IN Front

The Education Industry: 2018

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BMO Capital Markets

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Key Investment Considerations

The U.S. private sector education market should see growth accelerate. This $122 billion industry—serving the childcare, K-12, postsecondary, and corporate training segments—is a small component (roughly 8.1%) of the estimated $1.5 trillion to be spent on education in the U.S. in 2018. However, we believe private sector education has had a major impact on how traditional providers operate (e.g., greater acceptance of online education). Although annual growth slowed earlier this decade—owing to economic and regulatory issues, among others—we believe growth rates are starting to recover, though not to mid- to high-single-digit rates seen in the sector's heyday last decade. We project U.S. private sector education revenues will increase at a 2.7% compound annual growth rate (CAGR) over the next five years, reaching roughly $139 billion in 2023, and generating about 8.4% market share.

We believe the industry has many underlying growth drivers. We are still bullish on the long-term prospects for all the subsectors within the education industry. We believe private sector education could gain positive momentum from factors such as increased recognition of the benefits of early childhood education, the growing importance of accountability and education reform, rising awareness of the advantage of more education for one's lifetime earnings potential, and the expansion of addressable markets through technology (i.e., online learning). However, we caution investors that the sector does have some regulatory and related pressures even for those not directly serving government clients.

Contrary to prior popular belief, the economy does matter. In our view, the past two downturns have shown us that the acyclical theory of education may have been incorrect. Anecdotal evidence shows some companies cut back somewhat on expanding their worksite childcare offerings, as recruiting and retention perks became less of a priority in a downturn. State and local budget pressures forced severe education funding cuts, limiting what had been growth for those serving K-12 public schools. Conversely, these same limitations halted some advances by not-for-profit postsecondary institutions (e.g., online expansion) and made them weaker competitors just when demand for programs—which tend to be countercyclical—increased. We note, however, the not-for-profit sector has regained much of the "share" lost in the Great Recession. Revenue for corporate training providers declined because, in many cases, this training was considered a discretionary expense. As the economic expansion matures, private sector worksite childcare, K-12, and corporate training should continue to benefit, though private sector postsecondary schools may lag.

We believe technology is a key enabler and differentiator. Education providers that use technology as part of their service delivery should continue to outperform. In certain sectors, particularly postsecondary, an online delivery model has become more accepted and fewer quality-related questions are being asked (some argue that quality is better online owing to real-time updates and customization ability). While we do not envision online education ever fully replacing classroom-based learning, traditional education providers that smartly incorporate technology in their existing offerings—known as blended learning—should have a competitive advantage. Within the K-12 sector, technology is now virtually ubiquitous in every classroom, while inroads have also been made via "virtual schools," though we do not forecast the same type of online penetration as seen in the postsecondary sector. The growth of external services providers in the postsecondary sector (known as online program management firms, or OPMs) has made it much easier for traditional institutions to expand their online presence. We also see greater acceptance of blended learning in the corporate training world, though it is more often used as a replacement for the traditional instructor-led training (ILT) model.

Childcare: a "later cycle" segment. An improvement in demographics (e.g., population under five, dual income couples with children under six) is helping to spur growth. This, along with the greater recognition of the importance of early education and potentially more government funding, should continue to underlie steady growth in this sector. Childcare centers run by private sector providers—which represent about half the market, by our estimates—have been gaining share, and should continue to do so. This especially holds true for corporate-sponsored childcare, which tends to be later cycle, as more employers use this "perk" to improve employee recruitment and retention.

K-12: the largest but riskiest opportunity. A fundamental change has occurred in this sector, in our view, as the focus on improving quality has overtaken demographics as a key growth driver. Given that U.S. K-12 performance has lagged that of many other countries, this trend should continue, in our view. We believe education technology (ed-tech) has the greatest opportunity to make radical changes in this sector. However, capital issues remain a concern, despite increases in state and local tax revenues. In addition, K-12 could also be the riskiest investment sector, owing to heavy political and public pressures, as seen with opposition in certain areas within the school-management sector (e.g., charter schools).

Postsecondary: the worst may be over for private sector colleges, though the recovery may take some time. The latter part of last decade was among the best periods ever for private sector postsecondary schools, with strengthening enrollment growth owing to the subpar employment market and funding constraints for most traditional schools. However, enrollment has declined since peaking in fall 2010, and will likely continue to do so in the near term, though to a lesser extent. While many of the drivers of this decline have passed (e.g., regulatory changes such as the gainful employment rule – now proposed to be rescinded), others, such as concerns over the value proposition of higher education, may linger. Yet this issue does not affect only the private sector, as seen by pressure on not-for-profit schools to rein in tuition and fees. Competition is also intensifying as not-for-profits target working adult students—a space traditionally dominated by the private sector—through online and on-campus programs. Investments in third-party enablers (companies that help traditional institutions put programs online) and student lifecycle services (e.g., enrollment management) may be better near-term opportunities.

Corporate training: traditionally a later-cycle segment. The past two recessions have shown that corporations considered some training to be discretionary, with many reducing budgets as part of broader cost-cutting measures. Nevertheless, we still believe this sector's secular growth drivers—such as the importance of an education in moving up the career ladder and greater acceptance of life-long learning—are as strong as ever. In addition, the shift to less expensive models (e.g., software as a service) could lessen the adverse economic impacts in the next downturn. As the economic expansion matures, corporate training could be among the fastest-growing segments within the education industry.

Regulatory and related risks. Education, similar to healthcare, is a highly regulated industry. While the private sector plays an important role as a funding source—particularly in the childcare and corporate training markets—federal, state, and local governments play an ever greater role in the K-12 and postsecondary sectors given that they represent the bulk of funding in these areas. These monies come with "lots of strings attached," and understanding the myriad regulations and their ramifications is crucial to successful investments in this space.

We would like to thank Diego Aguirre for his invaluable assistance in creating this report.

Education Industry Overview

Stock performance varies by education subsector

While the bulk of the historical market capitalization within education has been in the traditional postsecondary space, there is a wide variety of niches within this industry. Given myriad underlying drivers (to be discussed in detail in this report), the stock performances within each subsector do not always move together. Nevertheless, there has been some volatility over the years driven by both operating performance and regulatory issues. The sector has seen stronger performance leading into and under the Trump administration.

Exhibit 1: BMO Capital Markets Education Index vs. Market Indices (2004-2018YTD)

Sector	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018 (YTD)
PreK-12	N.A.	N.A.	N.A.	N.A.	-61.1%	119.7%	-1.0%	-12.2%	-1.4%	41.3%	7.1%	5.9%	4.8%	-7.3%	7.4%
Postsecondary	0.1%	-17.3%	3.9%	60.8%	-4.5%	17.6%	-9.7%	-28.0%	-33.8%	44.1%	-4.1%	-36.4%	0.0%	-4.2%	34.4%
Corporate Training	14.2%	1.7%	28.3%	-57.7%	-57.7%	40.1%	36.0%	-1.4%	52.3%	44.3%	-2.6%	-26.0%	20.4%	-9.6%	-18.8%
Education Technology	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	-31.9%	-44.7%	-44.7%	9.7%	69.3%	22.6%
International	N.A.	N.A.	N.A.	140.3%	-31.9%	49.1%	-12.1%	-35.7%	-5.4%	46.8%	12.1%	-10.4%	38.9%	35.4%	-20.9%
Education industry	**-6.0%**	**5.0%**	**10.8%**	**108.9%**	**-25.5%**	**8.1%**	**3.1%**	**-28.3%**	**-7.1%**	**6.4%**	**-15.2%**	**-16.5%**	**22.5%**	**29.3%**	**7.4%**

N.A. – Not Available. Note: The BMO Capital Markets Education Index represents the median return for the following publicly traded education companies: AMB, APEI, ATAI, ATGE, BFAM, BLKB, CHGG, COE, CPLA, CSOD, DL, EDU, FC, GPX, HLG, HMHC, INST, LAUR, LOPE, LRN, LTRE, NORD, RST, SCHL, STRA, TAL, TEDU, TWOU, ESTC3-BR, KORT3-BR, NR7-SES, NVT-ASX, SEER3-BR. All returns exclude dividends. 2018 year-to-date as of August 20, 2018. N.A. – Not Available. Source: FactSet Research and BMO Capital Markets

Diversity is an attractive feature of investing in education

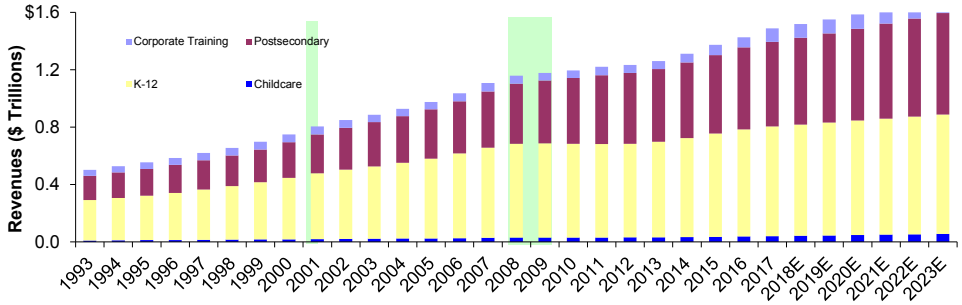
While public investors may have soured a bit owing to the issues faced by the private sector postsecondary (i.e., college) sector, there have been many successful investments in the industry from both a public and private perspective. We maintain a bullish longer-term outlook for investment opportunities throughout the education industry in general; the specific growth drivers for each sector are discussed in depth later in this report. In addition, we believe the education industry is among the most diversified within any vertical, providing the opportunity for investors to choose different paths based on their beliefs about the direction of the macro environment and other issues.

Size of the Education Industry

Estimated $1.52 trillion to be spent on education in the U.S. in 2018; estimated 1.9% CAGR through 2023

No matter how it is defined, the education industry represents a significant amount of spending. We estimate that roughly $1.52 trillion will be spent on educational services in the U.S. in 2018; this would represent about 6.7% of estimated GDP for the year. We note that economic downturns have had varied impacts on each sector: slowing for some (K-12, corporate training), while accelerating growth for others (postsecondary). We project that the education industry will grow at roughly a 1.9% annual rate through 2023, when total spending is expected to reach roughly $1.65 trillion.

Exhibit 2: U.S. Education Industry Revenues (1993–2023E)



Note: Shaded area represents recessionary period. Source: BMO Capital Markets estimates, U.S. Department of Education National Center for Education Statistics and Training Magazine.

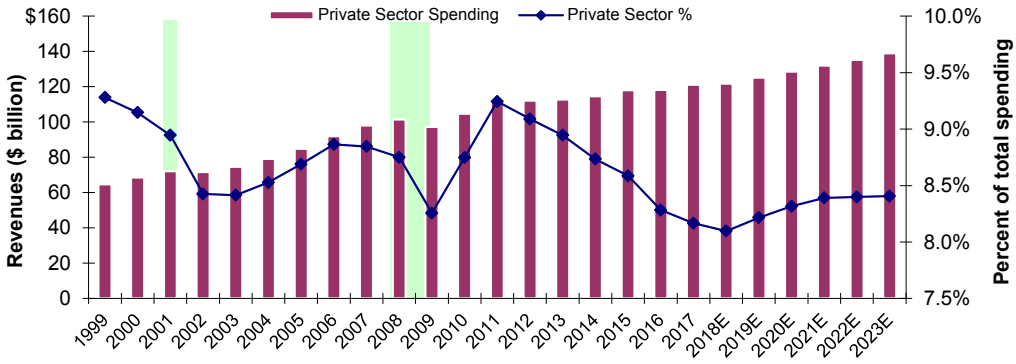
Private sector: estimated $122 billion to be spent in 2018 or about 8.1% of total spending

Although the entire industry may be vast, the private sector portion is still relatively small. The past two decades or so have seen the birth of the K-12 alternative school movement, the explosion (and then contraction) of the private postsecondary sector, and the creation of the e-learning sector. Based on data compiled from a number of different sources, we estimate that private sector education will generate roughly $122 billion in revenues in 2018, or about 8.1% of the roughly $1.52 trillion expected to be spent on U.S. education for the year.

Private sector: projected 2.7% CAGR through 2023 and a market share at 8.4%

While some portions of the sector are countercyclical, in our view, i.e., postsecondary, much of the private education sector has cyclical traits. Certain economically sensitive sectors (e.g., K-12, corporate training) could see solid growth over the next few years, assuming continued economic growth, and potentially offsetting the expected decline in the postsecondary sector in the early part of this period as the industry continues to transition to better comply with recent regulatory and market changes. As such, we forecast that private sector education revenues will grow at a 2.7% annual rate through 2023, reaching roughly $139 billion in revenues that year. This would equate to about 8.4% of the roughly $1.65 trillion in total education spending expected in 2023.

Exhibit 3: U.S. Private Sector Education Industry Revenues (1999–2023)



Note: Shaded area represents recessionary period. Source: BMO Capital Markets estimates, U.S. Department of Education National Center for Education Statistics, Training Magazine and Eduventures.

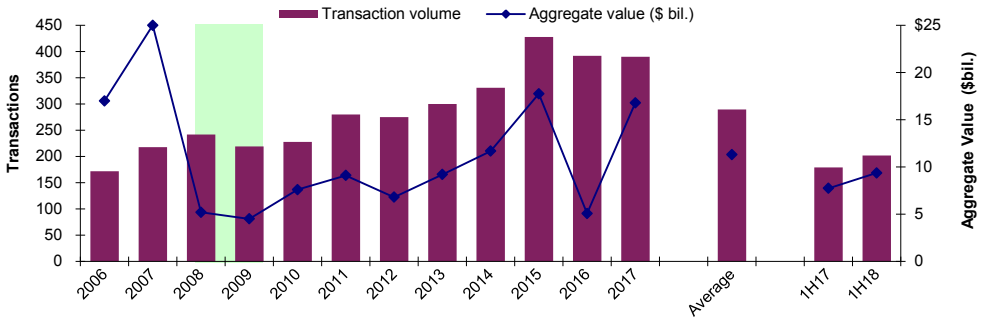
Investments and M&A Activity in the Education Industry

Throughout the past few decades, there has been strong interest in investing in the sector at the venture and early-stage levels. While a few of these companies have been successful public entities in their own right, many have sold to larger companies. Since the end of the Great Recession, we have seen an increase in the number of deals in the education space, given the sheer size of this market, the issues facing the various segments, and the recognition of the importance of education to future success. Many of these investments also contain the additional social benefit aspect of "doing good while doing well."

2015 was a record year in terms of deal volume for education; 2018 to date has seen more deal volume

There has been an increase of M&A activity in the education sector, and 2015 was a record year (in terms of volume) with 428 transactions worth nearly $18 billion. While volume declined a bit in the following years, there has been a pick-up in transactions YTD this year.

Exhibit 4: M&A Activity in the Education Industry (2006-2018 YTD)

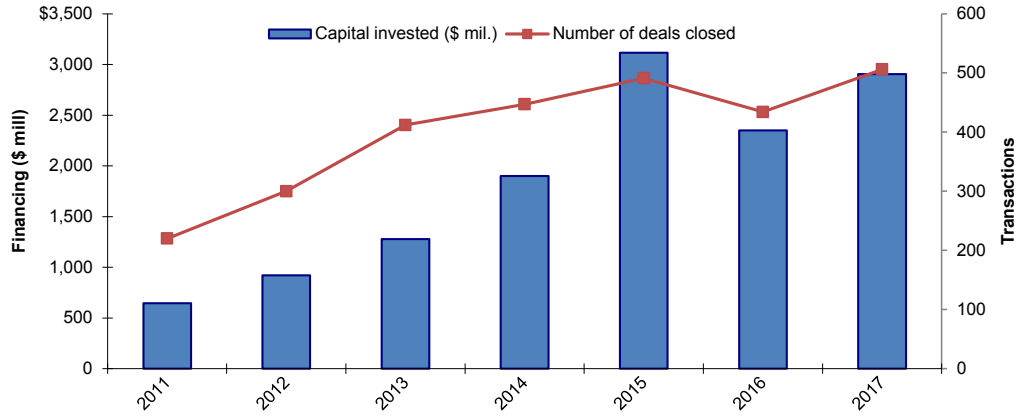


Note: Shaded area represents recessionary period. Source: Berkery Noyes and BMO Capital Markets.

2015 was a record year for VC-backed ed-tech investments, though 2017 came close

Many of the recent investments and transactions in education have been in privately held education-technology ("ed-tech") companies, ranging from early to later stage. CB Insights tracks venture capital investments in U.S.-based education start-ups. 2015 was a record year for education technology (ed-tech) investing, with over $3.1 billion in venture investments. Deal activity declined a bit in 2016 but recovered in 2017, registering $2.9 billion.

Exhibit 5: Venture Capital Investments in U.S.-Based Education Technology Companies (2011-2017)



Source: CB Insights and BMO Capital Markets.

While ed-tech may be a subsector of the education industry, others provide estimates of the sector on a stand-alone basis.

- According to the Educational Equipment and Software: Global Markets report by BCC Research, the global market for educational technology (hardware and software) is expected to grow at a 14% CAGR between 2017 and 2022. Educational hardware and software are projected to grow by CAGRs of 15.4% and 16.8%, respectively, over that period, with the combined global market estimated to reach $110.9 billion.
- According to EdTechXGlobal, in partnership with IBIS Capital, a media investment advisory firm, education technology is becoming a global phenomenon as distribution and platforms scale internationally. This market is projected to grow at 17% per annum, to $252 billion by 2020.
- According to research firm Markets and Markets, the "Ed Tech and Smart Classroom" market is estimated to grow from $43.27 billion in 2015 to $93.76 billion by 2020 - a 16.7% CAGR.

Recent increase in ed-tech IPOs

We have also seen an increase in ed-tech IPOs in recent years.

Exhibit 6: Recent Ed-Tech IPOs (2017-2018)

Announced Date	Target/Issuer	Exchange:Ticker	Total Transaction Value ($USDmm)
05/14/2018	China 21st Century Education Group Limited (SEHK:1598)	SEHK:1598	52
04/30/2018	Kingsley Edugroup Limited (SEHK:8105)	SEHK:8105	10
04/27/2018	Top Education Group Ltd (SEHK:1752)	SEHK:1752	26
04/16/2018	Pluralsight, Inc. (NasdaqGS:PS)	NasdaqGS:PS	311
03/13/2018	China Xinhua Education Group Limited (SEHK:2779)	SEHK:2779	166
03/02/2018	OneSmart International Education Group Limited (NYSE:ONE)	NYSE:ONE	179
02/23/2018	Sunlands Online Education Group (NYSE:STG)	NYSE:STG	150
12/13/2017	ReadCloud Limited (ASX:RCL)	ASX:RCL	5
12/04/2017	China Education Group Holdings Limited (SEHK:839)	SEHK:839	413
11/13/2017	SuRaLa Net Co.,Ltd. (TSE:3998)	TSE:3998	4
10/13/2017	Four Seasons Education (Cayman) Inc. (NYSE:FEDU)	NYSE:FEDU	101
09/22/2017	RISE Education Cayman Ltd (NasdaqGM:REDU)	NasdaqGM:REDU	160
08/30/2017	RYB Education, Inc. (NYSE:RYB)	NYSE:RYB	144
08/21/2017	Siddharth Education Services Limited (BSE:540736)	BSE:540736	2
06/30/2017	Netex Knowledge Factory S.A. (BME:NTX)	BME:NTX	5
04/18/2017	Bright Scholar Education Holdings Limited (NYSE:BEDU)	NYSE:BEDU	158
04/05/2017	China New Higher Education Group Limited (SEHK:2001)	SEHK:2001	102
02/15/2017	China YuHua Education Corporation Limited (SEHK:6169)	SEHK:6169	198
01/26/2017	Dadi Education Holdings Limited (SEHK:8417)	SEHK:8417	19
01/12/2017	Wisdom Education International Holdings Company Limited (SEHK:6068)	SEHK:6068	110

Source: S&P Capital IQ and BMO Capital Markets.

Within the broader education sector, among the more notable transactions in recent years:

- **Childcare.** One of the more interesting stories was the rise and fall of Australian-based childcare provider ABC Learning Centers (ABS.ASX). The company had been very active in the U.S. and U.K. markets, acquiring (among others) The Learning Care Group (January 2006) for US$153.5 million and La Petite Academy (January 2007) for US$339.4 million. Unfortunately, ABC ran into some trouble after this aggressive expansion strategy, and, in late June 2008, sold 60% of its U.S. business to Morgan Stanley Private Equity (MS), using the proceeds to pay down debt. This was not enough and the company collapsed into receivership (i.e., bankruptcy) in November 2008. Since then, most of its other units have been sold as well. Private equity sponsors have acquired some of the largest operators: Knowledge Universe (acquired by Partners Group in July 2015) and Learning Care Group (acquired by American Securities in May 2014).
- **K-12.** In December 2006, Irish educational software publisher Riverdeep acquired U.S. textbook publisher Houghton Mifflin for $3.4 billion, becoming Houghton Mifflin Riverdeep. In December 2007, it acquired the U.S. business operations of Harcourt Education from Reed-Elsevier (RUK) for $4 billion. The publishing company is now known as Houghton Mifflin Harcourt (HMHC), which filed for bankruptcy in May 2012, quickly recovered, and went public in November 2013.

- **Postsecondary.** Earlier this decade, the rate of school acquisitions by publicly held companies came to a halt, owing to regulatory issues and deteriorating fundamentals. However, we have seen some interest once again, with the most high profile transaction being the August 2018 merger of Strayer Education and Capella Education, now known as Strategic Education (STRA). In addition, we have seen many of the school operators go beyond the traditional school space to reduce their reliance on Title IV funding (U.S. government-funded financial aid), such as the July 2016 acquisition of anti-money laundering trainer ACAMS by DeVry Education Group (now Adtalem Global Education or ATGE).
- **Corporate training.** In May 2007, SkillSoft (a public company at the time) acquired NETg from Thomson Corporation for $270 million, creating one of the world's largest providers of e-learning content for the corporate sector. In May 2010, SkillSoft was taken private by a consortium of private equity firms, including Berkshire Partners, Bain Capital, and Advent International, for $1.2 billion. In April 2014, the company was sold to private equity firm Charterhouse Capital Partners for a reported $2 billion.

We provide detailed merger and acquisition activity data for each sector in the respective sections throughout this report.

Education IPOs have shifted from schools to service providers

There are a number of ways for investors in publicly held companies to invest in the education industry. The landscape has changed over time with the dot.com era being populated by IPOs of e-learning providers—few of which are still public in their own right today—to the increase in postsecondary school IPOs during the latter part of last decade. In recent years, we have seen a shift of IPOs from school operators to services providers; we note that some of the recent deals (e.g., 2U [TWOU] and Pluralsight [PS]) were not necessarily marketed as "education plays." A list of recent U.S. education IPOs can be found below.

Exhibit 7: Public Offerings of U.S. Education Companies (2006-2018)

Date	Company Name/Ticker	Description	Stock Market
Nov-06	Capella Education (CPLA)	Online postsecondary provider	US (NASDAQ)
Nov-07	American Public Education (APEI)	Online postsecondary provider	US (NASDAQ)
Dec-07	K12 Inc. (LRN)	Online K-12 provider	US (NYSE)
Nov-08	Grand Canyon Education (LOPE)	(Mostly) Online postsecondary provider	US (NASDAQ)
Apr-09	Bridgepoint Education (BPI)	(Mostly) Online postsecondary provider	US (NYSE)
Oct-09	Education Management (EDMC)	Postsecondary provider	US (NASDAQ)
Nov-09	Archipelago Learning (ARCL)	Online K-12 provider	US (NASDAQ)
Jan-13	Bright Horizons Family Solutions (BFAM)	Early childhood education provider	US (NYSE)
Nov-13	Chegg (CHGG)	Postsecondary textbook rental and student hub	US (NYSE)
Nov-13	Houghton Mifflin Harcourt (HMHC)	K-12 education publisher	US (NASDAQ)
Mar-14	2U (TWOU)	Postsecondary education software as a service	US (NASDAQ)
Nov-15	Instructure, Inc. (INST)	K-12/Postsecondary/Corporate LMS	US (NYSE)
Feb-17	Laureate Education (LAUR)	Global postsecondary provider	US (NASDAQ)
May-18	Pluralsight (PS)	Online professional learning	US (NASDAQ)

Source: BMO Capital Markets and Capital IQ.

Non-U.S. education companies going public

There also has been a number of public offerings of non-U.S. education companies in the U.S. and in their domestic markets. A list of recent foreign company IPOs can be found below.

Exhibit 8: Public Offerings of Non-U.S. Education Companies: (2006-2016)

Date	Company Name/Ticker	Country of Origin	Sector
Sep-06	New Oriental Education (EDU)	China	Postsecondary
Mar-07	Anhanguera Educacional Participacoes SA (AEDU11.BR)	Brazil	Postsecondary
Aug-07	Estacio Participacoes SA (ESTC11.BR)	Brazil	Postsecondary
Aug-07	Kroton Educacional SA (KROT11.BR)	Brazil	Postsecondary
Oct-07	Sistema Educacional Brasileiro (SEBB11.BR)	Brazil	K-12/Postsecondary
Oct-07	Noah Education Holdings, Ltd. (NED)	China	K-12
Nov-07	Al-Khaleej Training and Education Company (SASE:4290)	Saudi Arabia	Corporate Training
Dec-07	Early Learning Services Limited (ASX:ELY)	Australia	Childcare
Dec-07	ChinaEDU Corp. (CEDU)	China	K-12/Postsecondary
Jan-08	ATA Inc. (ATAI)	China	Postsecondary
Apr-08	CIBT Education Group (MBA)	China	Postsecondary
Jun-08	Chungdahm Learning, Inc. (KOSE:A096240)	Korea	K-12/Postsecondary/Corporate
Jun-08	Visang Education Inc (KOSE:A100220)	Korea	K-12/Postsecondary
Jul-08	China Distance Education Holdings, Ltd. (DL)	China	Postsecondary
Aug-08	Seigakusya Company, Limited (JASDAQ:2179)	Japan	K-12
May-10	Masterskill Education Group	Malaysia	Postsecondary
Aug-10	Ambow Education (AMBO)	China	K-12/Postsecondary/Corporate
Oct-10	Global Education & Technology Group Ltd (GEDU)	China	K-12/Postsecondary
Oct-10	TAL Education Group (XRS)	China	K-12
Nov-10	Xueda Education Group (XUE)	China	K-12
Mar-11	APFT Berhad (KLSE:APFT)	Malaysia	Postsecondary
Jul-11	Abril Educação S.A. (BOVESPA:BRE11)	Brazil	Publishing
Jul-11	Prestariang Berhad (KLSE: PRESHD)	Malaysia	Postsecondary
Aug-11	Tree House Education & Accessories Limited (BSE:533540)	India	K-12
Apr-12	MT Educare Limited (BSE:534312)	India	Test Prep / K-12
Aug-12	Success Holdings Co. Ltd. (JASDAQ:605))	Japan	Childcare
Aug-12	LZYE Group plc (AIM:LZYE)	Hong Kong	Childcare
Feb-13	Overseas Education Group (SGX:RQ1)	Singapore	K-12
Oct-13	GAEC Educação S.A. (BOVESPA:ANIM3)	Brazil	Postsecondary
Oct-13	Ser Educacional S.A. (BOVESPA:SEER3)	Brazil	Postsecondary
Dec-13	Affinity Education Group Limited (ASX:AFJ)	Australia	Childcare
Dec-13	Vocation Limited (ASX:VET)	Australia	Postsecondary
Mar-14	Nord Anglia Education (NORD)	Hong Kong	K-12 school operator
Apr-14	Tarena International (TEDU)	China	Corporate
May-14	Intueri Education Group Limited (NZSE:IQE)	New Zealand	Postsecondary
Jun-14	RareJob Inc. (TSE:6096)	Japan	K-12/Postsecondary/Corporate
Jul-14	3P Learning Limited (ASX:3PL)	Australia	K-12
Aug-14	Medaphor Group Plc (AIM:MED)	UK	Corporate
Nov-14	China Maple Leaf Educational Systems Limited (SEHK:1317)	China	Childcare / K-12
Dec-14	Australian Careers Network Limited (ASX:ACO)	Australia	Postsecondary
Jul-15	Hailiang Education Group Inc. (NasdaqGM:HLG)	China	K-12
Jul-15	Itokuro Inc. (TSE:6049)	Japan	K-12
Nov-15	Instructure, Inc. (NYSE:INST)	United States	K-12/Postsecondary/Corporate
Nov-15	IDP Education Limited (ASX:IEL)	Australia	Postsecondary
Jan-16	Virscend Education Company Limited (SEHK:1565)	China	K-12
Feb-16	Sylph Education Solutions Limited (BSE:539682)	India	Corporate
Mar-16	LITALICO, Inc. (TSE:6187)	Japan	K-12
Mar-16	Global Group .Co. Ltd. (TSE:6189)	Japan	Childcare
Jun-16	China Online Education Group (NYSE:COE)	China	K-12
Jun-16	Shanti Educational Initiatives Limited (BSE:539921)	India	K-12
Jun-16	AcadeMedia AB (OM:ACAD)	Sweden	K-12
Sep-16	Internationella Engelska Skolan i Sverige Holdings II AB (publ) (OM:ENG)	Sweden	K-12
Nov-16	Goldway Education Group Limited (SEHK:8160)	China	K-12
Dec-16	S Chand And Company Limited (BSE:540497)	India	K-12
Dec-16	ReTech Technology Co., Limited (ASX:RTE)	Australia	Corporate

Source: BMO Capital Markets and Capital IQ.

Exhibit 9: Public Offerings of Non-U.S. Education Companies: (2017-2018YTD)

Date	Company Name/Ticker	Country of Origin	Sector
Jan-17	Wisdom Education International Holdings Company Limited (SEHK:6068)	China	K-12
Jan-17	Dadi Education Holdings Limited (SEHK:8417)	China	K-12/Postsecondary
Feb-17	China YuHua Education Corporation Limited (SEHK:6169)	China	K-12
Apr-17	China New Higher Education Group Limited (SEHK:2001)	China	Postsecondary
Apr-17	Beijing Career International Co., Ltd. (SZSE:300662)	China	Corporate
Apr-17	Bright Scholar Education Holdings Limited (NYSE:BEDU)	China	Childcare/K-12
Jun-17	Netex Knowledge Factory S.A. (BME:NTX)	Spain	Corporate/Postsecondary
Aug-17	Siddharth Education Services Limited (BSE:540736)	India	Corporate
Aug-17	RYB Education, Inc. (NYSE:RYB)	China	Childcare
Sep-17	RISE Education Cayman Ltd (NasdaqGM:REDU)	China	K-12
Oct-17	Four Seasons Education (Cayman) Inc. (NYSE:FEDU)	China	K-12
Nov-17	SuRaLa Net Co.,Ltd. (TSE:3998)	Japan	K-12
Dec-17	China Education Group Holdings Limited (SEHK:839)	China	Corporate/Postsecondary
Feb-18	Arihant Institute Limited (BSE:541401)	India	Corporate
Feb-18	Sunlands Online Education Group (NYSE:STG)	China	Corporate/Postsecondary
Mar-18	OneSmart International Education Group Limited (NYSE:ONE)	China	K-12
Mar-18	China Xinhua Education Group Limited (SEHK:2779)	China	Postsecondary
Apr-18	Top Education Group Ltd (SEHK:1752)	Australia	Postsecondary
Apr-18	Kingsley Edugroup Limited (SEHK:8105)	Malaysia	Childcare/K-12/Postsecondary
May-18	China 21st Century Education Group Limited (SEHK:1598)	China	K-12/Postsecondary
May-18	Puxin Limited (NYSE:NEW)	China	K-12
Jun-18	Tianli Education International Holdings Limited (SEHK:1773)	China	K-12
Jun-18	BExcellent Group Holdings Limited (SEHK:1775)	China	K-12
Jul-18	Bojun Education Company Limited (SEHK:1758)	China	K-12
Jul-18	Hope Education Group Co., Ltd. (SEHK:1765)	China	Postsecondary

Note: 2018 YTD through July 2018. Source: BMO Capital Markets and Capital IQ.

Recent "going private" transactions

While the past few years has seen new education companies become available to public equity investors, a number of companies in the sector went the opposite way via "going private" transactions. Several of those transactions are summarized below.

