

Biopharmaceutical Sector

Update on the Financing and Strategic Environment

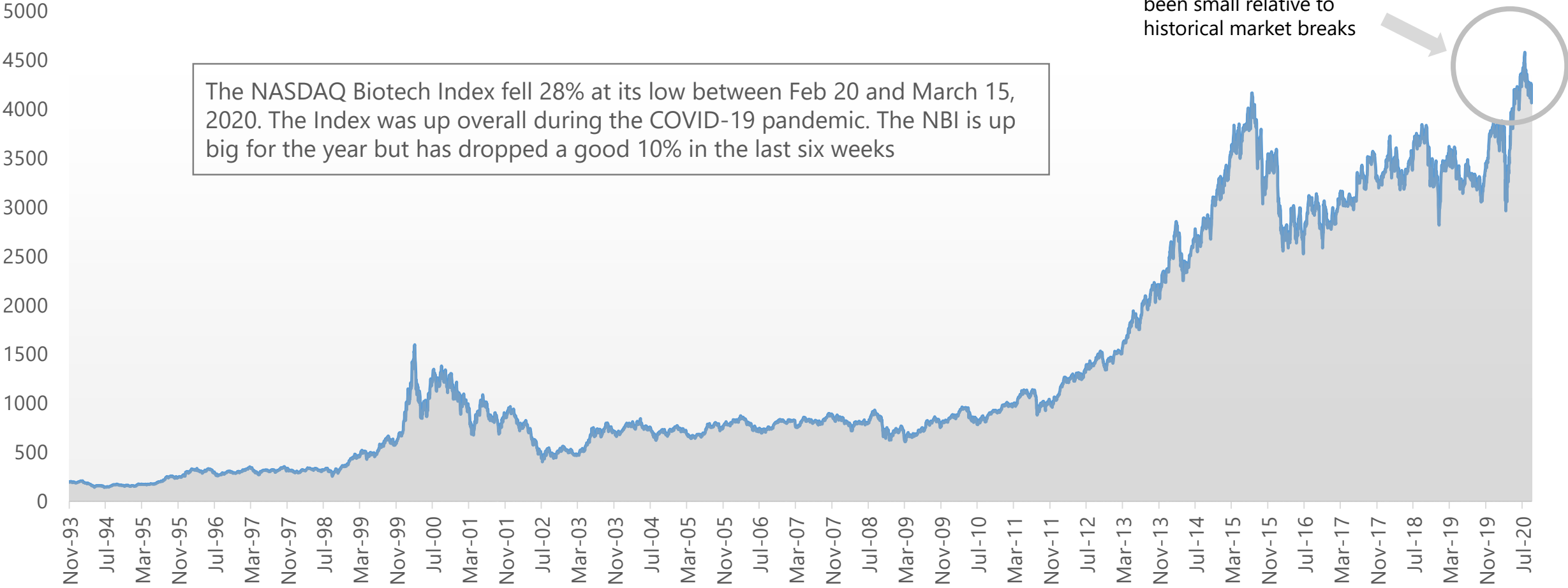
September 16, 2020

Summary of Key Points

- Despite the COVID crisis, the NASDAQ Biotech Index is trading near all-time highs
 - Generalist investors have moved into the sector seeking upside decorrelated from the economy
- The IPO market was on fire during the last two quarters, raising over \$8 bn since April
 - Currently investors look to be stepping back to wait out the US election and perhaps year end
- In terms of follow-ons, each month from May 2020 to August 2020 saw more activity than in any month in the last 30 years.
 - In total, \$41 billion was raised on U.S. exchanges in biopharma
 - More recently, the pace of activity is down by 60%, although activity levels are higher than normal
- On the biopharma M&A front, deal activity has been very slow this year, reflecting an industry that has been largely focused on the COVID-19 pandemic, and perhaps some “sticker shock” from high valuations
 - Both deal count and dollar volume of transactions remain at the lowest point in recent memory
 - We do expect to see M&A activity increasing in the coming months as companies seek to deploy significant excess capital to access innovation, realign portfolios and seek economies of scale / cost savings

