



Life Sciences Investment in the Era of COVID-19

Part 2 of 3: Public Equity

EXECUTIVE SUMMARY AND OUTLINE

The COVID-19 pandemic has reshaped each stage of the life science development and investment process. Previously, we addressed the state of venture capital and private equity investment in the life sciences. In this second installment of a three-part series, Marwood examines the appetite for crossover investment and IPOs as the latter comes off of a pronounced rebound in June and continued momentum in July, while crossover fund raise activity has been strong in July. The third installment will round out the series with considerations of end acquirers – manufacturers in the life sciences sector. The information in part 2 is broken down into the following sections:

- I. Introduction
- II. Crossover Investors
- III. IPO
- IV. Public Equity Markets

I. Introduction

As with prior recessionary periods, the life sciences market has demonstrated its resilience, even with the added burden of COVID-19. The economic ramifications of COVID-19 on public equities in the life sciences space may be more muted than the overall market basket, given the publicly-subsidized and nondiscretionary nature of healthcare coupled with the sector's role in finding solutions to the pandemic. Herein, we explore how the life sciences sector has performed relative to the pre-COVID-19 pandemic landscape of the previous year, focusing specifically on fundraising in the public equity market.

Buoyed by trends leading up to the full effects of the COVID-19 pandemic, the industry has raised ~\$80B across 1,249 transactions in the past year alone, 36% greater than the comparable period from 2018-2019 (**Figure 1**). Within the 2019-2020 period, ~57% was raised by companies completing public offerings, including follow-on financing and IPOs. While the number and total amount raised by IPO declined in the recent period by 32% and 14% respectively, follow-on funding from June 2019 – May 2020 exceeded \$35B on 274 transactions, far above the \$20B in 217 transactions from the year before. In this second installment of a three-part series, Marwood opens with a view of crossover investor activity. We then turn to examine the state of the life science IPO market, before rounding out with consideration of the overall public markets for life sciences investment.

June-May	IPO		Follow-ons		Public/other		Private		Total	
2017-2018	\$6,176	60	\$37,834	249	\$9,121	355	\$15,203	385	\$68,334	1,049
2018-2019	\$11,143	83	\$20,177	217	\$10,257	360	\$16,991	401	\$58,569	1,061
2019-2020	\$9,655	58	\$35,555	274	\$17,391	458	\$17,217	459	\$79,819	1,249

Figure 1: Biopharma capital raised, (\$M) and number of financings.¹

II. Crossover Investors

Crossover investors, those that invest in both private and publicly traded companies, often come in later and supply a substantial amount of the funding that supports a company until it goes public. Often the willingness of crossover investors to gamble on a life science company amounts to a tacit endorsement of a developer's public market prospects. Given their significance, there had been some concern earlier in the year that they may back away from life sciences companies in the current climate, as stocks became undervalued in the turbulent market. Indeed, mezzanine investors received a flat (1x) step-up from mezzanine to pre-money IPO in several public offerings in Q4 2019 and Q1 2020, negating the standard incentive to get in early at a lower price.

However, interest in crossover investment remains strong as evidenced by key funds established in Q2 and into Q3. Having traditionally backed early-stage life sciences companies, Paris-based Sofinnova Partners established a crossover fund of \$340.5M (€275M) in April of 2020 to invest in both public and private players. The fund, Sofinnova Crossover I, will dedicate 80% of its capital to Europe and 20% primarily to the US. More recently, July has seen San Francisco-based biotech investor Foresite Capital lining up a new \$650M fund. Finally, Netherlands-based Forbion is launching its first fund dedicated to late-stage opportunities. The new fund might share similar disease interests with the main funds – namely areas where pharma is more likely to look for commercial-ready assets to buy than to develop something in-house.

