

Life sciences investment continues trajectory toward dollar high

Investment activity in life sciences in the third quarter of 2016 was down from the record setting 2015 comparable quarter. However, the year continues on pace to finish as one of the highest dollar amounts invested in MoneyTree history.



US venture capital funding for the life sciences sector¹, which includes biotechnology and medical devices, declined 17% by value and 26% by volume, on a year-over-year basis during the third quarter of 2016, according to the MoneyTree™ Report from PricewaterhouseCoopers (PwC) LLP, based on data provided by Thomson Reuters. Venture capitalists invested \$2.5 billion in 156 life sciences deals in the third quarter of 2016, compared with \$3.0 billion in 210 deals during the same quarter of 2015. Investment in life sciences and biotech for the third quarter of the year was the sixth highest since the start of the MoneyTree data series in 1995. The average deal size increased by 12% from the third quarter of 2015 to \$16.0 million per average transaction in the third quarter of 2016. The life sciences industry continues to be the second most invested destination after software, in terms of dollars.

Growth in overall venture funding across all industries decreased in both value and in volume by 36% and 25% respectively from the third quarter of 2015 to 2016. Venture investors funneled \$10.6 billion into 891 deals during the third quarter of 2016. The average deal size decreased by 15% from the third quarter of 2015 to \$11.9 million per average transaction in the third quarter of 2016.

Life sciences venture capital investment

The life sciences record high investment spree of 2015 came to an end in Q4 with the lowest quarter of investments during the year, signaling a slow down in the record trend. Although there is no expectation that investments will match 2015 peak levels, 2016 investments to date by dollar continue at a strong pace. Buoyed by 4 megadeals in the third quarter, investment dollars persevere while the number of deals continues to decline.

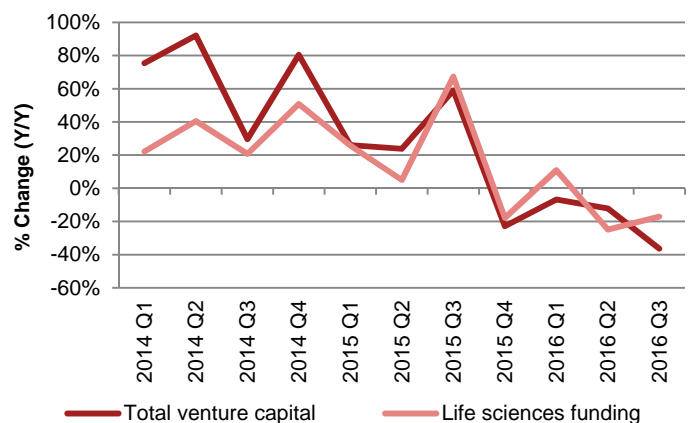
The life sciences share of total venture funding grew to 23% during the third quarter of 2016 from 18% during the third quarter of 2015.

The biotechnology industry received the second largest amount of venture capital in the third quarter of 2016, with \$1.8 billion going into 87 deals, a decrease of 15% in deal value and a decrease of 30% in deal volume, compared with the third quarter of 2015.

Investments for the medical devices industry also decreased by 23% in terms of value and by 19% in volume for the third quarter of 2016, compared with the same quarter in 2015, capturing \$663 million in 69 deals.

“Although we are still on track for a strong year in life sciences investment dollars, we cannot ignore the decline in deal volume for the 5th consecutive quarter,” said Greg Vlahos, Life Sciences Partner at PwC. “Investors are being more selective on where they are placing their stakes”.

Figure 1: Life sciences funding compared with total venture funding, 2014–2016



¹The MoneyTree™ life sciences sector includes the biotechnology and medical device and equipment industries. *Biotechnology* is defined as “developers of technology promoting drug development, disease treatment, and a deeper understanding of living organisms; includes human, animal, and industrial biotechnology products and services. Also included are biosensors, biotechnology equipment, and pharmaceuticals.”

Medical device and equipment industries are defined as those that “manufacture and/or sell medical instruments and devices including medical diagnostic equipment (X-ray, CAT scan, MRI), medical therapeutic devices (drug delivery, surgical instruments, pacemakers, artificial organs), and other health-related products such as medical monitoring equipment, handicap aids, reading glasses, and contact lenses.”