NASDAQ Biotech Index Near Record Highs

NASDAQ Biotech Index, 1993 to 2020



Source: Data from NASDAQ

Biotech Sector Performance

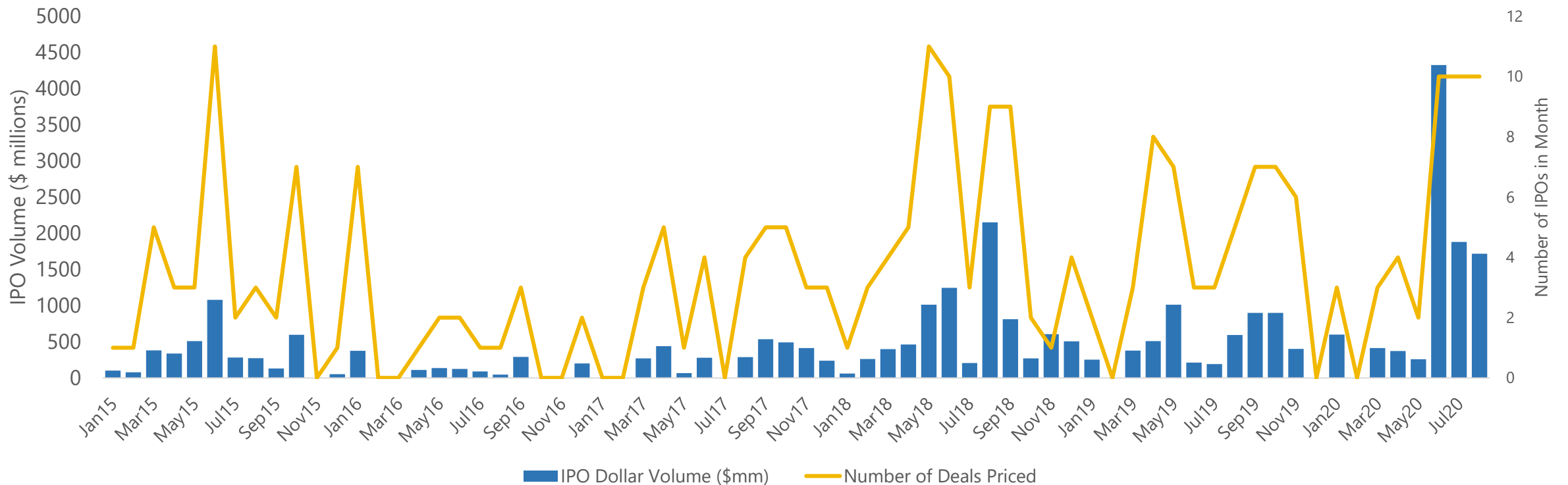


Source: Data from CapitalIQ

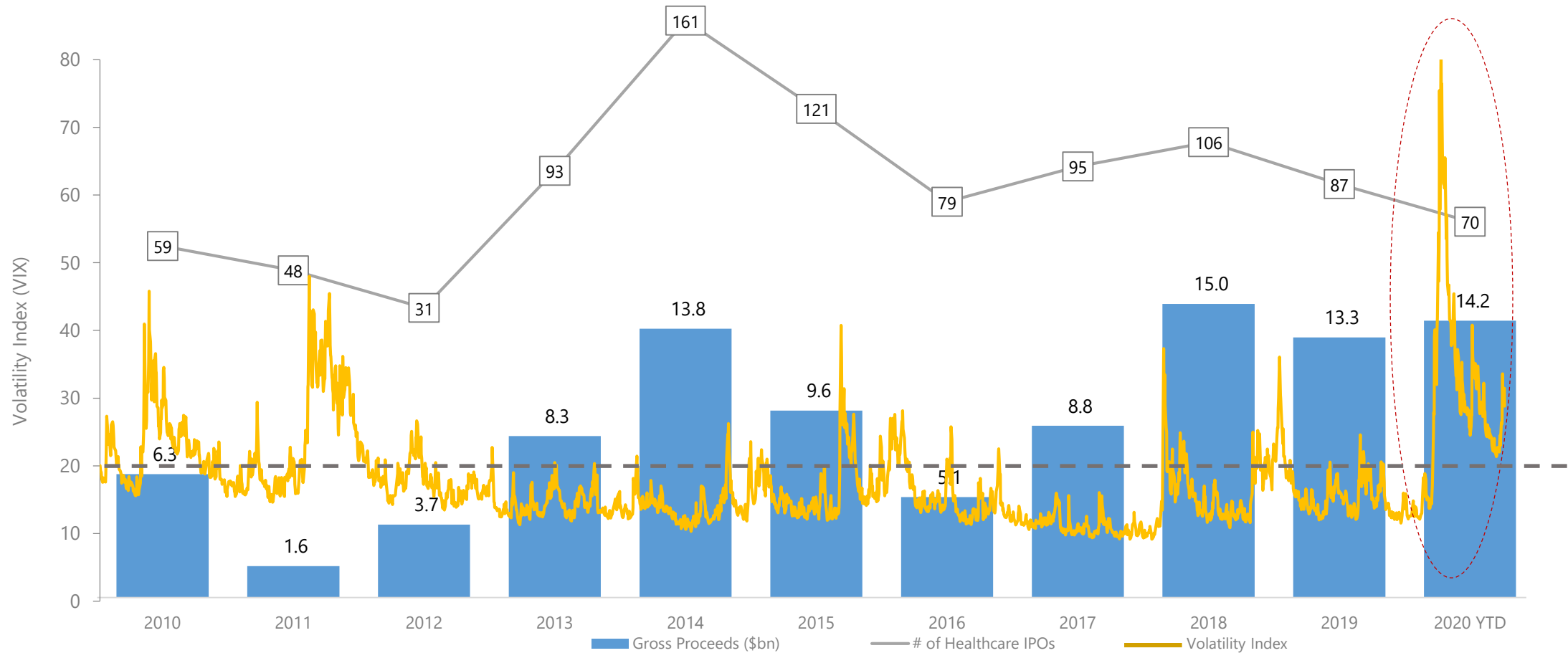
Biopharma IPO Activity, 2013-2020 (US Exchanges)

