

The MTS US Biotech IPO Monitor

Edition 2: Q1 2018 Update – Signs of Nervousness or Business as Usual?

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Executive Summary

The MTS Biotech IPO Monitor - Edition 2: Q1 2018 Update – Signs of Nervousness Or Business as Usual?

Key Messages From Detailed Analysis of 2012-Q1:2018 IPOs

- "Quality" Over Stage of Asset: Pre-Clinical/PI IPOs Have Higher Raises and Valuations than PIII Companies – Page 8
- Gene Therapy Companies
 Continue to Garner Higher Raises and Valuations than Small Molecule Companies Page 9
- 3. 85% of IPOs Are Still Trading As Original Entities; Exits: 9% M&A, 4% Reverse Merger, 2% Bankrupt or Delisted – Page 10
- Foreign Issuers Have Broad Access to US Capital Markets - Higher Quality Companies Eventfully Gravitate to US listings – Page 11
- ~30% Insider Participation
 Continues to be an Important
 Factor for a Successful IPO Page
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US Biotech IPO Market Q1:2018

- > A strong out of the gate Q1:2018 on number and initial IPO valuations...
 - Q1:18 was a strong first quarter in terms of the number of IPOs; 12 in Q1:18, vs. 4 in Q1:17, 6 in Q1:16, 7 in Q1:15, but lower than the banner 26 in Q1:14
 - Q1:18 average raise/post money valuation was ballpark in line to previous years at \$95/\$368m vs. FY17 \$100m/\$425m, FY16 \$76m/\$334m, FY15 \$109m/\$529m, FY14 \$89m/\$291m

> ...Not so strong on performance

- Only 3 out of the 12 Q1:18 IPOs have posted gains, but at an impressive average of +46%. The 9 underperformers have an average loss of -23%
- Mean IPO to current performance for class of Q1:18 -5% vs. class of 2017 +67%, class of 2016 +80%, and class of 2015 +20%

The Signs of Nervousness?

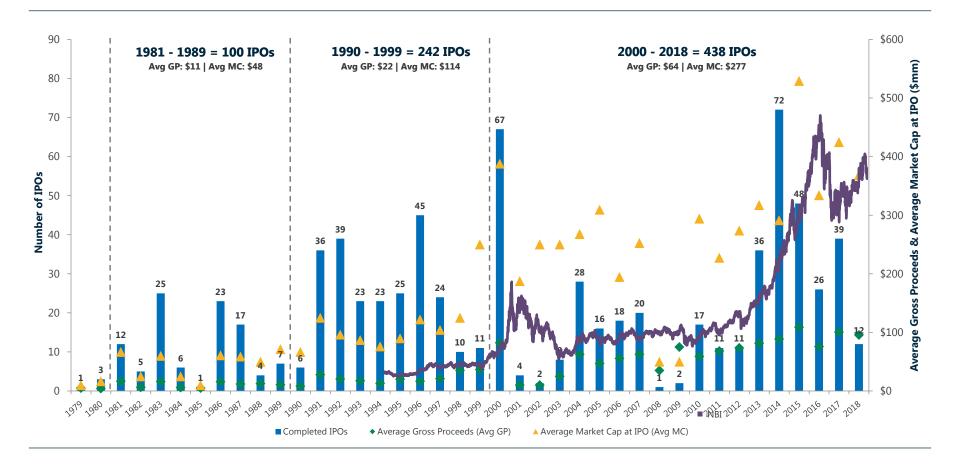
- With the "don't shoot the messenger" caveat, we note the following observations/feedback items
 - The lackluster post IPO performance of the Q1:18 IPO class as noted
 - "Atypical communications" around the IPO process e.g. the timing and disclosure of FDA clinical holds
 - We retain our view that "Indirect Generalist Fund Flows" principally drive biotech IPO windows. There is clear volatility and caution on the broader equity market in 2018
 - The number of potential IPO candidates in the pike – there is a time capacity issue to vet companies from the buyside

MTS Bespoke IPO Database

- > MTS' "Strategic Advisory Analytics" reports exemplify our value-add strategic advisory services to clients across all healthcare industry sub-sectors
- > Within the "US Biotech IPO Monitor" series, we utilize our proprietary database to generate thoughtprovoking statistics/observations about the IPO market
- Our database includes the 784 US Biotech IPOs from the first 1979 US Biotech IPO with micro detailed analysis from 2012

The 40 Years Of US Biotech IPOs

Strong Fund Flows Underlie Strong IPO Years



Special thanks to Stelios "The Godfather" Papadopoulos for the historic data

The MTS Outlook For The 2018 US Biotech Market

Looking Into The Crystal Ball

Private US and foreign issuers can request a presentation of our views, sensitivities, headwinds and tails winds for the 2018 Biotech IPO market by contacting:

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or any partner at MTS schalmo@mtspartners.com

Senior Life Sciences Team

Mark Epstein – Managing Partner



- > Completed over 100 private financings for clients raising over \$5 billion in private capital
- > Managing Director / Co-Head Bank of America Private Equity Placements
- Prior to BofA, VP and co-head of Direct Private Equity Placements at Merrill Lynch

Peter Collum - Partner



- > Has worked on over \$20 billion in M&A deal volume
- Director, Bank of America Healthcare Investment Banking from 2003-2009
- > Prior to BofA, Technical Development Engineer at Hoffmann-La Roche

Kazuki Kusaka – Partner



- > Joined MTS in December 2017
- Led the healthcare practice for Lazard in Japan for 10 years
- Prior to Lazard, Mr. Kusaka was a Managing Director and the head of Asia Healthcare Group at Lehman Brothers from 2000 to 2007

David Low – Partner



- Previously, a partner in Lazard's Life Sciences Group, which he joined in 2002
- > Long career in advising on M&A and equity financing strategies for life sciences companies globally
- > Worked at Lehman Brothers from 1987-1996 and JPMorgan from 1996 through July 2002

Andrew Weisenfeld – Managing Partner



- Has worked on approximately \$50 billion in M&A deal volume across a range of advisory transactions
- > Managing Director/ Co-Head of BofA Life Sciences Investment Banking
- > Prior to BofA, Managing Director and Head of Healthcare M&A at JPMorgan

Andrew Fineberg – Partner



- > Leads the MTS Royalty Monetization Practice
- > Has sold over \$2.4 Billion in royalty interests
- > Prior to MTS, Andrew led the Financing Group at Torreya Partners, LLC, a boutique investment bank and worked at Cowen and Company, as Vice President in the Private Placement Group

Sooin Kwon – Partner



- > Has worked on over \$14 billion in equity and M&A deal volume
- > Director, BofA Healthcare Equity Capital Markets
- Prior to BofA, Equity Research Analyst at Merlin Biomed Asset Management and UBS, respectively

Ravi Mehrotra – Partner



- > Has nearly two decades of healthcare equity research experience
- > Previously, was an equity research analyst at Credit Suisse for 11 years and most recently held the title Global Head of Biotechnology Equity Research

MTS' Strategic Advisory Analytics Reports

MTS Securities, LLC., an affiliate of MTS Health Partners, L.P., ("MTS") offers investment banking services to the healthcare industry. Our professionals distinguish themselves by providing experienced, attentive and independent counsel, and expertise in the context of long-term relationships. Our "Strategic Advisory Analytics" reports exemplify our value add strategic advisory services to clients across all healthcare industry sub-sectors. The reports are also distributed to institutional investors, providing a differentiated macro-perspective on key themes and therapeutic areas within Biopharma.

Industry Thought Reports

Drug pricing

Principled Drug Pricing Centered on Innovation and Choice: Part 1

Will Drug Pricing Still be as Big of an Issue Going Forward with the New US Administration?

<u>Unprincipled Price Rises: Where is the Value in the Unbearable Symptom?</u>

The Frictional Cost Break-up in Drug Pricing: It's not Me. It's You

Orphan Drug Pricing – Unlikely to be Left Alone in the Current Pricing Debate

#complex drug pricing in 140 characters or less

Gene Therapy: Near-term Revolution or Continued Evolution?

Part 1: Global Proprietary Data

Part 2: The Gene Therapy Ecosystem

Industry Dynamic Comments

IPO Monitor

<u>The MTS US Biotech IPO Monitor: 2017 Was a Banner Year – How Does This Bode For 2018, The 40th Birthday For The US Biotech IPO Market?</u>

Therapeutic Area Thought Reports

Dermatology – anticipated H1:2018

To be added to the mailing list for Strategic Advisory Analytics reports please email Nicole Schalmo at schalmo@mtspartners.com

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Appendix

1. Executive Summary

Key Message 1: "Quality" Wins Over Stage of Asset

Pre-Clinical/PI Companies Have HIGHER Raises and Valuations Than PIII Companies

Key Observations from Lead Asset Analysis by Stage

- A detailed analysis of the 244 IPOs from 2012-Q1:2018 when considering the stage of the lead asset (broken down into three buckets; early-stage preclinical/Phase I; mid-stage Phase II; late-stage Phase III/filed/marketed) demonstrated that, broadly speaking, the ability to raise capital and concomitant valuation remains dependent on the quality of the company rather than the stage of the lead asset
- > In Q1:2018, companies (with the caveat that there is n=12) with early-stage assets garnered the highest average in the 2012-2018 time frame. Midstage and late-stage companies in Q1:18 garnered similar to historic valuations
- > Data summarized from pages 19, 65, 66

	Early-Stage (26%)	Mid-Stage (41%)	Late-Stage (33%)
Avg Raise (2012 - Q1 2018)	\$95	\$90	\$87
Avg PM (2012 - Q1 2018)	405	345	376
	Early-Stage (21%)	Mid-Stage (38%)	Late-Stage (41%)
Avg Raise (2017)	\$88	\$98	\$109
Avg PM (2017)	403	369	487
	Early-Stage (42%)	Mid-Stage (33%)	Late-Stage (25%)
Avg Raise (Q1 2018)	\$115	\$87	\$74
Avg PM (Q1 2018)	458	274	346

Two Key Interlinked Dynamics:

- 1. Quality of the company acts as an investor filter relative to the development stage of the company: "hot" early-stage companies can get out at high valuations relative to "standard" late-stage companies the classical "risk/reward" play
- 2. The healthcare specialist investor base for each bucket of stage of lead asset company is notably different

Key Message 2: Gene Therapy = Highest Raises & Valuations

Gene Therapy Companies Garner ~50% Higher Raises and Valuations Than Small Molecule Companies

Key Observations from Lead Asset Analysis by Modality

- > A detailed analysis of the IPO market from 2012-Q1:2018, when considering the modality of lead asset [broken down into four buckets; small molecule, biologic, Gene Therapy (GT) or other], demonstrated that GT modality commands highest raises and concomitant valuations
- > In Q1:2018, there were 3 GT companies, Unum Therapeutics, Homology Medicines and Solid Biosciences. Interestingly, two out of three companies are clinical stage companies that both underperformed post IPO around clinical/FDA news flow
- > Data summarized from pages 20, 67, 68

