

J.P.Morgan

Q3 2023 Biopharma Licensing and Venture Report

October 2023

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Executive summary

Biopharma IPOs and venture totals are tracking higher while licensing and M&A values are down

The third quarter of 2023 saw a return to venture investments and IPO deal flow into biopharma therapeutics and discovery platform companies. Challenges remained, however, for licensing and M&A deals as the number of deals and total upfront values were down across the board.

Venture investments concentrated on clinical-stage businesses, with VCs focusing their attention on supporting existing portfolio companies. Startup and early-stage funding rounds declined quarter over quarter but remain over \$1 billion for the sector as company formation remains resilient—albeit at multiyear lows. Big Pharma partnerships continue to be a viable financing source for pre-clinical biotechs, with most partnerships occurring in the earliest stages of development.

Here are a few highlights from our third-quarter report:

- **Venture investment into therapeutics:** \$5.3 billion across 83 venture rounds in the third quarter of 2023, fewer rounds compared to Q2, but with higher totals. Larger average round sizes were in clinical-stage companies and Series B and C rounds.
- **IPOs:** Biopharma IPOs doubled in value to \$1.2 billion from six IPOs on U.S. exchanges in Q3.
- **M&A:** Biopharma M&A deal values declined further due to depressed valuations. More acquisitions were signed in Q3 as a result, mostly for small-cap biopharma.

- **Biopharma licensing partnerships:** \$31.7 billion in total announced deal value across 113 deals were signed in Q3, continuing the declines in both the number of deals and upfront cash and equity totals.

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

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Head of Healthcare VC Coverage
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.

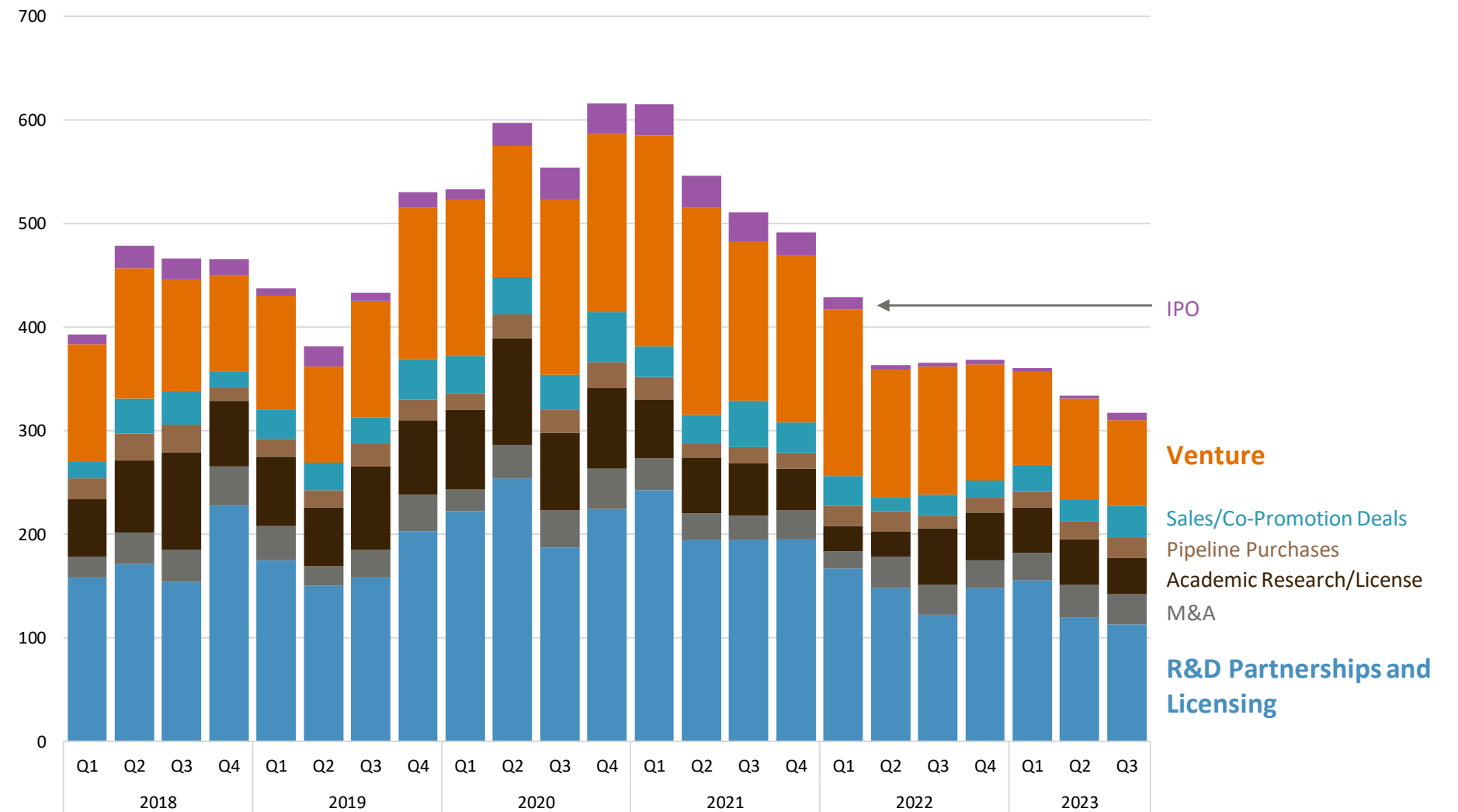
Data as of 9/30/2023

Biopharma dealmaking in perspective

Biopharma's overall deal flow tapered off again in the third quarter of 2023 as there were fewer licensing deals and venture rounds than earlier in the year. IPO activity tracked higher, as did total venture dollars.

- 317 total transactions across venture rounds and IPOs, licensing deals, and M&A in the third quarter, coming in lower than Q2.
- 113 biopharma R&D licensing partnerships signed in Q3, setting another record-smallest quarter since 2018.
- 83 venture rounds completed for drug and platform developers, which was a decline in the number of venture rounds—though total dollars raised tracked higher.

