing for early innovation.

Most common rounds in H1 2022			
Round	**Number**	**Total value ($m)**	**Average value ($m)**
Seed capital	4	89	22
A	20	431	22
B	20	956	48
C	18	1,110	62
D	11	1,009	92
E	4	278	70
F	3	115	38
Undisclosed	11	389	35

Source: Evaluate Medtech.

And much of that innovation is in the digital health arena. 2022's biggest VC tranche so far went to Biofourmis, which straddles the two main subsectors of digital medical technology – telehealth and therapeutic apps, though none of the latter have yet reached market. The $300m round allowed Biofourmis to secure two things: a unicorn valuation, and the former Medtronic chief exec Omar Ishrak as chairman of its board.

Other digital medtech groups that scored it big included Aidoc, Mindmaze and Viz AI. Mindmaze works on digital therapeutics, including a video game for stroke rehabilitation, but the other two are pursuing a technique of increasing interest to investors: the use of artificial intelligence to evaluate diagnostic images and flag those most in need of further investigation.

Top 5 VC rounds of H1 2022				
Date	**Company**	**Investment ($m)**	**Round**	**Focus**
Apr 26	Biofourmis	300	D	Digital heath
Jan 27	Enable Injections	215	C	Drug delivery
Jan 12	Noah Medical	150	B	Robotic surgery
Mar 30	BillionToOne	125	C	In vitro diagnostics
Mar 2	Saluda Medical	124	D	Neurostimulation

Source: Evaluate Medtech & Vantage.

IPOS

Only three device companies went public in the first half of 2022, and all three might well be wishing they had not.

While Bausch & Lomb was the only one of the select group to have to take a haircut upon its listing, the other two, the Chinese hospital equipment supplier Meihua and spine implant maker Tenon Medical, have lost around half their value in the few months they have been publicly traded.

H1 2022's medtech IPOs so far						
Date	**Company**	**Focus**	**Amount raised ($m)**	**Premium/ discount**	**Share price chg to Jun 30**	**Exchange**
Feb 16	Meihua International Medical Technologies	General & plastic surgery	36	0%	-47%	Nasdaq
Apr 27	Tenon Medical	Orthopaedics	16	0%	-55%	Nasdaq
May 6	Bausch & Lomb	Ophthalmology	630	-20%	-15%	NYSE

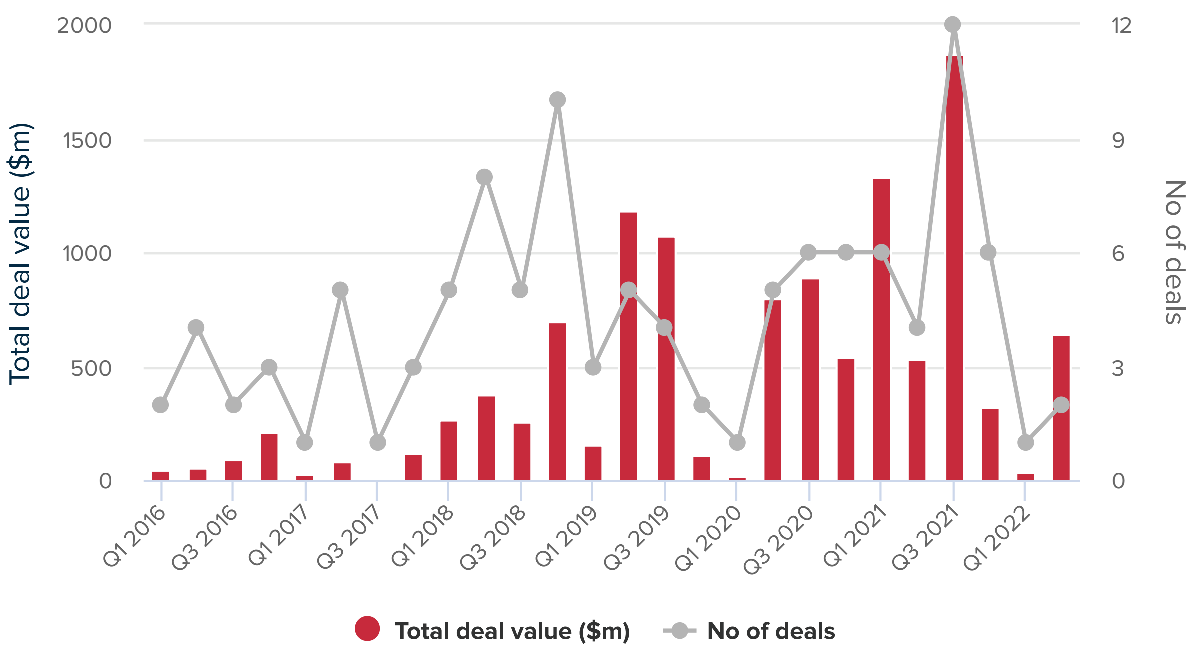
Source: Evaluate Medtech.

