

Biotech funding surges

Biotechnology investments in the fourth quarter of 2014 reached the highest level recorded since the MoneyTree™ data series was launched in 1995, breaking a record set just two quarters earlier. The biotech and medical devices industries both saw double-digit investment growth for the quarter and for the year.

February 2015



US venture capital funding for the life sciences sector,¹ which includes biotechnology and medical devices, increased 49% in value but declined 18% in volume on a year-over-year basis during the fourth quarter of 2014. These results were detailed in the MoneyTree™ Report from PricewaterhouseCoopers LLP (PwC) and the National Venture Capital Association (NVCA), based on data provided by Thomson Reuters. According to the report, venture capitalists invested \$2.75 billion in 202 life sciences deals during the quarter. For the full year 2014, investments in the life sciences sector rose 29% in value but declined 3% in volume, with \$8.6 billion invested in 789 deals.

US venture funding across all industries increased by 71% in value but decreased by 4% in volume on a year-over-year basis during the fourth quarter of 2014, with venture capitalists investing \$14.75 billion in 1,109 deals. For the full year, venture investors funneled \$48.4 billion into 4,356 deals, an increase of 61% in deal value and a 4% rise in deal volume. Compared to the previous quarter, deal value and volume grew by 46% and 6%, respectively. Investments for the quarter and for the full year were at the highest levels seen in 14 years.

Life sciences venture capital investment

The \$2.75 billion invested in the life sciences sector for the fourth quarter of 2014 was just shy of the record high of \$2.77 billion recorded in the first quarter of 2007. The \$2.75 billion was invested in 202 deals, versus \$1.9 billion allocated to 245 deals in the fourth quarter of 2013. While the sector posted a year-over-year increase in investments, its share of total venture capital in the fourth quarter declined to 19% from 22% in the same quarter of 2013.

Biotechnology investments reached a new record high during the fourth quarter of 2014, surpassing the previous record posted in the second quarter of 2014. Biotechnology funding for the quarter included a \$446 million deal—the largest deal completed since the launch of the MoneyTree data series in 1995.

During the quarter, the biotechnology industry raised \$2.0 billion in 112 deals, a 45% increase in value but a 22% decline in volume compared to the same quarter of last year.

With \$6 billion invested in 470 deals during 2014, the biotechnology industry was the second largest investment destination for the year in terms of dollars. The value of

¹ The 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.”

The medical devices 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.”

venture investments increased by 29% in 2014, but deal volume declined by 4%.

Medical devices funding during the fourth quarter of 2014 increased 59% in value but decreased 11% in volume compared to the same quarter of last year, with \$748 million invested in 90 deals.

“The biotech industry attracted record high venture investments in the second quarter of 2014 and even higher investments in the last quarter,” said Greg Vlahos, Life Sciences partner at PwC. “The medical devices industry also showed strong growth for the year. This is in line with our projection in early 2014 that the life sciences sector would have a very good year. Given the strong level of investments in this sector and others in recent quarters, we expect continued high investment levels in life sciences in the first half of 2015.”

Life sciences funding by quarter

For the full year 2014, life sciences investments reached \$8.6 billion, a 29% increase in value over the \$6.7 billion total for 2013.

Compared to the \$1.7 billion invested in the prior quarter, life sciences investment increased 62% to \$2.75 billion in the fourth quarter of 2014.

The full year biotechnology investment of \$5.97 billion was only a few million dollars short of the record high annual investment of \$5.99 billion achieved in 2007.

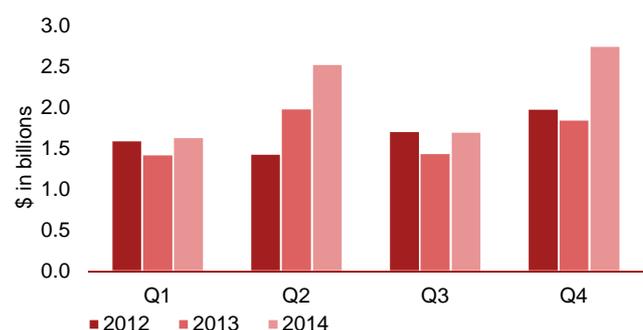
On a quarter-over-quarter basis, biotechnology investments rose significantly, increasing by 85% in value.

