William Blair

PRA Health Sciences, Inc.

Embedded Growth Opportunity in Pharmaceutical Outsourcing

December 22, 2014
Basic Report (14-163)

Stock Rating:	**Outperform**
Company Profile:	**Aggressive Growth**
Symbol:	PRAH (NASDAQ)
Price:	$23.80 (52-Wk.: $18–$25)
Market Value (mil.):	$1,520
Fiscal Year End:	December
Long-Term EPS Growth Rate:	17%
Dividend/Yield:	None

Estimates	**2013A**	**2014E**	**2015E**
EPS FY	$0.62	$1.18	$1.36
EBITDA (mil.)	$129	$175	$197
Valuation			
P/E	38.4x	20.2x	17.5x
EV/EBITDA	18.8x	13.9x	12.3x

Trading Data	
Shares Outstanding (mil.)	63.9
Float (mil.)	23.9
Average Daily Volume	320,000

Financial Data	
Long-Term Debt/Total Cap. (2015)	42%
Book Value Per Share (2015)	$18.64
Enterprise Value (mil.)	$2,357
2015 EBITDA (mil.)	$196.8
Enterprise Value/EBITDA	12.3x

We are initiating coverage of PRA Health Sciences with an Outperform rating and Aggressive Growth company profile after the company's initial public offering in November 2014. PRA is one of the largest global contract research organizations (CROs), managing clinical trials for a broad range of clients across 80 countries. From our perspective, the new PRA combines a legacy of serving midsize and small clients, a management team known for efficient execution, and, through the acquisition of RPS, a novel platform for providing embedded solutions to large pharma. Combine this unique positioning with the stable tailwinds from improving R&D spending and increased outsourcing, and we believe PRA Health Sciences should be able to increase revenue in the high single digits and earnings at a high-teens pace over the longer term.

Attractive market trends. The pharmaceutical outsourcing market has been increasing in penetration for more than two decades and now totals $26 billion in annual spending, in our estimation. Over the last decade, we estimate the CRO market has grown 10% annually on average. While penetration rates are hard to determine precisely, we believe penetration is roughly 42% for the clinical component of the market and has the potential to expand to more than 60%, which should allow the market to outpace R&D spending by biopharma manufacturers for several more years. We estimate spending on late-stage CROs is now $23 billion and should expand at a pace of 7% to 8% through 2020.

Unique service offering. While the same macro trends driving PRA will also drive its clinical CRO peers, PRA offers clients and investors some distinct characteristics. It has a compelling platform to service China with partner WuXi, a proprietary analytic engine, and relatively low client concentration; most significantly, PRA provides both traditional full-service trial management and embedded solutions that appeal to many large pharma clients.

Key risks. We view the following items as key risks for PRA's stock in the next one to three years: a slowdown in macro demand, perhaps driven by a reversal of the recent surge of capital into the biotechnology industry; client consolidation; quarterly volatility in new business bookings and related pricing pressure; a contraction in client pipelines following spending cuts in recent years; and lumpy integration of RPS.

PRA Health Sciences is one of the largest clinical CROs in the world, serving both the pharmaceutical and biotechnology industries. The company has a revenue base of $1.2 billion and more than 10,000 employees serving clients across 80 countries.

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Executive Summary

We are initiating coverage of PRA Health Sciences with an Outperform rating and Aggressive Growth company profile. PRA is one of the largest CROs in the world—ranking No. 6 by our count. It focuses on managing clinical development of new drug candidates, with a particular focus on oncology, infectious disease, central nervous system disorders, cardiovascular, and respiratory—categories that account for roughly 60% of the industry's pipeline. The company, based in Raleigh, North Carolina, has more than 10,000 employees serving pharma and biotech clients across 80 countries.

Exhibit 1
PRA Health Sciences, Inc.
Company History

1976	Founded in Charlottesville, VA, as an anti-inflammatory–focused study group
1982	Company established as PRA, a CRO focused on data management
1991	Services extended to clinical trials management and drug safety; European presence established
1996	Acquired by The Carlyle Group
1997	Acquired IMTCI, a Phase I facility in Lenexa, KS
1999	Acquired Valorum LTD in the U.K.; focused on regulatory and product registration
2000	Acquired ARCAM in Paris, France
2001	Acquired by Genstar Capital
2002	Acquired Staticon in Madrid, Spain
	Acquired CroMedica, expanding global presence and increase expertise in CNS
2004	First IPO
	Acquired Valid-Trio in Moscow, Russia
	Acquired Clincare in Brussels, Belgium
2005	Acquired GMG BioBusiness Limited in the U.K.
	Acquired Regulatory / Clinical Consultants, Inc.
2006	Acquired Sterling Synergy Systems in Mumbai, India
	Acquired Pharma Bio Research
2007	Acquired by Genstar Capital
	Acquired Pharmacon n Berlin, Germany
2008	Moved headquarters to Raleigh, NC
2010	PRA opens bioanalytical lab in Lenexa, KS
	Colin Shannon named CEO
2011	Acquired Kinship Technologies
2012	New offices open in Singapore, Utrecht, Beijing, and Belgrade
	Joint venture with WuXi PharmaTech to bring clinical expertise to China
2013	Acquired ClinStar
	PRA acquired by KKR
	Acquired RPS
	Acquired CRI Lifetree
2014	Second IPO

Sources: Company reports

The company went public again in November 2014 after a previous public stint from 2004 to 2007 and an operating history spanning 30 years. PRA's legacy has been to serve midsize and small biopharmaceutical clients. This has been augmented by an impressive number of acquisitions, including 16 transactions over the past 17 years. The most significant transaction, in our view, was last year's purchase of RPS. This deal increased the revenue base by about 60%, but more importantly provided a platform to serve the top 20 pharma segment with an embedded, functionally specific delivery model.

The company's revenue base is now $1.2 billion, which is up threefold from 2007, when the company exited the public markets. As exhibit 2 illustrates, the progress of PRA's management team has been impressive. In addition to the 70% increase in annualized revenue, staffing has increased by 70%-80%, and its exposure to the largest pharma segment has jumped thanks to the addition of RPS's embedded service model.

Exhibit 2
PRA Health Sciences, Inc.
Comparison—2007 to 2014

	2007	2014
Scale	Midsize	Top 5 Late-Stage CRO
Revenue	$354 million	$1.27 Billion
Employees	3,250	10,600
Offices	27	75
Countries	36	80
Approved Drugs	14	45
Service Model	Traditional Only	Flexible Service Model

Sources: Company reports

In light of this progress, we view shares of PRA as offering investors a compelling combination of three drivers:

1. A legacy of servicing small and midsize biopharma clients—the category seeing the highest levels of funding and spending growth at present, and the category that has been most aggressive with outsourcing;

2. A new platform to sell a differentiated service model into large pharma (the legacy RPS business); and

3. A senior management team from PPD that has a proven ability to execute efficiently for clients and investors.

This management team, in our opinion, should be able to transform what had been a marginally profitable RPS asset into a business that can generate EBITDA margins in excess of 10% and could become a unique cross-selling tool into the large pharma segment. This is the client segment that has been least aggressive in outsourcing in the past, but one that has been surprisingly willing to carve out functional contracts to legacy RPS. So while the CRO space has become more crowded of late thanks to public offerings of Quintiles, INC, and PRA in the last two years, we believe PRA's business model stands out from its peers.

Moving beyond PRA, the surge in capital market activity in the pharma outsourcing industry has prompted investor anxiety about a market top. For example, during the past two years among traditional CROs, INC has gone public, and Quintiles and PRA have returned to the public markets. IMS Health has returned to the public markets on the data and analytics side. And Catalent returned as an independent stand-alone entity focused on contract dose manufacturing and process development.

In addition to these new (or returning) entrants to the public markets, November 2014 saw the announcement of the Lab Corp/Covance merger and underwhelming quarterly bookings from one of the industry's leaders, Parexel.

Given the spike in capital markets activity and mixed signals on bookings, we have revisited two topics of late:

1. Is there a demand problem for clinical CROs at the present time?

2. Is the clinical CRO market topping, or when might it approach peak levels of outsourcing penetration?

We update our views on these two critical investment issues later in this report, but our summary thoughts are as follows:

- **There does not appear to be a demand problem.** While Parexel reported soft net bookings in the third calendar quarter of this year, the group in aggregate reported net bookings as a ratio of revenues of 1.20, which was a modest sequential improvement from the 1.16 average in the first and second quarters of 2014. Our industry discussions in recent weeks continue to suggest that overall proposal volumes are at record levels on the clinical side of the industry and are gradually improving on the preclinical side of the industry. The underlying drivers of this demand are also reassuring: capital flows into the biotechnology industry remain very high by historical standards. The industry's pipeline (defined by the total number of drug candidates in development) has been steadily rising since 2012. And the industry's pace of R&D spending has accelerated after the significant slowdown that began in 2008.

- **Is the pharmaceutical outsourcing market approaching a top? We do not believe this to be the case, although there are a few troubling indicators worth examining:**

  – First, trailing-12-month bookings for CROs, as measured by book-to-bill ratios, have trended down from 1.30 in 2012 to a range of 1.15 to 1.20 in 2014. This suggests a normalization of demand growth and perhaps slower rate of increase in the amount of development spending that is outsourced.

  – Second, the list of insiders that have sold equity during 2014 is impressively long, including PRA, INC, Covance, IMS Health, Catalent, Dennis Gillings (the founder of Quintiles), Bain Capital, TPG, 3i, Canada Pension Plan Investment Board, and Leonard Green Partners.

Given these two red flags, why do we believe the industry is not reaching a top? In terms of insider selling, we believe most of the recent equity sales are the logical liquidity events from significant bets made by private equity sponsors on pharma outsourcing 5-10 years ago in the face of cyclical demand slowing from generic erosion and financial turmoil. In terms of the normalized bookings metrics, we believe the post-recession spike was driven by a rush of pharma companies to do strategic deals with CROs. While the flow of announced strategic partners has slowed in the past few years, we believe the underlying drivers of demand still have plenty of room to improve.

We believe the key longer-term drivers that investors should watch for signs of an eventual top are underlying R&D spending growth, pipeline growth or contraction, clinical trial activity, and outsourcing penetration. Outsourcing penetration will eventually hit a ceiling, at which time the CRO industry's growth will likely slow, tracking with metrics such as R&D spending. Our semiannual surveys indicate that we are likely at least five to seven years from reaching full penetration. We estimate penetration of clinical development spending is roughly 42% today and expect it to top out between 60% and 70%.

In aggregate, we believe that PRA has made remarkable progress in the seven years since first exiting the public markets. While the same macro factors driving the likes of its clinical peers will arguably be the largest factors behind the stock's performance in the next few years, we believe last year's addition of RPS gives PRA an opportunity to gain share at both ends of the client spectrum if it executes well. As summarized in exhibits 3 and 4, we project the company to generate 8% organic revenue growth during the next five years, and another 2% from margin leverage, and 6% from balance sheet deleveraging. We conservatively project the company to generate EPS growth of 15% or better on average through 2020.

Exhibit 3
PRA Health Sciences, Inc.
Projected Calendar-Year Income Statement Summary

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Revenue	$ 547,669	$ 597,072	$ 832,901	$ 1,265,974	$ 1,363,463	$ 1,467,840	$ 1,580,238	$ 1,701,276	$ 1,831,620	$ 1,971,988
Growth	*21.4%*	*9.0%*	*39.5%*	*52.0%*	*7.7%*	*7.7%*	*7.7%*	*7.7%*	*7.7%*	*7.7%*
EBITDA	$ 94,076	$ 95,173	$ 128,934	$ 174,684	$ 196,776	$ 221,937	$ 244,147	$ 268,802	$ 294,158	$ 322,026
Margin	*17.2%*	*15.9%*	*15.5%*	*13.8%*	*14.4%*	*15.1%*	*15.5%*	*15.8%*	*16.1%*	*16.3%*
Growth	*4.3%*	*1.2%*	*35.5%*	*35.5%*	*12.6%*	*12.8%*	*10.0%*	*10.1%*	*9.4%*	*9.5%*
Adjusted Net Income	$ 33,534	$ 31,286	$ 24,427	$ 51,373	$ 87,087	$ 104,934	$ 123,609	$ 143,903	$ 164,587	$ 187,473
Growth	*42.7%*	*-6.7%*	*-21.9%*	*110.3%*	*69.5%*	*20.5%*	*17.8%*	*16.4%*	*14.4%*	*13.9%*
Adjusted EPS	**$0.83**	**$0.79**	**$0.62**	**$1.18**	**$1.36**	**$1.64**	**$1.93**	**$2.24**	**$2.56**	**$2.91**
Growth	***39.3%***	***-4.4%***	***-21.3%***	***90.0%***	***15.5%***	***20.3%***	***17.6%***	***16.2%***	***14.2%***	***13.7%***

Note: EBITDA, adjusted net income, and adjusted EPS include share-based compensation expense
Sources: William Blair & Company, L.L.C. estimates and company reports

Exhibit 4
PRA Health Sciences, Inc.
Earnings Build

	2013	2014	2015	2016	2017	2018	2019	2020
Revenue	39.5%	52.0%	7.7%	7.7%	7.7%	7.7%	7.7%	7.7%
Gross Profit	-11.0%	-21.1%	0.4%	1.0%	0.3%	0.3%	0.5%	0.2%
SG&A	7.0%	4.6%	4.5%	4.1%	2.0%	2.1%	1.3%	1.6%
EBITDA	**35.5%**	**35.5%**	**12.6%**	**12.8%**	**10.0%**	**10.1%**	**9.4%**	**9.5%**
Depreciation	2.9%	3.1%	2.1%	0.3%	0.3%	0.3%	0.2%	0.5%
Net Interest Expense	-26.1%	-4.2%	44.9%	7.4%	7.5%	6.0%	4.7%	3.9%
Tax	-34.2%	75.9%	9.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Net Income	-21.9%	110.3%	69.5%	20.5%	17.8%	16.4%	14.4%	13.9%
Shares Outstanding	0.6%	-20.3%	-54.0%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%
EPS	**-21.3%**	**90.0%**	**15.5%**	**20.3%**	**17.6%**	**16.2%**	**14.2%**	**13.7%**

Note: EBITDA, adjusted net income, and adjusted EPS include share-based compensation expense
Sources: William Blair & Company, L.L.C. estimates and company reports

Risks: While we are bullish on the pharma outsourcing sector in general and are optimistic that PRA will execute well, we see the following items as key unknowns. Like all CROs, PRA will be susceptible to a near-term shock from client consolidation, although M&A activity among major pharma has tended to drive more outsourcing over the longer term once the initial distractions of a given deal pass. If capital flows to smaller biotechnology companies dry up, these smaller, non-revenue companies could begin to hoard cash like they did in 2009. If the larger number of publicly traded CROs prompts aggressive pricing for new contract awards, we could see more volatility in quarterly new business totals. Looking at PRA specifically, the company has owned the RPS asset for only one year. While RPS should have less volatility than traditional CRO work, there could be challenges as management tries to adjust RPS pricing, expense structure, and strategy to large pharma.

Valuation and Stock Thoughts: Shares of PRA have increased 32% since the company's IPO on November 13. This compares with an increase of 3% over the same period for its peer group (flat excluding INC). As of December 18, PRA is trading at 17.5 times our estimated 2015 adjusted EPS of $1.36 and its enterprise value is 12.3 times our estimated 2015 EBITDA (including stock-based compensation). By comparison, the peer group is trading at 19.9 times forward earnings and 11.2 times forward EBITDA, making PRA appear relatively expensive on EBITDA but relatively inexpensive as a multiple of earnings. We believe the company's leveraged balance sheet has focused valuation on EBITDA at present, but as the company pays down debt we expect investors will gradually transition to an earnings multiple approach.