There have been four IPO's in Mar 2020, one in April and none in May. Then, there were 30 IPOs for all-time record volume in June to August 2020. In recent weeks, IPO activity has come to a screeching halt.

NASDAQ / NYSE Biopharma IPO Volume, 2015-2020



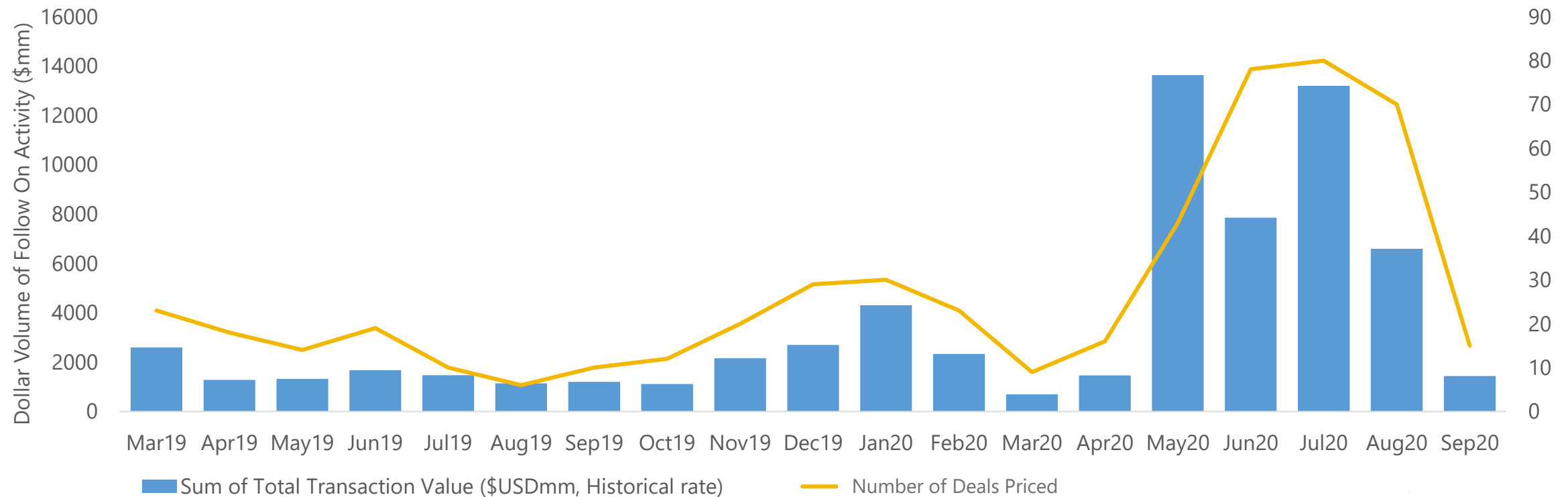
IPO Issuance Surged Despite Record Volatility Levels