For the full year 2014, the value of medical devices investments increased 27%, to \$2.7 billion.

Compared to the prior quarter, venture funding for medical devices increased 21% in value in the fourth quarter of 2014, to \$748 million.

“It was a great year for and biotech and medical devices, especially in a year that saw huge investments in software,” said Vlahos. “Last year, we saw biotech take off, so it wasn't surprising to see medical devices take off this year.”

Figure 1: Life sciences funding trends by quarter 2012–2014



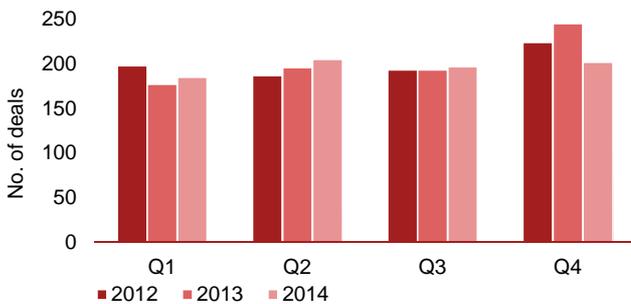
Life sciences deal volume by quarter

For the full year 2014, 788 deals were closed in the life sciences sector, a decline of 3% from the 789 deals completed in the prior year. On a quarter over quarter basis, deal volume in the sector increased by 3%, from 197 deals in the third quarter of 2014 to 202 deals in the fourth quarter.

In the biotechnology industry, the number of deals declined from 115 in the third quarter to 112 in the fourth quarter, a 3% decrease in volume.

In the medical devices industry, deal volume for the full year 2014 declined 1%, to 319 deals. In the fourth quarter, deal volume rose to 90, a 10% increase from the 82 deals closed in the prior quarter.

Figure 2: Life sciences deal volume by quarter 2012–2014



Life sciences average deal size by quarter

The average sizes of deals in the life sciences sector and biotechnology industry reached record highs during the fourth quarter of 2014.

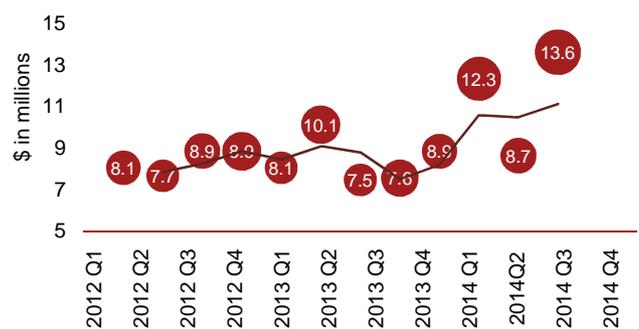
The average size of a life sciences deal was \$13.6 million for the quarter, an increase of 80% year over year and 58% quarter over quarter. This is the largest deal size in the sector since MoneyTree data reporting began in 1995.

For the full year, average deal size rose 32%, from \$8.3 million in 2013 to \$10.9 million in 2014.

The average size of biotechnology deals, \$17.9 million, was also the highest such figure recorded for the industry since the MoneyTree series was launched. In addition, one of the top five deals completed during the quarter was in the biotech industry—the \$446 million investment in Cambridge-based Moderna Therapeutics, which develops and delivers therapeutic proteins.

The life sciences sector saw three mega deals² in the quarter and five mega deals during the year. This is the highest number of mega deals for a quarter and year since MoneyTree began tracking data in 1995. “These large deals are a reflection of the coming of age of the highly innovative biotech and medical devices technologies and the resulting confidence of venture capitalists in the business models of these life sciences start-ups,” said Greg Vlahos of PwC.