We believe that investors will evaluate PRA, like its peers, on the basis of forward earnings and EBITDA, with any differential to the comparable group driven by bookings momentum, sustainable earnings growth potential, and perceived volatility. While we acknowledge that the group is expensive relative to historical averages, the group remains attractive relative to the broader market. The CRO group trades at 1.23 times the S&P 500 on a forward P/E basis, below its long-term average of 1.33 times. Because PRA can participate in the spending growth of smaller clients and ramp up penetration among larger clients, we believe the stock has an opportunity to trade at a premium as it builds its earnings track record and deleverages. On a risk-adjusted basis, we believe the stock offers upside of 18% at current levels (see exhibit 5).

Exhibit 5
PRA Health Sciences, Inc.
Probability-Weighted 12-Month Outlook (Using 2016 Estimates)

	Scenario 1 (A)	Scenario 2 (B)	Scenario 3 (C)
Earnings Per Share	$1.33	$1.64	$1.72
Implied Current P/E Multiple	17.9x	14.5x	13.8x
Estimated Multiple	**15.0x**	**17.5x**	**20.0x**
Implied Price	$20	$29	$34
Price Relative to Current Level	-16%	21%	45%
Probability	**20%**	**60%**	**20%**
Probability-Weighted Return		18.0%	

(A) Scenario 1 assumes a 4.5% increase in revenue and 10 basis points of operating margin leverage from 2014 through 2016

(B) Scenario 2 is our base case and assumes 7.7% revenue growth and 132 basis points of margin leverage from 2014 through 2016

(C) Scenario 3 assumes a 9.0% increase in revenue and 150 basis points of operating margin leverage from 2014 through 2016

Sources: FactSet and William Blair & Company, L.L.C. estimates

Investment Highlights

Attractive pharmaceutical outsourcing market trends. Outsourcing has become a mission-critical aspect of biopharmaceutical drug development over the past two decades. Large pharmaceutical companies have an imperative to improve R&D productivity, and they are turning to outsourcing to convert any and all steps of the R&D cycle to a variable expense. Smaller innovators are using outsourcing to enable a virtual pharmaceutical business model, allowing them to maintain ownership of a molecule without having to invest significant capital into infrastructure. This value proposition has allowed CROs to be excellent long-term performers despite occasional periods of turmoil. We estimate that the clinical CRO industry in which PRA competes has experienced average annual growth of roughly 10% over the past decade, and we expect this market to grow 7% to 8% in the coming several years.

PRA's service model breadth is a clear differentiator. Historically, the leading clinical CROs have pursued a traditional, full-service model that captures most aspects of work to conduct a clinical trial for a given drug candidate. Each contract is typically for one drug for the duration of one trial. If the CRO executed well, its odds of repeat work were quite high (and vice versa). PRA's legacy business followed this model with much success the past three decades with smaller clients, given PRA was generally viewed as a midtier player. However, RPS, which helped form the new PRA last year, was a pioneer in a very different service model. Referred to as strategic solutions or embedded solutions, the RPS approach allowed a client to maintain control over any and all of its drug candidates, but to still benefit from outsourcing. The RPS model would generally include taking over an entire function such as clinical monitoring in a given region, or data management. These services would be provided on most if not all drugs in a client's pipeline, with the dedicated employees working on-site at a client. This "staffing on steroids" model has proved rather "sticky" and popular with large clients that crave control, like many of the largest drug companies in the world. We understand that RPS and now PRA have contracts with all 20 of the largest drug companies.

Multiple P&L levers should allow for EPS growth of 15% or better. The drawback of the embedded service model is that it is also an inherently lower-revenue-per-person and lower-margin business, in comparison with traditional CRO work. One of the appealing investment opportunities of PRA, in our view, is the highly efficient management team's ability to maximize the profitability of the RPS asset. While we believe this embedded business will never have the high-teens EBITDA margins of PRA's traditional CRO business, management should be able to drive significant margin leverage, taking it from midsingle digits to low double digits, by our estimates. Moreover, we believe PRA has the opportunity to use the Strategic Solutions platform to cross-sell more profitable hybrid work (a mix of traditional and embedded) to a client segment where it has historically been underrepresented. We believe management has the opportunity to drive EBITDA margins from 14% today to the upper teens over the next several years. We project 30-50 basis points of leverage annually, which adds roughly 2% to annual EPS growth. We expect continuing reductions to debt will add another 4%-6% to EPS growth on average through 2020. In aggregate, we believe the company is well positioned to deliver 15% or better EPS growth before the benefit of any M&A activity.

The mysterious Project P. Pharmaceutical drug development has been notoriously inefficient and a laggard in technology adoption. But that pattern has begun to change in the past decade, since clients must improve the output from their R&D departments in the face of rapid generic erosion. One could argue that Phase I of this transition, which is ongoing, is the adoption of outsourcing—shifting fixed labor costs into variable costs. The next phase appears to be automation and data analytics to improve the accuracy, efficiency, and success rates of clinical trials. New tools such as electronic data capture have been widely adopted. Tools that use data analytics to better design trials, select investigators, and recruit and retain patients are gaining much attention and each clinical CRO appears to have a strategy in place to meet this need. PRA began an overhaul of its IT infrastructure in 2012, and has since built a project management system that uses predictive analytics to improve resource allocation and spot problems early. It rolled out this tool internally in late 2012 and to select clients in 2014. We expect a full launch of P by the summer of 2015, potentially providing another tool to help PRA gain share.

Investment Risks

We view PRA as an attractive way for investors to participate in the pharmaceutical outsourcing industry. History has taught us that the business model of CROs can be volatile from quarter to quarter and also subject to occasional demand shocks. Below, we expand on what we view as key risks.

RPS integration. We view the 2013 acquisition of RPS as a major point of differentiation for PRA, adding a new service model and significantly expanding the large pharma client segment. However, this asset has been owned by the company for only one year. We believe management is trying to exit unprofitable initiatives, right-size the cost structure, and cross-sell a hybrid offering into the legacy client base that should generate higher margins. We believe the strategy makes sense, but we would not be surprised if there are bumps along the way in the form of revenue declines or profit shortfalls.

Client-renewal risk. Consolidation among drug companies over the years has concentrated R&D spending power. Over the past five years, the trend toward strategic partnering has further concentrated the market among a smaller number of larger CROs. As contracting transitions from a trial-by-trial basis to encompassing an entire function or therapeutic area over several years, the contracts have become larger and therefore renewal risk has increased. This greater concentration may also increase the temptation of CROs to use aggressive pricing to gain share. Our industry discussions suggest that later-stage pricing is rational at present. Specific to PRA, only 38% of its revenue derives from its top five clients and none of its clients account for more than 10% of the top line, making it relatively well diversified compared with its peers.

Client M&A activity. While PRA has relatively low client concentration, its Strategic Solutions business added last year gave the company at least some exposure to all top 20 pharmaceutical companies. Therefore, if we see a rebound in merger activity among large clients, investor anxiety about the legacy RPS business will increase. In general, if the client is the buyer in a large transaction, near-term disruption in bookings caused by integration activities tends to give way to increased business over the longer term, as outsourcing penetration rates typically increase one to two years after the closing of a deal. But if the client is acquired, the CRO could lose the relationship altogether depending on the buyer's vendor relationships.

New business. New business contracts are the key leading indicator for CRO revenue growth. Thus, metrics for contract wins like book-to-bill ratios, backlog growth, and backlog coverage are watched closely by investors. While contracts in the CRO space often run for two to three years, the flow of new business can be volatile, particularly around vacations in August and December. Contract cancelations add to the quarter-to-quarter volatility, although these tend to be very low for the strategic solutions part of PRA's business (roughly one-third of the total revenue base). We view one quarter of disappointing net new business flow as normal and not unduly concerning. If this pattern extends for two or three quarters and/or the backlog coverage ratio declines to 70% or less of the next-12-months' revenues, the risk of guidance reductions becomes much greater, in our view. PRA's quarterly book-to-bill ratio over the past three years has ranged from 0.7 to 1.3 times, with a rolling-12-month average of 1.1 times. PRA's backlog coverage over the coming 12 months is reported by management at 89%. This is much higher than normal for clinical CROs. We typically view a coverage ratio above 75% as quite good, which suggests that PRA's visibility for 2015 is unusually high relative to its peers.

Outsourcing penetration. Once outsourcing penetration rates reach a ceiling, industry growth rates must naturally fall to a rate that mirrors the underlying rate of R&D spending. For the CRO industry, this means that the current 7%-8% pace of expansion will eventually fall to the low to midsingle digits (unless R&D spending accelerates). Our surveys indicate that penetration rates should be

able to climb from roughly 40% (depending on the source) today to more than 55%, while industry commentary suggests 60%-70% is possible over the long term. The timing of this progression is hard to discern, but we believe it will likely take five to seven years.

Late-stage pipeline. Since the recession of 2008, the pharmaceutical industry has cut spending on discovery and early-stage drug development. That pattern persisted for more than four years before apparently rebounding in the summer of 2013, creating the risk that underinvestment in discovery will translate into a late-stage pipeline crisis in the years to come. Our industry discussions suggest that this risk has diminished, given recent gains in the industry's early- and late-stage pipelines.

Biotech funding. Fiscal 2014 has been a banner year for biotech funding, with a total of $22 billion raised year-to-date, according to BioCentury. This is significantly more than the $16 billion raised in 2013 and marks the highest total since we began tracking the data in 1998. Biotech clients, particularly those that secure primary financing through the capital markets, tend to have high rates of outsourcing penetration, given a lack of internal infrastructure. PRA generates 32% of revenue from small and midsize clients. While this has helped drive robust revenue growth of late, if funding dries up or market conditions cause smaller clients to hoard cash in lieu of beginning new trials, we believe industry growth rates would be adversely affected.

Pharmaceutical Outsourcing Industry Update

Following the recession of 2008, the pharmaceutical outsourcing group underperformed for three years, as a result of tepid spending from large clients in anticipation of patent expirations, relatively modest inflows of capital to the biotechnology industry, and uncertainty regarding margin trends as strategic partnerships gained traction. In the past three years, however, group performance has improved significantly, as the passing of the generic wave has allowed revenue—and therefore spending—at large pharmaceutical companies to increase again. Investors' appetite for risk has also increased, leading to record levels of funding for small biotech companies, which in turn have driven an upturn in spending on new product development. Lastly, margins related to strategic partnerships have proved as good as or better than those under the traditional outsourcing model. As a result, CRO stocks have appreciated at a compound annual rate of 36% since the beginning of 2013 and have achieved a valuation not seen since the late 1990s (as measured by forward P/E multiples).

Given this excellent performance, three CROs that underwent go-private transactions in the last 5 to 10 years have successfully returned to public markets, beginning with Quintiles in May 2013, followed by INC Research and PRA Health Sciences in November 2014 (INC was not public previously, but one of its predecessors, Kendle, was). Catalent, the leading provider of manufacturing and advanced delivery technologies, also recently completed a public offering. Each of these stocks has been greeted favorably by investors, with Quintiles up 48% since its return in 2013, Catalent up 40% since July 2014, and INC up 32% and PRA up 32% since their recent listings. In addition, Covance, one of the largest and most diversified companies in the industry, recently agreed to be acquired by LabCorp—offering another example of an emerging industry trend to expand access to patient-specific data in the hopes of streamlining and improving the drug-development process.

All this movement in the public markets causes us to ask two questions. First, is there a demand problem? Second, are we approaching a top for the industry, or is this merely the beginning of the next growth leg for CROs? As we weigh the various data, it appears that the fundamentals are somewhat mixed at present, with volatile bookings and a spike of equity sales suggesting potential trouble. On the other hand, positive pipeline trends, better sentiment about R&D spending growth, and plenty of room to increase outsourcing penetration all suggest that market growth can remain

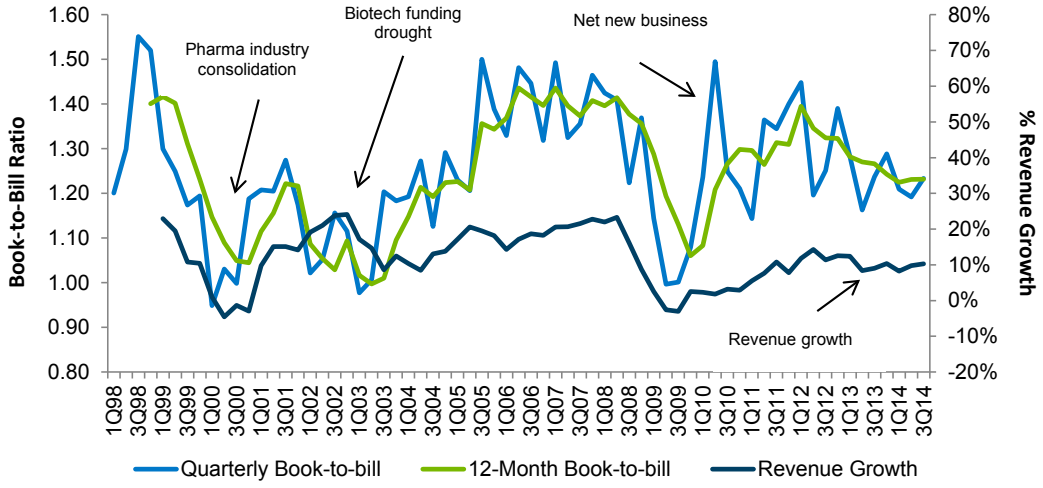
in the high single digits for the next several years. Below, we look at our leading indicators for insight on each of these issues and make a case for why PRA could be a good way for investors to participate in the market.

1. Is There a Demand Problem?

Recent bookings indicative of solid demand, despite some slowing from 2012's peak. The strong bookings growth that came with the rise of strategic partnerships in recent years has moderated somewhat and has periodically resulted in volatile quarterly results on a company-specific basis. Parexel's calendar third-quarter book-to-bill ratio came in below 0.9 times, for example. We do not believe this is indicative of a demand problem, however. While we acknowledge that the timing of this volatility merits caution, we believe bookings for the overall group remain solid and that Parexel's weakness will prove transitory.

Exhibit 6 details booking trends for the industry over the past 16 years. We saw a nice uptick in the third quarter thanks to solid bookings from Quintiles that more than offset weak Parexel numbers. However, the trend has been down for the group over the past two years, following a partnership-oriented surge from 2010 through 2012. On average, bookings have remained between 1.15 and 1.20 times on a trailing-12-months' basis, a level that should support organic revenue growth of about 10% if backlog duration and conversion rates remain constant. Given consistent commentary from all market participants in recent quarters that proposal activity is at record levels and that the number of ongoing clinical trials is as high as it has ever been, we believe that bookings trends for the group can remain in the 1.15 to 1.20 range for the near to intermediate term.