Recent crossover fund transactions in infectious disease may point to appetite in the space, even in a post-COVID-19 world. For example, SutroVax (STRO), developer of a pneumonia vaccine, raised \$110M in March led by RA Capital Management and Janus Henderson Investors. However, as investors looked elsewhere in recent years, many promising targets in the infectious disease space may have taken an alternative route toward federal programs, nonprofit funding and corporate support. For example, Affinivax, developer of conjugate vaccines, has funded itself through grants, The Bill & Melinda Gates Foundation and a key partnership with Astellas. Notably, Marwood is actively following developments in the vaccine space, including federal perspective on pricing and access, related federal legislation and US Department of Health and Human Services programs (i.e., BARDA, Operation Warp Speed), as well as how November election results may shape pricing and access.

¹ Based on estimates from the Biotechnology Innovation Organization BIO as of May 2020

III. IPOs

The past year, ending in May, has seen life sciences IPOs decline from 83 in the period from June 2018 - May 2019 to 58 in the same period 2019-2020 (**Figure 1**).¹ Along with the absolute number, there has been a consequent decrease in estimated funds raised from \$11.1B to \$9.6B. However, Marwood's analysis of \$50M+ life sciences IPOs reveal recent strength in the IPO market. Surprisingly, among these \$50M+ IPOs, March and April of 2020 were on par with 2019. While May demonstrated a dip in IPO activity, June came roaring back with 11 IPOs compared with 7 from the year before, bringing in close to \$2.7B versus \$1B from the year before (**Figure 2**). In addition, examination of the change in midpoint of target IPO pricing range to actual IPO price on debut, reveals a positive trend toward higher IPO price over the past 17 months. Furthermore, percent change from IPO price within the first day of trading also reveals a positive trend over the past 17 months. Notably, the first 6 months of this year saw only 1 \$50M+ IPO in the infectious disease space, Vaxcyte (PCVX), which demonstrated both a slightly higher IPO price on debut than midpoint range and ended the first day of trading up 67%.

July is on track to far exceed the number of \$50M+ IPOs versus the year before with 8 already trading and 5 planned; compared to 4 from the year earlier (**Figure 3**). However, IPO backlog in the healthcare sector stands at twice the level from the year before, according to NYSE data.² Notably, there was a reported swell in the overall US IPO backlog even prior to the pandemic.³ Whether this backlog is an artifact of the market uncertainties of the spring, continued concern over the COVID-19 pandemic's influence on the recovery or simply heightened frequency of life science IPOs will need to be watched. Marwood is closely monitoring the federal response to the COVID-19 pandemic as well as state reactions, both directly applicable to the healthcare sector and the overarching economic recovery.

As the IPO market experiences backlogs and life sciences companies seek capital, a number of alternative financing vehicles may step in to fill the void. There have been a flurry of listings by special purpose acquisition companies (SPACs), set up to buy promising yet cash-hungry targets in biotech. For example, Panacea Acquisition, a SPAC formed by EcoR1 Capital filed in June to raise up to \$125M in an IPO, while Therapeutics Acquisition Corp. (TXACU), a SPAC formed by RA Capital, raised \$118M in July. Marwood's analysis of private investment in public equity (PIPE) deals also notes PIPE activity held firm in March and, following a lull in April, recovered in May and exploded in June. Issuers in need of capital and investors looking to deploy funds nimbly are attracted to PIPE transactions because they can be done quickly and discretely without disclosure to the market until a deal is signed. Notable to the current COVID-19 pandemic, Novavax (NVAX) raised \$200M via PIPE in June. It had previously received \$388M toward a vaccine candidate for COVID-19 via the Coalition for Epidemic Preparedness Innovations (CEPI) in May. More recently, it received a massive \$1.6B from the Health & Human Services Program, Operation Warp Speed, to ramp up large-scale manufacturing of NVX-CoV2373 with the goal of delivering 100 million doses, potentially before the end of 2020.