Exhibit 10: Recent "Going Private" Transactions of Education Companies (2006–2017)

Date Closed	Company Name	Description	Buyer(s)	Transaction Value ($ mil.)
Jun-06	Education Management	Postsecondary school operator	Providence Capital Partners and Goldman Sachs Capital Partners	$3,200
Sep-06	Concorde Career Colleges	Postsecondary school operator	Liberty Partners	99
Jun-07	Educate	K12 supplmental education services provider	Investor group, including Sterling Capital Partners and Citigroup Private Equity	535
Jul-07	eCollege	e-learning provider	Pearson Education (PSO)	538
Aug-07	Laureate Education	International postsecondary school operator	Investor group led by CEO Doug Becker and a consortium, including Kohlberg Kravis Roberts & Co. (KKR), Citi Private Equity, and S.A.C. Capital Management	3,820
May-08	Bright Horizons Family Solutions	Worksite childcare provider	Bain Capital Partners, LLC.	1,300
Jul-09	SumTotal Systems	Corporate training provider	Vista Equity Partners	160
Mar-10	Plato Learning	K12 educational software provider	Thoma Bravo LLC	141
May-10	SkillSoft	Corporate training provider	Berkshire Partners LLC, Advent International Corporation and Bain Capital Partners, LLC	1,200
Aug-11	Nobel Learning	Early childcare and K-12 operator	Leeds Equity Partners	149
Oct-11	Blackboard	Education learning management systems	Providence Equity Partners	1,743
Oct-11	Renaissance Learning	K12 professional development services, curriculum and customized classes	Permira	437
Dec-11	Global Education and Technology	Foreign language training and test preparation	Pearson	155
May-12	Archipelago Learning	Provides SaaS education products	PLATO Learning (Thoma Bravo LLC)	303
Mar-13	McGraw-Hill Education	K12, postsecondary and professional educational publishing and services	Apollo Global Management (APO)	2,400
May-16	Apollo Education Group	Postsecondary school operator	Apollo Global Mgmt.; Vistria	541
Jun-16	Higher One Holdings, Inc.	Education financial technology	Blackboard Inc.	261
Aug-17	Nord Anglia Education	Global K12 school operator	Funds affiliated with Canada Pension Plan Investment Board and Baring Private Equity Asia	4,300

Source: BMO Capital Markets and company reports.

Impact of Economic Cycles

The economy still matters

Interestingly, although many had thought the performance of the education sector had little correlation with the economy, in our view the experience over recent cycles has proven this to be incorrect.

- **Childcare.** We believe workplace childcare has proved to be a relatively inexpensive way to maintain employee morale in challenging operating environments. Corporate-sponsored childcare also appears to be somewhat of a later-cycle play, owing to the long time frame (as much as three to four years) between an initial sales contact and the opening of a new center. In addition, purchase decisions may often be delayed, owing to budget constraints.
- **K-12.** K-12 spending growth had been somewhat stable through most prior U.S. recessions and spending levels generally improved during the ensuing recoveries. However, state funding fell in both FY2009 and FY2010 with the fallout from the Great Recession (December 2007–June 2009) as state and local tax revenues decreased, though offset somewhat with federal stimulus funding. While much of that stimulus is now gone, state and local tax revenues have rebounded, helping to spur some growth in the sector, including one its best years ever in FY2015.
- **Postsecondary.** The Great Recession was a boon for this sector, which generated stellar enrollment growth, as the sector experienced some of its historical countercyclical traits (i.e., accelerating enrollment growth and lower attrition rates). However, regulatory issues and negative publicity (among others) have hurt the private sector, which has continued to shrink since its record Fall 2010 level enrollments. While an economic recovery may help certain subsectors (e.g., graduate education), we believe traditional undergraduate trends are mostly countercyclical.
- **Corporate training.** This tends to be among the most cyclical of sectors, as corporations use training as a recruitment and retention tool, i.e., when the labor supply is plentiful during an economic downturn this becomes a discretionary expense. While somewhat later cycle, there are some signs that corporate training once again is picking up.

Regulatory Overview

Education, similar to healthcare, is a highly regulated industry. While the private sector plays an important role as a funding source—particularly in the childcare and corporate training markets—federal, state, and local governments play an ever greater role in the K-12 and postsecondary sectors. Within the discussion of each of the industry sectors in this document, we outline the specific applicable regulations that we believe are important to investors.

Education Industry Growth Drivers

Common growth drivers

Although some issues remain uncertain in the near term, we are bullish about the longer-term growth opportunities for investing within all sectors in the education industry. Although each sector has its own growth drivers and risks (which we discuss at length in the rest of this report), we believe a number of underlying trends have a broad influence on the group:

- **Importance of learning outcomes.** We believe this theme plays across all four sectors. Childcare providers are stressing the advantages of starting an education as early as possible to gain a head start before entering elementary school. K-12 providers are under pressure to improve their academic performance under mandated federal and state accountability regulations or face repercussions such as the loss of funding. Career-focused postsecondary schools try to stay ahead of changing hiring trends to enhance students' marketability. These outcomes are being stressed especially as student loan levels continue to rise. Finally, when justifying their purchases corporate training buyers have attempted to quantify the benefits derived based on potential skills improvement and other factors.
- **Growth of "blended learning."** This term often applies to the marriage of classroom-based and digital or online-based approaches. We believe classroom-based training and digital education tools each have their own merits and limitations. In our view, a blended approach can cater to the increasing student demand for greater flexibility as well as provide more personalized learning environments. We have seen blended learning approaches become well accepted in the postsecondary and corporate training areas, and it is gaining traction in the K-12 sector, in our view.
- **International demand for education.** We believe the demand for education services is notably strong outside the U.S. in both the postsecondary and K-12 sectors. This is driven by demographic booms and the rise of middle-class income populations in many developing countries, as well as the ongoing shift to service-based economies for many of these emerging countries.
- **Greater use of technology.** While the use of technology is somewhat commonplace throughout the entire education landscape, we believe the implementation of new technologies will continue to have a substantial impact on the industry. Education, in particular the K-12 sector, is notoriously a follower (as opposed to a trailblazer) when it comes to using technology. Still given the size and ongoing need for better outcomes, the use of technology will be increasingly relevant to the sector. In the postsecondary space, for example, the use of third-party "online enabler" services by colleges and universities to launch online program has been a key drive in the postsecondary space.
- **Intersection of various sectors.** Although we believe each sector within the education industry should be viewed on its own merits, we have seen selective instances where different sectors merge. This could be another growth driver for the industry overall. Examples include childcare/K-12 (e.g., childcare providers extending their programs through early elementary school), K-12/postsecondary (e.g., pre-college test preparation companies providing services to help K-12 schools acclimatize to the post-NCLB environment), postsecondary/corporate (e.g., the increasing focus on working-adult students and the growth of specialized corporate universities), and childcare/corporate training (e.g., childcare facilities catering to adult education programs in the evenings to maximize facility usage).

Risks

We identify specific risks that we believe are inherent to each education sector within the appropriate sections of this report. However, certain key risks apply to most sectors:

Regulatory risks. In our opinion, government regulation is by far the biggest risk to investing in the education industry, particularly those serving the K-12 and postsecondary markets. Although private sector companies have expanded their penetration of this industry, the public sector still dominates, whether by providing competitive services and/or potential funding. Companies generating a significant component of their revenues from the public sector could be affected by decisions that may be based more on politics or other issues than on business fundamentals. The gainful employment regulation, which has adversely affected the private sector postsecondary sector (though is in the process of being rescinded) is a perfect example of that, in our view.

Economic cyclicality. The past two economic cycles revealed the benefits, and, more importantly, the disadvantages of economic cyclicality for the education industry, in our opinion. For example, during recent recessions, postsecondary providers saw enrollment growth accelerate, as a weak job market provided fewer options to graduating high school students and greater numbers of older students went back to school to enhance their skills. Conversely, providers to the K-12 and corporate sectors saw revenues tumble as part of funding shortages and broader cost-cutting efforts. In the current economic expansion, the K12 and corporate sectors have both outperformed the postsecondary sector (for the most part).

Aggressive new entrants. We believe the increased focus on private sector education has transformed what was once a sleepy industry into one where competition has intensified. In addition to new pure-play entries in virtually every sector, competition has increased from traditional providers that expanded their reach (e.g., traditional universities growing their online and continuing education programs, publishing companies broadening their corporate training exposure), as well as more formidable privately held entities funded by private equity firms and the like. Many of these so-called "edruptors" could have sizeable impacts in the industry, in our view.

Not-for-profit competitors. We caution investors that, in certain sectors, not-for-profits have become tougher adversaries. This is becoming even more apparent in the postsecondary school market, in our view, where budgetary constraints and the rise of third-party funded "enablers" and MOOCs (Massive Open Online Courses) have led to what we believe is a tipping point of traditional schools entering the working adult and online sectors.

Headline risks. Throughout much of its history, private sector postsecondary providers have faced negative headlines unrelated to operating fundamentals, specifically the rise of allegations of impropriety in areas such as recruiting and disclosure. This, along with the filing of lawsuits, had adversely affected the stock performance of most companies in this sector as virtually all have been tainted by association. Similar "headline risks" have affected some in the private sector K-12 school sector (e.g., K12).

Impact of performance of comparable stocks. The stocks of education companies within a specific sub-sector tend to move together. As a result, negative news—whether external or operational—relating to one company could have a detrimental effect on the share prices of others. Until investors truly segment the industry's innovators from other publicly held competitors, this unwarranted negative association may continue.

Access to capital markets. An influx of private capital fueled much of the early growth in the education industry. Earlier in this decade, as these investors rationalized their current holdings, they were somewhat reluctant to inject fresh capital into the space. Although there has been an inflow of fresh capital in certain components of the industry (e.g., ed-tech), the current regulatory uncertainly has stymied that in others (e.g., postsecondary schools). Lack of liquidity had also affected the student loan market underlying the postsecondary sector as the loan securitization markets dried up.

In the remainder of this report, we analyze in detail the four major sectors in the education industry: childcare, K-12, postsecondary, and corporate training. A summary of this analysis is found below.

Exhibit 11: Summary of U.S. Education Sectors

($ Billions)	Total Spending 2018E	Priv.-Sector Rev. 2018E	Priv.-Sector Rev. 2023E	CAGR 2018-2023E	Key Growth Drivers	Risks	Effect of Economic Business Cycles
Childcare	$43.3	$26.3	$33.7	5.1%	Demographics, increasing awareness of early education benefits, tax incentives, and other positive legislation	Finding and retaining staff, competition, regulations	Potentially later-cycle, relatively little negative impact seen during last recession
K-12	775.4	28.0	31.0	2.0%	Focus on quality improvement and accountability, alternative school movement	Budgetary constraints, regulations, need to show academic improvement	Budgetary shortfalls hurt during recession; should improve as economic recovery matures
Postsecondary	589.2	59.7	65.7	1.9%	Demographics, increasing demand for skilled workers, proven earnings premium, continued influx of "older students," greater acceptance of online education	Regulatory, increasing competition (traditional universities, online enablers, MOOCs), economic expansion	Somewhat countercyclical (enrollment and tuition levels historically increase during and after a downturn)
Corporate Training	95.6	7.7	8.5	2.1%	Potentially tightening labor market, an accelerated pace of technological improvements, need to remain competitive in an increasingly global economy	Economic cyclicality, shift from instructor-led to e-learning, increasing competition from other sectors (i.e., postsecondary)	Potentially later-cycle recovery, although apparently more discretionary than previously thought
Total	**$1,503.4**	**$121.7**	**$139.0**	**2.7%**			

Note: Private sector revenues may differ somewhat from the segment private sector projections within the remainder of this report, as they may exclude certain categories. Source: BMO Capital Markets estimates, U.S. Department of Education National Center for Education Statistics, Eduventures, Gartner, Training Magazine, and Veronis Suhler Stevenson.

Early Child Care: A Small but Steady Market

U.S. Early Child Care Market Overview

We believe several growth drivers for childcare providers (which we outline below) remain in force, as the industry has recovered from the adverse impact of the Great Recession on supply/demand and funding levels for early child care, and is doing well in the face of improving demographic factors. We caution investors, however, that this industry is highly fragmented, and few companies have been able to achieve significant scale. We are aware of only one publicly traded company in this segment in the U.S., Bright Horizons Family Solutions (BFAM), which returned to the public markets in February 2013 after being taken private in a $1.3 billion deal in 2008.

Center-based child care has gained share since 1997, though most of it early in that period

According to childstats.gov, relatives provide the bulk of "child care" for children with working mothers. However, since 1997, center-based care has expanded its share from 20.4% to 24.1% in 2011 (latest data available), although it has remained relatively stable since the peak of 24.3% in 2002. We will focus this section of our report on center-based care and the like.

Exhibit 12: Primary Childcare Arrangements for Children 0-4 With Employed Mothers (1997-2011)

	1997	1999	2002	2005	2010	2011
Relative care:						
Mother care	3.2%	3.0%	3.2%	4.4%	4.4%	3.6%
Father care	17.7%	17.1%	17.5%	17.3%	18.6%	19.5%
Grandparent care	17.5%	19.7%	18.6%	19.6%	19.4%	20.5%
Other relative care	7.4%	8.0%	6.2%	6.6%	5.8%	5.3%
Subtotal	45.8%	47.8%	45.5%	47.9%	48.2%	48.9%
Other nonrelative care	20.2%	18.8%	17.2%	16.0%	13.5%	13.1%
Center-based care	**20.4%**	**21.0%**	**24.3%**	**23.8%**	**23.7%**	**24.1%**
Other	13.7%	12.4%	13.0%	12.0%	14.1%	14.0%

Note: Mother and father care each refers to care while the mother worked. Other relatives include siblings and other relatives. Center-based care includes day care centers, nursery schools, preschools, and Head Start programs. Other nonrelative care includes family day care providers, in-home babysitters, and other nonrelatives providing care in either the child's or provider's home. Source: www.childstats.gov.

According to Private Enterprise and Public Education, published in 2013, researcher Todd Grindal estimates that about half the children under the age of five in the U.S. that regularly attend child care do so in non-public (i.e., private) programs.

Limited and conflicting reports regarding market size

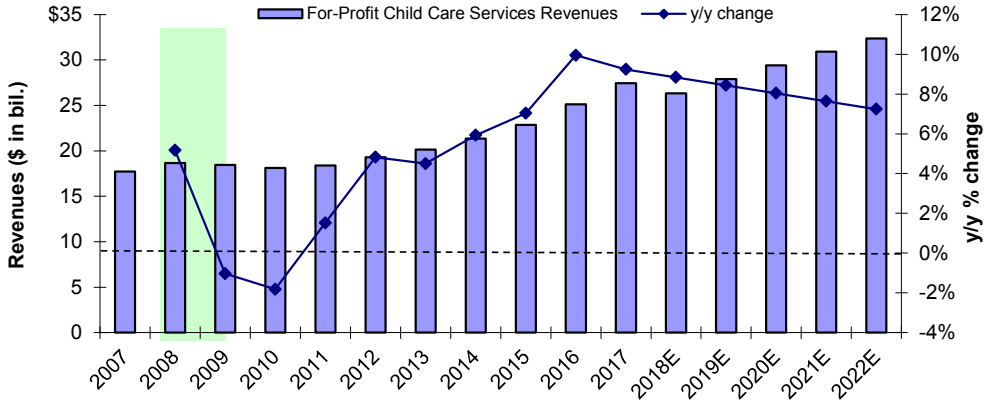
Information about the size of the current childcare market is limited. Some of the estimates include:

- An April 2018 report by First Research found that the roughly 54,000 commercial childcare facilities in the U.S. with combined revenue of $25 billion, plus 21,000 facilities run by non-profit organizations with combined revenue of about $13 billion.
- An April 2018 report by Ibis World estimated that the U.S. childcare industry will generate $48 billion in revenues in 2018 and grow at a 1.3% CAGR since 2013. The research firm projects growth to slow slightly over the next five years
- Per the U.S. Census Bureau, the Child Day Care Services industry (NAICS 6244) generated roughly $40.7 billion in revenues in 2017 – up 6.7% from 2016. Of that, $27.4 billion was generated by taxable organizations, which we use as our base for the for-profit childcare market; this was a 9.2% year-over-year increase from 2016, among the highest seen this decade.

We forecast steady growth over the next few years, driven primarily by improving demographics, more two-working-parent families, wage inflation – which should drive continued tuition increases – and the growing efforts of legislators to fund these programs. We forecast U.S. for-profit childcare expenditures to grow roughly 5.5% annually, reaching about $32.4 billion in 2022.

Projected 5.5% CAGR through 2022

Exhibit 13: For-Profit Childcare Market (2007-2022E)



Note: Shaded area represents recessionary period. Source: BMO Capital Markets estimates and U.S. Census Bureau.

Center-based childcare segments

According to IBIS, the center-based childcare market can be segmented as follows:

- **Child day care services (50% of revenues):** These services are primarily offered outside the home in childcare service centers (include some in-house baby-sitting). These are licensed facilities that offer a large number of enrollments. The average annual cost of a full-time center-based child care for a four-year-old in 2017 (latest data available per Child Care Aware of America) ranged from $7,290 in Tennessee to $14,256 in Massachusetts. Infant care is even higher; per a September 2016 report entitled The New America Care Report, infant care in centers is 12% higher than for older children, with annual full-time care ranging from $6,590 in Arkansas (about 15% of median income) to $16,682 in Massachusetts (about one-quarter of the median income).
- **Preschool programs (40% of revenues):** Child care centers with an educational focus, such as preschools and Montessori programs, are a popular product in the industry. These provide targeted educational programs primarily to children four years old; these are typically more expensive than standard child care.
- **Government contributions (4% of revenues):** This represents contributions from the federal government to operators. Federal grants can account for upwards of 25% of revenues for non-profit day care organizations. The main funding sources are the Child Care Development Block Grant, and the Head Start program and Social Service program. There are also tax credits available for families.
- **Other (6% of revenues):** Other sources include private donations from individuals and private businesses, which are especially important for non-profit day care centers. Other revenues also include social programs and investment income.

Childcare centers comprise 85% of total childcare capacity

The early childcare market is highly fragmented and includes care based in homes and housed by community organizations (e.g., churches, synagogues, YMCAs), as well as those funded by state and local governments. According to the 2014 Child Care Licensing Study (latest available) by the National Association for Regulatory Administration (NARA), nearly 42% of the 266,000+ licensed facilities were childcare centers in 2014 (latest data available), up from 38% in 2011. The vast majority of capacity is provided by center-based programs, which are typically much larger than home-based businesses. Center-based care represented roughly 85% of the total capacity in 2014, up slightly from roughly 84% in 2011.

Childcare centers have gained share

The total number of facilities and licensed capacity has fallen since 2011 owing to a number of factors, including the economy, low enrollment, changing demographics, and increased provider requirements. Much of that decline has been felt by non-centers as the number of center facilities and capacity declined by only 1.2% and 0.4%, respectively, from 2011 to 2014, allowing center-based care to gain share over that period.

Exhibit 14: Childcare Providers by Type (2011 and 2014)

	2011	2014	% change
Number of facilities:			
Child care centers	**111,701**	**110,309**	**-1.2%**
Other	180,164	155,708	-13.6%
Total	291,865	266,017	-8.9%
% of total facilities:			
Child care centers	38.3%	41.5%	
Other	61.7%	58.5%	
Total	100.0%	100.0%	
Licensed capacity:			
Child care centers	**8,392,054**	**8,362,036**	**-0.4%**
Other	1,661,070	1,491,099	-10.2%
Total	10,053,124	9,853,135	-2.0%
% of total capacity:			
Child care centers	83.5%	84.9%	
Other	16.5%	15.1%	
Total	100.0%	100.0%	
Average capacity per center:			
Child care centers	**75.1**	**75.8**	**0.9%**
Other	9.2	9.6	3.9%
Total	34.4	37.0	7.5%

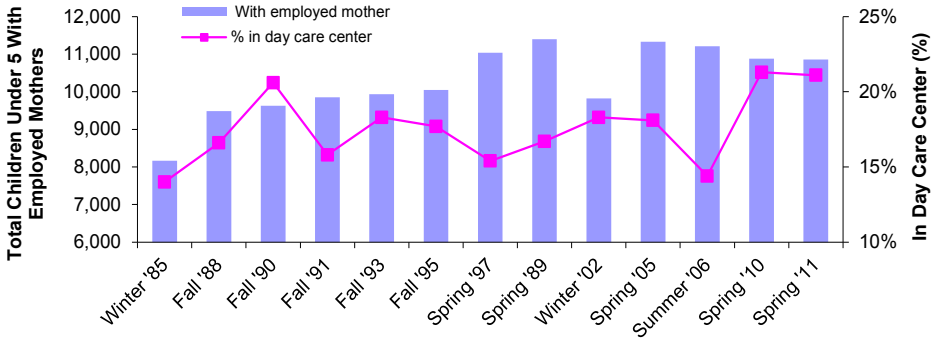
Note: Methodology change in 2014 made comparisons to studies prior to 2011 difficult. Source: BMO Capital Markets and National Association for Regulatory Administration's periodic Childcare Licensing Studies.

We believe most business and investment opportunities lie in center-based care, which can take many different forms, including preschools (nurseries), workplace centers (located onsite at the company), lease-model centers (located in a real estate development office complex), back-up centers (a variety of on-site and off-site back-up care programs), and family daycare facilities (located in someone's home or center).

Percentage of children under five attending day care at all-time high

In its latest report on the childcare population, the U.S. Census Bureau reported that in spring 2011 (most recent), the population of children under five years old with working mothers was 10.9 million, of which 6.9 million (roughly 63%) were in some kind of regular daycare arrangement (excluding family or relative care), with 2.3 million of those attending daycare centers, or about 21% – an all-time high. While this penetration rate can be volatile, it was flat from spring 2010, indicating some potential sustainability that may help offset some negative demographic trends.

Exhibit 15: Working Mothers With Children Under Five Years Old in Daycare Centers (1985-2011)



Source: BMO Capital Markets estimates and US Census Bureau's Report Who's Minding the Kids (various editions).

Growth Drivers

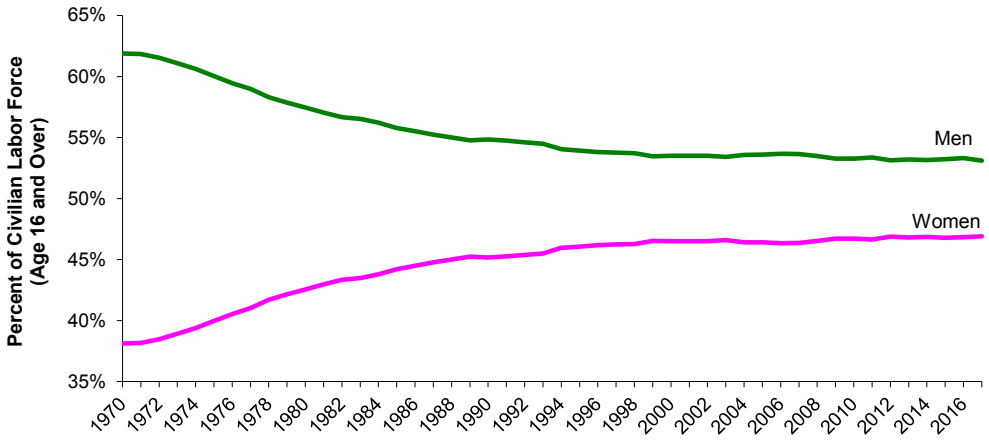
Among the current and future growth drivers for the early childcare market are:

- Number of working mothers with young children
- Demographics
- Increase in the number of families with two working parents
- Growing recognition of the importance of early education
- Positive legislation, tax incentives, and budgets
- Corporations recognizing the work benefits of childcare services

Women as % of labor force to increase slightly

Mothers with young children in labor force. Women have increased as a percentage of the overall civilian labor force, from 38.1% in 1970 to 46.9% in 2017; while matching an all-time high, this rate has been relatively stable in recent years. The Bureau of Labor Statistics estimates only a slight increase over the next decade or so, reaching 47.4% in 2026.

Exhibit 16: Civilian Labor Force by Gender (1970-2017)

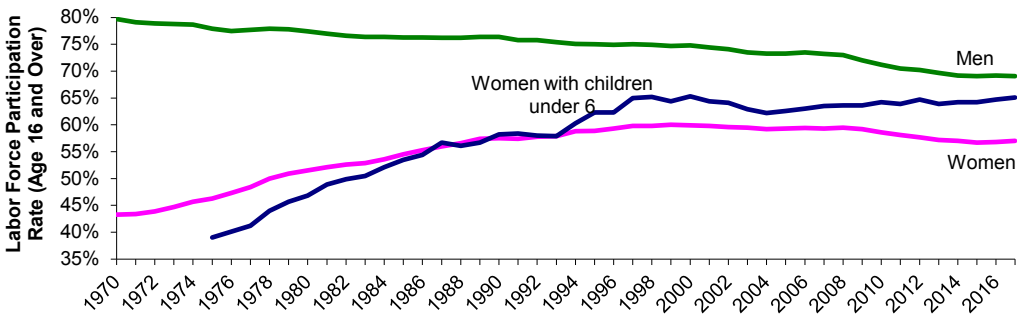


Source: BMO Capital Markets and US Census Bureau.

Women with children under age six have higher labor participation rates than the overall female population

Women with young children have significantly increased their presence in the workforce. In 2017, the labor force participation rate (either working or looking for work) for women with children under age six was 65.1% versus 39% in 1975 – just below the all-time high of 65.3% in 2000. Nevertheless, this rate exceeded the 2017 participation rate for all women of 57%.

Exhibit 17: Labor Force Participation Rates (1970-2017)

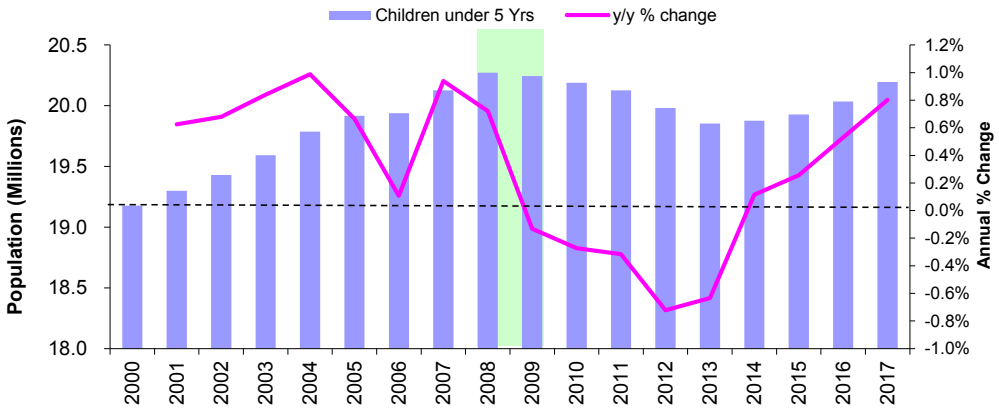


Source: BMO Capital Markets and US Census Bureau.

Population of children under age five now on upward trend

Demographics improving. According to Census Bureau data, the population of children under five peaked in 2008, and then fell each year thereafter until 2013, attributed to the Great Recession and slower immigration driving a lower fertility rate. However, trends have improved since, as an improving economy has spurred higher birth rates.

Exhibit 18: U.S. Population of Children Under Age Five (2000-2017)

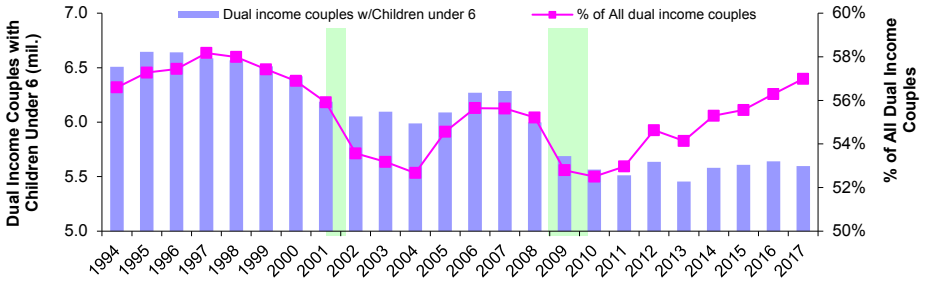


Note: Shaded area represents recessionary period. Source: US Census Bureau and BMO Capital Markets.

Increase in dual-income families could boost childcare demand

Percentage of dual-income families increasing again. The 1990s saw a sizable increase in the number of dual-income couples with children under age six. Since then, the trend appears to be a bit more cyclical, i.e., decreasing during a recession and increasing somewhat thereafter as both spouses eventually go back to the workforce. However, this decade, we have seen little increase in terms of numbers, as there were 5.6 million such families in 2017, up from the recent low of just over 5.5 million in 2011, but down compared to the prior year (5.64 million). Nevertheless, this amounted to about 57% of all dual-income couples – the highest level since 1999.

Exhibit 19: Dual-Income Couples With Children Under Six (1994-2017)



Note: Shaded area represents recessionary period. Source: US Census Bureau and BMO Capital Markets.

Recognition of importance of early education. Several studies support the benefits of early childhood education. A study issued by Center for Early Care and Education (a collaboration of the Schuyler Center for Analysis and Advocacy and Child Care, Inc.) concluded that quality early education increases the likelihood of children obtaining higher education at lower delinquency rates and generating greater lifetime earnings. This results in higher tax collections and more productive time for parents. We have summarized similar studies in the following table.

Exhibit 20: Summary of Research Showing Benefits of Pre-K Programs

Date	Source of Research	Findings
2017 (April)	University of Chicago economic professor James J. Heckman	Found that high-quality birth-to-five programs for disadvantaged children can deliver a 13% per year return on investment—a rate substantially higher than the 7-10% return previously established for preschool programs serving 3- to 4-year-olds. Significant gains are realized through better outcomes in education, health, social behaviors, and employment.
2013 (March)	National Institute for Early Education Research, Rutgers, NJ	Found that New Jersey's Abbott Preschool programs had substantial positive impacts on assessments in language, literacy and mathematics in 4th and 5th grade. PreK also reduced grade retention and special education placement rates.
2012 (Sept.)	Council for Exceptional Children; Department of Psychology, Georgetown University	Findings are interpreted as indicating that high-quality state pre-K programs can serve as effective early intervention programs for children with special needs.
2011 (Sept.)	Journal of Psychological Science; Elliot Tucker-Drob	Preschool may reduce inequalities in early academic achievement by providing children from disadvantaged families with higher-quality learning environments than they would otherwise receive.
2011 (June)	Journal of the American Medical Association	Found that preschool attendance was connected to a person's success in life 25 years later.
2007 (May)	Economic Policy Institute	The benefits of a voluntary, high-quality, publicly funded targeted pre-K education program serving the poorest 25% of 3- and 4-year-old children would exceed the cost by a ratio of 12:1 in 2050.
2007	Abercedarian Project	Tracked students in 1970s and 1980s and found children who received high-quality care and education programs from infancy through age 5 fared better on several quantitative and qualitative metrics when compared to a control group that did not receive similar benefits.
2006 (May)	W.E. Upjohn Institute for Employment Research	Every $1 invested in universal preschool would generate a present value of $3.79 through increased employment, earnings, taxes and other benefits.
2005 (March)	National Institute for Early Education Research	A quality prekindergarten experience can have long-term positive effects on children's lives. Many of these benefits, including impacts on participants' own health, decisions about marriage and family, and financial stability.
2005	HighScope Perry Preschool Study	Tracked low-income African-American 3- and 4-year-olds over 40 years, and found those receiving early intervention earned more and had fewer arrests. This resulted in a return of $17 for every dollar of investment in such programs.
2004	Cornell University	Each $1 spent in the child care sector has a broader statewide economic impact of $2 and each job created in the child care sector creates 1.5 jobs statewide. The output multiplier for childcare exceeds agriculture, manufacturing and services sectors as childcare dollars are spent locally and circulate longer in the local economy.
2003	Federal Reserve Bank of Minneapolis	The annual rate of return for investments in quality early childhood development programs for low-income youth was 12.5%.
2002	Frank Porter Graham Child Development Center	High-quality childcare programs have considerable long-term effects on such areas as school achievement, cognitive skills, language ability, math skills, grade retention, and social adjustment.

Source: BMO Capital Markets.

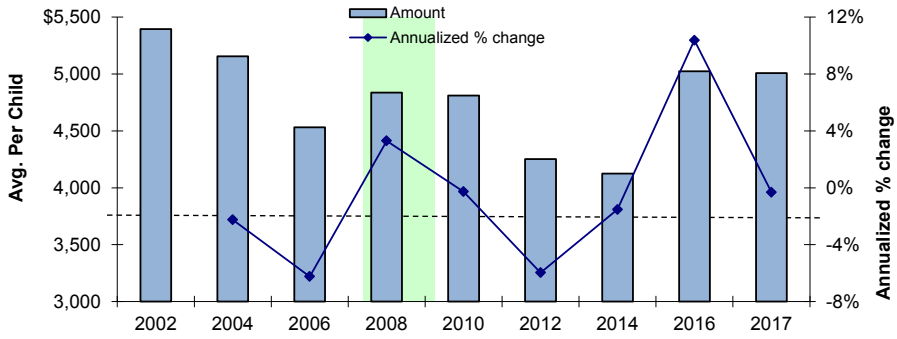
Positive legislation and government involvement. We believe this research, along with lobbying efforts, continues to raise political awareness and improve voter attitudes toward the benefits of early education.

Demand for state-funded programs is high and funding could potentially increase

According to the National Institute for Early Education Research (NIEER)'s "The State of Preschool 2017," 43 states and the District of Columbia offered state-funded preschool, enrolling nearly 1.5 million children. Nearly 33% of the nation's four-year-olds (up from 14% in 2002) and nearly 5% of three-year-olds (up from 3% in 2002) were enrolled in state-funded preschool.

NIEER found that total state preschool spending increased to nearly $7.6 billion in 2017, an increase of more than $155 million – the fifth year of sequential increases. Pre-K spending per child has increased over the past few years to reach $5,008 per child in 2017, per the study.

Exhibit 21: Average State Spending per Child for Child Care (2002-2017; in 2017 dollars)



Source: NIEER and BMO Capital Markets.

States very active in childcare legislation

We believe states are very active in passing child care-related legislation. According to the National Conference of State Legislatures, states enacted 140 bills in 2017 related to child care and early education – though down from 174 in 2013 – with most states passing significant child care bills.