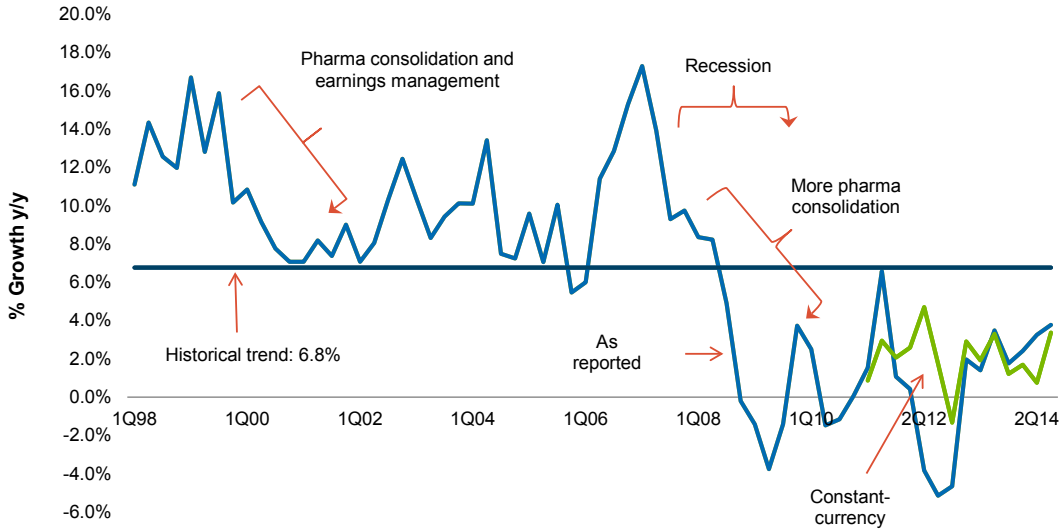
Exhibit 6
Long-Term Booking Trends Relative to Industry Revenue Growth



Note: Industry average includes Q, PRXL, ICLR, and CVD
Sources: William Blair & Company, L.L.C. estimates and company reports

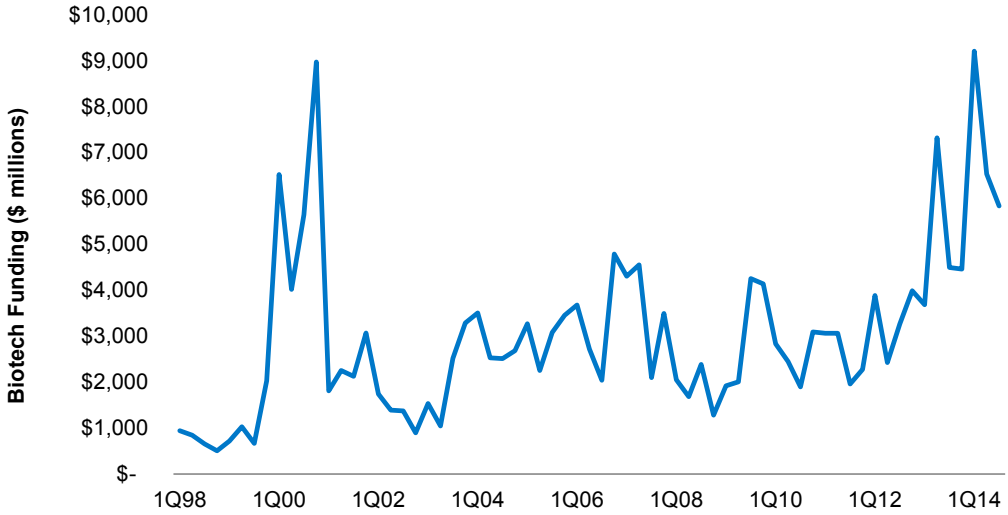
Strong pipeline also suggests solid demand. As shown in exhibits 7, 8, and 9, our data suggests that the number of drugs in each area of development has increased meaningfully over the past several years and has accelerated in 2014, thanks to stable spending at big pharma and strong funding for biotech companies. As long as R&D trends continue to improve and funding remains strong, we believe demand for CROs can remain above historical averages. We expect R&D trends to improve slightly over the next few years from about 2% annual growth today to 4% over the longer term, and while we expect biotech funding to remain strong, we would not be surprised by some reduction in absolute dollars raised compared with the record level over the last 12 months.

Exhibit 7
Biopharmaceutical R&D Spending Trends



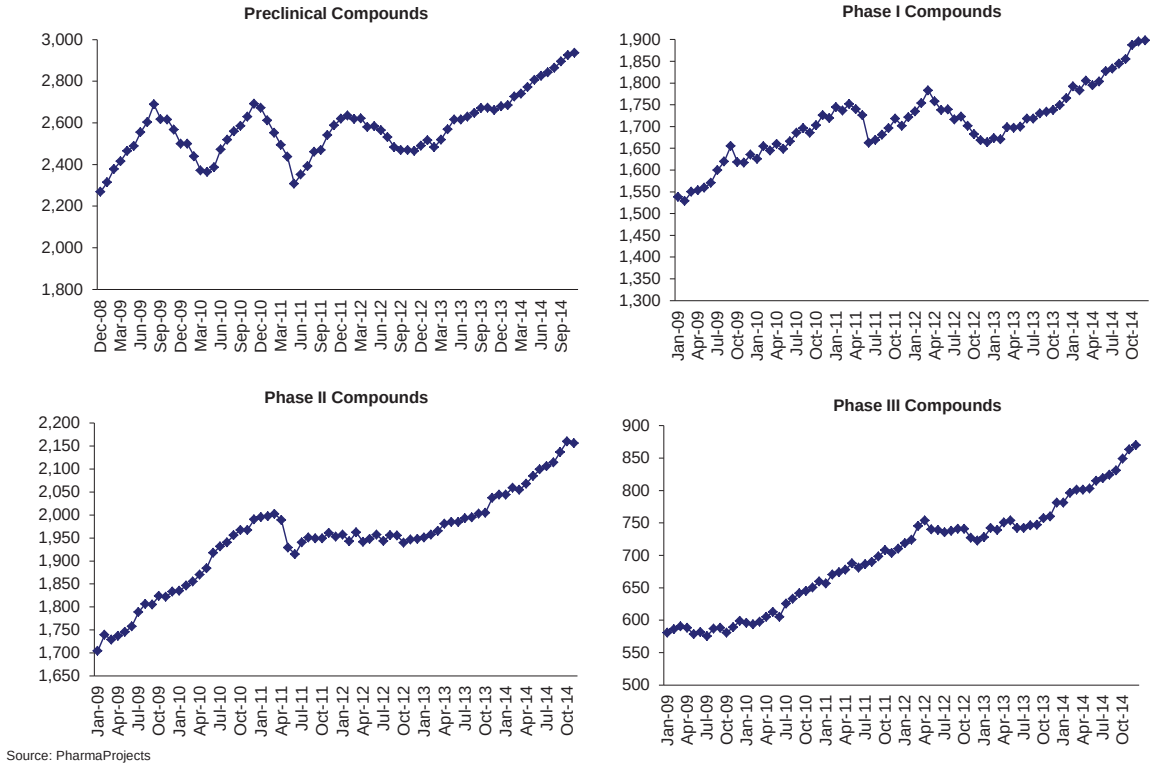
Note 1: Pharma includes PFE, GSK, MRK, AZN, BMY, JNJ, LLY, ROG, NVS, SNY
Note 2: Biotech includes AMGN, BIIB, BMRN, CLGN, GILD, ISIS, MDCO, VRTX
Sources: Company reports

Exhibit 8
Quarterly Biotech Funding (1Q98 to 3Q14)



Source: BioCentury

Exhibit 9
Estimated Number of Drug Candidates in Each State of Development (Preclinical Through Phase III)



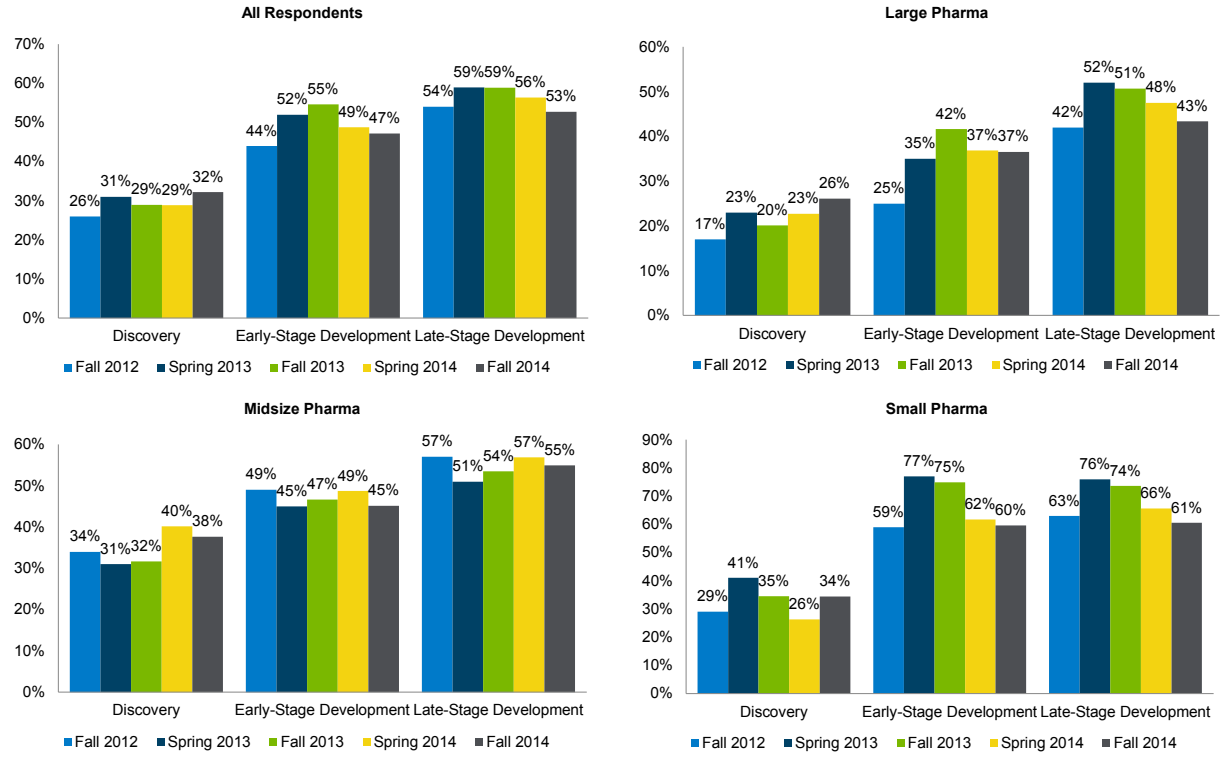
Source: PharmaProjects

2. Are We Near a Market Top?

Outsourcing penetration has room to go. We have frequently published estimates of where we believe outsourcing penetration rates are. Today, we believe outsourcing penetration rates for clinical outsourcing are 42% and are poised to improve to 53% by 2020. Over the longer term, management commentary from multiple industry participants suggests that penetration can reach 60% or higher, implying several years of strong growth beyond 2020. In our survey work, client responses have been generally consistent with the long-term commentary, implying higher penetration over the long term than is observed today. In our most recent survey, respondents suggested that clinical outsourcing penetration is 53% today, just below the 56% noted in our spring survey. We believe these numbers are somewhat overstated, as all companies are weighted equally regardless of R&D budget size.

In aggregate, we believe the fundamentals of the CRO market are solid. Despite some normalization in bookings trends, proposal volume is at or near record levels, the pipeline has been gradually increasing, spending is improving, and outsourcing penetration appears to have plenty of room to go. Furthermore, as the biopharmaceutical industry focuses on more complex specialty disease, we believe CROs with proven expertise in these areas can stand out and take share. While we acknowledge that the surprising amount of capital market activity in the space causes investors to question whether there is a problem, we believe the fundamentals indicate that this is not the case. We project aggregate market growth of 7% to 8% over the next five years. We continue to view the CRO industry as an attractive way to participate in the growth of biotech and specialty markets but with less risk of failure, and we believe this space should outperform broader healthcare indices for the next several years.

Exhibit 10
Percentage of Total Work Outsourced by Phase, by Company Type



Note: 133 respondents in fall 2014, 130 respondents in spring 2014, 137 respondents in fall 2013, 125 respondents in spring 2013, and 147 respondents in fall 2012

Sources: Life Science Strategy Group, LLC and William Blair & Company, L.L.C.

Exhibit 11
Global CRO Market Model
($ in millions)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Development Spending	$58.7	$66.3	$72.3	$75.2	$71.4	$70.7	$72.1	$72.8	$74.6	$76.9	$80.0	$83.2	$86.5	$89.9	$93.5	$97.3
% Growth (y-o-y)	7%	13%	9%	4%	-5%	-1%	2%	1%	3%	3%	4%	4%	4%	4%	4%	4%
% of R&D	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%	68%
Outsourced Preclinical Development	$3.2	$3.5	$4.0	$4.2	$3.2	$3.0	$3.0	$3.0	$3.1	$3.3	$3.6	$3.9	$4.2	$4.5	$4.9	$5.4
% Growth (y-o-y)	12%	11%	13%	6%	-24%	-6%	0%	1%	2%	7%	8%	8%	8%	9%	9%	9%
% Outsourced to CROs	25%	26%	28%	29%	29%	30%	31%	32%	32%	33%	35%	36%	38%	40%	42%	44%
Outsourced Clinical Development (to CROs)	$8.8	$11.0	$12.8	$14.7	$15.4	$16.5	$17.8	$19.4	$21.2	$23.1	$25.0	$27.0	$29.0	$31.2	$33.4	$35.8
% Growth (y-o-y)	14%	24%	17%	15%	5%	7%	8%	9%	9%	9%	8.5%	8.0%	7.5%	7.3%	7.3%	7.0%
% of Total Clinical Development	23%	24%	26%	28%	30%	32%	34%	37%	39%	42%	44%	46%	47%	49%	51%	53%
Outsourced Clinical Development to CROs and Investigators	$15.5	$18.1	$20.6	$22.7	$23.9	$25.5	$27.5	$29.8	$32.2	$34.9	$37.6	$40.5	$43.4	$46.4	$49.6	$52.9
% Growth (y-o-y)	11%	17%	14%	10%	5%	7%	8%	8%	8%	8%	7.8%	7.5%	7.2%	7.0%	6.8%	6.7%
% of Total Clinical Development	34%	34%	36%	38%	40%	42%	44%	47%	50%	52%	54%	56%	57%	59%	61%	62%
Total Outsourced Development (to CROs)	$12.0	$14.5	$16.7	$18.9	$18.6	$19.5	$20.8	$22.4	$24.2	$26.4	$28.6	$30.9	$33.2	$35.7	$38.3	$41.1
% Growth (y-o-y)	13%	20%	16%	13%	-2%	5%	7%	8%	8%	9%	8.4%	8.1%	7.6%	7.4%	7.4%	7.3%
% of Total Development	23%	24%	26%	28%	30%	32%	33%	36%	38%	41%	42%	44%	46%	48%	50%	51%
Total Payments to CROs and Investigators	$18.7	$21.6	$24.5	$26.9	$27.0	$28.5	$30.5	$32.8	$35.3	$38.2	$41.2	$44.3	$47.5	$50.9	$54.5	$58.2
% Growth (y-o-y)	11%	16%	13%	10%	0%	5%	7%	8%	8%	8%	7.8%	7.6%	7.3%	7.1%	7.0%	6.9%
% of Total Development	32%	33%	34%	36%	38%	40%	42%	45%	47%	50%	52%	53%	55%	57%	58%	60%

Sources: Company reports, EFPIA, JPMA, PhRMA, Pharmaprojects, and William Blair & Company, L.L.C. estimates

Exhibit 12
Relevant Pharmaceutical Outsourcing Providers by Development Phase

Discovery Services	Preclinical Toxicology	Phase I	Phases II-IV	Central Lab	Commercialization	Manufacturing
WuXi	Covance	Celerion	Quintiles	Covance	Inventiv	Catalent
Albany Molecular	Charles River	Lambda	Parexel	Quintiles	Quintiles	DPx
Charles River	Huntingdon/Harlan	Novum PRS	PPD	Quest	PDI	Aenova
Covance	MPI Research	Covance	ICON	PPD	Publicis	Farmar
ChemBridge	WIL Research	Parexel	PRA Health Sciences	Lab Corp	United Drug	Fareva
Argenta Discovery	LAB Research	Quintiles	Covance	ICON	EPS Corp.	Baxter
Ricerca	SNBL	PPD	Inventiv/PharmaNet			Corden
Jubilant Organosys	CIT	Inventiv/PharmaNet	INC Research			
Syngene*		INC Research				
Piramal		ICON				
Dishman Pharmaceuticals		PRA Health Sciences				
Divis Laboratories						

*Publicly traded entities focused on outsourced pharma services include Albany Molecular, Catalent, Charles River, Covance, ICON, INC Research, Parexel, PRA, Quintiles, and WuXi
**Syngene is BioCon's chemistry subsidiary
Sources: Company reports and William Blair & Company, L.L.C. estimates

Specialty pipeline should drive growth. As shown in the data above, we believe there has been an encouraging rebound in the product pipeline in the past four years. This has driven significant growth for CROs over the same period. According to data from Parexel's consulting group, however, growth has slowed somewhat in 2014 (at least through April). This could be adding to investor skepticism following the large number of equity sales in the industry. While this skepticism is reasonable, we believe the expected increase in R&D spending and recent funding trends for biotech firms should drive trial growth higher over the next several years.