Remarkably there are still some groups willing to brave these choppy waters. The UK diagnostics group Virax Biolabs brought in $6.8m with its Nasdaq listing on July 20, and another AI image analysis company, Seoul-based Lunit, raised KRW36.4bn ($28m) on the Kosdaq a day later. But Virax's deal was tiny, and Lunit had to price at a discount.

The summer months often see a lull on the stock exchanges. Perhaps the atmosphere will improve when autumn arrives; then again, perhaps it will not. Medtechs seeking cash have always tended to rely more in VCs than public investors, and this will not be changing in the foreseeable future.

Medtech IPOs, 2016-2022

(excludes IPOs above $1bn)



Source: Evaluate

Big medtech's share price bloodbath

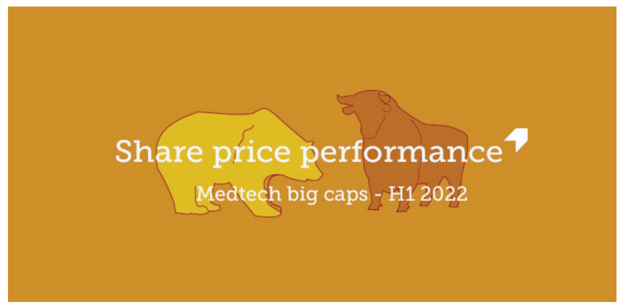
BY ELIZABETH CAIRNS
JULY 14, 2022

The worst half-year period for a decade leaves the biggest medical device companies half a trillion dollars poorer.

The first half of 2022 has been nothing short of disastrous for the largest medtech companies. All but one of the groups with a market cap greater than $10bn saw their share prices decline over the past six months, with this cohort as a whole shedding an astonishing $450bn in value.

While the wretched state of the markets in general is a major factor here, it is also clear that several of the big losers had been winners during the pandemic. The cosmetic dentistry specialist Align Technology, whose value soared as people became dissatisfied with their appearance on video calls, and Sysmex, which makes Covid tests, lead the fallers.

The half-year change in indices of listed device



makers shows just how miserable the situation is. All were up across 2021, by between 18% and 23%. Now all are down. European companies do not appear to be suffering as badly as US groups, though whether this counts as a glimmer of hope is debatable.

Stock index	% change in H1 2022
Stoxx Europe 600 health care	-6%
Dow Jones US medical equipment index	-24%
S&P composite 1500 healthcare equipment & supplies	-26%

Japan seems to be more resistant to wider market woes than US or even European stocks, judging by the sole group which managed to grow its valuation in the first half of 2022. Stock in Tokyo-listed Olympus has risen by 3% so far this year, which counts as a triumph in these dismal times.

The company's shares rose sharply in mid-May after it posted strong results for its fiscal fourth quarter and projected record net profit for the coming fiscal year. Olympus's profit more than doubled to ¥28.1bn ($216m) for the quarter that ended in March, thanks in part to a recovery from pandemic sales slumps.

And it said it could achieve net profits a third higher than this in its fiscal 2022.

ANGUISH

The rest of the big caps can only look on in envy. Align had the most torrid time of all, with its 64% fall in valuation representing the only time a big cap company has shed more than half of its worth stock since Vantage began tracking this cohort in 2013.

The reason for Align's freefall is simple: sales of Invisalign, the transparent tooth-straightening system that is the company's bread and butter, are falling. In the first quarter of 2022 the group shipped 598,835 Invisalign cases, down 5% from the final quarter of 2021. And the Q4 2021 figure was 4% below the quarter before that.

As a company whose products are used electively and largely paid for out of pocket, Align is hugely exposed to the cost of living crisis bedevilling the Western world. The same factors are partly behind the fall in the shares in Straumann, which has an Invisalign competitor called ClearCorrect.