Figure 3: Life sciences average deal size by quarter 2012–2014

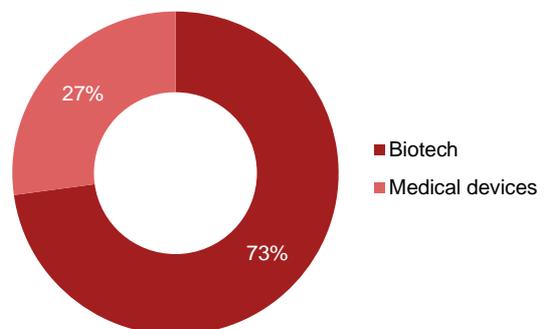


Funding for biotechnology and medical devices

Biotechnology captured 73% of all life sciences investments during the fourth quarter of 2014 and 69% during the full year 2014.

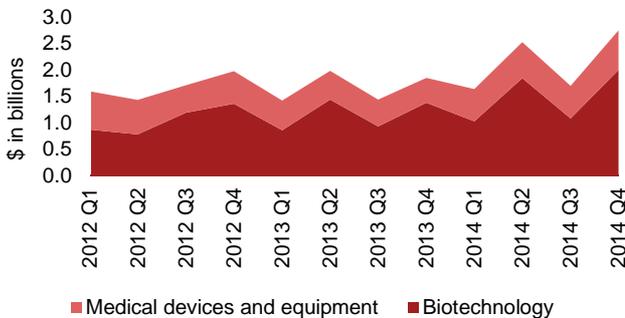
Three life sciences mega deals, including Moderna's \$446 million round, contributed to the record investments in the sector during the quarter. “That's a reflection of more money coming in to back companies with compounds targeting multiple indications and multiple molecules in the pipeline, to help reduce regulatory and commercialization risk,” said Vlahos.

Figure 4: Life sciences investment split for the fourth quarter of 2014



² Deals larger than \$100 million

Figure 5: Biotechnology and medical devices funding trends 2012–2014



Biotechnology funding by subsegments

For the full year 2014, the biotech human subsegment led venture capital funding in the life sciences sector, with \$4.8 billion invested.

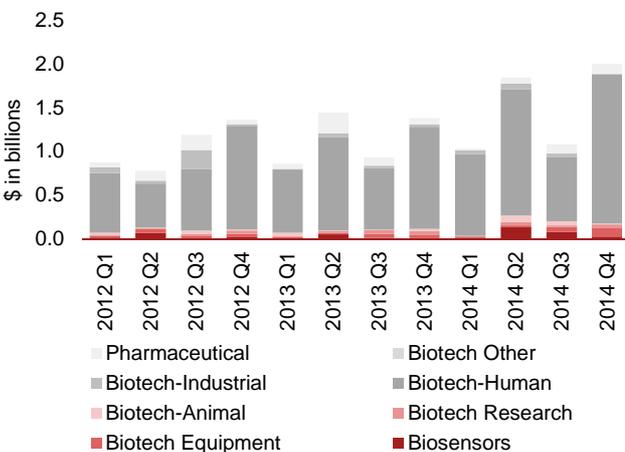
Compared with the fourth quarter of 2013, funding for five biotech subsegments rose during the final quarter of 2014:

- Biosensors: +259%, to \$28 million
- Biotech Equipment: +148%, to \$100 million
- Pharmaceutical: +60%, to \$115 million
- Biotech Human: +46%, to \$1,706 million
- Biotech Research: +1%, to \$39 million

Two biotechnology subsegments received less funding in the fourth quarter of 2014 compared with the same period in 2013:

- Biotech Animal, -64% to \$10 million
- Biotech Industrial, -74% to \$7 million

Figure 6: Biotechnology funding by subsegments 2012–2014



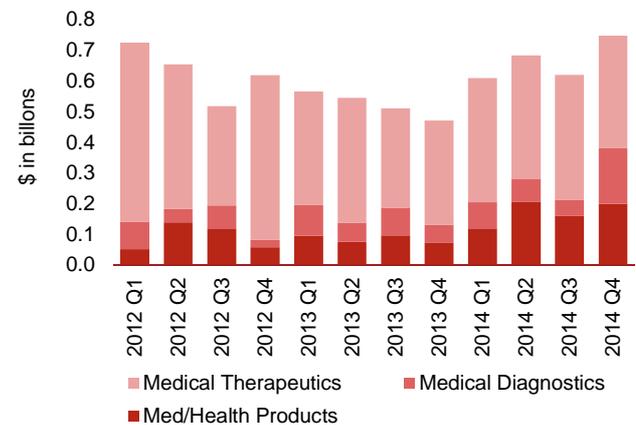
Medical device funding by subsegments

For all of 2014, medical therapeutics attracted \$1.6 billion in investments, leading the three medical device subsegments. Medical therapeutics funding increased 10% compared to 2013.

Funding for each of the three medical device subsegments increased during the fourth quarter of 2014 compared to the same quarter in 2013:

- Medical diagnostics: +216%, to \$180 million
- Medical/health products: +170%, to \$201 million
- Medical therapeutics: +8%, to \$368 million

Figure 7: Medical devices and equipment funding by subsegments 2012–2014



Life sciences funding by stages

Early-stage funding for the life sciences sector and biotechnology subsegment reached record highs during the fourth quarter of 2014.

Life sciences early-stage funding in the fourth quarter rose to a record high of \$1.5 billion—an increase of 46% compared to the \$1.1 billion funded in the same quarter of 2013.

For the full year 2014, early- and late-stage funding in the sector increased by 33% and 25%, respectively. A total of \$4.5 billion was invested in 429 early-stage deals, and \$4.2 billion went into 360 late-stage deals.

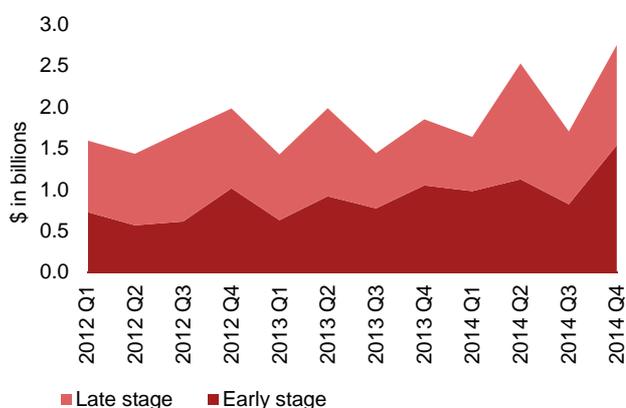
Quarter over quarter, early-stage funding rose by 87% in the fourth quarter of 2014.

Late-stage funding increased to \$1.2 billion, up 51% year over year and 38% from the previous quarter.

Early-stage deal volume decreased by 15% compared with the same quarter last year but increased 5% over the previous quarter, to 111 deals. The average size of early-stage deals increased 71% year over year and 79% quarter over quarter, reaching a record high of \$13.9 million.

The volume of late-stage deals completed during the quarter was 91—a 21% decline year over year but flat compared with the fourth quarter of 2013. The average deal size jumped 91% year over year and 38% quarter over quarter, to \$13.3 million.

Figure 8: Life sciences funding by stages 2012–2014



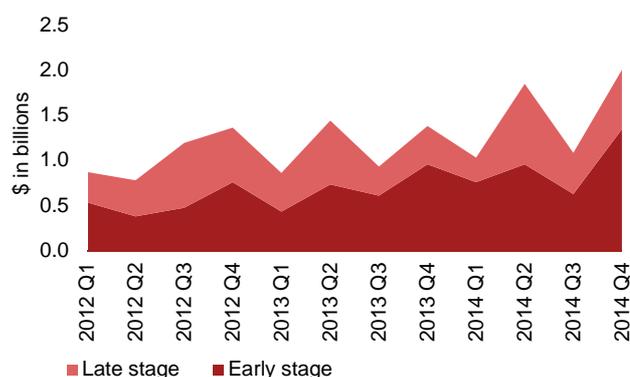
Biotechnology funding by stages

Early-stage funding of biotechnology companies in the fourth quarter of 2014 jumped to a record high \$1.3 billion, an increase of 41% over the \$956 million invested in the same quarter of 2013. Late-stage funding increased 55% quarter over quarter, to \$660 million.