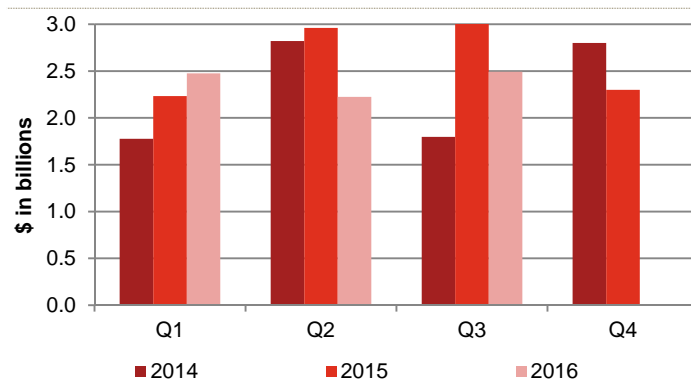
Life sciences funding by quarter

Life sciences investment decreased to \$2.5 billion in the third quarter of 2016, compared with the third quarter of 2015, during which \$3.0 billion was invested.

On a year-over-year basis for the third quarter of 2016, biotechnology investments decreased by 15% and medical devices investments decreased by 23% in terms of value.

Dollar funding increased by 5% for biotechnology and 21% for medical devices, when compared with the second quarter of 2016.

Figure 2: Life sciences funding trends by quarter, 2014–2016



Life sciences deal volume by quarter

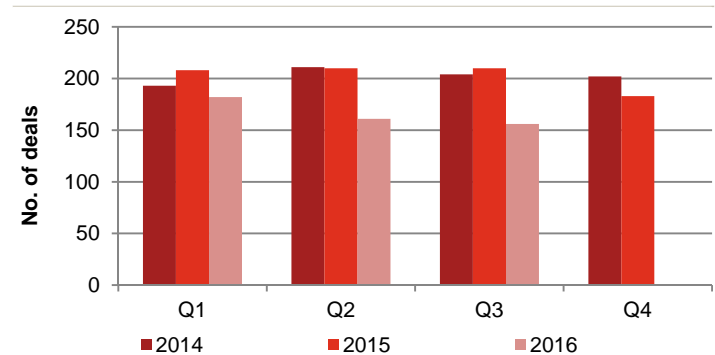
There were a total of 156 life sciences deals during the third quarter of 2016, representing a decline of 26% when compared to the same quarter in the previous year and 7% compared to the second quarter of 2016.

During the third quarter of 2016, the biotechnology industry completed 87 deals, down from 125 during the third quarter of 2015, and 103 during the second quarter of 2016.

The medical devices industry completed 69 deals during the third quarter of 2016, compared to 85 during the third quarter of 2015 and 64 during the fourth quarter of 2015.

“Deal volume is a key performance indicator to measure investor confidence,” Vlahos acknowledged. “However, even with volume down, the life sciences space continues to garner the most dollars behind the software industry.”

Figure 3: Life sciences deal volume by quarter, 2014–2016



Life sciences average deal size by quarter

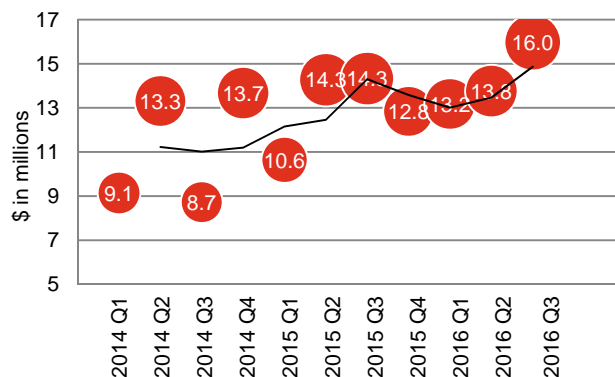
During the third quarter of 2016, the average deal size for life sciences was \$16.0 million, an increase of 12% year-over-year compared to the average deal size in 2015 of \$14.3 million.

The biotech industry had four deals on the top 10 financing list during the third quarter of 2016 compared to the same quarter of 2015 where only one deal hit the \$100 million or greater category. The biotechnology industry made up 8% of the total amount invested in top ten deals so far in 2016 compared to the software sector which accounted for 66%.