Free public Pre-K initatives are a competitive threat. According to the Child Care Exchange, competition from public schools has ranked among the top three conerns for for-profit operators in its annual surveys. Free public Pre-K is a competitive threat for for-profit operators as it tends to "crowd-out" the space as parents switch from private to public Pre-K. When a state launches a Pre-K initiative it typically offers free or reduced-cost child care for children aged four and older through public schools. Existing centers typically lose their older children and are left with primarily infants and toddlers. Care for younger children is usually much more expensive and some centers cannot balance their budgets without older (less expensive) children, forcing a number of centers out of business. This applies to both non-profit programs as well as for-profit programs.

Federal pre-K funding programs

While most funding comes at a state and local level, the federal government also plays a role. The federal government continues to allocate funding for childcare-related programs through several programs. We note annual budget requests are often not funded or are funded at lower levels.

Exhibit 22: Overview of Key Federal Funding Areas in Child Care

Department	Program	Details	FY2015 Appropriation	FY2016 Appropriation	FY2017 Appropriation	FY2018 Appropriation	FY2019 Request
Federal (Dept. of Education)	Preschool Grants for Children with Disabilities	The Preschool Grants Program, authorized under IDEA provide grants to states to serve young children with disabilities, ages 3-5.	$353 million	$368 million	$368 million	$366 million	$368 million
Federal (Dept. of Education)	Grants for infants and families	Early Intervention for Babies and Toddlers with disabilities, part C under IDEA to provide grants for early intervention services	$438 million	$459 million	$458 million	$455 million	$459 million
Federal (Dept. of Health and Human Services)	Head Start Early Headstart	Head Start and Early Head Start serve children from birth to age 5	$8.6 billion	$9.2 billion	$9.2 billion	$9.2 billion	$9.3 billion
Federal (Dept. of Health and Human Services)	Childcare Entitlement to the States (CCES)	Provides child care support for working parents	$2.9 billion	$2.9 billion	$2.9 billion	$2.9 billion	$3.2 billion
Federal (Dept. of Health and Human Services)	Child Care and Development Block Grant (CCDBG)	Provides monthly direct child care assistance to children of low-income families.	$2.4 billion	$2.8 billion	$2.8 billion	$2.8 billion	$3.0 billion
Federal (Dept. of Health and Human Services)	Temporary Assistance for Needy Families (TANF)	TANF provides grants to assist needy families with children	$16.7 billion	$16.7 billion	$16.7 billion	$16.7 billion	$15.1 billion
Federal (Dept. of Education)	Promise Neighborhoods	These programs would be designed to combat the effects of poverty and improve education and life outcomes	$57 million	$73 million	$73 million	$78 million	-
Federal (Dept. of Health and Human Services)	Social Services Block Grant (SSBG)	Provides a broad range of social services, including childcare, child welfare, and the like.	$1.8 billion	$1.7 billion	$1.7 billion	$1.6 billion	-

Source: BMO Capital Markets, National Child Care Information and Technical Assistance Center (NCCIC), U.S. Department of Health and Human Services, and U.S. Department of Education.

To offset some funding issues, certain tax incentives are available to parents utilizing childcare programs, including:

- Section 21 of the Internal Revenue Code provides a federal income tax credit (Child and Dependent Care Credit) ranging from 20% to 35% (increased in 2003) of certain childcare expenses for "qualifying individuals."
- The Economic Growth and Tax Relief Reconciliation Act of 2001 created a federal employer tax credit for certain childcare expenses beginning in 2002. Employers can receive a credit of 25% of their spending on the construction or rehabilitation of a childcare facility or on contracts with a third-party childcare facility to provide childcare services to employees.

In addition, we believe there are numerous grant sources available to those in the pre-K industry. One example is the Teacher Quality Enhancement Grant under Title II of the Higher Education Act (enacted in August 2008). This provides funding for early educator preparation programs.

Childcare tax credit. The Tax Cuts and Jobs Act (i.e., tax reform, signed into law on December 22, 2017) expanded the child tax credit to $2,000, increasing its value from the prior $1,000 maximum (up to $1,400 refundable) for up to $400,000 of income for couples. In addition, filers with dependents who are not qualified children may be able to claim a new $500 nonrefundable credit per dependent.

Employers recognize the benefit. Based on studies conducted by Bright Horizons (BFAM), employer sponsors of center-based child care and back-up dependent care services have seen strong returns from reduced turnover and increased productivity. It estimates that employees that use back-up dependent care services have been able to work on average six days annually that they otherwise would have missed due to breakdowns in childcare arrangements. In addition, according to a 2015 survey of its clients, 92% of respondents reported that access to a dependable back-up dependent care helps them focus on work and be more productive.

Recession reduces availability

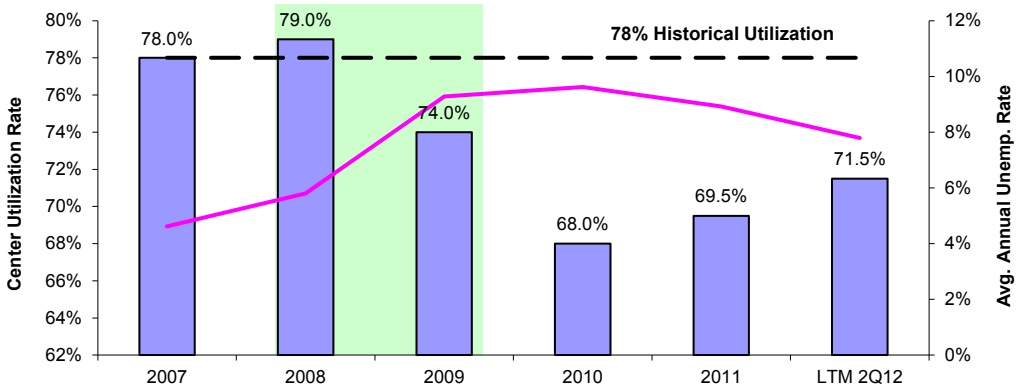
Impact of recession on childcare demand. We believe economic cycles can affect childcare demand. On the one hand, demand may increase as both parents have to return to work. On the other hand, demand may decline as parents lose jobs or can no longer afford childcare benefits. We believe the availability of publicly funded childcare centers (i.e., supply) generally decreases during recessions, as funding sources are cut or reduced. For example, an April 2009 survey conducted by Child Care Aware of America found the following results over the period from June to December 2008 (in the midst of the Great Recession):

- Of participating Child Care Resource and Referral Agencies (CCR&Rs) representing 40 states, 74% said the number of families falling behind or unable to make childcare payments increased between June and December 2008.
- Half of agencies said that childcare centers in their communities had closed in that six-month period, losing an average of six centers per community, or about 327 spaces.
- Among childcare centers still open, 65% of agencies reported an increase in vacancies during that time. In addition, 48% said centers were closing classrooms, while 41% said centers were laying off staff.

High unemployment reduces demand

While it is difficult to gauge the impact of recessions on company-sponsored child care, we believe that high unemployment may negatively affect demand and utilization levels. Bright Horizons saw a material decrease in utilization immediately following the end of the Great Recession – the trough of which coincided with peak unemployment rates during the recession.

Exhibit 23: Bright Horizons (BFAM) Cyclical Utilization and Unemployment Rates (2007-1H2012)



Note: Shaded area is recessionary period. Source: Company reports and BMO Capital Markets.

Very fragmented market

Labor shortage an ongoing issue

Labor shortage an issue. According to the Child Care Exchange, the top ranked threats identified by for-profit CEOs include "shortage of qualified staff" and "high turnover." The industry has a difficult time attracting talented, intelligent teachers, mainly due to low and stagnant wages. Per the Bureau of Labor Statistics (May 2017 data; latest available), the mean annual wage of Childcare workers is $23,760, well below the $39,600 for the Kindergarten and Elementary School Teachers. Turnover rates average 30% nationally (2012) according to a study by Washington State University. The issue of attracting and retaining qualified staff continues to impact the industry. When the economy is in a downturn and unemployment is high, the industry is able to attract a wider range of candidates. When the economy strengthens, potential candidates for childcare teacher positions have more employment options with better wages.

Largest Childcare Providers

The childcare market is extremely fragmented, as it includes many not-for-profit providers. According to the National Association for Regulatory Administration (NARA), nearly 59% of the licensed childcare centers in the U.S. in 2014 (latest data available) were operated by family-run businesses, though this percentage has been shrinking in recent years. The exhibit below contains the top U.S. for-profit childcare providers in terms of capacity and number of centers based on data from the Childcare Information Exchange. As shown, no single for-profit company has more than a 1.8% market share when including home-based businesses, or 2.1% when only measuring center-based business.

Exhibit 24: Top U.S. For-Profit Childcare Providers (Ranked by Capacity)

					Mkt. Share as % of Total		Mkt. Share as % of Center-Based		
Rank	Company	Ownership	Capacity	Centers	Capacity	Centers	Capacity	Centers	Avg. Capacity
1	KinderCare Education	Private	175,000	1,345	1.8%	0.5%	2.1%	1.2%	130
2	Learning Care Group	Private	135,292	911	1.4%	0.3%	1.6%	0.8%	149
3	Bright Horizons Family Solutions	BFAM	117,000	1,045	1.2%	0.4%	1.4%	0.9%	112
4	Goddard Systems*	Private	65,000	462	0.7%	0.2%	0.8%	0.4%	141
5	Primrose Schools	Private	60,004	375	0.6%	0.1%	0.7%	0.3%	160
6	Childcare Network	Private	43,247	262	0.4%	0.1%	0.5%	0.2%	165
7	Kids 'R' Kids Learning Academies*	Private	38,475	171	0.4%	0.1%	0.5%	0.2%	225
8	Nobel Learning Communities	Private	35,000	210	0.4%	0.1%	0.4%	0.2%	167
9	The Learning Experience	Private	34,815	211	0.4%	0.1%	0.4%	0.2%	165
10	Cadence Education	Private	32,000	174	0.3%	0.1%	0.4%	0.2%	184
11	Kiddie Academy	Private	31,860	200	0.3%	0.1%	0.4%	0.2%	159
12	Rainbow Child Care Centers	Private	19,973	136	0.2%	0.1%	0.2%	0.1%	147
13	The Sunshine House	Private	16,500	130	0.2%	0.0%	0.2%	0.1%	127
14	Children of America**	Private	14,000	66	0.1%	0.0%	0.2%	0.1%	212
15	New Horizon Academy	Private	14,414	94	0.1%	0.0%	0.2%	0.1%	153
16	Discovery Point	Private	10,810	47	0.1%	0.0%	0.1%	0.0%	230
17	Brightside Academy*	Private	10,544	65	0.1%	0.0%	0.1%	0.1%	162
18	Minnieland Academy	Private	10,252	66	0.1%	0.0%	0.1%	0.1%	155
19	Children's Lighthouse	Private	10,000	50	0.1%	0.0%	0.1%	0.0%	200
20	Crème de la Crème	Private	7,325	25	0.1%	0.0%	0.1%	0.0%	293
21	Creative World School	Private	5,480	23	0.1%	0.0%	0.1%	0.0%	238
22	Acelero Learning	Private	5,129	47	0.1%	0.0%	0.1%	0.0%	109
23	Lightbridge Academy	Private	5,000	30	0.1%	0.0%	0.1%	0.0%	167
24	Rainbow Station	Private	4,780	21	0.0%	0.0%	0.1%	0.0%	228
25	Action Day Nurseries/Primary Plus, Inc.	Private	4,250	19	0.0%	0.0%	0.1%	0.0%	224
26	Celebree Learning Centers	Private	4,345	41	0.0%	0.0%	0.1%	0.0%	106
27	Country Home Learning Center	Private	4,180	10	0.0%	0.0%	0.0%	0.0%	418
28	Never Grow Up/Southside Christian*	Private	4,200	34	0.0%	0.0%	0.1%	0.0%	124
29	The Malvern School	Private	3,629	26	0.0%	0.0%	0.0%	0.0%	140
30	Stepping Stone School	Private	3,628	20	0.0%	0.0%	0.0%	0.0%	181
31	The Gardner School	Private	3,352	17	0.0%	0.0%	0.0%	0.0%	197
32	Educational Playcare	Private	3,276	19	0.0%	0.0%	0.0%	0.0%	172
33	Little Sprouts LLC	Private	3,227	30	0.0%	0.0%	0.0%	0.0%	108
34	Youthland Academy	Private	3,200	16	0.0%	0.0%	0.0%	0.0%	200
35	StarChild Academy	Private	3,025	7	0.0%	0.0%	0.0%	0.0%	432
36	KLA Schools	Private	3,083	19	0.0%	0.0%	0.0%	0.0%	162
37	Doodle Bugs! Children's Learning Academy	Private	2,813	16	0.0%	0.0%	0.0%	0.0%	176
38	O2B Kids	Private	2,258	8	0.0%	0.0%	0.0%	0.0%	282
39	The Children's Workshop, Inc.	Private	2,126	19	0.0%	0.0%	0.0%	0.0%	112
40	Kids Kare Schools Inc.	Private	1,873	12	0.0%	0.0%	0.0%	0.0%	156
41	Valley Child Care & Learning Centers	Private	1,826	9	0.0%	0.0%	0.0%	0.0%	203
42	Kid's Country Learning Centers*	Private	1,787	11	0.0%	0.0%	0.0%	0.0%	162
43	Children's Discovery Center	Private	1,703	9	0.0%	0.0%	0.0%	0.0%	189
44	EduKids, Inc.	Private	1,775	15	0.0%	0.0%	0.0%	0.0%	118
45	U-GRO Learning Centres	Private	1,643	12	0.0%	0.0%	0.0%	0.0%	137
46	Bobbie Noonan's Child Care	Private	1,500	12	0.0%	0.0%	0.0%	0.0%	125
47	Little Tyke Learning Centers	Private	1,398	12	0.0%	0.0%	0.0%	0.0%	117
48	Small Miracles	Private	1,302	10	0.0%	0.0%	0.0%	0.0%	130
49	ABC Great Beginnings	Private	1,252	8	0.0%	0.0%	0.0%	0.0%	157
50	The Compass School	Private	1,223	6	0.0%	0.0%	0.0%	0.0%	204
	Top 50		**969,774**	**6,583**	**9.8%**	**2.5%**	**11.6%**	**6.0%**	**147**

Notes: Capacity and center data as of January 1, 2018. We used 2014 data for market share estimates. Source: Child Care Exchange and BMO Capital Markets.

We provide a list of the largest childcare franchises below. There is also a large number of not-for-profit childcare providers running multiple centers, although they tend to be relatively smaller than the larger for-profit chains.

Exhibit 25: Top U.S. National Child Care Franchising Organizations (Ranked by Capacity)

					Mkt. Share as % of Total		Mkt. Share as % of Center-Based		
Rank	Organization	Ownership	Capacity	Centers	Capacity	Centers	Capacity	Centers	Avg. Capacity
1	Goddard Systems	Private	65,000	462	0.7%	0.2%	0.8%	0.4%	141
2	Primrose Schools	Private	60,004	375	0.6%	0.1%	0.7%	0.3%	160
3	Kids'R'Kids Learning Academies	Private	38,475	171	0.4%	0.1%	0.5%	0.2%	225
4	The Learning Experience	Private	34,815	211	0.4%	0.1%	0.4%	0.2%	165
5	Kiddie Academy	Private	31,860	200	0.3%	0.1%	0.4%	0.2%	159
6	Discovery Point	Private	10,810	47	0.1%	0.0%	0.1%	0.0%	230
7	Children's Lighthouse	Private	10,000	50	0.1%	0.0%	0.1%	0.0%	200
8	Youthland Academy	Private	3,200	16	0.0%	0.0%	0.0%	0.0%	200
9	Starchild Academy	Private	3,025	7	0.0%	0.0%	0.0%	0.0%	432
10	KLA Schools	Private	3,083	19	0.0%	0.0%	0.0%	0.0%	162

Notes: Capacity and center data as of January 1, 2018. We used 2014 data for market share estimates. Source: Child Care Exchange and BMO Capital Markets.

Merger and Acquisition Activity

In recent years, the childcare industry has seen growing interest from the investment community. Major acquisitions include:

- In August 2018, KinderCare Education (KCE) acquired Rainbow Child Care Center and its 150 centers in 16 states. Based in Troy, Michigan, Rainbow is the eighth largest child care provider in the nation, and the acquisition expanded KinderCare's national presence to provide child care to more than 185,000 children in 40 states and Washington, D.C. This was the largest single acquisition for KinderCare since the company merged with Knowledge Learning Corporation in 2005. Terms were not disclosed.
- In August 2018, Investcorp announced the completion of the sale of Nobel Learning Communities, one of the leading providers of private education in the United States (from pre-school up to high school), to Spring Education Group, the leading PreK-12 private school operator in the United States and portfolio company of Primavera Capital Group, a leading Asia-based investment firm.
- In March 2018, PSP Investments made a significant investment in Learning Care Group in partnership with American Securities. No terms were disclosed. American Securities first partnered with Learning Care Group in May 2014, and remains the controlling shareholder.
- In July 2015, Switzerland-based private equity firm Partners Group announced the purchase of Knowledge Universe's early childhood education arm, the largest provided in the space in terms of capacity. No terms were disclosed.
- In April 2015, Norwest Venture Partners purchased The Learning Experience. Terms were not disclosed.
- In March 2015, Investcorp announced the acquisition of Nobel Learning Communities from Leeds Equity Partners for an estimated $405 million. In May 2011, Nobel announced it had reached an agreement to be acquired by Leeds Equity for $11.75 per share or approximately $149 million. At the time, the proposed price was about 0.6x and 8.7x trailing 12-month sales and EBITDA, respectively, by our calculation. This followed earlier bids by Knowledge Learning Corp in September of 2008 ($158 million offer) and March 2009 ($132 million offer).
- In March 2014, Australian childcare provider G8 Limited (ASX:GEM) acquired 91 learning centers from Sterling Early Education, a portfolio company of Macquarie Capital, for roughly $200 million.
- In September 2013, Teachers' Private Capital, the private equity investment division of Ontario Teachers' Pension Plan, bought private U.K.-based childcare provider Busy Bees Nursery Group for just over $352 million.
- In July 2013, Bright Horizons Family Solutions (BFAM) acquired the Dallas-based Children's Choice Learning Centers, which operated 49 centers, for $53 million. Children's Choice generated $41 million in revenue and $6 million EBITDA in the prior year.
- In April 2013, BFAM acquired the U.K.-based Kidsunlimited, which operates 64 centers, for £45 million. The company earned £41 million in the prior fiscal year.
- In January 2013, BFAM completed an IPO raising $222 million and establishing a market value of $1.4 billion. BFAM was taken private by Bain Capital in May 2008 for roughly $1.3 billion (12.1x TTM/EBITDA).

A list of recent childcare sector acquisition activity is included at the end of the K-12 section.

Risks

Finding and retaining staff. We believe low pay and high turnover make staffing a consistent difficulty for childcare providers. A report (2016) released by the U.S. Departments of Education and Health and Services found the national median annual wage for preschool teachers is $28,570, or 55% of the wages earned by kindergarten teachers and 52% of the wages of elementary school teachers. These statistics are notwithstanding the fact that 73% of these teachers had a bachelor's or higher degree (per Yale's National Prekindergarten Study (2005). About 19% of such teachers work an extra job for pay.

A weak economy or recession. We believe a weak economy and higher unemployment lead to lower demand for childcare services and lower utilization rates.

Government funded pre-K. Universal pre-K initiatives may provide government-sponsored services that would lessen the need and demand for private care providers.

Government budget cuts. We believe roughly 40-50% of childcare funding originates from the government. A cut in state or federal funding could have a detrimental impact on the industry's favorable subsidies and/or demand.

Regulatory risks. Companies that provide lower-quality services and that do not have sufficient revenues to meet rising standards may face greater regulatory risks. There are minimum standards in the areas of staffing, nutrition, health protection, and safety. If those standards are significantly raised, some companies might be unable to meet the costs.

The fear of child abuse. We believe child abuse is less common in center-based care. However, if a child or parent makes an accusation and the dispute becomes public, both the facility and staff members may lose credibility, which in turn could hurt future revenue flows. In addition, the accusation alone may be enough to put selling pressure on the stock given the highly charged nature of the issue. The 1980s saw a number of major child abuse allegations that provided negative publicity for the sector. These included McMartin Preschool (1983), Fells Acres Day Care (1984), Wee Care Nursery School (1985), Little Rascals (1989), and Breezy Point Day School (1989).

We provide some operating and valuation metrics for the publicly held childcare companies.

Exhibit 26: Trailing 12-Month Operating and Valuation Metrics: Selected Publicly Held Childcare Companies

	Bright Horizons BFAM
Rating	**Market Perform**
Price Target	**$118**
Operating Performance	
FY End	12
LTM Qtr. End	6/18
Revenue ($MM)	$1,826.6
Gross Profit ($MM)	418.3
EBITDA ($MM)	320.3
EBIT ($MM)	222.2
Pretax Income ($MM)	170.9
Net Income ($MM)	159.3
Free Cash Flow ($MM)	172.3
Gross Margins (in %)	22.9%
EBITDA (in %)	17.5%
EBIT (in %)	12.2%
Pretax Income (in %)	9.4%
Net Income (in %)	8.7%
Free Cash Flow Yield (in %)	2.5%
ROIC	8.8%
ROE: LTM	20.8%
Valuation Metrics	
FY End	12
LTM Qtr. End	6/18
Price (08/24/18)	$116.48
Shares Outstanding (MM)	58.6
Market Cap ($MM)	$6,821.8
Net Debt/(Cash) ($MM)	1,141.4
Enterprise Value ($MM)	7,985.9
CY EPS:	
2017A	$2.69
2018E	3.15
2019E	3.53
Two-Year CAGR	14.5%
P/E:	
2017A	43.3x
2018E	37.0
2019E	33.0
EV/Rev. (NTM)	4.0
EV/EBITDA (NTM)	20.9
EV/EBIT (NTM)	29.8
EV/Free Cash Flow (NTM)	68.6

Source: BMO Capital Markets and FactSet Research.

K-12 Education: Largest Opportunity, Though Risks Abound

While we believe the K-12 market may represent the largest investment opportunity within the education landscape, there historically have been relatively few ways to invest in this market from a public equity perspective, though the landscape has been expanding.

K-12 is the largest of the education sectors and continues to grow. While the 2002 No Child Left Behind Act (NCLB) was a catalyst for spending on innovation and accountability, the Great Recession and its impact significantly crimped state and local budgets, creating significant financial headwinds. While tax receipts have improved, spending levels remained somewhat mixed. Additionally, concerns over student outcomes and educational quality have become of greater importance.

Against this backdrop, we believe most recent investment opportunities have been centered on finding solutions to help schools drive better performance under the new reality of tighter cost constraints. To meet this demand, private equity, venture capital, and other endowments have invested hundreds of millions of dollars in recent years into disruptive, technology-based products that seek to help educators contend with these issues.

While we believe these pressures have increased educators' willingness to try new methods and products, we caution the K-12 sector remains a relatively sluggish one characterized by long sales cycles, dependence on government spending, and a high vulnerability to political pressures. We believe this, combined with a widespread resistance to change, adds several layers of complexity for investors in this space.

U.S. K-12 Market Overview

There are various ways we have seen K-12 spending segmented over time. For purposes of this report, we are using the categories used by GSV, noting their numbers differ somewhat from other estimates used in this section.

Exhibit 27: Components of U.S. K-12 Spending

($000s)	2015	2020E	CAGR
Total	**$ 1,567,963,900**	**$ 1,899,938,500**	**4%**
Children & Pre-Primary School	**$ 48,506,500**	**$ 61,608,000**	**5%**
Schools & Care Providers:			
Childcare Centers	$ 30,506,500	$ 40,110,800	6%
Pre-Schools, State Funded	$ 4,164,500	$ 4,973,600	4%
Pre-School, Private	$ 943,500	$ 1,126,800	4%
Headstart	$ 8,041,400	$ 9,603,700	4%
Family Child Care	$ 4,850,700	$ 5,793,000	4%
K-12	**$ 692,074,300**	**$ 837,888,400**	**4%**
Schools:	**$ 665,783,100**	**$ 802,929,900**	**8%**
Public	$ 584,682,000	$ 699,876,000	4%
Charter	$ 19,537,900	$ 34,849,600	12%
Private	$ 49,389,600	$ 56,694,300	3%
Home School	$ 1,320,000	$ 1,774,000	6%
Catholic	$ 10,853,600	$ 9,736,000	-2%
Instructional Materials:	**$ 8,860,200**	**$ 12,756,900**	**8%**
Print: Text Books	$ 3,266,300	$ 2,952,400	-2%
Print: Supplemental Materials	$ 1,088,800	$ 984,100	-2%
Digital: Text Books	$ 1,758,800	$ 2,584,200	8%
Digital: Supplemental Materials	$ 586,300	$ 861,400	8%
Games	$ 2,160,000	$ 5,374,800	20%
Management & Administration:	**$ 2,045,700**	**$ 2,477,400**	**4%**
Learning, Assessment & Behavioral Mgmt.	$ 1,140,700	$ 1,322,400	3%
Data (SIS & Data Warehouse)	$ 905,000	$ 1,155,000	5%
Assessment:	**$ 8,194,300**	**$ 9,378,300**	**2%**
States Tests (High Stakes)	$ 1,700,000	$ 1,877,000	2%
Entrance & Aptitude Exams (ACT, SAT, etc.)	$ 494,300	$ 545,700	2%
Tutoring & Test Prep	$ 6,000,000	$ 6,955,600	3%
Devices:	**$ 3,495,500**	**$ 5,714,600**	**10%**
Windows	$ 1,201,200	$ 1,392,500	3%
Mac OS	$ 400,400	$ 361,900	-2%
iOS	$ 778,400	$ 1,091,800	7%
Chrome OS	$ 1,061,200	$ 2,780,900	21%
Android	$ 54,300	$ 87,500	10%
Professional Development	**$ 3,201,000**	**$ 4,085,400**	**5%**
Curriculum & Content	$ 954,000	$ 1,217,600	5%
Services	$ 2,247,000	$ 2,867,800	5%

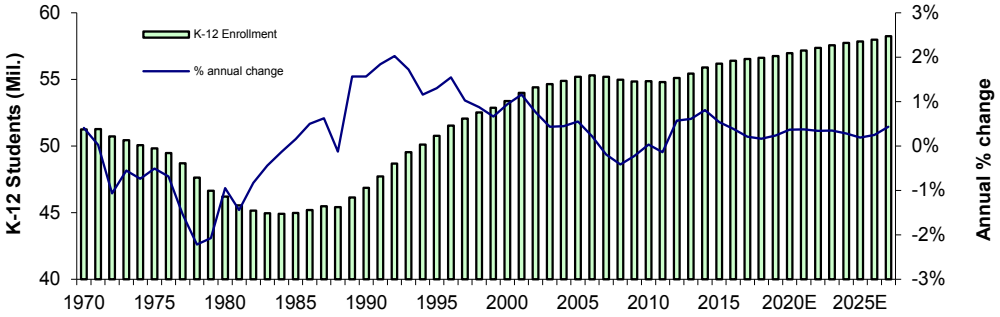
Source: GSV.

U.S. K-12 Schools Market

K-12 enrollment expected to continue to grow, albeit at slower rates

The K-12 schools market represents the vast majority of spending in this sector and consists of students in elementary (K-6th grade) and secondary (7th-12th grade) schools. Enrollment in K-12 schools has been driven almost entirely by demographics. Since bottoming at 44.9 million students in fall 1984, K-12 enrollment (both public and private schools) grew to roughly 56.2 million students in fall 2015 (latest available), representing about 0.7% CAGR over that period. We note that the NCES projects that growth will continue (albeit at slower rates), with the U.S. K-12 population reaching just over 58.2 million students by fall 2027, which would represent a 0.3% CAGR from current levels.

Exhibit 28: K-12 Enrollment (Fall 1969 to Fall 2027E)



Source: BMO Capital Markets and U.S. Department of Education National Center for Education Statistics. Note: Enrollment for fall of each year.

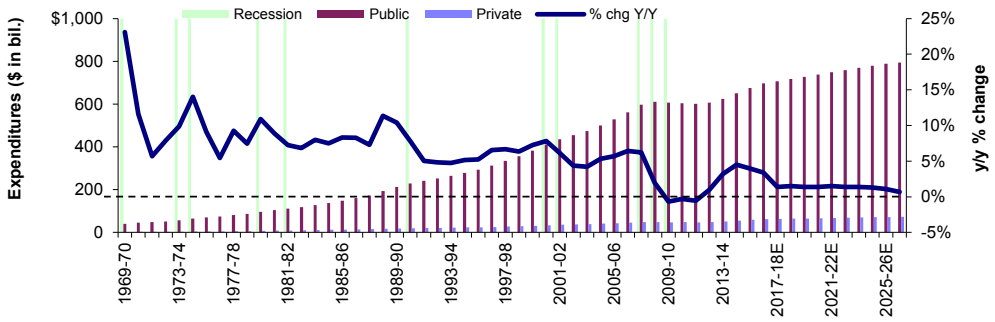
Represents 4% of U.S. GDP; mostly spent by U.S. public schools

According to the U.S. Department of Education's (ED) National Center for Education Statistics (NCES), K-12 expenditures were $759 billion in the 2016-2017 school year and equivalent to about 4.1% of the U.S. annual gross domestic product. This spending represented a 3.4% annual increase, continuing the rebound after three consecutive years of declines post the Great Recession. The vast majority (nearly 92%) is spent by U.S. public schools.

K-12 industry growth rates have slowed, and we expect slow, stable growth (1.3% CAGR) to continue

While K-12 spending has increased at a 6.3% annual rate since the 1969-1970 school year, we do not expect the sector to return to this growth rate, as state finances remain difficult, and the law of large numbers continues to have a bigger impact. Using NCES forecasted growth rates averaging roughly 1.3% annually, we project over $864 billion in expenditures in the 2026-2027 school year.

Exhibit 29: K-12 Schools Total Expenditures (1969-1970 to 2026-2027E)

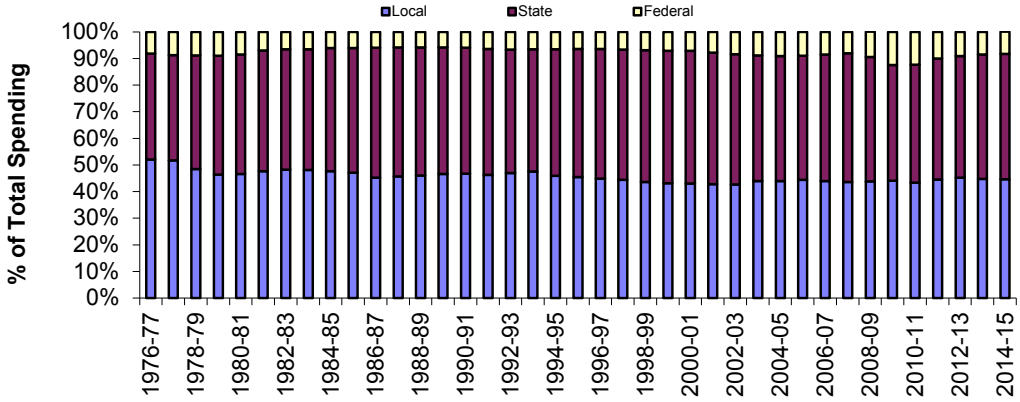


Note: Shaded areas represent U.S. recessionary periods.
Source: BMO Capital Markets estimates and U.S. Department of Education National Center for Education Statistics.

Most funding is provided by state and local sources, though recent spending had boosted the federal portion; that is now tapering off

State and local funding is the largest portion of K-12 public school spending. According to the NCES, in FY2015 (latest data available) states funded about 47% of public education, with local funding representing about 45%; federal funding accounted for the remaining 9% (totals may not add due to rounding). With the passage of NCLB, federal spending increased from the 6% level in the 1990s to the 8-9% range in the mid-2000s, and stimulus spending following the Great Recession (e.g., Race to The Top or RTTT) boosted this to 12.5% in FY2010—an all-time high, by our records. However, this rate has continued to drop since, and we expect the federal share to continue to return to the mid-2000s levels as state and local funding recovers.

Exhibit 30: K-12 Public Schools Funding by Source (FY1977–FY2015)

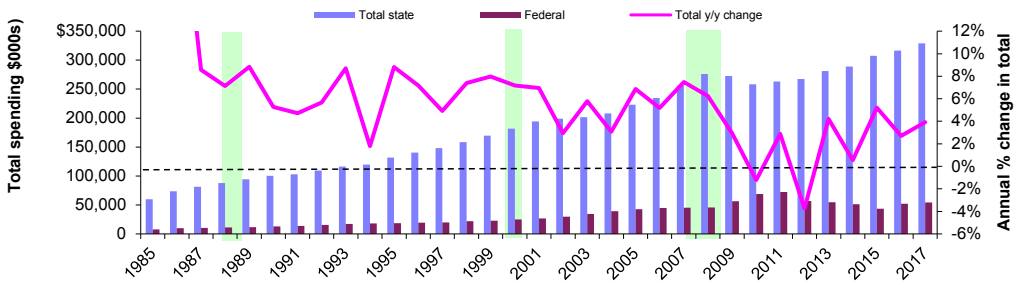


Source: BMO Capital Markets and U.S. Department of Education National Center for Education Statistics.

