

J.P.Morgan

Biopharma and Medtech Deals and Venture Outlook

Midyear Outlook - July 2022

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Executive summary

Life sciences deals and funding are back to pre-2020 levels

Biopharma and medtech dealmaking continued to see declines across its subsectors in the second quarter of 2022. This follows years of record-breaking activity in venture, licensing, IPO and M&A. Licensing and venture numbers are back down to mid-2019 levels—wrapping up two years of rapid deal and funding activity—though still near the top of the five-year trend.

Here are a few highlights our midyear outlook uncovers:

- **Biopharma and medtech venture:** \$5.3 billion was invested into biopharma and \$7.1 billion into medtech in the second quarter, both tracking downward from the 2021 peak but still near the top of the 2017 to mid-2020 range.
- **Licensing partnerships:** \$2.9 billion upfront and \$22.7 billion in total announced value across 130 biopharma partnerships. Total upfront cash and equity terms tracked higher as dealmaking turned to out-licensing more mature pipeline programs.
- **IPO and M&A:** Both were the lowest activity across the five-year trends for biopharma and medtech in the second quarter of 2022.
- **Advanced therapies and manufacturing:** Contract development and manufacturing remained the most active subsector in medtech with greater shifts to cell- and gene-therapy programs in biopharma.

What does this mean for the rest of 2022?

- **PIPEs and later-stage rounds** will likely continue to see an uptick in activity as private funds still need to deploy capital—now factoring tight IPO and public markets and a smaller cohort of advanced companies.
- **Equity market** will likely support existing public companies for catalyst-driven financings on the back of strong data readouts.
- **Out-licensing major programs** to attract larger deal terms despite shareholders and management eagerness to retain core asset development in house.

At J.P. Morgan, we have a team of relationship bankers and specialists dedicated to the life sciences and healthcare sectors. We believe deeply in the pivotal contributions these entrepreneurs add to society, shareholders and employees alike.

Regardless of the size or stage of your company, we're committed to your success. We're prepared and equipped to help you meet your strategic, financial and technical objectives.

Thank you for taking the time to read this report. We look forward to supporting you.

Sincerely,
Kathryn McDonough
Co-Head of Healthcare, Commercial Banking
J.P. Morgan

Parameters

Biopharma companies are defined as firms developing therapeutics and technology platforms engaged in drug discovery, clinical R&D and commercialization. Medtech companies are defined as firms developing medical devices, diagnostics, digital health therapeutics and research tools. Therapy areas, development stages and modalities are segmented per the DealForma database.

Financials are based on disclosed figures curated by DealForma. Multiple tranches of the same Series are counted as one together.

Data as of 7/7/2022

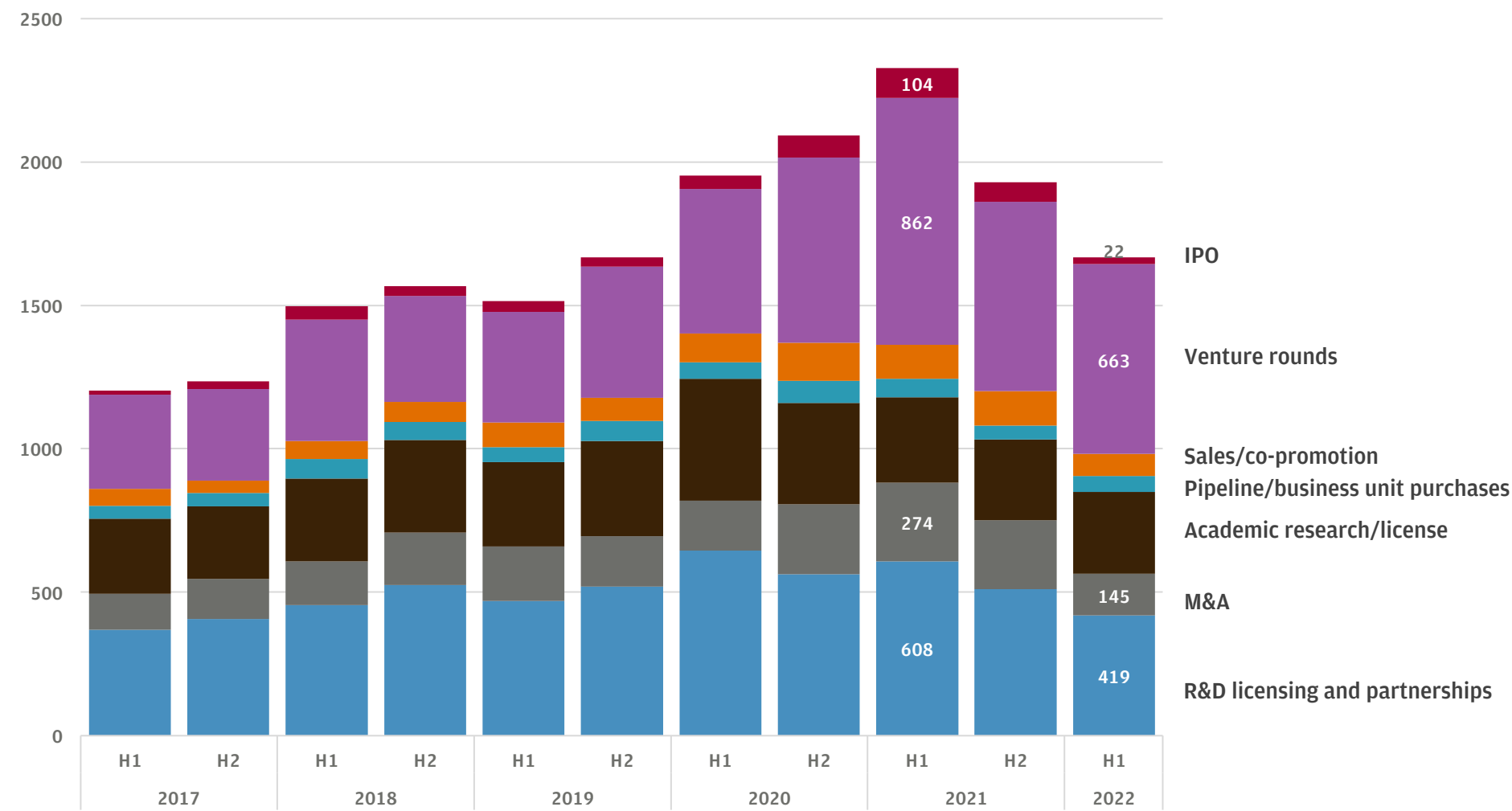
Deal flow across all healthcare and life sciences continued downward from the peak

Biopharma and medtech partnership and fundraising activity was down again for the first half of 2022. Total transaction volume settled to 2019 levels.

- 1,667 total transactions across venture rounds and IPOs, deals and M&A in the first half of 2022.
- 419 biopharma and medtech licensing partnerships were signed.
- 663 venture rounds across biopharma and medtech, down from the 862 peak in funding rounds in the first half of 2021.
- 22 new IPOs were filed in the first half of 2022 compared to 104 at the peak in 2021.
- 145 M&A deals across healthcare and life sciences in the first half of 2022.