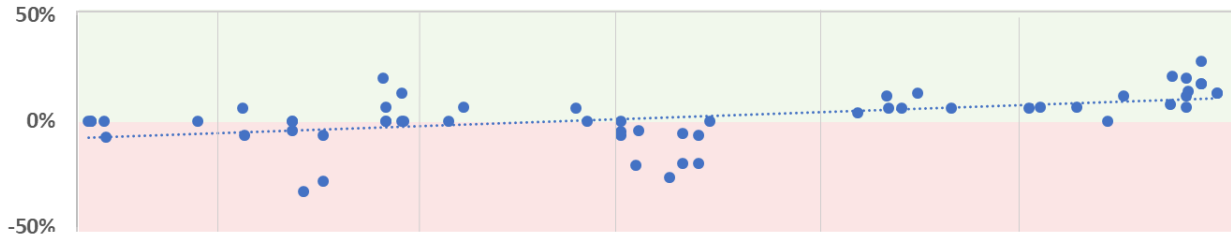
In this era, risks associated with COVID-19's negative impact on the ability to conduct even preclinical R&D as well as clinical trials, achieve manufacturing, as well as accurately gauge federal regulatory policy and the market access landscape are increasingly finding their way into IPO filings. For example, the clinical stage vaccine company SutroVax (STRO) mentions COVID-19 51 times in its IPO filing. However, this is not limited to clinical stage or infectious disease developers. Preclinical gene therapy

² New York Stock Exchange IPO backlog data, updated 7/22/2020.

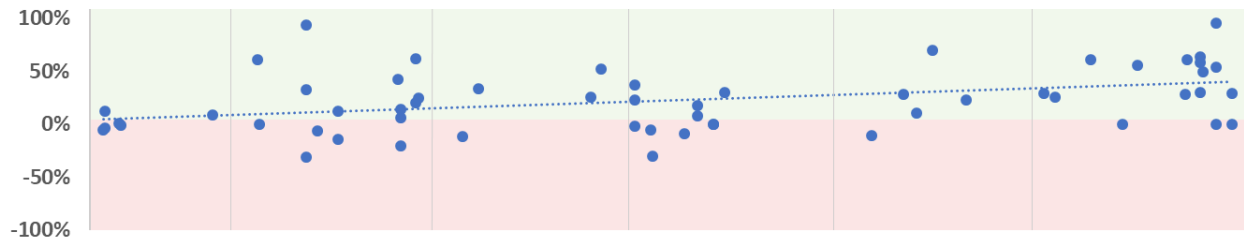
³ Franklin J and Sen A. "Swelling U.S. IPO backlog points to crowded 2020 field", Nasdaq.com 12/9/2019.

venture Generation Bio (GBIO), which raised \$230M in a June IPO, mentioned COVID-19 7 times in their IPO filing and preclinical gene therapy group Akouos (AKUS), which recently filed for a \$100M IPO, mentioned COVID-19 6 times in their S-1 filing. Marwood has been active in following the impact of COVID-19 on key players in pre-clinical and clinical development including contract research organizations (CROs) and clinical trial site management organizations (SMOs), FDA regulatory, commercial and federal payors, as well as legislative impacts on both company operations and products developed.

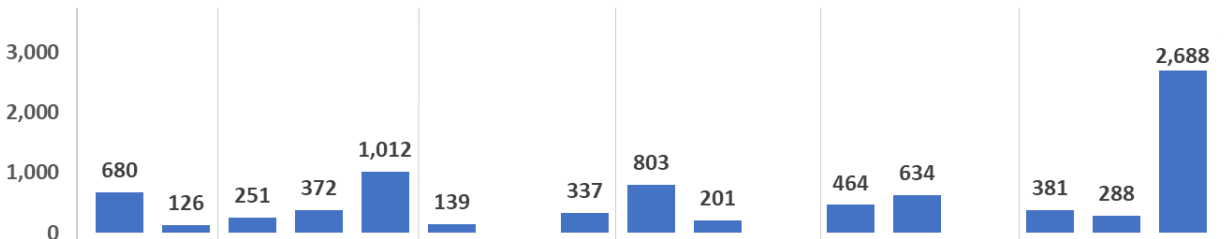
% Change, Midpoint of Target Range to IPO Price