State finances improving

Each year, the National Association of State Budget Offices (NASBO) tracks total K-12 education funding by state in its annual State Expenditures Report (the data differs somewhat from the aforementioned NCES data). Funding levels have been somewhat volatile recently, though it appears that financing is improving, especially on a state level as tax revenues improve; in FY2017, total elementary and secondary education funding improved 3.9% year over year, driven by a 3.8% annual increase at the state level. The mid-year Fiscal Survey of the States (spring 2018) NASBO expects total state funding to increase 3.2% in FY2019, with 37 states enacting spending increases for K-12. From our perspective, we believe the spending environment is certainly improving (steadily).

Exhibit 31: Public Schools Funding and Annual % Change (FY1985-FY2017)



Note: Shaded areas represent U.S. recessionary periods. Source: National Association of State Budget Offices.

Many states funding per K-12 student still below pre-recession levels

However, per-student funding remains at reduced levels. According to the Center on Budget and Policy Priorities (CBPP), 29 states were still providing less total school funding per school in FY2015 than they did in 2008 pre-recession level. While we believe trends are slowly moving in the right direction, it may yet be several years before most states return to pre-recession per-student funding levels.

No Child Left Behind Act

Federal funding is a relatively small component of total K-12 spending, though typically garners a disproportionate amount of publicity. The federal education program, initially established under the Elementary and Secondary Education Act (ESEA) of 1965, became The No Child Left Behind Act (NCLB) when President Bush signed it into law in January 2002. This act fundamentally shifted how states direct K-12 education spending, resulting in faster and greater changes than any prior federal K-12 education legislation.

Changes during Obama administration

NCLB's rigid testing requirements and proficiency mandates were extremely controversial, and, upon taking office, President Obama vowed to reauthorize ESEA (which officially expired in 2007) in a way that removed some of the more burdensome mandates. Among the changes made during his tenure was providing waivers to some of the states from some of the more onerous NCLB provisions (e.g., schools making Adequate Yearly Progress or AYP). In addition, a number of states chose to opt out of Common Core Standards (CCS), the initiative to have all states in the union follow the same core K-12 curricula.

Every Student Succeeds Act (ESSA)

The reauthorized ESEA—called The Every Student Succeeds Act (ESSA)—was signed into law on December 10, 2015. The regulations gave states considerably more flexibility and authority in K-12 education than they had under the prior NCLB law. The Trump administration and Republican Congress moved in 2018 to reduce federal accountability rules and give states more control over their schools systems.

Exhibit 32: Highlights of Every Student Succeeds Act (ESSA)

Highlights:

States would still have to test students in reading and math in grades 3–8 and once in high school, and break out the data for whole schools, plus different subgroups of students (English-learners, students in special education, racial
States get wide discretion in setting goals, figuring out just what to hold schools and districts accountable and deciding how to intervene in low-performing schools. While tests still have to be a part of state accountability systems, states must incorporate other factors that take into account students' opportunity to learn, like school climate, teacher
Combines 50 programs, some that have not been funded in years, into one block grant.
The authority of the U.S. Secretary of Education is also limited, especially when it comes to interfering with state decision-making on testing, standards and school turnarounds
ESSA keeps in place maintenance of effort (MOE), with some new flexibility for states.
ESSA is only "authorized" for four more years, as opposed to the typical five. That gives lawmakers a chance to revisit the policy under the next president. Its overall authorization funding levels are largely consistent with the most recent

Accountability:

States would still have to submit accountability plans to the Education Department (ED). These new ESSA plans would start in the 2017–18 school year. States can pick their own goals, both long- and short-term goals. These goals must address: proficiency on tests, English-language proficiency, graduation rates, and closing gaps in achievement.

Interventions:

For the bottom 5% of schools and for high schools with graduation rates of 67% or less:
- Districts work with teachers and school staff to develop evidence-based plans.
- States monitor turnaround efforts.
- If schools continue to struggle for up to four years, states decide on corrective action: take over a school, replace principal and staff, or convert the school into a charter.
- Districts could allow students to transfer out of seriously low-performing schools, but have to give priority to the

For schools where student subgroups are struggling:
- Schools must develop evidence-based plans to help the specific groups of students who are struggling.
- If the school continues to fall short, the district steps in; there's no specified timeline but a provision calling for a "comprehensive improvement plan." States and districts have to take more-aggressive action in schools where

Resources for Interventions:

The School Improvement Grant (SIG) program, which is funded at about $500 million currently, has been consolidated into Title I. States would be able to set aside up to 7% of their Title I funds for school turnarounds, up from 4% in current law. States would have the choice to send that money out by formula to all districts or competitively, as they do now

Students in Special Education:

Only 1% of all students can be given alternative tests.

Tests:

The testing schedule would be the same as under No Child Left Behind (NCLB); however, up to seven states could apply to pilot local tests with the permission of the ED. ESSA would allow for the use of local, nationally-recognized tests, such as the SAT or ACT, at the high school level, with state permission.

English-Language Learners:

States would have two choices:
Option A – Include English-language learners' test scores after they have been in the country for one year, just like under
Option B – During the first year, test scores would not count towards a school's rating, but ELLs would need to take both of the assessments. Districts would need to publicly report the results. (That's a change from current law, which only requires math in the first year.) In the second year, the state would have to incorporate ELLs' results for both reading and math, using some measure of growth. In their third year, proficiency scores of ELLs are treated like any other students'

Opt-Outs:

ESSA would allow states to create their own testing opt-out laws, but maintain the federal requirement for 95%

School Choice:

ESSA does not allow Title I portability. Federal funds will not follow the child to the school of their choice. ESSA does include a pilot project allowing districts to try out a weighted student funding formula, which would essentially function as a pool of funds. The program would allow 50 districts to combine state, local and federal funds for easy transferability with participation authorized by district officials. This is intended to allow districts the flexibility to target funds to

Teachers:

NCLB's "highly qualified teacher" requirement would be terminated. There is also language to continue the Teacher and School Leader Innovation Program, which provides grants to districts implementing performance pay and other teacher-

Source: Texas Association of School Boards.

EMOs a flourishing part of K-12 landscape

Outsourced School Administration. Education management organizations (EMOs) were introduced in the early 1990s, and manage traditional K-12 public schools on behalf of a school district (contract schools) or manage charter schools as the charter holder (charter schools) or under contract with the charter holder (contract charters). EMOs grew out of widespread interest in market-based school reform, and, in the early years, were mostly contract schools. However, with the rise of the school voucher system and charter schools—both of which allowed taxpayer funds to follow students to independent schools—EMOs increasingly have moved toward charter school management (typically managing schools for another entity that held the charter), and contract charter management.

Charter K-12 schools are independent, publicly funded schools typically governed by a group or organization under a legislative contract or charter with the state or jurisdiction. The charter exempts the school from having to comply with state or local regulations. In return, the school must meet accountability standards articulated in its charter, which is reviewed periodically (typically every three to five years). Often highly politicized, charter schools are widely viewed as a "disruptive" movement within education, as these schools are often formed by groups that are unsatisfied with current educational options and seek to create something that provides an educational alternative or challenges the status quo. Additionally, as charter holders often contract with private companies to run all or part of the schools, charter schools have become a key component of market-based education models.

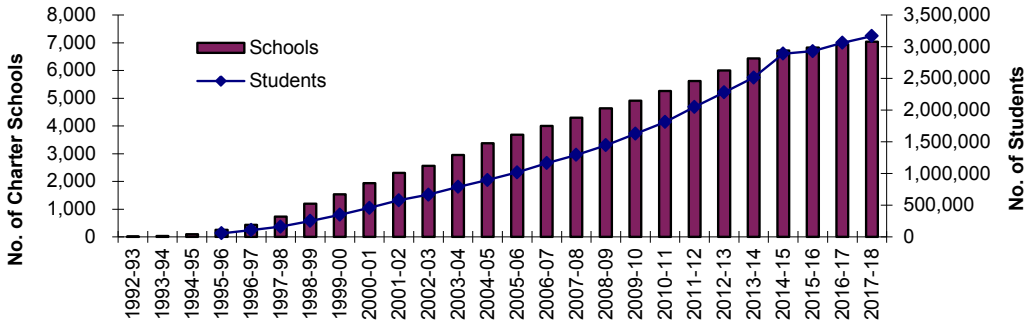
Charter schools are often formed with a more pointed "mission" than traditional schools, and often have specific goals to teach certain curricula, appeal to specific demographics, or attain certain academic goals. As a result, governance systems vary widely, but often include a blend of non-profit and for-profit agencies. A typical example may be a non-profit group that holds the charter, but contracts with a for-profit company to operate the school or provide curricula, including companies such as CharterSchools U.S.A, National Heritage Academies and Pansophic Learning. In addition, in recent years there has been an increase in the number of not-for-profit Charter Management Organizations (CMO), such as Aspire Schools, GreenDot Public Schools, Knowledge Is Power Program (KIPP) and the Success Academy Charter Schools. The share of charter schools that belong to large management organizations, which can be either for-profit and not-for-profit, has grown from about 31% of all charters in 2010 to 40% in 2017, according to data from the National Alliance for Public Charter Schools.

We believe growth drivers of this industry include favorable regulatory policies, poor performance of traditional schools, greater public acceptance of charters, and the rise of virtual learning.

Industry has shown solid growth

The first charter school was approved in Minnesota in 1992, and the industry has shown impressive growth since. According to the National Alliance for Public Charter Schools (NAPCS), there were more than 7,000 K-12 charter schools serving nearly 3.2 million students in the 2017-2018 school year. Since the 1999-2000 school year, the number of charter schools has grown on average roughly 8.8% annually, while charter school enrollment has increased roughly 13.0% annually, clearly outpacing the average K-12 enrollment growth of less than 1% over the same period.

Exhibit 33: K-12 Charter Schools and Enrollment (1992-1993 to 2017-2018)



Note: Number of students prior to 1995-96 school year was not available.
Source: BMO Capital Markets, National Alliance for Public Charter Schools, Charter School Leadership Council and Center for Education Reform.

Charter schools represent about 5% of total K-12 enrollment

Data from NCES varies slightly, but it estimates that, in the 2015-2016 school year (latest data available), there were nearly 6,900 charter schools operating in the U.S. (5.2% of all K-12 schools), serving nearly 2.85 million students (5.1% of total enrollment).

Exhibit 34: K-12 Market by Segment: Number of Schools and Enrollment (2015-2016 School Year)

	Schools		Enrollment		Students
	# of schools	total %	(x1000)	total %	Per School
Public	91,422	68.8%	47,593	84.7%	521
Private	34,576	26.0%	5,751	10.2%	166
Charter	6,855	5.2%	2,845	5.1%	415
Total	**132,853**	**100.0%**	**56,189**	**100.0%**	**367**

Source: Center for Education Reform, BMO Capital Markets and U.S. Department of Education National Center for Education Statistics.

State regulations limit growth

The growth of charter schools is highly dependent on state and local regulation. According to the NAPCS, there are six states that do not have any charter programs: Montana, Nebraska, North Dakota, South Dakota, Vermont, and West Virginia. However, even states that allow charters do so to varying degrees, and often impose limitations on enrollment and growth. Per the NAPCS, 21 states had some type of caps on charter schools and enrollment in the 2017-2018 school year, while 23 others had no caps. This results in different charter penetration rates across the country.

But acceptance growing

Nevertheless, while states and districts continue to tussle over charter regulations, we believe the environment for charter schools has generally become more favorable over time. In 2009, President Obama called on states to lift charter caps, and, over the past few years, several states have partially or entirely removed charter caps (NAPCS noted several states strengthened their authoring environments in 2016). In general, we attribute this change to states' desires to save costs while addressing the issue of perpetually underperforming public schools. Publicity of charters has also been turning more positive; according to a 2017 Gallup poll, 55% of Americans believed charter schools provide excellent or good education, after independent private schools and parochial or church-related schools.

Trump administration: A potential positive for the alternative school movement

Many had thought the appointment of Betsy DeVos as U.S. Secretary of Education by President Trump would accelerate growth in the charter school movement given her history of supporting education reform movements. However, the bulk of funding still comes at the state level. Nevertheless, federal funding for charter schools appears to be picking up slowly. Congress increased funding for the Charter Schools Program (CSP) in F2018 by 17% to $342 million. The amount of Title I and IDEA education funding, which are also important sources of support for charter schools, were also increased.

Financial hurdles

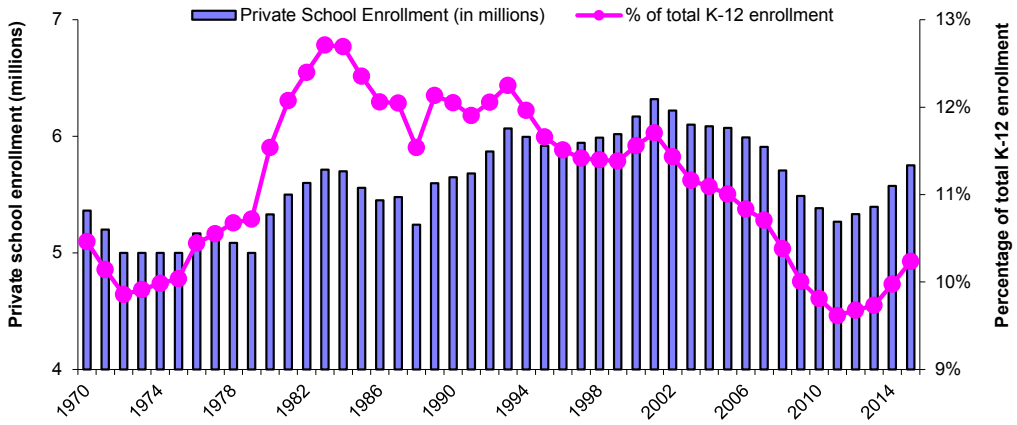
One impediment to the charter schools sector is the lack of funding relative to traditional schools. Typically, charter school operators must fund real estate, facility, and other start-up costs on their own; preliminary data from a November 2013 survey by the NEPC shows that charter schools that rent their facilities from a private organization spend more (10%) than schools that own their facility (9%), and those that rent the facility from a school district (1.8%).

Additionally, charter schools typically receive less funding overall; based on a report from the University of Arkansas' Department of Education, charter schools receive less funding by an average of $5,721 per student during the 2013-2014 year, based on research of 14 cities with high concentration of charter school enrollment. According to the Center for Education Reform, public funding is about 42% less, at $7,131 per student (2012-2013 school year) versus $12,300 in public funding for traditional public schools (2011-2012 school year; latest available). This requires charters to find alternate funding sources, such as private donations or either lenders or bank loans. Additionally, we believe this has helped drive the growth of consortiums of charter groups and management organizations, which often make it easier to source funding initial costs.

Private school enrollment declining as charter school enrollment rises

Private K-12 schools. Much of the initial growth in charter school enrollment coincided with a decline in private school enrollment. According to NCES, enrollment in private schools bottomed at 5.27 million in the 2011-2012 school year, down nearly 17% from a peak of 6.32 million in the 2001-2002 school year. Many believe this was due to the rise in charter school enrollment. Nevertheless, private school enrollment has rebounded since then, reaching 5.75 million in the 2015-2016 school year (latest data available); this represented 10.2% of total K-12 enrollment that year, though still well down from a peak of 12.7% in the mid-1980s. We believe the recent rebound was driven by the rebound in the U.S. economy, which gave parents greater discretionary income to use for private school tuition.

Exhibit 35: K-12 Private School Enrollment and Percentage of Total K-12 Enrollment (Fall 1970 to Fall 2015)

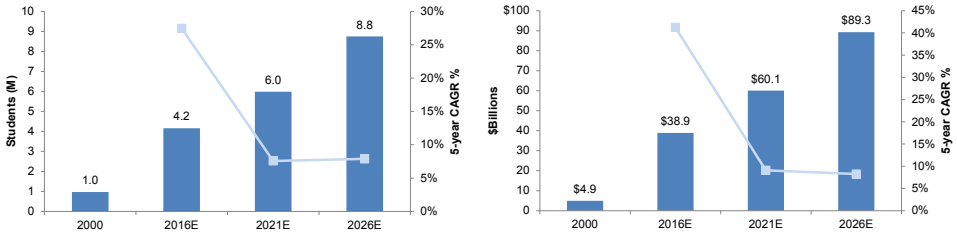


Source: BMO Capital Markets and U.S. Department of Education National Center for Education Statistics. Note: Enrollment for fall of each year, not all years available.

Premium K-12 schools; $39 billion global market expected to grow 8.7% CAGR through 2026

Despite this choppiness, there is a consistent interest in higher-end private (i.e., premium) K-12 schools, many of which provide premium pricing. This is a global phenomenon; according to ISC Research Ltd., in 2016, there were nearly 8,200 such schools enrolling 4.2 million students (average over 500 students per school), and generating nearly $39 billion in "fee income" for the year. The firm projects that by 2026, enrollments will nearly double to about 16,200 students (7% CAGR), while fee income will increase to over $89 billion (8.7% CAGR).

Exhibit 36: International K-12 Private Schools and Enrollment (2000-2026E)



Source: ISC Research Ltd.

While each community typically has its own high-end schools (e.g., New York City's Trinity School, Boston's Roxbury Latin), we are seeing a trend of companies operating a chain of private schools, many of which have a global presence. These include:

- U.S.-based Avenues: The World School, with schools in New York City and Sao Paolo, Brazil
- U.S.-based Bennett Day School witht a large presence in Chicago.

- U.K.-based Dulwich International College Group, with schools in the U.K. and Asia.
- India-based Edvance Group, with a number of schools in that country.
- India-based EuroKids International, with schools in India, Nepal and Bangladesh.
- U.S.-based Fusion Education Group with schools in California, New York, and New Jersey, which offer a non-traditional private school education with completely customized one-to-one classrooms.
- UAE-based GEMS Education, with schools in Africa, Europe, the Middle East, Southeast Asia, the U.K., and the U.S.
- Singapore-based Global Schools Foundation, with schools in Southeast Asia, Africa, MENA, and India.
- U.S.-based Higher Ground Education, which specialzes in running schools affiliated with the Montessori movement.
- Hong-Kong based Nord Anglia Education (fomerly ticker: NORD; company went private in August 2017), with schools across China, Europe, the Middle East, Southeast Asia, and North America.
- U.S.-based Penn Foster, which runs online high schools and colleges.
- U.S.-based Spring Education Group, which operates schools under Stratford School, LePort Montessori and Nobel Learning Communities brands.
- U.S.-based Stratford Schools with a large presence in California.
- U.S.-based Whittle School & Studios, with plans to open schools, in Shenzhen and Washington, DC, in 2019.

Voucher funding increasing

Over recent years, a number of states have offered voucher-type programs allowing students meeting certain criteria to use public funding to attend schools of their choice; many of these programs included private schools. While controversial, these programs are slowly making headway. According to edchoice.org, as of June 2017, there were over 60 voucher and voucher-type programs in 31 states in the U.S. serving over 1.3 million students, which "cost" over $3.1 billion. We believe voucher programs will continue to grow, but note that the system remains controversial.

K-12 online schools. Online learning generally consists of two formats: 1) fully online virtual schools (100% online); and 2) blended learning (combined online with in-class learning).

Drivers of K-12 online learning include technological advancements, greater access, a need to cut costs, and a robust market of new product development from new and existing players. Additionally, we believe online learning has benefitted from an overall positive legislative environment and greater public support.

Estimates of the K-12 online school market show a small but robust segment

Some estimates of the size of this market follow:

- The National Education Policy Center estimates there were nearly 296,000 students enrolled in 429 full-time virtual schools in the 2016-2017 school year. In addition, 296 blended schools enrolled nearly 117,000 students.
- Evergreen Education Group estimate that 2.7 million students took roughly 4.5 million supplemental online courses during the 2014-15 school year.
- According to the International Association for K-12 Online Learning (INACOL), in 2013-2014, 29 states and Washington, D.C. had statewide full-time online schools, while 25 states had state virtual schools. In 2011, approximately 40 states operated or authorized online schools that students may attend full or part time, with 30% of high school and 19% of middle school students having taken at least one course either blended or fully online.

We provide some detail on differing models based on research provided by Evergreen's *Keeping Pace with Online Learning* below:

- **Single-district online programs** are created by a district primarily for students within that district. While they may be fully online, most provide supplemental online courses for students enrolled full time in the district and accessing most of their courses in a physical school. Single district programs are the fastest-growing segment of both online and blended learning.
- **Multi-district fully online schools** are the main education providers for their students, who do not need to go to a physical school to access any aspect of their education (although they may do so). These schools focus on fully online schools that operate across multiple school districts, and often draw students from an entire state.
- **State virtual schools** are created by legislation or by a state-level agency. They are often, but not always, administered by a state education agency, and funded by a state appropriation or grant to provide online learning opportunities to students across the state. They also may receive federal or private foundation grants, and they sometimes charge course fees to help cover operating costs. Some of the largest state virtual programs include:
    - Florida Virtual School, founded in 1997, with nearly 199,000 students and 472,000 course completers in the 2016-2017 school year.
    - North Carolina Virtual Public School, founded in 2007, with nearly 36,000 unique students and over 58,200 course enrollments in the 2016-2017 school year.
- **Consortium and online programs** often are developed by districts, education service agencies, or intermediate service units that wish to create efficiencies by combining resources. They usually serve students from multiple districts that join the consortium.
- **Postsecondary programs** include many private pay options, but this report focuses on programs working with school districts to provide publicly funded options to students.

K-12 online schools more prevalent at higher grade levels

We believe online learning is more prevalent at the higher grade levels, where demand for credit recovery, AP classes, and other alternative learning is higher; whereas lower grade levels require more student/teacher interaction and supervision (2008 survey is latest data available). While this is 2008 survey data, we do not believe the breakdown has changed substantially, though we do believe there has been some shift to younger students.

Exhibit 37: Percentage of Students in Online Courses by Grade Level (2008 Survey)

Grade	Fully Online	Blended	Total
K-5	21%	1%	14%
6-8	15%	20%	17%
9-12	64%	78%	69%
Other	<1%	<1%	<1%
	100%	100%	100%

Source: Sloan Consortium and BMO Capital Markets.

Virtual schools can be more profitable than brick-and-mortar charter schools

An October 2006 report (latest available) by consultants Augenblick, Palaich & Associates estimates that start-up costs for a virtual school serving 500 students would be approximately $1.5 million, and annual FTE costs were estimated at $7,200-8,300 per full-time student. However, we believe there are a number of scale benefits similar to most technology-driven businesses, allowing larger virtual school operators to generate sizeable margins, despite being funded at lower rates than traditional bricks-and-mortar schools, given their lower cost structure (i.e., no buildings, fewer teachers, etc.). The Thomas B. Fordham Institute, in its 2012 report "The Cost of Online Learning," stated that there is limited availability of reliable and consistent cost data when it comes to virtual learning. However, they estimate that the per-pupil cost of a virtual school runs between $5,100 and $7,700, while a blended learning model runs between $7,600 and $10,200 compared to the $10,000 Fordham says traditional public schools spend per pupil.

In the following table we outline the cost similarities and differences between operating virtual and brick-and-mortar schools.

Exhibit 38: Cost Types: Brick and Mortar vs. Virtual Schools

Brick-and-Mortar School Only	Online School Only	Both
Buildings and grounds maintenance	Space for offices and computer lab for students	Administration
Security	Course-management system	Teachers
Transportation	Course content	Students
Energy	Computer and Internet access for every teacher and student	Professional development
Computer and internet access for every teacher	Mobile-communication device for teachers (e.g., cellphone) and network	Student-information system
Substitute-teacher costs (for sick days or professional development)	Technology support (e.g., help desk, course updating, server maintenance)	State testing system
Athletics	Marketing and advertising	Textbooks
Music program (e.g., band)		Courses and course outlines approved by governing board
Nursing services		Access to computers
		Special education services
		Student support (counseling, library)
		Network infrastructure
		Telephones and network

Source: Sloan Consortium and BMO Capital Markets.

In many instances, the virtual school model is similar to the charter school model, where a not-for-profit entity receives the charter and hires an education management firm, or an EMO, to operate the school. According to the National Education Policy Center, there were nearly 154 EMO-operated virtual schools in 2016-2017 (latest available), with 136 of these operated by for-profit EMOs, which accounted for 59% of all virtual school enrollments.

Exhibit 39: Overview of Virtual Schools by Operator (2016-2017 School Year)

	Schools	% of schools	Students	% of Enrollment	Avg. Enrollment per School
Independent	275	64%	113,038	38%	411
Nonprofit EMO	18	4%	7,319	2%	407
For-profit EMO	136	32%	175,161	59%	1,288
K12 Inc. (LRN)	76	18%	89,582	30%	1,179
Connections Academy (PSO)	34	8%	50,409	17%	1,483
Total for All Virtual Schools	**429**	**100%**	**295,518**	**100%**	**689**

Note: We note that LRN cites student enrollment at the end of its F2017 school year of nearly 104,000. Source: National Education Policy Center, and BMO Capital Markets.

Of the schools operated by for-profit EMOs, the bulk of them were run by two organizations: K12 Inc. (LRN), and Pearson's (PSO) Connections Academy. Expanding for-profit EMOs include Calvert Education Services, Edison Schools, and White Hat Management. The largest non-profit EMOs include Learning Matters Educational and Advanced Academics.

Exhibit 40: Virtual School Operators Ranked by Enrollments (2016-2017 School Year)

Name	Enrollments	% of Enrollments	Schools	% of schools
Independent	113,038	38.3%	275	64.1%
K12 Inc. (LRN)	89,582	30.3%	76	17.7%
Connections Education (PSO)	50,409	17.1%	34	7.9%
Altair Learning Management	13,895	4.7%	1	0.2%
Calvert Education Services	9,422	3.2%	5	1.2%
Indiana Online Learning	3,705	1.3%	1	0.2%
Responsive Education Solutions	3,419	1.2%	1	0.2%
White Hat Management	2,080	0.7%	2	0.5%
Edison Learning	1,975	0.7%	3	0.7%
ColoradoEd	1,762	0.6%	3	0.7%
Compass Charter Schools	885	0.3%	3	0.7%
Learning Matters Educational	762	0.3%	7	1.6%
GEM Innovation Schools	555	0.2%	1	0.2%
Global Alliance Collaborative	554	0.2%	1	0.2%
Pinnacle Education, Inc.	495	0.2%	1	0.2%
Virtual Academy of Lafourche,	489	0.2%	1	0.2%
Edkey, Inc.	445	0.2%	1	0.2%
Pacific Charter Institute	415	0.1%	1	0.2%
CompuHigh	408	0.1%	1	0.2%
Pathways Management Group	407	0.1%	2	0.5%
Cyber Education Center	268	0.1%	2	0.5%
Innovative Education Services	180	0.1%	1	0.2%
SIATech	121	0.0%	1	0.2%
Academica	107	0.0%	1	0.2%
North Star Charter School	90	0.0%	1	0.2%
Advanced Academics	38	0.0%	1	0.2%
Mosaica Education, Inc.	12	0.0%	2	0.5%
Grand Total	**295,518**	**100.0%**	**429**	**100.0%**

Note: We note that LRN cites student enrollment at the end of its F2017 school year of nearly 104,000. Source: National Education Policy Center, and BMO Capital Markets.

K-12 online school growth drivers and headwinds

Unique drivers of K-12 online learning include:

- Credit recovery and supplementary courses.
- Parental choice or child need for an online or distance environment.
- Higher-quality of online offerings and improved access.
- The increasing acceptance of charter schools and raising of enrollment caps.
- The growth of district-led online schools and online consortium schools.
- Philanthropic initiatives and grants such as the Bill and Melinda Gates Foundation and the Dell Foundation.

Hurdles to growth include the following:

Fiscal caps. While virtual schools may reduce per-student funding costs, funding models where money does not follow the student are vulnerable to cuts in state and federal spending programs.

Student outcomes. As of yet, there are no definitive studies on the outcomes of 100% online education, in our view. In fact, recent ED's Annual Yearly Progress (AYP) data found that many fully online for-profit EMO schools performed below their ground-based peers. We believe this is driving more district-led online school models as parents, teachers, and administrators seek non-profit, local alternatives that often have a ground-based component.

Enrollment caps. Many states put limitations on virtual school enrollment, prohibit cross-district enrollment, or require certain teacher certifications. We believe online schools will continue to be subject to strong enrollment regulation.

Accreditation. As online school accreditation is relatively new and uncharted territory, we believe substantial risk remains to consumers and providers, as consumers may enroll in unaccredited schools, while providers may be subject to evolving accreditation standards.

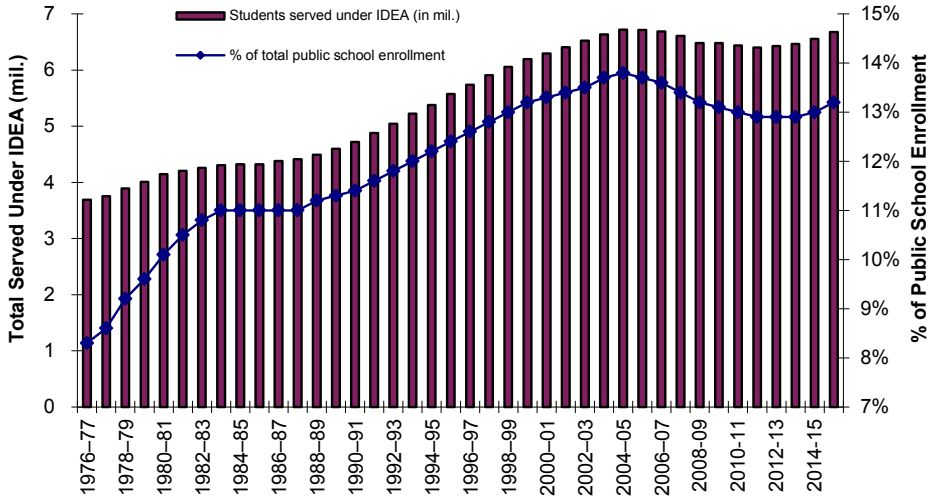
Ownership models. Online charter schools often are operated under a charter held by a non-profit entity, which then hires a for-profit company to run and manage the school. We believe this model has created some controversy among those who believe state funding should not be funneled to for-profit schools.

Special education schools are specialty schools that serve children with special education needs (e.g., autism, learning disabilities). Most of these students are eligible for public funding under the Individuals with Disabilities Education Act (IDEA), which was last reauthorized in December 2004 with most provisions taking effect in July 2005. We believe this market is relatively more stable during difficult times, as government is generally very reluctant to reduce this funding owing to political pressures.

Roughly 13% of U.S. public school population gets special education services provided by ED

According to the ED, in the 2015-2016 school year (latest data available) roughly 6.68 million school-age children in the U.S.—roughly 13.2% of the total U.S. public school enrollment—received IDEA funding; this is still below the peak of 6.72 million in the 2004-2005 school year (13.8% of total U.S. public school enrollment). We believe this decline is not necessarily owing to fewer students needing these services, but rather to more stringent eligibility requirements owing to budget constraints. We note this student body has increased since bottoming in the 2011-2012 school year.

Exhibit 41: Students Served Under IDEA (1976-1997 to 2015-2016 School Years)

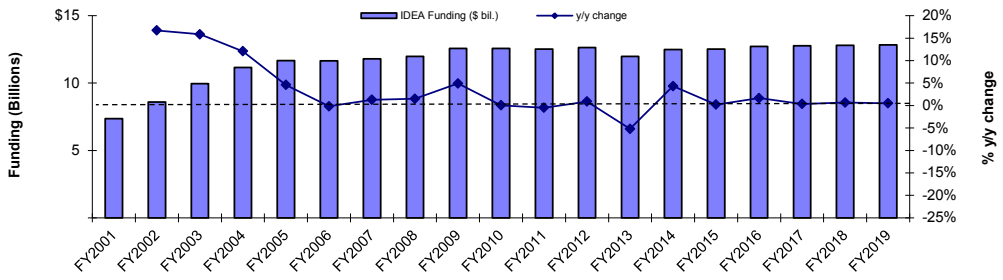


Source: BMO Capital Markets and National Center for Education Statistics.

Post-stimulus spending returns to more historical levels

The current IDEA expired in June 2010 and has yet to be reauthorized, though funding has continued to be provided. The budget proposal for annual funding has remained relatively flat, at around $12-13 billion since FY2005 (excluding a $12.2 billion stimulus boost in FY2010). We note that federal funding is normally well below the 40% (i.e., "full funding") levels promised in the original 1975 IDEA.

Exhibit 42: IDEA Funding (Excluding Stimulus; FY2001–FY2019E)



Source: BMO Capital Markets and Department of Education. Note: FY2010 excludes $12.2 billion in ARRA funds. FY2016 represents White House's request.

States may lower special education funding under recent guidance

Traditionally, states were required to maintain special education budgets at current funding levels to comply with the federal "maintenance of effort" rule, which requires such funding be either flat or up year to year, with violations risking the loss of federal funding. However, ED guidance in mid-2011 allowed states to reduce special education funding in one year, then be in compliance the following year so long as they met the new reduced level (vs. the prior formula, which penalized states until they spent at the previous maximum level). While this may provide more flexibility to states, it could allow special education funding levels to decrease somewhat.