	Small Molecule (49%)	Biologic (27%)	Gene Therapy (18%)	Other (6%)
Avg Raise (2012 - Q1 2018)	\$84	\$89	\$122	\$81
Avg PM (2012 - Q1 2018)	306	420	466	401
	Small Molecule (33%)	Biologic (17%)	Gene Therapy (25%)	Other (25%)
Avg Raise (Q1 2018)	\$108	\$104	\$126	\$42
Avg PM (Q1 2018)	398	390	493	190

A Focus on GT Remains

As noted above, the GT sector IPO window remains open with relatively robust valuation despite companies the regulatory clinical noise. This somewhat reflects the M&A within the GT space over the last 9 months

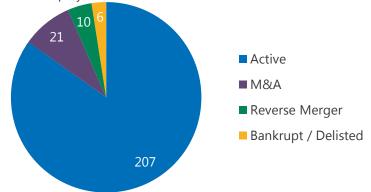
Key Message 3: 85% IPOs Still Trading As Original Entities

A Relatively Small Proportion of IPOs Exit Via M&A or "Completely Fail"

Key Observations from Different Types of Exits

- > Of 244 companies that IPO'd from 2012 Q1:2018, 21 companies exited via M&A at an average 377% premium to IPO pricing
 - Q1:18 saw a very strong M&A dataflow with 4 deals, the same number as in the whole of 2017 and 1 more than in 2016
 - In Q1:18, the average premium was 404%, only second to 2015's outstanding year when average premium was 520%
 - In Q1:18, the average time to exit was 1.7 years vs. 2.0 years for all companies in 2012-2016
- > From the same 244 companies, 10 companies reported negative data and reverse merged at an average of a 73% discount to IPO pricing
 - 2017 was "The Reverse Merger Year" from 2012 Q1 2018, 6 of the 10 reverse mergers occurred in 2017, 2 occurred in Q1:2018
 - The majority of private companies that were the effective acquirers in these reverse mergers were considering a traditional IPO
- > Of 244 companies, there were 6 that filed for bankruptcy or delisted

Data summarized from pages 21, 22



IPO Exits via M&A and Reverse Mergers – Somewhat Surprising Results

Of the 244 US Biotech IPOs over the last 7 years, 21 (8.6%) were acquired, 10 (4.0%) had lead asset failures and exited via a reverse merger, and 6 (2.4%) filed for bankruptcy.

Key Message 4: Foreign Issuers Have Broad Access to US

Generally Higher Quality/Successful EU Companies Eventfully Gravitate to US listings

Key Observations from ADR Offerings

- Over the last 7 years, 2015 and 2017 were exceptional years for foreign issuers IPOing in the US based on matrices such as total amount raised and post money valuation
- > In 2015, there were 9 foreign companies that IPO'd, raising ~22% of the total amount raised and representing ~25% of total post money valuation for that year, whereas in 2017 there were 7 foreign companies that IPO'd, raising ~20% of total IPO proceeds and representing ~22% of total post money valuation for the year
- > In Q1:2018 there was only 1 foreign company raising ~1% of total IPO raise, and representing ~6% of total post money valuation for the year to date



Foreign Companies Benefit from US Capital Markets

US capital markets offer the largest pool of sophisticated investors that are supportive of novel biotech technologies.

Key Message 5: Insider Participation, A Notable Component

High Insider Participation Continues to Drive Successful IPO Numbers in Q1:2018

Key Observations from Analysis of Insider Participation

- > Over the last 7 years, average insider participation in the US biotech ranged from 23% 40%
- > 2016 was a banner year with an average insider participation of 39.9%
- > Q1:2018 numbers regarding the amount of insider participation demonstrate that the trend is continuing from previous years

	2012	2013	2014	2015	2016	2017	Q1 2018	Total
Average Insider Participation	35.8%	29.2%	26.9%	22.1%	39.9%	32.0%	30.7%	29.2%

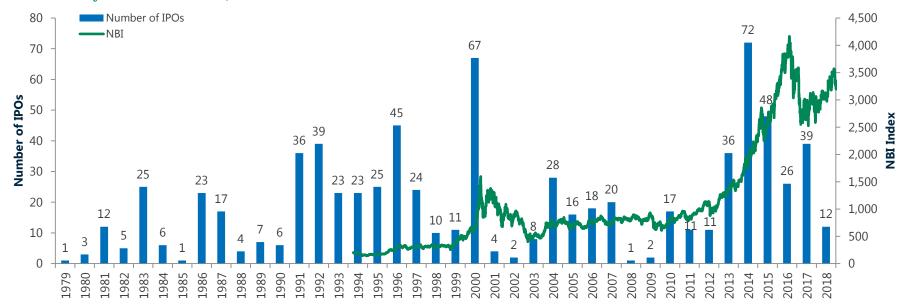
Meaningful Insider Participation in Q1:2018 Continues to be a Driver in Successful IPOs

2. Historical Biotech IPO Market Overview

1979-2018 IPO Biotech Market Overview

2018 is the 40Th Year of Public US Biotech

IPO Totals by Year vs. NASDAQ Biotech Index



Historical IPO Raises and Valuation

	2010	2011	2012	2013	2014	2015	2016	2017	Q1 2018
Avg. Raise	\$80	\$75	\$73	\$81	\$89	\$109	\$76	\$100	\$95
Avg. Post Money Valuation	308	237	274	317	291	529	334	425	368
Total Raised	1,448	980	808	2,933	6,384	5,227	1,967	3,911	1,145
Total Post Money Valuation	5,538	3,075	3,011	11,421	20,983	25,396	8,688	16,563	4,422

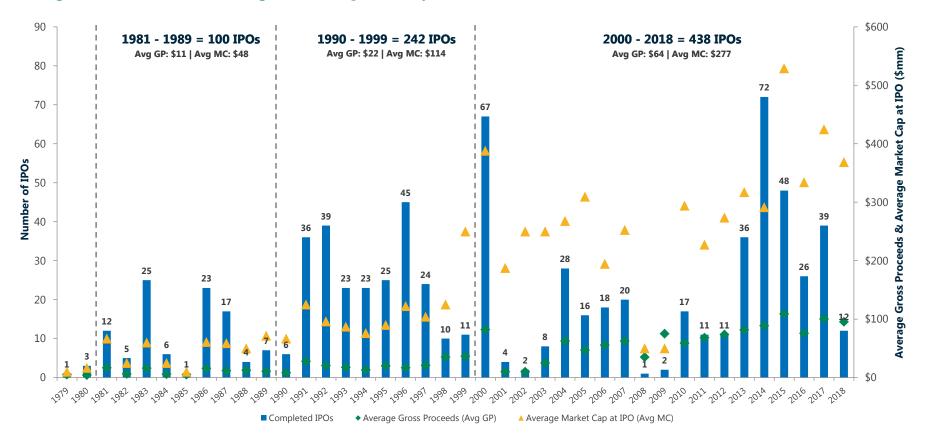
Note(s): All \$ in mm.

Source(s): MTS and Dealogic, as of 03/31/2018. Special thanks to "The Godfather" Stelios Papadopoulos for the historic data.

1979-2018 IPO Biotech Market Overview

The Three Generations Of US Biotech IPOs By Average Gross Proceeds and Market Cap

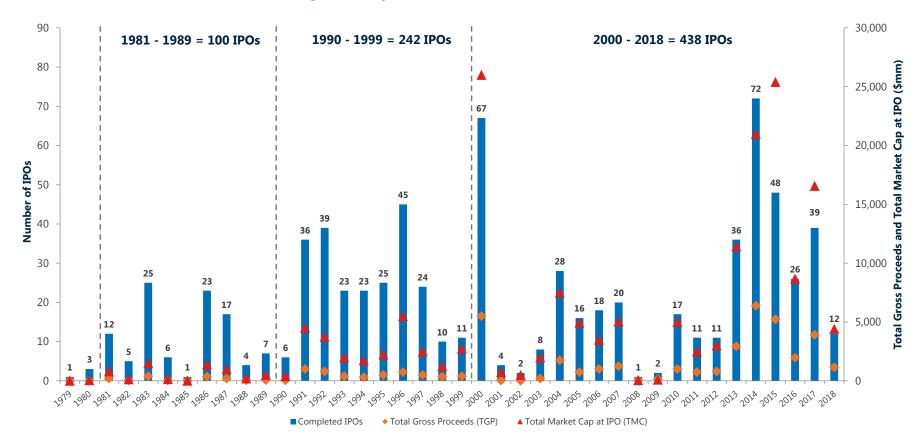
Average Gross Proceeds and Average Market Cap at IPO by Year



1979-2018 IPO Biotech Market Overview

The Three Generations Of US Biotech IPOs By Total Gross Proceeds and Market Cap

Total Gross Proceeds and Total Market Cap at IPO by Year



Annual Stock Price Performance

Selected Benchmark Indices / Equities

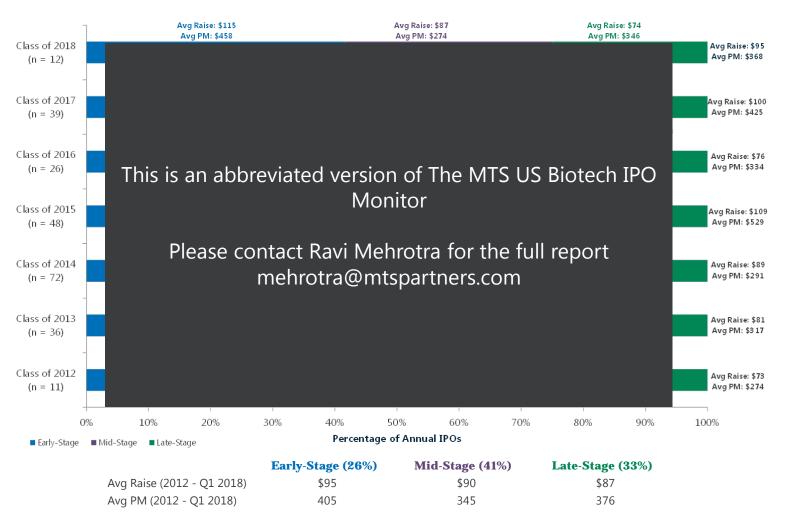
	2010	2011	2012	2013	2014	2015	2016	2017	2018
NASDAQ	16.9%	(1.8%)	15.9%	38.3%	13.4%	5.7%	7.5%	28.2%	3.4%
Healthcare Indices									
NASDAQ Biotechnology Index	15.0%	11.8%	31.9%	65.6%	34.1%	11.4%	(21.7%)	21.1%	(0.0%)
NYSE Arca Biotechnology Index	37.7%	(15.9%)	41.7%	50.6%	47.6%	10.9%	(19.4%)	37.3%	10.1%
ProShares Ultra NASDAQ Biotechnology ETF	-	15.6%	66.8%	159.6%	66.8%	13.9%	(44.2%)	40.5%	(3.0%)
S&P Pharmaceuticals Select Industry Index	21.4%	11.6%	10.1%	59.5%	28.7%	1.1%	(23.7%)	11.3%	(3.6%)
Bellwether Stocks ⁽¹⁾									
Mean	3.1%	27.4%	41.3%	86.4%	30.4%	2.5%	(11.5%)	9.3%	(6.1%)

⁽¹⁾ Bellwether stocks comprise of AMGN, BIIB, CELG and GILD Source(s): MTS and FactSet Research Systems, as of 04/12/2018.

