

SECTOR IN-DEPTH

18 October 2018

 Rate this Research

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Leveraged Finance – US: Tracking the largest private equity sponsors

LBO credit quality is weak, bodes ill for next downturn.

High leverage, weak structures, loose covenants set the stage for a rough default cycle

- » **Current rating distribution of companies owned by the top 16 private equity (PE) firms is weaker than that of non-PE owned firms, elevating default risk.** PE firms' focus on shareholder returns and high leverage translates to a weaker rating distribution of their sponsored companies, when compared to debt issuers without PE sponsors. Ninety-two percent of companies owned by the top 16 PE firms are rated B2 and below, which significantly exceeds 40% of the companies without a PE sponsor. This weakness is driven by PE sponsors' aggressive financial policies, propensity to invest in smaller businesses, the high leverage and event risk that results at their portfolio companies.
- » **Large PE firms continue to take debt-funded dividends, further increasing leverage.** Since 2009 we rated 308 companies owned by top 16 PE firms and 99 of those paid debt-funded dividends to PE shareholders. This cadre of LBOs comes from a post-crisis period, so all of the dividends were taken in a benign default environment from 2010 until now, when capital markets were willing to fund even risky transactions like dividend recaps.
- » **Covenant flexibility in PE-sponsored loans and bonds is unprecedented.** As fundamental covenant protections continue to erode, PE-backed firms are creating the potential to upend or dilute the position of first-lien loans. This is because, under such lenient loan terms, portfolio companies even when distressed have the flexibility to engage in collateral-stripping asset transfers, incur incremental secured debt, and retain more asset-sale proceeds.
- » **More downgrades than upgrades for top 16 PE firm deals.** The rating actions taken on the 308 LBOs we looked at were dominated by downgrades, due mainly to failure to improve financial performance, deteriorating credit metrics, or weakening liquidity.
- » **In a benign default environment distressed exchanges (DEs) remain the debt restructuring tool of choice for PE firms.** DEs became prevalent in the last downturn and remain widespread, especially among large PE sponsors. We recorded 20 defaults in the study group of 308 companies and 60% of them were DEs. PE firms will continue to use DEs to buy time to salvage struggling companies and avoid bankruptcy.

About this report

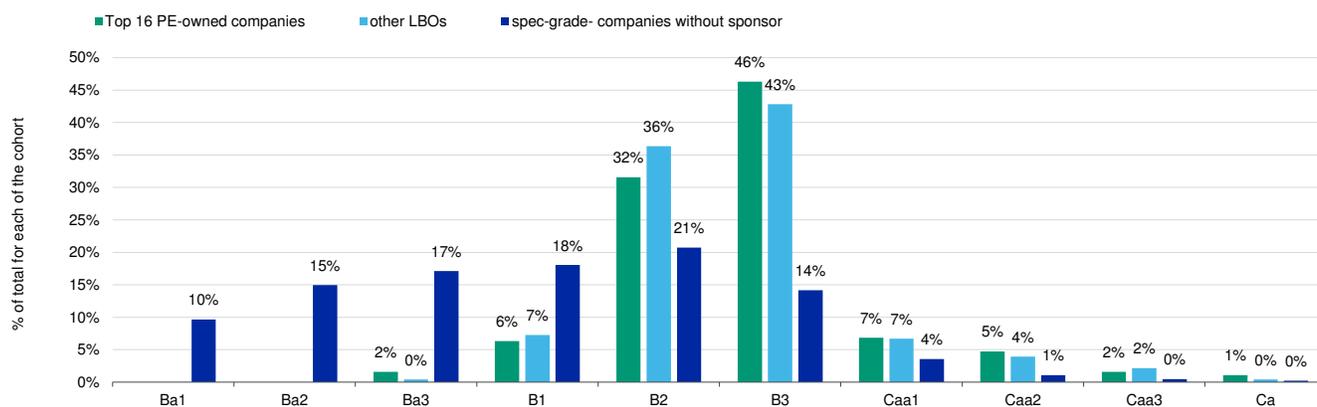
This is the fourth report in our series summarizing performance of PE-owned firms, following prior publications in 2014, 2009 and 2008. As part of our continuing effort to provide transparency on the behavior of the largest private equity sponsors and the performance of the companies they own, we analyzed 308 companies that we rated between 2009–2017 sponsored by the top 16 PE firms, as defined in this report. As of September 1, 190 out of the 308 companies we reviewed remain rated and owned by the largest 16 PE sponsors (for more details describing the data see Appendix A.) Our analysis focuses on the performance of these deals by looking at corporate family ratings (CFRs) from the initial assignment and tracking these ratings through the PE sponsor's exit (where applicable), or until the most recent rating action for the ones still owned. We also compare the CFR rating distributions of PE-owned companies to the rating make-up of the rest of the spec-grade population excluding PE-owned companies from the study. We also examine some credit metrics and financial policies employed by the large PE firms relative to each other. Given lax credit conditions, low interest rates, and loose covenants, many lower rated PE-sponsored companies were able to stay afloat despite weak cash flows. Defaults were sparse during the study period, but are likely to be much more prevalent over a full economic and credit cycle. Despite the low default rate, the frequent use of distressed exchanges has allowed PE firms to maintain control of their portfolio companies even when the companies are distressed, with the majority of the burden falling on creditors.

Rating distribution of top 16 PE firms' portfolio companies weak, suggests more default risk

Financial policy, alongside leverage, have always been primary rating considerations for publicly or privately-held corporate borrowers. Private equity firms' predilection for high leverage, coupled with their shareholder-oriented financial policies, are embedded in our ratings. That is why most PE-owned firms are typically initially rated B2 and B3. Eighty-eight percent of the initial ratings assigned to these LBOs were B2's (56%) and B3's (32%), but as we tracked the CFR movement through the life of the 308 LBOs, 12% of these ratings migrated down to Caa-territory. If we look at the CFRs of the 190 deals owned by top 16 PE firms that we currently rate, ninety-two percent of companies owned by the top 16 PE firms are rated B2 and below, which significantly exceeds 40% of the companies without a PE sponsor in those rating buckets. PE-owned firms skew the overall CFR distribution of the current US spec-grade population down (see Exhibit 1.) The current distribution of spec-grade ratings also underscores the fact PE-owned companies are typically rated B2 and B3. Of the 1,546 spec-grade non-financial corporate debt issuers as of September 1, 55% had CFRs of B2 and B3. Of the 55%, companies owned by top 16 PE firms accounted for 10%, other PE-sponsored LBOs were 26%, and the remaining 19% had no PE involvement.

Exhibit 1

PE-owned companies drag down the credit quality of overall spec-grade universe % of each group by CFR



CFR distributions by rating category; rounded percentages may not sum to 100%

Source: Moody's Investors Service

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

The substantial number of PE-owned companies on our B3 Negative and Lower List (B3N List or "distressed debt list") also evidences weak credit quality of these deals (see Exhibit 2.) We looked at the group of 190 currently rated companies still controlled by the 16 large PE firms. Of those, 36 (or 19%) are on our B3N List.

Exhibit 2

Nearly one-fifth of companies owned by Top 16 PE firms are on B3N List vs. 8% for spec-grade companies without a PE sponsor

	Population	On B3N List	% of population
Top 16 PE-owned firms*	190	36	19%
Other PE-owned firms	509	84	17%
Non-PE owned	848	71	8%

*Currently rated and owned LBOs, remaining subset of the original group of 308 deals rated between 2009-2017, and sponsored by top 16 PE firms that we identified. Data as of Sep 1, 2018

Source: Moody's Investors Service

By contrast, only 8% of spec-grade companies without any PE sponsor are on the distressed debt list, not surprising given that PE-owned firms tend to be rated towards the lower end of the spec-grade rating spectrum. Of the 16 PE firms in our study group, four stood out in terms of absolute numbers of distressed debt list companies in their portfolios: Carlyle – 5, Clayton Dubilier & Rice (CD&R) – 4, Bain – 4, Apollo – 4 (see Exhibit 3.)

Exhibit 3

Carlyle, CD&R, Bain and Apollo have the most companies on our distressed debt list*

Number of B3 and lower rated companies by PE firm



CFRs are as of Sep 1, 2018.

*B3N list is comprised of companies with a probability of default rating of B3-PD Negative and below.

Source: Moody's Investors Service

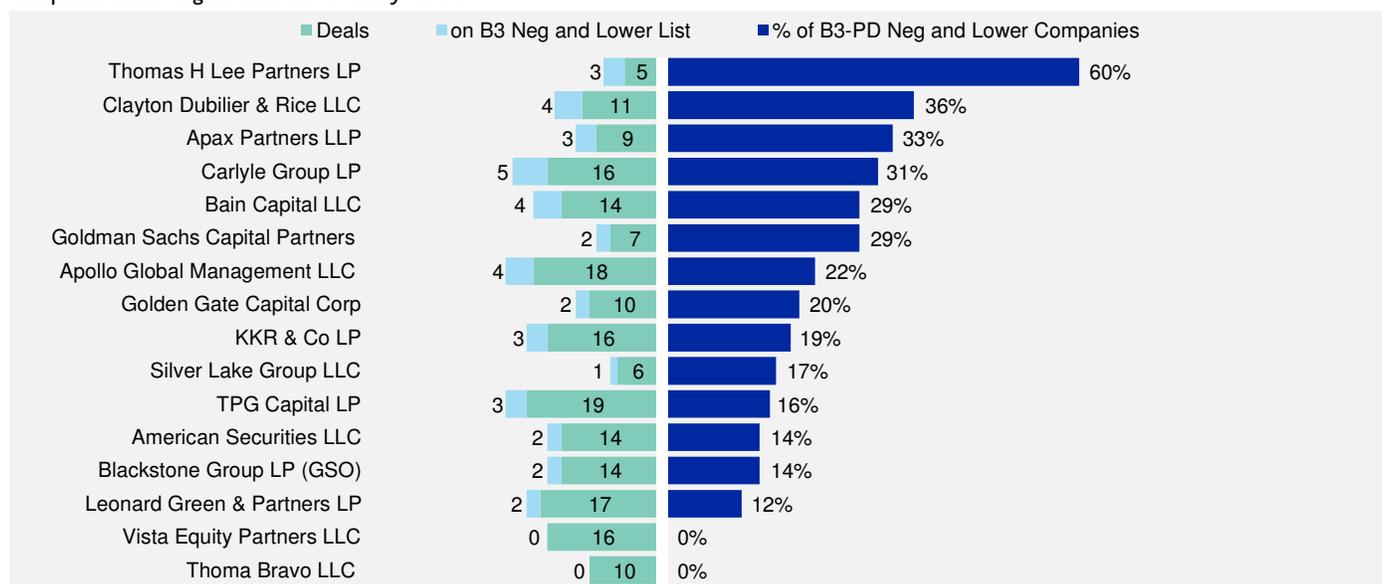
We believe looking at what share of the large 16 PE firms' companies are still rated B3 negative and lower is important, since the lower-rated debt issuers on this list are more likely to default when credit conditions eventually become more difficult, and thus can potentially raise the sponsors' overall default rate. Historically, nearly half of the companies that were part of our distressed debt list defaulted over the following three years.

Looking at the 190 still rated and PE-controlled portfolio companies from another vantage point (see Exhibit 4), three PE firms have at least one third of their rated portfolio companies on our B3 Negative and Lower List: TH Lee – 60% (or 3 out of 5), CD&R – 36% (or 4 out of 11) and Apax – 33% (3 out of 9).

Exhibit 4

TH Lee, CD&R and Apax Partners have at least 33% of their still rated companies on our B3N list

Companies on B3 Negative and Lower list by PE firm



The exhibit shows the number of rated LBO transactions for each of the PE firms and how many have probability of default ratings of B3-PD Negative and Lower as a percentage of total rated deals, and ranks 16 PE firms by these percentages

The green bar or the deals = the number of still rated and PE-controlled LBOs; multiple PE firms were involved in some of the deals

Source: Moody's Investors Service

As for TH Lee's portfolio of 11 rated LBOs since 2009, we should note that only five companies remain majority controlled by this firm, with three being on our B3N List. The remaining six were sold to another PE firm or strategic investor.

Between 2009 and 2017, we rated 18 deals sponsored by CD&R and, as of September 1, only 11 remained rated and majority owned by the firm. Of those, four are on our B3N list. CD&R exited seven of the original 18 either via an IPO or a sale to a strategic acquirer.

Of the 14 companies originally owned by Apax, four are no longer rated — two went bankrupt; one missed interest payments and later had its ratings withdrawn due to debt repayment, one sold to another PE firm; and one more company is in the process of being acquired by another PE sponsor. Three of the nine companies still owned by Apax remain on our B3N watch list.

What happened to LBOs from our 2014 distressed watch list and beyond?

When we looked at PE-sponsored companies on the B3N List in our 2014 PE study, [we warned defaults were likely](#) for a group of weak companies unable to generate sustainable positive earnings or cash flow, that were managing to stay afloat only due to generous markets and loose covenants that limited creditors' ability to intervene. Our warning proved prescient, with about half (9 of 19) of the PE-sponsored companies on the B3 negative and lower list as of the 2014 publication having defaulted at least once between May 2014 and August 2018.