Companies serving special education market

We believe the escalating costs of special education also present opportunities for businesses that can provide consulting services. Additionally, we note that the use of virtual technologies for special education has started to find a niche. Some businesses in this space include:

- Operators of alternative or special education schools, such as privately held Aspen Education Group, Catapult Learnng (purchased Specialized Education Services, Inc. in July 2015), ChanceLight Behavioral Health and Education (formerly Educational Services of America), and White Hat Management's LifeSkills Centers. Publicly held Providence Service Corporation (PRSC) and Universal Health Services (UHS) also provide social services.
- Product and service companies that have offerings specifically designed for special-education students, including Cambium Learning Group (ABCD), Renaissance Learning, Scientific Learning (SCIL), and School Specialty (SCOO).

A list of recent transactions of preK-12 schools (including childcare providers) in both U.S. and non-U.S. is provided as follows.

Exhibit 43: PreK-12 Schools Transactions: U.S. (2011-2018)

Annc. Date	Target	Acquiror	Transaction Value	Transaction Value/LTM Revenue	Transaction Value/LTM EBITDA
			(US$ mm)	(ratio)	(ratio)
Aug-18	Rainbow Childcare Center	KinderCare Education	n.a.	n.a.	n.a.
Aug-18	Nobel Learning Communities, Inc.	Spring Education Group	n.a.	n.a.	n.a.
Jul-18	The Learning Experience Corp.	Golden Gate Capital	n.a.	n.a.	n.a.
Mar-18	Learning Care Group, Inc. (minority investment)	American Securities / PSP Investments	n.a.	n.a.	n.a.
Feb-18	Endeavor Schools, LLC	Leeds Equity Partners, LLC	n.a.	n.a.	n.a.
Nov-17	Fusion Education Group LLC	Leeds Equity Partners, LLC	n.a.	n.a.	n.a.
Sep-17	Stratford Schools, Inc.	Primavera Capital Group	n.a.	n.a.	n.a.
May-17	AdvancePath Academics, Inc.	Graduation Alliance Inc.	n.a.	n.a.	n.a.
Apr-17	Minute Menu Systems, LLC	Alpine Investors, LP	n.a.	n.a.	n.a.
Dec-16	Creative Kids Learning Centers, LLC	Learning Group (Tutor Time, Inc.)	n.a.	n.a.	n.a.
Sep-16	Cadence Education	Morgan Stanley Private Equity	n.a.	n.a.	n.a.
Jul-16	College Nannies & Tutors, Inc.	Bright Horizons Family Solutions, Inc.	n.a.	n.a.	n.a.
Jul-16	Rainbow Early Education	Quad-C Management	n.a.	n.a.	n.a.
Apr-16	Aurora Day School	Catapult Learning, LLC	n.a.	n.a.	n.a.
Feb-16	Next Generation Children's Center Inc.	Cadence Education	n.a.	n.a.	n.a.
Dec-15	Little Sprouts	Wicks Group	n.a.	n.a.	n.a.
Dec-15	Beach Cities Learning	Learn-It Systems, LLC	n.a.	n.a.	n.a.
Oct-15	New York State Military Academy	Research Center on Natural Conservation, Inc.	$16.0	n.a.	n.a.
Aug-15	Children's Lighthouse Learning (7 centers in Dallas, Fort Worth)	Childcare Network	n.a.	n.a.	n.a.
Jul-15	Knowledge Universe	Partners Group	n.a.	n.a.	n.a.
Jul-15	Arlington, Belmont, and Concord schools (A Place to Grow)	Little Sprouts	n.a.	n.a.	n.a.
May-15	Hildebrandt Learning Centers	Bright Horizons	n.a.	n.a.	n.a.
Apr-15	Six Schools & a MI in LMPS from Meritas	Nord Anglia Education	$575.0	2.7x	11.4x
Apr-15	The Learning Experience	Norwest Venture Partners	$125.0	n.a.	n.a.
Mar-15	Nobel Learning Communities	Investcorp	$405.0	n.a.	n.a.
Feb-15	Hershey Christian School	Lancaster Mennonite Conference Schools	n.a.	n.a.	n.a.
Jan-15	Eurocentres San Diego	Oxford International Education Group	n.a.	n.a.	n.a.
Aug-14	Fusion Education Group	Laird Norton Company, LLC	n.a.	n.a.	n.a.
May-14	Learning Care Group	American Securities LLC	n.a.	n.a.	n.a.
Feb-14	Art Masters, Inc.	Global Vision Holdings, Inc.	n.a.	n.a.	n.a.
Jan-14	Alternatives Unlimited, Inc., Drop Back In Academy	Catapult Learning, LLC	n.a.	n.a.	n.a.
Jan-14	Northern Educate VSC LLC	Ability Academic and Athletic LLC	n.a.	n.a.	n.a.
Jul-13	Children's Choice Learning Centers	Bright Horizons Family Solutions	$53.0	1.3x	n.a.
Jun-13	Clubhouse Child Care Center, Inc.	Little Jewels Learning Center, Inc.	n.a.	n.a.	n.a.
May-13	WCL Group	Nord Anglia Education	$237.0	n.a.	n.a.
Jul-12	South Hill Academy	The Indian Public School	$10.0	n.a.	n.a.
May-12	Casterbridge Nurseries Ltd	Bright Horizons Family Solutions, Inc.	$114.3	n.a.	n.a.
May-12	Stratford School	Warburg Pincus	n.a.	n.a.	n.a.
Sep-11	Connections Education	Pearson	$400.0	2.1x	n.a.
Jul-11	C2 Educational Systems	Serent Capital	n.a.	n.a.	n.a.
May-11	Kaplan Virtual Education	K-12	n.a.	n.a.	n.a.
May-11	Nobel Learning	Leeds Equity Partners	$140.0	0.6x	8.2x
Apr-11	K12 Inc. (13% stake)	Technology Crossover Ventures	$125.8	2.2x	14.6x
Mar-11	5 preschools	Nobel Learning Communities	$47.2	n.a.	n.a.
Mar-11	ePals	New University	n.a.	n.a.	n.a.
Feb-11	Insight Schools	K12 Inc.	n.a.	n.a.	n.a.
			Mean	**1.8x**	**12.1x**
			Median	**1.4x**	**10.7x**

Source: BMO Capital Markets and Capital IQ.

Exhibit 44: PreK-12 Schools Transactions: Non-U.S. (2011-2018)

Annc. Date	Target	Acquiror	Transaction Value	Transaction Value/LTM Revenue	Transaction Value/LTM EBITDA
			(US$ mm)	(ratio)	(ratio)
May-17	BrightPath Early Learning Inc.	Busy Bees Holdings Ltd.	$108.2	1.7x	12.1x
May-17	ZGS Bildungs-GmbH	Oakley Capital Investments Limited	n.a.	n.a.	n.a.
May-17	McGraw-Hill Ryerson Ltd., K-12 Business	Nelson Education Ltd.	n.a.	n.a.	n.a.
Apr-17	Nord Anglia Education, Inc.	Baring Private Equity; CPPIB	$4,300.1	4.9x	20.8x
Mar-17	Treetops Nurseries Limited	Busy Bees Childcare Limited	$116.1	3.1x	n.a.
Feb-17	Nuevo Agora Centro De Estudios S.L	Providence Equity Partners LLC	n.a.	n.a.	n.a.
Dec-16	Camp Australia Pty Ltd	Bain Capital Private Equity, LP	$400.0	n.a.	n.a.
Jan-17	Magic Nursery Group Ltd.	LPCR Groupe, SAS	n.a.	n.a.	n.a.
Nov-16	Conchord Limited	Bright Horizons Family Solutions LLC	$207.9	2.8x	n.a.
Aug-16	Only About Children Pty Ltd.	Bain Capital Private Equity, LP	n.a.	n.a.	n.a.
Aug-16	Little Unicorn Day Nurseries	Bright Horizons Family Solutions, Inc.	n.a.	n.a.	n.a.
Jul-16	The Lawrence Park School Ltd.	BrightPath Early Learning Inc.	$0.8	n.a.	n.a.
Jun-16	20 Centers from Peekaboo Child Care	BrightPath Early Learning Inc.	$16.8	n.a.	n.a.
Aug-15	Affinity Education Group Ltd.	Anchorage Capital Partners	$149.0	1.2x	8.9x
Jun-15	Xueda Education Group	Xiamen Insight Investment Co.,Ltd	$129.9	0.4x	8.9x
Mar-15	British International School Vietnam	Nord Anglia Education	$153.4	2.9x	9.6x
Feb-15	12 Premium Childcare and Education Centres	G8 Education Limited	$28.0	n.a.	n.a.
Feb-15	60 nurseries in Singapore and Malasia from Knowledge Universe	Busy Bees Childcare Limited	n.a.	n.a.	n.a.
Dec-14	Canadian International School	Southern Capital Group and Headland Capital Partners	n.a.	n.a.	n.a.
Nov-14	Oxbridge Academic Programs	WorldStrides, LLC	n.a.	n.a.	n.a.
Oct-14	The Learning Lab	Advent International Corporation	$234.7	n.a.	n.a.
Jul-14	Northbridge International School Cambodia	Nord Anglia Education, Inc.	n.a.	n.a.	n.a.
Jul-14	19 Premium Childcare And Education Centers	G8 Education Limited	$24.2	n.a.	n.a.
Jun-14	Caring Daycare Limited	Busy Bees Childcare Limited	n.a.	n.a.	n.a.
May-14	NACE Group	Magnum Capital	n.a.	n.a.	n.a.
Mar-14	Sterling Early Education Holdings	G8 Education Limited	$199.8	n.a.	n.a.
Mar-14	Kinder Nurseries Ltd	Busy Bees Childcare Limited	n.a.	n.a.	n.a.
Feb-14	63 Premium Childcare and Education Centres	G8 Education Limited	$92.9	n.a.	n.a.
Dec-13	Noah Education Holdings Ltd. (Remaining 41% Stake)	Consortium of PE Investors	$22.8	0.6x	2.9x
Dec-13	Cambridge Education Group Limited	Bridgepoint Advisers Limited	$303.6	2.1x	11.0x
Oct-13	ZGS Schülerhilfe GmbH	Deutsche Beteiligungs AG; DBAG Fund VI	$93.4	1.6x	n.a.
Sep-13	29 Premium Childcare And Education Centers	G8 Education Limited	$39.7	n.a.	n.a.
Sep-13	Busy Bees Childcare Ltd.	Teachers' Private Capital	$351.2	2.0x	11.6x
Jul-13	Colégio Motivo	Abril Educação S.A.	$45.5	n.a.	n.a.
May-13	Urban International School	Loyalist Group Limited	$0.3	0.5x	n.a.
Apr-13	Kidsunlimited Limited	Bright Horizons Family Solutions	$69.0	1.1x	8.6x
Apr-13	Linkman International Language Institute	CIBT Education Group Inc.	n.a.	n.a.	n.a.
Apr-13	Cognita Schools, Ltd. (49% stake)	KKR	n.a.	n.a.	n.a.
Mar-12	Eight Child Care Center	Edleun Group	$0.5	n.a.	n.a.
Dec-11	Three The Children's House Montessori Daycare Centers	Edleun Group	$5.4	n.a.	n.a.
Dec-11	Four Child Care Center	Edleun Group	n.a.	n.a.	n.a.
Aug-11	Fredericksburg Children's Academy	Phoenix Children's Academy (Audax)	n.a.	n.a.	n.a.
Apr-11	Yuanbo Education (80% stake)	Noah Education Holdings	$14.7	2.7x	n.a.
Apr-11	International School of Berne	K12 Inc.	$2.0	n.a.	n.a.
Feb-11	Nord Anglia Education (minority stake)	Partners Group, Baring Private Equity Asia	n.a.	n.a.	n.a.
			Mean	**2.0x**	**10.5x**
			Median	**1.8x**	**9.6x**

Source: BMO Capital Markets and Capital IQ.

U.S. K-12 Instructional Materials Market

There are various estimates for the size of the K-12 instructional materials market.

- According to Simba Information, in its *Publishing for the PreK-12 Market 2016-2017*, educational print and digital media sales were $8.75 billion in 2017, up from $8.72 billion in 2014. Simba's numbers include textbooks, print supplements, manipulatives, trade books, magazines, state tests or summative high-stakes assessments, digital courseware, digital supplements, and video.
- The venture capital firm GSV Capital estimates $8.9 billion was spent on K-12 instructional materials in 2015. It forecast the sector to increase 8% CAGR to $12.8 billion in 2020, though we believe this forecast may be a bit too optimistic.

Sector is migrating from print to digital

A sizeable portion of spending in this area is on textbooks. For years, the "textbook" market was easily segmented into basal (core curriculum) material used as primary texts, supplemental material (supplement to instruction), and digital resources (supplemental, if any). The modular nature of digital definitions has softened these definitions a bit. Per MDR, there have been several trends impacting this market: the addition of digital elements to basal programs and arrival of fully digital core curriculum programs; flexible "adoption" systems or the process that states use to review basal instructional materials; the rise of OER (open educational resources), or open-license materials for free; and the persistence of Common Core State Standards (despite being a political lightening rod).

Nevertheless, we are using the historical classifications for our analysis.

Basal publishing trends to be somewhat dependent on adoption cycle

U.S. basal publishing. Historically, basal publishing has comprised between 75% and 80% of the total K-12 publishing market, consisting of core curricular materials typified by the traditional textbook, but increasingly including digital products. Basal publishing trends to be somewhat dependent on adoption cycles, which may or may not match directly with economic cycles. For example, the last "peak" year was 2014, with adoptions flat to down since, though expected to rise in the 2018-2019 school year.

Public school spending drives a large component of basal publishing market, as textbook publishers compete for the lucrative, state-allocated budgets. Twenty states (known as adoption states, which represent more than half the U.S. K-12 population) approve and procure new basal programs, typically every five to seven years on a state-wide basis, before individual schools or districts can schedule the purchase of materials. State funds are set aside to cover the costs of supplying educational materials. Once new adoptions are approved, typically the purchases are done over a three- to four-year time frame (adoption purchasing cycle).

In the remaining states, known as open states or territories, individual schools or districts can procure materials at any time, though usually according to a five- to nine-year cycle. In adoption states, states approve curriculum and provide funding, while in open states, local school districts approve curriculum and provide funding for materials. We summarize the various characteristics of these buyers below.

Exhibit 45: Adoption vs. Open Territory States

Adoption	Open Territory
20 States	• 30 States (plus District of Columbia)
26M Students	• 22M Students
2017E Market Size: $1.3 billion	• 2017E Market Size: $1.4 billion
State determines the timing of when material will be purchased	• Local school districts determine the timing of when material will be purchased
Occurs typically on a five to seven year cycle per subject area	• Occurs typically on a five to ten year cycle per subject area
Publishers will submit their programs to get approved by the state. Once approved, publishers can market and sell their programs to local school districts	• Local school districts instead of the state determine content, strategy and style of instruction suitable for edcuational requiremtns
Funding for the purchase of materials is predominantly provided by the state to local school districts	• Funding for purchase of materials is provided by local school sidstricts

Source: BMO Capital Markets and the American Association of Publishers.

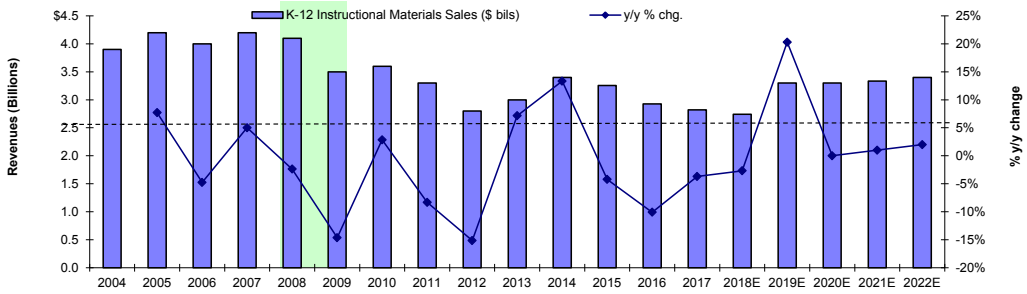
According to most industry estimates, three companies dominate the U.S. K-12 basal publishing market: Houghton Mifflin Harcourt (HMHC; went public in November 2013), McGraw-Hill Education (taken private by Apollo Global Management in March 2013), and Pearson Learning (PSO). In February 2018, Pearson announced plans to sell its K-12 curriculum business (Pearson Learning Services), but no update was available at the time of this publication.

While demand can be driven by secular spending needs, such as that provided by Common Core adoption, it typically follows enrollment trends and new textbook adoption, with cyclicality driven by local and federal budget levels. In the prior cycle, K-12 basal content revenues did not trough until 2004, nearly three years after the end of the 2001 recession.

K-12 basal publishing: great year in 2014, but that type of growth not sustainable; next peak expected in 2019

The American Association of Publishers (AAP) estimated that K-12 instructional materials reached roughly $2.8 billion in spending in 2017, down about 4% from the prior year. We believe much of this decline was due to the lower sales in new state adoptions in 2017 (as well as in 2015 and 2016) following a very strong 2014 when the "floodgates" opened to meet pent-up demand after the Great Recession, which also corresponded with increased state and local property tax revenues. Given expected adoptions, most expect the next peak to arrive in 2019.

Exhibit 46: K-12 Instructional Materials Sales (2004–2022E)

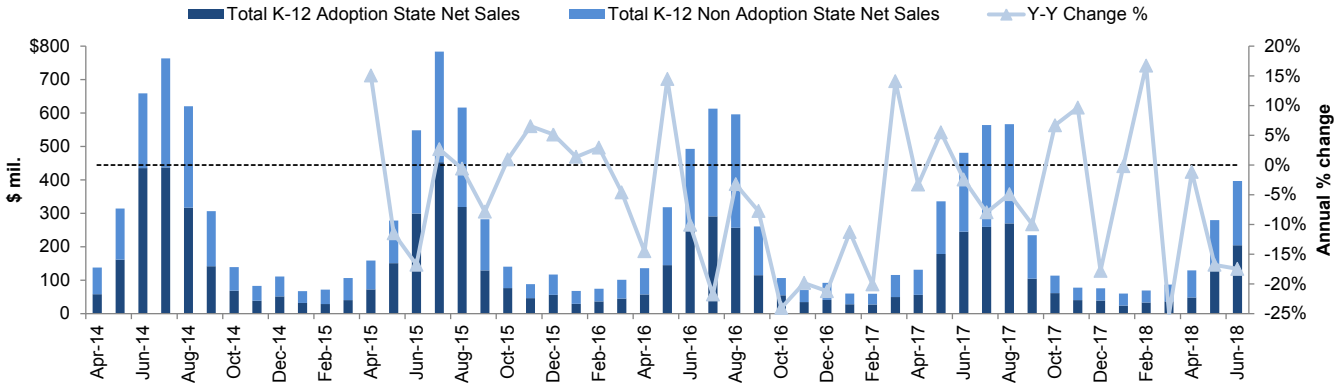


Note: Shaded area represents recessionary period. Source: American Association of Publishers and BMO Capital Markets.

Purchasing cycles and new adoptions can drive volatility

Purchasing cycles can have a material impact on future sales, especially in major adoption states. While enrollment growth is relatively stable and should support increases in K-12 state spending in the long run, spending levels have been volatile of late due to purchasing cycle trends. In 2014, spending growth in K-12 materials reached all-time highs due to pent-up demand driving strong new adoption sales. We believe this resulted in sales "pulled forward" from the following year translating into a subpar 2015, due to a lower new adoption market. Trends have been disappointing since; AAP estimates total net sales were down nearly 14% YTD through June 2018.

Exhibit 47: AAP K-12 Net Sales (2014-2018YTD)



Source: American Association of Publishers.

Digital educational content. We believe digital media is a disruptive force that is changing the product mix and business models of the large publishers. A 2015 research report by Simba Information found that print accounted for nearly 70% of preK-12 instructional materials sales in the U.S., while digital makes up the other 30% of the market. We believe that mix is continuing to evolve.

The Software & Industry Information Association (SIIA) defines "software and digital content/resources" as education software and related platforms, products, and services sold to PreK-12 institutional markets (both public and non-public schools) within the U.S. These products and services can be used both in and outside of the classroom, including professional development but excluding hardware. The markets for hardware, network infrastructure, and telecommunications and Internet services, which would dramatically increase the total market, are not included in its estimates.

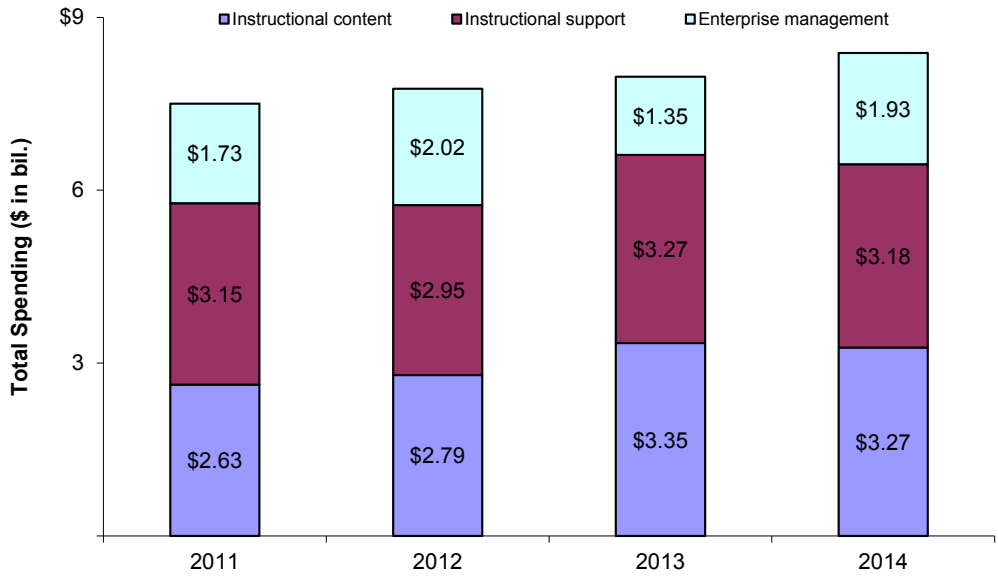
Move to more digital content

SIIA estimates that $8.38 billion was generated in preK-12 software and digital content/resources in 2014 (latest data available), having grown at a 3.8% CAGR since 2011. The organization segments this spending across three categories:

- **Instructional content** (39% of the total or approximately $3.3 billion in 2014), where Reading/Language Arts and Mathematics/Arithmetic dominate.
- **Instructional support** (38% of the total or approximately $3.2 billion in 2014), which includes testing and assessment.
- **Enterprise management** (23% of the total or approximately $1.9 billion in 2014), formerly called platform and administration.

Since 2011, spending has been a bit choppy across these three areas, with instructional content seeing the greatest increase (7.6% CAGR).

Exhibit 48: U.S. PreK-12 Software and Digital Content (2011-2014)



Source: Software & Industry Information Association.

Migration from print to digital

It was difficult to gauge the exact progress of the shift from print to digital within the K-12 instructional materials segment, given the various definitions of digital. However, most evidence suggests a gradual migration from print to digital.

- Per Education Market Research, in 2014, digital sales comprised 37% of all sales to U.S. school districts, vs. 44% for print; however, while print sales fell roughly 2.6% year over year, digital sales increased by that same percentage.
- Per Houghton Mifflin (HMHC) management, digital represented approximately 48% of its 2015 billings within its large education basal program and approximately 34% of billings overall for its Education segment; the latter number compares to over 50% in 2014 and 27% in 2013. The company has not released this data since.

Digital should have many potential benefits

The expected benefits of digital curricula are vast, in our view, and include:

- **Custom "personalized" content.** Digital content enables schools to create unique, customizable educational solutions that meet specific needs of schools and teachers or standards required by the district or state.
- **More range of content.** Digital products increase access to a broader range of learning content across skill levels and enable schools to offer online programs or courses that otherwise couldn't be funded.
- **Low price.** Owing to their customizable features and digital delivery model, digital products enable low-cost incremental purchases at the school and classroom level, as opposed to large and costly district-wide purchases of print products.
- **Mobility.** Cloud-based and SaaS products can be used by students, parents, and teachers at home and at school, and allow collaborative data sharing or lesson planning across districts and schools. Many school districts are also investing in mobile devices for students.
- **Assessment capability**. Digital products enable comprehensive student learning analytics and give teachers the ability to analyze the performance of individual students and meet regulatory reporting requirements.

- **District requirements and regulations.** More states are passing laws and funding initiatives to increase the use of digital content and online courses in schools. In addition, the assessment arm of the ED's Common Core Standards will be all digital, requiring schools to have this capability.
- **Greater access and connectivity.** Increased "wiring" of schools over the years and access to high-speed internet have enabled more use of digital products through K-12 schools. Government subsidy programs such as the ED's E-Rate program (started in 1997 and "modernized" in 2015 with additional funding for broadband and Wi-Fi connectivity) should provide additional infrastructure support for K-12 schools.

While we believe the "new toy" factor is also a component of this shift, there is growing evidence, at least anecdotally, that technology and digital products have a positive impact on student engagement.

Going digital should drive cost savings

Over the long term, we believe the economics of digital content promise to reshape the business of education curriculum. According to the industry-led LEAD Commission (March 2013 report), digital learning material-rich education can offer about $250 in annual savings over traditional education per student ($3,621 vs. $3,871).

According to Global Equities Research, the cost benefits of selling electronic books include:

- No used book market: Used books comprise 35% to 50% of textbook sales, for which publishers get zero revenue.
- No supply chain markup: In the current model, textbooks go from the publisher to the distributor, to the wholesaler, to the retailer, and then to the end user (i.e., student). The supply chain markup is between 8% and 15% at each step, totaling between 33% and 35%.
- Zero distribution costs, thanks to the magic of the internet.
- Cheaper production: iBook production costs are estimated to be 80% less than the cost of producing a printed book.
- Favorable supply/demand curves: At $14.99, publishers might sell 40-60% more books than they could at $125.

Several drivers of digital content migration

Some drivers of the migration to digital content:

- **Market disrupters and new players:** Consumer technology has become more prevalent in the space, especially as major technology companies have increased investments over the years. For example, Amazon, Alphabet (parent of Google), and Apple have digital marketplaces to distribute the content and educational apps. Teachers are also developing their own educational content and leveraging the internet to distribute lesson plans, videos, and activities, and others resources in teacher marketplaces, such as Teacher Pay Teachers. We note than in April 2018, Amazon announced it would no longer be supporting its TenMarks classroom prodcts after the 2018-2019 school year.
- **State and federal initiatives encouraging connectivity**, such as the FCC's Digital Textbook Playbook initiative, and the FCC's E-Rate program to connect the nation's schools and libraries to broadband. The Obama administration's ConnectED initiative also provided additional funding to upgrade school connectivity, improve access to learning devices and resources, and support teacher development in technology.
- **Open Education Resources (OER)**. Foundation grants and support from some districts are enabling the creation of digital instructional materials that are free to share. In 2015, a consortium of 12 states, known as the K-12 OER Collaborative, began to create an entire OER-based English Language arts and mathematics courses, under the coordination of the non-profit, The Learning Accelerator. Some schools prefer to self-author curricula through creation of proprietary digital texts.
- **Investments in instructional technologies.** School districts continue to allocate budgets to instructional devices, including tablets and laptops for students. However, these purchases have not always been successful. For example, earlier this decade, the Los Angeles school district invested

heavily to purchase Apple iPads, and later Google Chromebooks, and other vendors. The proposal was part of a $1 billion goal to provide a computer to every student, teacher, and administrator in the school system; though due to technical issues (as well as funding concerns) the initiative was cancelled in April 2015, the newly reformed Instructional Technology Initiative Task force continues to focus on bringing a device to every student in the district.

- Private ventures to develop digital texts such as that between Apple and large publishers, including McGraw Hill Education and Pearson.

Most schools districts expect to have a blend of print and digital

The migration to digital is moving, though at a slow pace, as most public school districts intend to adopt a blend of print and digital materials. A 2016 national survey of public school districts by Washington-based Consortium for School Networking (CSN) found that 89% of the school technology officials surveyed in 2015 expected instructional materials to be at least 50% digital in the next three years. A follow-up survey found that only 43% of respondents had instructional materials 50% digitally based in 2018. The pace of transition is still slow. One possible reason cited is the lack of interoperaability between digital content and digital content platforms. Still, IT leaders are playing a larger role in digital content purchasing decisions, particularly in core curriculum.

U.S. supplemental publishing. This market consists of instructional workbooks, study aids, digital video products, e-learning, online, and other computer-based systems that augment traditional in-school learning, which can include any instructional materials not labeled as basal" or "core." Companies that develop and market supplemental extend beyond Pearson, McGraw-Hill Education, and Houghton Mifflin Harcourt (HMHC) to a wide range of firms, from start-up to global enterprise.

Various market size estimates

As a wide range of resources can potentially be considered "supplemental," market size estimates for the segment vary widely. *The Supplemental Products: 2014 Size, Growth & Change from Simba Information/Education Market Research (EMR)* (latest available), which defines supplemental products broadly (which we believe also includes infrastructure-related products) and makes calendar-year projections, estimated that supplemental educational products sales grew 6.3% year over year from 2013 to 2014 to $15.26 billion, following a 3.5% year-over-year increase from 2012 to 2013. Simba/EMR's *The Complete K-12 Report: 2015* (which uses a narrower definition and does school-year estimates) sized the 2014-2015 supplemental materials market (all supplemental materials excluding core textbooks) at $6.7 billion, up 2.4% from the 2013-2014 school year.

We believe similar factors affecting basal or core publishing are taking effect here: drivers of this market include cheap, easy-to-use products, and schools with generally higher levels of technology infrastructure, often incentivized by government initiatives such as the Common Core Standards and connectivity programs such as the FCC's e-Rate.

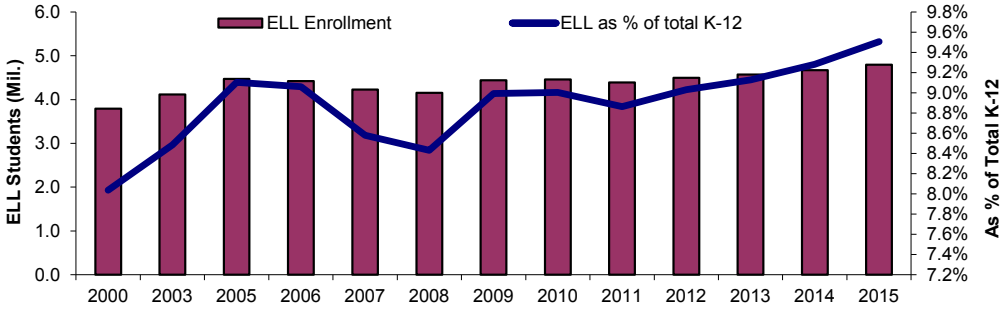
Digital supplemental products have proliferated

Digital products are also making headway in supplemental publishing, and there are numerous businesses competing for this market share, including Achieve3000, Agilix, Apex Learning, Cambium Learning (ABCD), Carnegie learning, Catapult Learning, Curriculum Associates, DimensionU, Discovery Education, Dreambox Learning, Edmentum (formerly Plato Learning), Everfi, GL Education, Glynlyon, Imagine Learning, Knewton, Lexia Learning (purchased by Rosetta Stone [RST] in July 2013), MSI Information Services, Newsela, and Scientific Learning (SCIL). This market also includes the thousands of educational apps now available on mobile devices.

ELL students also represent a sizable curriculum market

The English Language Learner (ELL) market also has represented a strong pocket of growth for publishers, driven by the fast-growing ELL student population. In the 2015-2016 school year (latest data available), there were roughly 4.7 million ELL students in the U.S., accounting for 9.5% of the total U.S. K-12 public school enrollment. While the rate of growth has been somewhat lumpy, this population has grown at roughly 4x the rate as overall K-12 enrollment since 2000.

Exhibit 49: English Language Learners as Percentage of Total K-12 Enrollment (Fall 2000-Fall 2015)



Note: Data for 2004 and 2005 not available. Source: U.S. Department of Education National Center for Education Statistics and National Clearinghouse for English Language Acquisition and Language Instruction Educational Programs.

A list of recent education publishing transactions is provided below.