3.2012-Q1:18 Detailed US IPO Biotech Analysis

Valuation Dynamics Split by Lead Asset Phase at IPO

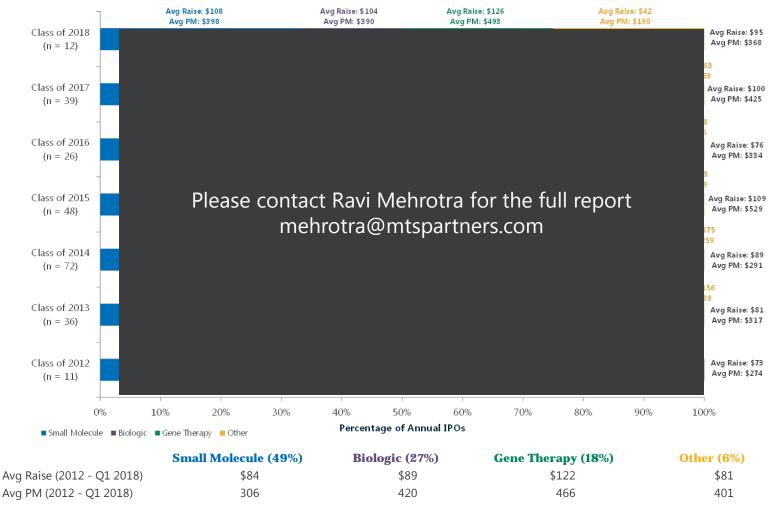
Classes of 2012 – Q1 2018



Note(s): All \$ in mm; Early-Stage = Preclinical and Phase I assets; Mid-Stage = Phase II assets; Late-Stage = Phase III assets and onwards. PM refers to post-money valuations. Source(s): MTS, Dealogic and CapitalIQ, as of 03/31/2018.

Valuation Dynamics Split by Modality

Classes of 2012 – Q1 2018



Note(s): All \$ in mm; Other is comprised of steroids, vaccines and non-traditional biotech products. Source(s): MTS, Dealogic and CapitalIQ, as of 03/31/2018.

Valuation Dynamics of IPO Exits via M&A

Classes of 2012 – YTD 2018 IPO Exits

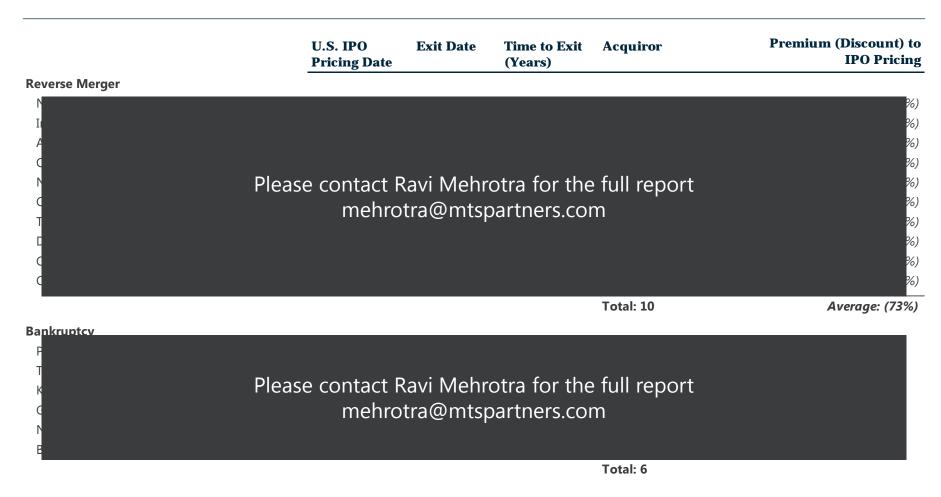


⁽¹⁾ Traded on the NASDAQ as ADRs.

⁽²⁾ Excluded from average, since stock was trading far below IPO price when acquired. For reference, the acquisition represented a 400% premium over unaffected stock price at the time. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

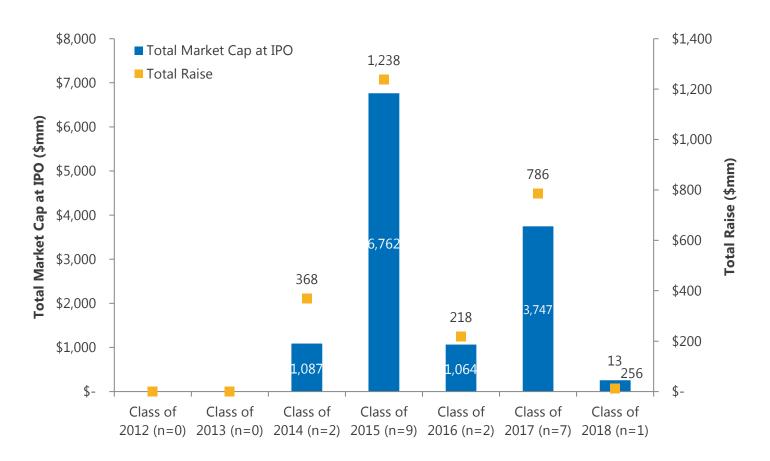
Valuation Dynamics of IPO Exits via Reverse Mergers & Bankruptcies

Classes of 2012 - YTD 2018 IPO Exits



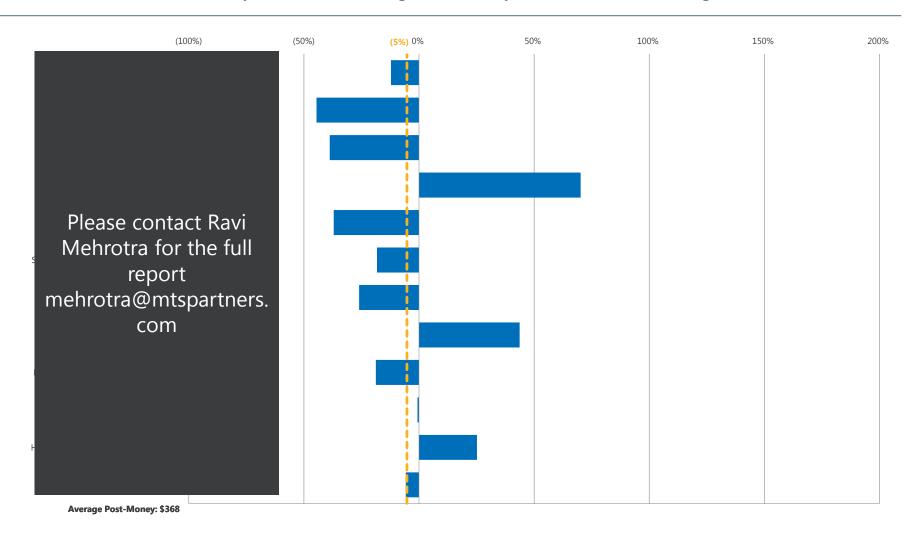
Valuation Dynamics of ADR Offerings

Total Market Cap at IPO and Total Raise of ADR Offerings



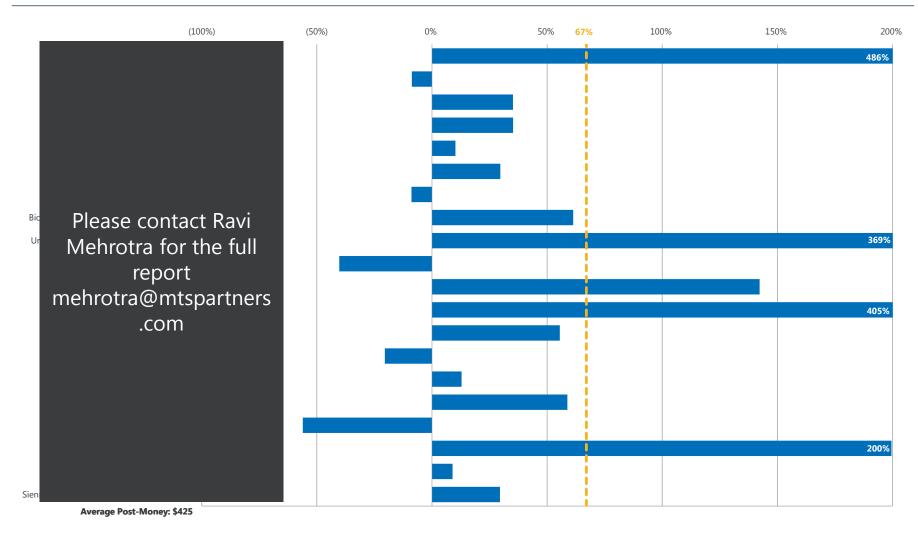
4. 2012 – YTD 2018 Performance Since IPO

Class of 2018 (n=12) Sorted by Date and Showing Post-Money Valuation at IPO Pricing



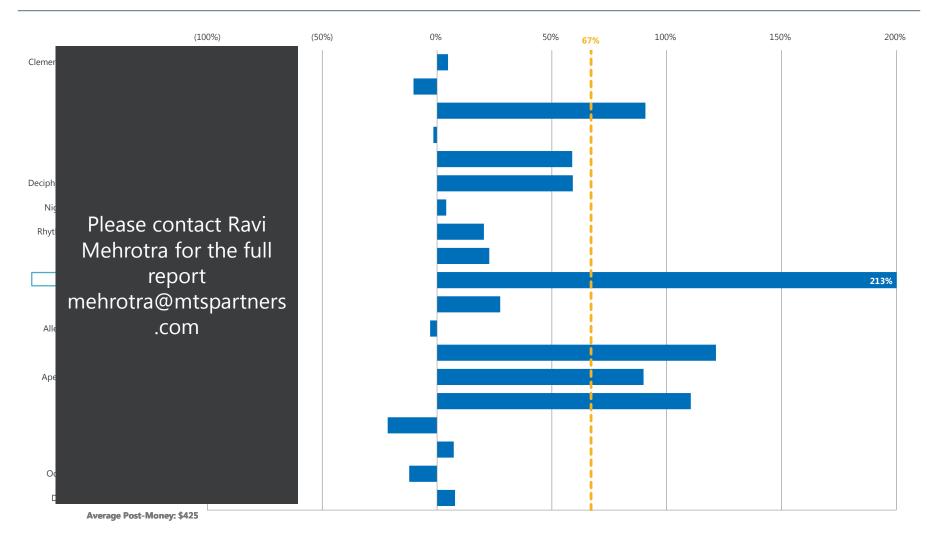
Note(s): All \$ in mm.