There were no medical devices deals in the top 10 in the third quarter of 2016, but there was one deal in the top 10 in the third quarter of 2015.

Vlahos noted, “Deal sizes were artificially inflated with four megadeals during the quarter. Investors are not deviating from the practice of giving companies just enough dollars to reach the next development milestone.”

Figure 4: Life sciences average deal size by quarter, 2014–2016



Funding for biotechnology and medical devices

Biotechnology captured 73% of all life sciences investments during the third quarter of 2016. This share ranks slightly higher than the 71% recorded in the third quarter of 2015, but lower than the 76% witnessed in the second quarter of 2016.

In the third quarter of 2016, the share of medical devices and equipment declined to 27% from 29% when compared to the same quarter of last year, but the share rose from 24% compared to the second quarter of 2016.

According to Vlahos, “The biotechnology industry continues to receive the bulk of funding as they have been successful reaching liquidity events.”

Figure 5: Life sciences investment split for the third quarter of 2016

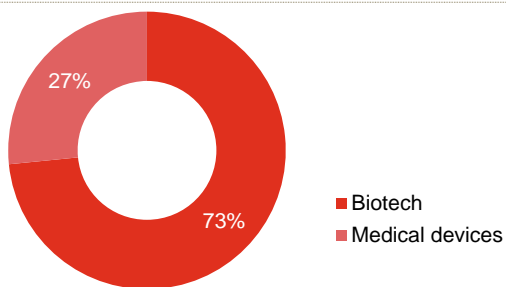
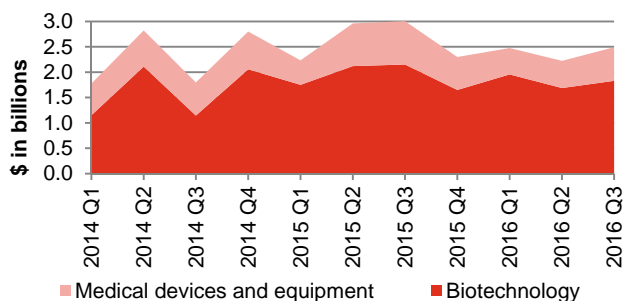


Figure 6: Biotechnology and medical devices funding trends, 2014–2016



Biotechnology funding by subsegments

The biotech-human subsegment led the life sciences venture capital funding with \$1.5 billion during the third quarter of 2016, which represents 82% of the total biotechnology total invested. This was a decrease from \$1.7 billion invested during the third quarter of 2015, which represented 78% of the total biotechnology investments.

When compared with the third quarter of 2015, two subsegments rose during the third quarter of 2016:

- Biotech animal: +176% to \$138 million
- Pharmaceutical: +13% to \$156 million

In the third quarter of 2016, biotechnology subsegments receiving less funding compared with the same period in 2015 were:

- Biotech research: -96% to \$4 million
- Biotech equipment: -90% to \$4 million
- Biosensors: -76% to \$14 million
- Biotech industrial: -75% to \$17 million
- Biotech human: -11% to \$1,495 million

Figure 7: Biotechnology funding by subsegments, 2014–2016

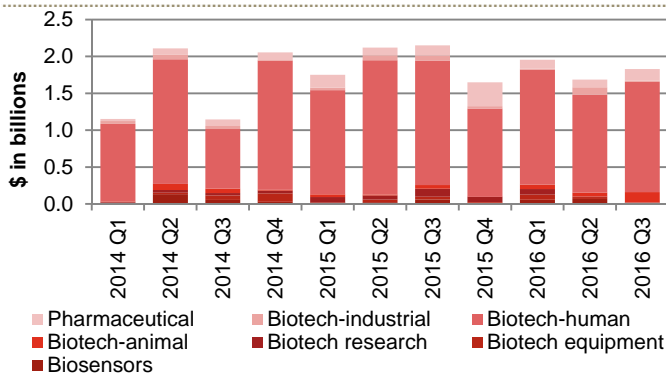
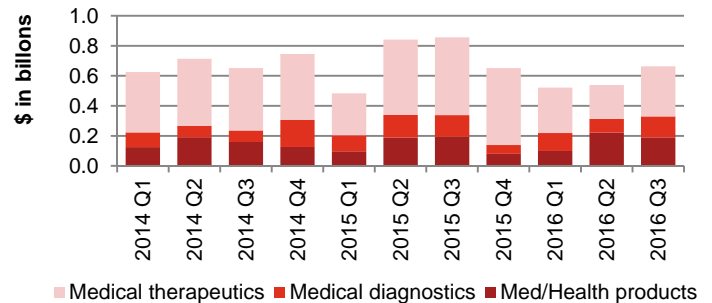