Biopharma Deal Flow: Total Number of Deals and Funding Rounds



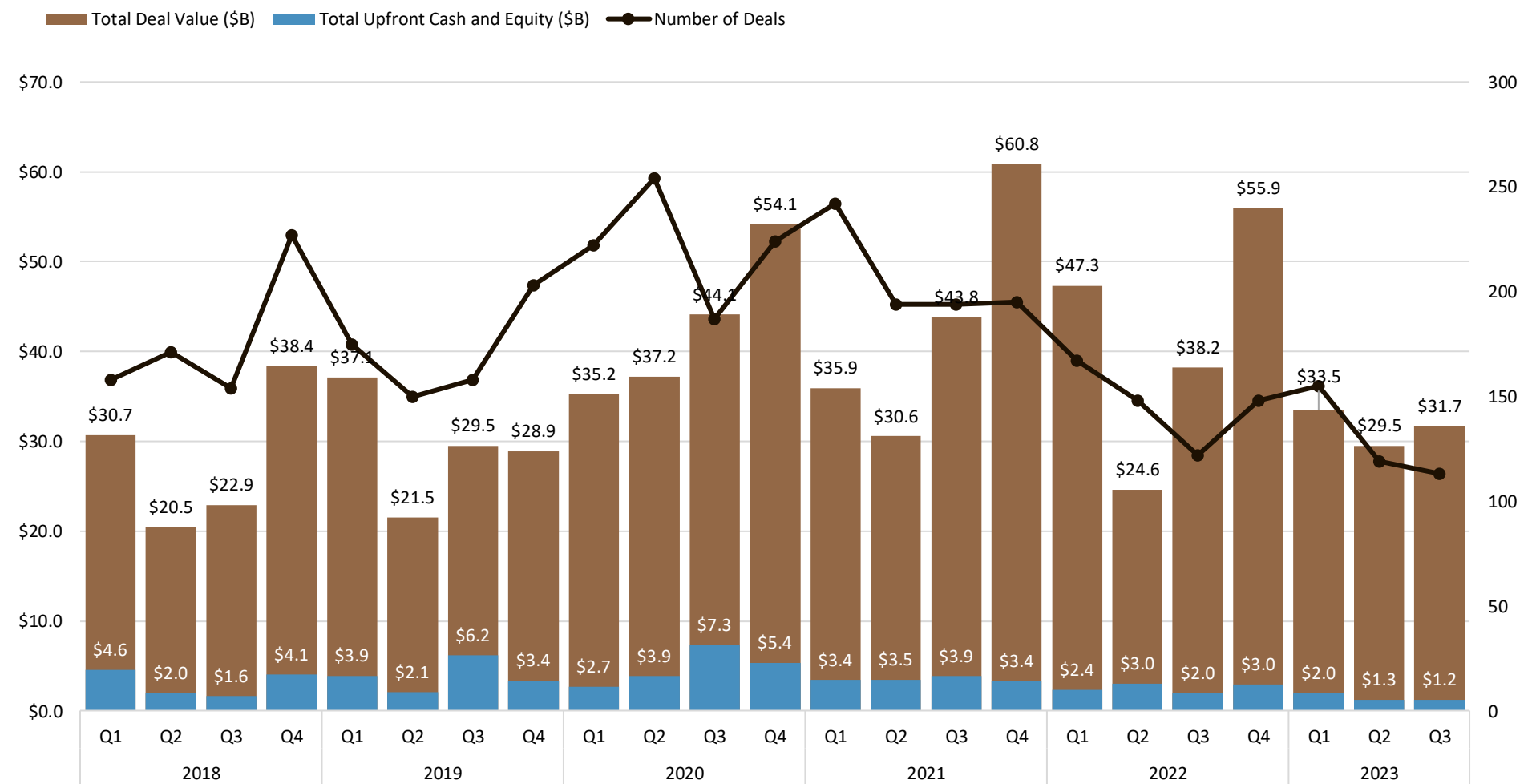
Source: DealForma.com database
Financials based on disclosed figures. Data through 9/30/2023.

Fewer biopharma deals and a smaller upfront total in Q3 for the lowest since 2018

Quarterly biopharma licensing and partnership activity saw a smaller deal count in the third quarter to continue the declines started last quarter. This drove total upfront cash and equity smaller. Increases in deal value were largely “bio-bucks” and contingent upon companies de-risking clinical assets.

- 113 biopharma R&D licensing partnerships were signed in third quarter 2023, down from 119 in Q2.
- \$1.2 billion in total upfront cash and equity for licensing therapeutics and discovery platforms, down slightly from \$1.3 billion in Q2 2023.
- \$31.7 billion in total announced deal values as more capital was tied to clinical progression.

Biopharma Therapeutics and Platforms: R&D Partnership/Licensing Totals (\$B) and Number of Deals



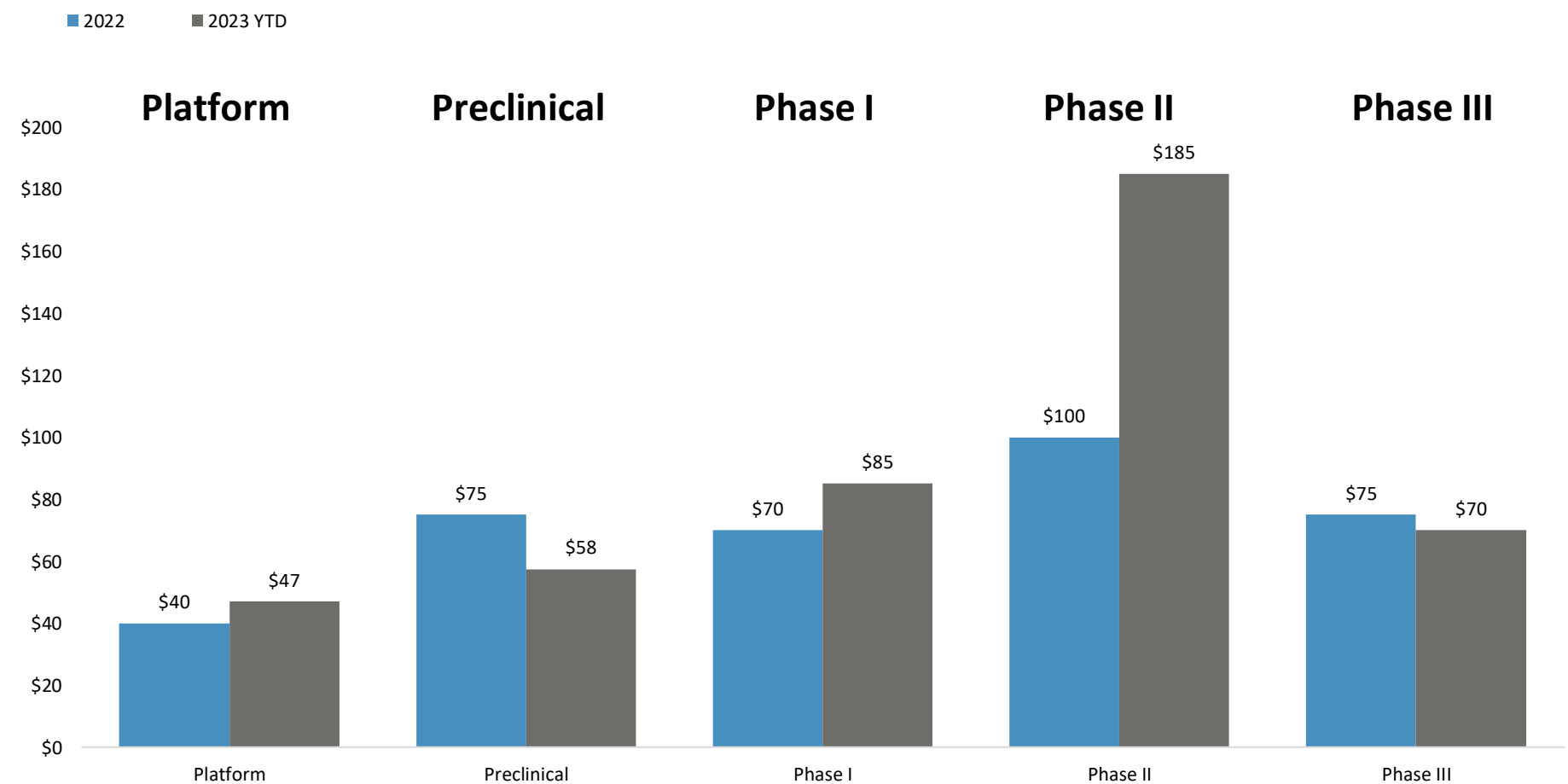
Source: DealForma.com database
Financials based on disclosed figures. Data through 9/30/2023.

Big pharma pays well for proven Phase II programs

Large-cap biopharma (market cap of \$50 billion-plus) are still signing \$100 million-plus deal upfronts. Median upfront values increased for Platform / Discovery stage programs as well, reaching \$47 million.