Source: DealForma.com database
Financials based on disclosed figures. Data through 7/7/2022.

Biopharma and medtech deal flow: Total number of deals



Biopharma licensing and M&A

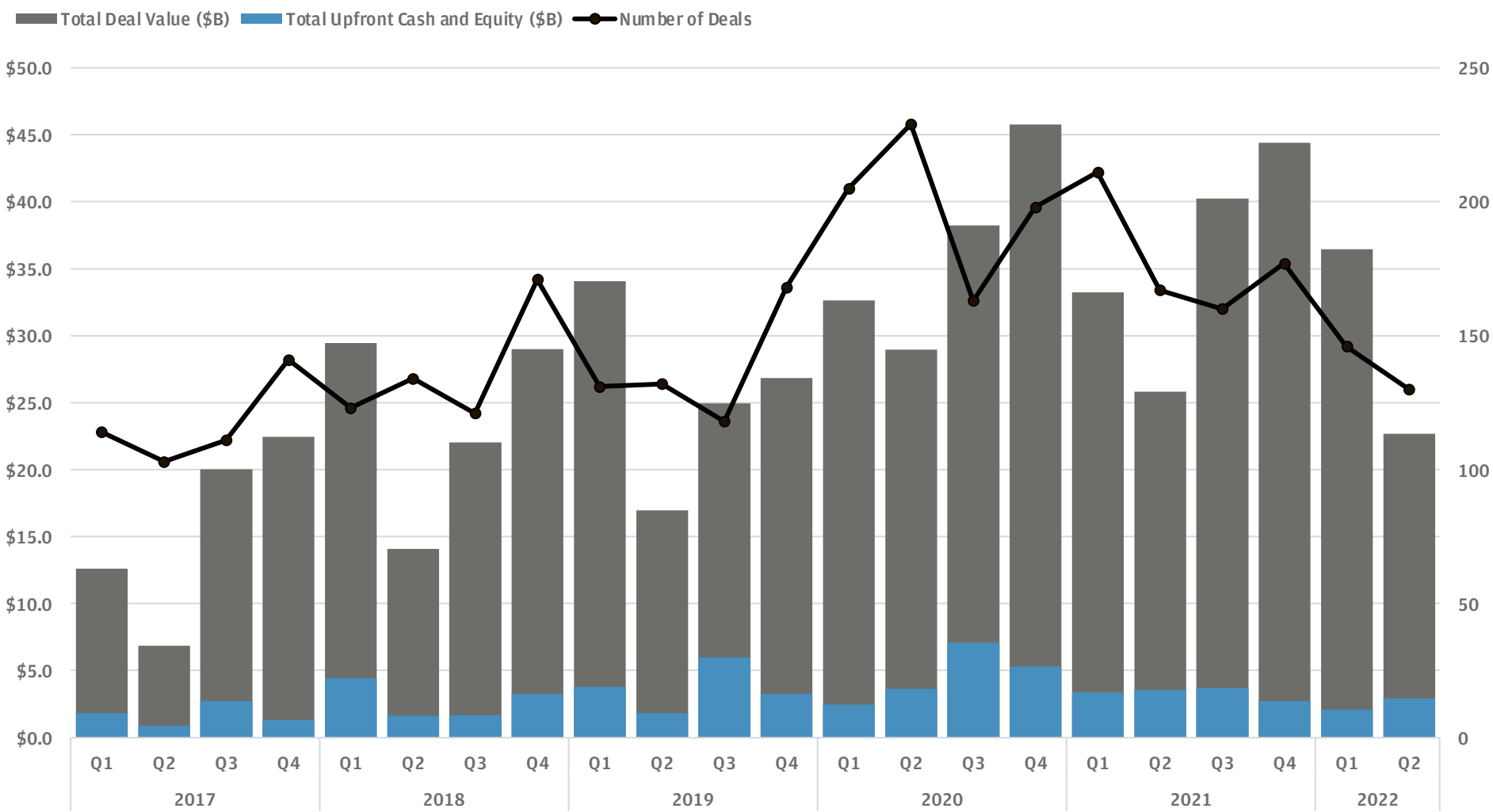
Biopharma licensing upfronts recovering despite fewer deals and smaller total deal values

Quarterly, biopharma R&D licensing partnership activity saw fewer deals and smaller total announced deal values. Total upfront cash and equity terms, however, tracked higher as dealmaking turned to out-licensing more mature pipeline programs.

- 130 biopharma R&D licensing partnerships were signed in the second quarter of 2022, down from 146 in the prior quarter.
- \$2.9 billion in total upfront cash and equity on fewer deals for licensing therapeutics and discovery platforms, up from \$2.1 billion in the first quarter.
- \$22.7 billion in total announced deal values in the second quarter, down from \$36.5 billion in the first quarter of 2022.

Source: DealForma.com database
Financials based on disclosed figures. Data through 7/7/2022.

Biopharma therapeutics and platforms: R&D partnership/licensing totals (\$B) and number of deals