Figure 8: Medical devices and equipment funding by subsegments, 2014–2016



Medical devices funding by subsegments

In the third quarter of 2016, the medical therapeutics subsegment, with funding of \$333 million, attracted the most funding in the medical devices industry, representing 50% of the total funding. The amount substantially decreased by 36% from the same period last year.

Although the medical therapeutics subsector still has the majority share of the medical devices total funding in the third quarter of 2016 at 50%, its share has decreased from 60% of the total reached in the third quarter of 2015. Meanwhile, the other two segments (medical/health products and medical diagnostics) steadily increased their market share.

Funding for all three medical devices subsegments decreased during the third quarter of 2016 when compared with the same quarter of 2015:

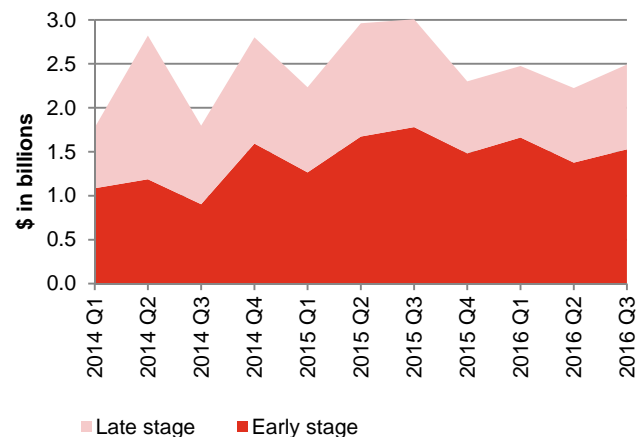
- Medical diagnostics: -2% to \$139 million
- Medical/health products: -4% to \$190 million
- Medical therapeutics: -36% to \$333 million

Life sciences funding by stages

In the third quarter of 2016, early stage life sciences funding, at \$1.5 billion in 73 deals, represented a decrease of 14% in terms of funding and declined 42% in terms of deal volume when compared to the same period last year.

Late stage funding in the third quarter of 2016 was at \$965 million in 83 deals. Year-over-year funding declined by 22% while deal volume declined by 2%.

Figure 9: Life sciences funding by stages, 2014–2016



Biotechnology funding by stages

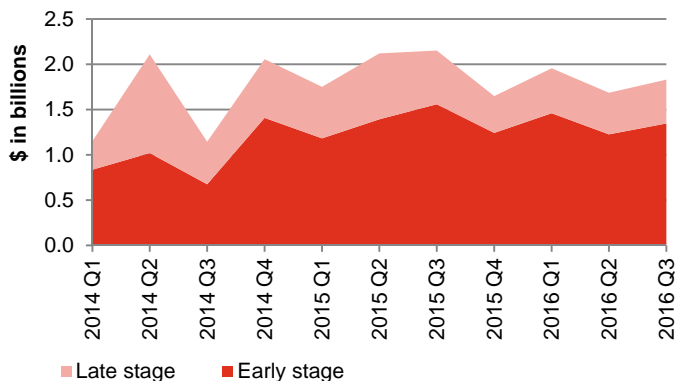
During the third quarter of 2016, early stage biotechnology funding decreased by 13% to \$1.4 billion in 51 deals, compared with \$1.6 billion in 85 deals for the same period of 2015.

Late stage funding for biotechnology in the third quarter of 2016 declined by 20% to \$483 million in 36 deals, from \$601 million in 40 deals during the third quarter of 2015.

When compared to the second quarter of 2016, early stage biotechnology funding increased by 7%, while late stage funding decreased by 1% in the third quarter of 2016.

Average deal size was higher for early stage biotech transactions at \$26.4 million in the third quarter of 2016 compared to \$18.2 million in the same quarter of 2015. Late stage deals declined to \$13.4 million in the third quarter of 2016, compared to 15.0 million during the third quarter of 2015.