As shown in exhibit 13, since 2005, Phase I and Phase III trials both experienced annual growth of 6.5%, while Phase II lagged slightly, growing 5.0%. As the number of biotech funded compounds make their way out of preclinical studies and into early development, we expect Phase I trials to outpace Phase II and III over the next few years. Relative to its CRO peers, PRA has more exposure to Phase I/clinical pharmacology and would thus benefit from a further rebound in the earlier portion of the industry's pipeline.

Exhibit 13
Total Average Number of Active Programs by Year*

Phase	March 2005	March 2006	April 2007	May 2008	April 2009	April 2010	April 2011	April 2012	April 2013	April 2014	9 Year CAGR
Phase I	1,539	1,702	1,828	2,064	2,292	2,505	2,609	2,767	2,865	2,713	**6.5%**
Phase II	1,694	1,871	1,918	2,152	2,294	2,488	2,578	2,669	2,777	2,636	**5.0%**
Phase III	754	812	794	910	952	1,005	1,079	1,219	1,315	1,333	**6.5%**

Note: Databases search via Dialog and Pharmaprojects
*Numbers rounded
Sources: Parexel Consulting and Parexel Sourcebook

To summarize, we believe that demand remains solid and outsourcing penetration has plenty of room to improve. We view the industry transactions as a normal part of the cycle of private equity interest in the space. We acknowledge that the group valuation is toward the high end of historical averages, and this is likely a contributing factor to the insider selling, but we believe the underlying growth fundamentals suggest that the companies can grow into these valuation multiples. Given this outlook, we believe that investors should maintain exposure to the space, and we view PRA as an attractive way to do so.

Company Overview

PRA, which became a public company for the second time in November 2014, is among the leading contract research organizations in the world, with roughly $1.2 billion in annual revenue and 10,600 employees working in 75 offices worldwide. The company offers a comprehensive range of drug development services from Phase I through IV clinical trials. The company's favorable reputation in clinical services has helped drive a high rate of repeat business with both blue-chip pharmaceutical clients and top biotechnology clients. A unique business model combining traditional CRO services with a more functional approach through the embedded solutions offering (through the RPS acquisition) has positioned the company as having one of the most flexible offerings in the industry.

Exhibit 14
PRA Health Sciences, Inc.
Acquisition History

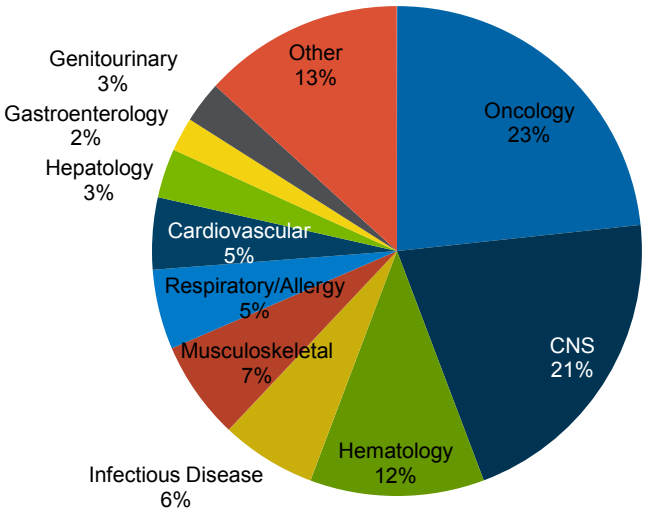
Date	Acquired Company	Description
1997	International Medical and Technical Consultants (IMTCI)	CRO based in Kansas; clinical trials leader in allergy and respiratory therapies; Phase I facility
1999	Valorum (UK) Ltd.	Reading, U.K.'s service delivery center; expanded European CRO presence and brought strong regulatory team
2000	ARCAM	Based in Paris, France, and founded in 1989, the company adds 250 European staff to PRA
2002	Staticon International Espana, S.A.	Based in Madrid, Spain; expanded capabilities in clinical trials management, data management, medical writing; added operations in Spain and Portugal; estimated $4 million in annual revenue
2002	CroMedica International	Based in Victoria, Canada; increased capabilities in CNS; added operations in North America, South America, Africa, and Australia; $40 million in annual revenue
2003	Valid-Trio GmbH	Based in Moscow, Russia, expanded clinical trial business in Russia, Ukraine, Romania, and bordering countries; estimated $2 million in annual revenue
2003	ClinCare Consulting BVBA	Based in Brussels, Belgium; improved capabilities in cardiovascular, CNS, oncology and rheumatology; expanded operations in Belgium; estimated $4 million in annual revenues
2005	GMG BioBusiness	London-based company that offers consulting services in centralized and mutual recognition filings, labeling preparation, negotiations, due diligence, Clinical trial applications, accelerated submissions and approvals, development strategies, and on-site placement services
2005	Regulatory / Clinical Consultants, Inc.	Located in Lees Summit, Missouri, the company offers specialized and consultancy services including regulatory affairs, electronic regulatory submissions, health economics and outcomes research and quality assurance. Operational core competencies include therapeutically focused clinical trial monitoring and data management.
2006	Sterling Synergy Systems	Expanded clinical monitoring capabilities in Mumbai, India
2006	Pharma Bio Research	Early-phase clinical development facility and bioanalytical laboratory in the Netherlands
2007	Pharmacon	Phase I facility provider based in Berlin, Germany
2011	Kinship Technologies	Software developer and services company based in Chennai, India
2013	ClinStar, LLC	Privately held CRO that provides comprehensive trial and logistics services in Russia and Eastern Europe
2013	RPS	Leading provider of "embedded" solutions to biopharma customers, providing a differentiated offering to traditional CRO services
2013	CRI Lifetree	Early-stage service provider with full range of Phase I-II clinical research services in specialized patient populations

Sources: Company reports

Pharmaceutical Research Associates, Inc., PRA Health Science's predecessor company, was incorporated in Charlottesville, Virginia, in 1982 as a data management company after beginning in 1976 as an anti-inflammatory drug study group. The company expanded into the clinical trials management business with a location in Europe in 1991 and slowly expanded internationally thereafter. The company has grown both internally and through a long list of acquisitions. Historically, the assets were usually small, troubled companies that added a particular therapeutic expertise or helped establish a presence in new geographies. Exhibit 14 provides a summary of PRA's acquisition history. In our view, PRA has done an excellent job buying companies and integrating them quickly. While not all terms have been disclosed, we believe PRA generally pays about 6-8 times trailing EBITDA and roughly 1 times (or sometimes less) revenue for acquisitions.

In 1996, the company was recapitalized by the Carlyle Group. At that point, the name was changed to PRA International, and expansion, particularly in Western Europe, was accelerated. In 2001, the company was purchased by Genstar Capital, which continued the international expansion by acquiring assets in Spain (Staticon) and Canada (CroMedica), the latter of which had global operations that expanded PRA's presence into Africa, South America, and Australia. CroMedica also helped bolster expertise in central nervous system CNS, which has become one of the largest areas of spending in the pharmaceutical industry. We believe oncology and CNS represent a large percentage of revenue for PRA, roughly 45% as of 2014. Given the outsized portion of the pipeline dedicated to these areas, we believe they could become a larger percent of revenue over the next few years.

Exhibit 15
PRA Health Sciences, Inc.
Therapeutic Concentration as a Percent of Revenue – LTM



Sources: Company reports

In 2004, the company underwent its first public offering, raising capital to continue its international expansion. In the three years spent as a public entity, expansion in Europe continued with acquisitions in Russia, Belgium, the United Kingdom, India, and the Netherlands, as well as internal office expansions in both Western and Eastern Europe. The Dutch facility expanded PRA's presence in Phase I (where there was already a facility in the United States), and these two sites have become the basis for a successful early-development business that feeds the larger and more lucrative late-stage business.

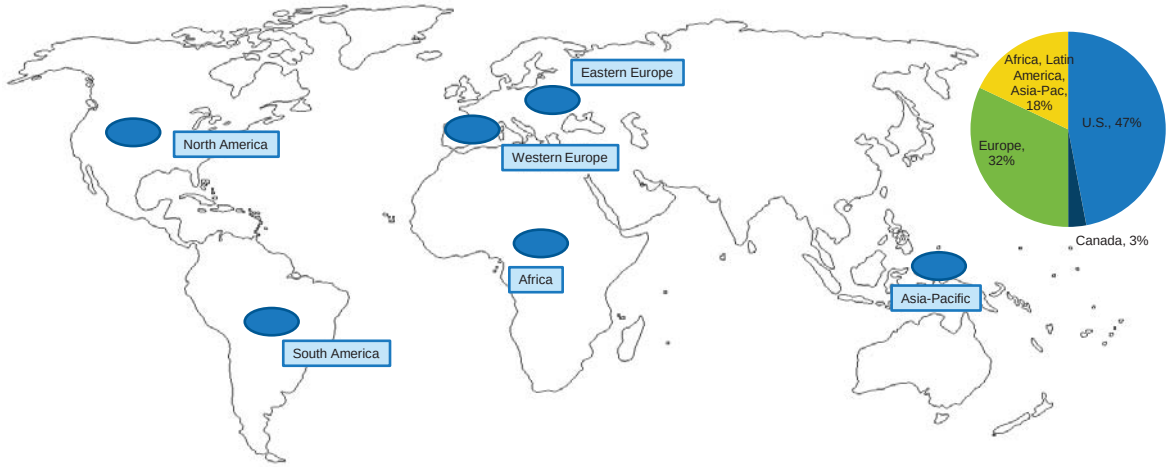
After three years in the public markets, the company was reacquired by Genstar, which continued its previous strategy of expanding through acquisition. In addition, new management was brought in from PPD; both Colin Shannon (CEO) and Linda Baddour (CFO) joined in 2007. We believe this team brings a disciplined approach to operations and finance that has already enabled the company to transition from a midsize market participant to a top six global player.

Another notable move by the current management was forming a joint venture with WuXi Pharmatech in 2012 to provide a platform to conduct clinical trials in China. While this effort is still in its infancy, we believe it gives PRA the ability to eventually be the dominant clinical CRO in China given the power of WuXi's brand.

In 2013, the company made two more typical acquisitions before Genstar sold its stake to KKR, which in turn financed the acquisition of RPS. The acquisition of RPS is the largest in company history, with a price tag of more than $1 billion. We view the combination with RPS as an opportunity to generate significant revenue synergies and bring financial discipline to RPS, which, despite a fast-growing top line, generated an EBITDA margin well below that of its more traditional clinical CRO peers.

Today, the company accounts for 6% of the clinical CRO market by our estimates and has grown significantly since we last covered it seven years ago. With the pieces put in place since that time, we believe PRA is well positioned to continue gaining market share as 1) integration with RPS should allow for significant top- and bottom-line synergies, 2) expertise in Phase I should allow for strong growth over the next few years as the early-stage portion of the industry's pipeline rebounds, 3) it has a scalable technology platform that is a potential differentiator, and 4) it has lower client concentration than its peers. Below, we expand on each item.

Exhibit 16
PRA Health Sciences, Inc.
Global Footprint



Sources: Company reports

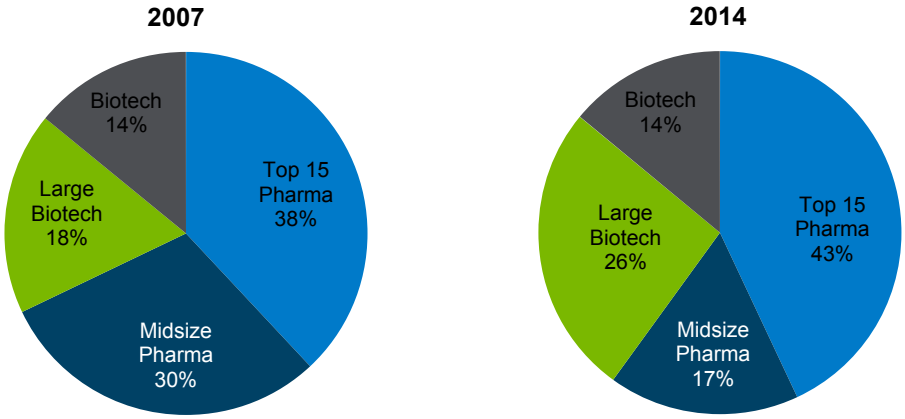
RPS

We believe the acquisition of RPS in 2013 is the most obvious differentiator for the company since it gives PRA the unique ability to offer global CRO services both in a traditional full-service model as well as an embedded functional model. The company operates as a division of PRA called Strategic Solutions and is run by RPS's former COO, Harris Koffer. RPS was founded in 1998 and is based in Fort Washington, Pennsylvania. RPS has particular expertise in "embedded" solutions but has also offered traditional CRO services.

Traditional CRO services typically comprise one entire study for one specific drug candidate, with the CRO using its own internal standard operating procedures (SOP) to conduct the project. Strategic Solutions, on the other hand, use the client's SOPs and often focus on a particular function rather than a single study. We view the relationships in the Strategic Solutions business as similar to strategic deals given the high level of collaboration required to make it work. Therefore, we believe these relationships are stickier than traditional services and particularly well suited for large pharmaceutical clients that tend to prefer the use of their own SOPs as they gain comfort outsourcing more of their development functions. We note that there are various degrees of integration, ranging from simply filling staffing needs to fully integrated clinical operations and infrastructure. We believe legacy RPS had relationships with 14 of the top 15 pharma companies, with at least 6 of these relationships using embedded programs.

In addition, RPS expanded the market opportunity to not only include the outsourced component of R&D spending ($23 billion by our estimate), but also offer a perceived lower-risk way to access total development spending of an estimated $77 billion. We believe this offering presents an opportunity for sales synergies as RPS has historically had good traction with large pharma clients, while PRA has had better traction with smaller pharma and biotech clients. As shown in exhibit 17, the addition of RPS has shifted the revenue base toward the top 15 pharma companies.

Exhibit 17
PRA Health Sciences, Inc.
Customer Focus Shift



Source: Company report

As a relatively new company, legacy RPS's geographic reach was more limited than PRA's, which offers the potential for cross-selling geographically. In addition to RPS's headquarters in Pennsylvania, the company had offices in Latin America, Europe, and Asia. While most of the company's historical growth was organic, the company made acquisitions beginning in 2008 with three small CROs in Europe and made another acquisition in China in 2009. Despite an arguably stronger presence in Latin America, we believe RPS will benefit from cross-selling into PRA's broader geographic footprint.

In addition to sales synergies, we believe RPS will benefit from the financial discipline PRA's management team can bring. At the time of the acquisition, RPS had more than 4,000 employees and a presence in roughly 65 countries. In addition, the company had a reputation for high SG&A costs, which a drove single-digit EBITDA margin. As RPS is integrated into the PRA structure and duplicative facilities are consolidated, we believe PRA's focus on cost control should allow SG&A costs to be reduced and margins enhanced. Today, we believe PRA has been able to improve EBITDA margin for

legacy RPS to the low double digits. Over the longer term, we see more room for margin improvement in this business, although we suspect it will likely never equal the high-teens rate currently being generated in the traditional business.

We believe the Strategic Solutions business should grow at a rate at or slightly below overall revenue. In the near term, we believe growth has been slower as PRA has refocused the business development effort on more profitable projects rather than top-line growth. Thus, in the near term, we expect slower revenue growth but improving margin.

Early Development

As noted above, PRA has been very acquisitive during its history and a significant portion of these acquisitions added geographic presence and expertise in the early-development market, specifically clinical pharmacology (typically referred to as Phase I services) and bioanalytical laboratory capabilities. Today, PRA has six clinical pharmacology clinics comprising nearly 500 beds of capacity, 2 bioanalytical labs, and roughly 1,000 employees in early development. The segment represents roughly 10% of total revenue.