Biopharma Follow-On Equity Activity, Mar 2019-Sep 2020

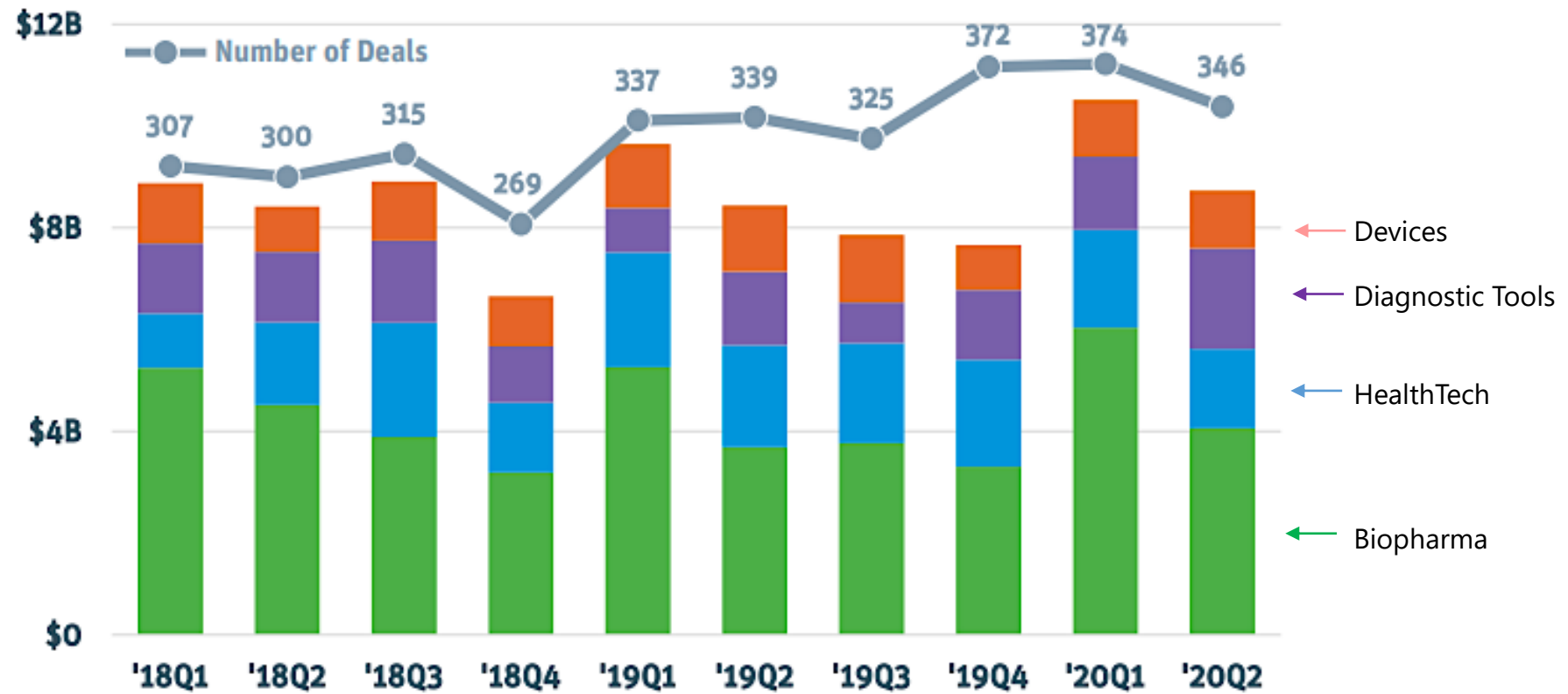
Each month from May 2020 to August 2020 saw more follow-on activity than in any month in the last 30 years. In total, \$41 billion was raised on U.S. exchanges in biopharm. In just four months. The pace of activity is down by 60%. However, activity levels are higher than normal even in this month.