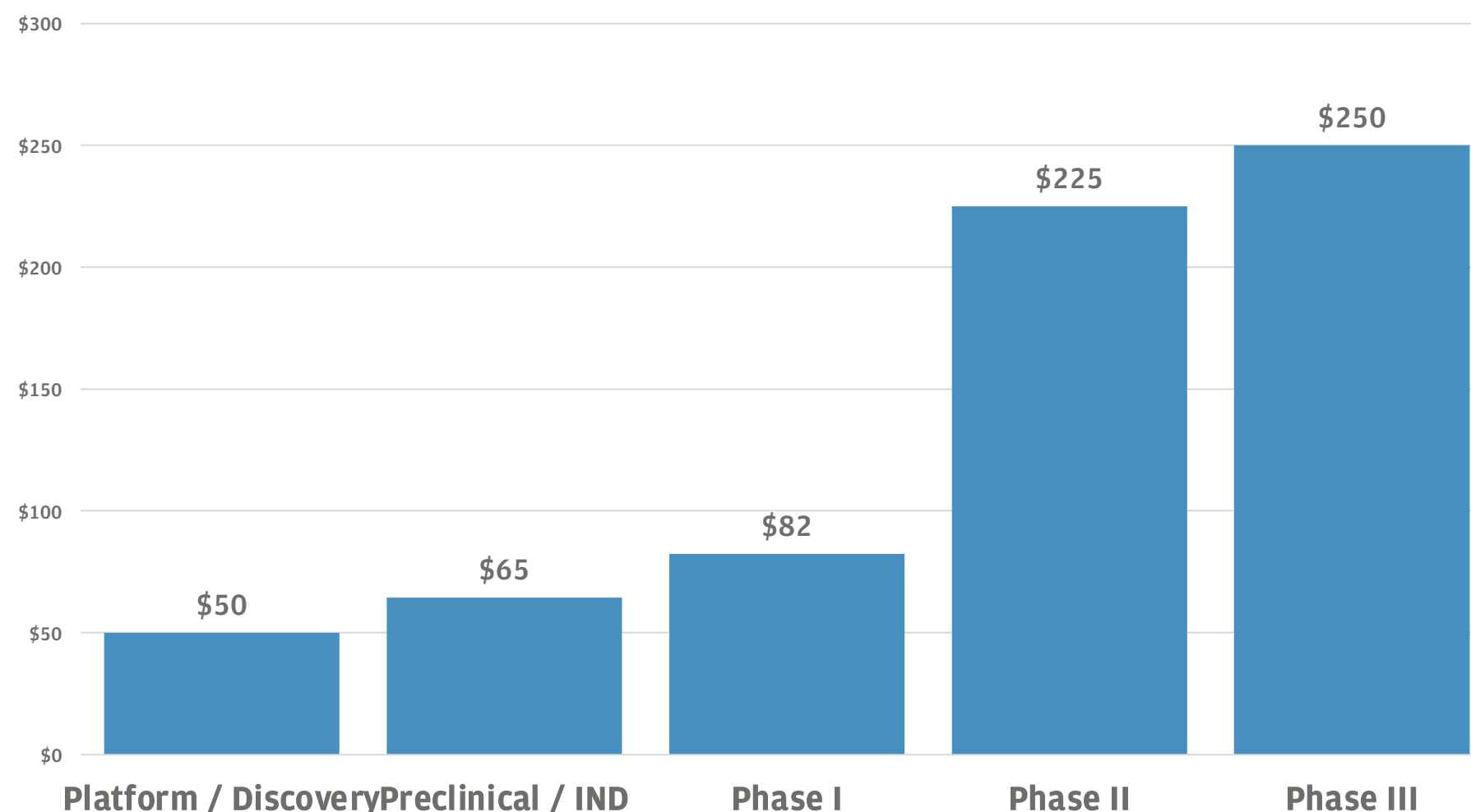


It pays well to develop into Phase II before out-licensing to big pharma

Upfront cash and equity payment terms are typically larger as programs are developed further into the clinic before out-licensing. Median upfront amounts can see a large jump up for Phase II programs when a large-cap biopharma (\$50 billion+) is the in-licensing partner.

- 174% higher median upfront cash and equity for Phase II programs over Phase I when large-cap biopharma is in-licensing over the past five years.
- Smaller increase for Phase III median upfronts for individual deals. Phase III assets, however, are often licensed multiple times for different territories and fields of use summing to greater total value.

In-licensing by big pharma: Median upfront cash and equity by stage at signing, 2017-2022 YTD (\$M)



Source: DealForma.com database
Financials based on disclosed figures. Data through 7/7/2022.

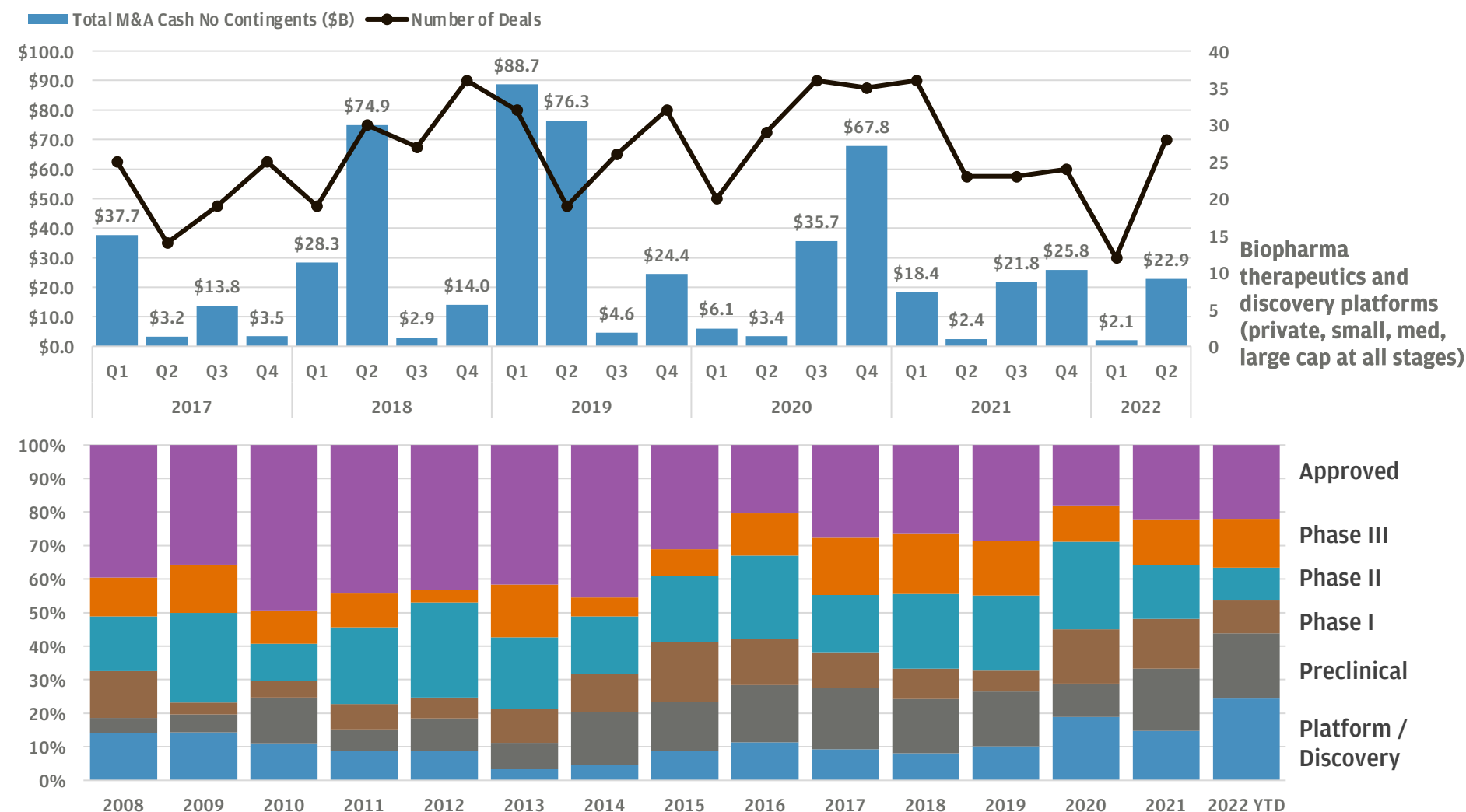
Biopharma M&A picked up in the second quarter with more early-stage acquisition targets

Biopharma merger and acquisition activity saw a bump in deal activity, mainly in June 2022, in part due to lowered public valuations. M&A activity is still focused on smaller, early-stage biopharma contributing smaller individual deal values to the quarterly total.

- 28 M&A transactions for biopharma therapeutics and platform companies were announced in the second quarter of 2022, higher than recent quarters.
- \$22.9 billion in total M&A upfront cash and equity for biopharma companies for the second-highest quarterly total since the beginning of 2021.
- 20% of recent acquisition targets were still at platform and discovery stages followed by another 20% at preclinical stage.

Source: DealForma.com database
Financials based on disclosed figures. Data through 7/7/2022.