Exhibit 5

Nearly half of PE-owned LBOs that were on our May 2014 B3N list defaulted so far

Company Name (Defaulted)	Sponsor(s)	Year of LBO	Date added to Moody's B3N watch List	Default Type	Default Date	Subsequent Default Type	Default Date
Affinion Group, Inc	Apollo	2005	Aug-12	Distressed Exchange	Jun-14	Distressed Exchange	Nov-15
Altegrity	Providence Equity Partners	2007	Aug-11	Bankruptcy	Jun-14		
Artel, LLC	TPG Growth : Torch Hill Investment	2011	May-13	Distressed Exchange	May-17		
Caesar's Entertainment Co.	Apollo Management, TPG Inc	2008	Nov-08	Bankruptcy	Jan-15		
Claire's Stores, Inc.	Apollo Management LP	2007	Jul-08	Distressed exchange	May-Sep 2016	Bankruptcy	Mar-18
Gymboree Corp	Bain Capital Partners LLC	2010	Dec-12	Distressed exchange	May-16	Bankruptcy	Jun-17
iHeartCommunications, Inc.(fka Clear Channel Communications, Inc.)	Bain Capital & TH Lee Partners	2006	Sep-09	Distressed Exchange	Feb-17	Bankruptcy	Mar-18
NexTag, Inc.	Providence Equity Partners	2010	Apr-13	Distressed Exchange	Jun-14		
Toys 'R' US, Inc.	Bain Capital, KKR & Co, Vornado Realty Trust	2005	Apr-14	Distressed exchange	Aug-16	Bankruptcy	Sep-17

Company Name (Did not default)	Sponsor(s)	Year of LBO	Date added to Moody's B3N watch List	Default Type	Subsequent rating actions*
Apex Tool Group, LLC	Bain Capital Partners LLC	2013	Feb-14	n/a	B3-PD affirmed, rating outlook revised to stable in 2015, ratings affirmed in Feb 2018
Ascend Learning Inc	Providence Equity Partners LLC	2010	Dec-12	n/a	Upgrade to B3-PD in Jan 2015; WR in Aug 2017, sold to another PE sponsor
Expert Global Solutions, Inc.	JP Morgan (One Equity Partners)	2006	Jan-11	n/a	WR in July 2016, sold to strategic
FPC Holdings, Inc	TPG Capital LP	2012	Nov-13	n/a	Interim downgrade to Caa1-PD in Dec 2015; Upgrade to B3-PD stable in Mar 2018
Regional Care Hospital Partners, Inc.	Warburg Pincus	2009	Oct-13	n/a	Upgrade to B3-PD Stable in Nov 2015; on watch for possible downgrade B3 RUR in Mar 2016, WR in May 2016, sold to another PE sponsor
Sagittarius Restaurant LLC (Del Taco)	Goldman Sachs, Charlesbank Capital Partners; Grotech Capital Group, Inc; Leonard Green & Partners; The Resolute fund L.P.	2006	Jul-07	n/a	Upgrade to B3-PD stable in Mar 2015; WR in Aug 2015, sold to another PE / investor
Sensus Metering Systems Inc.	GS Capital Partners & The Jordan Company, L.P.	2003	Dec-13	n/a	Upgrade to B2-PD in May 2016; WR in Nov 2016, sold to strategic
TASC Inc.	KKR & Co LP; General Atlantic LLC	2009	Apr-14	n/a	Upgrade to B2-PD in Mar 2015, merged with strategic; WR in Aug 2016
The ServiceMaster Company	Clayton Dubilier & Rice Inc; JPM Chase Funding; and others	2007	Jan-14	n/a	Upgrade to B2-PD in Feb 2015; PE exited post IPO
Momentive Specialty Chemicals Inc.	Apollo Management LP	2004	Apr-09	n/a	Downgrade to Caa1-PD in Dec 2014; Downgrade to Caa2-PD in Feb 2017

This table consists of companies on our B3N list as of May 1, 2014 that were owned by PE companies included in our June 2014 report;

* rating actions while owned by PE sponsor, pursuant to publication of our 2014 PE study;

WR- ratings withdrawn, RUR- ratings under review

Source: Moody's Investors Service

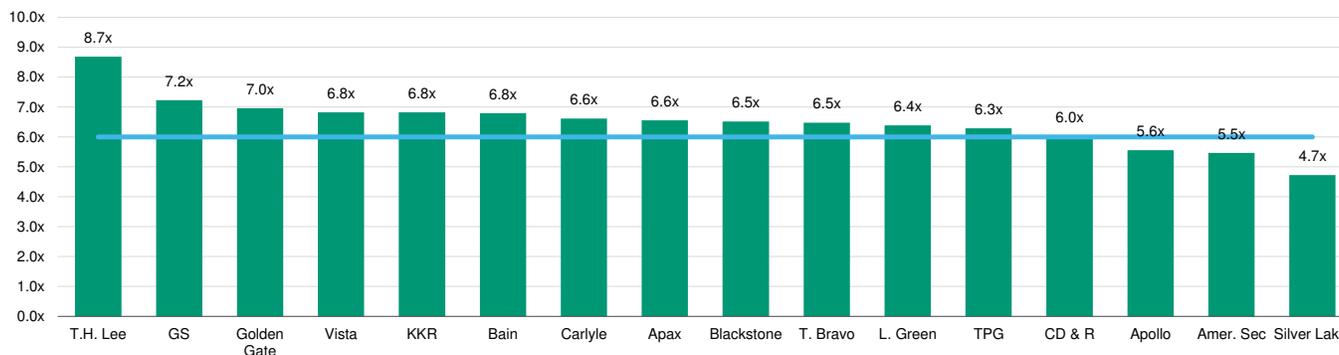
Moreover nine more PE-owned companies from our 2014 study group but not on the B3N list at that time defaulted. By the time of the default, each of the nine firms were downgraded to the B3N list. Most of these companies (5 of 9) executed DEs, and three — Core Entertainment, Philadelphia Energy Solutions, Samson Investment Company — sought bankruptcy protection.

Private equity is predisposed to high leverage in their deals

Thirteen of the big 16 PE sponsors' average 12-18 month forward-looking leverage ratios for their rated portfolio companies are above 6.0x debt-to-EBITDA, which is notably higher than a spec-grade median of 5.3x. Apollo, American Securities, and Silver Lake were the only three with average leverage ratios for their portfolio companies below 6x (see Exhibit 6.) High leverage is a function of aggressive financial policies, the latter combined with issuer-friendly market conditions, is allowing spec-grade companies to push leverage higher and credit quality lower.

Exhibit 6

13 of 16 PE sponsors have average leverage ratios for portfolio companies above 6x



Leverage ratios are 12-18 month forward-looking ratios as projected by Moody's; different industry focus can impact these ratios

Source: Moody's projections

PE firms continue to take dividends, lever-up portfolio companies in benign market

Of the 308 companies owned by the PE firms we focused on, 99 (32%) distributed debt-funded dividends. That is more than the 24% of companies owned by a broader group of top PE firms that used debt proceeds to distribute dividends to sponsors from 2004-2007, [as noted in our 2014 PE study](#).

Since the LBOs we looked at for this research mainly come from a post-crisis period, all the dividends were taken in the benign default-rate environment of 2010-2018, when even highly leveraged spec-grade companies can secure financing and markets easily absorb even risky transactions like dividend recapitalizations.

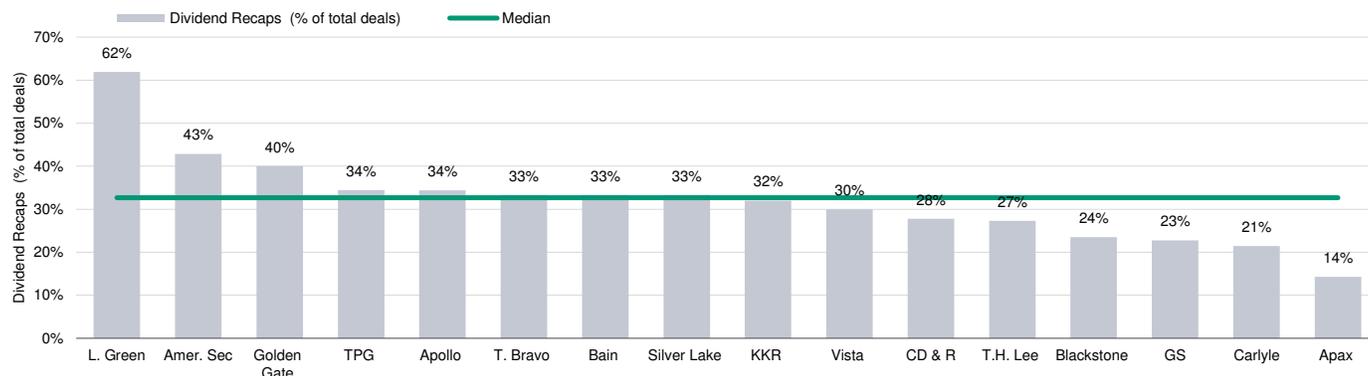
Powered by investors searching for yield in a low-interest-rate environment, these generous market conditions extended for a much longer time than the pre-crisis study period of 4 years. This, along with an increase in the length of time PE firms own a company before exiting, may be contributing to the higher rate of debt-financed dividends. For example, among the 308 companies we examined, only 41 (or around 13%) completed IPOs, and in 14 of those 41 deals PE sponsors still held at least 30% of the equity. It appears that, overall, PE exit timelines have lengthened since the pre-crisis period, averaging more than the four years estimated in our earlier research which is more typical of PE quick flips.

Among the top 16 PE firms, five took dividends in more than a third of their deals, which was the median for the group (see Exhibit 7.)

Exhibit 7

Leonard Green, American Securities, Golden Gate, TPG & Apollo took debt-funded dividends most often

Share of dividend recaps by PE firm



Several of these PE firms took more than one dividend financed with debt from their portfolio company since LBO

Source: Moody's Investors Service

Debt-financed dividends are particularly aggressive when they represent a large percentage of the PE-firms' equity contribution at the time of the LBO and when they occur shortly after the LBO. Combined, 42% of the 99 PE-owned firms distributed large debt-financed dividends, meaning cumulatively dividends amounted to more than 75% of the initial equity used to finance the LBO by PE firms (see Exhibit 8.) And 30% of these dividend-paying firms did dividend recaps within about year of the original LBO (see Exhibit 9).

Among the most active firms in terms of extracting cash from their portfolio companies, Leonard Green came out on top with 62% (13 out of 21) of its analyzed portfolio companies paying debt-funded dividends. Of those 13 companies, 46% paid large dividends, that represented at least three-quarters of PE initial equity contributions.

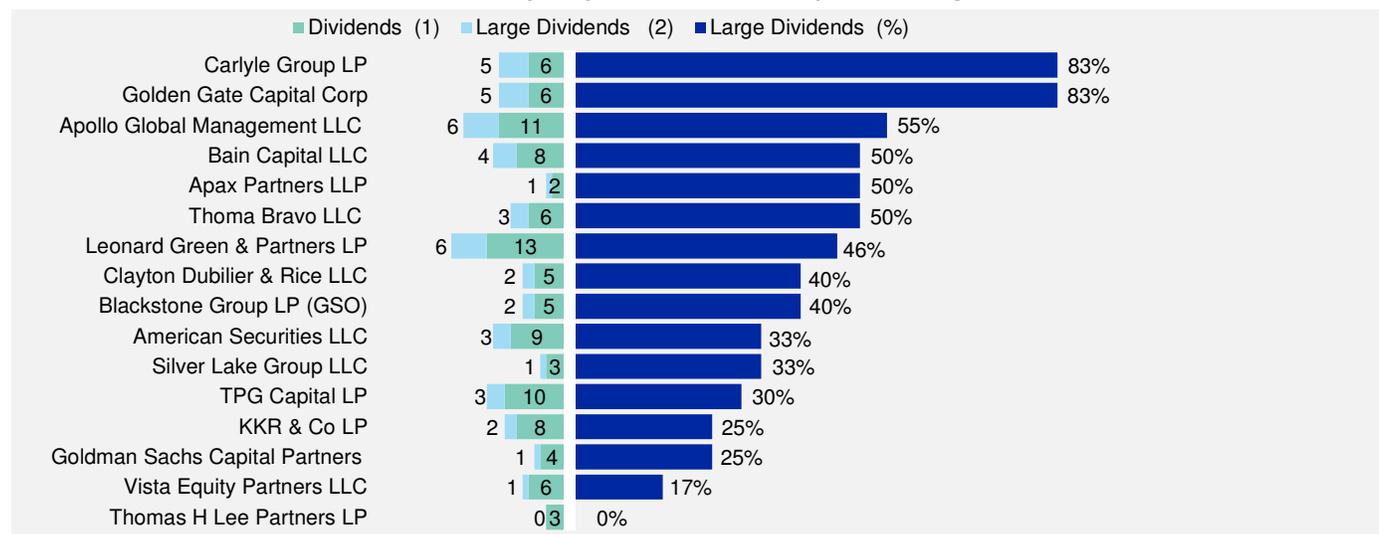
American Securities was second with 43% of its owned companies (9 of 21) paying debt-funded dividends and 33% of those companies paying large dividends (see Exhibit 8).

At 40% (6 of 15), Golden Gate is third in terms of share of companies that paid debt-financed dividends, and together with Carlyle tops the rest of large PE firms in extracting large dividends.

Although Carlyle and Apax Partners, at 21% and 14% respectively, were below the median percentage of dividend recaps done by portfolio companies, when these PE firms did take payouts, those distributions were large. For Carlyle, 83% of the dividend recaps were above 75% of initially contributed equity and for Apax the figure was 50%, on par with Bain and Thoma Bravo.

Of the five PE firms most active in extracting cash distributions from their portfolio companies, Apollo pursued the most aggressive dividend policies during the current cycle. Not only was Apollo among PE firms that did the largest share of dividend recaps, it also had a large share of deals in which at least 75% of the initial equity was taken out (see Exhibit 8.)

Exhibit 8

More than half of the debt-funded dividends taken by Carlyle, Golden Gate and Apollo were large

(1) Refers to the number of PE-owned firms where dividends were financed with additional debt; several of these PE firms took more than one dividend.