U.S. Biopharmaceutical Follow-on Activity, Mar 2019 - Sep2020 (ytd)



1H20 Largest Ever Two Quarter Venture Financing

Venture Financings at All-Time Highs

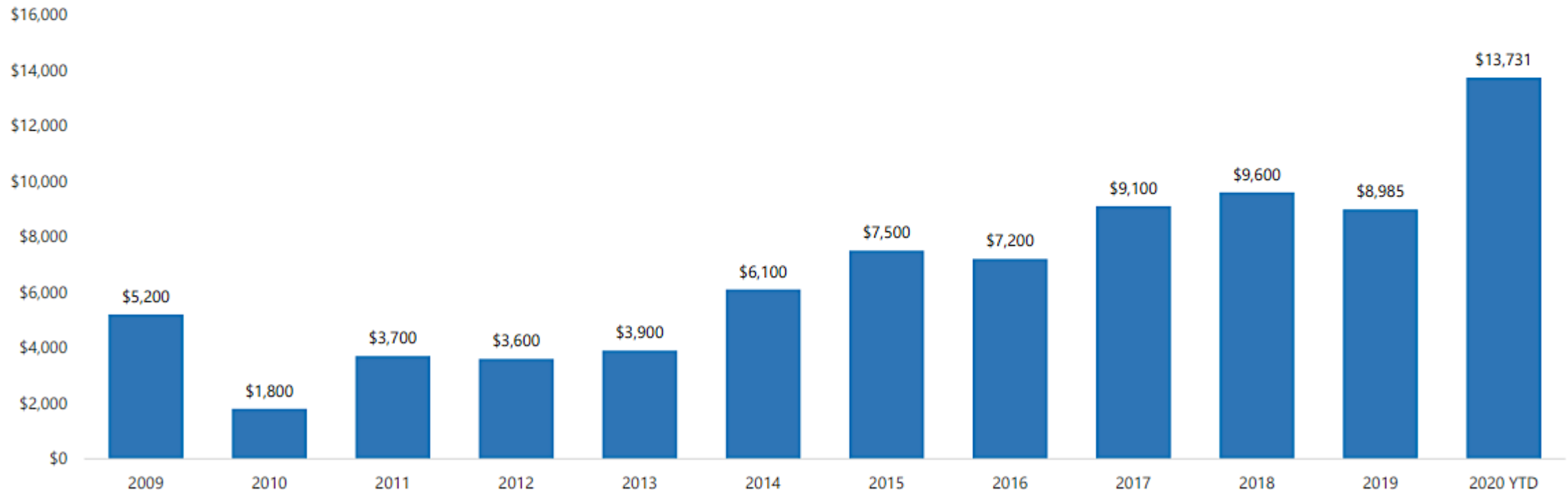


Source: SVB and Pitchbook

Wall of Money Flowing to the Biopharma Venture Sector





The pace of new venture capital raised for biopharma investments has been at \$1 billion a week through mid-April 2020 (or \$25 million a business hour). This is by far the highest volume period for fresh venture capital in our memory.