- Median upfront cash and equity payments from big pharma were up to \$185 million across two deals signed in Phase II in year-to-date 2023, up from a median of \$100 million from four deals in 2022.
- Phase III asset deals, which are often signed for less-than-worldwide licensed territories, saw the median upfront drop slightly to \$70 million in 2023 from \$75 million in full-year 2022. Regional licenses to the same asset may be signed with multiple parties generating increased deal payments.
- Platform / Discovery stage programs also saw a healthy median upfront of \$47 million in 2023, up from \$40 million in full-year 2022.

In-Licensing by Big Pharma: Median Upfront Cash & Equity by Stage at Signing. 2022 vs. 2023 YTD



Source: DealForma.com database

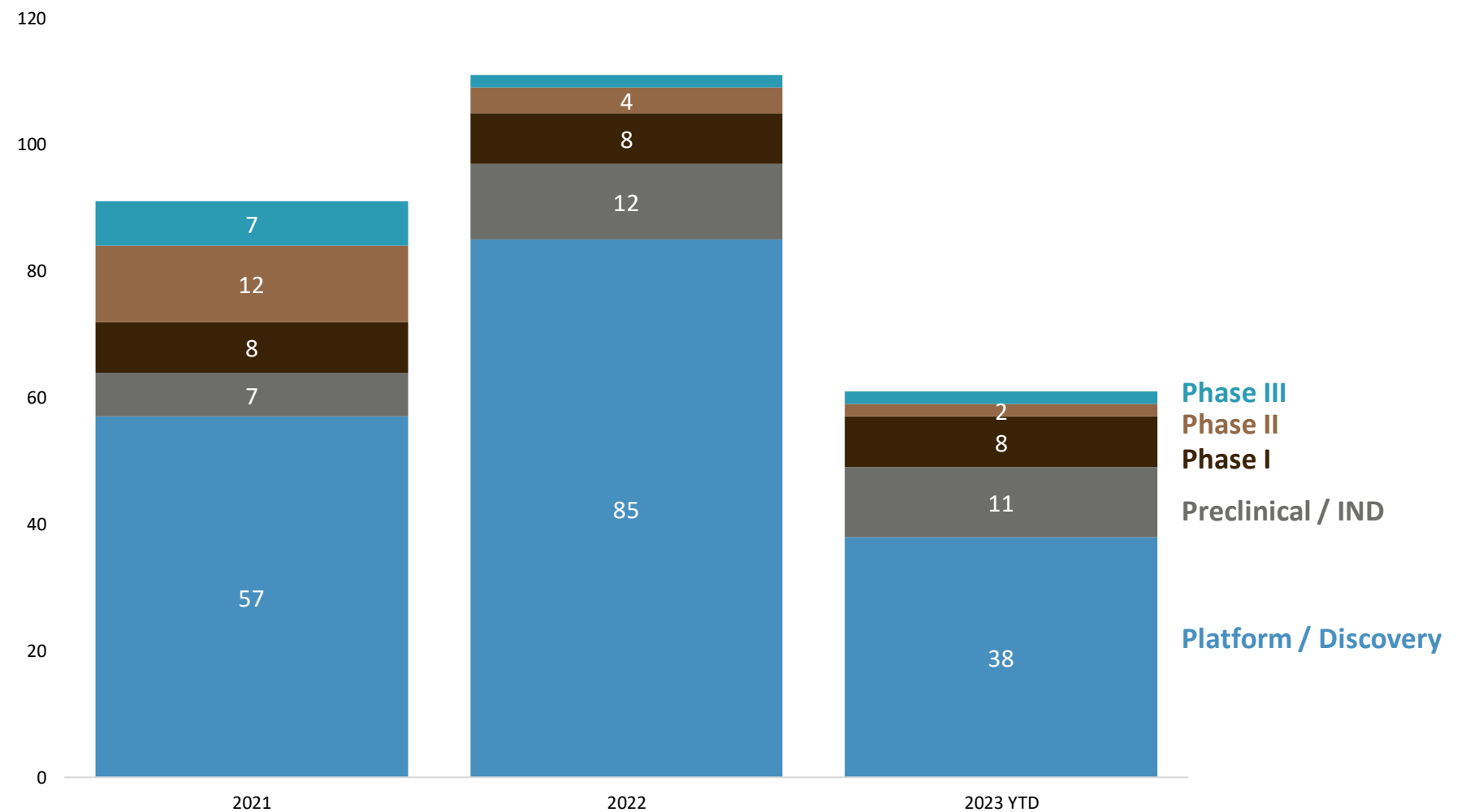
Financials based on disclosed figures. Stage of lead asset in multi-asset deals. Phase III deals are more often regional rather than worldwide, hence the smaller upfront. Data through 9/30/2023.

Big pharma signs a majority of their deals at the earliest stages, often for entire platforms

The largest share of in-license deals into big pharma happens at platform and discovery stages. These are often the riskiest but provide the partners substantial support and control over program development. Deals signed at these earliest stages saw median upfront payments of \$45 million since 2022.

- 38 biopharma R&D licensing deals were signed year-to-date in 2023 for platforms and discovery programs. Full-year 2022 saw 85 early-stage deals with Big Pharma.

In-Licensing by Big Pharma: Number of Development and Commercialization Deals by Stage at Signing



Source: DealForma.com database
Financials based on disclosed figures. Data through 9/30/2023.

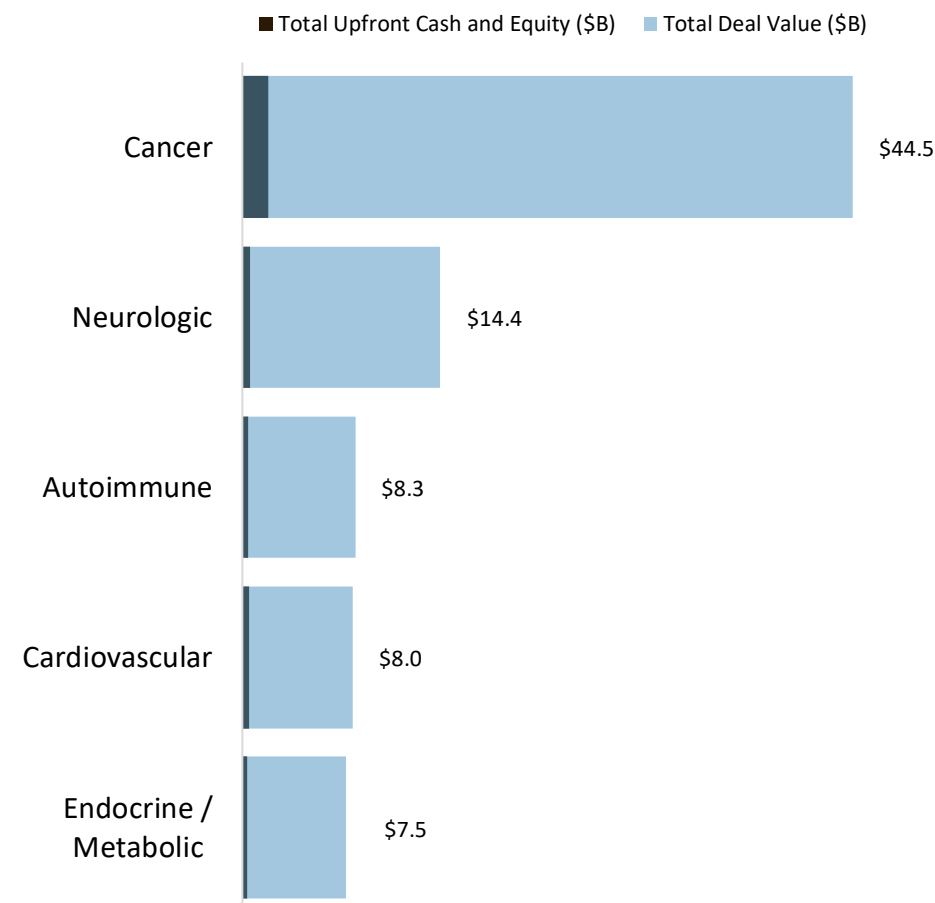
Oncology and biologics continued to lead year-to-date biopharma deal totals in 2023

R&D licensing activity for cancer therapies consistently ranks highest among the top therapy areas. Likewise, therapies developed in the largest deals are often advanced biologics, antibodies, and complex molecular programs.