More broadly, of the $23 billion total market for clinical outsourcing, we believe Phase I accounts for $1 billion to $2 billion, or 5% to 9% of the total, slightly lower than PRA's exposure. We believe the profitability profile of this business can vary from quarter to quarter given the relatively fixed-cost nature of the work. Unlike Phase II-IV work, which has relatively little fixed costs given that it is primarily people-focused, Phase I work has a higher degree of cost tied into fixed assets, primarily treatment clinics. As a result, depending on the capacity utilization at these facilities, profitability can range from the single-digit level to the high-teens at the EBITDA line. Generally, the growth profile of this segment of the market depends on the number of INDs filed following preclinical work. As a result, there was a period of relatively low activity following the downturn in the preclinical market in 2009 and a similar period of facility consolidation in the industry. However, now that the momentum in preclinical has begun to shift, we are beginning to see the Phase I market improve as well.

While this is a relatively small portion of PRA's business, we believe a potential cyclical improvement in the number of compounds in early development could drive solid top-line growth in this business over the next few years. Given the higher fixed costs, we believe this could drive a disproportionate bottom-line benefit and, as a result, we could see margins approach the company average in 2015. Relative to its competitors, we believe PRA is modestly overweight in this category and therefore could see a slightly larger benefit if the market improvement materializes.

Project P

Like many other CROs, PRA has increased its focus on technology to increase the efficiency of clinical trials and reduce time to market. Each player has created its own platform to best exploit the increasing body of data generated by clinical trials and each platform offers a point of differentiation from its peers. PRA's system is known as Project P at present and is still somewhat of a work in process. Begun in 2012, the system is designed as an open platform that will be the base on which all aspects of a trial can be managed. It can draw on all data generated by a current or historical trial in real time. Like other systems, Project P is geared toward identifying trends in the data that can predict future outcomes and reduce exposure to risk. Based on the predicted areas of risk, resources can be more effectively deployed to minimize waste and reduce the duration and cost of a trial. We expect the next phase of the project to be introduced in the second or third quarter of 2015, when the company launches the capability broadly across its client base.

We believe enhanced use of data analytics to improve trial design and execution will be a key service CROs can provide clients over the next several years as CROs will have access to a larger body of data than any of their clients will have individually. We believe the CROs with the most predictive models and ability to increase trial efficiencies (through better design, site selection, or patient retention,

for example) will win a disproportionate share of work over time, but at this point it is difficult to know who has the best system. We believe PRA is in as good a position as any of its global peers to be a premier technology provider, but we expect the landscape in this area of the market to be fluid over the next few years.

Client Mix

PRA has worked with more than 300 clients and has performed more than 2,300 clinical trial programs since 2000. The company has a relationship with all of the top 20 largest pharma companies in the industry and is in a unique position to offer market-leading solutions in both traditional services as well as functional expertise through RPS's embedded model. As shown in exhibit 17, the acquisition of RPS significantly shifted PRA's client mix to include more large pharma companies. Given PRA's historically strong position with smaller biopharma clients and relative underpenetration of the large pharma segment, we believe there is an opportunity for cross-selling within the two client bases.

In addition, for the nine months ended September 2014, PRA had one of the most diverse customer bases of any large CRO. No client makes up more than 10% of revenue, which is a key differentiator given the increasing concentration at many peers involved in strategic deals. We believe this diversity provides some cushion in the event of additional large mergers. Today, PRA's key disclosed relationships are with Amgen and UCB.

Exhibit 18
Client Concentration at CROs

	Covance	ICON	Parexel	Quintiles	PRA	INC
Top Client	11%	35%	15%	<10%	8%	15%
Top 5 Clients	~40%	52%	44%	45%	38%	34%
Market Share	8%	7%	10%	20%	6%	4%

Note: CVD market share does not include central lab sales
Sources: Company reports and William Blair & Company, L.L.C. estimates

Exhibit 19
Percentage of Revenue by Client Type at CROs

	Covance	ICON	Parexel	Quintiles	INC	**PRA**
Large Biopharma	80%	60%	60%	60%	57%	**68%**
Small to Midsize Biopharma	20%	40%	40%	40%	43%	**32%**

Sources: Company reports and William Blair & Company, L.L.C. estimates

Management

In exhibit 20, we list PRA's senior management team. As is the case with any service-based business, the cohesiveness of this team will be key success factor over the long term. In our opinion, PRA's management team has a more disciplined operating focus than many of its peers, given its many years of experience under a highly leveraged capital structure and track record of strong margin performance both at PPD and since taking over at PRA in 2010.

Exhibit 20
PRA Health Sciences, Inc.
Management Biographies

Name	Position	Tenure (years)	Summary
Colin Shannon	Chairman, President, and CEO	7	Mr. Shannon joined PRA in 2007, serving as president and COO. He was named president and CEO in 2010. Before this, Mr. Shannon worked at PPD for 12 years, serving in various roles including executive vice president of global clinical operations, COO of the European division, and CFO for Europe and the Pacific Rim. Before joining PPD, Mr. Shannon had more than 15 years of experience in a variety of financial and accounting positions in the utility and multimedia industries. Mr. Shannon earned his M.B.A. from London's City University and is a fellow member of the Chartered Association of Certified Accountants.
Linda Baddour	EVP and CFO	7	Ms. Baddour joined PRA in 2007 as executive vice president and CFO. Before joining PRA, Ms. Baddour was CFO at PPD from 2002 to 2007, chief accounting officer from 1997 to 2002, and corporate controller from 1995 to 1997. Ms. Baddour earned her M.B.A. from the University of North Carolina at Wilmington and is also a Certified Public Accountant.
David Dockhorn	EVP, Compliance Officer	17	Dr. Dockhorn joined PRA in 1997 as vice president of operations and regional director of the Lenexa, Kansas, operations. In September 2007, Dr. Dockhorn was named executive vice president, product registration–the Americas, and in January 2012 he was named executive vice president and corporate compliance officer. Before joining PRA, Dr. Dockhorn worked for International Medical Technical Consultants, Inc., a CRO acquired by PRA in 1997. Dr. Dockhorn received his Ph.D. in neuroscience from Texas Tech University.
Paul Bunch	EVP, Operations	<1	Dr. Bunch, is responsible for driving operational delivery and overall client satisfaction, while also focusing on continuous process improvement and change initiatives. Dr. Bunch brings 25 years of industry experience to PRA. Before joining the company, Dr. Bunch served as vice president of global project management at CSL Behring, where he managed R&D delivery and governed the R&D project portfolio. He also has held executive leadership roles at Covance, Merck, and Eli Lilly. He received his B.Sc. and Ph.D. in chemical engineering from Purdue University.
Willem Drijfhout	EVP, Early Development Services	8	Dr. Drijfhout is the executive vice president of early development services and heads all early-phase development and bioanalytical laboratory work for PRA. Dr. Drijfhout was chief scientific officer for Pharma Bio-Research before the company was acquired by PRA in mid-2006. He joined Pharma Bio-Research in 1996 and became a member of the executive board in 1999. Dr. Drijfhout has extensive experience in drug development and has been involved in the design and conduct of several hundred Phase I studies. He holds a Ph.D. in pharmacy.
Harris Koffer	President, Strategic Solutio	1	Dr. Koffer is president of strategic solutions at PRA. Before joining PRA, he served in several roles at RPS, including CEO, president, and COO. He also served as vice president of clinical trials and pharmaceutical business development for Quest Diagnostics and vice president and general manager of Covance Clinical Services and president of Covance Periapproval Services. In these roles, he was responsible for global embedded clinical development solutions, central laboratory services, and full-service clinical research and development capabilities for Phases I-IV of drug development. In addition to more than 30 years of experience in clinical drug development, he has served in a number of professorial roles in academia.

Sources: Company reports

Financial Outlook and Modeling Assumptions

Based on 2014 consensus revenue targets, PRA is the sixth-largest clinical CRO, with a revenue base of roughly $1.27 billion. Similar to its peers, PRA is heavily weighted toward the fastest-growing therapeutic segments of oncology, CNS, and infectious diseases. Unlike most CROs, PRA has diversified its business model to allow clients to choose the traditional "transaction" model or the embedded solutions model to meet their needs. While it remains to be seen if this dual model will be embraced by clients beyond the larger drug companies, we believe it differentiates PRA from its peers, granting the company more flexibility to penetrate the large pharma segment of the market. Thus, we project that in a normal economic environment, top-line growth for PRA will be near 8% (all organic). Management's longer-term goal is 8% to 10%.

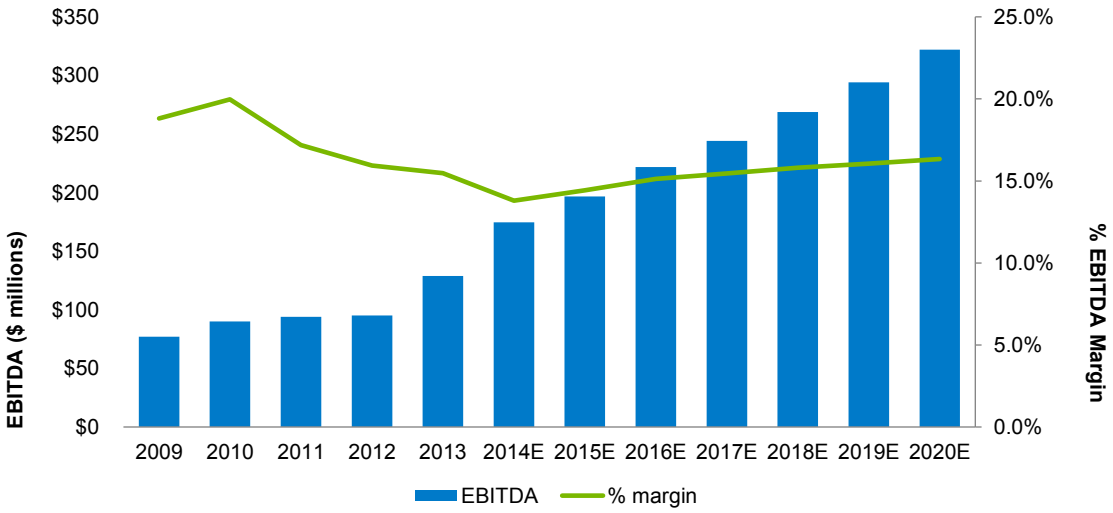
On a consolidated basis, we believe the company can realize operating margin leverage of roughly 40 basis points per year, which should translate into low-double-digit EBITDA growth by 2018. While PRA's operating margins are below industry peers by an average of 290 basis points (exhibit 21), we note that before the RPS acquisition in 2013, consolidated margins were closer to 16%, as shown in exhibit 22. With the operational integration of RPS and CRI Lifetree substantially complete, we believe the company is in a favorable position to drive margin expansion in the coming years. We calculate that every 20 basis points of EBITDA leverage translate into roughly $0.03 in EPS, or a boost of 1.4% to annual EPS growth.

Exhibit 21
CRO Peer Group

Company	Ticker	2014 Sales	2018 Sales	4 Yr. CAGR	2014 EBITDA	2014 % margin	2018 EBITDA	2018 % margin	4 Yr. CAGR	2014 Adj EPS	2018 Adj EPS	4 Yr. CAGR	Long-Term Tax Rate
ICON	ICLR	1,504,803	2,104,038	8.7%	258,653	17.2%	405,027	19.3%	11.9%	$2.76	$4.66	14.0%	16%
Parexel	PRXL	1,994,515	2,724,845	8.1%	297,696	14.9%	472,054	17.3%	12.2%	$2.46	$4.55	16.7%	~ 25%
Quintiles	Q	4,181,100	5,487,942	7.0%	704,306	16.8%	1,012,386	18.4%	9.5%	$2.64	$4.22	12.5%	30%
Covance	CVD	2,518,917	3,055,633	4.9%	437,769	17.4%	573,203	18.8%	7.0%	$3.79	$5.44	9.4%	24%
INC Research	INCR	803,933	1,178,757	10.0%	146,980	17.4%	218,070	18.5%	10.4%	$0.90	$1.97	21.5%	32%
CRO AVERAGE				**7.8%**		**16.7%**		**18.5%**	**10.2%**			**14.8%**	
PRA Health	**PRAH**	**1,265,974**	**1,701,276**	**7.7%**	**174,684**	**13.8%**	**268,802**	**15.8%**	**11.4%**	**$1.18**	**$2.24**	**17.4%**	**30%**

Source: William Blair & Company, L.L.C. estimates

Exhibit 22
PRA Health Sciences, Inc.
EBITDA Margin



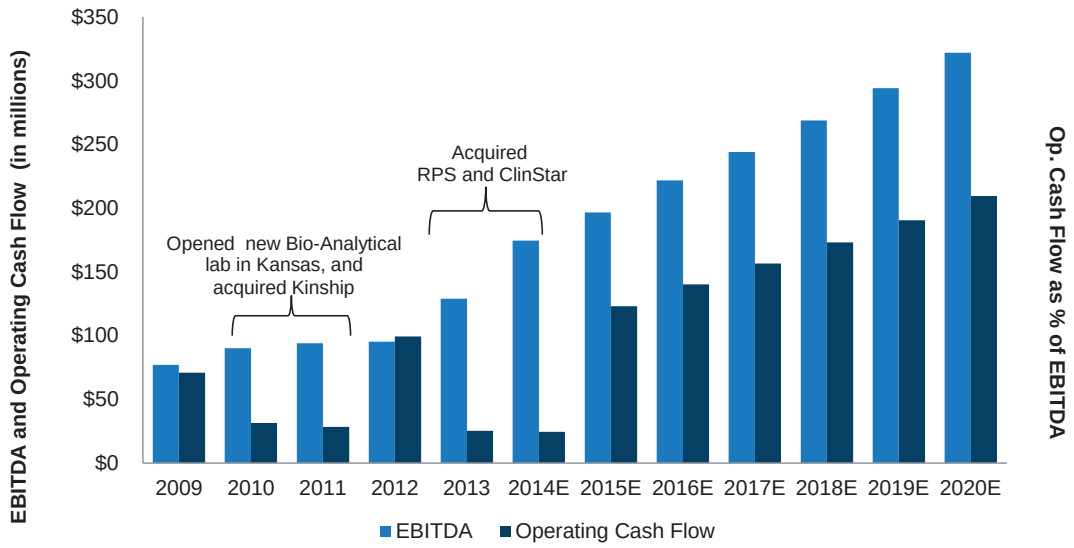
Sources: Company reports and William Blair & Company, L.L.C.

Foreign exchange will likely contribute to quarterly volatility for PRA, as it has for all global CROs. Based on company filings, roughly 22% of service revenues are denominated in currencies other than the U.S. dollar, with the most significant currency exposures to the euro and pound. Fortunately, revenue and expenses of non-U.S. operations are generally denominated in local currencies, creating a natural hedge. Thus, the EPS and revenue effects should be similar and represent only a translational, paper impact.

Cash Flow

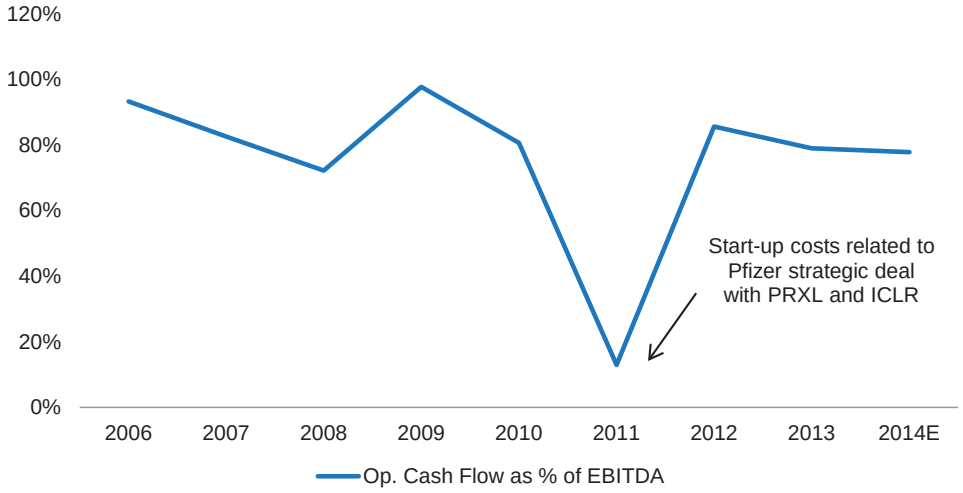
With the integration of ClinStar and RPS finalized, PRA is poised to generate strong cash flow in the coming years, in our view. As shown in exhibit 23, during periods of expansion, there is a temporary lull in cash flow generation as the company manages working capital requirements and transaction-related costs. While we acknowledge that operating cash flow can be volatile from year to year, under normalized circumstances, the CRO industry has been able to generate operating cash flow as a percentage of EBITDA in the 70% range, dating to 2006 (exhibit 24). Following 2015, we assume PRA's operating cash flow grows roughly in line with EBITDA, at 10% annually.