For the full year 2014, early-stage funding of biotech companies rose 35% to \$3.7 billion, while late-stage funding increased 21% to \$2.3 billion.

The average deal size for early-stage biotech transactions during the quarter was \$18.2 million, compared with \$17.4 million for late-stage deals.

Figure 9: Biotechnology funding by stages 2012–2014



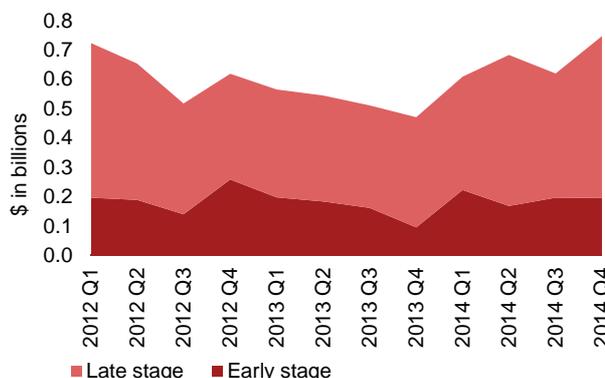
Medical device funding by stages

During the last quarter of 2014, early-stage funding for the medical devices industry increased 103% from the same quarter of the previous year, soaring to \$196 million. Over the same period, late-stage funding increased 47% to \$553 million.

For the full year 2014, early- and late-stage funding increased by 22% and 29%, respectively. Early-stage ventures received \$785 million in 125 deals while late-stage companies attracted \$1,877 million in venture capital, allocated across 194 deals.

Average deal sizes for early- and late-stage medical device transactions during the quarter were \$6.3 million and \$9.7 million, respectively.

Figure 10: Medical device funding by stages 2012–2014



First-time funding compared with follow-on funding

Follow-on funding for the life sciences sector and biotechnology industry during the quarter was at the highest level since 1995, when MoneyTree reporting began.

Life sciences follow-on funding in the fourth quarter of 2014 surged 51% year over year, to \$2.4 billion. First-time funding totaled \$403 million—an increase of 35% from the same quarter last year.

For the full year 2014, first-time funding in the life sciences sector was \$1.1 billion and follow-on funding was \$7.5 billion, representing growth of 25% and 29%, respectively.

Follow-on deals in the life sciences sector for the fourth quarter of 2014 averaged a record high \$13.8 million, and first-time deals averaged \$12.6 million.

For the full year, first-time deals in the sector averaged \$7.3 million and follow-on funding deals averaged \$11.8 million.

Figure 11: Life sciences follow-on compared with initial investments 2012–2014

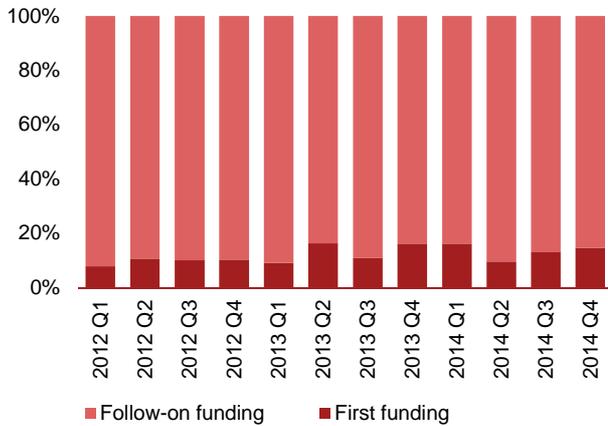


Table 1: Life sciences investments 2014 fourth-quarter growth factors (Y/Y growth)

	% change in deal volume	% change in avg. deal size	% change in investments
First-time	-41%	+127%	+35%
Follow-on	-11%	+70%	+51%

Regional funding trends

During the fourth quarter of 2014, two cities—Boston and Chicago—and three regions—the San Francisco Bay Area,³ New York Metro, and Research Triangle—received the most life sciences venture capital dollars.