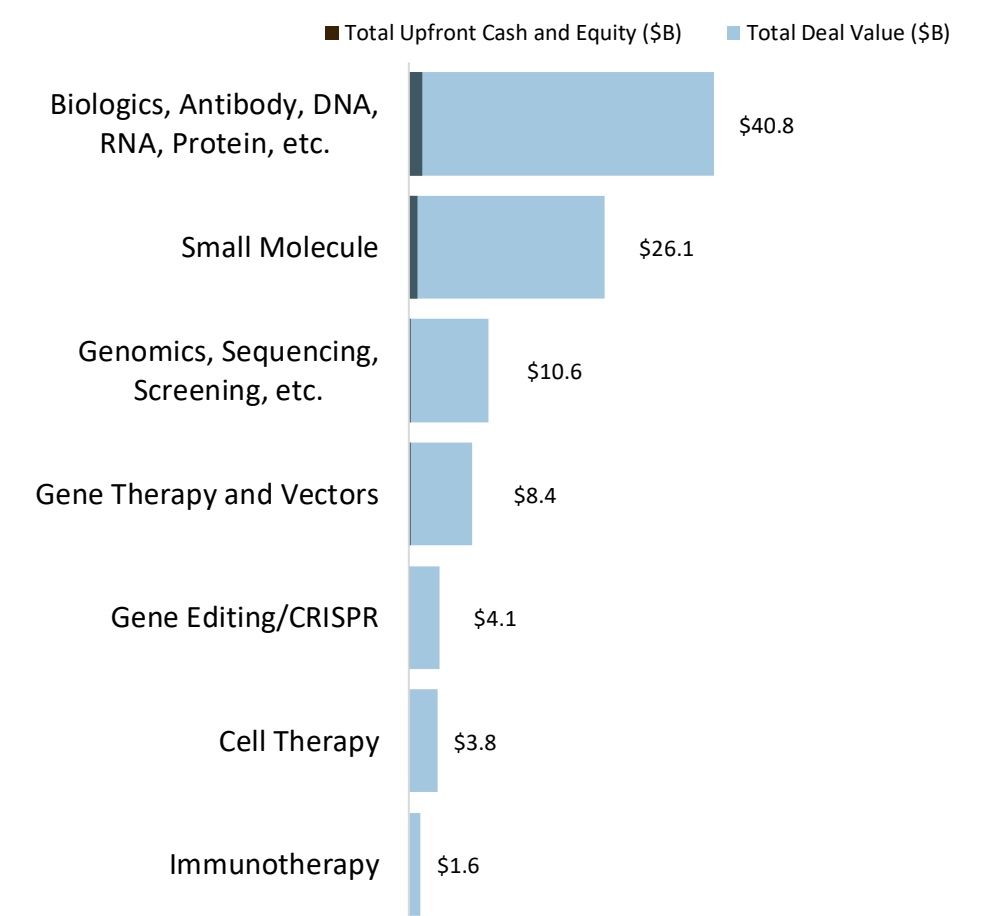
- \$44.5 billion in year-to-date 2023 total announced deal values for cancer program.
- \$40.8 billion in total deal value for biologics in 2023 through the third quarter.

Top Therapy Areas and Modalities for Licenses among Biopharma, 2023 YTD: Total Announced Deal Values

Top 5 Therapy Areas – Total Deal Values (\$B)



Top 5 Modalities – Total Deal Values (\$B)



Source: DealForma.com database
Financials based on disclosed figures. Data through 9/30/2023.

AI-based drug discovery upfronts increased; Cell and gene therapy upfronts dropped

Artificial intelligence and machine learning continued to attract Big Pharma licensing partners and those with large deal budgets to use AI for drug discovery. Deal flow is also concentrated on fewer companies offering proven AI technology over the noise.

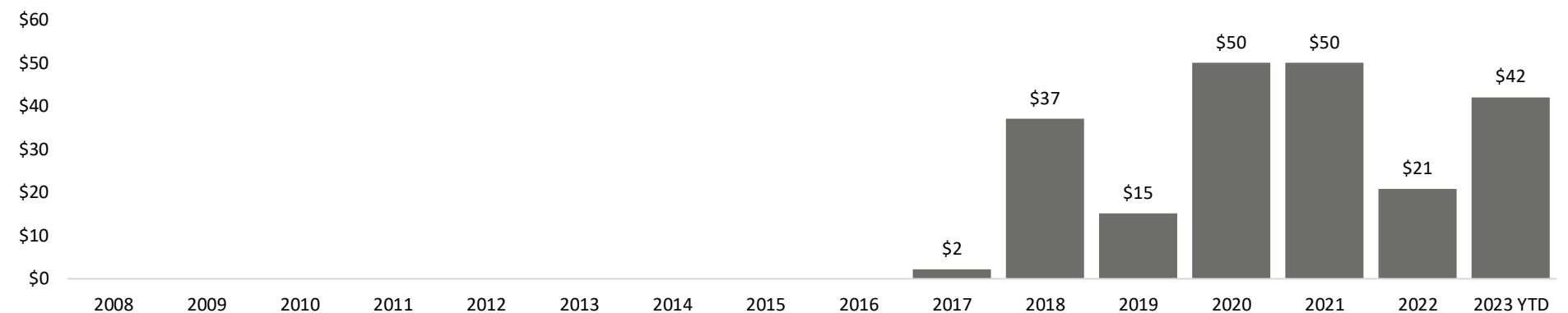
Cell and gene therapies continue to attract the largest deals despite those upfront medians dropping this year from a recent peak.

- \$42 million median upfront cash and equity for AI/ML-based drug discovery licensing deals in 2023 YTD, doubling the median from last year. There have been 30 deals in 2023 YTD compared to 80 in 2022.
- The median upfront for cell and gene therapy program licensing fell to \$60 million in 2023 YTD from \$111 million in 2022 on smaller deal values. There have been 60 deals for cell and gene therapy so far this year, compared to 69 for all of 2022.

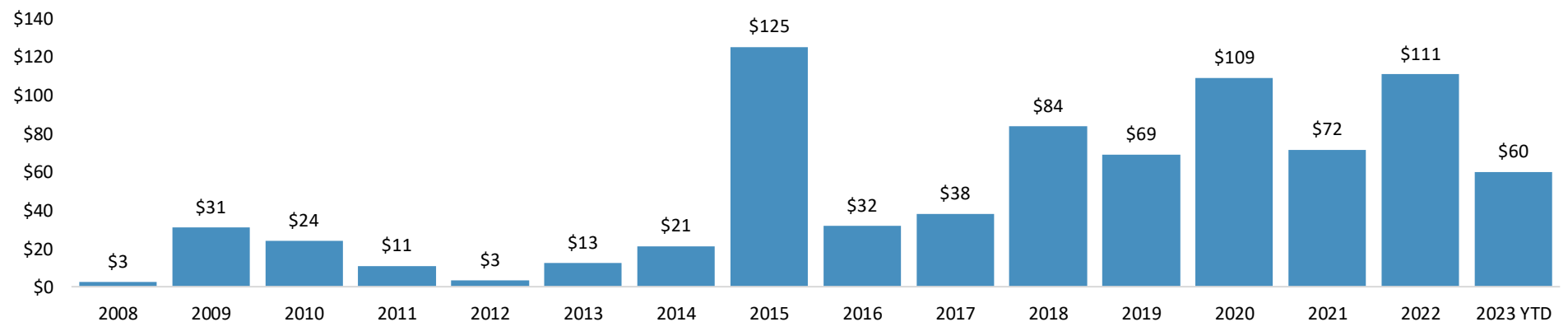
Source: DealForma.com database
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AI/ML and Cell and Gene Therapy In-Licensing: Median Upfront Cash & Equity (\$M)