Exhibit 50: Educational Publishing Recent Transactions (2011-2018)

Annc. Date	Target	Acquiror	Transaction Value	Transaction Value/LTM Revenue	Transaction Value/LTM EBITDA
			(US$ mm)	(ratio)	(ratio)
Mar-18	myON LLC	Renaissance Learning Inc.	n.a.	n.a.	n.a.
Feb-18	Discovery Education, Inc.	Francisco Partners Management LLC	$120.0	n.a.	n.a.
Jan-18	Colégio e Vestibular de A a Z	Pearson Sistemas do Brasil S.A.	n.a.	n.a.	n.a.
Jan-18	Infobase Holdings, Inc.	Centre Lane Partners, LLC	n.a.	n.a.	n.a.
Jan-18	Weld North Education, LLC	Silver Lake	n.a.	n.a.	n.a.
Nov-17	Wall Street English	CITIC Capital Holdings Limited; Baring Private Equity Asia	$300.0	1.4x	n.a.
Nov-17	iversity GmbH	Springer Nature	n.a.	n.a.	n.a.
Nov-17	Motion Math Inc.	Curriculum Associates LLC	n.a.	n.a.	n.a.
Oct-17	Rodale Inc.	Hearst Magazines Corporation	n.a.	n.a.	n.a.
Sep-17	Curriculum Associates	Berkshire Partners	n.a.	n.a.	n.a.
Aug-17	Education Advisory Board	Vista Equity Partners LLC	$1,550.0	6.3x	n.a.
Jul-17	Penguin Random House LLC	Bertelsmann SE & Co. KGaA	$4,466.0	1.3x	8.4x
Feb-17	myON	Francisco Partners Management LLC	n.a.	n.a.	n.a.
Apr-16	Baker & Taylor Corporation	Follet Corporation	n.a.	n.a.	n.a.
Apr-16	IP Publishing Ltd.	SAGE Publishing	n.a.	n.a.	n.a.
Mar-16	Perseus (distribution business)	Ingram Content Group	n.a.	n.a.	n.a.
Jul-15	Education Market Research	Simba Information	n.a.	n.a.	n.a.
Jun-15	Saraiva Educação (publishing and education business)	Abril Educação	n.a.	n.a.	n.a.
May-15	Nebraska Book Company, Inc., Retail Store Division	Follet Corporation	n.a.	n.a.	n.a.
Apr-15	Boundless Learning, Inc.	Valore	n.a.	n.a.	n.a.
Mar-15	TSI Evolve	MPS North America LLC.	n.a.	n.a.	n.a.
Mar-15	Make Believe Ideas	Scholastic Corporation	n.a.	n.a.	n.a.
Feb-15	Spinoff of Barnes & Noble Education	Barnes & Noble, Inc	n.a.	n.a.	n.a.
Feb-15	Ingram Content Group (multiyear inventory purchasing relationship)	Chegg, Inc.	n.a.	n.a.	n.a.
Feb-15	Baker & Taylor Publishing Group / Marketing Services	ReaderLink Distribution Services	n.a.	n.a.	n.a.
Feb-15	Courier Corporation	R.R. Donnelley	$306.4	1.1x	8.3x
Jan-15	Springer Science+Business Media S.A.	Macmillan Science	n.a.	n.a.	n.a.
Sep-14	BookRags, Inc.	Gradesaver LLC	$5.0	1.2x	3.1x
Jul-14	Canadian Legal Publishing Operation of Wolters Kluwer	LexisNexis	n.a.	n.a.	n.a.
Nov-13	Children's Network, LLC	NBCUniversal Cable Entertainment Group	n.a.	n.a.	n.a.
Jul-13	Grockit Inc., Test Prep Assets and Social Learning Platform	Kaplan, Inc.	n.a.	n.a.	n.a.
Jul-13	National Transcript Center	Hobsons	n.a.	n.a.	n.a.
Jun-13	Springer Science+Business Media S.A.	BC Partners	$4,422.0	3.4x	9.7x
Feb-13	Thomson Reuters, Law School Publishing Business	Eureka Growth Capital	n.a.	n.a.	n.a.
Jan-13	Groupe Modulo	TC Media	n.a.	n.a.	n.a.
Jan-13	School Specialty	Bayside Finance	n.a.	n.a.	n.a.
Nov-12	McGraw-Hill Education	Apollo Global Management	$2,400.0	1.1x	5.7x
Nov-12	John Wiley & Sons Assets	Houghton Mifflin Harcourt	n.a.	n.a.	n.a.
Oct-12	Penguin Group	Random House (Bertelsmann)	n.a.	n.a.	n.a.
May-12	Harlan Davidson	John Wiley & Sons	n.a.	n.a.	n.a.
Mar-12	Princeton Review (Assets)	Charlesbank Capital Partners	$33.0	0.3x	2.1x
Feb-12	Inscape Holdings	John Wiley & Sons	$85.0	n.a.	n.a.
Feb-12	Bendon Publishing International	The Wicks Group of Companies	n.a.	n.a.	n.a.
Feb-12	Talaris Institute	Teaching Strategies	n.a.	n.a.	n.a.
Jan-12	Teaching Strategies, Inc	Chicago Growth Partners	n.a.	n.a.	n.a.
Jan-12	Learners Publishing	Scholastic	n.a.	n.a.	n.a.
Nov-11	Global Education and Technology	Pearson	$155.0	2.7x	15.9x
Aug-11	Stark Holding	Pearson	n.a.	n.a.	n.a.
Aug-11	Carnegie Learning	Apollo Group	$75.0	n.a.	n.a.
Jul-11	Excelligence Learning	Sterling Investment Partners	n.a.	n.a.	n.a.
Jun-11	National Geographic School Publishing	Cengage Learning	n.a.	n.a.	n.a.
Jun-11	The HW Wilson Company	EBSCO Publishing	n.a.	n.a.	n.a.
Apr-11	BARBRI	Leeds Equity	n.a.	n.a.	n.a.
Mar-11	Second Language Testing	Berlitz Corporation	n.a.	n.a.	n.a.
			Mean	**2.1x**	**7.6x**
			Median	**1.3x**	**8.3x**

N.A. – Not Available. Source: BMO Capital Markets and Capital IQ.

U.S. K-12 Testing and Assessment Market

For educators, there are generally two types of student assessments:

- **Formative assessment,** the goal of which is to monitor student learning to provide ongoing feedback that can be used by instructors to improve their teaching, and by students to improve their learning.
- **Summative assessment,** which evaluates student learning at the end of an instructional unit by comparing it against some standard or benchmark.

Other specific type of tests in the K-12 market, which overlap to an extent, include (as defined by Simba Information):

- **High-stakes assessment.** High-stake tests result in an important outcome for a school, district, or state, or for an individual student. Examples: federal- (such as NCLB) or state-mandated exams, graduation exams, end-of-course exams.
- **Benchmark assessments.** Tests given at intervals and aligned to state standards. They often have similar items as on high-stakes tests. Intended to measure progress at a point along the path toward summative exams, they offer a snapshot of student performance at a given moment.
- **Diagnostic assessments.** Tests given at the beginning of a given time period to assess special needs prior to learning and at intervals thereafter to assess progress.
- **Standardized tests.** Administered and scored in a predetermined manner, so results can be compared across schools, districts or states. These include the SAT and Advanced Placement (AP) tests.

There are some gray areas where these overlap, as some states/districts incorporate tests and item banks that resemble formative assessment in the classroom. As more schools embrace digital instructional content, the use of assessments is increasing. School districts benefit from potential cost savings, centralized resource tracking, and efficient aggregation of student data using electronic assessments. In the classroom, teachers potentially can create assessments and implement assessments more easily. The ultimate goal is using electronic assessments to gather student performance for educators to aggregate and analyze to develop personalized learning for each student.

Various estimates for size of U.S. K-12 testing and assessment market

There are various estimates of the size of the U.S. K-12 testing and assessment market.

- Simba Information estimates the testing market generated $2.59 billion in 2016-2017 revenues. It divides the category into two segments: state level tests ($1.2 billion in 2015), and classroom assessments ($1.5 billion in 2015), with the latter having grown faster over the past two years. It expects growth to be modest, at under **2% a year**.
- Research provider Outsell estimates the testing and assessment market to be a $4.5 billion market (2016), forecast to grow at a **3.3% CAGR** through 2019.
- GSV Capital segments between States Tests (high stakes) at $1.7 billion, and Entrance & Aptitude Exams (ACT, SAT, etc.) at just under $500 million (both 2015 estimates); it forecasts both segments to grow at a **2% CAGR** through 2020.

Funding sources for assessments. The majority of funding for testing and assessment comes from state and federal government sources, with states accounting for an estimated 45% of the market spending on testing, districts at 38%, and federal funding at 17%, according to Simba's *PreK-12 Testing Market Forecast: 2012-2013* (latest data available). This is a bit more skewed to federal funding than most other K-12 verticals (typically in high-single digits).

NCLB drove investments in test development

State-level assessments. The No Child Left Behind Act (NCLB) was the main catalyst for testing assessment demand in the 2000s, which mandated testing for each state. According to the ED's 2010 NCLB accountability report (final report in series), the federal government spent roughly $2.8 billion from 2002 to 2008 on grants to states for development of state assessments.

While the initial investment in NCLB assessment has passed, administration and maintenance expenses remained. According to Simba estimates, growth in state assessment spending peaked in 2006, declining through 2010, when it dropped to $1.1 billion. Spending began improving in 2011 and onwards, with Simba projecting 3.3% CAGR growth through 2016, when it forecast spending to top $1.2 billion.

Common standards driving state-level assessments

The transition to the Common Core Standards (CCS) tests had been a driver for state-level assessments, with the assessments created by the two multi-state CCS testing consortia: the Partnership for Assessment of Readiness for College and Careers (PARCC), and Smarter Balanced Assessment Consortium (SBAC), which provide CCS-aligned assessments.

But not without some controversy

However, this transition has not been seamless. In the 2015-2016 fiscal year, the Education Commission of the States (ECS) noted that six states plus Washington D.C. used PARCC, and 15 states used SBAC assessments. This number was down significantly from 2010 when PARCC had 26 and SBAC had 31 members, respectively. Part of this appears to be related to political pressures related to the adoption of CCS, where many states may have given up CCS assessment in response. The December 2015 passage of the Every Student Succeeds Act (ESSA) also ended any federal mandates and incentives for states to adopt CCS.

Digital assessments gaining ground

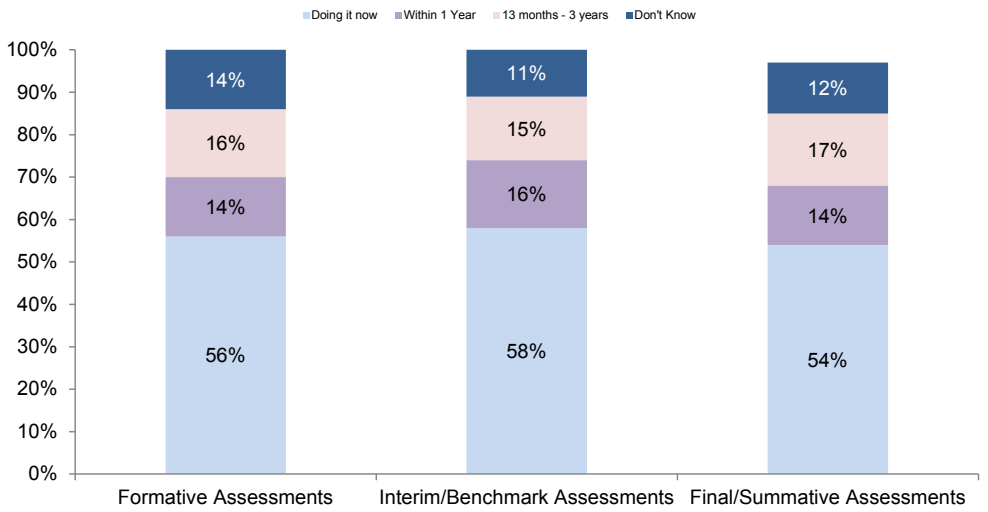
Still, we believe CCS has driven state assessment programs to move online (with several having already implemented online testing), due to the online nature of the high-stakes PARCC and SBAC assessments. We believe digital assessments (though not necessarily provided by PARCC and SBAC) will continue to gain ground. Not only does digital capability better comply with CCS, but it also enables educators to more easily integrate digital curriculum, assessments, and learning management systems, and provides quicker, more standardized feedback about student performance. In the 2011-2012 school year, Simba estimates that online testing represented 35% of high-stakes, state-level testing, and we believe this level has increased since that time and will continue to do so.

Classroom assessments. These assessments comprise the materials and technologies used to monitor student progress and to help shape the instructional needs of individual students. They can come with the textbook, or can be purchased from an assessment publisher or vendor (in either print or online, or both). These assessments can be developed by the district or state or third party, or in some cases via open-source (OER or teacher-created and shared). According to Simba Information, funding for classroom assessments tends to be purchased by three sources: the district, the school, and the individual teacher, with the split among the three varying among districts, though the district is generally the primary purchaser. State-level initiatives are an important driver for classroom assessments; many states continue to invest heavily in formative assessment tools to help raise performance and support summative assessments (i.e., high-stakes tests).

More of these assessments are moving online or to mobile devices, with many sold on a subscription basis to the district (occasionally the school). A 2016 Education Week Research Center survey found that 83% of district or school leaders said their teachers were using one or more digital tools for conducting formative assessments during the 2015-2016 school year.

The rise of 1:1 initiatives (one device per student) and increasing use of digital instructional material are an important driver for these assessments, as both require imbedded formative assessment tools to be effective, personalized learning programs. More broadly, the growth of online K-12 education is also an important driver for online classroom assessments. According to an MDR survey of district technology directors on when they plan to make assessment digital and administer online, the top answer for all three types is listed as "doing it now," though it differs by type of assessment.

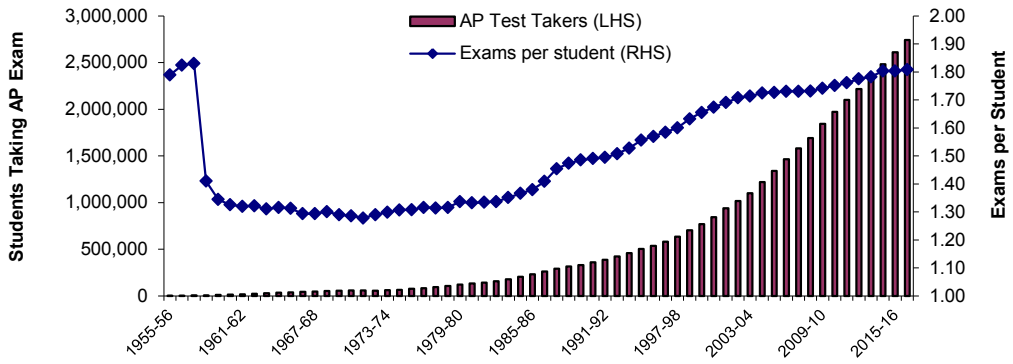
Exhibit 51: Administration of Online Assessments (2014-2015)



Source: MDR *State of the K-12 Market 2015* report.

The Advanced Placement (AP) testing is also an important component of the assessment market. According to the College Board, over 2.7 million students took AP exams in the 2016-17 school year, which was an all-time high. In addition, the number of exams taken per student has been creeping up in recent years and is now approaching just below two per student, which was also an all-time high.

Exhibit 52: Students Taking AP Exam (1955-1956 to 2016-2017 School Years)



Source: College Board and BMO Capital Markets.

More students taking AP Exams

Investment risks in assessment products include state and federal funding levels, commitment to CCS or other standards, testing errors or other systematic failures, and test manipulation. There have been numerous examples of companies having to fix testing errors, with a number of subsequent penalties assessed: such as those that led Pearson (PSO) to pay $15 million to Florida in 2010 to settle a complaint over delays in reporting test results, and led the Educational Testing Service in 2006 to create an $11 million fund to pay teachers who were given the wrong scores on licensing exams. Developments such as these can hurt from both a financial and "headline" perspective.

Based on MDR's survey of district-level curriculum directors for the 2015-2016 school year, products from Renaissance Learning (including STAR Reading, STAR Math, and other STAR programs), Northwest Evaluation Association (including Measures of Academic Progress), Pearson (including AIMSweb, GMADE, and GRADE), and Edmentum (Study Island) are among those with the highest penetration in school districts. Other companies that provide K-12 testing and assessment products and services include: ACT, The College Board, Edgenuity, Edmentum, GL Education and Renaissance Education.

U.S. Tutoring and Test Preparation Market

Various estimates as to market size and growth

This market comprises third-party providers of test preparation and tutoring services for students, with revenues paid by schools and school districts. There are various estimates as to the size and growth of this market:

- According to Anything Research 2015 Tutoring Industry Report, tutoring in the U.S. is a $4.3 billion dollar industry, projected to reach $5.4 billion by 2019 (**roughly 6% CAGR**).
- GSV Capital pegs the U.S. K-12 tutoring and test preparation market at $6 billion in 2015, and forecasts **3% CAGR** growth to nearly $7 billion by 2020.
- According to Global Industry Analysts Inc., private tutoring and test preparation in North America generated $12 billion in 2014, up from $7 billion in 2006; we believe this may include services for college-age students. The firm projects North American revenues to reach $17.5 billion in 2020, reflecting **roughly 6.5% CAGR** growth.
- Technavio's analysts forecast the U.S. test preparation market to grow at a **7% CAGR** during the period 2018-2022. It estimates the K-12 test preparation market was roughly $8.3 billion in 2016. Globally, Technavio estimates the test prep market will grow from $24.57 billion in 2016 and expected to reach $32.13 billion by 2021, per Technavio analysts.

NCLB was early catalyst, but growth now sluggish

In the early 2000s, NCLB was a catalyst for this industry, as it required schools to purchase supplemental education services (SES) from third-party providers. However, the SES market has struggled in recent years for several reasons, including underutilization, lack of funding to states, and increasing waivers being granted to schools, which free them from NCLB mandates. While we expect tutoring companies that are selling to private purchasers (i.e., parents) will continue to have a niche, we expect the larger opportunity of selling directly to schools to be difficult.

Large companies and technology products still prevalent

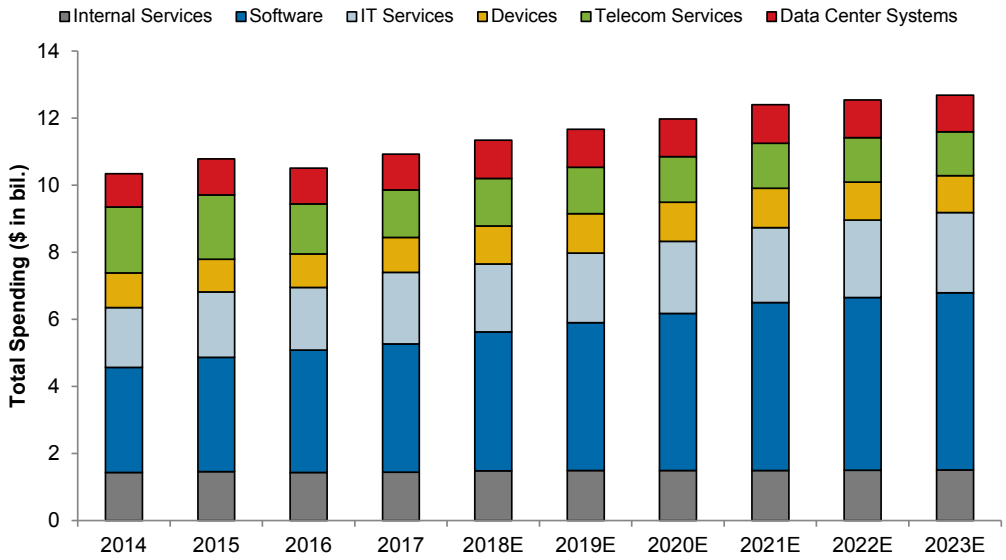
While the growth in this industry that followed NCLB is not likely to return, we believe the larger providers, which are not reliant on federal funds and have achieved some scale, represent relatively more stable investments. These include Huntington Learning, Kaplan Test Prep (a subsidiary of Graham Holdings Corp. [GHC]), Kumon, and Sylvan Learning. We also believe continued technology and online-enabled products will continue to emerge, adding more investment opportunities in this sector. Companies that specialize in online tutoring and test preparation include providers such as C2 Education, Eduboard, InstaEDU (acquired by Chegg [CHGG] for $30 million in June 2014), Revolution Prep, Smarthinking (Pearson [PSO]), StudyPoint, TutaPoint, Tutor.com (acquired by IAC in January 2013), Varsity Tutors, Wyzant, and Yup Technologies; and offshore providers such as Educomp Solutions (NSE: EDUCOMP), and TutorVista. We believe organizations like Khan Academy would also fit into this category.

U.S. K-12 Technology Market

K-12 ed-tech estimated 2.3% CAGR through 2023

According to Gartner research, an estimated $11 billion will be spent on technology in the U.S. K-12 sector or "ed-tech" in 2018. Based on Gartner forecasts, we project this spending will grow at roughly a 2.3% CAGR, reaching nearly $13 billion in 2023, and mostly led by increases in the software and IT services segments.

Exhibit 53: U.S. K-12 Technology Revenues (2014–2023E)

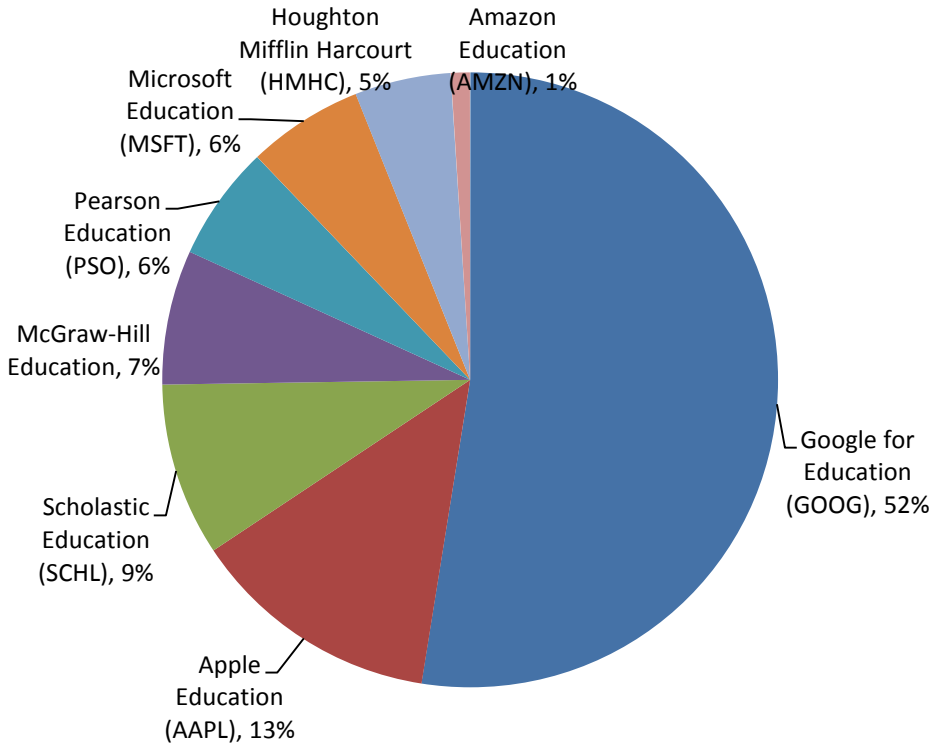


Source: Gartner estimates.

Google becoming a more dominant player

In recent years, the technology landscape has shifted such that Google (GOOG) has become a more dominant player. According to an April 2017 report by EdWeek Market Brief, buyers cite such advantages as ease of use, and effectiveness and quality of their products. In the same report, K-12 technology buyers were asked which one company they would hire to improve student achievement in their school district: Google generated more responses than all the other companies combined.

Exhibit 54: Which Technology Company Would K-12 Technology Buyers Pick to Improve Student Achievement (April 2017 Survey)

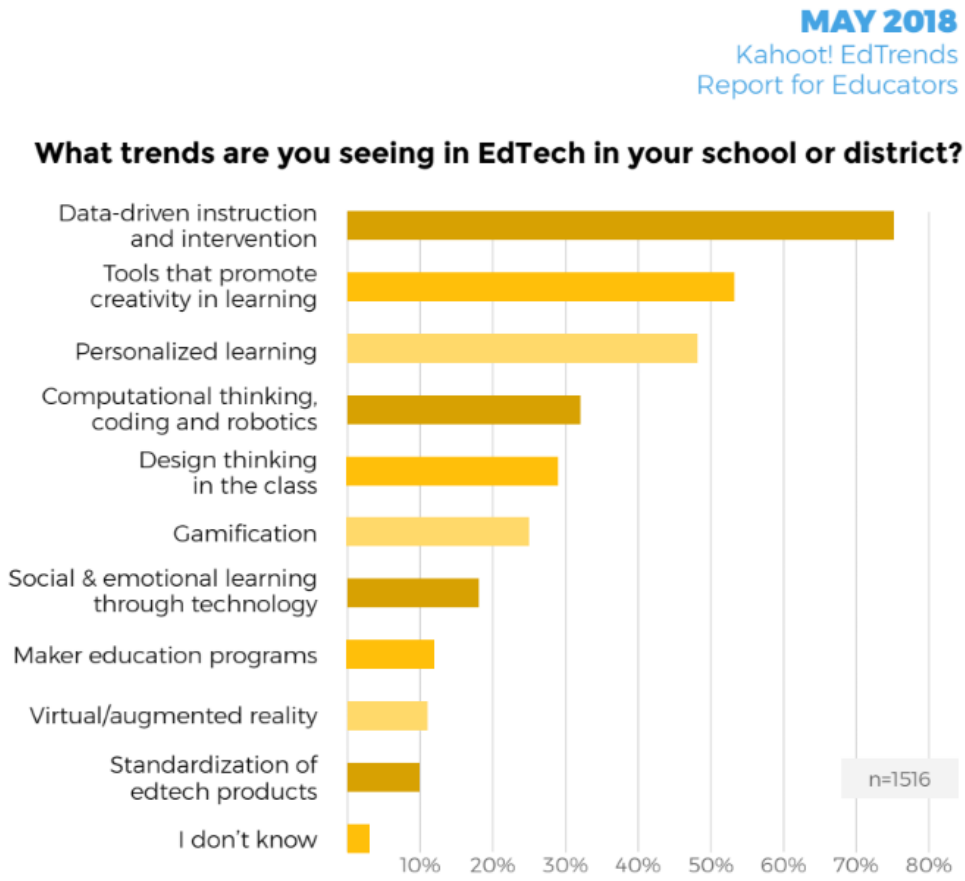


Source: EdWeek Market Brief

Teacher survey re: K-12 ed-tech trends

A May 2018 survey of over 1,500 U.S. K-12 teachers by Kahoot!, a game-based learning platform, found that roughly 75% stated data-driven instruction as the top trend they see in how ed-tech is used in their schools; that compares to only 28% in their 2017 survey. However, two major impediments to rapid adoption remain, according to these survey respondents: funding and lack of training in how to use new technology.

Exhibit 55: What Ed-Tech Trends Teachers Are Seeing in Their Schools or Districts (May 2018 Survey)



Source: EdWeek Market Brief.

We provide details on the various components of K-12 ed-tech spending below.

Software is the fastest-growing component; estimated 5% CAGR through 2023

K-12 software market. Using Gartner's definition, software is the largest component of U.S. K-12 technology spending, and is expected to reach an estimated $4.1 billion in 2018, or roughly 36% of all K-12 technology spending in the U.S. Software has been, and is expected to continue to be, the fastest-growing component of K-12 technology spending, increasing at a 5% CAGR to $5.3 billion in 2023.

We believe Learning Management Systems (LMS) are likely one of the largest software expenditures for schools, and have been a core area of investment in education technology in recent years. Originally designed as an administrative tool to help manage and organize the classroom, LMS have evolved into virtual ecosystems that link students, teachers, and parents in an online environment where all aspects of learning can be monitored, analyzed, and managed.

Learning management systems (LMS)

LMS have many areas of focus, including course and assignment delivery, assessment tracking and analytics, social and collaborative networking, and demographic and socioeconomics student information systems. Modern LMS increasingly utilize cloud-based technologies and open-source development to enable real-time access and easier installation and configuration of content and user functions. While various LMS do exist as separate systems, the lines between them are increasingly becoming blurred by hybrid systems that incorporate several functions as single solutions.

Although LMS have been around since the 1990s, adoption quickened following NCLB, which required schools to report performance data in ways supported only by electronic data systems. While these systems initially may have been geared more to the managerial functions of running a school and

tracking student performance, recent growth has also been driven by the increase in digital curriculum and virtual class initiatives. Additionally, the move to CCS and the economic stimulus package in 2009 also incentivized investments in LMS. We believe these drivers, along with improving technology and growing acceptance of the benefits of LMS, have driven widespread adoption in recent years. According to MDR, the implementation rate at K-12 schools grew from 33% in 2011 to 48% in 2015.

As service offerings vary widely, the definitions of different kinds of LMS are constantly changing. However, we provide the following three categories of LMS as defined by Simba Information. Many of these companies also provide LMS products to the postsecondary education space, and we believe these definitions are roughly consistent across K-12 and higher learning.

1. **Traditional LMS**. These represent stand-alone learning management systems and include leading commercial open-source products such as Blackboard, Desire2Learn, Canvas (INST), Google Classroom (GOOG), and Moodle. Traditional LMS include the full suite of products that provide the infrastructure for online course delivery, collaboration, and management functions. These are open systems in that they can work with content and technology provided by outside companies.
2. **LMS "Lite."** These are newer systems that offer alternatives to the traditional model and allow more flexibility in terms of price and customization. These systems generally have fewer features but are more user-friendly and focus on specific functions such as course supplements, data management, or augmenting a current LMS with a social networking function. These products sometimes are available free online with costs incurred at varying service levels. Companies providing these products include Edmodo and Schoology.
3. **Enterprise platforms.** These are broad infrastructure solutions that integrate an LMS with other enterprise functions such as student information systems or curriculum management. They are often marketed by publishers and tied to proprietary products.

Drivers of LMS adoptions in schools include:

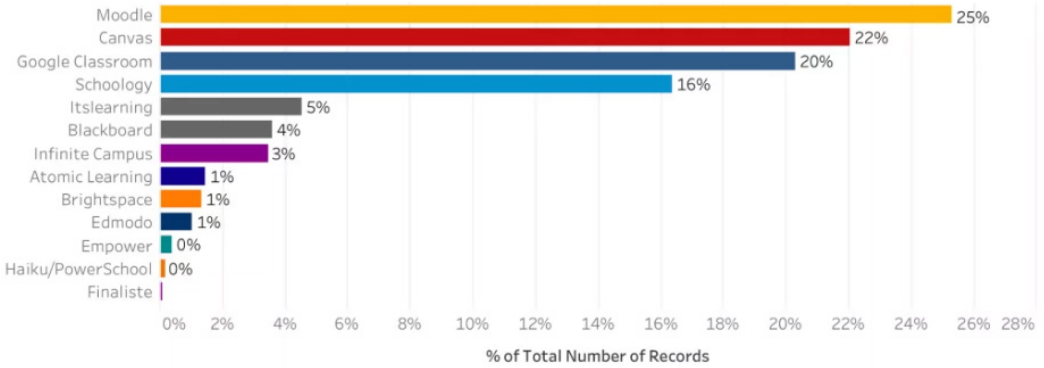
- States' efforts to comply with data management requirements recommended by the ED (this was part of the requirement for receiving stimulus aid following the Great Recession).
- The growing use of online virtual schools (fully online school) and blended learning (a mix of online and classroom based learning)—see more details later in this section.
- Potential educational benefits of using an LMS.

We believe cost remains a key barrier to LMS adoption. In a 2012 survey by Simba (latest available), more than 43% of schools cited cost as the biggest impediment to LMS implementation. However, we believe this may drive schools to experiment with lower-cost LMS "Lite" technologies, which has helped drive innovation in the industry.

Most of the LMS purchase decisions are still made at the district level, but we expect cooperation at the state level to increase as states pursue common standards. According to Simba Information, commercial LMS providers are the most common, accounting for 42.9% of district systems; this is followed by 11.8% that are developed within the district, and 4.7% made available by the state. We believe district systems may gain traction as more schools form cooperative consortiums to develop technology capabilities at lower costs.

It was difficult to obtain current market share data for LMS providers to the K-12 sector. However, among the better known providers are Blackboard, Desire2Learn, and Instructure's (INST) Canvas in the sector. Other providers include Atomic Learning, BrightBytes, Brightspace, Edmodo, Empower, Finalsite, Haiku/Power School, ItsLearning, Infinite Campus, and Schoology. We believe this high level of fragmentation will continue to drive M&A in the sector as companies seek to provide the full suite of technology offerings.

Exhibit 56: Percentage of U.S. Public K-12 Schools Using Each LMS



Source: e-literate. Preliminary Data on K-12 LMS Market (January 2018), based on eight states with coverage of 17-50% of known schools.

U.S. K-12 hardware sector estimated flat to down slightly spending through 2023

K-12 hardware market. Using Gartner's definition (devices), hardware spending is expected to represent roughly 10% of total U.S. K-12 technology spending in 2018, reaching roughly $1.1 billion. Using Gartner estimates, we forecast roughly flat spending through 2023.

These products are generally provided by the largest global computer companies, including Apple (AAPL), Dell, and Hewlett-Packard (HPQ). There is also growing adoption from newer technology providers; Apple's tablets (IPads) and Google's (GOOG) Chromebooks (manufactured by a variety of computer companies) have seen particularly strong adoption in U.S. K-12 classrooms.

Most school districts meet recommended connectivity requirements

While most school districts have internet connectivity, it can vary by region. According to Education SuperHighway 2017, 94% of the nation's school districts met the FCC's minimum internet connectivity target of 100 kbps per student in 2017. While that is a sizeable increase from just 30% in 2013, there are still geographic disparities; 6.5 million students don't have access to high-speed internet, while these students are located across 40 states; Maryland, Florida, and Mississippi have the worse rates.

In its 2016 Digital Education Survey, Deloitte found that laptop computers were the most common type of hardware used, followed closely by desktop computers and tablets. However, preference among younger grades geared more towards tablets, a trend which we believe will continue.