Figure 10: Biotechnology funding by stages, 2014–2016



Medical devices funding by stages

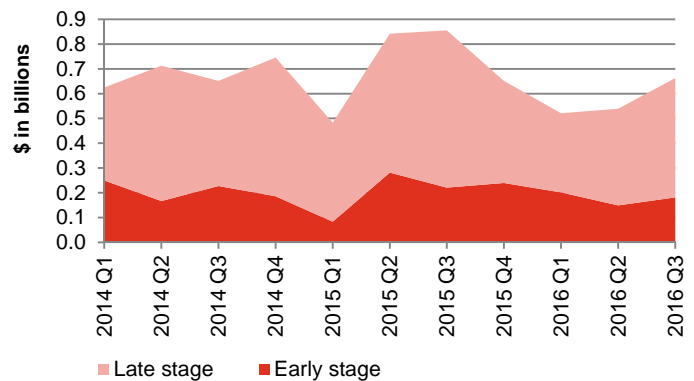
During the third quarter of 2016, early stage funding for medical devices decreased 19% to \$181 million in 22 deals, compared with \$222 million in 40 deals for the same period of 2015.

Later stage funding for medical devices decreased by 24% to \$482 million in 47 deals during the third quarter of 2016, from \$635 million in 45 deals during the third quarter of 2015.

Medical devices funding for early stage rose by 19% and funding for the late stage deals rose by 21% when comparing the second quarter 2016 to the third quarter of the same year.

Similarly to the trend seen in biotechnology deals, the average deal size of \$8.2 million in the third quarter of 2016 for early stage investments has increased from 2015's third quarter average of \$5.6 million. For late stage investments, the average deal size has decreased from \$14.1 million on average in 2015 to \$10.2 million in the third quarter of 2016.

Figure 11: Medical devices funding by stages, 2014–2016



First-time funding compared with follow-on funding

Compared with the third quarter of 2015, first-time funding for the life sciences sector decreased 11% to \$370 million, and the number of deals decreased 33% to 33 in the third quarter of 2016.

Quarter-over-quarter, first-time funding for the life sciences sector rose by 3% in dollars but declined by 8% in deals during the third quarter of 2016.

“The decline in deals being funded for the first time signals a slowdown in life science investments,” Vlahos noted. If this trend continues, there will be fewer investment opportunities which will have an impact on the liquidity markets in the future.”

In the third quarter of 2016, the life sciences sector received follow-on funding of \$2.1 billion, a decrease of 18% compared with the third quarter of 2015 but an increase of 9% compared with the second quarter of 2016.

There were 123 follow-on deals in the third quarter of 2016, which is a decrease of 24% compared to the third quarter of 2015 and a decrease of 6% compared to the second quarter of 2016.

For the third quarter of 2016, the average deal size for first time funding was \$11.2 million compared to \$8.5 million for the third quarter of 2015. For follow-on funding, the average deal size was \$17.3 million in the third quarter of 2016 compared to \$16.1 million in the third quarter of 2015.

Figure 12: Life sciences follow-on compared with initial investments, 2014–2016

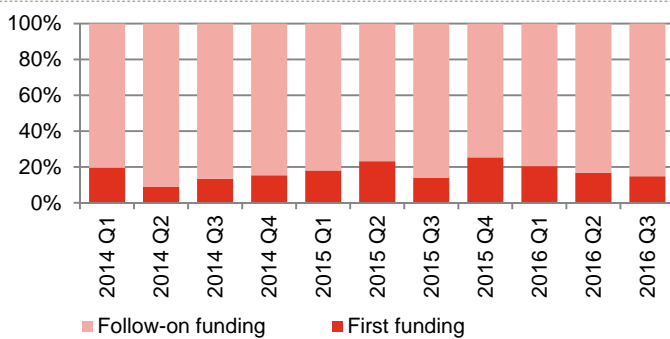


Table 1: Life sciences investments 2016 third quarter growth factors (Y/Y growth)

	% change in deal volume	% change in avg. deal size	% change in investments
First-time	-33%	+32%	-11%
Follow-on	-24%	+7%	-18%

Regional funding trends

The Boston, San Francisco Bay Area², Great Lakes, NY Metro and Twin Cities regions received the most life sciences venture capital dollars during the third quarter of 2016.