Class of 2017 (n=39) Sorted by Date and Showing Post-Money Valuation at IPO Pricing



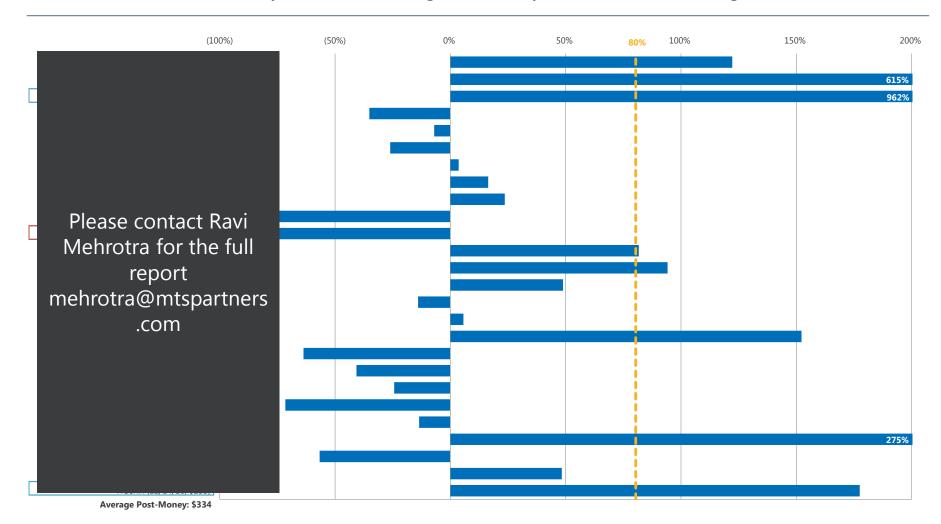
Note(s): All \$ in mm.

Class of 2017 (n=39) Sorted by Date and Showing Post-Money Valuation at IPO Pricing (cont'd)



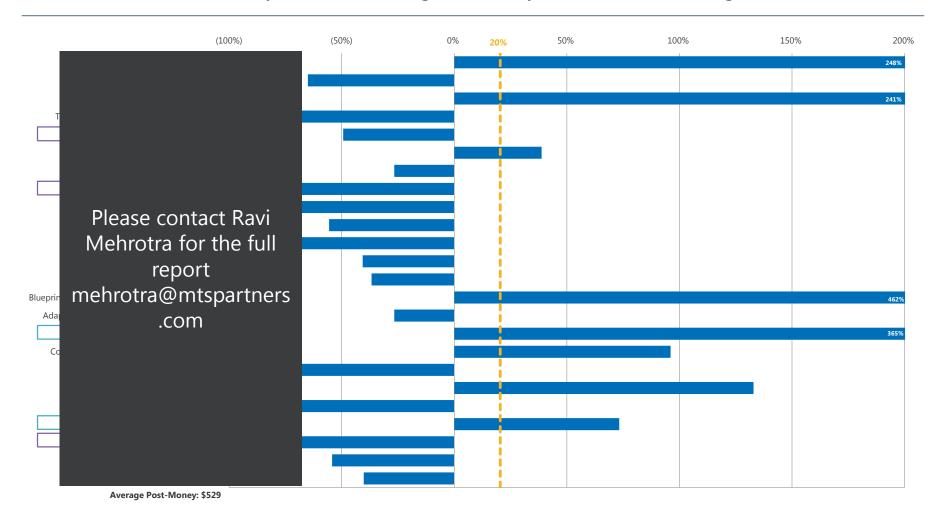
Note(s): All \$ in mm.

Class of 2016 (n=26) Sorted by Date and Showing Post-Money Valuation at IPO Pricing



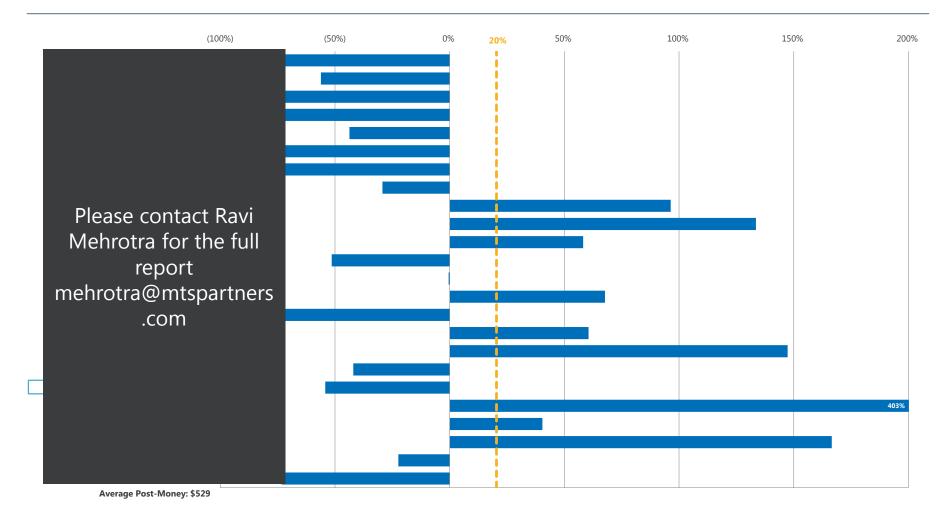
Note(s): All \$ in mm. Blue box indicates acquired companies. Red box indicates bankrupt companies. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

Class of 2015 (n=48) Sorted by Date and Showing Post-Money Valuation at IPO Pricing



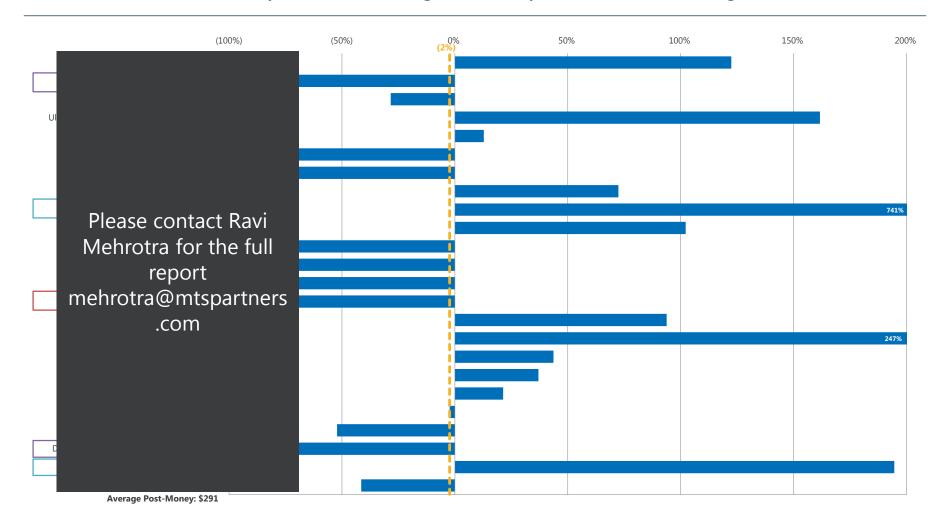
Note(s): All \$ in mm. Blue box indicates acquired companies. Purple box indicates companies that were acquired through a reverse merger. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

Class of 2015 (n=48) Sorted by Date and Showing Post-Money Valuation at IPO Pricing (cont'd)



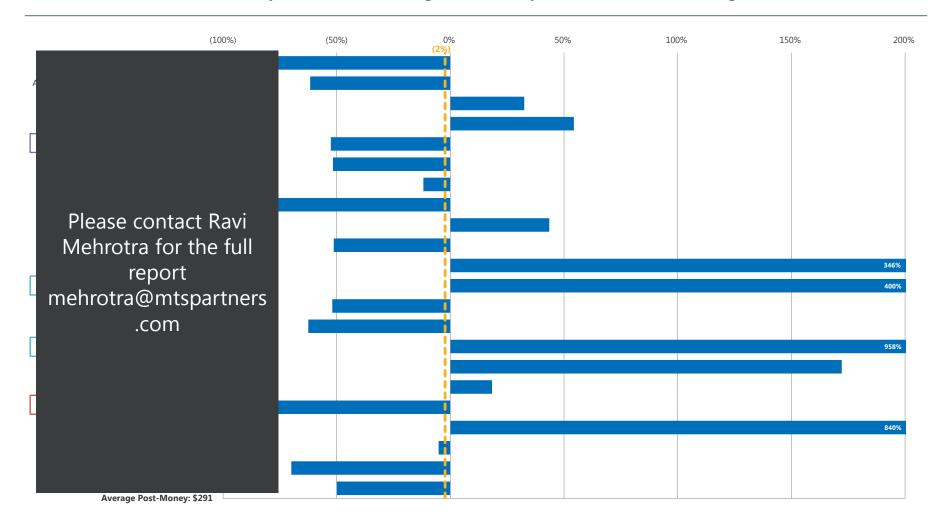
Note(s): All \$ in mm. Blue box indicates acquired companies. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

Class of 2014 (n=72) Sorted by Date and Showing Post-Money Valuation at IPO Pricing



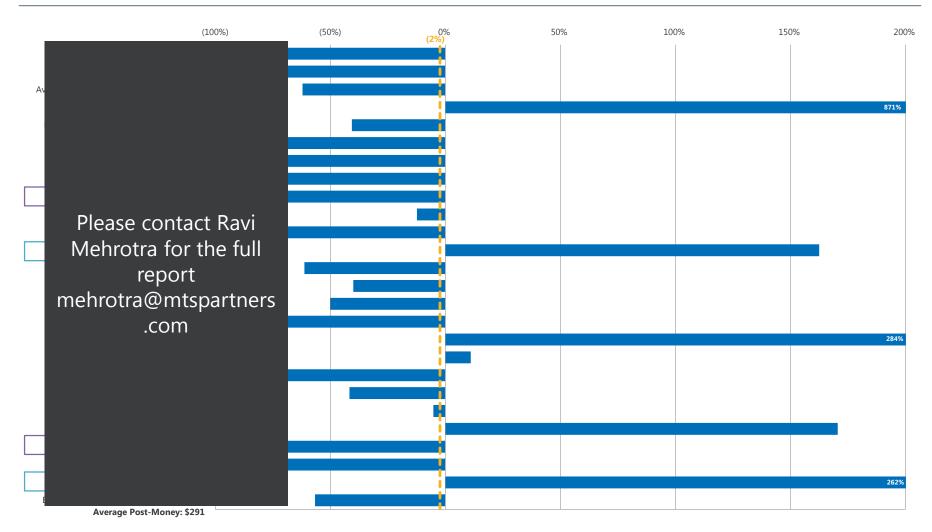
Note(s): All \$ in mm. Blue box indicates acquired companies. Purple box indicates companies that were acquired through a reverse merger. Red box indicates bankrupt companies. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