Healthcare Venture Capital Funds - Amount Raised \$mm, by Year



Top 20 Biopharma Venture Investors by Firepower

Investor	Firepower (\$bn)	Last Raise
 Blackstone	\$3.4	Jan 2020
DEERFIELD	\$3.2	Apr 2020
 OrbiMed <small>Healthcare Fund Management</small>	\$1.8	Sep 2017
 ARCH Venture Partners	\$1.5	Apr 2020
 南豐集團 <small>NAN FUNG GROUP</small>	\$1.5	Evergreen
 VIVO <small>CAPITAL</small>	\$1.4	Oct 2019
 HBM Partners	\$1.4	Public Fund
 novo holdings <small>Investors in life science</small>	\$1.2	Evergreen
 SoftBank	\$1.2	Dec 2018
 QIMING <small>VENTURE PARTNERS</small>	\$1.1	Apr 2020

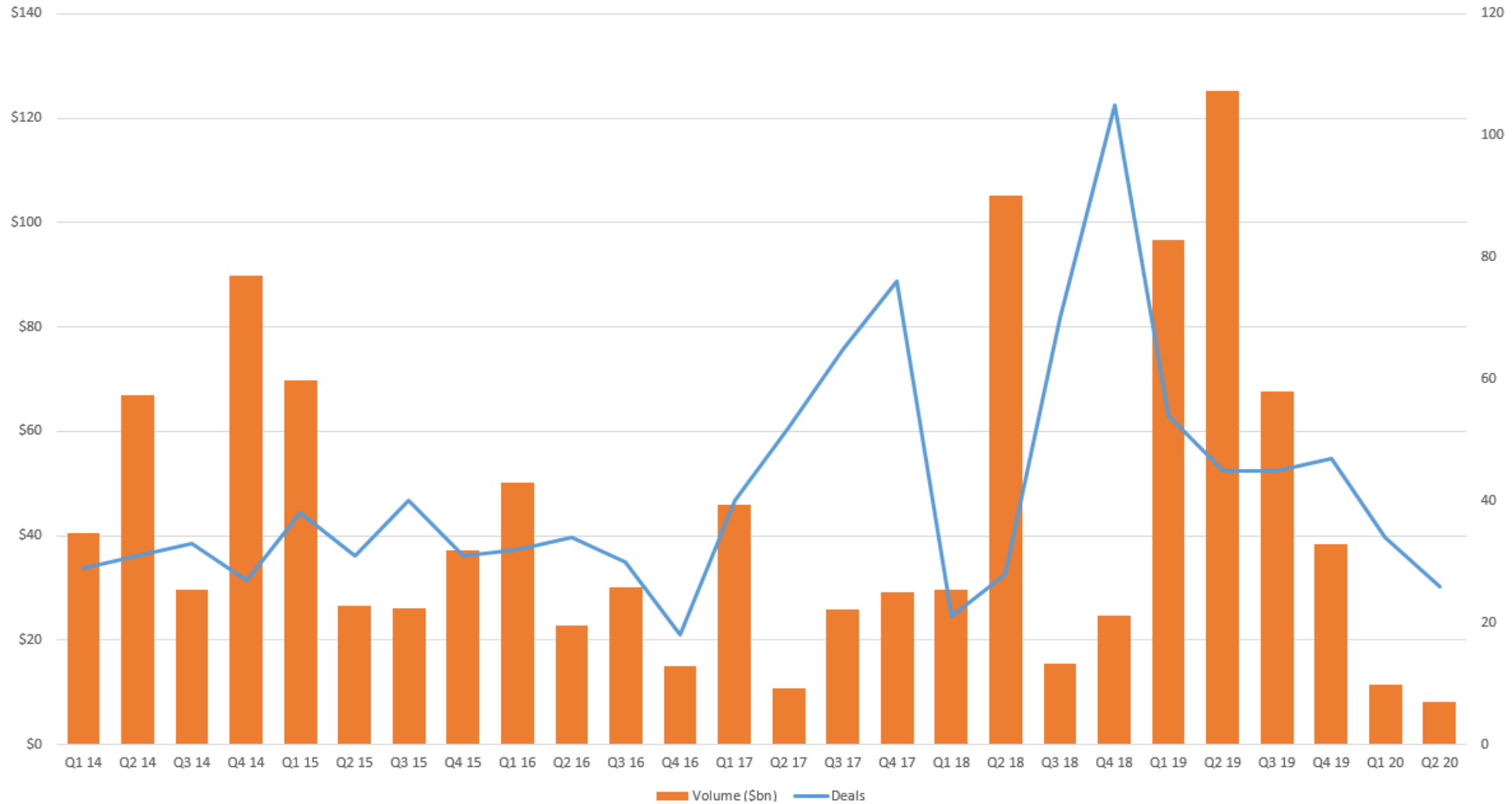
Investor	Firepower (\$bn)	Last Raise
 Flagship Pioneering	\$1.1	Apr 2020
 Syncona	\$1.0	Public Fund
 GENERAL ATLANTIC	\$1.0	Apr 2018
INVUS	\$1.0	Evergreen
 NF	\$1.0	Evergreen
 UPMC <small>LIFE CHANGING MEDICINE</small>	\$1.0	Jan 2020
 Viking <small>Global Investors LP</small>	\$1.0	Evergreen
 G/	\$0.9	Evergreen
 BainCapital <small>Life Sciences</small>	\$0.9	Jun 2019
Cormorant Asset Management	\$0.9	Feb 2019