AI and Machine Learning



Cell and Gene Therapy

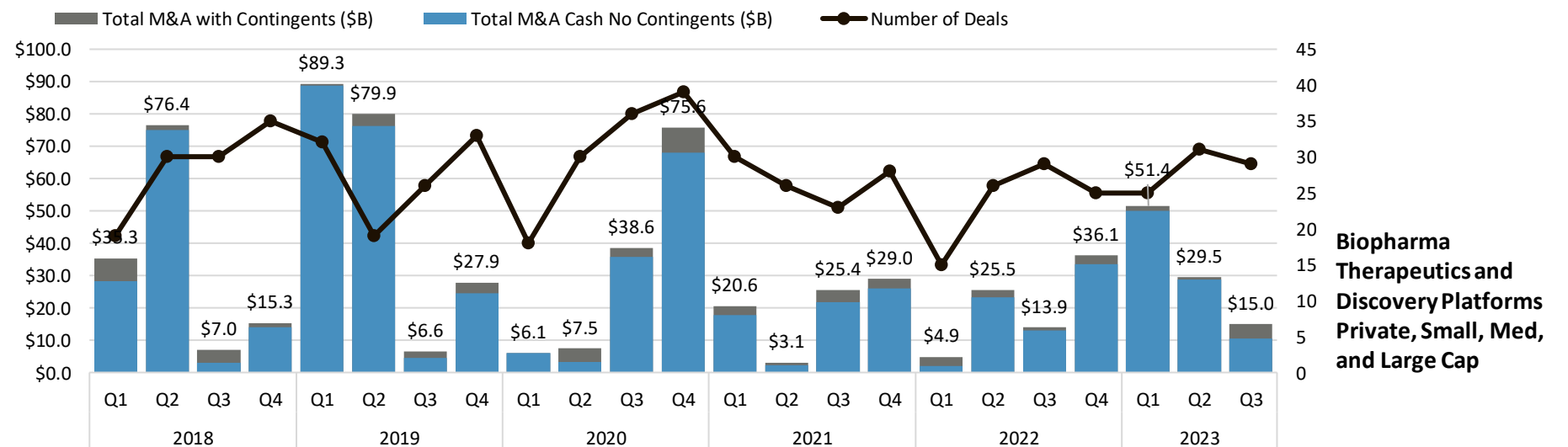
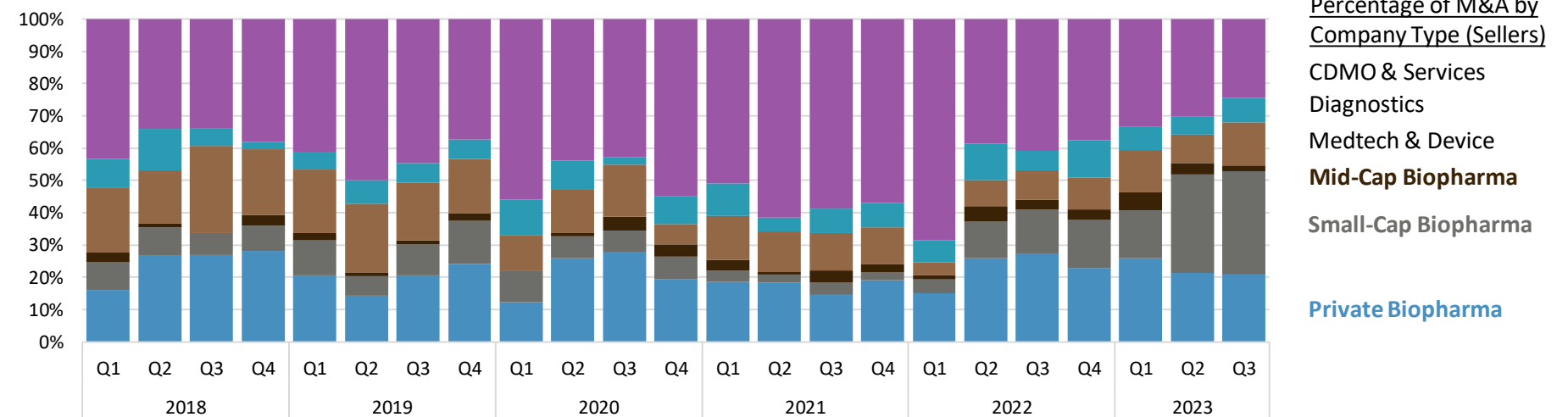


Private and small-cap biopharma acquisitions increased to 50% of life sciences M&A

Biopharma M&A deal values dropped considerably through the third quarter of 2023 despite a steady increase in the number of acquisitions. Over half of all life sciences M&A activity is now for private and small-cap biopharma sellers (<\$1 billion market cap).

- 29 M&A transactions for biopharma therapeutics and platform companies were announced in the third quarter of 2023.
- \$15.0 billion in total M&A value for biopharma companies in the third quarter of 2023, half the value of Q2 2023.

Biopharma M&A Activity Compared with Other Life Sciences Subsectors



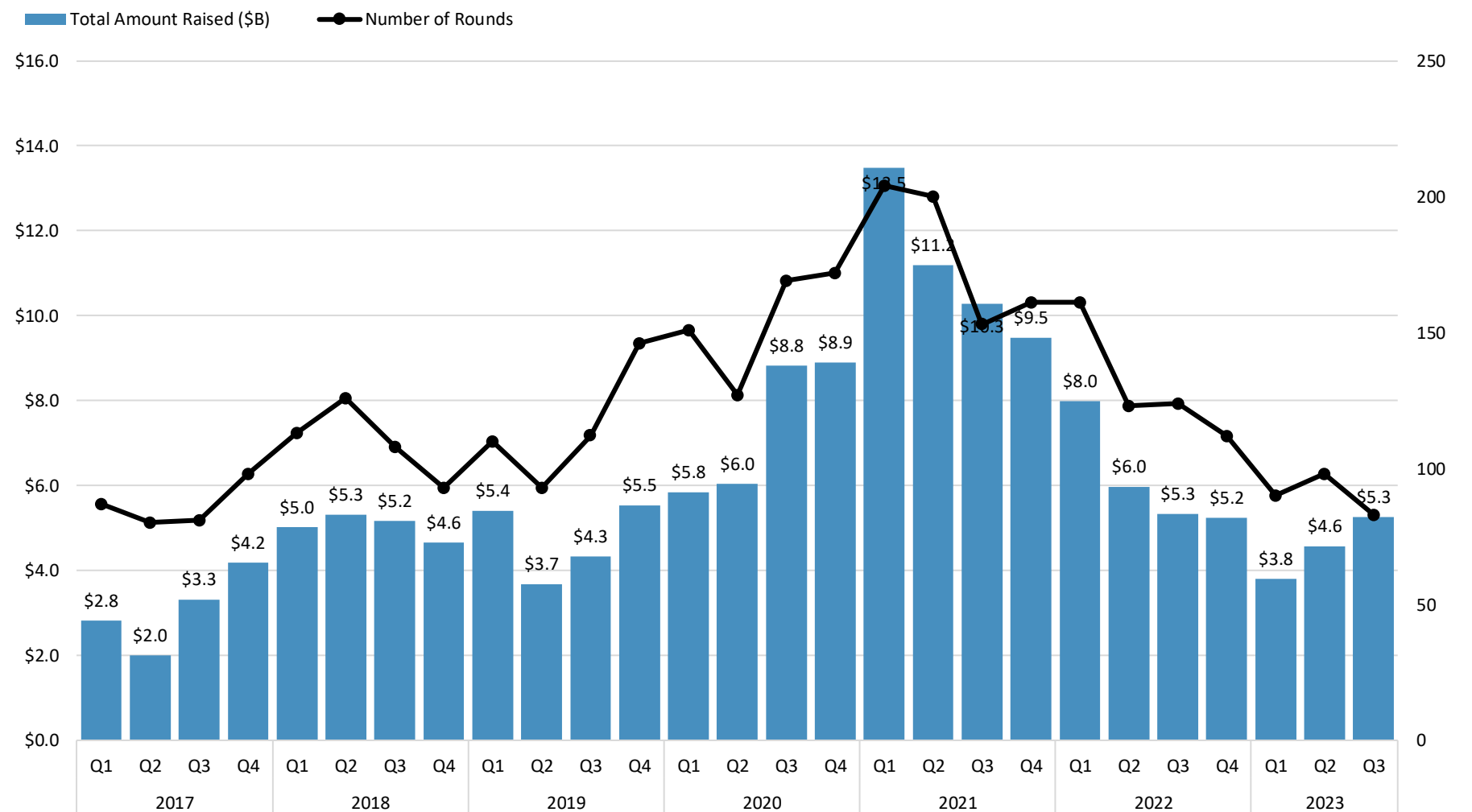
Source: DealForma.com database
Financials based on disclosed figures. Data through 9/30/2023.