Class of 2014 (n=72) Sorted by Date and Showing Post-Money Valuation at IPO Pricing (cont'd)



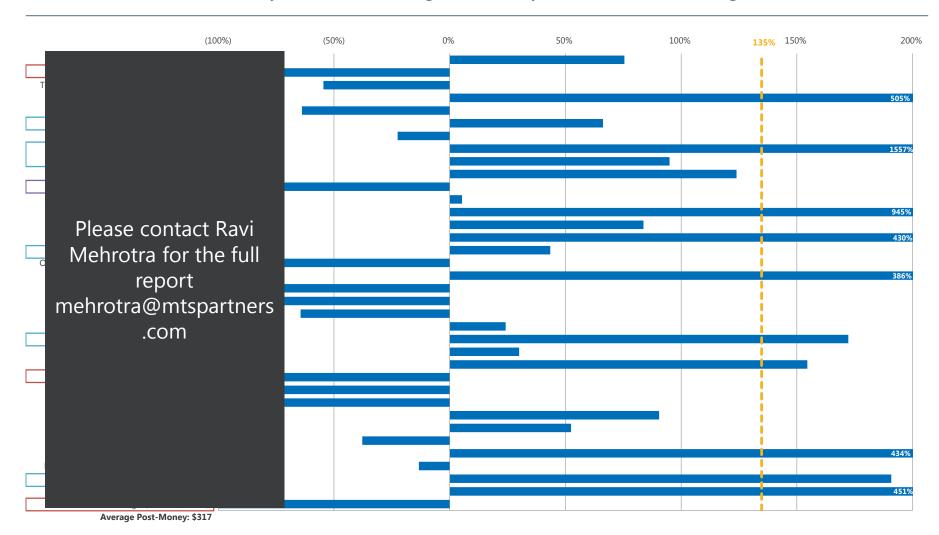
Note(s): All \$ in mm. Blue box indicates acquired companies. Purple box indicates companies that were acquired through a reverse merger. Red box indicates bankrupt companies. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

Class of 2014 (n=72) Sorted by Date and Showing Post-Money Valuation at IPO Pricing (cont'd)



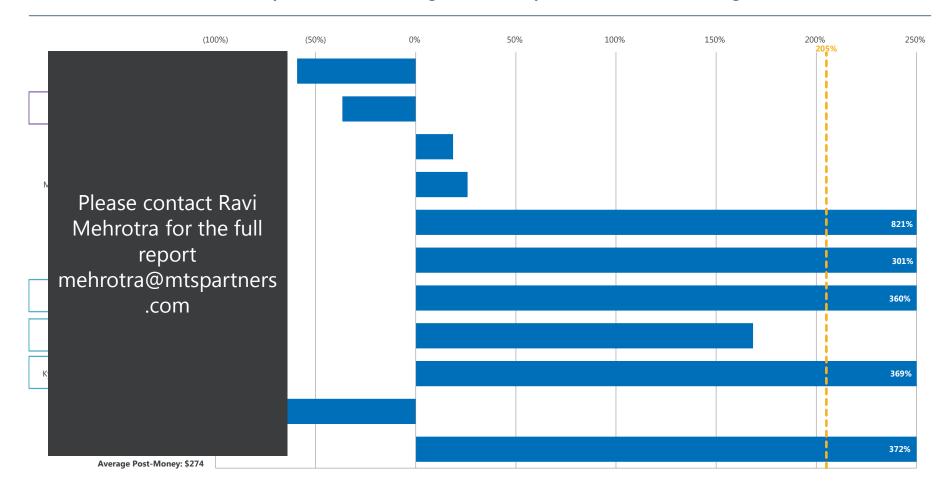
Note(s): All \$ in mm. Blue box indicates acquired companies. Purple box indicates companies that were acquired through a reverse merger. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

Class of 2013 (n=36) Sorted by Date and Showing Post-Money Valuation at IPO Pricing



Note(s): All \$ in mm. Blue box indicates acquired companies. Purple box indicates companies that were acquired through a reverse merger. Red box indicates bankrupt companies. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

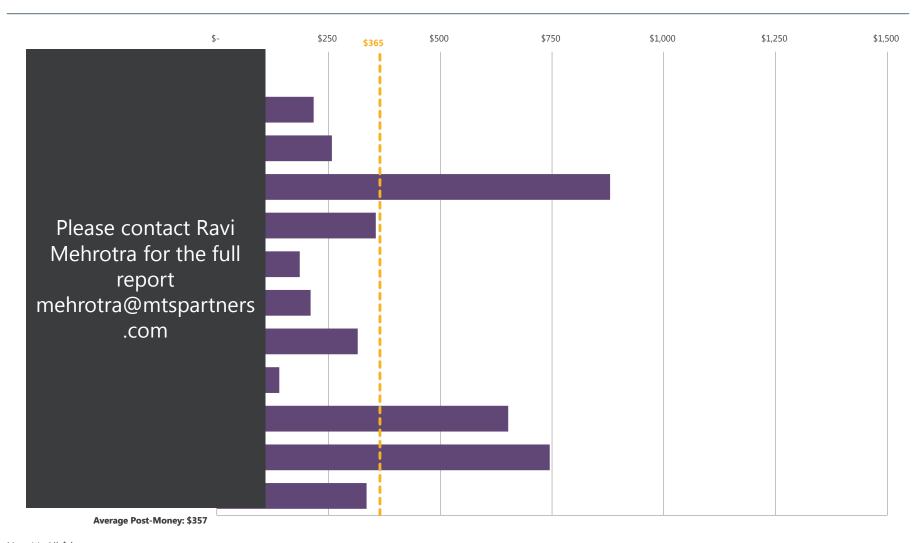
Class of 2012 (n=11) Sorted by Date and Showing Post-Money Valuation at IPO Pricing



Note(s): All \$ in mm. Blue box indicates acquired companies. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

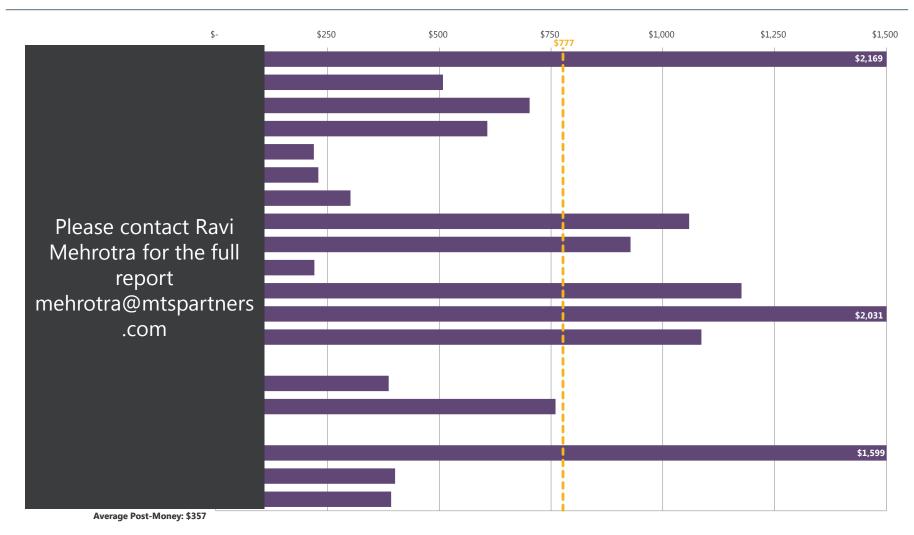
Current Market Capitalization

Class of 2018 (n=12) Sorted by Date and Showing Post-Money Valuation at IPO Pricing



Note(s): All \$ in mm.

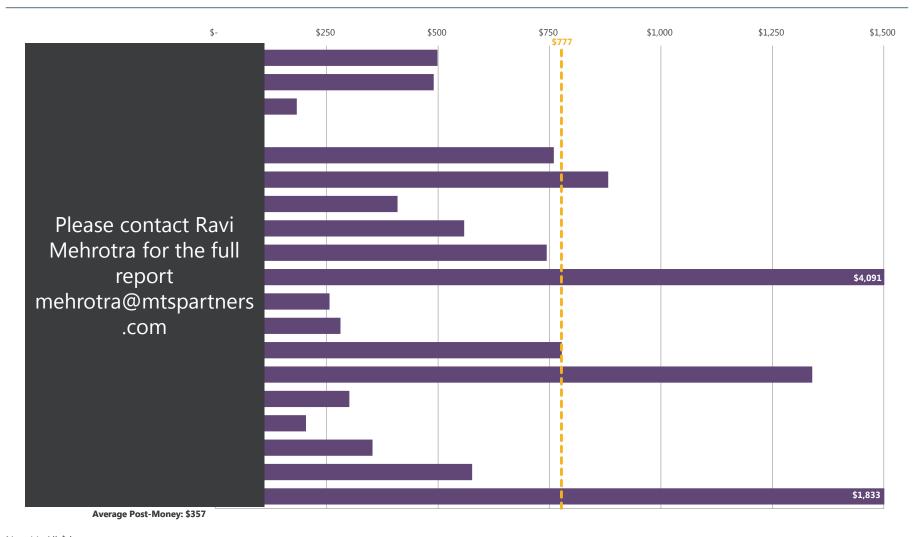
Class of 2017 (n=39) Sorted by Date and Showing Post-Money Valuation at IPO Pricing



Note(s): All \$ in mm.

Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

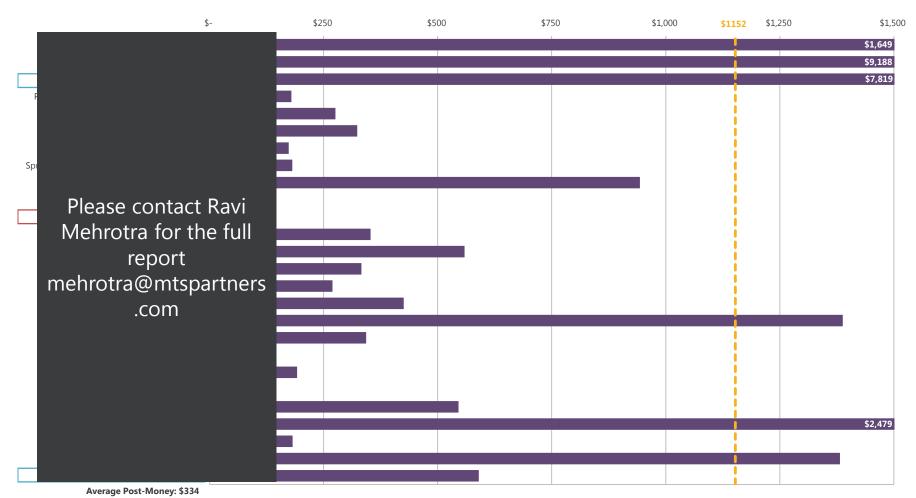
Class of 2017 (n=39) Sorted by Date and Showing Post-Money Valuation at IPO Pricing (cont'd)



Note(s): All \$ in mm.