Biopharma M&A: Total upfront value and share of target company stages at acquisition



Biopharma venture highlights

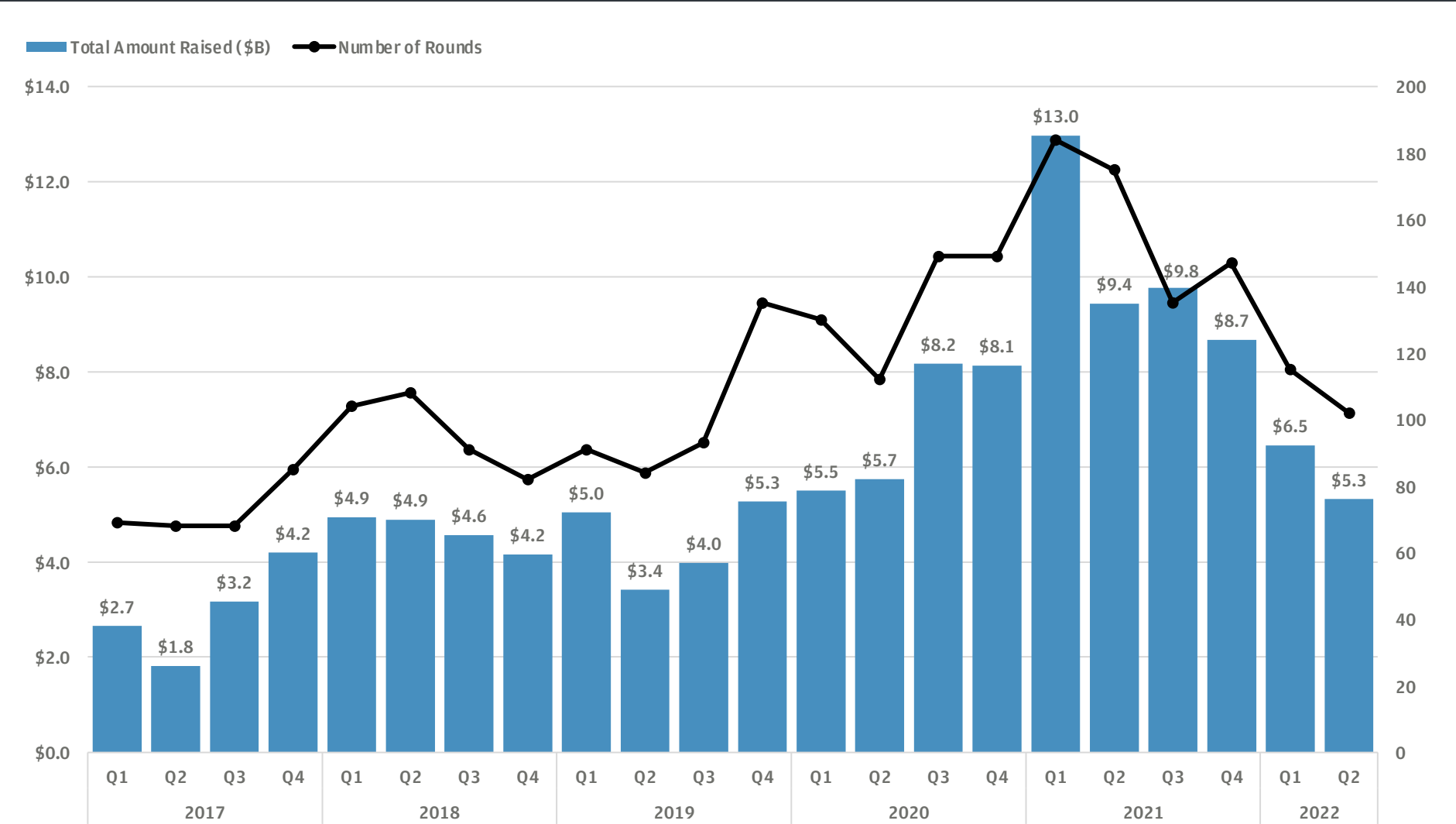
Biopharma venture investment activity is back to Q4 2019 levels; still good over five years

Quarterly biopharma venture investment activity continued to track downwards from 2021’s first quarter peak. Dollar volumes, however, are still near the top of the 2017 to mid-2020 range with investors continuing to announce record new funds.

- \$5.3 billion was invested in private funding rounds in the second quarter of 2022.
- 102 rounds were raised, fewer than in previous quarters after the peak in the first quarter of 2021.

Source: DealForma.com database
Financials based on disclosed figures. Data through 7/7/2022.

Biopharma therapeutics and platforms: Venture totals (\$B) and number of rounds



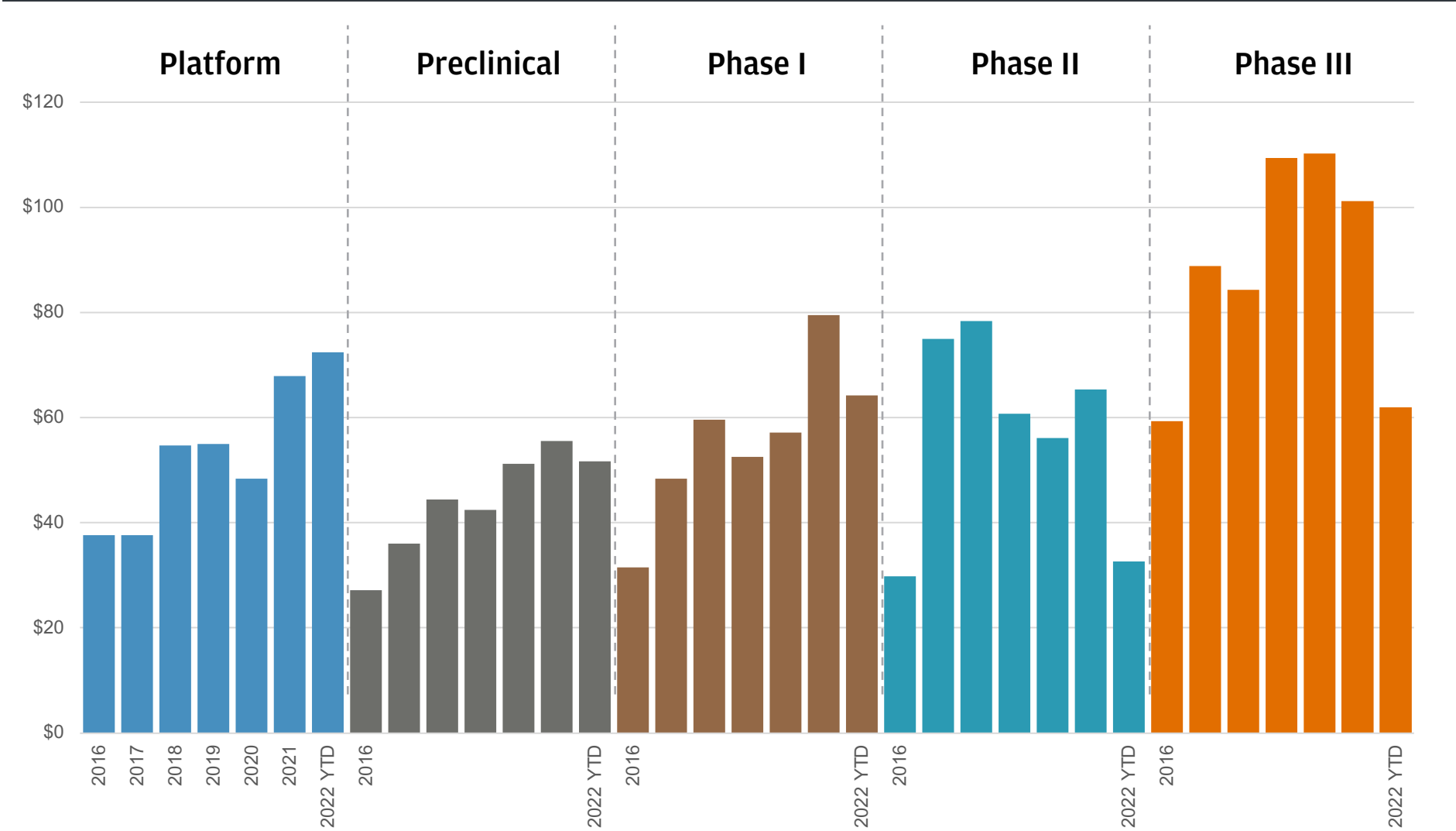
Platform and discovery-stage biopharma venture round averages continued to increase