Venture investment dollars into biopharma tracked higher in Q3, but on fewer deals

Venture investors became more selective in 2023 and were focused on supporting their existing portfolio companies. The number of new venture capital deals declined modestly but aggregate investment continued its upward trend in 2023.

- \$5.3 billion was raised in private funding rounds in the third quarter of 2023 across 83 deals. The total invested tracked higher than the \$4.6 billion in Q2 2023 despite fewer rounds.

Biopharma Therapeutics and Platforms: Venture Totals (\$B) and Number of Deals



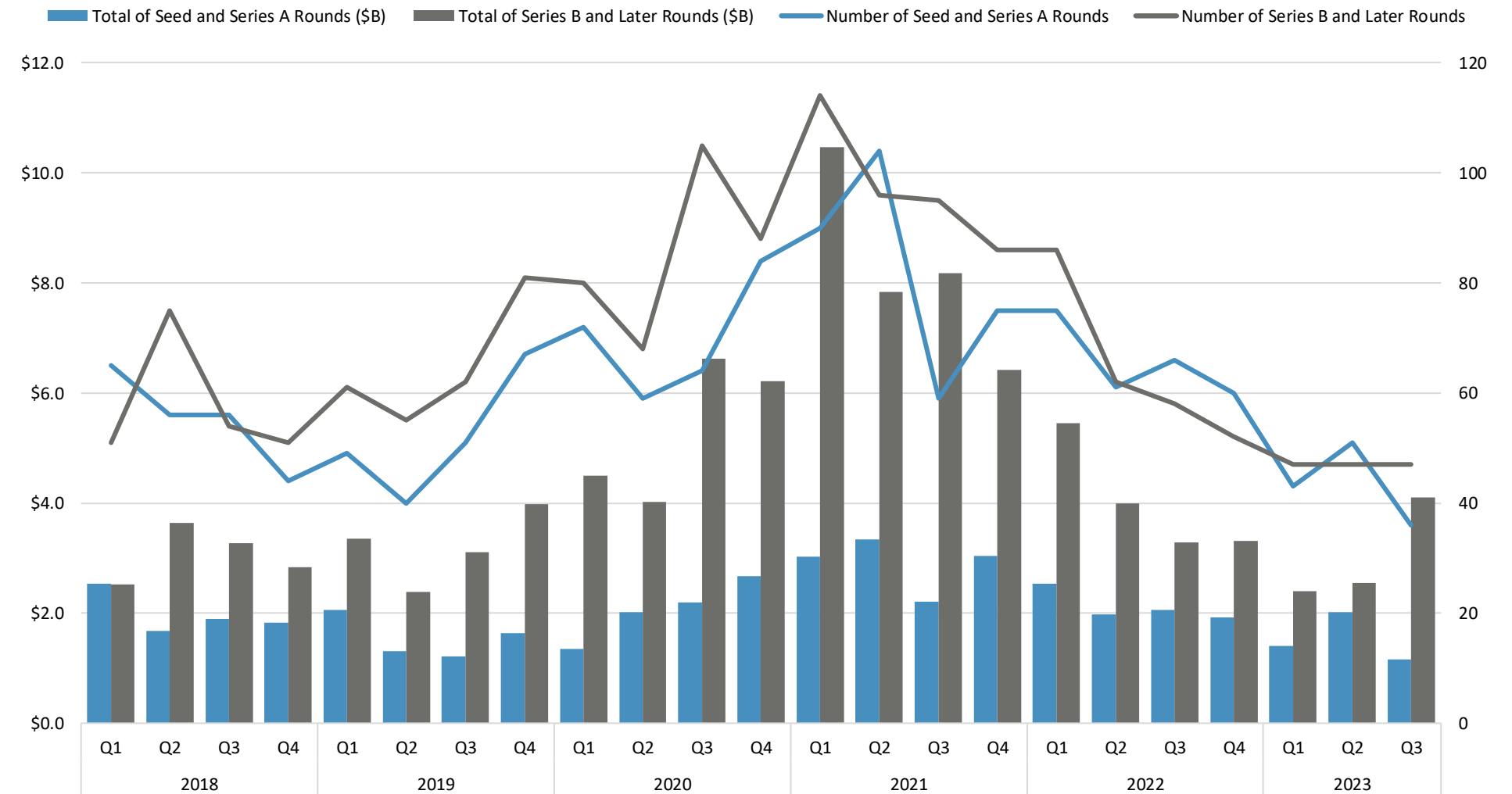
Source: DealForma.com database
Financials based on disclosed figures. Data through 9/30/2023.

Company formation returns to 2019 levels with less investment dollars allocated to first time financings

The decline in the number of venture rounds has been felt most in first-round investments. Just 36 companies raised a total of \$1.2 billion in seed and Series A rounds in the third quarter of 2023. Series B and later-round investments fared better at \$4.1 billion across 47 rounds in Q3.

- \$1.2 billion across 36 seed and Series A rounds in the third quarter of 2023, the fewest since Q2 2019.
- \$4.1 billion across 47 second and later rounds in Q3 bringing the total investment back to Q2 2022 levels.

Seed and Series A vs. Later Series Venture Totals in Biopharma Therapeutics and Discovery Platforms



Source: DealForma.com database
Financials based on disclosed figures. Data through 9/30/2023.