The leader, Boston, received \$959 million in funding during the quarter, with \$928 million going into biotechnology and the remaining \$31 million invested in medical devices. Boston closed 32 deals during the quarter, with an average size of \$30 million.

The San Francisco Bay Area captured \$580 million in biotechnology funding and \$258 million in medical device funding in the final quarter of 2014.

“In 2014, Boston received the highest biotechnology investment among all markets since MoneyTree was launched in 1995,” said Greg Vlahos of PwC. “Two out of the three largest life sciences deal since 1995 were made in 2014 in Boston-based companies. They include a \$200 million investment in Intarcia Therapeutics in the second quarter and a \$446 million investment in Moderna Therapeutics in the fourth quarter. This cements Boston’s position as a leading center of innovation in biotechnology.”

Figure 12: Top five metropolitan regions, fourth quarter 2014

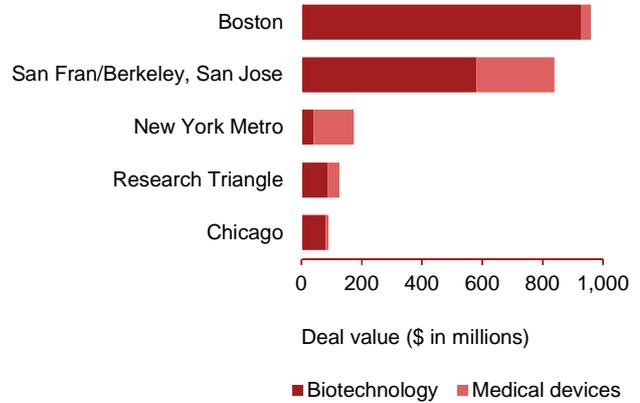
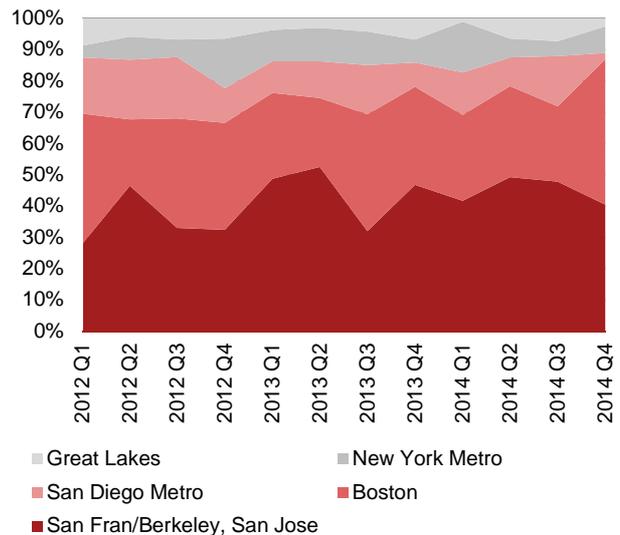


Figure 13: Life sciences funding trends in top five regions, 2012–2014



³ The San Francisco Bay Area includes SF/Berkeley and San Jose

Venture capital outlook

Across sectors, venture capitalists invested \$48.3 billion in the US in 2014, including \$14.8 billion in the fourth quarter – the highest annual and quarterly investment totals since 2000.