Boston received \$1.1 billion, with \$1.06 billion going to biotechnology and the remaining \$34 million going to medical devices in the third quarter of 2016. Boston closed 26 deals during the third quarter of 2016, with an average deal size of \$42.0 million.

The San Francisco Bay Area received \$663 million, with \$395 million going to biotechnology and the remaining \$268 million going to medical devices in the third quarter of 2016. The San Francisco Bay Area closed 36 deals during the third quarter of 2016, with an average deal size of \$18.4 million.

²The San Francisco Bay Area includes San Francisco, Berkeley and San Jose

Figure 13: Top five metropolitan regions, third quarter 2016

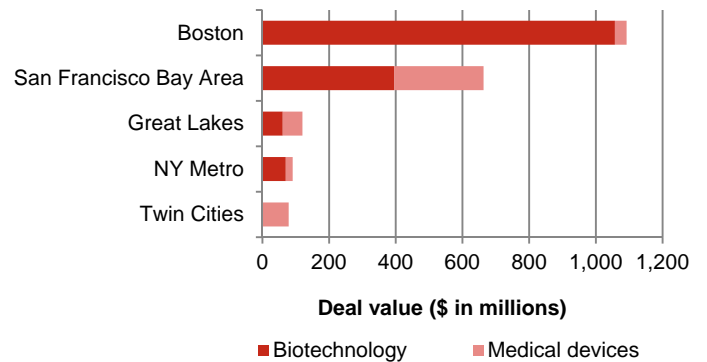
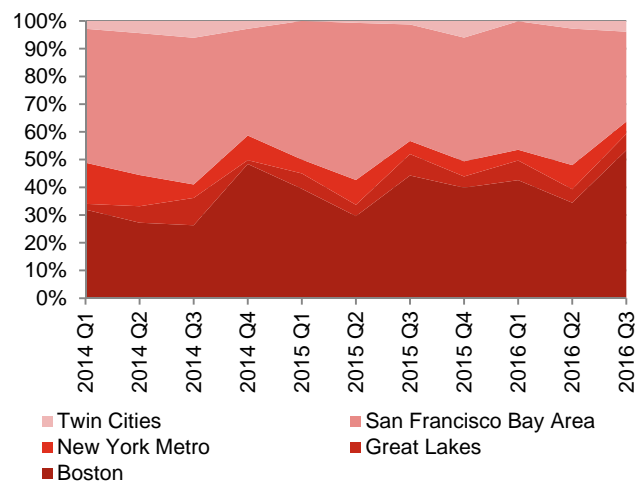


Figure 14: Life sciences funding trends in top five regions, 2014–2016



Venture capital outlook

Venture capitalists invested \$11 billion in 891 deals in the third quarter of 2016. Total venture dollars deployed to startup companies decreased 36% for the third quarter of 2016 and total deal count was down 25%, compared with the third quarter of 2015 when \$17 billion was invested in 1,189 deals in its record year. This is the eleventh consecutive quarter of more than \$10 billion in venture capital invested in a single quarter.

“The decline in venture capital activity this quarter is part of the normalization process that is expected after a quarter in which record-breaking investments dominated headlines,” said Tom Ciccolella, US venture capital market leader at PwC. “Despite deal count being the lowest since Q3 2010, quality deals continue to receive funding. The broader ecosystem remains healthy, bolstered by a lift in biotechnology within the top deals and overall, strong fundraising, and a continuation of the trend towards investments in non-traditional industries.”

The software industry continues to receive the highest level of funding of all industries, receiving \$3.7 billion going into 372 deals, a 58% decrease in dollars and a 6% decrease in deals versus the second quarter of 2016. Three of the top 10 megadeals (investments of \$100m or more) were in the software industry in 2016.

The biotechnology industry received the second largest amount of venture capital for the third quarter of 2016, with \$1.8 billion going into 87 deals, representing a 5% increase in dollars but a 16% decrease in deals, compared with the previous quarter. Investments in life sciences companies accounted for 23% of all venture capital deployed to the startup ecosystem in the third quarter of 2016.

The top 10 deals accounted for 22 percent of total dollars invested in the third quarter, down from 38 percent of total venture capital deployed during the second quarter. In total, there were 10 megadeals in the third quarter of 2016, down from 12 in the previous quarter and 27 in the same quarter of 2015.

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