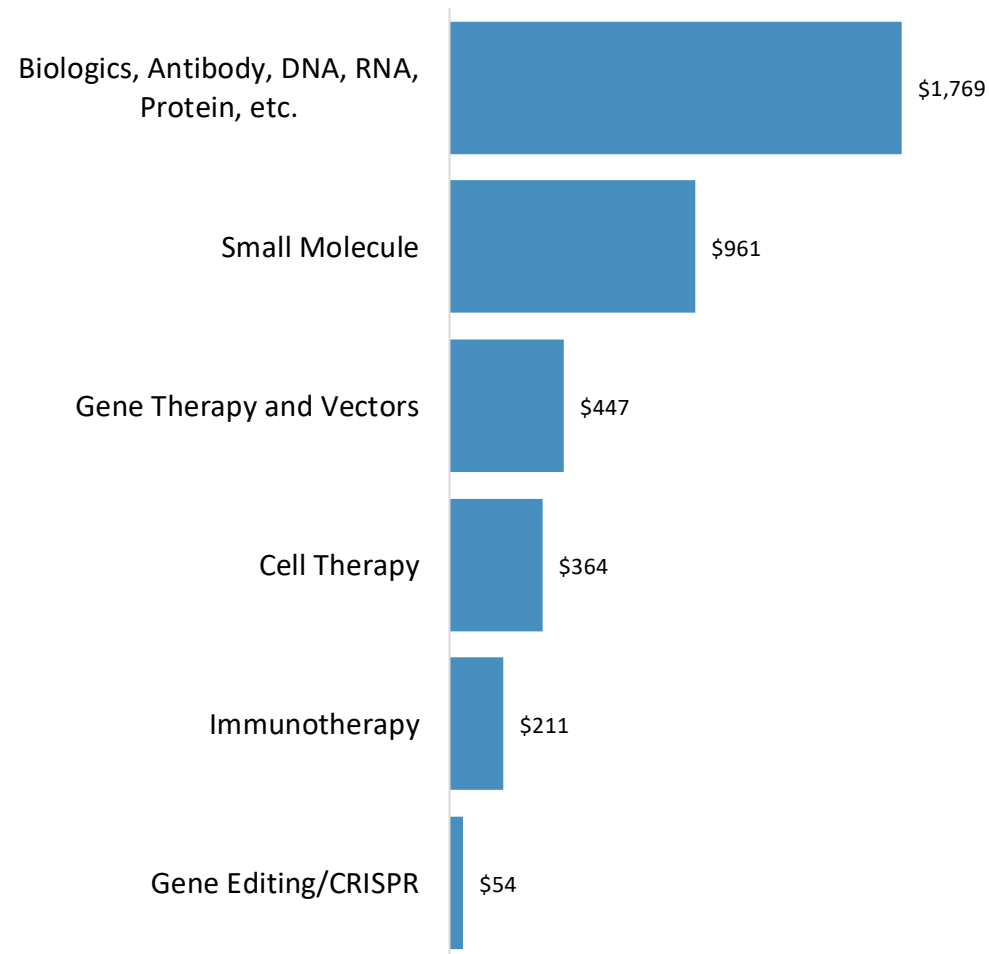
New investments continued to flow to biologics and oncology focused companies

Biopharma companies developing cancer therapies attracted the largest share of all initial venture funding year-to-date in 2023. Biologics and advanced molecular therapies also led seed and Series A rounds among the top modalities. This is similar to licensing rankings.

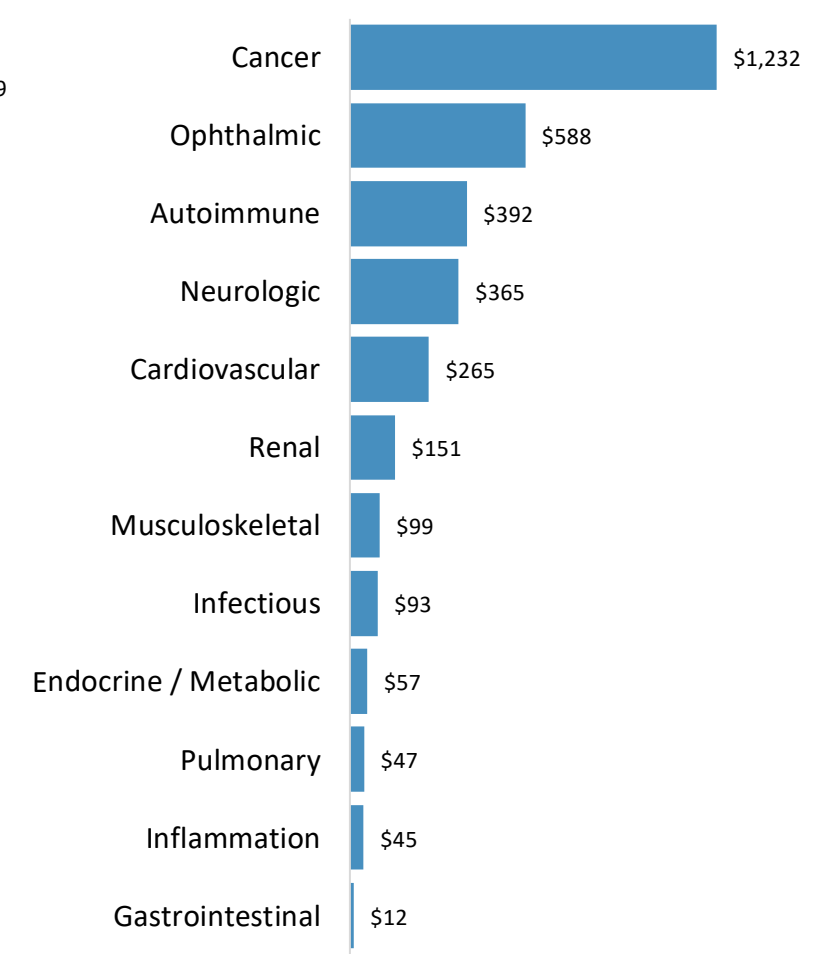
- \$1.8 billion in seed and Series A rounds for biologic programs in year-to-date 2023.
- \$1.2 billion in seed and Series A rounds focused on cancer in year-to-date 2023.

Top Modalities and Therapeutics Areas: Total Seed and Series A for 2023 YTD (\$M)