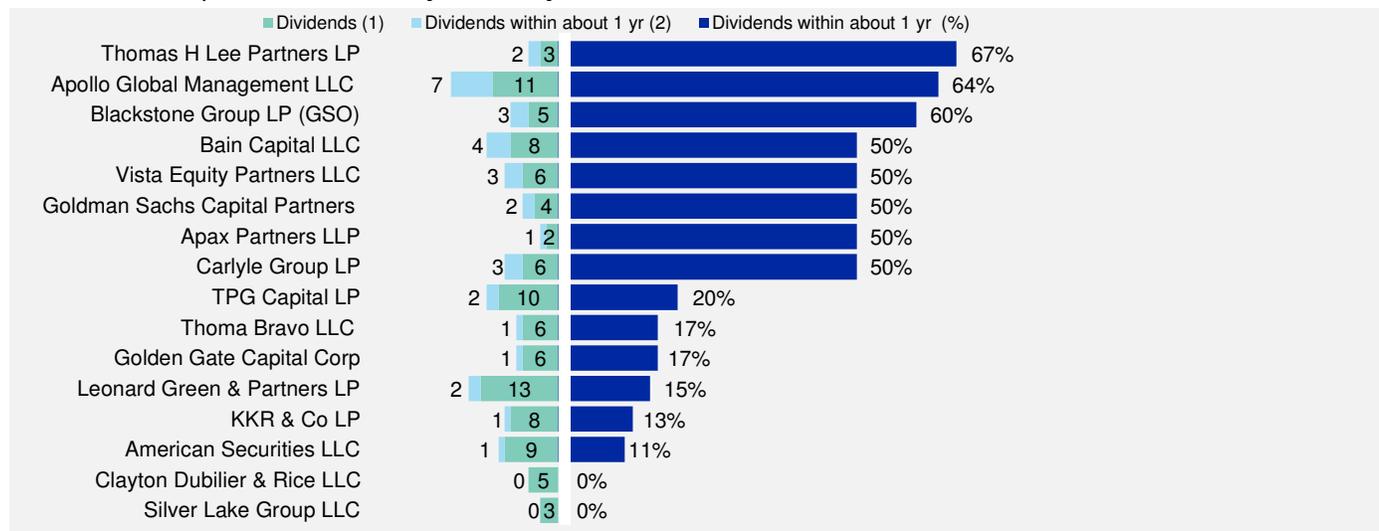
(2) Large dividend=cumulative dividends amounted to more than 75% of the initial equity used to finance the LBO

Source: Moody's Investors Service

Apollo was also among PE sponsors who topped the rest of PE firms that took debt-financed dividends within about the first year after an LBO transaction (see Exhibit 9.)

Although at 33%, Bain's percentage of dividend recap transactions does not top the group's median (see Exhibit 7), it ranks just below Apollo in terms of large dividends taken (see Exhibit 8) and is also among the leaders in PE firms extracting cash from companies within the first year after an LBO (See Exhibit 9.)

Exhibit 9

TH Lee tops other large PE firms in taking dividends out within around the first year of LBO
share of dividend recaps within around the first year of LBO by PE firm

(1) Refers to the number of PE owned firms where dividends were financed with additional debt; several of these PE firms took more than one dividend.

(2) Debt-financed dividends within around 1-year after an LBO; Four of the LBOs covered in this exhibit paid dividends just after 1-year of PE ownership while the rest were within a 1-year window.

Source: Moody's Investors Service

It is important to note the ability to extract dividends is predicated on the underlying performance of the sponsored companies, so a higher dividend rate may be indicative of strong performance at certain portfolio companies. Out of 99 PE-owned companies that issued debt-funded dividends to their sponsors, so far only three have defaulted: Collective Brands Inc. (d.b.a. Payless Inc.) owned by Golden Gate filed for Chapter 11 in April 2017; J. Crew Group Inc. (a.k.a. Chinos Intermediate Holdings) owned by Leonard Green and TPG consummated a distressed exchange in July 2017; EP Energy LLC (f.k.a. EPE Holdings) controlled by Apollo consummated two DEs, in 2016 and 2017 (for more details, please see Appendix B.)

Overall, a limited number of defaults among these PE-owned dividend -paying companies can be explained not only by the benign economic backdrop of 2010-2018, but also by the fact companies capable of paying dividends typically have performed well and the dividends were paid under accommodative credit market conditions that produced flexible credit agreements and indenture terms. That said, dividends funded with debt increase leverage, potentially elevating the company's default risk during an economic trough or industry downturn like those that affected the commodity and retail sectors. These types of events can negatively affect performance of highly levered companies for a sustained period, by cutting off access to the capital markets, preventing the refinancing of maturing debt, and reducing financial flexibility to re-invest in the business.

PE firms stripped away important creditor protections, broader market followed suit

Moody's Covenant Research Team

Weak covenant packages have proliferated in the marketplace for a number of years and private-equity sponsors continue to receive generous and highly flexible covenant terms in the current market. 2018-vintage leveraged loans for PE-owned [Laureate Education, Inc.](#), [Party City Holdings Inc.](#), [Atkore International, Inc.](#), and [Sabre GBLB Inc.](#) (sponsored by KKR, TH Lee, CD&R, TPG/Silver Lake Partners, respectively) are emblematic of the weaknesses in credit documents that undermine key investor protections.

The covenant flexibility to undertake collateral-stripping asset-transfers remains widespread. In the handful of PE-sponsored loan issuances meeting our scoring criteria in 2018, we found all of the PE-deals we reviewed allowed for the transfer of assets to unrestricted subsidiaries outside their credit agreements' restricted groups, enabling sponsors to strip collateral from secured lenders. These transfers allow companies to raise and secure new debt at the transferee level secured by those assets in order to reshape the capital structure (by refinancing unsecured debt on a secured basis using the collateral) or simply to buy time for operational improvement. This harms existing secured lenders because it lowers the recovery value of their loans in a potential bankruptcy.

All of the PE-deals we analyzed included incremental equivalent debt structures (debt incurred outside of the credit facility with pari passu or junior priority that can dilute existing loans while reducing incremental capacity). These structures raise complex intercreditor issues, permitting the addition of creditors on an equal footing who may have vastly different strategies in a default scenario and compete against one another. This is particularly troublesome with the rise of first lien loan-only capital structures, where such lien dilution has the potential to affect recovery outcomes.

For example, in the documentation for term loans issued to Atkore (CD&R) and Sabre (TPG/Silver Lake), there are risky provisions that permit leverage-based exclusions to the asset sale prepayment requirement. These step-downs permit borrowers to lower or possibly even eliminate prepayment requirements when hitting certain pre-defined leverage targets and are contrary to typical loan investors' expectation that 100% of proceeds from asset sales would either go towards the prepayment of senior debt or be reinvested in the borrower's business.

Weak bond covenants enable PE firms to execute strategies with limited interference

Many of the top 16 PE firms' sponsored companies issued bonds with weak investor protections (see Exhibit 10). Covenant quality (CQ) scores, which assess the strength of bond covenants, tend to be weaker for bonds issued by portfolio companies of PE firms, compared with those issued by comparably-rated bonds issued by non-PE sponsored companies.

Exhibit 10

Average CQ scores have been deteriorating amid receptive credit markets

	Top 16 Private Equity Funds		All Private Equity Funds		B1 and Below Full Package Non-Private Equity	
	Average CQ Score	Bonds	Average CQ Score	Bonds	Average CQ Score	Bonds
2011	3.62	45	3.33	86	3.18	106
2012	3.80	68	3.52	133	3.32	156
2013	3.92	57	3.77	109	3.65	112
2014	4.23	31	3.94	88	3.80	106
2015	4.40	33	4.11	71	3.91	104
2016	4.20	33	4.10	68	3.95	97
2017	4.37	29	4.14	81	3.93	120
2018 YTD	4.37	12	4.12	32	3.81	51
L-T Average	4.02	308	3.82	668	3.66	852

Source: Moody's High-Yield Covenant Database

A PE firm's successful implementation of a strategy to strengthen a portfolio company's operations based on strategic acquisitions and divestitures before making its exit requires latitude to make restricted investments and limited change of control protections. Our covenant scores reflect PE firms' success in negotiating for that flexibility. Bonds of PE portfolio companies issued since the start of 2015 averaged risky investments and change-of-control risk category scores of 4.44 (weakest) and 4.23 (weakest). For the same period bonds rated B1 and below issued by non-PE portfolio companies averaged scores of 4.23 (weakest) and 3.35 (moderate ↓) in those risk categories.

The disparity is even greater when looking solely at the bonds issued by portfolio companies of the top 16 PE firms. The risky investments and change-of-control risk category provisions in their bonds averaged scores of 4.70 (weakest) and 4.45 (weakest).

The ability to take debt-financed dividends along the way is reflected by the weaker leveraging and cash-leakage risk category scores that typify bonds from portfolio companies of PE firms. For this same period, bonds of PE portfolio companies averaged leveraging and cash-leakage risk scores of 4.23 (weakest) and 4.39 (weakest). Bonds rated B1 and below issued by non-PE portfolio companies averaged 4.15 (weak ↓) and 4.19 (weak ↓) in those categories. Bonds issued by portfolio companies of the top 16 PE firms were even weaker, averaging 4.33 (weakest) and 4.77 (weakest), respectively.

Of the top 16 PE firms, CD&R, Golden Gate, Blackstone, American Securities (1 bond) and Leonard Green all averaged CQ scores greater than 4.50, with CD&R's seven bonds averaging 4.83. Of firms with portfolio companies that issued more than one bond during the period, only Apax Partners (three bonds) averaged a score better than the 3.92 (weak) average for non-PE issuers. Its three bonds, all issued in 2016, averaged a CQ score of 3.89.

The CQ scores are presented on a five-point scale, with 5.0 denoting the weakest investor protections and 1.0, the strongest.

Poor performance, weak credit metrics lead to more downgrades than upgrades for LBOs

Between the initial assignment of a CFR and the PE exit (where applicable) or the most recent rating action, the 308 LBOs that we looked at experienced far more downgrades (99) than upgrades (38) from 2009 through September 1, 2018. This was mainly because they failed to improve financial performance as projected at the time of LBO or experienced deteriorating credit metrics and weakening liquidity. Downgrades for the rest of the spec-grade population with comparable ratings and excluding these 308 LBOs also topped upgrades, but the gap between these types of rating actions was less pronounced.

One of the reasons for the LBO downgrades were add-on debt-financed acquisitions, which in some cases negatively impacted metrics. Of the 308 companies we analyzed, at least 165 completed debt-financed acquisitions after their LBOs. These debt-financed acquisitions often resulted in weak credit metrics, high integration costs, and slower-than-expected profitability improvements that were among the reasons for ratings downgrades. CFR upgrades tied to completed add-on mergers or acquisitions were pretty rare — only 4 of the 165 instances.

Half of the CFR upgrades of the PE-owned companies, when compared to their initial rating, took place pursuant to IPOs. However, upgrades stemming from organic revenue growth, improvement in operating performance and other credit metrics, where the firms did not complete an IPO, were slightly less common, at 39% of the total positive rating actions taken on these companies.

Only two PE firms' portfolio companies saw more upgrades than downgrades as percentage of their total deals, Thoma Bravo and Silver Lake, 3 to 2 in both instances. CFR upgrades and downgrades were equal for companies owned by KKR and Vista and downgrades only marginally topped upgrades for Apollo and CD&R-owned companies. For the rest of the PE firms, the gap between upgrades and downgrades was much wider (see Exhibit 11.)

Exhibit 11

Downgrades outpace upgrades for most PE firms' portfolio companies

CFR migration by PE firm

PE Firm	Deals	Upgrades	Downgrades	Up/Down ratio
Thoma Bravo LLC	18	3	2	1.5
Silver Lake Group LLC	9	3	2	1.5
KKR & Co LP	25	7	7	1.0
Vista Equity Partners LLC	20	1	1	1.0
Apollo Global Management LLC	32	8	9	0.9
Clayton Dubilier & Rice LLC	18	4	5	0.8
Thomas H Lee Partners LP	11	2	5	0.4
Leonard Green & Partners LP	21	2	5	0.4
American Securities LLC	21	2	6	0.3
Carlyle Group LP	28	4	13	0.3
Bain Capital LLC	24	2	10	0.2
Blackstone Group LP (GSO)	22	1	7	0.1
Apax Partners LLP	14	1	8	0.1
TPG Capital LP	29	1	9	0.1
Goldman Sachs Capital Partners	17	1	9	0.1
Golden Gate Capital Corp	15	0	7	0.0
Total*	308	38	99	0.4

we compare initial CFRs of LBOs to the most recent CFRs during PE-ownership;

Note: total adjusted for unique counts due to multiple firms involved in the same transaction

Source: Moody's Investors Service

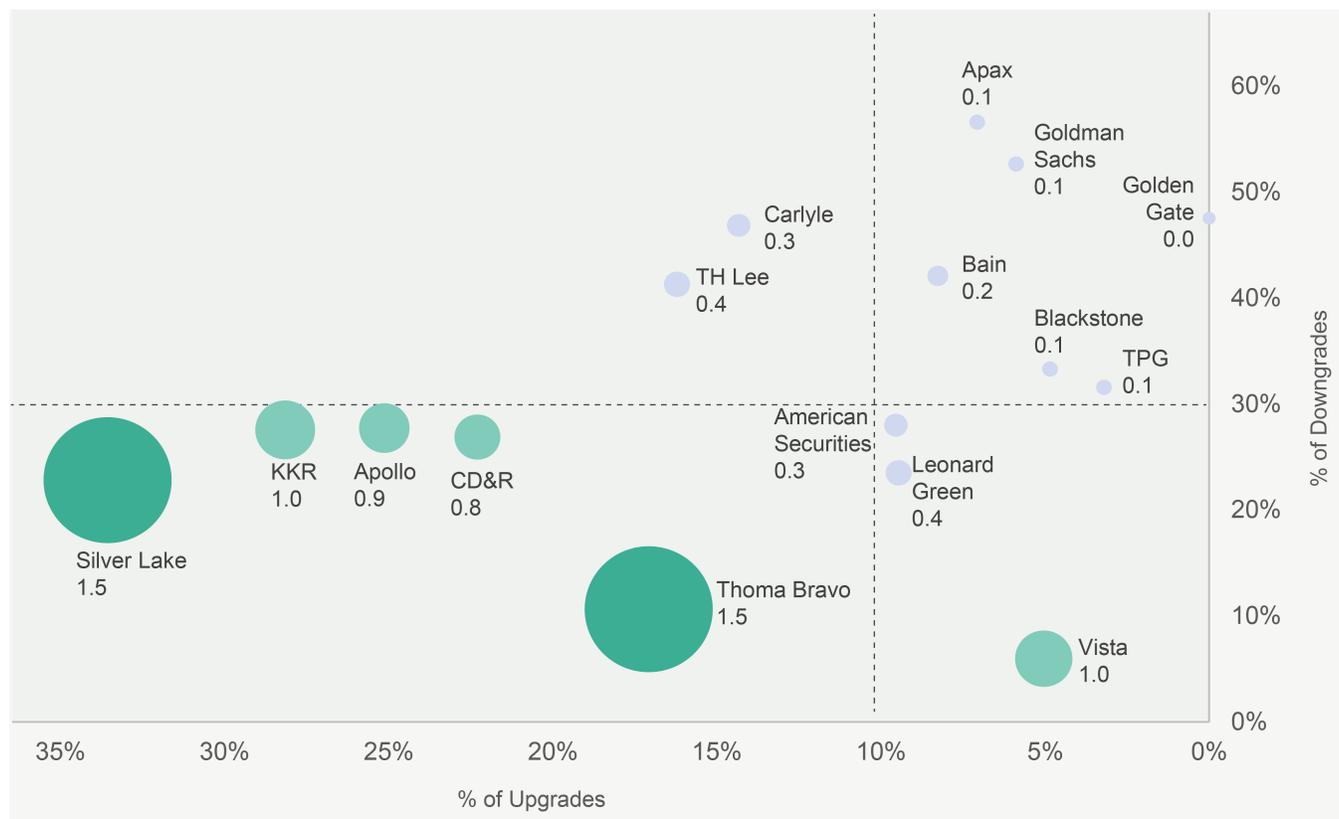
As the Exhibit 11 shows, companies owned by Golden Gate that we identified for this research did not experience a single CFR upgrade, and nearly half out of the 15 companies in Golden Gate's portfolio were downgraded.