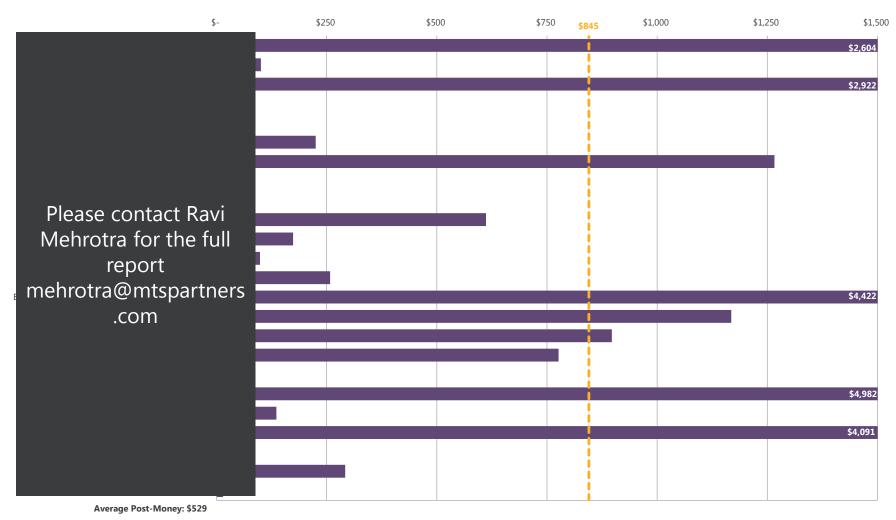
Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

Class of 2016 (n=26) Sorted by Date and Showing Post-Money Valuation at IPO Pricing



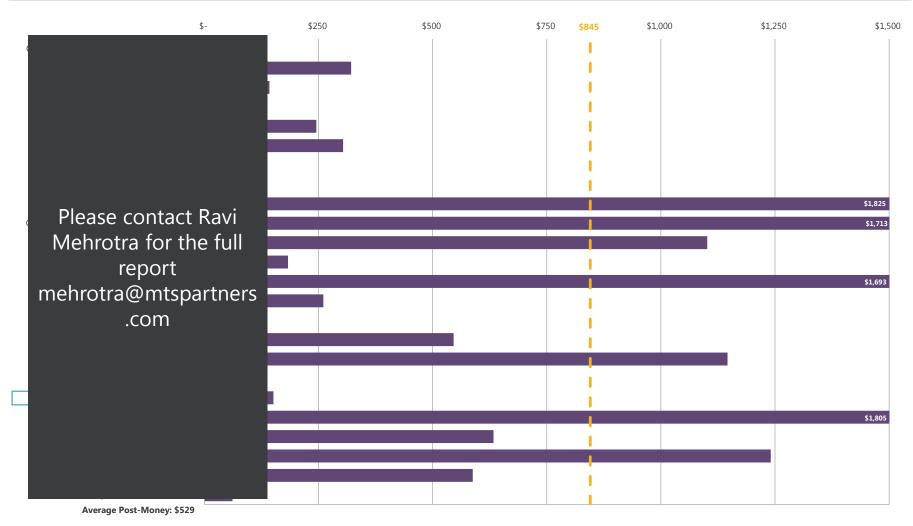
Note(s): All \$ in mm. Red box indicates bankrupt companies. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

Class of 2015 (n=48) Sorted by Date and Showing Post-Money Valuation at IPO Pricing



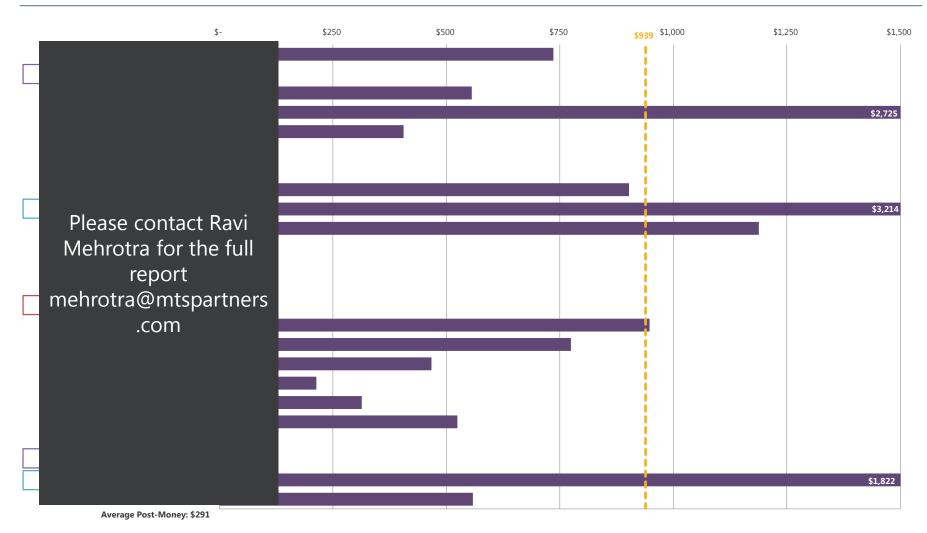
Note(s): All \$ in mm. Blue box indicates acquired companies. Purple box indicates companies that were acquired through a reverse merger. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

Class of 2015 (n=48) Sorted by Date and Showing Post-Money Valuation at IPO Pricing (cont'd)



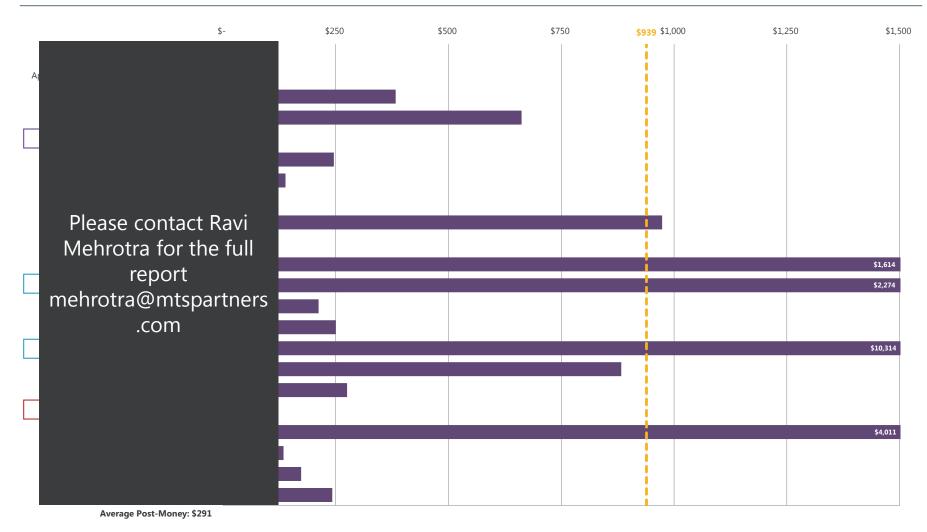
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Class of 2014 (n=72) Sorted by Date and Showing Post-Money Valuation at IPO Pricing



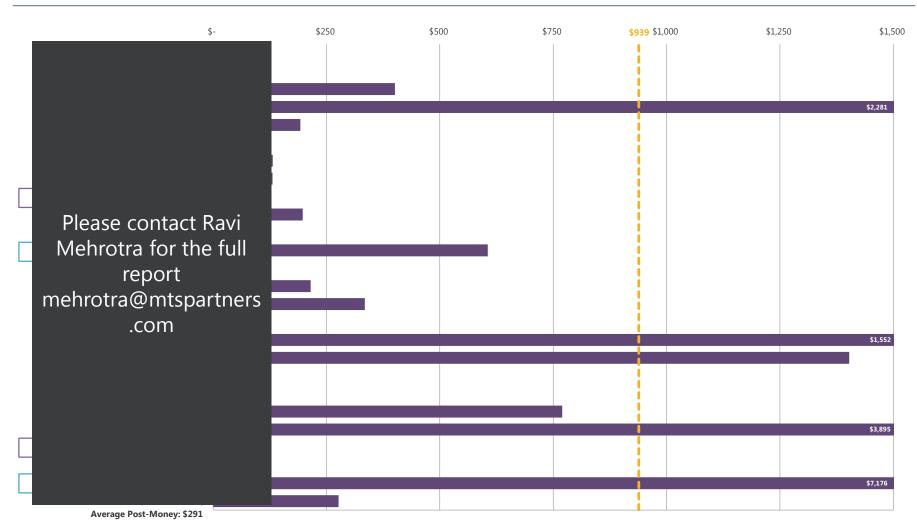
Note(s): All \$ in mm. Blue box indicates acquired companies. Purple box indicates companies that were acquired through a reverse merger. Red box indicates bankrupt companies. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

Class of 2014 (n=72) Sorted by Date and Showing Post-Money Valuation at IPO Pricing (cont'd)



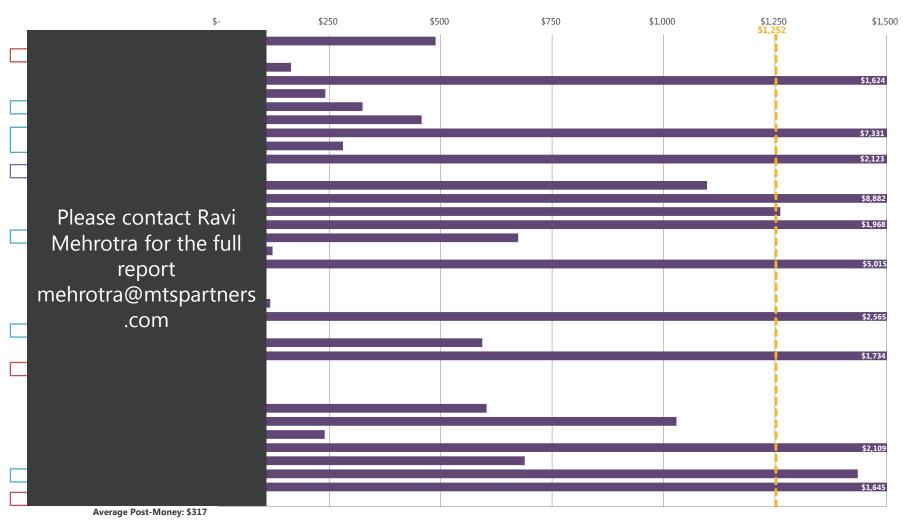
Note(s): All \$ in mm. Blue box indicates acquired companies. Purple box indicates companies that were acquired through a reverse merger. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

Class of 2014 (n=72) Sorted by Date and Showing Post-Money Valuation at IPO Pricing (cont'd)