Top Biopharma Modalities – Seed and Series A



Top Therapeutic Areas – Seed and Series A



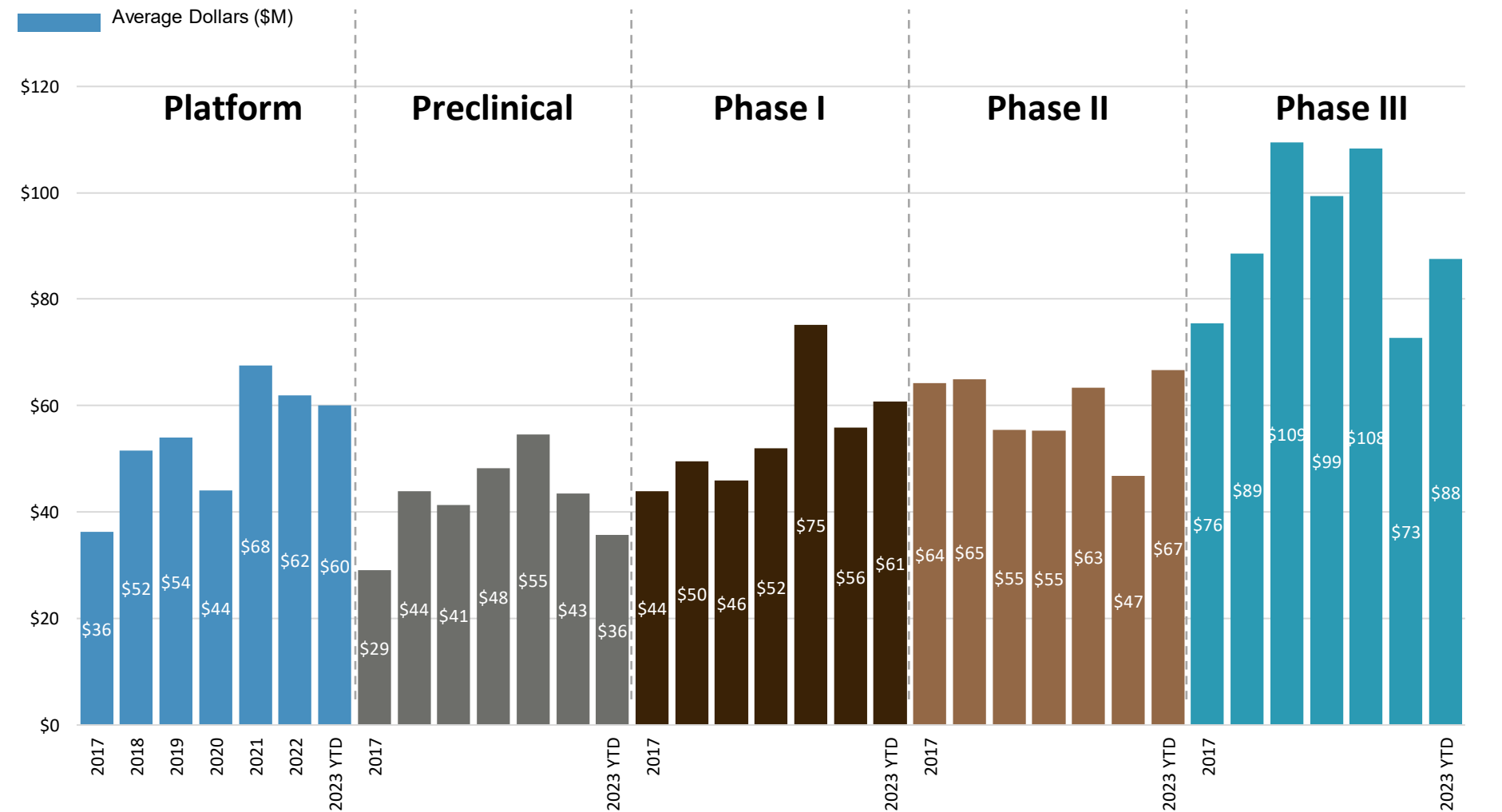
Source: DealForma.com database
Financials based on disclosed figures. Data through 9/30/2023.

Venture investments pushed higher for biopharma companies with clinical programs

Biopharma companies with their lead programs in Phase I and later saw higher average investment rounds in year-to-date 2023. Dollar averages here increased the most for Phase II-staged companies. The declines were felt in earlier-staged companies.

- \$88 million average venture round for Phase III biopharma companies 2023 YTD, an increase from \$73 million in full-year 2022.
- Phase II companies raised on average \$67 million rounds; Phase I companies \$61 million.

Biopharma Therapeutics and Platforms: Average Venture Rounds by Company Stage



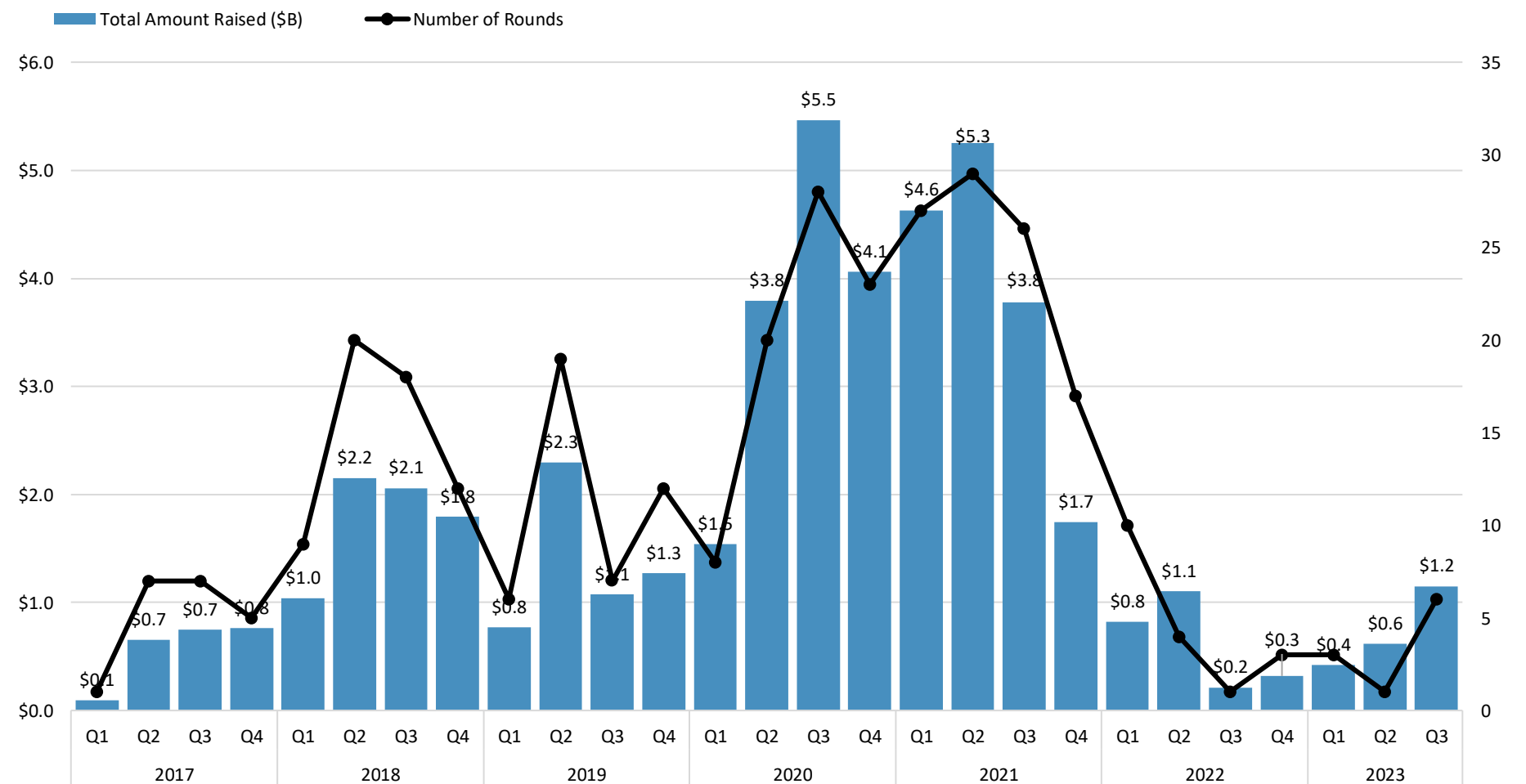
Source: DealForma.com database
Financials based on disclosed figures. Data through 9/30/2023.

Biopharma IPOs returned in Q3

Six biopharma companies completed their IPOs on NASDAQ and NYSE in the third quarter of 2023, bringing the year-to-date count to 10 companies—a refreshing sign of improvement to biopharma finance.

- \$1.2 billion in six completed biopharma IPOs in the third quarter of 2023 on NASDAQ.
- Three of the biopharma companies in Phase II programs, two in Phase I and one preclinical company completed their IPOs in Q3 2023.

NASDAQ and NYSE Completed IPOs in Biopharma Therapeutics and Platforms: Totals (\$B) and Count



Source: DealForma.com database

Financials based on disclosed figures. Kenvue, Inc. (Q2 2023, \$4.4B) and other OTC focused companies excluded in this chart. IPOs by completion date. Data through 9/30/2023.

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