Exhibit 12 shows the number of CFR upgrades/downgrades for each PE firm between 2009 and end of August 2018 as compared with each other, and expressed as percentages of the total number of owned companies we reviewed. PE sponsors that saw their companies experience a higher percentage of downgrades and a very low percentage of upgrades are located toward the upper right-

hand corner of the chart. While those with the higher percentage of CFR upgrades and lower percentage of CFR downgrades (i.e. below the downgrade median of 30% for all 308 companies) are located toward the lower left hand corner.

Exhibit 12

Apax, GS, Golden Gate, Blackstone, TPG companies were downgraded most; Thoma Bravo and Silver Lake's LBOs had more upgrades
Relative comparison of CFR downgrades vs. upgrades for the portfolio companies of 16 Large PE firms



CFR upgrades and downgrades are shown as %s of total owned deals that we evaluated in this study. The size of the circle corresponds to the upgrade/downgrade ratio; a horizontal dotted line= 30% median of CFR downgrades; a vertical dotted line=10% median of CFR upgrades.

Source: Moody's Investors Service

Companies owned by firms like Apax, GS, Golden Gate, Bain, Carlyle, Blackstone and TPG experienced a higher percentage of downgrades than upgrades. Companies owned by TH Lee, meanwhile, did better at 18% than the group's 10% median of upgrades, but at 45% received greater than the 30% median of downgrades too.

Apax (57%, or 8 of 14) and GS (53%, or 9 of 17) were the PE firms that had more than half their portfolio companies downgraded during the time frame on which we focused. At Apax, eight CFR downgrades took place between 2011-2015, due to lagging operating and financial performance, heavy debt load, and high interest expense. Similarly, GS's LBOs were downgraded due to credit-metric deterioration, weakening cash flows, and aggressive financial policies such as debt-financed dividends to shareholders. The CFR downgrades for GS-owned companies were almost evenly distributed between 2012-2018.

In benign credit cycle, DE remains restructuring tool of choice for PE firms

Defaults among top 16 PE-owned firms were sparse during the period we looked at, but are likely to be much more prevalent over a full economic and credit cycle. The majority of the deals we reviewed originated during a benign credit cycle. Aside from some industry-specific issues, most non-financial corporates were not subject to any broad or severe global stress since 2008-2009. This extended period of benign credit conditions has helped many weak, highly leveraged companies avoid default and we do not believe the default rates experienced so far by top 16 PE-owned firms during this time is representative of future prospects.

Between 2009 and August 2018, we identified only 20 unique defaults among the 308 companies in our study group (see Exhibit 13.) Retail and oil & gas were the two biggest contributors, adding five and four, respectively. Eight of the 20 recorded defaults were 2012 LBOs, including four from the oil & gas sector funded prior to the commodity price rout.

Exhibit 13

Lax credit environment, loose covenants spared many PE-owned firms from defaults Oil & Gas and Retail contributed the greatest number of defaults to this relatively small sample

Company Name	LBO year	Default Year	PE	Industry	Bankruptcy	Pmt Default	Distressed Exchange	Total Number of Unique Defaults
Atrium Windows & Doors Inc	2010	2011	Golden gate	Manufacturing			1	1
Edmentum (fka PLATO Learning, Inc.)	2010	2015	Bravo	Business Services			1	1
Gymboree Corp	2010	2017	Bain	Retail	1		1	2
Core Entertainment Inc (fka CKX Entertainment, Inc)	2011	2016	Apollo	Media	1			1
J Crew Group Inc (Chinos Intermediate Holdings)	2011	2017	Leonard/TPG	Retail			1	1
Artel, LLC	2011	2017	TPG	Aerospace/Defense			1	1
EPE Holdings/ EP Energy	2012	2016-2017	Apollo	Oil & gas			2	2
Pinnacle Operating Corporation (fka Jimmy Sanders)	2012	2017	Apollo	Chemicals			1	1
Pinnacle Holdco (Paradigm Ltd)	2012	2017	Apax	Technology		1		1
Getty Images Inc	2012	2015	Carlyle	Media			1	1
Philadelphia Energy Solutions LLC	2012	2018	Carlyle	Oil & Gas	1			1
Samson Investment/ Resources Company	2012	2015	KKR	Oil & gas	1			1
Collective Brands Inc (Payless inc)	2012	2017	Golden gate	Retail	1			1
United Distribution Group (GHX /United Central Industrial Supply Co LLC)	2012	2016	American Securities	Whlsl Dstrbtn: Metals			1	1
One Call Care Management Inc	2013	2017	Apax	Business Services			1	1
rue21, inc.	2013	2017	Apax	Retail	1			1
Answers Corporation	2014	2017	Apax	Business Services	1			1
Neovia Logistics Intermediate Holdings, LP	2015	2017	GS	Transportation			1	1

Counts reflect corporate family defaults

Source: Moody's Investors Service

Exhibit 14 shows the distribution of defaults among the top 16 PE-owned portfolio companies, with four being the maximum number of unique default events for a PE firm.

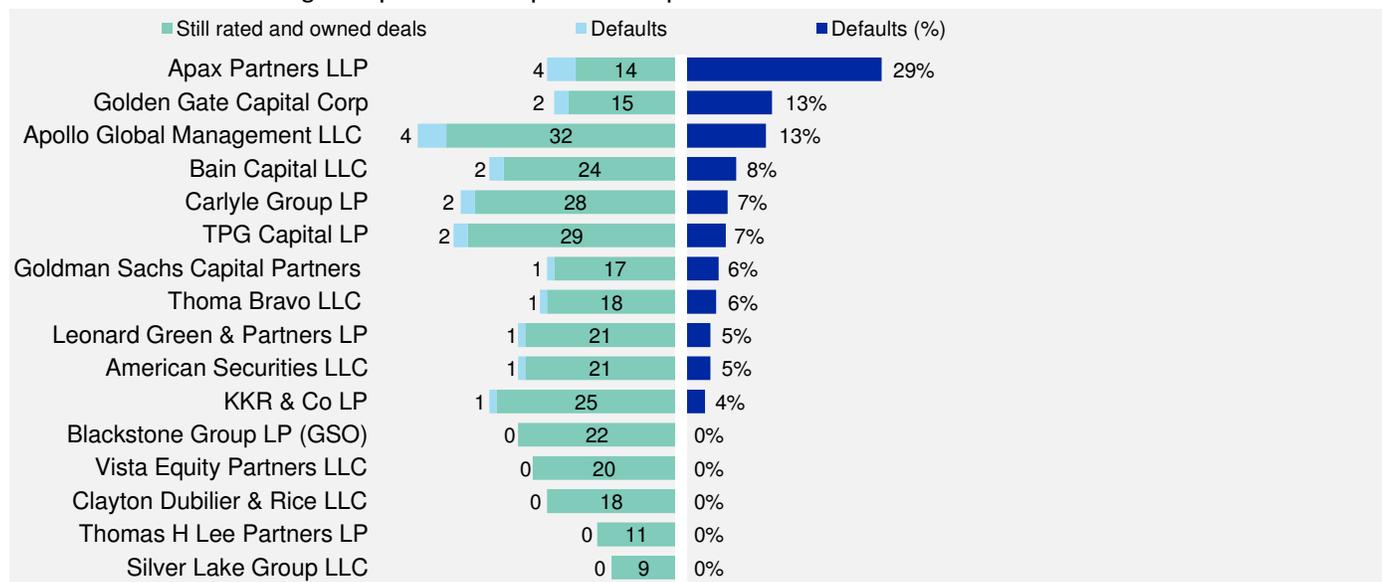
All four of Apax's defaults took place in 2017: bankruptcies, by rue21 Inc. and Answers Corp.; a distressed debt exchange, consummated by One Call Care Management, which also remains on our B3N list; and a missed payment by Pinnacle Holdco S.a.r.l (Paradigm Ltd).

Apollo also had four unique defaults in its portfolio of 32 LBOs that we reviewed: Core Entertainment filed for bankruptcy in April 2016; Pinnacle Operating Corp. consummated a DE in 2017; and EPE Holdings had two DEs, in 2016 and 2017. Pinnacle and EPE are also on our B3N list.

Conversely, between 2009 - August 2018 there was not a single default for companies owned by Blackstone, CD&R, TH Lee, Silver Lake, and Vista Equity.

Exhibit 14

Distribution of defaults among the top 16 PE-owned portfolio companies



Some of these deals were co-sponsored, that's why the number of still rated deals add up to a greater number than 190 unique LBOs we studied.

Source: Moody's Investors Service

Looking at 20 defaults that we recorded among 308 PE-sponsored companies in our sample, distressed exchanges account for 60% of the total, or 12 of 20 defaults, whereas bankruptcies comprise 35% or 7 out of 20 defaults. Out-of-court debt restructurings became prevalent during the latest downturn and remain widespread. DEs usually involve an out-of-court, privately negotiated restructuring of a portion of a company's debt, typically unsecured bonds. Most importantly, in most cases they allow PE sponsors to remain in control of the portfolio company, while providing the company additional time to improve operating performance and reduce leverage after the DE transaction. These incentives will continue to encourage PE firms to utilize DEs going forward. However, DEs are less likely to allow the firm to permanently avoid a default over longer economic and credit cycle downturns.

We reviewed the default resolutions in our Ultimate Recovery Database (1987-2018) and compared the default mix dynamic of top 16 PE firms to non-LBO defaulters (see Exhibit 15.)

Exhibit 15

Defaults by type for top 16 PE firms, and companies without PE sponsors

	Defaulted portfolio companies owned by Top 16 firms						Defaulted companies without PE sponsor			
	1987-present		2008-2009		2010-present		2008-2009		2010-present	
	LBOs	non-LBOs	defaults	% of total	defaults	% of total	defaults	% of total	defaults	% of total
Regular Bankruptcy	40%	62%	7	23%	4	15%	42	52%	41	36%
Prepackaged Bankruptcies	38%	22%	9	29%	11	42%	18	22%	42	37%
Distressed Exchanges	22%	17%	15	48%	11	42%	21	26%	32	28%
Total	100%	100%	31		26		81		115	

This exhibit includes default resolutions of LBOs completed before our study period of 2009-2017; it does not include private DEs consummated by companies who do not file publicly, or companies that are still in bankruptcy (such as Toys "R" US)

Source: Moody's Ultimate Recovery Database

Looking at the overarching period from 1987-2018, LBOs were restructured via a DE 22% of the time, versus 17% for other companies. However, during the default cycle of 2008-2009, large PE firms used DEs more heavily, with those restructurings representing 48% of total resolved defaults during the period for the top PE firms. That is by far higher than the 26% of defaults consummated through a DE by companies without any PE sponsor. The same trend persisted after the 2008-2009 downturn. During a more benign “recovery” cycle since 2010 through now, large PE firms are still showing a preference to renegotiate debt outside of bankruptcy court, or file pre-arranged, prepackaged plans.

DE effectiveness in preserving value is highly dependent on the duration and severity of stress a company endures. If financial stress is prolonged, DEs are less likely to provide sufficient credit relief and more likely to be followed by bankruptcies that produce lower-than-average recoveries. Our data on 30 years of default history suggests that 41% of the time, DEs did not shore up the capital structures of struggling companies enough to stave off another default — be it a bankruptcy or another DE.

Historically, senior bank debt typically did not default in a DE, however, in a multi-year default cycle with more loan-only issuers, this may play out differently. If a company is unable to improve operations, a DE that turns into a bankruptcy could end up with lower loan recoveries, since there is generally less junior debt to absorb losses.

PE predisposition for high leverage, weak creditor protections will ultimately lead to more defaults; worse recoveries in next downturn

As discussed above, larger PE firms continue to push the limits of the market with new deals and set precedents for the rest of the market. The very sizable amount of capital raised by the largest PE firms suggests LBOs will continue to be an attractive structure for these firms and we can continue to expect deteriorating credit quality and covenant protections given current investor demand. A bright economic outlook signals limited default risk over the next year. But the longer the current favorable credit environment persists, the more the ranks of low-rated companies will build, expanding the potential number of defaults and credit losses on rated issuers in the next downturn.