Other Funds with \$300m or More of Biopharma Investment Firepower





















Our database counts \$72 billion in venture investment firepower today. We should see more than \$10 billion in spend on biopharma venture investments a year in the future. This would be a significant increase from levels of recent years.



Pharma M&A Activity was at an All-Time High Pre-COVID



Top 10 Pharma and Biotech M&A Transactions 2020 YTD

Target	Acquirer	Transaction Value (US\$bn)
 Momenta	 <i>Johnson & Johnson</i>	6.4
 FortySeven	 GILEAD	5.0
 PRINCIPIA BIOPHARMA	 SANOFI	3.7
 aimmune THERAPEUTICS	 Nestlé HealthScience	2.1
 CORVIDIA	 novo nordisk	2.1
 PORTOLA	 ALEXION	1.8
 ARCHER	 INVITAE	1.4
 Dermira	 <i>Lilly</i>	1.3
 THEMIS	 MERCK	1.1
 CerSci	 ACADIA Pharmaceuticals	0.9

M&A Should Accelerate in the Coming Months

- Traditionally, there have been three key drivers of Pharma M&A
 - Access to innovation
 - Portfolio realignment, such as after a patent cliff or key pipeline failures
 - Economies of scale / cost pressures
- In the early days of the pandemic's outbreak, pharma companies were reluctant to engage in M&A as they focused on COVID solutions as well as the impact on their overall business
- Going forward, however, we expect M&A demand to accelerate from these low levels
- The top dozen pharmas are estimated by McKinsey to have \$170 bn in M&A firepower
 - \$76 bn in excess cash plus \$94 bn in unused debt capacity
- Also, major pharmas have historically returned up to one-third of available cash to shareholders through share buybacks
 - During the COVID crisis, this may be unlikely to continue for political, economic and strategic reasons, leading to a reallocation of capital for investment in strategic and/or opportunistic acquisitions