Large cap ($10bn+) medtech companies: top risers and fallers in H1 2022			
	H1 share price chg	**H1 market cap chg ($bn)**	**Market cap at Jun 30, 2022 ($bn)**
Riser			
Olympus (¥)	3%	0.2	30.4
Top 5 fallers			
Align Technology ($)	-64%	-33.2	18.7
Sysmex (¥)	-47%	-13.7	14.9
Dexcom ($)	-45%	-22.8	29.3
Intuitive Surgical ($)	-44%	-56.3	72.0
Straumann (SFr)	-41%	-13.7	19.7

The drop in Dexcom's market cap is more to do with competitive pressure. Abbott's Freestyle Libre 3 continuous glucose monitors was approved by the FDA in late May. The device competes with Dexcom's G7 in Europe, but the G7 has yet to gain US approval.

One element that was not at play in Dexcom's falling valuation was the bid it was said to be considering for the insulin pump maker Insulet in May. The company scotched these rumours after a week or so of fevered speculation, but its shares barely shifted during this period.

While the factors affecting individual companies are interesting, they are mostly outweighed by the macro issues hitting the sector. Makers of devices that patients pay for themselves are having a hard time and will likely continue to suffer in the months to come.

Despair engulfs smaller device companies

BY ELIZABETH CAIRNS
JULY 15, 2022

The nightmare on the public markets is not confined to the bigger groups.

If the biggest medical device developers are having a hard time of it they are not the only ones. Among the medium sized medtech companies there was again only one – the blood collection specialist Haemonetics – that managed to keep its head above water in terms of share price moves across the first half.

Things are more cheerful among the small caps, in that there is the full complement of five risers. Unfortunately, there are only five. All the others lost value as the turmoil on the markets and the ups and downs of the pandemic devastated investor sentiment.

Haemonetics makes systems to aid donation of both whole blood and plasma, as well as devices to test, store and process the donated material. The group's business suffered during the pandemic but was particularly badly hit in April 2021 when the company said that CSL Plasma, a network of centres that pay donors for plasma donations, had decided not to keep buying Haemonetics' PCS2 plasma collection devices and disposable plasmapheresis kits.

A further slump came in November when the group cut its 2022 guidance. So its success so far this year has as much to do with starting from a low bar as it does with post-Covid trends, though a recovery in Haemonetics' hospital business early this year also helped.

Mid cap ($2.5-10bn) medtech companies: top risers and fallers in H1 2022			
	H1 share price chg	**H1 market cap chg ($bn)**	**Market cap at Jun 30, 2022 ($bn)**
Riser			
Haemonetics ($)	23%	0.6	3.3
Top 5 fallers			
Teladoc Health ($)	-64%	-9.3	5.4
Natera ($)	-62%	-5.4	3.4
Tandem Diabetes Care ($)	-61%	-5.8	3.8
Ambu (DKr)	-60%	-4.1	2.7
Guardant Health ($)	-60%	-6.1	4.1

The list of mid-caps whose share price fell the furthest is full of names that have previously featured in the list of risers. The telemedicine group Teladoc, which did so well in the pandemic, fell 37% in late April when it admitted in its first-quarter results that its $18.5bn acquisition of Livongo had not quite worked out as expected.

Teladoc said it had been forced to take a $6.6bn write down on the Livongo deal.

And Natera, a developer of non-invasive prenatal tests and liquid biopsies, lost a third of its value in March after the short seller Hindenburg Research issued a report questioning its sales and billing practices.

WOEFUL

Among the small caps, there was a rare case of a single product sharply moving a company's share price. Cerament G, an injectable bone graft that elutes the antibiotic gentamicin, was approved by the FDA in May as a treatment for osteomyelitis, causing the stock to jump by 49%.

Natus, meanwhile, was pushed skywards in April when private equity group Archimed bought it for $1.2bn.

It is interesting that, among the mid-size and smaller groups, a single cause for a share price move can be pinpointed in many cases. Despite this, the major reason for the fallers outweighing the risers in both number and magnitude of the changes is the woeful state of the markets as a worldwide recession looms.

Medtech shares were once seen as a safe haven compared with the vicissitudes of biotech trading. It appears, however, that in the current climate there is nowhere to hide.

Small cap ($250m-2.5bn) medtech companies: top risers and fallers in H1 2022			
	H1 share price chg	**H1 market cap chg ($m)**	**Market cap at Jun 30, 2022 ($m)**
Top 5 risers			
Bonesupport (SKr)	60%	168	490
Natus Medical ($)	38%	323	1,133
Taidoc Technology (NT$)	7%	42	648
Glaukos ($)	2%	66	2,150
IBA Group (€)	2%	8	533
Top 5 fallers			
Invitae ($)	-84%	-2,898	559
Inmode ($)	-68%	-3,529	1,862
Senseonics ($)	-61%	-714	477
Care Dx ($)	-53%	-1,258	1,143
Viewray ($)	-52%	-430	478

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