Recent transactions suggest further deterioration in credit protections possible

A recent high-profile LBO, Refinitiv, (B3 CFR) with a 55% investment from Blackstone (along with CIPPB and GIC), gave new meaning to the term “cov-lite”. The deal set new weak standards in terms of creditor protections including significant flexibility regarding dividends to the sponsor. This deal was notable due to its large (\$1 billion or 40% of as-defined EBITDA) unrestricted dividend basket, its allowance of dividends without a standard coverage test, the ability to pre-pay junior debt before more senior debt, the inclusion of three years of future cost savings in the calculation of EBITDA (two years for future transactions), and the ability to remove certain assets out of the collateral package in a distressed scenario. The bonds bode poorly for future credit protections given the likelihood of other transactions mimicking the bond covenant package, which received the weakest-possible score for a full package bond (5.00). That means the worst-possible score was assessed for all six risk categories based on our covenant scoring criteria. The transaction was well-received in the market suggesting the potential for an increase in large transactions and perhaps a return to “club” deals that were common prior to the financial crisis, but with the weaker covenant protections prevalent today. Also, these terms allow more frequent dividends to the sponsor when their companies are performing well and even when it isn't, limiting any potential upside for debt investors. These trends are likely to continue until credit conditions worsen for issuers due to greater limitations on access to capital or the threat of an economic downturn increases.

Appendix A: About data in this report

The PE firms we focus on are:

Top 16 PE firms in this study

LBOs by year

PE Firm	rated deals	2009	2010	2011	2012	2013	2014	2015	2016	2017
American Securities (Amer. Sec)	21		2	3	3		3	2	5	3
Apax	14			2	1	4	1	3		3
Apollo	32		5	3	5	4	1	3	7	4
Bain	24	1	6		3	2	4	3	2	3
Blackstone	22	2	1	2	2		6	1		8
Carlyle	28	1	2	3	4	2	6	1	4	5
Clayton Dubilier & Rice (CD&R)	18	1	3	1	3	2	3	1		4
Golden Gate	15	1	2	3	1	2	2	2		2
Goldman Sachs (GS)	17		2	2	3	2	3	2	2	1
KKR	25	1		5	3	5	2	3	1	5
Leonard Green (L.Green)	21		4	3	4	2	2	2	2	2
Silver Lake	9		3	2			2	1	1	
Thoma Bravo (T.Bravo)	18		3		3	1	3	2	3	3
Thomas H Lee (T.H. Lee)	11		1		2	3	1	1	2	1
TPG	29	1	5	7	3	3	1	3	1	5
Vista Equity (Vista)	20			1	1	3	3	2	7	3
Total*	308									

total adjusted for unique counts due to multiple firms involved in the same transaction

Previously in our 2008-2009 and in 2014 reports, we examined companies that were financed during 2004-07, 2008-2013 years, respectively, and were owned by PE sponsors. We then ranked the PE firms by the amount of their Moody's-rated debt and this way identified the 14 top PE companies. Those PE sponsors were the largest and there was a substantial drop-off in the rated debt for the next largest sponsor. In the current study we employed a similar process for LBOs funded and rated between 2009-2017, and this way identified the PE study group of 16 top PE sponsors, some of these firms were not part of our past studies. On average, each of the top 16 private equity firms has 20 companies in this analysis, as determined by our selection criteria.

Out of the total 308 companies in this study, 190 are currently rated and still owned by these top 16 PE firms as of August 2018. PE firms exited 114 of their portfolio companies in this study group: 7% lost their equity ownership due to bankruptcies or an out-of-court debt restructuring, 46% sold their equity stakes to strategic, 31% -sold to another PE firm(s), 16% exited via IPO (see exhibit below).

Total number of evaluated deals between 2009-2017	308
Still PE-owned and rated	190
Still PE-owned and no longer rated	4
PE Exited :	114
Sold to strategic *	53
Sold to another PE	35
Filed for bankruptcy protection/ debt recap	8
Exited post IPO	18

Note: "Sold to strategic" =sold to a non-PE firm; some of these companies went public prior to their sale to a strategic, for example Taminco Corp's IPO took place in Apr 2013 and the sale to Eastman Chemical Company closed in Dec 2014
some of the companies were in the process of being sold as of Sep 1, 2018;

The 190 still owned and rated companies comprise roughly 12% of the current population of the US spec-grade non-financial corporates. Excluding the 190 LBOs, companies controlled by PE sponsors outside of our study group, make up an additional 33% of the total spec-grade universe, while the remaining spec-grade issuers without any PE sponsor comprise 55% of the total.

Appendix C contains a list of the companies included in this analysis, both still sponsored by the Top 16 PE firms and previously owned anywhere between 2009 through end of August 2018. For the purpose of this analysis, once the PE sponsor is no longer a majority controlling shareholder of a company, or when a company files for a bankruptcy protection, and if the original PE sponsor sells off a majority stake to another strategic investor or a company, we would consider these events as a PE exit, although it may not be considered a full exit or a completely realized investment from the PE standpoint.

Appendix B: Firms where defaults followed dividend recaps

- » **Collective Brands Inc. (d.b.a. Payless Inc.) owned by Golden Gate, Blum Capital Partners:** After its 2012 LBO, Payless' sponsors extracted nearly \$350 million in debt-funded dividends, representing over 130% of the \$270 million initial equity contribution. These sizable equity extractions, along with ongoing operational performance issues and a challenging retail environment, contributed to declining credit metrics. Payless eventually filed for Chapter 11 bankruptcy in April 2017.
- » **J. Crew Group Inc. (a.k.a. Chinos Intermediate Holdings) owned by Leonard Green and TPG:** Since 2011 LBO, the company distributed around \$787 million in dividends, including a \$500 million debt-funded distribution to its sponsors in late 2013. Following these transactions, J. Crew's operating performance weakened, with EBITDA declining by over 50% from its peak in 2013 through LTM Q1 2017. Subsequently in 2017, the company consummated a distressed exchange trying to address its upcoming debt maturity. In July 2017, J. Crew agreed to exchange 99.85% of the \$566.5 million 7.75%/8.50% Senior PIK Toggle Notes due 2019 for new \$250 million notes, as well as non-convertible preferred stock and common equity. [J. Crew made headlines when they transferred intellectual property beyond the reach of secured lenders in order to collateralize the debt exchange](#). At 7.8 times based on company calculations (equivalent to 6.6 times Moody's-adjusted), J. Crew's leverage still remains high, although it has improved by 2.5 times since the completion of the July 2017 distressed exchange. The company outperformed its 2017 EBITDA budget due to higher than expect sourcing cost savings and we expect earnings growth to result in credit metrics improvement to low-6 times debt/EBITDA and 1.1 time EBIT/interest expense in 2018. In May 2018, we changed the company's outlook to positive from stable, however, with CFR of Caa2, and PDR of Caa1-PD, the company still remains on our distressed debt list.
- » **EP Energy LLC (f.k.a. EPE Holdings) controlled by Apollo, Riverstone and other legacy stockholders:** issued additional \$350 million of PIK toggle debt to make a distribution to the equity holders within the first year after its 2012 LBO. Faced with industry challenges and high leverage, the company consummated two DEs, in 2016 and 2017, attempting to reduce its outstanding debt via repurchases at significant discounts to par and extend impending maturities via debt exchanges. First in Q1 2016, the company bought \$345 million of unsecured notes for \$143 million in cash at an average price of 47 cents on the dollar and subsequently entered into agreements to buy back another \$264 million of debt (\$226 million of notes and \$38 million of the term loans) for \$144 million. Then in 2017, EPE offered to exchange the new \$1.2 billion senior secured notes due 2024 for outstanding 9.375% senior unsecured notes due 2020 at par, as well as for its 2022 and 2023 notes at discounts to par. Since then the company remains on our distressed debt list.

Appendix C: Companies owned* by the top 16 PE firms

Company Name	Sponsor(s)	Year of LBO	Initial CFR	date	Last CFR	date	Comment*
4L Technologies Inc (aka Clover Technologies)	Golden Gate Capital Corp	2010	B2	Apr-14	B3	Oct-17	Still Owned
ABG Intermediate Holdings 2 LLC (aka Authentic Brands Group)	Leonard Green & Partners (35%), General Atlantic (33%), Lion Capital (21.5%)	2010	B2	May-14	B2	Sep-17	Still Owned
Academy Ltd	KKR & Co LP	2011	B2	Jul-11	B3	Sep-17	Still Owned
Accudyne Industries Borrower S.C.A.	Carlyle Group LP; BC Partners LLP	2012	B2	Nov-12	B3	Jul-17	Still Owned
Acelity L.P. Inc. (fka Kinetic Concepts Inc)	Apax Partners LLP; Canada Pension Plan Investment Board; Public Sector Pension Investment Board	2011	B2	Aug-11	B2	Feb-17	Still Owned
Acosta Inc.	Carlyle Group LP	2014	B2	Aug-14	Caa2	Apr-18	Still Owned
ADMI Corp (fka Aspen Dental Management Inc)	American Securities LLC	2015	B2	Apr-15	B2	Apr-18	Still Owned
Advantage Sales (Solutions) & Marketing LLC	Leonard Green & Partners LP; CVC Capital Partners Ltd (Bain- minority)	2014	B2	Jul-14	B2	Apr-17	Still Owned
Air Medical Group Holdings Inc	KKR & Co LP	2015	B3	Apr-15	B2	Sep-17	Still Owned
Air Methods Corp	American Securities LLC	2017	B2	Apr-17	B2	Apr-17	Still Owned
Albany Molecular Research Inc	Carlyle Group LP; GTCT Golder Rauner LLC	2017	B3	Jul-17	B3	Jul-17	Still Owned
Aleris International Inc	Oaktree Capital Group LLC; Apollo Global Management LLC; Bain	2010	Ba3	Feb-11	B3	Jul-18	Still Owned
Alphabet Holding Company, In (fka Nature's Bounty Co)	KKR & Co LP	2017	B2	Aug-17	B3	Apr-18	Still Owned
American Tire Distributors Holdings Inc	TPG Capital LP (46.7%)/ Ares Management (46.7%) bought in in Feb 2015	2010	B2	May-10	Caa2	May-18	Still Owned
American Trailer World Corp. (Big Tex Trailer)	Bain Capital LLC	2015	B3	Aug-16	B3	Aug-16	Still Owned
Apex Tool Group LLC	Bain Capital LLC	2013	B2	Jan-13	B3	Feb-18	Still Owned
Aptean, Inc.	Vista Equity Partners LLC	2012	B3	Feb-14	B3	Nov-16	Still Owned
Aptos, Inc. (fka Epicor Retail Solutions Inc)	Apax Partners LLP	2015	B3	May-15	B3	Jun-18	Still Owned
APX Group, Inc. (dba Vivint, Inc)	Blackstone Group LP	2012	B2	Nov-12	B3	Jul-17	Still Owned
Arctic Glacier USA Inc	Carlyle Group LP	2017	B2	Feb-17	B2	Feb-17	Still Owned
Artel, LLC	TPG ; Torch Hill Investments	2011	B3	Oct-12	Caa2/WR	May-17	Still Owned
Aruba Investments Inc (fka Angus Chemical Co)	Golden Gate Capital Corp	2015	B2	Jan-15	B2	Nov-15	Still Owned
Ascend Learning LLC	Canada Pension Plain Investment Board; Blackstone Group LP	2017	B3	Jun-17	B3	Jun-17	Still Owned
ASP Chromaflo Holdings II, LP	American Securities LLC	2016	B3	Oct-16	B3	Oct-16	Still Owned
ASP MCS Acquisition Corp. (fka Mortgage Contracting Services)	American Securities LLC	2017	B2	May-17	B3	Jun-18	Still Owned
Aveanna Healthcare LLC	Bain Capital LLC	2017	B3	Feb-17	B3	May-18	Still Owned
Badger Finance, LLC (Trilliant Food and Nutrition, LLC)	Blackstone Group LP	2017	B3	Sep-17	B3	Sep-17	Still Owned
BCP Raptor LLC (EagleClaw Midstream Services LLC)	Blackstone Group LP	2017	B3	May-17	B3	May-17	Still Owned
Beaver-Visitec International Inc	TPG Capital LP	2016	B3	Aug-16	B3	Jun-18	Still Owned
BJ's Wholesale Club Inc	Leonard Green & Partners LP; CVC Capital Partners Ltd	2011	B1	Sep-11	B1	Jul-18	Still Owned
Blount International Inc	American Securities LLC/P2 Capital Partners	2016	B1	Mar-16	B1	Oct-17	Still Owned
BMC Acquisition, Inc. (BenefitMall)	Carlyle Group LP	2017	B2	Dec-17	B2	Dec-17	Still Owned/ Exiting via sale to another PE
BMC Software Finance, Inc	Golden Gate Capital Corp; Bain Capital LLC; Insight Venture Management LLC; GIC Special Investments Pte Ltd;	2013	B2	Jul-13	B3	Nov-17	Still Owned
Bob's Discount Furniture (BDF Acquisition Corp.)	Bain Capital LLC	2014	B3	Jan-14	B2	Jun-16	Still Owned
Brand Industrial Services, Inc.	Clayton Dubilier & Rice LLC	2013	B2	Nov-13	B3	Jan-17	Still Owned
BrightView Landscapes, LLC (fka Brickman Group Ltd LLC)	KKR & Co LP	2013	B2	Dec-13	B1	Jul-18	Still Owned
Calceus Acquisition, Inc (dba Cole Haan LLC)	Apax Partners LLP	2013	B2	Jan-13	B3	Feb-18	Still Owned
California Pizza Kitchen Inc	Golden Gate Capital Corp	2011	B3	Mar-12	B3	Aug-17	Still Owned
CareerBuilder LLC	Apollo Global Management LLC	2017	B2	Jul-17	B2	Jul-17	Still Owned
Carestream Dental Equipment, Inc.	Clayton Dubilier & Rice LLC	2017	B3	Jul-17	B3	Jul-17	Still Owned
Casablanca International Hldgs Ltd (dba Apple Leisure Group)	KKR & Co LP, KSL Capital Partners LLC;	2017	B3	Jan-17	B3	Jan-17	Still Owned