Platform and discovery-stage biopharma companies are seeing larger venture round averages, posting the highest among companies with more advanced pipeline programs.

- \$72 million average venture round through the second quarter of 2022 for platform and discovery-stage biopharma companies.
- 2022 year-to-date increase in platform company venture round averages despite declines elsewhere across the pipeline.

Source: DealForma.com database
Financials based on disclosed figures. Data through 7/7/2022.

Biopharma therapeutics and platforms: Average venture rounds by company stage



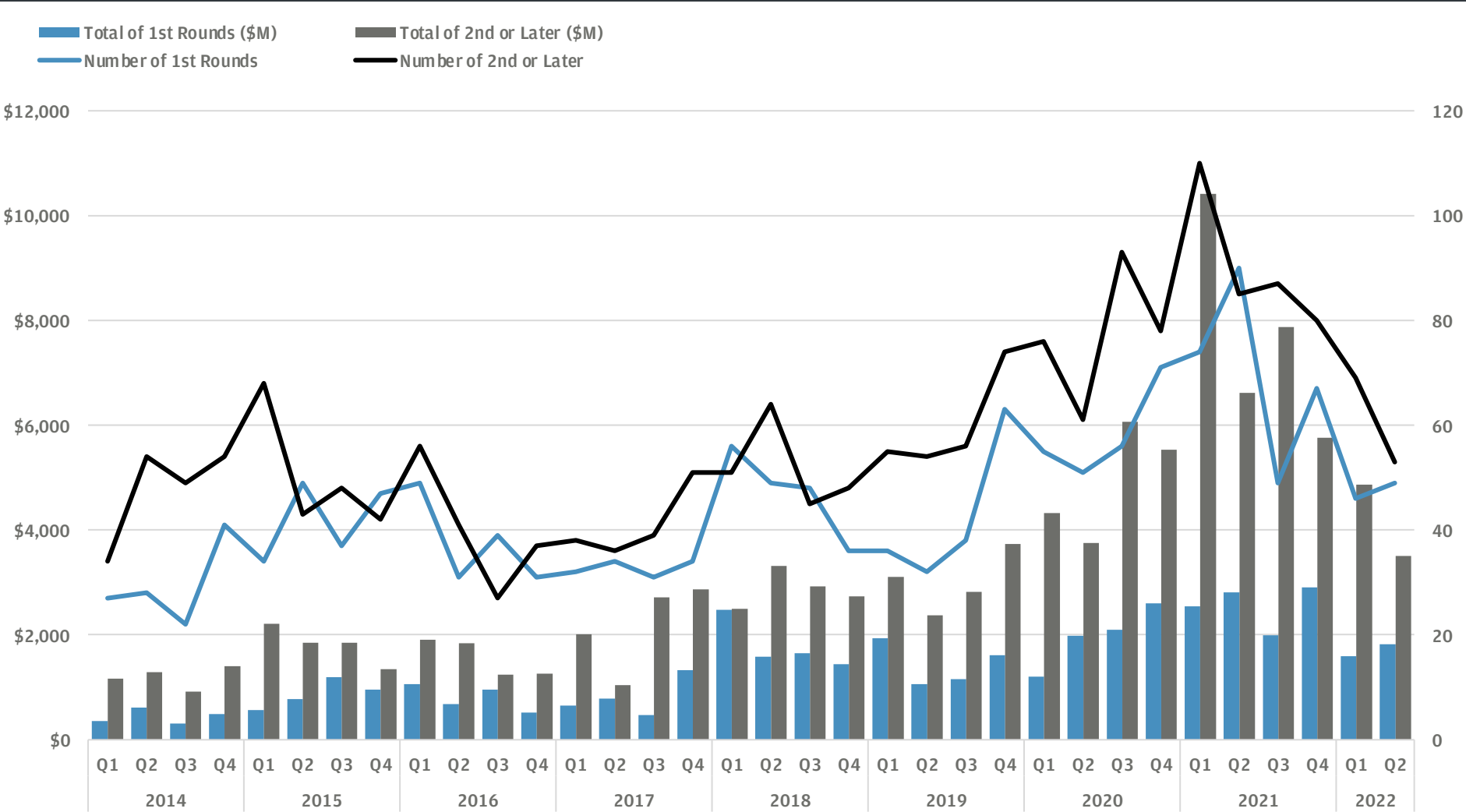
Newco investments: First round activity is holding steady

Biopharma companies raising their first seed and Series A rounds saw a small uptick in activity in the second quarter of 2022, despite a continued slowdown in overall venture activity.

- 49 Seed and Series A rounds totaling \$1.8 billion into biopharma companies in the second quarter
- 53 rounds totaling \$3.5 billion in later Series

Source: DealForma.com database
Financials based on disclosed figures. Data through 7/7/2022.