Exhibit 23
PRA Health Sciences, Inc.
Operating Cash Flow and Adjusted EBITDA



Sources: Company reports and William Blair & Company, L.L.C.

Exhibit 24
CRO Weighed Average Operating Cash Flow as Percentage of EBITDA

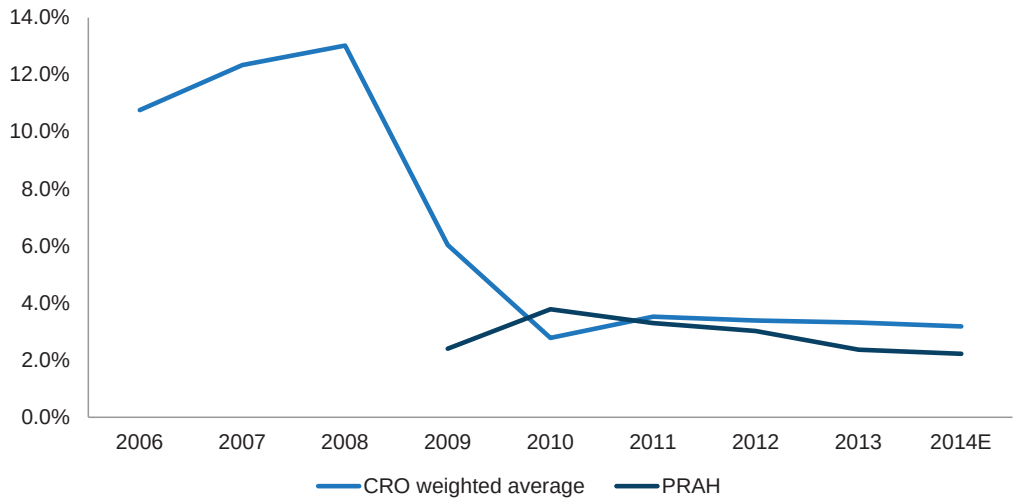


Note: CRO weighted average includes CVD, ICLR, PRXL, Q, and CRL

Source: FactSet

As the CRO industry has matured, capital expenditures as a percentage of sales have declined from 2008 and become more consistent at roughly 3% since 2010 (exhibit 25). While investing in technology remains a focus for the industry, we believe the majority of the infrastructure is in place to support growth, which should lead to more sustainable free cash flow. We believe PRA will be able to match this trend over the next few years, as it invests roughly 2.5% of sales in capital expenditures. Management has stated that cash will be used to fund organic growth, deleverage the balance sheet, and fund future M&A activity. Our model does not include any acquisitions in the future and assumes modest option dilution.

Exhibit 25
Capital Expenditures as Percentage of Sales



Note: CRO weighted average includes CVD, ICLR, PRXL, Q, and CRL
Sources: FactSet and William Blair & Company, L.L.C.

Given PRA's current debt-to-capital ratio of 50% and net-debt-to-EBITDA ratio of 4.6 times, management has said that it plans to use free cash flow primarily to pay down debt, while targeting a net leverage ratio of 3.5 times by the end of calendar 2016. In 2015, we project that interest expense will detract $0.57 from EPS.

Exhibit 27 demonstrates that if PRA uses 40% of annual free cash flow to reduce debt from 2015 to 2018, it could increase EPS by $0.01 in 2015, $0.04 in 2016, $0.07 in 2017, and $0.10 in 2018, with a resulting 2018 net-debt-to-EBITDA ratio of 2.6 times, by our calculations. While management is guiding toward a net leverage ratio of 3.5 times by 2016, we would not be surprised if it deleveraged further to similar levels to that of the peer group. Thus, our base model assumes $100 million of debt reduction annually, adding a cumulative $0.55 to EPS from 2015 to 2018, resulting in a net-debt-to-EBITDA ratio of 1.8 times.

Exhibit 26
Peer Companies Estimated Debt Ratios

Company	Debt-to-Capital	Net Debt-to-EBITDA
CRL	54%	2.1x
CVD	14%	NA
ICLR	NA	NA
PRXL	39%	0.2x
Q	136%	1.8x
INCR	52%	2.0x
PRAH	**50%**	**4.6x**

Note 1: Debt-to-capital ratios as of calendar 3Q14
Note 2: Net debt-to-EBITDA assumes calendar 2015 EBITDA
Sources: William Blair & Company, L.L.C. estimates and company reports

Exhibit 27
EPS Benefit From Reduced Interest Expense

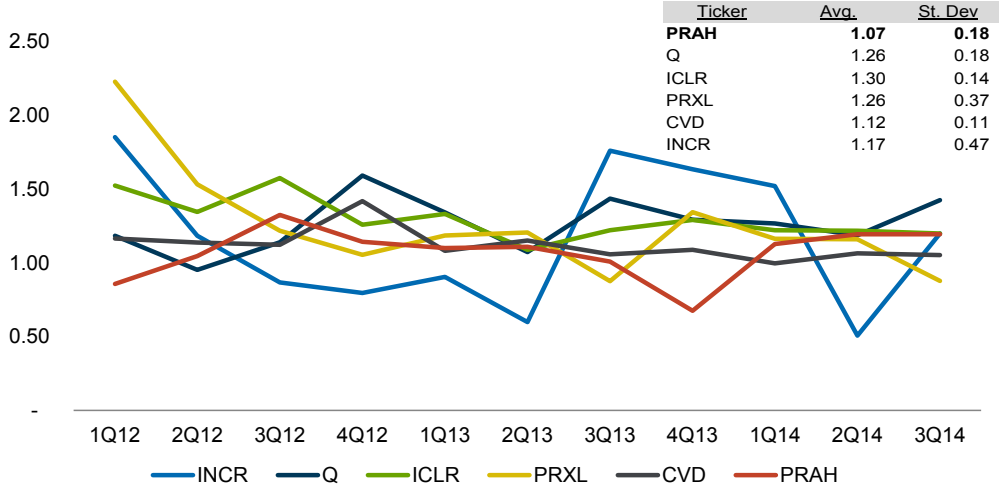
% of Free CF	2015	2016	2017	2018	Net Debt-to-EBITDA
10.0%	$ 0.00	$ 0.01	$ 0.02	$ 0.03	3.1x
40.0%	$ 0.01	$ 0.04	$ 0.07	$ 0.10	2.6x
70.0%	$ 0.02	$ 0.07	$ 0.12	$ 0.18	2.1x
BASE	$ 0.07	$ 0.09	$ 0.16	$ 0.23	1.8x

Note 1: Base case assumes $100 million in debt paydown annually
Note 2: Assumes PRA has a $75 million cash position in 2018
Sources: Company reports and William Blair & Company, L.L.C. estimates

Book-to-Bill Ratio

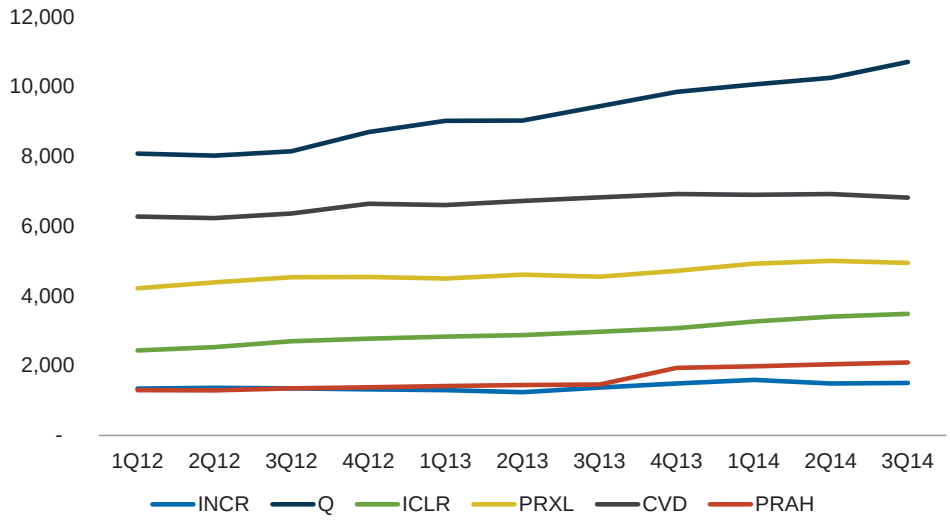
Over the last 11 quarters, PRA has reported an average quarterly book-to-bill ratio of 1.07 times, compared with 1.26 times for Quintiles, 1.30 times for ICON, 1.26 times for Parexel, 1.12 times for Covance, and 1.17 times for INC. We view book-to-bill as an important revenue metric, as ratios of 1.15 to 1.20 indicate backlog growth adequate to support high-single-digit revenue growth. While this appears to be a relative negative for PRA (it has reported only one quarter of bookings above 1.2 times since first quarter 2012), we note the following: 1) in the second and third quarters of 2014, PRA reported consecutive net book-to-bill ratios of 1.19, and 2) the RPS business tends to deflate bookings since management typically operates the embedded model on a 1.0-times book-to-bill basis with little churn from cancelations.

Exhibit 28
Net Book-to-Bill Ratio



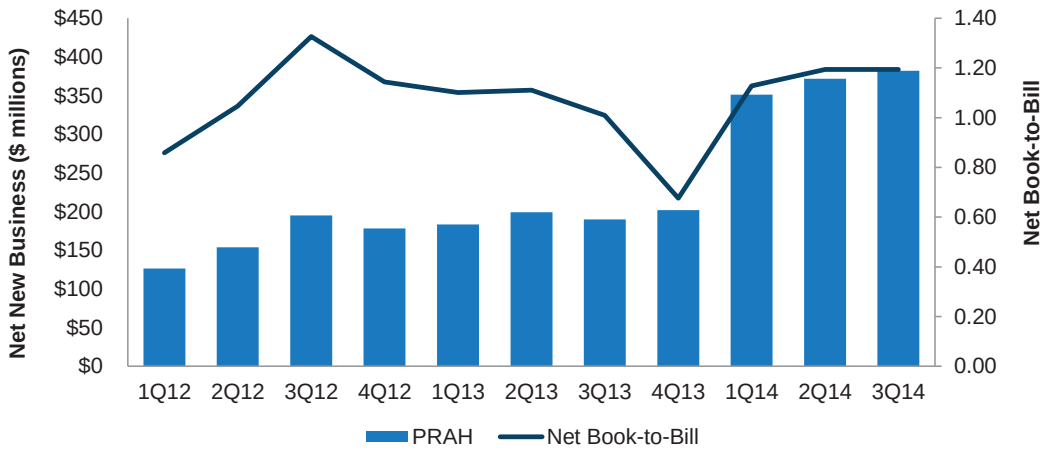
Sources: Company reports and William Blair & Company, L.L.C.

Exhibit 29
Quarterly Backlog



Sources: Company reports and William Blair & Company, L.L.C.

Exhibit 30
PRA Health Sciences, Inc.
Quarterly Net New Business



Sources: Company reports and William Blair & Company, L.L.C.

Key Sensitivity Assumptions

Operating margin. We believe that PRA can improve EBITDA margins by 30 to 40 basis points annually as the company transitions more non-client-facing functions overseas and also realizes cost synergies from RPS and ClinStar. We project 63 basis points of margin expansion in 2015 and 37 basis points of annual expansion from 2016 to 2018.

Using our 2016 estimates, every 10 basis points of margin leverage results in a $0.016 swing to EPS (about 1% of the earnings base).Therefore, if the 70 basis points of leverage we forecast do not materialize, there could be as much as 6.9% downside to our earnings expectations.

Revenue. We project constant-currency, organic revenue growth of 7.7% in 2015. Every 100 basis points in 2015 revenue growth is equivalent to roughly $12.7 million in sales. Assuming our 14.43% EBITDA margin estimate remained unchanged, every 100-basis-point change in revenue growth yields a change of $0.02 to EPS (roughly 1.5%) annually. From 2014 results through 2018, we expect a top-line CAGR of 7.7% and annual operating leverage of 40 basis points. In exhibit 31, we estimate a range of 2018 EPS, based on annual revenue growth between 4% and 14% and annual operating margin increases of as much as 100 basis points. We believe that the most likely range of outcomes is for a minimum of 6% annual revenue growth and 20 basis points of margin leverage and a maximum of 10% annual revenue growth and 70 basis points of annual margin leverage. This would result in a potential EPS range of $1.85 to $2.67, compared with our estimate for 2018 EPS of $2.24, a 17.2% CAGR.

Exhibit 31
PRA Health Sciences, Inc.
2018 EPS Range Based on Revenue CAGR and EBITDA Leverage Variations

Annual EBITDA Margin Change	Four-Year Revenue CAGR (2014 to 2018)					
	4%	6%	8%	10%	12%	14%
0.00%	$ 1.54	$ 1.72	$ 1.90	$ 2.10	$ 2.31	$ 2.53
0.10%	$ 1.60	$ 1.78	$ 1.98	$ 2.18	$ 2.39	$ 2.62
0.20%	$ 1.67	**$ 1.85**	**$ 2.05**	**$ 2.26**	$ 2.48	$ 2.71
0.30%	$ 1.73	**$ 1.92**	**$ 2.13**	**$ 2.34**	$ 2.57	$ 2.81
0.40%	$ 1.80	**$ 1.99**	**$ 2.20**	**$ 2.42**	$ 2.66	$ 2.90
0.50%	$ 1.86	**$ 2.06**	**$ 2.28**	**$ 2.50**	$ 2.74	$ 2.99
0.60%	$ 1.93	**$ 2.13**	**$ 2.35**	**$ 2.58**	$ 2.83	$ 3.09
0.70%	$ 1.99	**$ 2.20**	**$ 2.43**	**$ 2.67**	$ 2.92	$ 3.18
0.80%	$ 2.06	$ 2.27	$ 2.50	$ 2.75	$ 3.00	$ 3.27
0.90%	$ 2.12	$ 2.34	$ 2.58	$ 2.83	$ 3.09	$ 3.37
1.00%	$ 2.18	$ 2.41	$ 2.65	$ 2.91	$ 3.18	$ 3.46

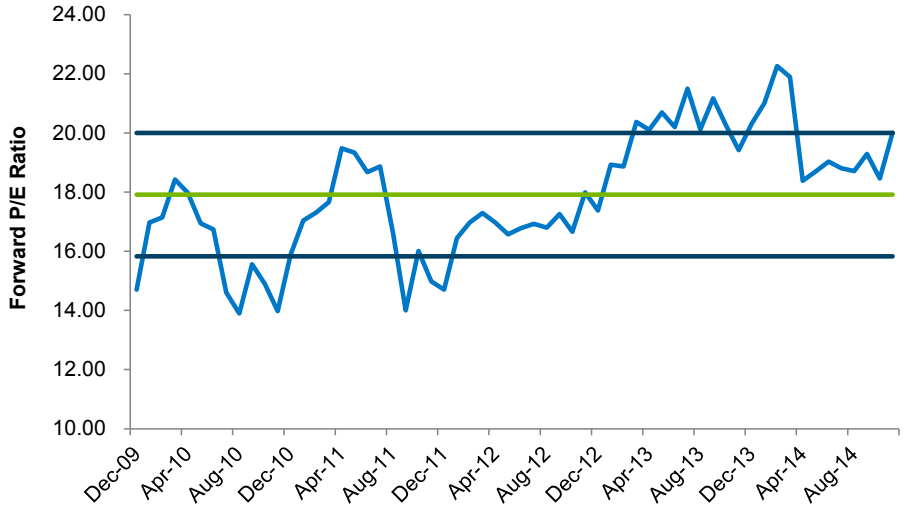
Sources: Company reports and William Blair & Company, L.L.C. estimates

We believe PRA will be able to average 17% bottom-line growth over the next four years, thanks to a combination of organic top-line expansion (8%), margin improvement (2%-4%) and debt paydown (6%-7%).