Exhibit 57: Technology Hardware Penetration in K-12 Schools (2016)

Which devices are used in the classroom in a typical week?	
Laptop computer	56%
Desktop computer	54%
Tablet	51%
Interactive whiteboard	45%
Smartphone	28%
Chromebook	23%
Dedicated eReaders	5%
Wearables	3%

Source: Deloitte 2016 Digital Education Survey

However, despite the growing prevalence of in-school computing, we believe several hurdles remain:

- Implementation, support, and infrastructure—especially difficult for wireless implementations and the increasing number of devices on a network.
- Professional development—mainly teacher and administrator training.
- Integration and interoperability—complicated by the existence of legacy systems and platform-specific tools.

K-12 IT systems market. Another portion of K-12 technology spending includes systems that help school districts manage and analyze back-office operations, as well as administrative and transactional data. Traditionally, these enterprise-level applications were primarily operated in isolation from instructional activities and were reserved for school districts with more than 25,000 students. Recently, the market among medium-sized to small school districts has grown as schools look to integrate human resources, finance, and procurement system (HRFPS) and instructional data. This has reduced the deal size, which was typically in excess of $1 million.

Future growth in the HRFPS segment is expected to be driven by the trend of connecting entire districts through LMS, as well as the need for data-driven decision making. Still, these complex business management systems have high switching costs, and, therefore, we project somewhat limited year-over-year growth. Leading providers in this segment include BlackBaud, Frontline Education, Powerschool (SunGard K-12), and truenorthlogic.

Recent notable K-12 technology deals include:

- In December 2016, Vista Equity Partners and PowerSchool Group acquired FIS SunGard Public Sector and Education business for $850 million.
- In June 2015, private equity firm Vista Equity Partners acquired student information system provider PowerSchool from Pearson (PSO) for $325 million in cash.
- In May 2015, Houghton Mifflin Harcourt (HMHC) completed the acquisition of Scholastic (SCHL)'s Ed Tech and Services business for $575 million in cash.
- In September 2014, private equity firm Insight Venture Partners and Singapore's sovereign wealth fund completed the acquisition of anti-plagiarism software company iParadigms LLC from majority owner Warburg Pincus for $752 million.
- In March 2014, Renaissance Learning agreed to be acquired for $1.1 billion by private equity investment firm Hellman & Friedman. In August 2011, Renaissance Learning announced plans to be taken private by private equity firm Permira for $440 million. That price was a 26% premium to the stock's prior close, and implied an EV/TTM EBITDA of roughly 10.9x EV/TTM EBITDA.
- In March 2012, Plato Learning acquired Archipelago Learning for $291 million, a 23% premium to the stock's prior closing price and an EV/TTM EBITDA of 14.3x.
- In August 2011, Apollo Education Group (APOL) announced the acquisition of Carnegie Learning, a developer of learning tools for K-12 students, for $96.5 million. The rationale was to de-emphasize Carnegie's K-12 business while using the company's software for its students at its own postsecondary schools.
- In July 2011, Blackboard was taken private by Providence Equity Partners for $1.64 billion, a 21% premium to the stock's close prior to the announcement and roughly 11.6x EV/TTM EBITDA.
- In November 2010, News Corporation (NWSA) acquired Wireless Generation, a K-12 provider of digital curriculum and student assessment and performance software, for $360 million. This eventually became part of the company's Amplify unit, though in August 2015 the company announced plans to divest the entire unit.

U.S. Professional Development Market

ESSA removed development requirements, likely pressuring funding

In recent years, more focus has been placed on improving teaching quality as a means to improve student outcomes. While the initial impetus for this stemmed in part from the original NCLB Act, which required schools to ensure that all teachers were "highly qualified" (HQTs), we believe professional development has become a more integral part of K-12 education as new teacher tracking and accountability systems become more widespread, and as schools adopt CCS.

We believe the original HQT requirement was successful in raising awareness of teacher quality and development issues, as it required that all teachers have a bachelor's degree and state certification. This requirement was eliminated under the Every Student Success Act (ESSA), ensuring teacher quality standards in some form will likely remain a part of the final legislation. However, the amount of investment schools and government entities likely will be under some pressure.

In addition to helping schools comply with standards, we believe professional development also has the potential to improve retention. In a 2004 study published in the American Teachers Journal, turnover for first-year teachers with "comprehensive induction," which includes targeted and ongoing professional development, was only 9% versus 20% for those teachers with no induction.

It is very difficult to estimate the size of the U.S. K-12 professional development market.

- A 2014 study conducted by the Bill & Melinda Gates Foundation with the Boston Consulting Group estimated that $18 billion was spent annually on professional development, of which $3 billion was delivered by external providers.
- GSV pegs this spending at $3.2 billion in 2015, growing at roughly **5% CAGR** to $4.1 billion in 2020.
- Technavio expects the market for professional development in the U.S. to be roughly $3.5 billion and will grow moderatly at a **4% CAGR** to 2020 to $4.1 billion.

Most development provided internally

Given historical trends, budget pressure, and cost-cutting, we believe for-profit businesses likely may capture only a small piece of this pie. Responding to the Great Recession, several schools retained professional development in-house as a means to save jobs. In addition, many districts procure professional development locally or regionally, often from former employees, universities, and smaller outfits whose people they know. According to an article in Education Week, Pearson (PSO) estimated that in 2007 (latest available) about half of professional development was provided internally or by regional education service agencies, 25% by non-profits such as universities, 15% by individuals from outside the district, and just 10% by for-profit organizations.

Online tools offer affordable development options

We believe growth opportunities in this market exist in online professional development tools, as schools have sought less expensive alternatives to traditional in-class professional development. Additionally, we believe teachers are increasingly using online professional learning networks for advice, opinions, discussions, collaboration, and lesson planning. These platforms also offer collaboration and social networking capabilities: ASCD Edge, BloomBoard, Class Dojo, Classroom 2.0, Edmodo, Edweb.net, and Remind.

Market participants in the professional development segment typically fall into one of three categories: content providers, consultancies, or professional development organizations. Content providers offer professional development training that aligns with their core business of educational content sales. Consultancies enter into contracts with the school, district or state to provide professional development services. Finally, professional development organizations focus exclusively on providing development training.

Although the market remains highly fragmented, professional development providers include a range of publishing companies (e.g., Houghton Mifflin, Pearson), industry specialists (e.g., Accelerate Education, ESS/Source4Teachers, Illuminate Education, Swing Education, Teachers Pay Teachers) and not-for-profit providers (e.g., National Center on Education and the Economy, or NCEE). In addition, not-for-profit universities as well as certain for-profit schools (e.g., Grand Canyon Education's [LOPE] Grand Canyon University, and Laureate Education's [LAUR] Walden University) serve this segment of the market through degree programs.

Teacher evaluations gaining importance

A more emerging area of professional development includes teacher evaluation programs. While controversial, several states and districts are pressing ahead with plans to find new ways to evaluate teacher performance. States implementing new teacher review systems in recent years include Texas, New Jersey, New York, Florida, Pennsylvania, and Maryland.

A list of recent K-12 services transactions can be found in the exhibit below.

Exhibit 58: K-12 Services Recent Transactions (2011-2018)

Annc. Date	Target	Acquiror	Transaction Value	Transaction Value/LTM Revenue	Transaction Value/LTM EBITDA
			(US$ mm)	(ratio)	(ratio)
Aug-18	Knowre	Daekyo Co., Ltd.	n.a.	n.a.	n.a.
Aug-18	Cirrus Group LLC	Procare Software, LLC	n.a.	n.a.	n.a.
Aug-18	Procare Software, LLC	Warburg Pincus LLC	n.a.	n.a.	n.a.
May-18	ChanceLight Behavioral Health and Education	The Halifax Group	n.a.	n.a.	n.a.
May-18	Teaching Strategies	Summit Partners	n.a.	n.a.	n.a.
Jan-18	Lifetouch Inc.	Shutterfly, Inc.	$825.0	0.9x	8.3x
Mar-18	SchoolKidz.com, Inc.	Skyview Capital LLC	n.a.	n.a.	n.a.
Jan-18	ECS Learning Systems, Inc.	Asteria Education, Inc.	n.a.	n.a.	n.a.
Jan-18	Performance Matters LLC	PeopleAdmin, Inc.	n.a.	n.a.	n.a.
Dec-17	Kids & Us English S.L.	CorpFin Capital	n.a.	n.a.	n.a.
Dec-17	KidReports LLC	Procare Software, LLC	n.a.	n.a.	n.a.
Nov-17	Studienkreis GmbH	IK Small Cap Management	$71.7	n.a.	n.a.
Nov-17	WorldStrides	Eurazeo SE; Primavera Capital Group	$500.0	n.a.	n.a.
Oct-17	SchoolMint Inc.	Hero K12, LLC	n.a.	n.a.	n.a.
Sep-17	First Tutors UK Ltd	Varsity Tutors LLC	n.a.	n.a.	n.a.
Sep-17	Teachers On Call, Inc.	Kelly Services, Inc.	n.a.	n.a.	n.a.
Sep-17	Collegewise, LLC	ChangedEdu Holdings	n.a.	n.a.	n.a.
Aug-17	Triumph Learning, LLC	School Specialty, Inc.	n.a.	n.a.	n.a.
Jul-17	Source4Teachers	Education Solutions Services, LLC	n.a.	n.a.	n.a.
May-17	Citelighter, Inc.	Sylvan Learning, Inc.	n.a.	n.a.	n.a.
May-17	Apex Learning	Education Growth Partners	$86.0	n.a.	n.a.
Apr-17	Frog Street Press, Inc.	Excelligence Learning Corporation	n.a.	n.a.	n.a.
Mar-17	Childcare Education Institute LLC	Excelligence Learning Corporation	n.a.	n.a.	n.a.
Feb-17	Quintessential School Systems, Inc.	Harris School Solutions	n.a.	n.a.	n.a.
Jan-17	Questar Assessment	Educational Testing Service, Inc.	$127.5	n.a.	n.a.
Feb-17	Connect Education & Care	RM Plc	$80.4	1.0x	7.2x
May-16	Mind Streams Education	Peterson's Nelnet, LLC	n.a.	n.a.	n.a.
May-16	TeacherMatch LLC	PeopleAdmin (Vista Equity)	n.a.	n.a.	n.a.
Apr-16	Centris Group	Frontline Technologies	n.a.	n.a.	n.a.
Mar-16	Progressus Therapy LLC	Invo HealthCare Associates, Inc	n.a.	n.a.	n.a.
Feb-16	WorldStrides	Metalmark Capital; Silverhawk Capital	n.a.	n.a.	n.a.
Jan-16	Dynamic Internet Applications, LLC	RenWeb School Management Software	n.a.	n.a.	n.a.
Jul-15	Classmates, Inc.	Intellius Holdings, Inc.	n.a.	n.a.	n.a.
Jul-15	Special Education Services, Inc. (SESI)	Catapult Learning, LLC	n.a.	n.a.	n.a.
Jun-15	CTB McGraw Hill	Data Recognition Corporation	n.a.	n.a.	n.a.
Apr-15	Source4Teachers	Nautic Partners, LLC	n.a.	n.a.	n.a.
Feb-15	Technical Perspectives, Inc.	SEAS Education	n.a.	n.a.	n.a.
Feb-15	Netchemia	PeopleAdmin	n.a.	n.a.	n.a.
Feb-15	Uclass, Inc.	Renaissance Learning, Inc.	n.a.	n.a.	n.a.
Feb-15	NWEA, formative assessment item bank business line	Certica Solutions	n.a.	n.a.	n.a.
Feb-15	Tadpoles	Teaching Strategies	n.a.	n.a.	n.a.
Jan-15	Excelligence Learning	Brentwood Associates	n.a.	n.a.	n.a.
Nov-14	Flinn Scientific, Inc.	Windjammer Capital Investors	n.a.	n.a.	n.a.
Nov-14	Teaching Strategics	L Squared Capital Partners	n.a.	n.a.	n.a.
Nov-14	ParentLink	Blackboard Inc.	n.a.	n.a.	n.a.
Nov-14	School Reach	West Corporation	n.a.	n.a.	n.a.
Oct-14	Avatar TMS	Truenorthlogic	n.a.	n.a.	n.a.
Oct-14	Modern Star Pty Ltd	Navis Capital Partners	n.a.	n.a.	n.a.
Sep-14	Educational Holdings, LLC (dba Zula)	General World Ventures, LLC	n.a.	n.a.	n.a.
Aug-14	GEMS Education	Bahrain Mumtalakat, Blackstone, Fajr Capital Limited	n.a.	n.a.	n.a.
Jul-14	Education Holdings 1, Inc.	Tutor.com, Inc.	n.a.	n.a.	n.a.
Jul-14	Special Kids and Families Inc.	Shelby Residential and Vocational Services	n.a.	n.a.	n.a.
Jul-14	Pacific Metrics	ACT Inc.	n.a.	n.a.	n.a.
Jun-14	Vision For Education Ltd.	TSL Education Limited	n.a.	n.a.	n.a.
May-14	Education Personnel	Intermediate Capital Group	n.a.	n.a.	n.a.
Apr-14	SchoolMessenger	West Corporation	$75.0	2.8x	n.a.
Mar-14	SchoolSpring Inc.	Netchemia, LLC	n.a.	n.a.	n.a.
Feb-14	Betterfly, Inc.	Service Scout, Inc.	n.a.	n.a.	n.a.
Jan-14	Select Assets of K12 Inc.	Safanad Limited	n.a.	n.a.	n.a.
Dec-13	Newton Alliance, LLC	Catapult Learning, LLC	n.a.	n.a.	n.a.
Oct-13	Choice Solutions, Inc	Houghton Mifflin Harcourt	n.a.	n.a.	n.a.
Oct-13	Blendedschools.net	Sibling Group Holdings, Inc.	n.a.	n.a.	n.a.
Jul-13	TSL Education Limited	TPG Capital	$598.0	4.7x	10.2x
Jan-13	Tutor.com	IAC	n.a.	n.a.	n.a.
Sep-12	Editure Professional Development & JBHM Education Group	Weld North & KKR	n.a.	n.a.	n.a.
Jun-12	TeacherMatch LLC	Prairie Capital, L.P.; Prairie Capital V, L.P.	n.a.	n.a.	n.a.
Jun-12	NonPublic Educational Services	Catapult Learning, LLC	n.a.	n.a.	n.a.
Apr-12	Children's Progress	Northwest Evaluation Association	n.a.	n.a.	n.a.
Nov-11	Crisis Prevention Institute	Brockway Moran and Partners	n.a.	n.a.	n.a.
Oct-11	Windsor Management Group LLC	Tyler Technologies, Inc	$23.5	2.0x	n.a.
Oct-11	School-Link Technologies, Inc.	Heartland School Solutions	n.a.	n.a.	n.a.
Oct-11	WorldStrides, LLC	The Carlyle Group LP	n.a.	n.a.	n.a.
Oct-11	Literacy First	Catapult Learning, LLC	n.a.	n.a.	n.a.
Sep-11	Class.com	Cambium Learning	$4.5	1.0x	n.a.
Jul-11	Education2020	Weld North	n.a.	n.a.	n.a.
Jun-11	TH(i)NQ Ed	Edline	n.a.	n.a.	n.a.
Apr-11	Youth & Family Centered Services	Acadia Healthcare	n.a.	n.a.	n.a.
Jan-11	Camelot Schools (Education Services Division)	The Riverside Company	n.a.	n.a.	n.a.
			Mean	**2.1x**	**8.5x**
			Median	**1.5x**	**8.3x**

N.A. – Not Available. Source: BMO Capital Markets and Capital IQ.

We provide some operating and valuation metrics for the publicly held companies serving the K-12 sector.

Exhibit 59: Trailing 12-Month Operating and Valuation Metrics: Selected Publicly Held K-12 Companies

	Cambium Learning ABCD	Houghton Mifflin Harcourt HMHC	K12 LRN	Scholastic SCHL	GROUP MEDIAN
Rating	**N.A.**	**Market Perform**	**Outperf**	**N.A.**	
Price Target	**N.A.**	**$8**	**$19**	**N.A.**	
Operating Performance					
FY End	12	12	6	5	
LTM Qtr. End	6/18	6/18	6/18	5/18	
Revenue ($MM)	$159.5	$1,387.9	$917.7	$1,628.4	
Gross Profit ($MM)	112.1	588.3	311.0	840.0	
EBITDA ($MM)	46.0	200.5	107.1	138.1	
EBIT ($MM)	25.6	(69.0)	31.8	72.4	
Pretax Income ($MM)	15.5	(124.3)	26.5	(1.5)	
Net Income ($MM)	43.8	(60.2)	27.6	(5.0)	
Free Cash Flow ($MM)	31.2	54.9	94.9	20.0	
Gross Margins (in %)	70.3%	42.4%	33.9%	51.6%	**47.0%**
EBITDA (in %)	28.8%	14.4%	11.7%	8.5%	**13.1%**
EBIT (in %)	16.0%	-5.0%	3.5%	4.4%	**4.0%**
Pretax Income (in %)	9.7%	-9.0%	2.9%	-0.1%	**1.4%**
Net Income (in %)	27.5%	-4.3%	3.0%	-0.3%	**1.4%**
Free Cash Flow Yield (in %)	19.6%	4.0%	10.3%	1.2%	**7.1%**
ROIC: Annual	198.7%	(4.1%)	4.7%	(0.4%)	**2.1%**
ROE: LTM	N.A.	(8.3%)	4.8%	(0.4%)	**-0.4%**
Valuation Metrics					
FY End	12	12	6	5	
LTM Qtr. End	6/18	6/18	6/18	5/18	
Price (08/24/18)	$13.11	$6.30	$17.42	$41.78	
Shares Outstanding (MM)	47.3	123.6	39.6	35.0	
Market Cap ($MM)	$619.5	$778.4	$689.4	$1,462.8	
Net Debt/(Cash) ($MM)	49.5	785.2	(215.1)	(384.0)	
Enterprise Value ($MM)	$669.0	$1,562.8	$492.8	$1,078.8	
CY EPS:					
2017A	$0.95	($0.84)	$0.39	$1.43	
2018E	0.39	(1.02)	0.38	1.67	
2019E	0.51	(0.38)	0.66	1.95	
Two-Year CAGR	-26.7%	-32.9%	30.0%	16.8%	**-5.0%**
P/E:					
2017A	N.A.	N.M.	44.8x	29.2x	**37.0x**
2018E	N.A.	N.M.	45.4	25.0	**35.2x**
2019E	N.A.	N.M.	26.5	21.4	**24.0x**
EV/Rev. (NTM)	3.9x	1.1	0.5	0.6	**0.9x**
EV/EBITDA (NTM)	12.6	6.5	3.8	8.4	**7.4x**
EV/EBIT (NTM)	13.3	N.M.	10.2	14.2	**13.3x**
EV/Free Cash Flow (NTM)	N.A.	20.9	7.1	73.2	**20.9x**

N.A. - Not Available. N.M. - Not Meaningful.
Source: BMO Capital Markets and FactSet Research.

Postsecondary Education: Tough Near Term, but Solid Long Term

Many companies are proactively slowing their own growth

The postsecondary education sector has roughly a dozen companies trading in U.S. equity markets and is the most developed sector in the education industry from a public investment perspective, in our opinion. However, the stocks in this sector have underperformed much of this decade, reacting to changes in enrollment growth trends and other operating fundamentals, as well as regulatory and funding-related concerns. Recent regulatory changes have caused a number of providers to alter aspects of their business models, proactively slowing their own growth, with many companies shrinking in size as the focus shifts to outputs (e.g., graduation rates) from inputs (e.g., enrollment growth). Many stocks have rebounded under hopes of an improving regulatory environment in a Trump administration and operating trends for many companies have begun to improve. Nevertheless, while we believe this will make the industry stronger from an operational, regulatory, and public perception perspective, the transition period has been painful for the sector and its investors.

U.S. Postsecondary Market Overview

There are various ways we have seen postsecondary spending segmented over time. For purposes of this report, we are using the categories used by GSV, noting their numbers differ somewhat from other estimates used in this section.

Exhibit 60: Components of U.S. Postsecondary Spending (2015 vs. 2020E)

($000s)	2015	2020E	CAGR
Postsecondary	**$ 591,447,400**	**$ 690,356,900**	**3%**
Undergraduate:	**$ 492,330,400**	**$ 559,321,700**	**3%**
Non-Profit: 2-Yr & Vocational	$ 54,030,600	$ 61,130,600	2%
Non-Profit Public: 4-Yr	$ 251,503,600	$ 284,553,300	2%
Private: 2-Yr & Vocational	$ 585,500	$ 662,400	2%
Private: 4-Yr	$ 159,287,900	$ 180,219,600	2%
For-Profit: 2-Yr & Vocational	$ 5,718,000	$ 6,956,900	4%
For-Profit: 4-Yr	$ 21,204,800	$ 25,798,900	4%
School-as-a-Service	**$ 900,000**	**$ 1,810,200**	**15%**
Graduate:	**$ 59,799,900**	**$ 81,086,700**	**7%**
Law School	$ 14,345,000	$ 11,666,000	-4%
MBA	$ 21,236,000	$ 27,180,700	5%
Teaching	$ 9,703,900	$ 14,357,500	8%
Nursing	$ 4,245,400	$ 8,899,100	18%
Medical	$ 3,545,400	$ 5,245,600	8%
Masters-Other	$ 6,724,200	$ 13,737,800	15%
Instructional Materials:	**$ 23,052,100**	**$ 27,672,600**	**4%**
Print: Text Books	$ 12,425,100	$ 14,404,100	3%
Print: Supplemental Materials	$ 5,325,000	$ 6,173,200	3%
Digital: Text Books	$ 3,711,400	$ 4,966,700	6%
Digital: Supplemental Materials	$ 1,590,600	$ 2,128,600	6%
Management & Administration:	**$ 1,233,600**	**$ 1,430,000**	**3%**
Learning, Assessment & Behavioral Mgmt. Data (SIS & Warehouse)			
Marketing & Recruiting	**$ 14,131,300**	**$ 18,035,600**	**5%**

Source: GSV.

U.S. Postsecondary Schools Market

Postsecondary education (commonly referred to as "higher education") includes programs offered by colleges, universities, and similar facilities. We have used data for degree-granting postsecondary institutions from the U.S. Department of Education's (ED) National Center for Education Statistics (NCES) for most of our analysis, as this data series goes the farthest back historically. This data excludes those attending institutions that are not eligible for Title IV funds (i.e., federal financial aid) and therefore likely understates the true market size.

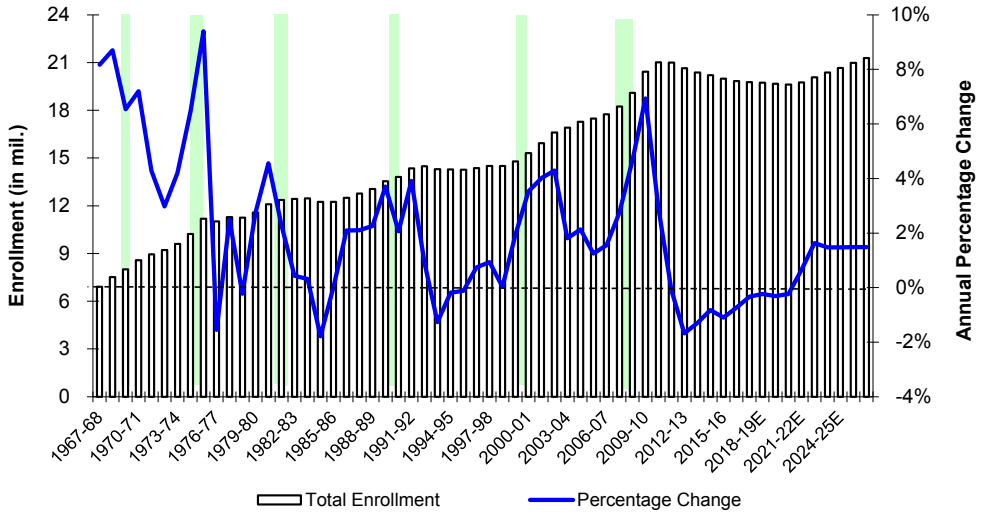
Postsecondary enrollment has fallen for six straight years

Per the NCES, just under 20 million students enrolled in degree-granting postsecondary institutions during the 2016-2017 school year (latest data available). Enrollment fell roughly 1% from the prior school year—the sixth consecutive year of decline and the first time that has ever happened based on NCES records. In February 2014, the NCES projected that enrollment in degree-granting postsecondary institutions would grow at roughly a 1.2% annual rate from the 2011-2012 to 2022-2023 school years. It assumed only some minimal decline in growth (0.1%) in that first year and growth the following year—something that obviously did not occur.

Postsecondary enrollment should grow once again though likely below its long-term rate

Although not faulting the NCES, for our forecast, we prefer to use a macro-economic analysis as provided by EY-Parthenon, based on changes in population, unemployment, length of unemployment, and marketing spending among other factors. EY-Parthenon's analyses have proven to be a bit more conservative and timely, in our view. Using this data, we project total postsecondary enrollment declines will get "less worse" over the next few years, and reach a bottom in the 2020-2021 school year. Thereafter, enrollment is projected to increase at 1.4% CAGR growth through 2026-2027, close to its long-term 1.5% annual growth rate.

Exhibit 61: Postsecondary Degree Granting Enrollment (1967–1968 to 2026–2027E School Years)



Note: Shaded areas represent U.S. recessionary periods. Reliance restricted for EY-Parthenon data. Does not constitute assurance or legal advice. EY takes no responsibility for the achievement of projected results.
Source: BMO Capital Markets estimates based on a macro-economic analysis from EY-Parthenon and historical data from the U.S. Department of Education National Center for Education Statistics.

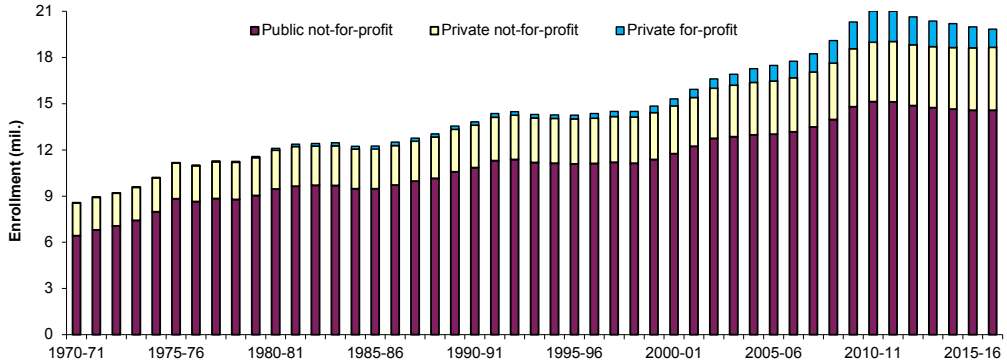
Most students attend public not-for-profit institutions; enrollment has fallen since the 2010-2011 school year at virtually all school types

There are a number of different ways to analyze historical trends in postsecondary enrollment. One way to segment these schools is by tax classification. There are three types:

- Public not-for-profit schools (e.g., Penn State University)
- Private not-for-profit schools (e.g., University of Pennsylvania)
- Private for-profit schools (e.g., Apollo Group's University of Phoenix)

The vast majority of students enrolled in degree-granting postsecondary institutions attend public not-for-profit institutions; in the 2016-2017 school year (latest data available), these institutions enrolled 14.6 million students, or 73.5% of the total. This was followed by the 4.1 million students attending private not-for-profit institutions (20.6% of the total) and the 1.2 million students attending private for-profit institutions (5.9% of the total). Most of the decline since peaking in the 2010-2011 school year has occurred at private for-profit institutions.

Exhibit 62: Postsecondary Degree Granting Enrollment by School Type (1970–1971 to 2016–2017 School Years)



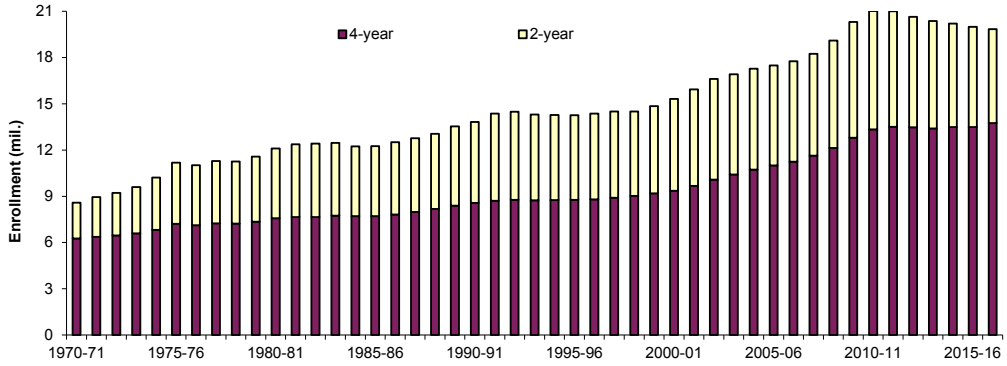
Source: BMO Capital Markets estimates and U.S. Department of Education National Center for Education Statistics.

Another segmentation is by typical program length. Four-year schools are those that provide mostly bachelor's degrees and above, while two-year schools are those that specialize in associate's degrees, such as community colleges (there are also those known as "less than two-year schools", i.e., typically providing non-degree vocational-type programs, which we analyze later as part of our discussion of the for-profit sector).

Four-year schools enroll a majority of degree-seeking students; bulk of enrollment decline has been at two-year schools

U.S. higher education historically has been dominated by students attending four-year schools, with well over 80% of total postsecondary students in the 1960s. However, enrollment at two-year schools grew at a faster rate through the mid-1990s, when it approached nearly 40% share. Since then, four-year schools have "recaptured" some of that share, with enrollment reaching 13.8 million (69.3% of total enrollment at degree-granting postsecondary institutions) versus 6.1 million (30.7% share) for students attending two-year schools in the 2016-2017 school year (latest data available). We note the bulk of the recent enrollment decline has been at two-year schools.

Exhibit 63: Postsecondary Degree Granting Enrollment by Program Length (1970–1971 to 2016–2017 School Years)

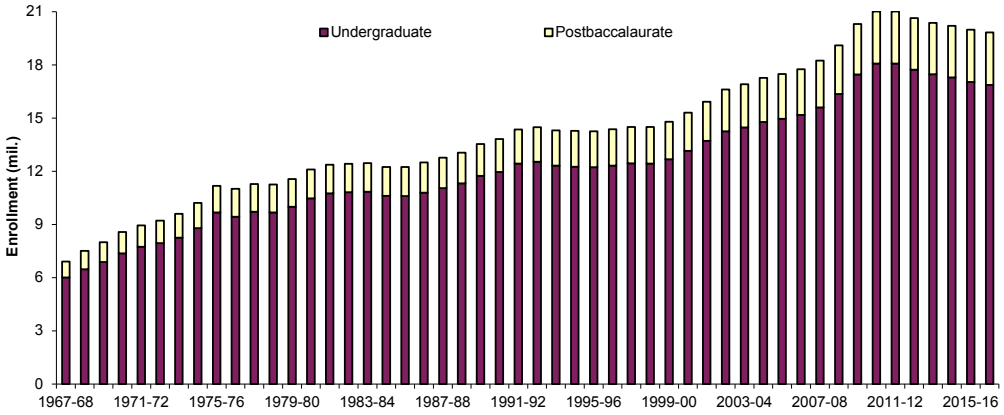


Source: BMO Capital Markets estimates and U.S. Department of Education National Center for Education Statistics.

Bulk of students in undergraduate programs, though graduate enrollment has expanded in recent years, likely from online growth

Another way to segment the data is via those enrolled at degree-granting undergraduate programs (i.e., associate's and bachelor's), versus those enrolled at degree-granting postbaccalaureate programs (i.e., master's and above, including first professional degrees). The bulk of students (about 16.9 million, or 85%) attending degree-granting postsecondary institutions during the 2016-2017 school year (latest data available) were enrolled in undergraduate programs, with roughly 3 million students (15%) in postbaccalaureate programs. While this "share" had shifted slightly (and gradually) towards undergraduates over the past 40 years or so, enrollment in graduate programs bottomed in the 2013-14 school year and has expanded in recent years, gaining back some "share"; we believe much of this has been driven by online enrollment, which we discuss in depth later in this section.

Exhibit 64: Postsecondary Degree Granting Enrollment by Degree Type (1967–1968 to 2016-2017 School Years)



Source: BMO Capital Markets estimates and U.S. Department of Education National Center for Education Statistics.

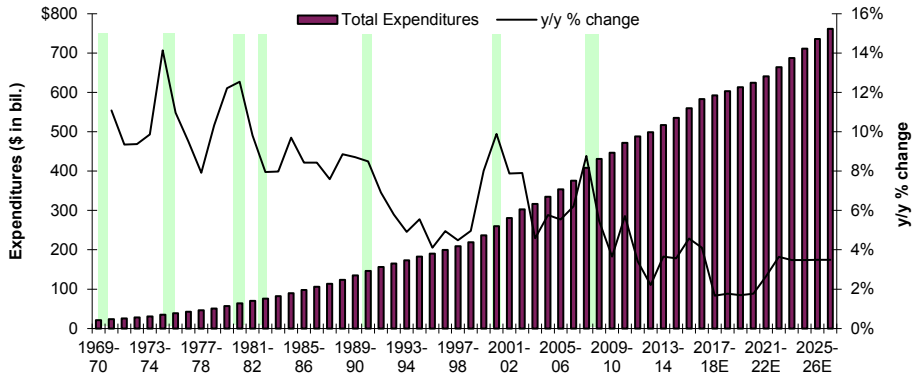
Postsecondary expenditures have had a 7.3% CAGR for roughly 45 years, though at a slower rate in recent years

When measured by spending, postsecondary is the second largest of the country's four education segments (behind K-12); it generated roughly $583 billion in revenue in the 2016-2017 school year (latest data available), according to the NCES. This level of spending represented roughly 3% of the U.S. annual gross domestic product that year. Since the 1969-1970 school year, the amount spent on postsecondary education has increased at a 7.3% average annual rate, although the rate has slowed to low-single digits in recent years.