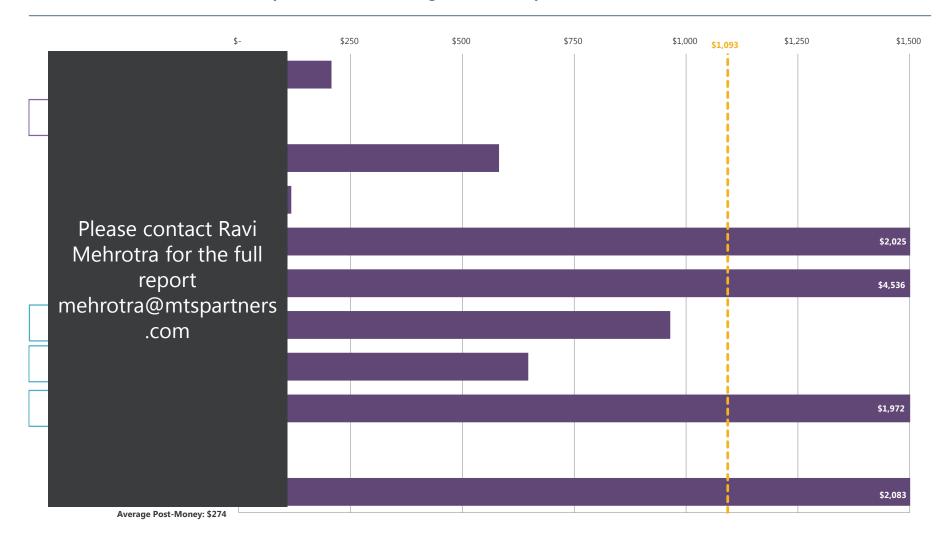
Note(s): All \$ in mm. Blue box indicates acquired companies. Purple box indicates companies that were acquired through a reverse merger. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

Class of 2013 (n=36) Sorted by Date and Showing Post-Money Valuation at IPO Pricing



Note(s): All \$ in mm. Blue box indicates acquired companies. Purple box indicates companies that were acquired through a reverse merger. Red box indicates bankrupt companies. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

Class of 2012 (n=11) Sorted by Date and Showing Post-Money Valuation



Note(s): All \$ in mm. Blue box indicates acquired companies. Purple box indicates companies that were acquired through a reverse merger. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

5. 2012-Q1:18 Detailed US IPO Biotech Database

Q1 2018 (n=12)



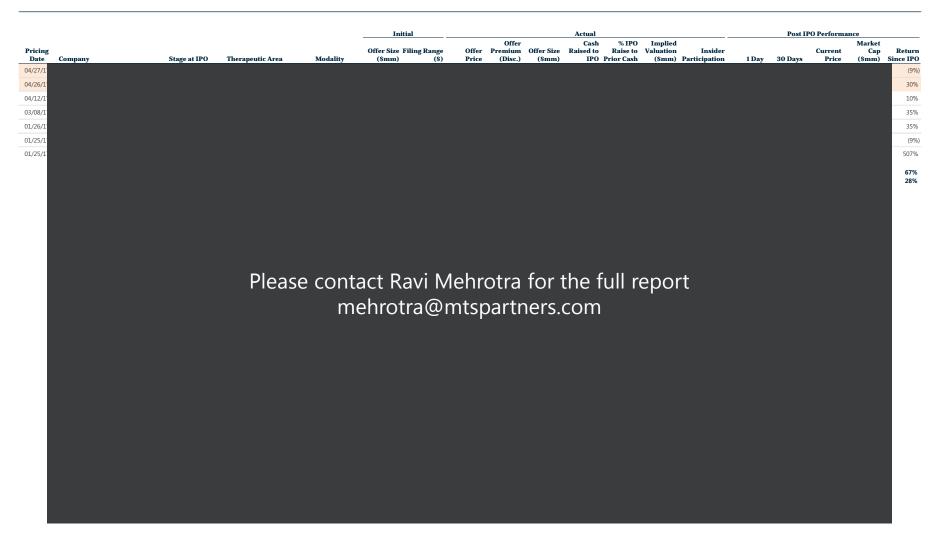
Note(s): Orange shading indicates ADR offerings. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

2017 (n=39)

				Initial			Actual			Post IPO Performance				
ng e Company	Stage at IPO	Therapeutic Area	Modality	Offer Size Filing Range (\$mm) (\$)	Offer Premium Price (Disc.)	Offer Size (\$mm)	Cash % IF Raised to Raise IPO Prior Cas	to Valuation Insider		30 Days	Current Price	Market Cap (\$mm)	Retur Since IP	
/1													89	
/1													(129	
/1													79	
/1													(22	
/1													111	
/1													90	
/1													121	
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Lead program is peptide undergoing NDA regulatory pathway, we classed it as biologic.
 In the US, Ablynx is an ADR offering.
 Note(s): Blue shading indicates acquired companies. Orange shading indicates ADR offerings.
 Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

2017 (n=39) (cont'd)



Note(s): Orange shading indicates ADR offerings. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

2016 (n=26)



(2) Lead program is peptide undergoing NDA regulatory pathway, we classed it as biologic.

Note(s): Blue shading indicates acquired companies. Orange shading indicates ADR offerings. Red shading indicates bankrupt companies. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

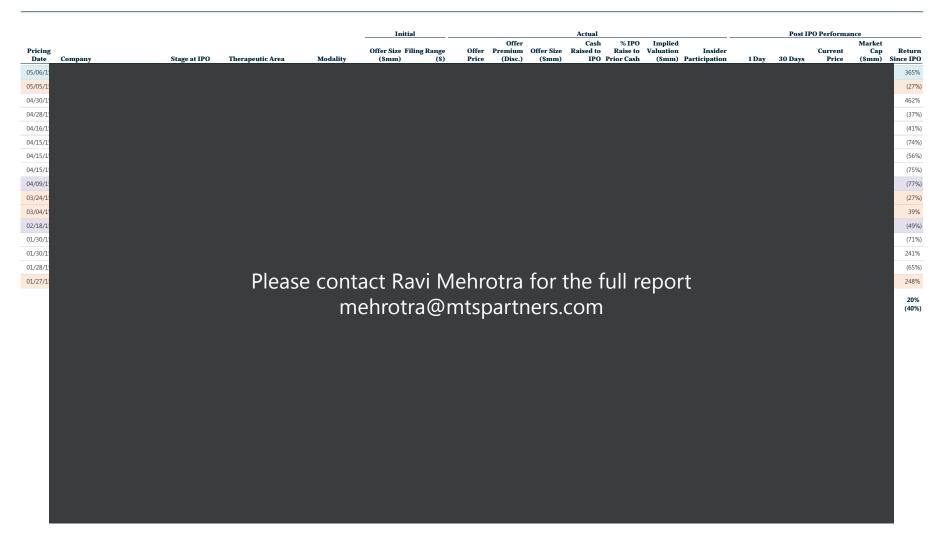
2015 (n=48)

					Initial		Actual					Post IPO Performance				
ing te	Company	Stage at IPO	Therapeutic Area	Modality	Offer Size Filing Range (8mm) (\$)	Offer Premium Price (Disc.)	Offer Size (\$mm)		% IPO Raise to rior Cash	Implied Valuation In (\$mm) Particip	sider ation 1 Day	30 Days	Current Price	Market Cap (\$mm)	Retur Since IP	
9/1															(73	
3/1															(22	
/1															167	
1															40	
1															40	
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(2) In the US, Biotie is an ADR offering.

Note(s): Blue shading indicates acquired companies. Purple shading indicates companies that were acquired through a reverse merger. Orange shading indicates ADR offerings. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

2015 (n=48) (cont'd)



Note(s): Blue shading indicates acquired companies. Purple shading indicates companies that were acquired through a reverse merger. Orange shading indicates ADR offerings. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

2014 (n=72)



Note(s): All \$ in mm. Blue box indicates acquired companies. Purple box indicates companies that were acquired through a reverse merger. Red box indicates bankrupt companies. Orange shading indicates ADR offerings.

Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

2014 (n=72) (cont'd)

icing					Initial		Actual				Post IPO Performance			
					Offer Size Filing Range	Offer Offer Premium	Offer Size	Cash % IPO Raised to Raise to	Implied Valuation Inside	r		Current	Market Cap	Retur
	Company	Stage at IPO	Therapeutic Area	Modality	(\$mm) (\$)	Price (Disc.)	(\$mm)	IPO Prior Cash	(\$mm) Participatio		30 Days	Price		Since IP
														1729
														9589
14														(639
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1														400
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1.														(52
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14														44
1														247
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1.														102
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1														74.

(1) Lead program is peptide undergoing NDA regulatory pathway, we classed it as biologic.

Note(s): Blue shading indicates acquired companies. Purple shading indicates companies that were acquired through a reverse merger. Red shading indicates bankrupt companies.

Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

2014 (n=72) (cont'd)



⁽¹⁾ Lead program is peptide undergoing NDA regulatory pathway, we classed it as biologic. Note(s): Purple shading indicates companies that were acquired through a reverse merger. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

2013 (n=36)

				Initial			Actual		Post IPO Performance				
ng				Offer Size Filing Range	Offer Premi			Valuation Insider		Current	Market Cap	Retu	
e Company	Stage at IPO	Therapeutic Area	Modality	(\$mm) (\$)	Price (Di	c.) (\$mm)	IPO Prior Cash	(\$mm) Participation	1 Day 30 Days	Price	(\$mm)	Since II	
/1												(100	
/1												451 191	
/1 /1												(13	
/1												434	
/1												(38	
/1												52	
/1												91	
/1												(80	
/1												(87	
/1												(99	
/1:												155	
1.												30	
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1			m	ehrotra@	mtspar	tners.	com					(8)	
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1.												4	
1												431	
/1												84	
/1												945	
/1													
/1: /1:												124	
/1												9:	
/1												155	
/1												(2:	
/1												6	

Note(s): Blue box indicates acquired companies. Purple box indicates companies that were acquired through a reverse merger. Red box indicates bankrupt companies. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

2013 (n=36) (cont'd)



Note(s): Red shading indicates bankrupt companies. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

2012 (n=11)



Note(s): Blue shading indicates acquired companies. Purple shading indicates companies that were acquired through a reverse merger. Source(s): MTS, Dealogic and CapitalIQ, as of 04/12/2018.