Valuation

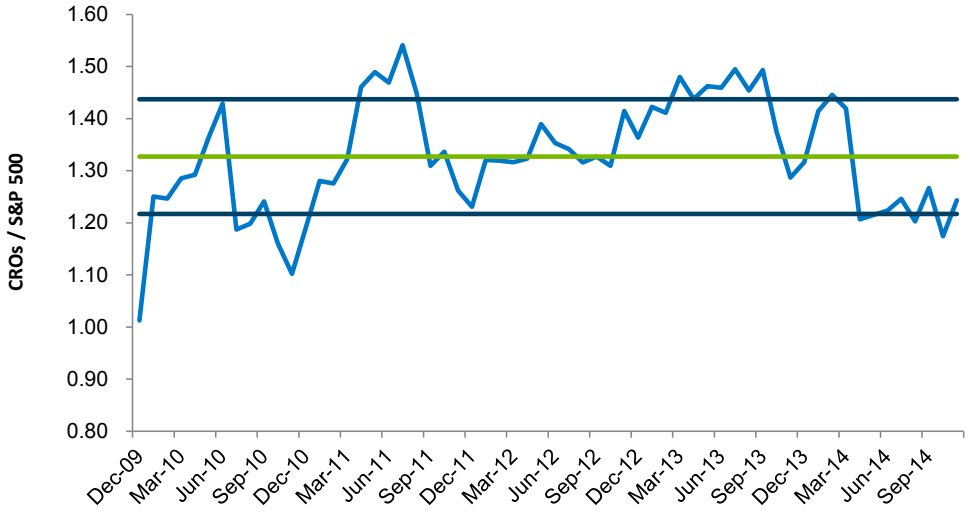
Since its IPO at $18.50 on November 13, PRA's stock is up 32%, compared with its peer average of 3% over the same period (flat excluding INC Research). So far this year, CRO stocks have risen 24% (excluding INC), outpacing the broader equity market's 11.5% return. While CRO equity returns have more than doubled the S&P 500 in 2014, both absolute and relative P/E valuations have come down from recent peaks. Over the last five years on a forward P/E basis, the peer group has traded between 16 and 20 times, with an average multiple of 18 times (exhibit 32, on the following page). Excluding Covance, given its current acquisition premium, the CRO peer group is trading at 18.8 times our 2015 estimates, slightly above its long-term average of 17.9 times. While the group looks fairly valued on an absolute basis, relative to the broader market it is trading one standard deviation below its five-year average of 1.33 times. As shown in exhibit 33, relative to the S&P 500, CRO stocks have not traded at this level since late 2010.

Exhibit 32
CRO Group Five-Year Forward P/E Ratio December 2009 to November 2014)



Note: Companies include CVD, CRL, ICLR, PRXL, and Q
Source: FactSet

Exhibit 33
CRO Group Five-Year P/E Relative to the S&P 500 (Dec. 2009 to Nov. 2014)



Note: Companies include CVD, CRL, ICLR, PRXL, and Q
Source: FactSet

PRA trades at 17.5 times our 2015 EPS estimate (including stock-based compensation expenses), a 12% discount to its peer group (7% excluding Covance). Over the next three to five years, if PRA can maintain its market share and increase revenues in the high single digits while leveraging RPS to grow consolidated earnings in the midteens, in our view, it should eventually trade in line with the peer average. We believe this is plausible, given its differentiated imbedded solutions offering, plans to steadily pay off debt, and ability to realize cost synergies with RPS.

Exhibit 34
CRO Valuation Comparison

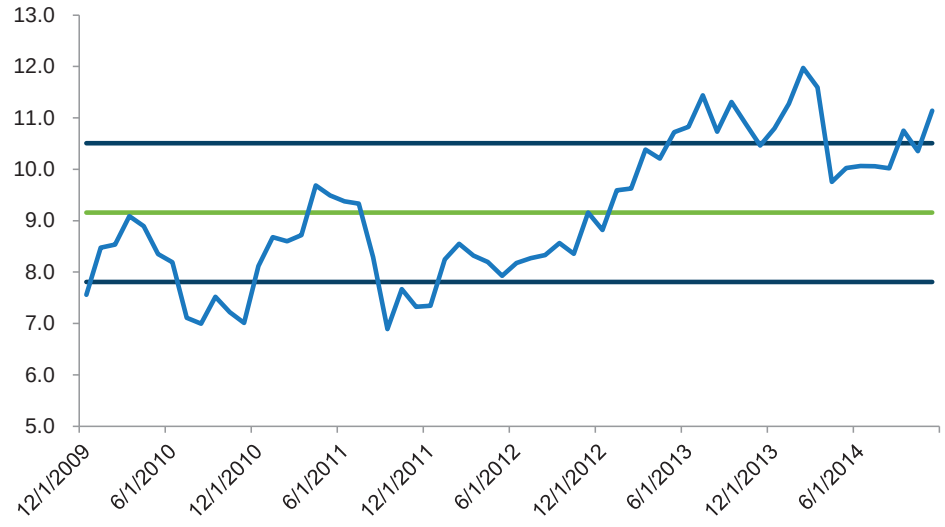
Company	Ticker	Share Price	Enterprise Value	Net Debt	2015 EPS	2015 EBITDA	2015 P/E	2015 EV/EBITDA	Net Leverage Ratio
ICON	ICLR	$52.48	$3,080.9	NA	$3.17	$288.1	16.6	10.7	NA
Parexel	PRXL	$55.13	$3,159.8	$85.8	$2.97	$343.5	18.6	9.2	0.2
Quintiles	Q	$59.38	$9,153.3	$1,398.2	$2.95	$772.0	20.1	11.9	1.8
Charles River	CRL	$63.61	$3,637.9	$656.0	$3.62	$312.4	17.6	11.6	2.1
Covance	CVD	$103.52	$5,485.3	NA	$4.07	$459.5	25.4	11.9	NA
INC Research	INCR	$24.48	$1,868.7	314.2	$1.11	$156.1	22.0	12.0	2.0
PRA Health	**PRAH**	**$23.80**	**$2,418.7**	**$ 898.8**	**$1.36**	**$196.8**	**17.5**	**12.3**	**4.6**
Average			**$4,397.6**				**20.0**	**11.2**	**1.5**

Source: William Blair & Company, L.L.C. estimates

We believe enterprise value to EBITDA is an alternative way to assess the company's valuation. Based on FactSet data, over the last five years, CROs have traded in a relatively narrow range between 8.0 and 10.5 times EBITDA, as shown in exhibit 35. Using our estimates, the group is trading at roughly 11.2 times 2015 EBITDA, which is more than one standard deviation above its five-year average of 9.2 times. While valuations appear full at current levels using this metric, as shown in exhibit 36, on the following page, valuations are four turns lower than all-time highs reached in 2008 and one turn lower than the most recent highs of 2013. PRA is trading at an enterprise value of 12.3 times our 2015 EBITDA estimate (including stock compensation), which is a 10% premium to its peers.

Given the stock's relative P/E discount and EV/EBITDA premium, we view it as reasonably valued in the context of other CRO stocks. Given the outlook for organic revenue growth in the high single digits and EPS growth of 15% or better, we believe PRA offers attractive double-digit return potential even without any multiple expansion. We therefore rate the stock Outperform.

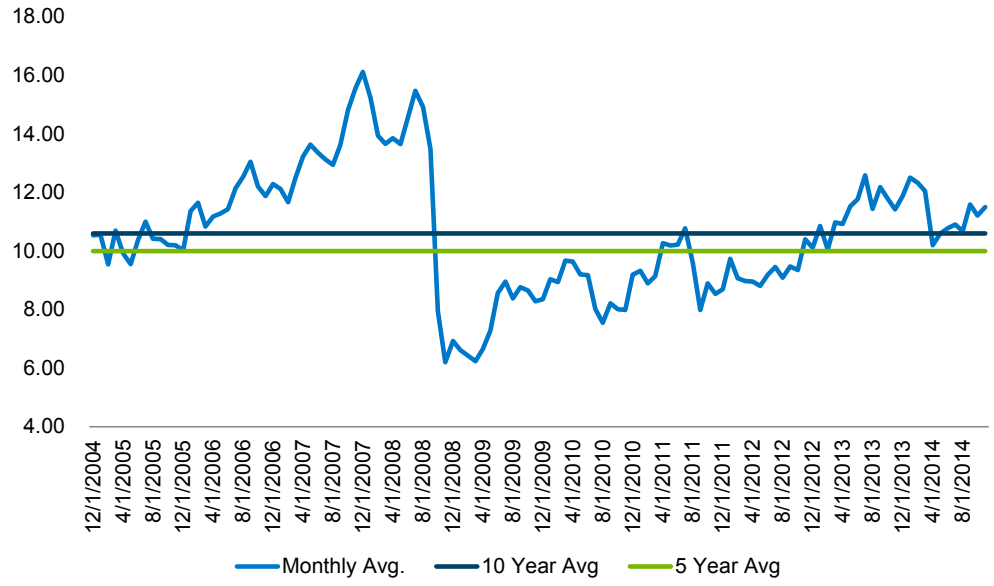
Exhibit 35
CRO Group Five-Year EV/EBITDA (Dec. 2009 to Nov. 2014)



Note: Companies include CVD, CRL, ICLR, PRXL, and Q

Source: FactSet

Exhibit 36
CRO Group Five-Year EV/EBITDA (Dec. 2004 to Nov. 2014)



Note: Companies include CVD, CRL, ICLR, PRXL, and Q

Source: FactSet

Exhibit 37
PRA Health Sciences, Inc.
Income Statement

	2009	2010	2011	2012	Q1'13	Q2'13	Q3'13	Q4'13	2013	Q1'14	Q2'14	Q3'14	Q4'14E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
Net revenue	**$409,077**	**$451,223**	**$547,669**	**$597,072**	**$166,508**	**$179,463**	**$188,139**	**$298,791**	**$832,901**	**$311,352**	**$311,422**	**$320,063**	**$323,137**	**$1,265,974**	**$1,363,463.2**	**$1,467,840**	**$1,580,238**	**$1,701,276**	**$1,831,620**	**$1,971,988**
Cost of revenue				357,812	99,795	106,063	114,839	204,791	525,488	215,052	213,222	215,591	219,733	863,598	928,407	995,196	1,069,821	1,150,062	1,235,611	1,329,120
Gross profit				239,260	66,713	73,400	73,300	94,000	307,413	96,300	98,200	104,472	103,404	402,376	435,056	472,644	510,417	551,213	596,009	642,868
Selling, general and administrative expense				143,077	37,440	40,362	40,303	59,233	177,338	57,061	53,046	57,893	56,064	224,064	234,462	246,597	261,845	277,648	296,722	315,518
Stock comp				1,010	379	303	327	132	1,141	892	868	969	898	3,627	3,818	4,110	4,425	4,764	5,129	5,324
EBITDA	**76,969**	**90,156**	**94,076**	**95,173**	**28,894**	**32,735**	**32,670**	**34,635**	**128,934**	**38,347**	**44,286**	**45,610**	**46,441**	**174,684**	**196,776**	**221,937**	**244,147**	**268,802**	**294,158**	**322,026**
Depreciation				15,041	4,143	3,978	4,445	5,487	18,053	5,895	4,910	5,988	4,201	20,994	20,452	22,605	24,336	26,200	28,207	29,580
Operating income (inlcuding options beg Q105)				80,132	24,751	28,757	28,225	29,148	110,881	32,452	39,376	39,622	42,240	153,690	176,324	199,333	219,811	242,602	265,951	292,446
Interest and other income (expense), net				(28,499)	(9,761)	(11,014)	(11,811)	(20,312)	(52,898)	(20,332)	(19,359)	(19,541)	(16,500)	(75,732)	(51,915)	(49,427)	(43,227)	(37,027)	(30,827)	(24,627)
Pretax income				51,633	14,990	17,743	16,414	8,836	57,983	12,120	20,017	20,081	25,740	77,958	124,409	149,906	176,584	205,575	235,124	267,819
Income tax expense				20,347	6,198	5,279	23,229	(1,151)	33,556	4,852	6,231	6,751	8,752	26,585	37,323	44,972	52,975	61,673	70,537	80,346
Net income (excl. nonrecurring items, excl. amort., incl. options and deferred rent)	**15,970**	**23,494**	**33,534**	**31,286**	**8,792**	**12,464**	**(6,815)**	**9,987**	**24,427**	**7,268**	**13,786**	**13,330**	**16,989**	**51,373**	**87,087**	**104,934**	**123,609**	**143,903**	**164,587**	**187,473**
Nonrecurring items				(56,188)	(15,087)	(12,520)	(126,367)	(31,607)	(185,581)	(28,494)	(29,259)	(14,007)	(21,400)	(93,160)	(61,132)	(50,044)	(37,632)	(32,753)	(27,753)	(22,753)
Tax adjustment				22,195	5,959	4,863	49,758	12,240	72,821	11,185	11,417	1,852	10,165	34,619	18,340	15,013	11,290	9,826	8,326	6,826
Nonrecurring items (net of tax)				(33,993)	(9,128)	(7,657)	(76,609)	(19,367)	(112,760)	(17,309)	(17,842)	(12,155)	(11,235)	(58,541)	(42,792)	(35,031)	(26,342)	(22,927)	(19,427)	(15,927)
Net income (GAAP)				**($2,707)**	**($336)**	**$4,807**	**($83,424)**	**($9,380)**	**($88,333)**	**($10,041)**	**($4,056)**	**$1,175**	**$5,754**	**($7,168)**	**$44,294**	**$69,903**	**$97,267**	**$120,976**	**$145,160**	**$171,546**
EPS (excl. nonrecurring items, excl. amort. incl. options and def rent)	**$0.40**	**$0.59**	**$0.83**	**$0.79**	**$0.22**	**$0.32**	**($0.17)**	**$0.25**	**$0.62**	**$0.18**	**$0.34**	**$0.33**	**$0.33**	**$1.18**	**$1.36**	**$1.64**	**$1.93**	**$2.24**	**$2.56**	**$2.91**
EPS (excl. nonrecurring items, excl. amort. incl. options and def rent) **EPS** (as reported)				**($0.07)**	**($0.01)**	**$0.12**	**($2.12)**	**($0.24)**	**($2.25)**	**($0.25)**	**($0.10)**	**$0.03**	**$0.11**	**($0.21)**	**$0.69**	**$1.09**	**$1.52**	**$1.88**	**$2.26**	**$2.66**
Weighted average shares outstanding (diluted)	39,603	39,621	40,607	39,641	39,337	39,337	39,337	39,337	39,337	40,268	40,268	40,284	52,073	43,224	63,900	64,000	64,100	64,200	64,300	64,400
MARGIN ANALYSIS:																				
Gross profit				40.1%	40.1%	40.9%	39.0%	31.5%	36.9%	30.9%	31.5%	32.6%	32.0%	31.8%	31.9%	32.2%	32.3%	32.4%	32.5%	32.6%
SG&A				24.0%	22.5%	22.5%	21.4%	19.8%	21.3%	18.3%	17.0%	18.1%	17.4%	17.7%	17.2%	16.8%	16.6%	16.3%	16.2%	16.0%
Stock comp				0.2%	0.2%	0.2%	0.2%	0.0%	0.1%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Total SG&A				24.1%	22.7%	22.7%	21.6%	19.9%	21.4%	18.6%	17.3%	18.4%	17.6%	18.0%	17.5%	17.1%	16.9%	16.6%	16.5%	16.3%
EBITDA	18.8%	20.0%	17.2%	15.9%	17.4%	18.2%	17.4%	11.6%	15.5%	12.3%	14.2%	14.3%	14.4%	13.8%	14.43%	15.1%	15.5%	15.8%	16.1%	16.3%
Depreciation & amortization				2.5%	2.5%	2.2%	2.4%	1.8%	2.2%	1.9%	1.6%	1.9%	1.3%	1.7%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Operating income				13.4%	14.9%	16.0%	15.0%	9.8%	13.3%	10.4%	12.6%	12.4%	13.1%	12.1%	12.9%	13.6%	13.9%	14.3%	14.5%	14.8%
Tax rate				39.4%	41.3%	29.8%	141.5%	-13.0%	57.9%	40.0%	31.1%	33.6%	34.0%	34.1%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Net income				5.2%	5.3%	6.9%	-3.6%	3.3%	2.9%	2.3%	4.4%	4.2%	5.3%	4.1%	6.4%	7.1%	7.8%	8.5%	9.0%	9.5%
GROWTH RATES:																				
Revenue					**13.1%**	**22.2%**	**27.9%**	**91.7%**	**39.5%**	**87.0%**	**73.5%**	**70.1%**	**8.1%**	**52.0%**	**8%**	**8%**	**8%**	**8%**	**8%**	**8%**
Revenue (excl. foreign exchange effect)										**13.0%**	**9.8%**	**10.7%**								
Revenue (organic)					13.1%	21.8%	20.1%	14.1%	17.2%	14.2%	7.1%	12.1%	7.9%	9.9%	8%	8%	8%	8%	8%	8%
Gross profit					18%	25%	19%	50%	28%	44%	34%	43%	10%	31%	8%	9%	8%	8%	8%	8%
SG&A					3%	15%	12%	65%	24%	52%	31%	44%	-5%	26%	5%	5%	6%	6%	7%	6%
EBITDA					44%	41%	29%	31%	35%	33%	35%	40%	34%	35%	13%	13%	10%	10%	9%	9%
Operating income					**49%**	**47%**	**31%**	**29%**	**38%**	**31%**	**37%**	**40%**	**45%**	**39%**	**15%**	**13%**	**10%**	**10%**	**10%**	**10%**
Net income (excl. non-recurring items)					53%	41%	-171%	42%	-22%	-17%	11%	-296%	70%	110%	70%	20%	18%	16%	14%	14%
EPS (exlc. non-recurring items, incl. options)					**54%**	**42%**	**-171%**	**43%**	**-21%**	**-19%**	**8%**	**-291%**	**29%**	**90.0%**	**15%**	**20%**	**18%**	**16%**	**14%**	**14%**
Diluted shares outstanding					-1%	-1%	-1%	-1%	-1%	2%	2%	2%	32%	10%	48%	0%	0%	0%	0%	0%