Biopharma therapeutics and platforms: 1st rounds and later venture totals



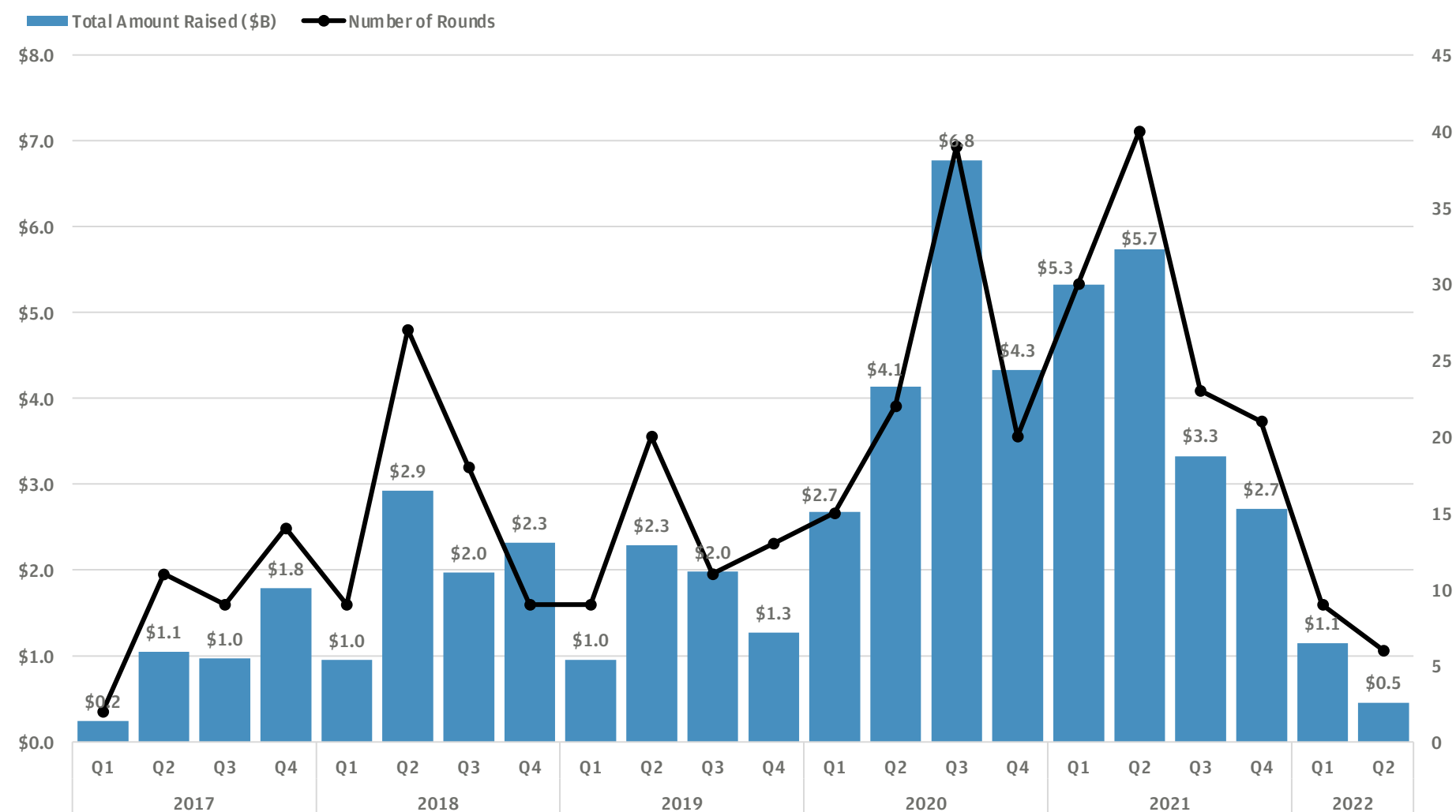
Biopharma IPO activity returned to early 2017 levels, when the window was first opening

Biopharma company IPO activity dropped to early 2017 levels in the second quarter of 2022 as the number of new filings and IPO completions was the smallest in the last five years.

- \$500 million in six newly-filed and completed IPOs in the second quarter of 2022.
- Recent biopharma IPO filers have more advanced development pipelines at announcement versus companies raising in the last two years.

Source: DealForma.com database
Financials based on disclosed figures. IPOs by first filing date. Data through 7/7/2022.

Active & completed IPOs in biopharma therapeutics and platforms



Medtech licensing and M&A

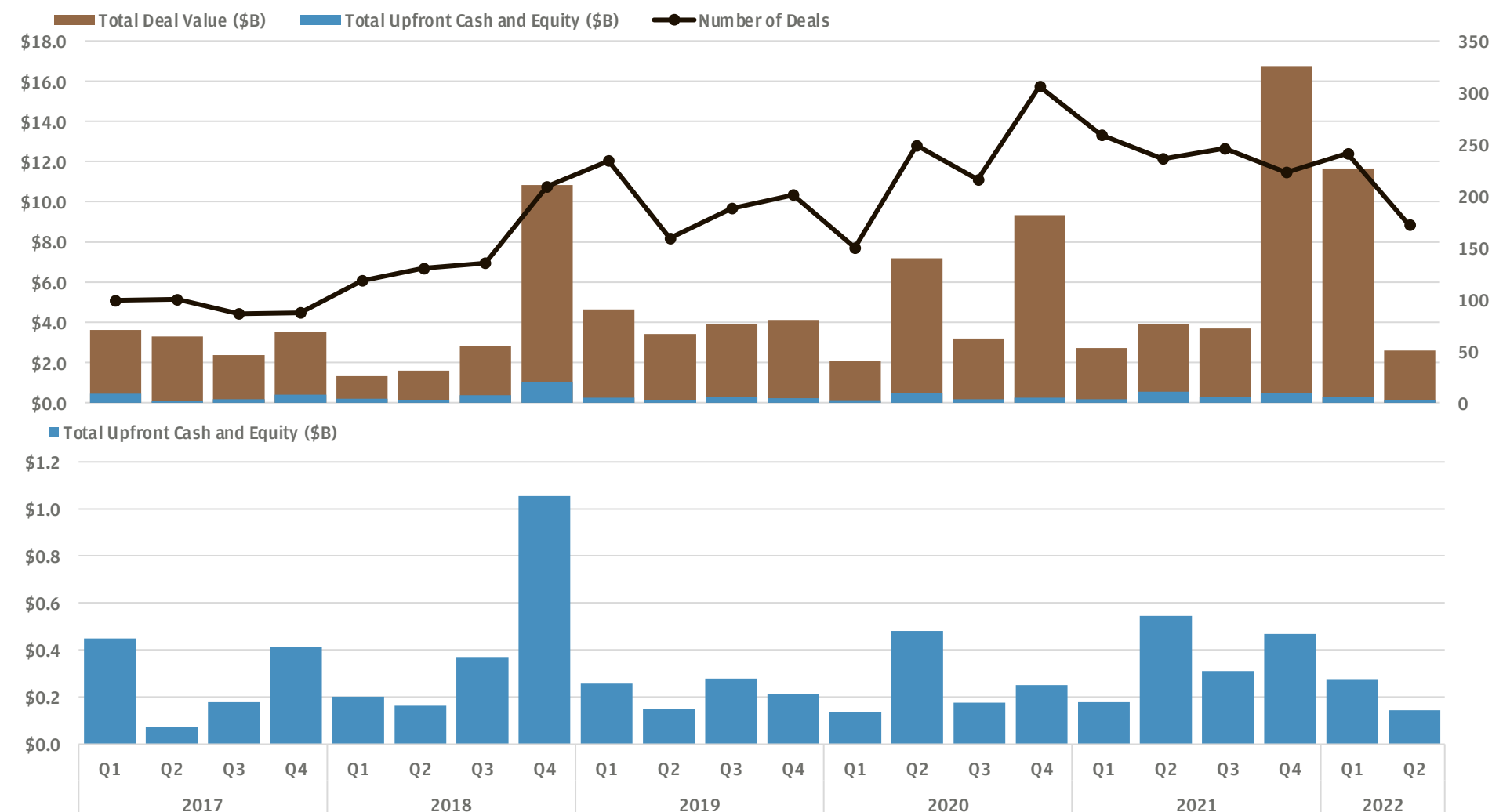
Medtech, diagnostics, and digital therapeutics partnerships tracked lower

Partnership and contract activity within medical devices, diagnostics, digital therapeutics, and manufacturing all increased during 2020 as companies partnered to develop COVID-related products. Deal flow, however, quickly dropped afterwards in all medtech subsectors, except contract manufacturing, which is now more focused than before on developing advanced cell and gene therapies for biopharma clients.