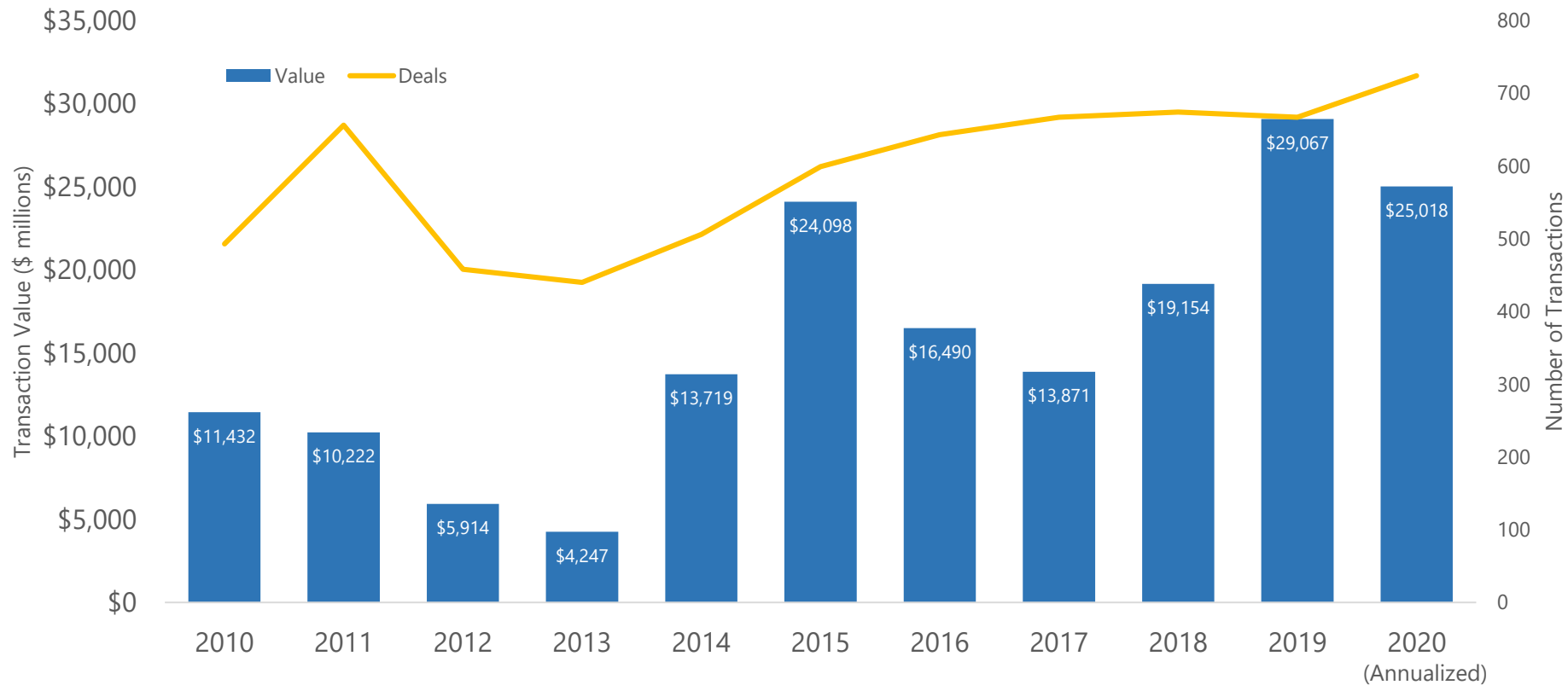
Predictions for M&A Focus

We have spoken to the great majority of large pharma acquirors in the last few quarters about their M&A “wish lists” and intentions. Discussions in the last month have confirmed that these interests remain, if anything, stronger today. Based on these discussions our predictions for biopharma M&A are as follows:

- 1 High M&A volume in **precision oncology** likely
- 2 High M&A volume in novel therapeutics for **genetic disease** likely, especially in neurology
- 3 Medium M&A volume in **immuno-oncology** with a focus on novel targets and game-changing cell therapy
- 4 Medium M&A volume in **immunology, eye, kidney and neuro**
- 5 Other therapeutic areas will see less volume
- 6 Late stage assets with **differentiation and outstanding efficacy** against real medical need always in demand

Annual Worldwide Pharmaceutical Licensing Activity

Volume of Pharmaceutical Industry License Deals Per Month
All License Types, 2010-2020



← Unlike the M&A market, licensing deal count in 2020 is at a record level and dollar volume is not far behind. We believe that this reflects long-term secular trend of growth of the sector and associated transaction activity rather than anything remarkable about 2020 itself.

Notes/Sources: BioPharm Insight data. We extrapolated 2020 volume for the for period Jan 1 to May 25 out to the full year. Deal value is estimated as the sum of the upfront payment plus 25% of all other milestone payments.

Thank you