Company Name	Sponsor(s)	Year of LBO	Initial CFR	date	Last CFR	date	Comment*
Cast & Crew Payroll, LLC	Silver Lake Group LLC	2015	B3	Jul-15	B2	Sep-17	Still Owned
CB URS HOLDINGS CORPORATION	Carlyle Group LP	2017	B2	Oct-17	B2	Oct-17	Still Owned
CDRH Parent, Inc (aka Healogics Inc)	Clayton Dubilier & Rice LLC	2014	B3	Jun-14	Caa1	Oct-17	Still Owned
CEC Entertainment Inc (Chuck e Cheese)	Apollo Global Management LLC	2014	B2	Feb-14	B3	Feb-16	Still Owned
Charter NEX US, Inc.	Leonard Green & Partners LP	2017	B3	May-17	B3	May-17	Still Owned
CHG Healthcare Services Inc	Leonard Green & Partners LP; Ares Management LP	2012	B2	Oct-12	B2	May-18	Still Owned
CHI Overhead Doors Inc	KKR & Co LP	2015	B3	Jul-15	B2	Jul-18	Still Owned
Cirque du Soleil Inc (CDS U.S. Intermediate Holdings, Inc.)	TPG Capital LP (55%) / Fosun Capital Group (25%)/ Caisse (10%)	2015	B2	Jun-15	B2	Jun-17	Still Owned
ClubCorp Holdings Inc	Apollo Global Management LLC	2017	B2	Aug-17	B2	Aug-17	Still Owned
Coinstar LLC (Outerwall, Inc)	Apollo Global Management LLC	2016	B2	Sep-16	B2/WR	Jun-17	Still Owned
Compuware Corp	Thoma Bravo LLC	2014	B3	Nov-14	B2	Jan-18	Still Owned
Constellis Holdings LLC	Apollo Global Management LLC; Forte Capital, Manhattan Partners, ex mngmt	2016	B3	Sep-16	B3	Mar-17	Still Owned
Core & Main LP (dba HD Supply Waterworks)	Clayton Dubilier & Rice LLC	2017	B2	Jul-17	B2	Jul-17	Still Owned
Covenant Surgical Partners Inc (Cosmo Acquisition Corp)	KKR & Co LP	2017	B3	Aug-17	B3	Aug-17	Still Owned
CPI Holdco, LLC (aka Cole-Parmer Instrument Company LLC)	Golden Gate Capital Corp	2017	B3	Mar-17	B3	Mar-17	Still Owned
Creative Artists Agency, LLC	TPG Capital LP	2010	B2	Nov-14	B2	Nov-14	Still Owned
Crosby US Acquisition Corp. (Crosby Worldwide Ltd.)	KKR & Co LP	2013	B2	Oct-13	Caa1	Apr-18	Still Owned
CTI Foods LLC	Thomas H Lee Partners LP; Goldman Sachs Capital Partners	2013	B2	May-13	Caa2	May-18	Still Owned
Cvent Inc	Vista Equity Partners LLC	2016	B3	Jun-16	B3	Nov-17	Still Owned
David's Bridal Inc	Clayton Dubilier & Rice LLC /Leonard Green	2012	B3	Sep-12	Caa3	Feb-18	Still Owned
Diamond (BC) B.V. - Diversey	Bain Capital LLC	2017	B3	Jul-17	B3	Jul-17	Still Owned
Diamond Resorts International Inc	Apollo Global Management LLC	2016	B2	Jul-16	B2	Oct-17	Still Owned
DigiCert Inc	Thoma Bravo LLC	2015	B3	Sep-15	B3/WR/ B3	Aug-18	Still Owned
Dynamic Precision Group (TurboCombustor Technologies, Inc)	Carlyle Group LP / Aero Equity Partners	2011	B2	Sep-13	Caa1	Jul-17	Still Owned
EAB Global Inc (aka Avatar Purchaser, Inc)	Vista Equity Partners LLC	2017	B3	Sep-17	B3	Sep-17	Still Owned
EagleView Technology Corporation	Vista Equity Partners LLC	2015	B3	Jul-15	B3	Jul-15	Still Owned
Emerald Performance Materials (ASP Emerald Holdings, LLC)	American Securities LLC	2014	B2	Jul-14	B2	Dec-16	Still Owned
EPE Holdings/ EP Energy	Apollo Global Management Riverstone Holdings;Access Industries Inc., Korea National Oil Corporation	2012	Ba3	Apr-12	Caa1	Nov-17	Still Owned
Epicor Software Corp	KKR & Co LP	2016	B3	Aug-16	B3	Aug-16	Still Owned
Everest Holdings, LLC (dba Eddie Bauer)	Golden Gate Capital Corp	2009	B2	Apr-14	Caa2	May-17	Still Owned
Exact Holdings North America Inc.(fka Eci Software Solutions)	Apax Partners LLP	2017	B3	Sep-17	B3	Sep-17	Still Owned
ExamWorks Group	Leonard Green & Partners LP	2016	B2	Jun-16	B2	Feb-18	Still Owned
Eze Castle Software, Inc (Eze Software)	TPG Capital LP	2013	B2	Mar-13	B2	Feb-17	Still Owned
FHC Health Systems, Inc. (Beacon Health /Value Options)	Bain Capital; Diamond Castle Holdings	2014	B1	Sep-14	B2	May-15	Still Owned
Flex Acquisition Holdings, Inc. (fka Novolex)	Carlyle Group LP	2016	B2	Dec-16	B2	Jun-18	Still Owned
FPC Holdings, Inc (fka FleetPride Inc)	TPG Capital LP	2012	B2	Nov-12	B3	Mar-18	Still Owned
Fresh Market Inc	Apollo Global Management LLC	2016	B2	Apr-16	Caa2	Jul-18	Still Owned
FULLBEAUTY Brands Inc	Apax Partners LLP	2015	B2	Sep-15	Ca	May-18	Still Owned
Gardner Denver, Inc. (fka Renaissance Acquisition Corp.)	KKR & Co LP	2013	B2	Jul-13	B1	Apr-18	Still Owned
Gates Global LLC	Blackstone Group LP	2014	B3	Jun-14	B2	Jan-18	Still Owned
Getty Images Inc	Carlyle Group LP	2012	B2	Sep-12	Caa1	Dec-15	Still Owned
Give & Go Prepared Foods Corp	Thomas H Lee Partners LP	2016	B2	Jun-16	Caa1	Jun-18	Still Owned
Global Tel*Link Corporation (GTL)	American Securities LLC	2011	B2	Nov-11	B3	May-13	Still Owned
Go Daddy Operating Company, LLC	KKR & Co LP;Silver Lake Management LLC;Technology Crossover Ventures;	2011	B1	Sep-11	Ba3	Jan-17	Still Owned

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Greenway Health, LLC (fka Vitera Healthcare Solutions)	Vista Equity Partners LLC	2011	B3	Oct-13	B3	Feb-17	Still Owned
Helix Acquisition Holdings (MWI)	American Securities LLC	2017	B3	Sep-17	B3	Sep-17	Still Owned
Henry Holdings, Inc	American Securities LLC	2016	B2	Sep-16	B2	Jan-18	Still Owned
High Ridge Brands Co	Clayton Dubilier & Rice LLC	2016	B2	Mar-17	Caa2	May-18	Still Owned
Immucor, Inc.	TPG Capital LP	2011	B2	Aug-11	B3	Jun-17	Still Owned
Infoblox Inc	Vista Equity Partners LLC	2016	B2	Oct-16	B2	Oct-17	Still Owned
Innocor Inc (aka Comfort Holding LLC)	Bain Capital LLC	2017	B2	Jan-17	Caa1	Jun-18	Still Owned
J Crew Group Inc (Chinos Intermediate Holdings)	Leonard Green & Partners LP; TPG Capital LP	2011	B2	Feb-11	Caa2	May-18	Still Owned
Jagger Merger Sub Inc. (dba MDVIP, LLC)	Leonard Green & Partners LP	2017	B3	Oct-17	B3	Oct-17	Still Owned
Jo-Ann Stores Inc	Leonard Green & Partners LP	2011	B2	Feb-11	B2	Apr-18	Still Owned
Jonah Energy LLC	TPG Capital LP/ EIG Global Energy Partners	2014	B1	Apr-14	B1	Sep-17	Still Owned
K&N Engineering Inc.	Goldman Sachs Capital Partners	2016	B3	Oct-16	B3	Oct-16	Still Owned
Keystone Acquisition Corp (dba KEPRO)	Apax Partners LLP	2017	B3	Apr-17	B3	Apr-17	Still Owned
Lawson Software /Infor, Inc	Golden Gate Capital Corp/ Summit Partners	2011	B2	Jun-11	B3	Aug-15	Still Owned
LD Intermediate Holdings, Inc (aka KrollDiscovery)	Carlyle Group LP/ Revolution Growth VC	2016	B3	Nov-16	Caa1	Dec-17	Still Owned
Learning Care Group Inc	American Securities LLC	2014	B3	Apr-14	B3	Feb-18	Still Owned
Life Time, Inc (DBA Life Time Fitness, Inc)	Leonard Green & Partners LP; TPG Capital LP; Landau Nasella Klatsky LLC	2015	B2	Mar-15	B2	Mar-18	Still Owned
Market Track LLC (Millennium Park HoldCo, Inc)	Vista Equity Partners LLC	2017	B3	May-17	B3	May-17	Still Owned
Marketo, Inc.	Vista Equity Partners LLC	2016	B3	Jun-18	B3	Jun-18	Still Owned
Maxim Crane Works Holdings Capital (aka Cloud Crane)	Apollo Global Management LLC	2016	B2	Jul-16	B2	Jul-16	Still Owned
MB Aerospace Holdings II Corp.	Blackstone Group LP	2015	B2	Jan-18	B2	Jan-18	Still Owned
McAfee, LLC.	TPG/Thoma Bravo LLC (51%/49%)	2017	B2	Sep-17	B2	Dec-17	Still Owned
McGraw-Hill Global Education Holdings, LLC (MHGE)	Apollo Global Management LLC	2013	B2	Mar-13	B2	Dec-17	Still Owned
MediaOcean LLC	Vista Equity Partners LLC	2015	B3	Jul-15	B3	Sep-17	Still Owned
Medical Depot Inc (aka Drive DeVilbiss Healthcare)	Clayton Dubilier & Rice LLC	2017	Caa1	Nov-16	Caa1	Nov-16	Still Owned
Medical Solutions Holdings, Inc	TPG Capital LP	2017	B2	May-17	B2	May-17	Still Owned
Mediware Information Systems Inc (Project Ruby Ultimate Parent Corp)	TPG Capital LP	2017	B3	Jan-17	B3	Jun-17	Still Owned
MH Sub I, LLC-Internet Brands	KKR & Co LP	2014	B2	Jun-14	B3	Dec-17	Still Owned
Milk Specialties Co.	American Securities LLC	2016	B2	Jul-16	B2	Jul-16	Still Owned
Mister Car Wash Holdings Inc	Leonard Green & Partners LP	2014	B2	Sep-14	B2	Dec-16	Still Owned
Mitchell International Inc	KKR & Co LP	2013	B3	Sep-13	B3	Nov-17	Still Owned
Mood Media Borrower, LLC	Apollo Global Management LLC/ GSO Capital Partners	2017	B3	Jun-17	Caa3	Jun-18	Still Owned
MPH Acquisition Holdings LLC- MultiPlan	Leonard Green & Partners ;Hellman & Friedman LLC, GIC Pte Ltd	2016	B2	May-16	B3	Nov-17	Still Owned
NAVEX Global Inc (dba Navex Acquisiiton, LLC)	Vista Equity Partners LLC	2014	B3	Oct-14	B3	Aug-17	Still Owned
Navicure, Inc.	Bain Capital LLC	2016	B3	Oct-17	B3	Oct-17	Still Owned
NCI Building Systems Inc	Clayton Dubilier & Rice LLC (68.5%)	2009	B3	Oct-09	Ba3	Jan-18	Still Owned
Neovia Logistics Intermediate Holdings, LP	Goldman Sachs Capital Partners/Rhone Capital LLC	2015	B3	Oct-14	Caa2	Mar-17	Still Owned
NEP/NCP Holdco, Inc	Carlyle (49%), Crestview Partners (45%)	2016	B2	Apr-15	B2	Apr-18	Still Owned
NeuStar Inc	Golden Gate Capital Corp/GIC	2017	B1	Aug-17	B1	Aug-17	Still Owned
Nexeo Solutions LLC	TPG Capital LP	2011	B1	Feb-11	B2(WR)/B2	May-16	Still Owned
NMSC Holdings, Inc (aka North American Partners in Anesthesia)	American Securities LLC	2016	B2	Mar-16	B3	Mar-17	Still Owned
Novetta Solutions LLC	Carlyle Group LP	2015	B3	Sep-15	Caa1	Sep-16	Still Owned