- 172 medtech partnerships and service contracts were signed in the second quarter of 2022, down from previous quarters and 2020's fourth quarter peak.
- \$2.6 billion in total announced deal value was also lower—with just \$100 million of that in announced upfront cash and equity.

Source: DealForma.com database
Financials based on disclosed figures. Data through 7/7/2022.

Medtech, diagnostics, digital therapeutics and tools: Partnership and contract service totals (\$B)



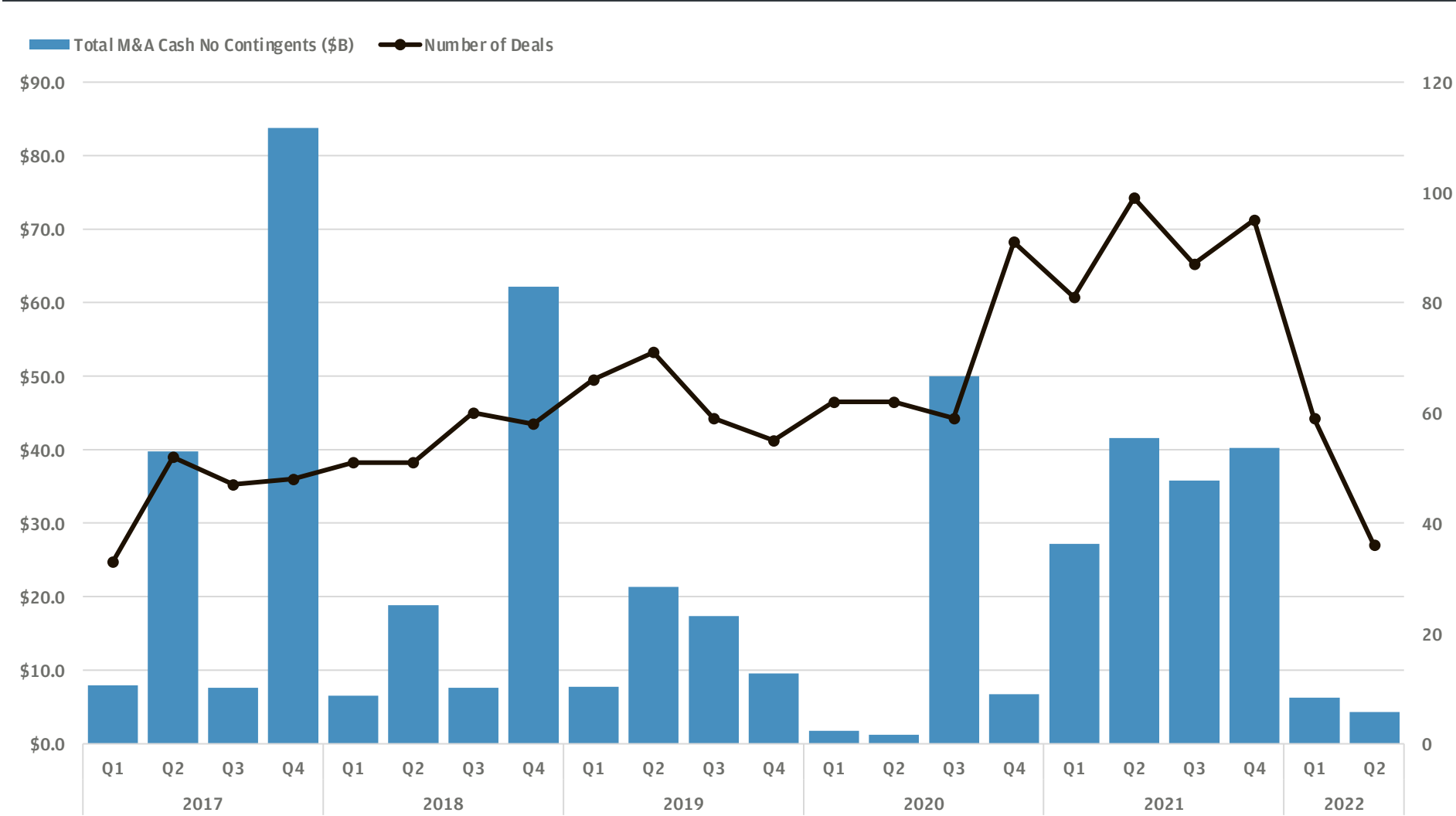
Quarterly M&A activity in medtech, diagnostics and tools dropped to a five-year low

2022 follows five quarters of very active M&A in medtech to return to 2017 levels with a significant drop in deal volume.

- 36 medtech mergers and acquisitions were announced in the second quarter of 2022, only slightly higher than the beginning of 2017.
- \$4.4 billion in total M&A upfront cash and equity for the second quarter of 2022, not counting contingent payments and potential deal value.

Source: DealForma.com database
Financials based on disclosed figures. Data through 7/7/2022.