6. Introduction to MTS

MTS Health Partners Overview

Investment Banking

- Privately owned, independent firm, founded in 1999
- Aligned strategic and financial advisory services to healthcare companies of all sizes, from global corporations to venture-backed businesses
- Extensive experience across a broad range of client and transaction types
 - Public and private; for-profit and not-for-profit
 - Mergers and acquisitions, restructurings, private placements, IPOs, structured debt financings and general strategic advice
- > Partners averaging 20 years of healthcare experience
- Offices in New York, San Francisco and Tokyo

Life Sciences

- > Pharmaceuticals
- > Specialty Pharma
- > Generics

- > Biotechnology
- > Orphan / Rare Disease
- > Medical Devices / Diagnostics

Healthcare Services

- > Managed Care
- > Hospitals/Outsourced Services
- > PBMs & Pharmacy Services
- Dialysis
- Post-Acute Facilities (SNF, IRF, LTACH)

- Home Healthcare/Hospice
- > Healthcare Technology
- > Clinical Laboratories
- Healthcare Distribution/Supply
- Pharma Services

Advantages of a Partnership with MTS Advisory Team

Bulge Bracket Capabilities with a Boutique Approach

Distinguished by experienced, attentive and independent counsel in the context of long-term relationships



Aligned

- Economics compensation model that transcends annual Wall Street bonus cycle
- > Culture private equity mentality allows for investor-focused perspective
- "Success" defined through achievement of client goals rather than mere transaction execution

Independent

- Stability of franchise and execution in turbulent banking environment
- > Unencumbered by balance sheet conflicts or commoditized financing solutions
- Advisory team solely focused on meeting client objectives without impact from other parts of the organization

Attentive

- Boutique environment

 ensures personal
 commitment and focus
- Team of over 40 professionals, larger than many bulgebracket healthcare teams
- Staffed, resourced similarly to bulgebracket banks

Long-Term Partnership

- Long-term relationships rather than short-term transactions
- > Translates to **unbiased and objective** evaluation and advice

Experienced

- > Senior personnel decades of healthcare-focused banking experience
- Extensive strategic, operational, financial and capital markets expertise
- > Creative solutions rather then the "standard" banker playbook

Healthcare-Focused

- > Unparalleled network provides broadest reach of any healthcare advisor
- In-depth knowledge of healthcare industry, trends, transactions, decision-makers and their personalities

Large Firm Scale with Boutique Focus

Senior Life Sciences Team

Mark Epstein

Managing Partner

Completed over 100 private financings for clients raising over \$5 billion in private capital

Managing Director / Co-Head Bank of America Private Equity Placements

Prior to BofA, VP and co-head of Direct Private Equity Placements at Merrill Lynch

Andrew Weisenfeld

Managing Partner

Has worked on approximately \$50 billion in M&A deal volume across a range of advisory transactions

Managing Director/ Co-Head of BofA Life Sciences Investment Banking

Prior to BofA, Managing Director and Head of Healthcare M&A at JPMorgan

Peter Collum

Partner

Has worked on over \$20 billion in M&A deal volume

Director, Bank of America Healthcare Investment Banking from 2003-2009

Prior to BofA, Technical Development Engineer at Hoffmann-La Roche

Andrew Fineberg

Partner

Prior to MTS, Andrew led the Financing Group at Torreya Partners, LLC, a boutique investment bank

Prior to Torreya Partners, Andrew worked at Cowen and Company, a global investment bank as Vice President in the Private Placement Group

Kazuki Kusaka

Partner

Prior to joining MTS, Mr. Kusaka led the healthcare practice for Lazard in Japan for 10 years

Prior to Lazard, Mr. Kusaka was a Managing Director and the head of Asia Healthcare Group at Lehman Brothers from 2000 to 2007

Sooin Kwon

Partner

Has worked on over \$14 billion in equity and M&A deal volume

Director, BofA Healthcare Equity Capital Markets

Prior to BofA, Equity Research Analyst at Merlin Biomed Asset Management and UBS, respectively

David Low

Partner

Previously, a partner in Lazard's Life Sciences Group, which he joined in 2002

Long career in advising on M&A and equity financing strategies for life sciences companies globally

Worked at Lehman Brothers from 1987-1996 and JPMorgan from 1996 through July 2002

Ravi Mehrotra

Partner

Has nearly two decades of healthcare equity research experience

Previously, at Credit Suisse for 11 years and most recently held the title Global Head of Biotechnology Equity Research

Worked at Cowen 1999-2004 as European head of Biotechnology and Deutsche bank 1997-1999

Entire MTS Team Solely Focused on the Global Healthcare Industry

Partners/Senior Advisors

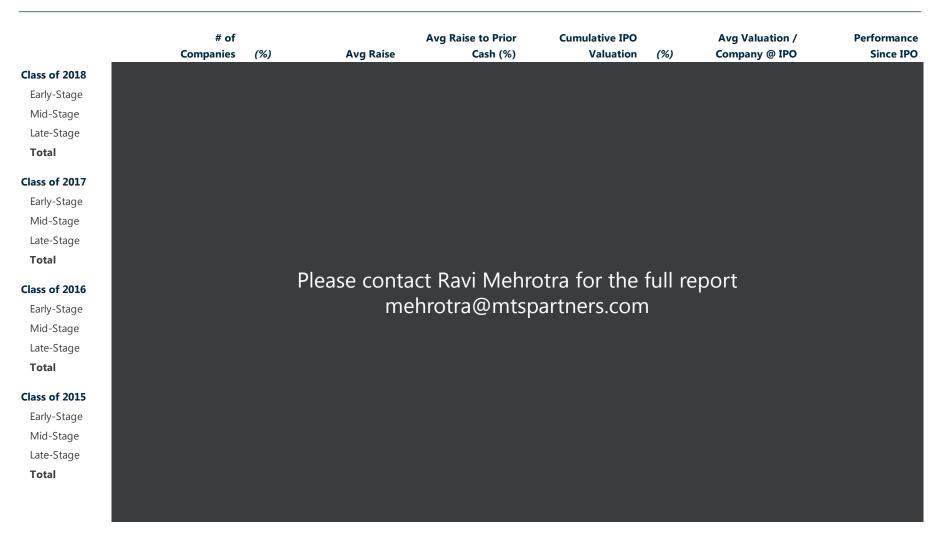
Directors / Vice Presidents

Associates / Analysts

Appendix

Valuation of Performance Split by Lead Asset Phase at IPO

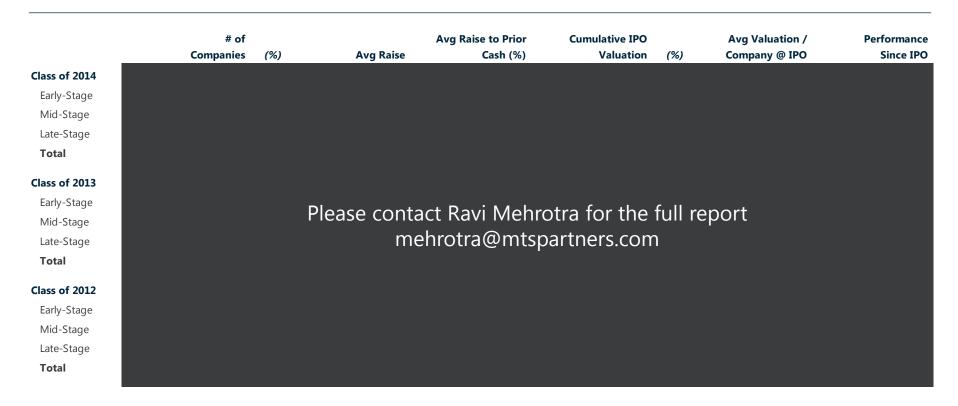
Classes of 2015 - Q1 2018



Note(s): All \$ in mm; Early-Stage = Preclinical and Phase I assets; Mid-Stage = Phase II assets; Late-Stage = Phase III assets and onwards. PM refers to post-money valuations. Source(s): MTS, Dealogic and CapitalIQ, as of 03/31/2018.

Valuation of Performance Split by Lead Asset Phase at IPO

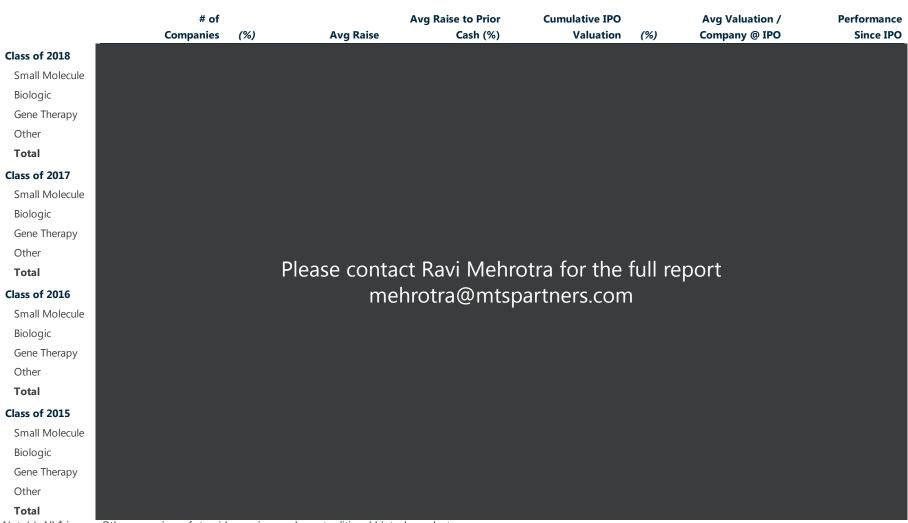
Classes of 2012 – 2014



Note(s): All \$ in mm; Early-Stage = Preclinical and Phase I assets; Mid-Stage = Phase II assets; Late-Stage = Phase III assets and onwards. PM refers to post-money valuations. Source(s): MTS, Dealogic and CapitalIQ, as of 03/31/2018.

Valuation of Performance Split by Modality

Classes of 2015 - Q1 2018

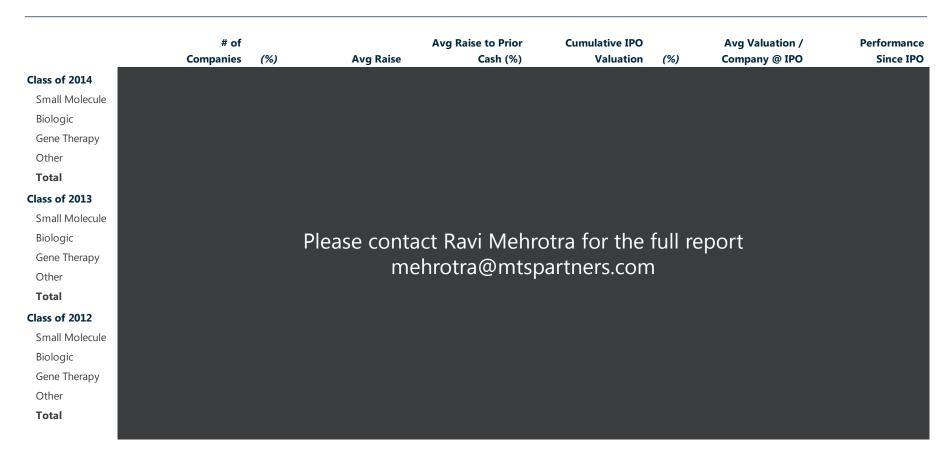


Note(s): All \$ in mm; Other comprises of steroids, vaccines and non-traditional biotech products.

Source(s): MTS, Dealogic and CapitalIQ, as of 03/31/2018.

Valuation of Performance Split by Modality

Classes of 2012 – 2014



Note: All \$ in mm; Other comprises of steroids, vaccines and non-traditional biotech products. Source(s): MTS, Dealogic and CapitalIQ, as of 03/31/2018.



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