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Olive Merger Sub (dba Optiv Security Inc)	KKR & Co LP;	2017	B3	Jan-17	B3	Sep-17	Still Owned
Omnitracs Inc	Vista Equity Partners LLC	2013	B2	Oct-13	B2	Mar-18	Still Owned
One Call Care Management Inc	Apax Partners LLP	2013	B3	Nov-13	Caa1	Apr-18	Still Owned
Ortho-Clinical Diagnostics	Carlyle Group LP	2014	B2	Apr-14	B3	May-18	Still Owned
Osmose Holdings Inc	KKR & Co LP	2015	B3	Aug-15	B3	Mar-18	Still Owned
Outerstuff LLC	Blackstone Group LP (50%)	2014	B1	Jul-14	B1	Aug-18	Still Owned
Party City Holdings Inc	Thomas H Lee Partners LP	2012	B2	Jul-12	Ba3	Jul-18	Still Owned
PetroChoice Holdings Inc	Golden Gate Capital Corp	2015	B2	Jul-15	B3	Jun-18	Still Owned
PFS Holdings (Phillips Pet Food and Supplies)	Thomas H Lee Partners LP	2013	B2	Jan-14	Ca	Apr-18	Still Owned
Pharmerica Corp	KKR & Co LP	2017	B2	Sep-15	B2	Sep-17	Still Owned
Ping Identity Corporation	Vista Equity Partners LLC	2016	B3	Jan-18	B3	Jan-18	Still Owned
Pinnacle Operating Corporation (fka Jimmy Sanders)	Apollo Global Management LLC	2012	B2	Oct-12	Caa1	Mar-17	Still Owned
PlayAGS LLC (AP Gaming LLC)	Apollo Global Management LLC	2013	B3	Dec-13	B2	Jan-18	Still Owned
Presidio Holdings Inc	Apollo Global Management LLC	2015	B2	Jan-15	B1	Mar-17	Still Owned
Project Accelerate Parent, LLC (aka ABC Financial)	Thoma Bravo LLC	2017	B3	Dec-17	B3	Dec-17	Still Owned
Project Alpha Intermediate Holding, Inc. (U.S.) (dba Qlik Technologies),	Thoma Bravo LLC	2016	B3	Apr-17	B3	Apr-17	Still Owned
Project Leopard Holdings Inc (Kofax Ltd)	Thoma Bravo LLC	2017	B2	Jun-17	B2	Jun-17	Still Owned
Prospect Medical Holdings Inc	Leonard Green & Partners LP	2010	B3	Feb-11	B2	Jan-18	Still Owned
Protection One-Prime Security Services (fka Apollo Security Services)	Apollo Global Management LLC	2015	B2	Jun-15	B1	Jan-18	Still Owned
Prowler Acquisition Corp. (PSS)	Broad/ West Street Energy Partners (affiliate of Goldman Sachs Merchant Banking)	2013	B3	Jan-14	B3	Aug-18	Still Owned
Quality Distribution Inc (Gruden Acquisition Inc)	Apax Partners LLP	2015	B2	Jul-15	B3	Jun-17	Still Owned
Quorum Business Solutions Inc	Silver Lake Group LLC	2014	B2	Jul-14	B3	Jul-17	Still Owned
Rackspace Hosting, Inc.	Apollo Global Management LLC	2016	B1	Nov-16	B1	Nov-17	Still Owned
Radiate HoldCo (fka RCN / Grande Communications)	TPG Capital LP	2017	B2	Nov-16	B2	Oct-17	Still Owned
Ramundsen Holdings LLC (dba Superior)	Vista Equity Partners LLC	2017	B3	Jan-17	B3	Jan-17	Still Owned
Red Lobster Hospitality LLC	Golden Gate Capital Corp	2014	B3	Jul-14	B3	Nov-17	Still Owned
Redbox Automated Retail LLC (dba Outerwall)	Apollo Global Management LLC	2016	B1	Sep-16	B1/WR	Oct-17	Still Owned
RegionalCare Hospital Partners, Inc	Apollo Global Management LLC	2015	B2	Apr-16	B2	Apr-16	Still Owned
RentPath, inc. (aka PRIMEDIA INC.)	TPG Capital LP/ Providence Equity Partners (2014)	2011	B1	Jun-11	B3	May-17	Still Owned
Riverbed Technology, Inc.	Thoma Bravo LLC/Teachers Private Capital (50%/50%)	2015	B2	Feb-15	B2	Feb-15	Still Owned
Savers Inc (Evergreen AcqCo 1, LP)	Leonard Green & Partners LP; TPG Capital LP	2012	B2	Jun-12	Caa2	Oct-17	Still Owned
Service King Paint & Body LLC (Midas Intermediate Holdco II, LLC)	Blackstone Group LP (Carlyle Group LP (retained minority)	2014	B2	Sep-14	B2	Aug-16	Still Owned
SESAC Inc	Blackstone Group LP	2017	B3	Jan-17	B3	Jan-17	Still Owned
SMART Modular Technologies (WWH) Inc	Silver Lake Group LLC	2011	B2	Jun-11	B2	Jun-18	Still Owned
SolarWinds Inc	Thoma Bravo LLC; Silver Lake Group LLC	2016	B2	Jun-16	B2	Feb-18	Still Owned
Solenis International LP	Clayton Dubilier & Rice LLC	2014	B3	Jun-14	B3	Jun-14	Still Owned
Solera, LLC	Vista Equity Partners LLC / Koch Equity Development LLC/ Goldman, Sachs & Co	2016	B2	Feb-16	B2	Jan-17	Still Owned
Sophia, L.P. (dba Ellucian Co LP)	Leonard Green & Partners LP; TPG Capital LP	2015	B3	Sep-15	B3	Sep-15	Still Owned
Sterling Midco (Infosystems)	Goldman Sachs Capital Partners	2015	B2	May-15	B2	Jun-17	Still Owned
STS operating Inc -SunSource Holdings Inc	Clayton Dubilier & Rice LLC	2017	B2	Nov-17	B2	Apr-17	Still Owned

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SurveyMonkey.Com, Inc	Bain Capital Ventures; Spectrum Equity Investors LP, TPG (2011)	2009	B2	Jan-13	B3	Jul-15	Still Owned
Syniverse Holdings Inc	Carlyle Group LP	2010	B2	Dec-10	B3	Feb-18	Still Owned
Talos Production LLC	Apollo Global Management LLC; Riverstone Holdings;	2012	B3	Jan-13	Caa1/WR	Mar-17	Still Owned
Tank (Roto) Holdings Corp	Leonard Green & Partners LP	2012	B2	Jun-12	B3	Feb-16	Still Owned
Team Health Holdings Inc	Blackstone Group LP	2017	B2	Jan-17	B3	Jan-18	Still Owned
Tempo Acquisition, LLC	Blackstone Group LP	2017	B2	Apr-17	B2	Nov-17	Still Owned
Ten-X LLC	Thomas H Lee Partners LP	2017	B3	Sep-17	B3	Sep-17	Still Owned
ThoughtWorks Inc (Turing Merger Sub Inc)	Apax Partners LLP	2017	B2	Sep-17	B2	Apr-18	Still Owned
TI Group Automotive Systems LLC	Bain Capital LLC	2015	B2	Jun-15	B1	Oct-17	Still Owned
TIBCO Software Inc	Vista Equity Partners LLC	2014	B3	Nov-14	B3	May-17	Still Owned
TOMS Shoes LLC	Bain Capital LLC	2014	B2	Oct-14	Caa3	Dec-17	Still Owned
Trader Corp	Thoma Bravo LLC	2016	B3	Jul-16	B2	Jun-18	Still Owned
Tradesmen International LLC (Tribe Buyer LLC)	Blackstone Group LP	2017	B2	Jan-17	B2	Dec-17	Still Owned
Transcendia Inc	Goldman Sachs Capital Partners	2017	B3	Apr-17	B3	Apr-17	Still Owned
TravelClick Inc	Thoma Bravo LLC	2014	B3	Apr-14	B3	Mar-18	Still Owned
Tupelo Buyer Inc (Transplace Inc)	TPG Capital LP	2017	B3	Sep-17	B3	Sep-17	Still Owned
U.S. Renal Care, Inc.	Leonard Green & Partners LP	2012	B2	Jun-12	B3	Jun-17	Still Owned
Unifrax Corp	American Securities LLC	2011	B2	Nov-11	B2	Oct-17	Still Owned
United Distribution Group (GHX /United Central Industrial Supply Co LLC)	American Securities LLC	2012	B3	Sep-12	Caa1	Aug-15	Still Owned
US Security Associates Inc.	Goldman Sachs Capital Partners	2011	B1	Jul-11	B3	Jun-17	Still Owned
Veritas Bermuda Ltd.	Carlyle Group LP	2016	B2	Nov-15	B3	Nov-16	Still Owned
Vertafore Inc (VF Holding Corp)	Bain Capital LLC/Vista Equity Partners LLC	2016	B3	Jun-16	B3	May-18	Still Owned
Vine Oil & Gas, LP	Blackstone Group LP	2014	B3	Dec-14	B3	Apr-18	Still Owned
WellDyneRx Inc	Carlyle Group LP	2017	Caa1	Feb-17	B3	May-18	Still Owned
West Corp	Apollo Global Management LLC	2017	B1	Sep-17	B1	Sep-17	Still Owned
Wilsonart LLC	Clayton Dubilier & Rice LLC	2012	B2	Oct-12	B2	Nov-16	Still Owned
WME IMG, LLC (dba Endeavor)	Silver Lake Group LLC	2014	B2	Feb-14	B2	May-18	Still Owned

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1-800 Contacts Inc (aka CNT Holdings III Corp)	Thomas H Lee Partners LP	2014	B2	Jan-14	B2	Jan-18	Exited (Sold to another investor/PE)
Active Network LLC (fka Lanyon Solutions, Inc)	Vista Equity Partners LLC	2013	B3	Oct-13	B2/WR	Jun-16	Exited (Sold to strategic)
Air Medical Group Holdings Inc	Bain Capital LLC/ Brokway Moran Investors	2010	B2	Oct-10	B3/WR	Apr-14	Exited (Sold to another investor/PE)
Airvana Network Solutions Inc.	Blackstone (GSO) Group; S.A.C. Private Capital Group LLC, Sankaty Advisors	2010	B3	Mar-11	Caa1/WR	Jan-13	Exited (Sold to strategic)
Answers Corporation	Apax Partners LLP	2014	B1	Sep-14	Caa2/WR	Dec-16	Bankruptcy in Mar 2017/ Exited
Apple Leisure Group (ALG B.V.)	Bain Capital LLC	2012	B2	Jan-13	B2/WR	Mar-17	Exited (Sold to another investor/PE)
Arizona Chemicals Holdings Corp	American Securities LLC	2010	B1	Nov-10	Ba3 /WR	Sep-15	Exited (Sold to strategic)
Aspen Dental Management Inc (ADMI Corp)	Leonard Green & Partners LP/Ares Management	2010	B2	Sep-10	B2/WR	Jun-15	Exited (Sold to another investor/PE)
Associated Asphalt Inc.	Goldman Sachs Capital Partners	2012	B2	Feb-12	B3	Jun-15	Exited (Sold to another investor/PE)
AssuraMed Holding, Inc. (fka Harrington Holdings Inc)	Clayton Dubilier & Rice Inc; Goldman Sachs Capital Partners	2010	B2	Sep-10	B2/WR	Mar-13	Exited (Sold to strategic)
Athlon Energy Operating LLC	Apollo Global Management LLC	2010	B3	Apr-13	B2/WR	Dec-14	Exited (IPO/ Sold to strategic)
Atkore International Group Inc	Clayton Dubilier & Rice LLC	2010	B2	Dec-10	B1	Dec-16	Exited (IPO)
Atrium Windows & Doors Inc	Golden Gate Capital Corp/Kenner & Co	2010	B3	Apr-10	Caa1/WR	May-18	Exited (Sold to another investor/PE)
AVSC (dba PSAV)	Goldman Sachs Capital Partners/Olympus Partners	2014	B2	Jan-14	B3	Feb-18	Exited (Sold to another investor/PE)
Axalta Coating Systems Ltd	Carlyle Group LP	2013	B2	Jan-13	Ba3	Aug-16	Exited (IPO)
Big Heart Pet Friends (fka Del Monte Corp)	KKR, Vestar Cap Ptnrs, Centerview Capital	2011	B1	Mar-13	B2/WR	Feb-15	Exited (Sold to strategic)
Blue Coat Systems Inc	Thoma Bravo LLC/Ontario Teachers Pension Plan	2012	B2	Jan-12	B2/WR	Jun-13	Exited (Sold to another investor/PE)
Blue Coat Systems Inc	Bain Capital LLC	2015	B3	May-15	B3/WR	Nov-15	Exited (Sold to strategic)
Brasa Holdings (Fogo de Chao Churrascaria LLC)	Thomas H Lee Partners LP	2012	B2	Jun-12	B2/WR	Jul-15	Exited (IPO/ Sold to another investor)
Busch Entertainment Group (SeaWorld Parks & Entertainment Inc)	Blackstone Group LP	2009	Ba3	Nov-09	B2	Aug-14	Exited (IPO)
Capital Safety North America Holdings Inc. (aka Hupah Finance Inc)	KKR & Co LP	2012	B2	Dec-11	B2	Mar-14	Exited (Sold to strategic)
Capsugel Inc	KKR & Co LP	2011	B2	Jul-11	B2/WR	Dec-16	Exited (Sold to strategic)
CCC Information Services Group Inc	Leonard Green & Partners LP /TPG	2013	B3	Dec-12	B3/WR	Dec-12	Exited (Sold to strategic)
Change Healthcare (FKA Emdeon Business Services)	Blackstone Group LP	2011	B2	Sep-11	B2/WR	Mar-17	Exited (Sold to strategic)
Charter Communications Operating LLC	Apollo Global Management LLC; Crestview Partners LLC; Oaktree Capital Management LP	2010	Ba3	Mar-10	Ba3	Nov-12	Exited (IPO)
Chesapeake/ Multi Packaging Solutions (MPS)	Madison Dearborn Partners; Carlyle Group	2013	B2	Dec-13	B1/WR	Jan-17	Exited (IPO/ Sold to strategic)
CKE Restaurants Inc	Apollo Global Management LLC	2010	B2	Jun-10	B2	Jul-10	Exited (Sold to another investor/PE)
Collective Brands Inc (Payless inc)	Golden Gate Capital Corp; Blum Capital Partners LP	2012	B2	Sep-12	Ca/WR	Apr-17	Bankruptcy in Apr 2017/ Exited
CommScope Holding Company, Inc.	Carlyle Group LP	2011	B2	Jan-11	B1	May-15	Exited (IPO)
CompuCom Systems Inc	Thomas H Lee Partners LP	2013	B2	Apr-13	Caa2/WR	Jun-16	Exited (Sold to strategic)
Consolidated Container Co LLC	Bain Capital LLC	2012	B2	Jun-12	Caa1	Jun-16	Exited (Sold to strategic)
Core Entertainment Inc (fka CKX Entertainment, Inc)	Apollo Global Management LLC	2011	B3	Jan-12	Ca/WR	Apr-16	Bankruptcy in Apr 2016/ Exited
Curo Health Services Holdings Inc	Thomas H Lee Partners LP	2015	B3	Jan-15	B3/WR	Jul-18	Exited (Sold to strategic/ PE)
Custom Sensors & Technologies Inc	PAI Partners SAS; Carlyle Group LP; Schneider	2014	B2	Jun-14	B2/WR	Dec-15	Exited (Sold to strategic)
Dealogic (I-Logic Technologies Bidco Limited)	Carlyle Group LP/ Euromoney Institutional Investors	2014	B1	Nov-14	B2/WR	Dec-17	Exited (Sold to another investor/PE)
Decision Insight Info. Group (US) I, Inc. (fna: Property Data)	TPG Capital LP	2011	B2	Dec-10	B3/WR	Apr-14	Exited (Sold to strategic)
Deltek Inc	Thoma Bravo LLC	2012	B3	Sep-12	B2	Oct-16	Exited (Sold to strategic)
Digital Insight Corp	Thoma Bravo LLC	2013	B3	Oct-13	B3/WR	Aug-14	Exited (Sold to strategic)
Edmentum (fka PLATO Learning, Inc.)	Thoma Bravo LLC	2010	B2	Apr-12	Caa1/WR	Jun-15	DE in June 2015/ Exited
EIG Investors Corp (aka Endurance International Group Holdings LLC)	Warburg Pincus LLC ; Goldman Sachs Capital	2011	B1	Dec-11	B2	Nov-13	Exited (IPO)
Envision Healthcare (Emergency Medical Services Corp)	Clayton Dubilier & Rice LLC	2011	B2	Apr-11	B1	Nov-16	Exited (IPO/ Merged with strategic)