M&A activity in medtech, diagnostics, digital therapeutics and tools



Medtech venture highlights

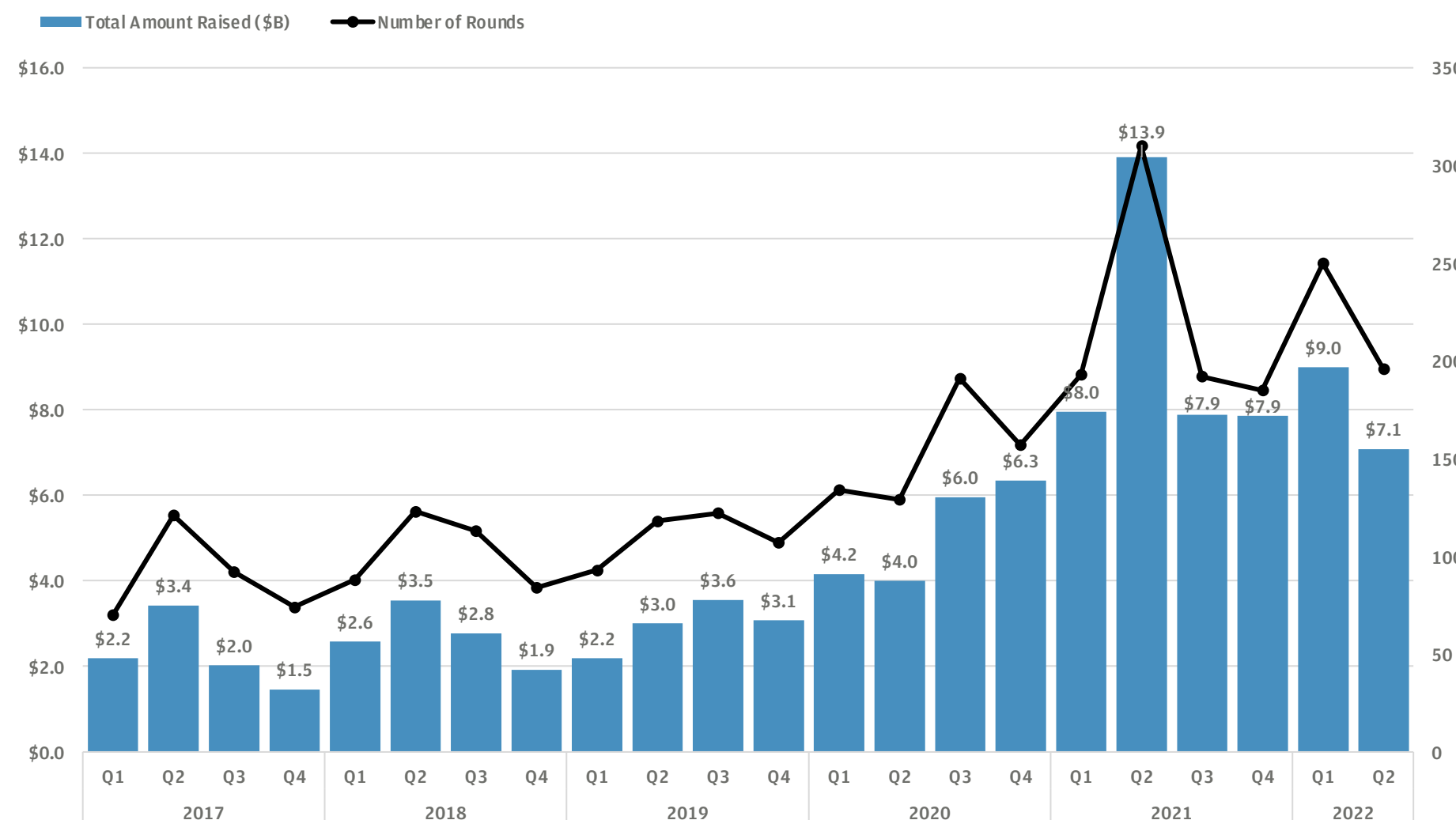
Medtech venture investment activity is holding better than biopharma

Quarterly medtech, diagnostics, digital therapeutics, and tools company venture investment activity continued to track lower from 2021's record first quarter. Volumes are still at or above the 2017 to mid-2020 range, however, with investors continuing to announce record new funds.

- \$7.1 billion in total medtech venture funding in the second quarter of 2022, down from \$9.0 billion in the first quarter but still higher than 2020 and earlier.
- 196 funding rounds for the second quarter of 2022, the second most active quarter since the peak.
- The contract manufacturing subsector drew increased investment into new facilities, lifting the total for all medtech.

Source: DealForma.com database
Financials based on disclosed figures. Data through 7/7/2022.

Medtech, diagnostics, digital therapeutics and tools: Venture totals (\$B) and number of rounds



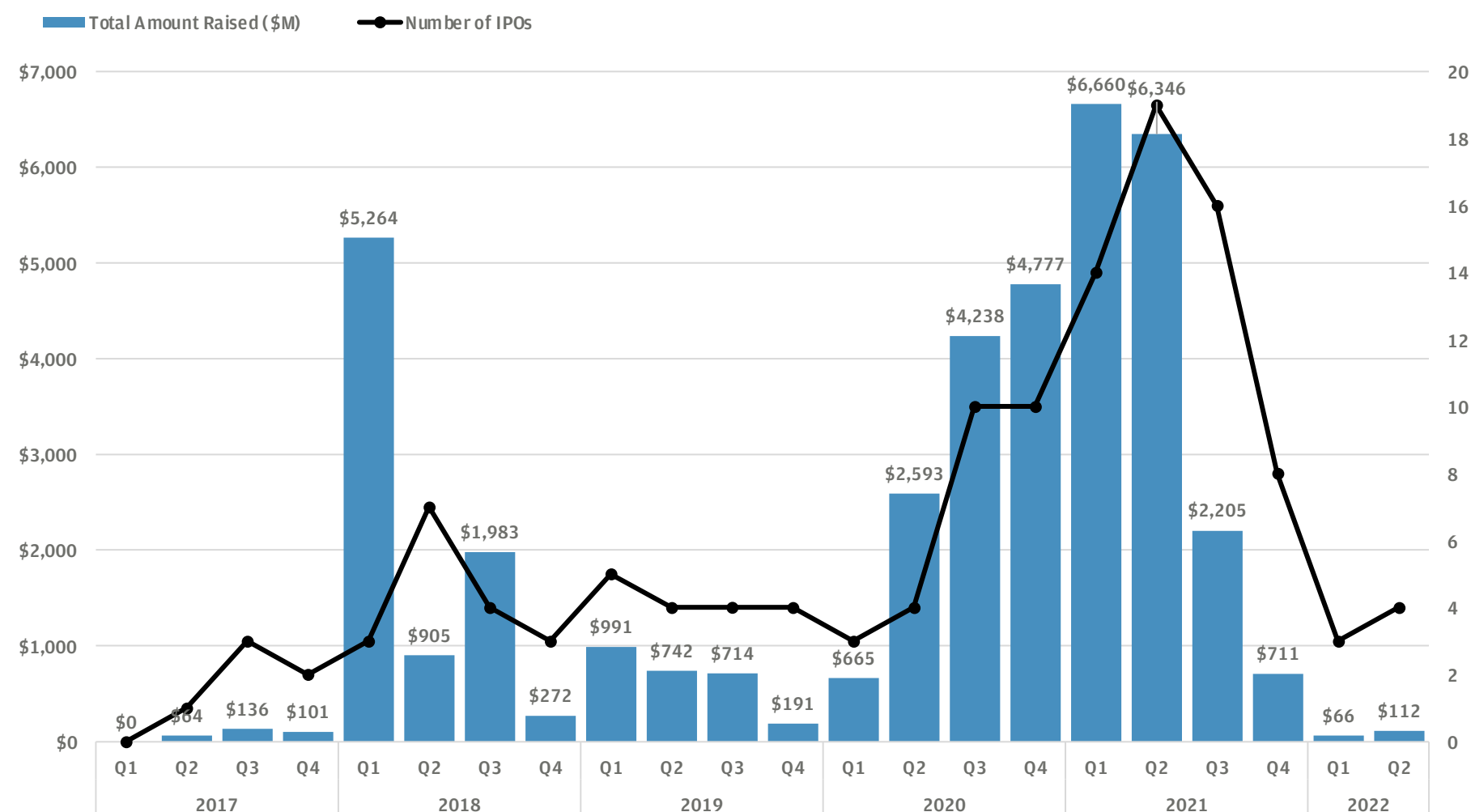
The medtech IPO window began to close in mid-2021 like biopharma

Medtech, diagnostics, digital therapeutics, and tools company IPO activity dropped to pre-2020 levels to close a shorter IPO window for the subsector compared to biopharma.

- \$112 million in four newly-filed and completed IPOs in the second quarter of 2022.
- Longer timelines from first filing and unfavorable market conditions caused some companies to withdraw their IPO filings.

Source: DealForma.com database
Financials based on disclosed figures. IPOs by first filing date. Data through 7/7/2022.

Active and completed IPOs in medtech, diagnostics, digital Tx and tools



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