% First Day Change from IPO Price



Biotech IPOs \$M Raised



Biotech IPOs per Month

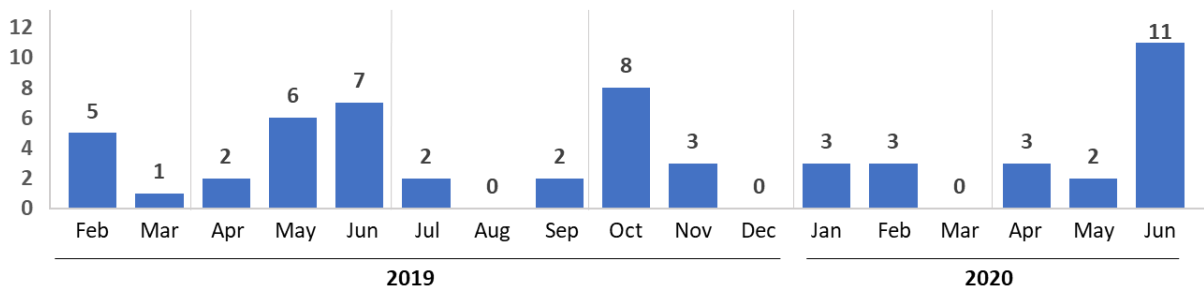


Figure 2: Life sciences IPOs 2019/2020 over \$50M. Monthly tally of percent change from midpoint of target range to IPO price, percent change of first day price from IPO price, total amount raised and the number of IPOs per month. Dotted lines represent linear trend lines.

Ticker	Company	Offer Date	IPO Size	% Change Midpoint of Target Range to IPO Price	Change in Price After First Day of Trading
ITOS	iTeos Therapeutics	7/24/2020	~100M	N/A	N/A
ANNX	Annexon	7/24/2020	~\$150M	N/A	N/A
INZY	Inozyme Pharma	7/24/2020	~\$80M	N/A	N/A
NRIX	Nurix Therapeutics	7/24/2020	~\$158.4M	N/A	N/A
ACLL	ACell	7/20-24/2020	~\$86M	N/A	N/A
BLI	Berkeley Lights	7/17/2020	\$148M	+12.8%	+297%
ALXO	ALX Oncology Holdings	7/17/2020	\$185.7M	+18.8%	+60.7%
PAND	Pandion Therapeutics Holdco	7/17/2020	\$126M	+5.9%	+0.2%
RLAY	Relay Therapeutics	7/16/2020	\$400M	+8.1%	+75.3%
RNLX	Renalytix AI plc	7/16/2020	\$78M	0%	+5.1%
NKTX	Nikarta	7/10/2020	\$150M	+9.1%	+166.1%
PSTX	Poseida Therapeutics	7/10/2020	\$150M	+6.7%	-4.1%
IVA	Inventiva S.A.	7/10/2020	\$14.40	0%	-6.8%

Figure 3: Life sciences IPOs July 2020 over \$50M. Life sciences IPOs as of publication.⁴

IV. Public Equity Markets

Biotech stocks have held up relatively well this year compared to the rest of the market, which bodes well for the above detailed financing strategies. After an initial shock to stock prices in March 2020, investment in biotech companies listed on the stock exchanges has actually increased. The Nasdaq Biotechnology Index emerged from the slump to reach a five-year high, up 13.7% since the start of the year, following a 20% rise in 2019. Year to date, among health & biotech exchange traded funds (ETFs), IBB (cap-weighted) and XBI (equal weighted) are up 13.5% and 17.6%, respectively. Comparably, the DOW is down -8.1% and S&P500 down -1.5% year to date, with only the NASDAQ up 21% for the year.

Not surprisingly, opportunities with connections to COVID-19 treatment have drawn investor interest. By mid-May alone, there were over a hundred treatments and more than a dozen vaccine candidates in human testing across the wider biopharmaceuticals industry, academic institutions and non-profits. Marwood routinely conducts strategic analysis of this landscape, hand in hand with our federal analysis. In the final installment of this three-part series, we will explore how end acquirers in biopharma and medtech have fared and responded to COVID-19, both from a public markets and M&A perspective.

⁴ Based on IPO listings in the Biopharmacatalyst IPO Calendar.

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