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Envision Pharmaceutical Services LLC	TPG Capital LP	2013	B3	Sep-13	B3/WR	Aug-14	Exited (Sold to strategic)
EP Minerals LLC	Golden Gate Capital Corp	2011	B3	Jul-14	B3/WR	May-18	Exited (Sold to strategic)
Epicor Software Corporation (OLD)	Apax Partners LLP	2011	B2	May-11	B3/WR	May-16	Exited (Sold to another investor/ PE)
Erie Acquisition Holdings, Inc	TH Lee/ Goldman Sachs Capital Partners/	2016	B2	Feb-16	B3/WR	Sep-17	Exited (Sold to strategic)
EVERTEC Inc	Apollo Global Management	2010	B2	Aug-10	B1	Apr-13	Exited (IPO)
Fairmount Santrol Inc	American Securities LLC	2010	B1	Jul-10	Caa1/ WR	Jan-16	Exited (IPO)
Fotolia LLC	KKR & Co LP ; TA Associates Management LP	2012	B2	Jun-13	B2/WR	Sep-13	Exited (Sold to strategic)
GCA Services Group Inc	Blackstone Group LP	2012	B2	Sep-12	B2/WR	Jul-16	Exited (Sold to another investor/ PE)
Global Healthcare Exchange, Inc. (GHX)	Thoma Bravo LLC	2014	B2	Jul-15	B3/WR	Jun-17	Exited (Sold to another investor/ PE)
Globallogic Holdings Inc.	Apax Partners LLP	2013	B3	Nov-13	B2	Jul-18	Exited (Sold to another investor/ PE)
Great Wolf Resorts Inc (aka GWR Operating Partnership, LLC)	Apollo Global Management LLC	2012	Caa1	Mar-12	B3/WR	Jan-15	Exited (Sold to another investor/ PE)
Gymboree Corp	Bain Capital LLC	2010	B2	Nov-10	Ca /WR	Jun-17	DE in May 2016, Bankruptcy in Jun 2017/ Exited
Hearthside Food Solutions LLC	Goldman Sachs Capital Partners /Vestar Capital Partners LLC	2014	B2	Apr-14	B2	Apr-18	Exited (Sold to another investor/ PE)
HHI- MPG Holdco	American Securities LLC	2012	B2	Sep-12	B1/WR	Apr-17	Exited (IPO/ Sold to strategic)
Hillex Poly Co. LLC	TPG Capital LP	2009	B3	Sep-10	B3/WR	Dec-12	Exited (Sold to another investor/ PE)
Hostess Brands	Apollo Global Management LLC Metropoulos & Co;	2013	B2	Jul-15	B2	Jul-15	Exited (Sold to strategic)
Infinity Acquisition (Ipreo Holdings LLC)	Goldman Sachs Capital Partners/The Blackstone Group	2014	B3	Jul-14	B3	Jul-14	Exited (Sold to strategic)
Interactive Data Corp	Silver Lake Technology Management LLC; Warburg Pincus LLC	2010	B2	Jun-10	B3/WR	Apr-14	Exited (Sold to strategic)
Interline Brands Inc	Goldman Sachs Capital Partners	2012	B2	Jul-12	B3/WR	Jul-15	Exited (Sold to strategic)
InVentiv Health (Syneos) Inc	Thomas H Lee Partners LP/ Libery Lane Partners	2010	B2	Jul-10	B3/WR	Nov-16	Exited (Sold to strategic)
Ipreo Holdings LLC	KKR & Co LP	2011	B2	Jun-11	B2/WR	Jun-15	Exited (Sold to another investor/ PE)
Kenan Advantage Group Inc	Goldman Sachs Capital Partners; Centerbridge Partners	2010	Ba3	Jun-10	B1(WR)	Aug-15	Exited (Sold to another investor/ PE)
LANDesk Software Inc	Thoma Bravo LLC	2010	B2	Jun-12	B2/WR	Sep-16	Exited (Sold to another investor/ PE)
LM U.S. Member LLC (Landmark Aviation Inc)	Carlyle Group LP	2012	B3	Oct-12	B3/WR	Jun-15	Exited (Sold to strategic)
Marine Acquisition Corp.	American Securities LLC	2014	B2	Jan-14	B2/WR	Jun-16	Exited (Sold to strategic)
Mediware Information Systems Inc	Thoma Bravo LLC	2012	B2	Jun-16	B2/WR	Sep-16	Exited (Sold to another investor/ PE)
Mercury Payment Systems, LLC	Silver Lake Group LLC	2010	B2	Jun-11	B1/WR	Jul-14	Exited (Sold to strategic)
Metaldyne, LLC	The Carlyle Group and Solus Alternative Asset Management LP	2009	B1	Sep-10	B1/WR	Dec-12	Exited (Sold to another investor/ PE)
Metaldyne-MPG Holdco	American Securities LLC	2012	B2	Nov-12	B2/WR	Oct-14	Exited (Sold to strategic)
Michael Foods Inc.	Goldman Sachs Capital Partners /TH Lee	2010	B2	Jun-10	B2/WR	Apr-14	Exited (Sold to strategic)
MultiPlan Inc	Silver Lake Group LLC; BC Partners LLP	2010	B2	Aug-10	B2/WR	Sep-13	Exited (Sold to another investor/ PE)
National Vision Inc	KKR & Co LP	2014	B3	Feb-14	B1	Nov-17	Exiting (IPO)
NBTY, Inc- The Nature's Bounty (Alphabet Holding Company)	Carlyle Group LP	2010	B1	Sep-10	B2/WR	Aug-17	Exited (Sold to another investor/ PE)
Northern Tier Energy, LLC	TPG Capital LP/ ACON Investments	2010	B1	Nov-10	B1	Nov-13	Exited (IPO/ Sold to strategic)
Novitex Enterprise Solutions (fka Pitney Bowes Management Services Inc)	Apollo Global Management LLC	2013	B2	Sep-13	B3/WR	Feb-17	Exited (Reverse IPO/ sold to strategic)
Optiv (aka Accuvant, Inc)	Blackstone Group LP	2014	B2	Dec-14	B3/ WR	May-15	Exited (Sold to another investor/ PE)
Par Pharmaceutical Companies, Inc. (Endo International pic)	TPG Capital LP	2012	B2	Sep-12	B2/WR	May-15	Exited (Sold to strategic)
Pharmaceutical Product Development Inc (PPD)/ Eagle Holding Company II, LLC	Carlyle Group LP; Hellman & Friedman LLC	2011	B1	Nov-11	B2(WR)	Apr-17	Exited, and re-invested a minority stake again in May
PharMEDium Healthcare Corp	Clayton Dubilier & Rice LLC	2014	B3	Jan-14	B3/WR	Dec-15	Exited (Sold to strategic)
Philadelphia Energy Solutions LLC	Carlyle Group L.P.; Sunoco Inc	2012	B1	Apr-13	Ca/WR	Jan-18	Bankruptcy in Jan 2018/ pending exit

Company Name	Sponsor(s)	Year of LBO	Initial CFR	date	Last CFR	date	Comment*
Phillips-Medisize Corp	Golden Gate Capital Corp	2014	B3	May-14	B3/WR	Oct-16	Exited (Sold to strategic)
Physio-Control Inc	Bain Capital LLC	2012	B2	Jan-12	B2/WR	Feb-16	Exited (Sold to strategic)
Pinnacle Holdco (Paradigm Ltd)	Apax Partners LLP; JMI Equity	2012	B2	Jul-12	Caa3/WR	Sep-17	Exited (Sold to strategic)
PlayPower, Inc	Apollo Global Management LLC	2011	Caa1	Oct-11	B3/WR	Jun-15	Exited (Sold to another investor/ PE)
Polymer Group Inc (aka AVINTIV)	Blackstone Group LP	2011	B1	Jan-11	B2/WR	May-14	Exited (Sold to strategic)
PRA Holdings, Inc	KKR & Co LP	2013	B2	Aug-13	Ba3	Aug-17	Exited (IPO)
Presidio Inc.	American Securities LLC	2011	B1	May-11	B1/WR	Dec-14	Exited (Sold to another investor/ PE)
Quintiles IMS Incorporated (aka IQVIA)	TPG Capital / CPPIB/ Leonard Green & Partners LP	2010	B1	Jan-10	Ba2	Sep-17	Exited (IPO)
Renal Advantage Inc	Bain Capital LLC/KRG Capital Partners LLC	2010	B2	Nov-10	B2/WR	Apr-12	Exited (Sold to strategic)
Roofing Supply Group LLC	Clayton Dubilier & Rice LLC	2012	B2	May-12	B3/WR	Oct-15	Exited (Sold to strategic)
Royal Holdings, Inc.	American Securities LLC	2015	B2	May-15	B3	Mar-17	Exited (Sold to strategic)
rue21, inc.	Apax Partners LLP	2013	B3	Aug-13	Ca/WR	May-17	Bankruptcy in May 2017/ Exited
Samson Investment/ Resources Company	KKR,Crestview Partners LLC, Natural Gas Partners; Itochu Corporation	2012	Ba3	Jan-12	Ca/WR	Sep-15	Bankruptcy in Sep 2015/ Exited
Signode Industrial Group US Inc.	Carlyle Group LP	2014	B2	Mar-14	B2/WR	Nov-16	Exited (Sold to strategic)
SiteOne Landscape Supply (Fka John Deere Landscapes)	Clayton Dubilier & Rice LLC	2013	B2	Sep-15	WR/ B1	Apr-16	Exited (IPO)
SkillSoft Ltd (Aka SSI Investments II Ltd)	Berkshire Partners LLC, Advent International Corporation and Bain Capital Partners, LLC	2010	B2	May-10	B2/WR	Sep-13	Exited (Sold to another investor/ PE)
SonicWALL Inc	Thoma Bravo LLC/Teachers Private Capital	2010	B2	Jul-10	B2/WR	Jul-10	Exited (Sold to strategic)
Springs Industries Inc.	Golden Gate Capital Corp	2013	B2	May-13	B2	Nov-17	Exit (selling to another investor)
Sprouts Farmers Markets LLC	Apollo Global Management LLC	2011	B2	Apr-11	B1	Aug-13	Exited (IPO)
Summit Materials	Blackstone Group LP/ Silverhawk Capital Partners	2009	B2	Jan-10	B2	Feb-16	Exited (IPO)
Taminco Global Chemical Corporation	Apollo Global Management LLC	2012	B2	Jan-12	B2/WR	Mar-15	Exited (IPO/ Sold to strategic)
TASC, Inc	General Atlantic LLC; KKR & Co LP	2009	B1	Dec-09	B2	Jul-17	Exited (Sold to strategic)
Taylor Morrison (Monarch) Communities, Inc	TPG Capital, Oaktree Capital Management LP	2011	B1	Mar-11	B1	Apr-13	Exited (IPO)
Trans Union, LLC	Goldman Sachs Capital Partners ;Advent International Corp	2012	B2	Feb-12	Ba3	Jul-17	Exited (IPO)
TransFirst Holdings Inc	Vista Equity Partners LLC	2014	B3	Nov-14	B3/WR	May-16	Exited (Sold to strategic)
Trinseo Materials Operating S.C.A. (fka Styron Corp)	Bain Capital LLC	2010	B2	Jun-10	B2	Apr-15	Exited (IPO)
Univar Inc	CVC Capital Partners Ltd; Clayton Dubilier & Rice LLC	2010	B2	Nov-10	B2	Jun-15	Exited (IPO)
USIC Locating Services Inc	Leonard Green & Partners LP	2013	B3	Jul-13	B3	Jan-18	Exited (Sold to another investor/ PE)
Vertafore Inc (VF Holding Corp)	TPG Capital LP	2010	B2	Jul-10	B2/WR	Dec-16	Exited (Sold to another investor/ PE)
Viewpoint, Inc.	Bain Capital LLC	2014	B2	Jul-17	B2/WR	Jul-17	Exited (Sold to strategic)
Vivid Seats LLC	Vista Equity Partners LLC	2016	B3	Feb-16	B3/WR	Jul-17	Exited (Sold to another investor/ PE)
Vogue International LLC	Carlyle Group LP /Todd Christopher	2014	B2	May-14	B2/WR	Jun-16	Exited (Sold to strategic)
Websense Inc	Vista Equity Partners LLC	2013	B2	Jun-13	B3/WR	Mar-14	Exited (Sold to strategic)

* PE ownership as of August 2018; For the purpose of this analysis, once the PE sponsor is no longer a majority controlling shareholder of a company, or if a company files for a bankruptcy protection, and if the original PE sponsor sells off a majority stake to another PE firm or a strategic investor, we would consider these events as a PE exit, although it may not be considered a "clean" full exit or a completely realized investment from the PE standpoint.

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