E=William Blair & Company, L.L.C. estimate

Source: William Blair & Company, L.L.C. estimates

Exhibit 38
PRA Health Sciences, Inc.
Balance Sheet

	2009	2010	2011	2012	2013	Q1'14	Q2'14	Q3'14	Q4'14E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
Cash and cash equivalents	$64,730	$66,405	$69,380	$109,211	$72,155		$57,646	$49,254	$90,979	$90,979	$79,989	$83,426	$100,512	$131,045	$175,754	$236,118
Restricted cash	$0	$0	$0	$0	$8,760		$8,199	$6,427	$0	$0	$0	$0	$0	$0	$0	$0
Accounts receivable and unbilled services	$114,880	$148,108	$201,752	$184,891	$294,983		$339,956	$349,305	$350,271	$350,271	$375,565	$377,137	$408,311	$439,631	$462,907	$498,434
Prepaid and other current assets	$0	$0	$0	$30,133	$82,096		$78,311	$81,632	$83,265	$83,265	$101,209	$123,020	$149,531	$181,756	$220,926	$268,537
Total current assets	$179,610	$214,513	$271,132	$324,235	$457,994	$0	$484,112	$486,618	$524,515	$524,515	$556,762	$583,582	$658,355	$752,432	$859,587	$1,003,088
PP&E, net	$625,000	$627,000	$630,000	$650,010	$1,874,699		$1,818,632	$1,762,348	$1,796,590	$1,796,590	$1,940,344	$2,095,600	$2,263,279	$2,444,374	$2,639,960	$2,851,195
Investment in subsidiaries	$0	$0	$0	$0	$3,246		$2,792	$2,243	$2,243	$2,243	$2,243	$2,243	$2,243	$2,243	$2,243	$2,243
Debt financing costs	$0	$0	$0	$0	$41,373		$38,056	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other assets	$106,838	$79,862	$57,002	$8,280	$17,422		$19,870	$53,322	$53,855	$53,855	$56,042	$58,317	$60,685	$63,149	$65,714	$68,382
Total assets	$911,448	$921,375	$958,134	$982,525	$2,394,734	$0	$2,363,462	$2,304,531	$2,374,961	$2,374,961	$2,553,148	$2,737,499	$2,982,319	$3,259,956	$3,565,261	$3,922,665
Accounts payable and accrued expenses	$70,000	$78,000	$79,000	$81,398	$154,475		$185,299	$189,679	$183,865	$183,865	$213,218	$212,569	$239,376	$264,815	$279,877	$305,114
Advanced billings	$107,161	$118,000	$125,000	$221,162	$295,889		$293,613	$275,814	$278,463	$278,463	$301,663	$324,790	$349,696	$376,520	$405,408	$436,521
Borrowings under credit facilities	$0	$0	$0	$0	$10,000		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Current portion of long-term debt	$14,805	$10,154	$40,863	$3,358	$8,900		$8,900	$8,900	$8,900	$8,900	$8,900	$8,900	$8,900	$8,900	$8,900	$8,900
Total current liabilities	$191,966	$206,154	$244,863	$305,918	$469,264	$0	$487,812	$474,393	$471,228	$471,228	$523,782	$546,259	$597,972	$650,235	$694,185	$750,535
Other long-term liabilities	$66,973	$75,203	$64,131	$49,574	$212,323		$171,313	$172,700	$172,700	$172,700	$172,700	$172,700	$172,700	$172,700	$172,700	$172,700
UBS Term loans	$401,418	$389,313	$384,456	$451,076	$878,875		$874,425	$930,230	$778,230	$778,230	$678,230	$578,230	$478,230	$378,230	$278,230	$178,230
Senior subordnated debt (long-term debt)	$0	$0	$0	$0	$375,000		$375,000	$310,077	$160,077	$160,077	$160,077	$160,077	$160,077	$160,077	$160,077	$160,077
Debt discount	$0	$0	$0	$0	($8,063)		($7,149)	$0	$0	$0	$0	$0	$0	$0	$0	$0
Paid-in capital	$251,091	$250,705	$264,684	$330,524	$490,409		$462,061	$493,274	$468,274	$468,274	$368,274	$268,274	$168,274	$68,274	($31,726)	($31,726)
Retained earnings (deficit)	$0	$0	$0	($154,567)	($23,074)		$0	($76,142)	($70,388)	($70,388)	($26,094)	$43,809	$141,076	$262,051	$407,211	$578,758
Other	$0	$0	$0	$0	$0		$0	$0	$567,541	$567,541	$848,881	$1,140,851	$1,436,691	$1,741,090	$2,057,284	$2,286,792
Total stockholder's equity	$251,091	$250,705	$264,684	$175,957	$467,335	$0	$462,061	$417,132	$965,427	$965,427	$1,191,060	$1,452,934	$1,746,041	$2,071,415	$2,432,770	$2,833,824
Total liabilities and stockholder's equity	$911,448	$921,375	$958,134	$982,525	$2,394,734	$0	$2,363,462	$2,304,531	$2,374,961	$2,374,961	$2,553,148	$2,737,499	$2,982,319	$3,259,956	$3,565,261	$3,922,665
Key Metrics:																
Debt-to-capital ratio	62%	61%	62%	72%	73%		73%	75%	50%	50%	42%	34%	27%	21%	16%	11%
Net Debt-to-Capital ratio	53%	51%	52%	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Working capital (excl. cash)	($77,086)	($58,046)	($43,111)	($90,894)	($92,185)		($69,545)	($43,456)	($37,692)	($37,692)	($47,008)	($46,103)	($40,130)	($28,848)	($10,352)	$16,435
Total Debt / EBITDA	5.4x	4.4x	4.5x	4.8x	9.8x		7.1x	6.8x	5.1x	5.4x	4.3x	3.4x	2.7x	2.0x	1.5x	1.1x
A/P days (calculated)				57	53		63	62	60	60	65	60	63	65	64	65
A/R DSO (reported)																
A/R DSO (calculated on net revenue)				(21)	(0)		13	21	20	20	19	13	13	13	11	11
ROE (excluding one time items)	6.4%	9.4%	13.0%	14.2%	7.6%		23.9%	12.1%	9.8%	7.2%	8.1%	7.9%	7.7%	7.5%	7.3%	7.1%
ROA (excluding one time items)	1.8%	2.6%	3.6%	3.2%	1.4%		4.7%	2.3%	2.9%	2.2%	3.5%	4.0%	4.3%	4.6%	4.8%	5.0%
ROIC (excluding one time items)	6.7%	7.9%	8.2%	7.7%	3.8%		5.5%		5.5%	5.5%	6.5%	6.8%	7.0%	7.1%	7.2%	7.2%
Cash per share	$1.63	$1.68	$1.71	$2.76	$1.83		$1.43	$1.22	$1.75	$2.10	$1.25	$1.30	$1.57	$2.04	$2.73	$3.67
Book value per share (including goodwill)	$6.34	$6.33	$6.52	$4.44	$11.88		$11.47	$10.35	$18.54	$22.34	$18.64	$22.70	$27.24	$32.26	$37.83	$44.00

Source: William Blair & Company, L.L.C. estimates

Exhibit 39
PRA Health Sciences, Inc.
Statement of Cash Flows

	2009	2010	2011	2012	2013	Q1'14	Q2'14	Q3'14	Q3'14E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
Net income (loss)				($2,707)	($88,333)	($10,041)	($4,056)	$1,175	$5,754	($7,168)	$44,294	$69,903	$97,267	$120,976	$145,160	$171,546
Adjustments to reconcile to net cash from operations:																
Depreciation and amortization				$35,011	$54,001	$26,065	$26,065	$21,011	$22,147	$95,287	$77,668	$69,025	$60,875	$58,608	$57,207	$56,580
Stock-based comp				$11,610	$24,741	$892	$868	$969	$898	$3,627	$3,818	$4,110	$4,425	$4,764	$5,129	$5,324
Change in operating assets and liabilities				$46,632	$57,776	($15,087)	($15,087)	($17,924)	($5,764)	($53,861)	$9,316	($905)	($5,973)	($11,282)	($18,496)	($26,787)
Other operating items				$8,713	($22,916)	($6,440)	($6,440)	($512)	$0	($13,391)	($12,000)	($2,000)	$0	$0	$1,500	$3,000
Net operating cash flow	**$70,848**	**$31,410**	**$28,305**	**$99,259**	**$25,269**	**($4,611)**	**$1,351**	**$4,719**	**$23,035**	**$24,494**	**$123,096**	**$140,133**	**$156,593**	**$173,065**	**$190,500**	**$209,664**
% of Net Income																
Y/Y Growth		*-56%*	*-10%*	*251%*	*-75%*	*-122%*	*-89%*	*-70%*	*-196%*	*-3%*	*403%*	*14%*	*12%*	*11%*	*10%*	*10%*
Cash flow from investing activities:																
Investment in PP&E (CAPEX)				($18,058)	($19,706)	($5,938)	($5,938)	($7,116)	($9,209)	($28,201)	($34,087)	($36,696)	($39,506)	($42,532)	($45,790)	($49,300)
Acquisition/sale of business				$0	($1,054,823)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other				$0	($4,609)	$7,532	$7,532	$0	$0	$15,064	$0	$0	$0	$0	$0	$0
Net cash used in investing activities	**($9,845)**	**($17,099)**	**($18,085)**	**($18,058)**	**($1,079,138)**	**$1,594**	**$1,594**	**($7,116)**	**($9,209)**	**($13,137)**	**($34,087)**	**($36,696)**	**($39,506)**	**($42,532)**	**($45,790)**	**($49,300)**
Cash flow from financing activities:																
Issuance of debt				$60,994	$739,477	($7,225)	($7,225)	($2,225)	($302,100)	($318,775)	($100,000)	($100,000)	($100,000)	($100,000)	($100,000)	($100,000)
Proceeds from issuance of stock				$0	$470,505	$0	$0	$135	$330,000	$330,135	$0	$0	$0	$0	$0	$0
Other				($102,364)	($132,658)	$7	$7	($3,905)	$0	($3,892)	$0	$0	$0	$0	$0	$0
Net cash generated in financing activities	**($41,531)**	**($10,702)**	**($7,112)**	**($41,370)**	**$1,077,324**	**($7,219)**	**($7,219)**	**($5,995)**	**$27,900**	**$7,468**	**($100,000)**	**($100,000)**	**($100,000)**	**($100,000)**	**($100,000)**	**($100,000)**
Net increase (decrease) in cash and equiv.	**$19,472**	**$3,609**	**$3,108**	**$39,831**	**$23,455**	**($10,235)**	**($4,274)**	**($8,392)**	**$41,725**	**$18,824**	**($10,991)**	**$3,437**	**$17,087**	**$30,533**	**$44,709**	**$60,364**
GAAP Net increase (decrease) in cash and equiv.	**$19,472**	**$3,609**	**$3,108**	**$39,831**	**$23,455**	($10,235)	($4,274)	($8,392)	$41,725	**$18,824**	**($10,991)**	**$3,437**	**$17,087**	**$30,533**	**$44,709**	**$60,364**
Beginning cash (including short-term investments)	**$43,191**	**$62,663**	**$66,272**	**$69,380**	**$0**	**$72,155**	**$61,920**	**$57,646**	**$49,254**	**$72,155**	**$90,979**	**$79,989**	**$83,426**	**$100,512**	**$131,045**	**$175,754**
Net sale (purchase) of investments	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Change in short-term investments	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Ending cash (including short-term investments)	**$62,663**	**$66,272**	**$69,380**	**$109,211**	$72,155	$61,920	$57,646	$49,254	$90,979	$90,979	$79,989	$83,426	$100,512	$131,045	$175,754	$236,118
Free cash flow (=op. cash fl. - capex)	**$61,003**	**$14,311**	**$10,220**	**$81,201**	**$5,563**	**($10,549)**	**($4,588)**	**($2,397)**	**$13,825**	**($3,708)**	**$89,009**	**$103,437**	**$117,087**	**$130,533**	**$144,709**	**$160,364**
% of Net income																
Y/Y Growth																
Free Cash Flow per Share	***1.54***	***0.36***	***0.25***	***2.05***	***0.14***					***(0.09)***	***1.39***	***1.62***	***1.83***	***2.03***	***2.25***	***2.49***

Source: William Blair & Company, L.L.C. estimates

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DJIA:	17,778.15
S&P 500:	2,061.23
NASDAQ:	4,748.40

The prices of the common stock of other public companies mentioned in this report follow:

Albany Molecular Research, Inc.	$15.04
Catalent, Inc. (Outperform)	$28.69
Charles River Laboratories International, Inc. (Market Perform)	$63.61
Covance Inc. (Market Perform)	$103.52
ICON Plc (Outperform)	$52.48
IMS Health Holdings, Inc. (Outperform)	$25.35
INC Research Holdings, Inc. (Outperform)	$24.48
Laboratory Corporation of America Holdings (Outperform)	$106.44
PAREXEL Health Service, Inc. (Outperform)	$55.13
Quintiles Transnational Holdings, Inc. (Outperform)	$59.38
WuXi PharmaTech, Inc. (Outperform)	$34.44

Current Ratings Distribution (as of 11/30/14)

Coverage Universe	Percent	Inv. Banking Relationships*	Percent
Outperform (Buy)	64%	Outperform (Buy)	16%
Market Perform (Hold)	31%	Market Perform (Hold)	3%
Underperform (Sell)	1%	Underperform (Sell)	0%

* Percentage of companies in each rating category that are investment banking clients, defined as companies for which William Blair has received compensation for investment banking services within the past 12 months.

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