“With the fundraising environment improving in 2014 and non-traditional investors increasingly joining venture capital firms in later-stage funding rounds, more capital was deployed to the start-up ecosystem in 2014 than any year since 2000,” said Bobby Franklin, President and CEO of the National Venture Capital Association (NVCA). “As the epicenter for technological innovation, the United States has a wealth of groundbreaking start-up companies that require the financial capital and business expertise of venture investors to take their businesses to the next level. Whether it be a medical device company whose products will save thousands of lives or the software company whose services will transform an entire industry, the venture community is investing in the future of our economy.”

According to Franklin, “2014 was a strong fundraising year for the industry, both in the number of funds raised as well as the amount of capital commitments received. It’s good to see that fundraising levels are finally starting to catch up with the overall level of investment we’ve witnessed in the last few quarters. As a result of the strong exit market for venture-backed companies over the last couple of years, more money is being distributed back to investors, who have chosen to redeploy that capital to the venture ecosystem.”

During the full year 2014, 115 venture-backed companies went public in the US, including 27 venture-backed IPOs in the fourth quarter, valued at \$4.4 billion.

Sixteen of the 27 IPOs, representing 59% of all listings in the fourth quarter, were in the life sciences sector. The biotechnology industry led the sector IPO offerings, with 59 offerings during the full year 2014. This marks the strongest annual period for US-listed venture-backed offerings in the sector since records began in 1994.

A total of 95 venture-backed M&A deals were reported for the fourth quarter of 2014, with 17 deals in the life sciences sector, valued at \$2.7 billion, closing during the quarter.

“This has been an exciting year for venture capital investing,” said Mark McCaffrey, global software leader and technology partner at PwC. “In 2014, for the first time in MoneyTree history, we saw two deals greater than \$1 billion and more than 40 so-called ‘mega deals,’ which exceed \$100 million. In addition, there’s been an influx of

private equity investors at a level we’ve not seen previously. As a result, entrepreneurial companies are capable of disrupting entire industries and leveraging investment dollars to expand to global markets. With the continued economic conditions, we would expect venture capitalists to be positioned to maintain strong levels of investing in 2015.”

“The strong IPO market has played a big role in this robust performance of venture funding, and there are good signs that the trend has legs that can carry it well into 2015,” says Greg Vlahos of PwC. “With a 33% increase in funding for early-stage life sciences companies in 2014, start-ups are likely to continue to do well in the year ahead.”

In particular, Vlahos is bullish on the prospects for medical devices and diagnostics companies in 2015. He notes:

“All of this venture activity is going to translate into more innovation for the medical devices industry. If you look at some of the companies that have gone public in the medical device space, they are in novel areas that haven’t been backed traditionally.

We’re seeing more traditional biotech investors looking at companies in the medical device and diagnostics space. For diagnostic companies that have a drug component or a drug partnership, that helps validate the space, and we expect to see strong investment in medical devices in 2015.

“An improving returns environment will continue to prevail for medical device and diagnostic venture-backed start-ups, despite the ongoing big-cap consolidation in the sector that some fear could dampen an already limited acquisition appetite.”

Bobby Franklin of the NVCA is also optimistic about the prospects for venture-backed companies in the coming year:

“2014 was an exceptionally strong year for the public markets, creating favorable conditions for venture-backed companies to make that long-awaited IPO,” said Franklin. “With the technology sector grabbing all the headlines, it’s worth noting that for the second year in a row biotech companies accounted for more than half of all venture-backed IPOs. With the economy continuing to gain steam and the appetite for high-growth companies on the cutting edge of innovation at a high, we hope that the public markets continue to provide opportunities for the next batch of companies coming up through the venture pipeline.”

About PwC's Pharmaceuticals and Life Sciences Industry Group

PwC's Pharmaceuticals and Life Sciences Industry Group is dedicated to delivering effective solutions to the complex strategic, operational, and financial challenges facing pharmaceutical, biotechnology, and medical device companies. We provide industry-focused assurance, tax, and advisory services to build public trust and enhance value for our clients and their stakeholders. More than 195,000 people in 157 countries across the PwC global network share their thinking, experience, and solutions to develop fresh perspectives and practical advice.

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