We conservatively forecast 2.8% annual growth in postsecondary expenditures through 2026-2027

While we project postsecondary enrollment will decline in the near term, we expect some growth thereafter. In addition, tuition rates will likely continue to be pressured, though over the long term, we expect some pricing power to return (assumed to be in the 2%-plus range, roughly in line with inflation). As such, we project total postsecondary expenditures should grow roughly 2.8% annually, reaching an estimated $768 billion in the 2026-2027 school year. This is much slower than the sector's historical growth, which we believe benefited from a strong increase in college participation, especially in the 1980s.

Exhibit 65: U.S. Postsecondary Expenditures (1969–1970 to 2026–2027E School Years)



Note: Shaded areas represent U.S. recessionary periods.
Source: BMO Capital Markets estimates and U.S. Department of Education National Center for Education Statistics.

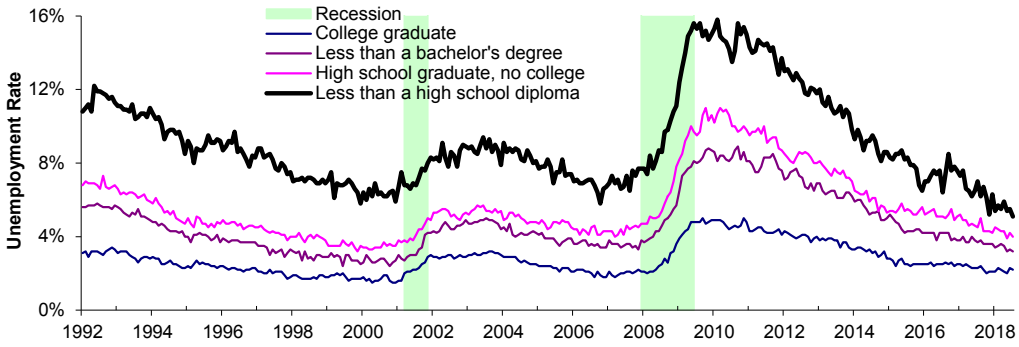
We see a number of longer-term drivers for continued growth in postsecondary education:

- Increasing employer-driven demand for skilled professionals;
- Increasing employee-driven demand as a result of the potential earnings premium;
- Increased participation of nontraditional (i.e., older) students; and
- Increased acceptance of online degrees (discussed in detail separately).

The unemployment rate for those with less than a high school diploma skyrocketed during the Great Recession and remains higher than other groups

Increasing demand for skilled professionals. While apparent before, the Great Recession had a more significant impact on the job prospects for the lesser educated, in our view. Unemployment rates for those with less than a high school diploma skyrocketed well above historical rates, reaching a reocrd high of 15.6% in September 2010. While it has fallen dramaticallty since then, the 5.1% rate as of July 2018 was still above the rates for high school graduates with no college (4.0%), those with less than a bachelor's degree (3.2%) and for college graduates (2.2%).

Exhibit 66: Unemployment Rate by Education Type (1992–2018YTD)



Note: Data are seasonally adjusted. Shaded area represents recessionary period. Source: Bureau of Labor Statistics, National Bureau of Economic Research, and BMO Capital Markets.

Need a bachelor's degree to get a "good job"

As a result of technological advances and the continued globalization of the economy, we believe higher levels of education have become, and will continue to be, a prerequisite for many positions. While a July 2017 study by the Georgetown University Center on Education and the Workforce was entitled "*Good Jobs that Pay Without a BA,*" the study actually showed that the percentage of "good jobs" – defined as those that pay an average of $55,000 per year, and a minimum of $35,000 annually – going to those workers without a bachelor's degree declined to 45% in 2015 from 60% in 1991.

Exhibit 67: Percentage of "Good Jobs" by Education Category (1991 vs. 2015)

	1991	2015
High school dropout	4%	2%
High school graduate	28%	18%
Some college, no degree	19%	14%
Associate's degree	9%	11%
Subtotal	**60%**	**45%**
Bachelor's degree and higher	40%	55%

Source: Georgetown University Center on Education and the Workforce.

Employers need more educated workers; jobs requiring a graduate degree are among the fastest-growing categories, though non-degree jobs are also expected to be strong

This trend is expected to continue. The Bureau of Labor Statistics (BLS) projects that, by 2026, roughly 26.6% of those employed will be required to have a bachelor's degree or higher, up from 25.8% in 2016. Jobs requiring graduate education are projected to be among the fastest-growing categories (e.g., jobs requiring a master's degree, up 15.8% or 1.5% CAGR). Interestingly, jobs requiring a minimum of a "postsecondary non-degree award," i.e., a certificate are expected to rise at a faster rate (up 10.8% or 1.1% CAGR) than those requiring a bachelor's degree (up 10% or 1% CAGR).

Exhibit 68: Employment by Education and Training Category (2016–2026E)

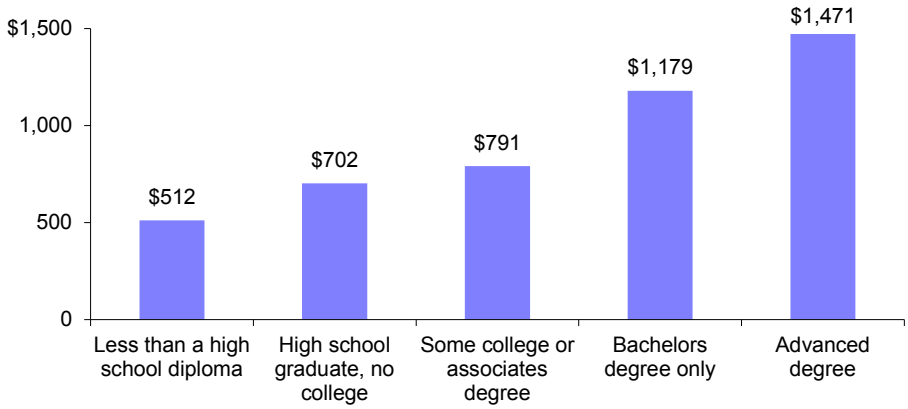
	Number (in 000's)		2016-2026E	% of workforce	
Education Level	**2016**	**2026E**	**% Chg.**	**2016**	**2026E**
Doctoral or professional degree	4,231	4,798	13.4%	2.7%	2.9%
Master's degree	2,671	3,093	15.8%	1.7%	1.8%
Bachelor's degree	33,372	36,710	10.0%	21.4%	21.9%
Bachelor's degree or higher	**40,274**	**44,600**	**10.7%**	**25.8%**	**26.6%**
Associate degree	3,618	4,012	10.9%	2.3%	2.4%
Postsecondary nondegree award	9,583	10,618	10.8%	6.1%	6.3%
Some postsecondary (below bachelor's)	**13,201**	**14,630**	**10.8%**	**8.5%**	**8.7%**
Some college, no degree	3,858	4,020	4.2%	2.5%	2.4%
High school diploma or equivalent	61,504	64,702	5.2%	23.9%	23.6%
No formal educational credential	37,227	39,609	6.4%	23.9%	23.6%
Total	**156,064**	**167,562**	**7.4%**	**100.0%**	**100.0%**

Source: BMO Capital Markets and Bureau of Labor Statistics Employment Outlook, 2014-2024.

A college degree has a high return on investment

Potential earnings premium. The income premium associated with a postsecondary education has been widely documented, and we believe it has not gone unnoticed by the public. According to a 2006 paper by economists at the Federal Reserve Bank of Chicago, for each additional year of completed schooling, an individual's earnings increase, on average, by roughly 11%; we believe this relationship still holds, though the percentage may be smaller. In 2017, the median weekly earnings of U.S. employees with a bachelor's degree was significantly higher than the median weekly earnings for those with only a high school education ($1,179 versus $702).

Exhibit 69: Median Weekly Earnings by Education Category (2017)

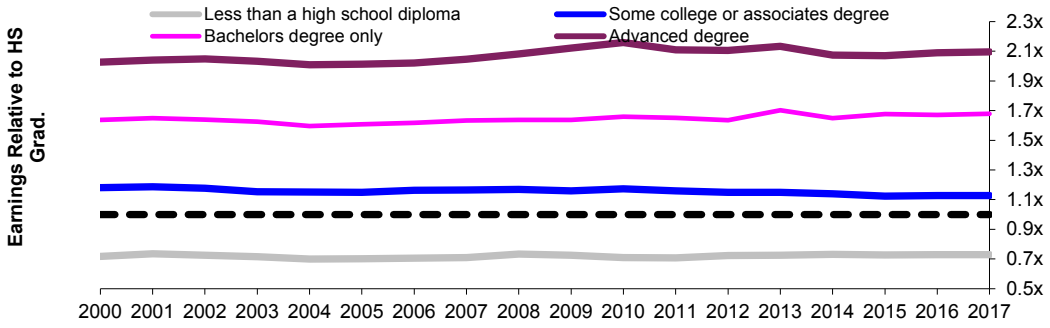


Source: BMO Capital Markets and Bureau of Labor Statistics.

The income gap has been relatively stable in recent years

While at one time the income gap between high school graduates and those with additional education was expanding, in recent years this has leveled off a bit. In 2017, the median weekly earnings for an individual with a bachelor's degree and one with an advanced degree were, respectively, 68% and 110% higher than a person with only a high school diploma; in 2000, the rates were 64% and 103%, respectively.

Exhibit 70: Median Weekly Earnings Relative to Average Annual Earnings of High School Graduates (2000–2017)



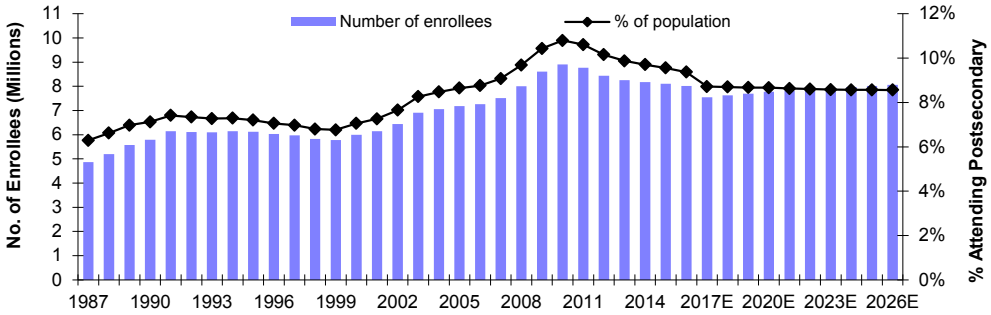
Source: BMO Capital Markets and Bureau of Labor Statistics.

Students aged 25 or older have grown at a faster rate than "traditional" students; share expected to fall slightly

Influx of "older" students. While thoughts of postsecondary education may bring back memories of a leafy campus and fraternity initiations, much of the growth in the sector in recent years has been driven by nontraditional students. According to the NCES, the number of 25- to 44-year-old students grew from 4.9 million in fall 1987 to 8.9 million in fall 2010, a total increase of 83% (2.7% CAGR), above the roughly 72% increase (2.4% CAGR) in the total number of postsecondary students over that timeframe. Over that period, the percentage of this age group enrolled in postsecondary institutions increased its "share" from 6.3% to 10.8%.

However, enrollment in this age group share fell since — to 8.1 million students (9.4% "share" of this age group in fall 2016; latest data available). The NCES forecasts that this trend will continue in the future; students aged 25-44 are expected to increase roughly 0.5% (0.1% CAGR), reaching 8.1 million in fall 2026 or 8.6% share.

Exhibit 71: Number of 25- to 44-Year-Old Students and as Percentage of Population (Fall 1987-2026E)

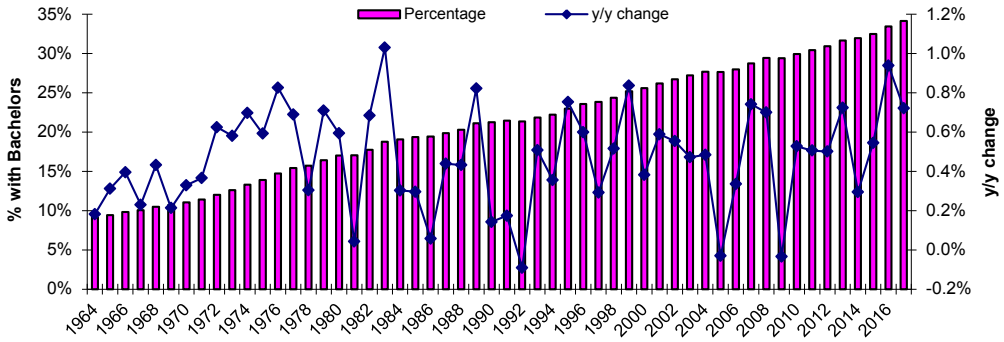


Source: BMO Capital Markets and U.S. Department of Education National Center for Education Statistics.

The market is still far from saturated: about 34.2% of the U.S. population older than 25 holds a bachelor's degree or higher

We still believe the market is far from saturated. In 2017, roughly 34.2% of the U.S. population older than 25 had a bachelor's degree or more – an all-time high. This percentage has increased significantly from 9.1% in 1964 (about 50 bps annually). Over the same period, the percentage of the U.S. population with an associate's degree or higher has risen to 44.4% from 18%. While we by no means believe these percentages will approach 100%, they should continue to go higher from here.

Exhibit 72: Percentage of U.S. Population Older Than 25 With Bachelor's Degree or More (1964–2017)

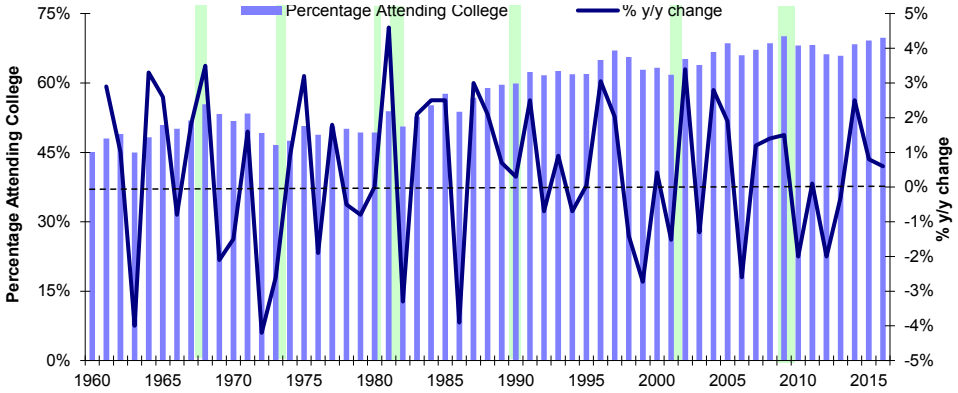


Source: BMO Capital Markets and Postsecondary Education Opportunity from data compiled by the U.S. Census Bureau.

College continuation rate hit all-time high in fall 2009, after falling it is now rebounding

College continuation rate – was declining though now rebounding. While the percentage of high school students enrolled in college peaked with the fall of 2009 entering class (70.1%), it fell thereafter, troughing at 65.9% in fall 2013. However, it has rebounded to 69.8% in fall 2016, which we believe may reflect some aspect of countercyclicality (i.e., improving job market attracting recent high school graduates). However, over the long term, the percentage of high school students enrolling in college will likely not go much beyond the 70% level for the foreseeable future, as not all students go to college (e.g., financial issues, maturity issues).

Exhibit 73: Percentage of High School Students Entering College (Fall 1960 to Fall 2016)

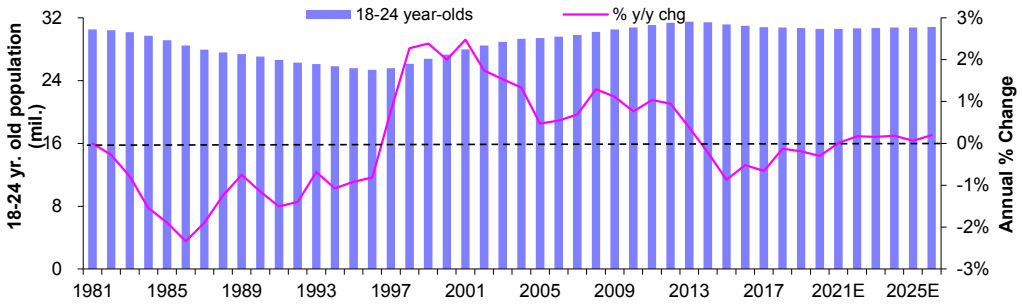


Source: BMO Capital Markets, U.S. Department of Education National Center for Education Statistics, and Postsecondary Education Opportunity.

Number of 18- to 24-year-olds in U.S. peaked in 2013; not expected to trough until 2020

Shrinking traditional cohort. Unfortunately, the postsecondary sector faces some potential headwinds in terms of unfavorable demographics. While the non-traditional student gets a lot of press and focus, most postsecondary students are still in the traditional 18- to 24-year-old range; in the 2015-2016 school year (latest data available), roughly 11.6 million in this age group were enrolled in U.S. degree-granting institutions, representing over 58% of all students according to the NCES. Based on Census Bureau data, this "traditional age" cohort reached its peak in 2013 at roughly 31.5 million and is not expected to trough until 2020 at just over 30.6 million before beginning to increase once again.

Exhibit 74: U.S. Population: Age 18 to 24 Years Old (1981–2026E)



Source: BMO Capital Markets and U.S. Census Bureau.

U.S. For-Profit Postsecondary Schools – Enrollment Trends

Recent headlines revived memories of a checkered past

The most significant component within the for-profit postsecondary sector is the schools market, consisting of companies that run for-profit (also called proprietary) schools. In its early days, this sector developed an unpleasant reputation, owing to allegations of fraudulent activities regarding government funding at certain correspondence and "back-of-the-matchbook" schools. Although headlines in recent years may have brought reminders of those days, we believe the migration of most of the publicly held companies beyond their original vocationally oriented roots (e.g., Career Education, DeVry), the introduction of more professional management—often through private equity involvement—as well as regulatory changes, have helped, for the most part, to "clean up" the reputation of the for-profit sector, though we acknowledge some would argue this is not the case.

For-profit enrollment represents just over 7% of the total; schools are typically smaller than their not-for-profit peers

According to the NCES, roughly 1.44 million students enrolled in the over 2,800 for-profit postsecondary institutions (both degree-granting and non-degree granting) eligible for Title IV (i.e., federally funded financial aid) in the U.S. as of fall 2016 (2016-2017 school year). We note this excludes those studying at non-degree granting institutions; a February 2012 working paper by the National Bureau of Economic Research estimated that there were as many as 670,000 additional students attending institutions not eligible for Title IV funding. Although the for-profit sector represented roughly 42.8% of all institutions as of fall 2016, it only served 7.1% of all postsecondary students, as for-profit schools tend to be much smaller than their not-for-profit counterparts.

Exhibit 75: For-Profit as Percentage of Total Institutions and Enrollment (Fall 2016)

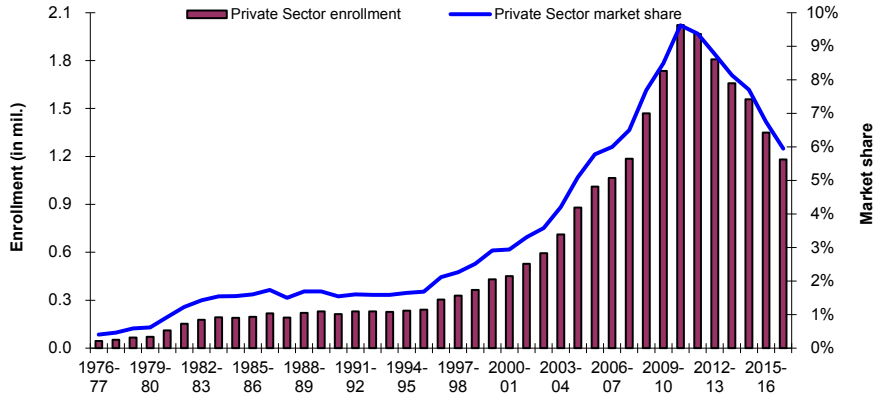
	Institutions		Students (in 000's)		
	Number	% of Total	Number	% of Total	Avg. Size
Public	1,958	29.6%	14,693	72.7%	7,504
Private not-for-profit	1,823	27.6%	4,096	20.3%	2,247
Private-for-profit	**2,825**	**42.8%**	**1,435**	**7.1%**	**508**
Total	6,606	100.0%	20,224	100.0%	3,061

Note: U.S. Degree and non-degree granting institutions. Source: BMO Capital Markets and U.S. Department of Education National Center for Education Statistics (NCES 2016-005 and NCES 2016-112rev).

For-profit market share has fallen since peaking in the fall 2010 school year; likely continued to decline in fall 2017

We have historical data for the for-profit sector at degree-granting institutions since the fall 1976 school year (the prior chart also included non-degree granting institutons). The sector had gained a considerable amount of share, rising from 0.4% of total enrollment before peaking at 9.6% in the fall 2010 school year. However, enrollment at degree-granting for-profit institutions has fallen since then with the sector's market share declining to 5.9% in the fall 2016 school year. We believe this trend continued in the fall 2017 school year.

Exhibit 76: For-Profit as Percentage of Total Enrollment at Degree-Granting Institutions (Fall 1976–Fall 2016)



Note: Shaded area represents recessionary period. Degree granting institutions only. Source: BMO Capital Markets and U.S. Department of Education National Center for Education Statistics.

Most for-profit students attend degree-granting institutions

Although the bulk of for-profit institutions are non-degree granting (i.e., they focus on diploma and certificate programs and not on providing degrees, such as associate's and bachelor's degrees), the majority of for-profit students are enrolled in degree-granting institutions. Most of the students at for-profit schools (nearly 83%) attend programs at degree-granting institutions, with an average size of 1,119 students per institution (fall 2016 data).

Exhibit 77: For-Profit Institutions and Enrollment by Degree Type (2016-2017 School Year)

	Institutions		Students (in 000's)		
	Number	% of Total	Number	% of Total	Avg. Size
Degree granting	1,055	37.3%	1,180	82.2%	1,119
Non-degree granting	1,770	62.7%	255	17.8%	144
Total	2,825	100.0%	1,435	100.0%	508

Source: BMO Capital Markets and U.S. Department of Education National Center for Education Statistics.

Public not-for-profits dominate higher ed, although for-profits dominate at less-than-two-year schools

Public not-profit schools tend to enroll the bulk of students across all school types, except at less-than-two-year schools, where for-profits dominate, with roughly 77% of all enrollments.

Exhibit 78: Enrollment by School Type and Market Share (Fall 2016)

	Public not-for-profit		Private not-for-profit		Private for-profit		Total	
	No. (000's)	%	No. (000's)	%	No. (000's)	%	No. (000's)	%
Four-year schools:								
Undergraduate	7,300	49.7%	2,762	67.4%	717	49.9%	10,779	53.3%
Graduate	1,442	9.8%	1,265	30.9%	265	18.5%	2,972	14.7%
Subtotal	8,742	59.5%	4,028	98.3%	982	68.4%	13,751	68.0%
Two-year schools	5,901	40.2%	56	1.4%	249	17.4%	6,206	30.7%
Less than two-year schools	51	0.3%	12	0.3%	204	14.2%	267	1.3%
Total	14,693	100.0%	4,096	100.0%	1,435	100.0%	20,224	100.0%
Market share by school type:								
Four-year schools:								
Undergraduate	67.7%		25.6%		6.6%		100.0%	
Graduate	48.5%		42.6%		8.9%		100.0%	
Subtotal	63.6%		29.3%		7.1%		100.0%	
Two-year schools	95.1%		0.9%		4.0%		100.0%	
Less than two-year schools	18.9%		4.5%		76.6%		100.0%	
Total	72.7%		20.3%		7.1%		100.0%	

Note: Degree and non-degree granting institutions. Source: BMO Capital Markets and U.S. Department of Education National Center for Education Statistics (NCES 2016-005).

For-profit demographics: skewed toward female, older, and minority with lower academic performance prior to enrolling

A typical student at a for-profit postsecondary school is somewhat different from one who attends a not-for-profit institution. For-profit programs tend to enroll more females (especially for non-degree programs, i.e., less than two-year schools), older students, and non-white students, though this can be largely dependent on program type and other factors. For example, Carrington Colleges (formerly part of DeVry Education Group, now Adtalem Global Education [ATGE]) have a predominantly female population, likely owing to their focus on allied health care programs, while Universal Technical Institutes (UTI) skews more heavily toward male students, owing to its focus on automotive repair and the like. In addition, for-profit students tend to be more broadly distributed among all three program types (i.e., diploma/certificate, two-year schools, and four-year schools), skew more toward attending full time (likely because they favor shorter duration programs) and have a "lower" academic performance prior to enrolling.

Exhibit 79: Student Demographics: For-Profit vs. Not-For-Profit

	For-Profit	Public Not-for-Profit	Private Not-For-Profit
Distribution (1)	4-year school: 68% 2-year school: 17% Less than 2-year school: 14%	4-year school: 59% 2-year school: 40% Less than 2-year school: 0%	4-year school: 98% 2-year school: 1% Less than 2-year school: 0%
Type (1)	Undergraduate: 82% Graduate: 18%	Undergraduate: 90% Graduate: 10%	Undergraduate: 69% Graduate: 31%
Gender (1)	Total: 34% male, 66% female 4-year school: 34% male, 66% female 2-year school: 37% male, 63% female Less than 2-year school: 26% male, 74% female	Total: 45% male, 55% female 4-year school: 45% male, 55% female 2-year school: 44% male, 56% female Less than 2-year school: 49% male, 51% female	Total: 42% male, 58% female 4-year school: 42% male, 58% female 2-year school: 28% male, 72% female Less than 2-year school: 36% male, 64% female
Race/ethnicity (1)	Total: 37% white, 45% non-white, 18% multi-race/ unknown/ nonresident alien 4-year school: 37% white, 41% non-white, 23% multi-race/unknown/ nonresident alien 2-year school: 37% white, 54% non-white, 10% multi-race/ unknown/nonresident alien Less than 2-year school: 37% white, 57% non-white, 6% multi-race/ unknown/nonresident alien	Total: 51% white, 37% non-white, 11% multi-race/unknown/ nonresident alien 4-year school: 54% white, 33% non-white, 14% multi-race/unknown/ nonresident alien 2-year school: 48% white, 44% non-white, 11% multi-race/ unknown/nonresident alien Less than 2-year school: 64% white, 31% non-white, 11% multi-race/ unknown/nonresident alien	Total: 55% white, 27% non-white, 18% multi-race/unknown/ nonresident alien 4-year school: 55% white, 27% non-white, 22% multi-race/unknown/ nonresident alien 2-year school: 44% white, 48% non-white, 9% multi-race/ unknown/nonresident alien Less than 2-year school: 27% white, 68% non-white, 7% multi-race/ unknown/nonresident alien
Attendance (1)	Total: 66% full-time, 34% part-time 4-year school: 57% full-time, 43% part-time 2-year school: 90% full-time, 10% part-time Less than 2-year school: 81% full-time, 19% part-time	Total: 57% full-time, 43% part-time 4-year school: 71% full-time, 29% part-time 2-year school: 36% full-time, 64% part-time Less than 2-year school: 49% full-time, 51% part-time	Total: 75% full-time, 25% part-time 4-year school: 75% full-time, 25% part-time 2-year school: 79% full-time, 21% part-time Less than 2-year school: 97% full-time, 3% part-time
Age (2)	Average age (est.): 33 years Younger than 18: 0% 18-24 years old: 25% 25-39 years old: 50% 40 and older: 24%	Average age (est.): 25 years Younger than 18: 7% 18-24 years old: 62% 25-39 years old: 24% 40 and older: 8%	Average age (est.): 26 years Younger than 18: 2% 18-24 years old: 58% 25-39 years old: 29% 40 and older: 11%

	For-Profit	Public Not-for-Profit	Private Not-For-Profit
Annual income (3)	Dependent students: Under $20,000: 24% $20,000-$39,000: 30% $40,000-$59,000: 17% $60,000-$79,000: 12% $80,000-$99,000: 7% $100,000 and over: 10% Independent students: Under $20,000: 51% $20,000-$39,000: 30% $40,000-$59,000: 11% $60,000-$79,000: 5% $80,000-$99,000: 2% $100,000 and over: 2%	Dependent students: Under $20,000: 12% $20,000-$39,000: 17% $40,000-$59,000: 18% $60,000-$79,000: 15% $80,000-$99,000: 13% $100,000 and over: 26% Independent students: Under $20,000: 39% $20,000-$39,000: 28% $40,000-$59,000: 15% $60,000-$79,000: 7% $80,000-$99,000: 7% $100,000 and over: 6%	Dependent students: Under $20,000: 8% $20,000-$39,000: 12% $40,000-$59,000: 14% $60,000-$79,000: 13% $80,000-$99,000: 14% $100,000 and over: 39% Independent students: Under $20,000: 36% $20,000-$39,000: 26% $40,000-$59,000: 16% $60,000-$79,000: 9% $80,000-$99,000: 6% $100,000 and over: 7%
Prior academic performance (4)	Average SAT scores prior to enrolling: 433 (math); 413 (reading) Average ACT composite score prior to enrolling: 20.6 Average grade point average: 3.03	Average SAT scores prior to enrolling: 538 (math); 549 (reading)* Average ACT composite score prior to enrolling: 23.4* Average grade point average: 3.33*	

Note: Totals may not add to 100 owing to rounding. Sources: (1) National Center for Education Statistics Report 2018-002; Enrollment in Postsecondary Institutions, fall 2016 data; (2) National Center for Education Statistics Digest of Education Statistics 2016 Table 303.55, fall 2015 data (3) Career Education Colleges and Universities Fact Book 2013 using NCES data for 2007-2008 school year (4) FastWeb survey fall 2009 entering class. *Not-for-profit data applies to all seniors and was not segmented between public and private not-for-profit attendees.

Why is for-profit enrollment declining?

It is no secret that enrollment in the for-profit sector has been shrinking. Among the components, we note the following:

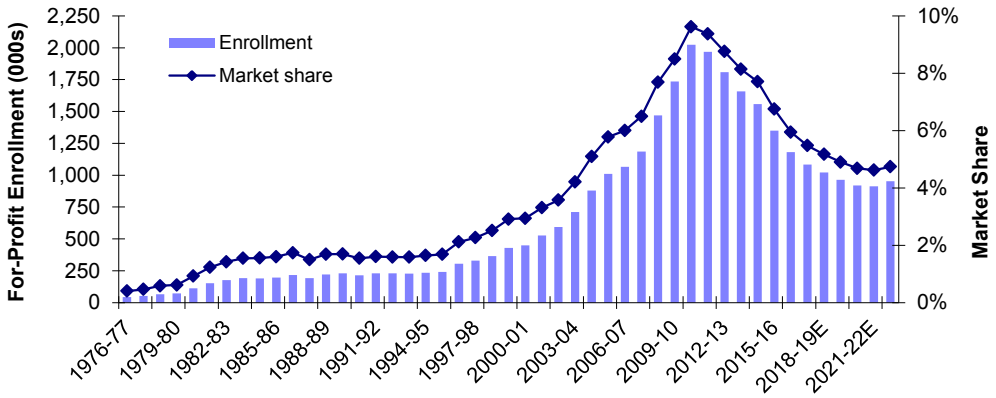
- The weak economy and poor employment market have re-focused students on the value proposition of going to school. While enrollment declines may be more pronounced at for-profit schools, growth has also slowed at traditional schools, with many of them seeing enrollment declines as well.
- Increasing competition for higher-degree-level students across the for-profit landscape and a growing threat of not-for-profit online alternatives.
- Recruitment strategies are less aggressive, owing to the incentive compensation ban (effective July 1, 2011) and a shift toward recruiting "higher-quality" students.
- Negative publicity, which has tainted the for-profit sector.
- Self-regulation to improve the quality of the student base and overall student outcomes, often resulting in higher enrollment standards and shifting how loans are distributed to students to encourage higher retention levels.
- The countercyclical impact of a slowly improving economy leading to fewer potential students returning to school as more job opportunities become available.
- Student acquisition costs have increased as schools are much more selective in marketing to a very specific potential student base, while advertising costs have generally increased along with the strengthening economy.

While the adverse impacts of some of these trends (e.g., incentive compensation changes) are likely behind the sector, others (e.g., competition) could continue to hurt.

Enrollment at for-profit degree-granting institutions peaked in fall 2010; while declines are getting "less worse,' likely bottom not until 2021-2022

Longer-term historical enrollment data for the for-profit sector exists only for degree-granting programs, which enrolled roughly 1.18 million students as of fall 2016 (latest data available). From fall 1976 to the peak enrollment of just over 2 million in fall 2010, for-profit enrollment increased at an 11.9% CAGR—well above the 1.9% rate for postsecondary education as a whole. However, since that peak, for-profit enrollment has fallen dramatically, declining nearly 42% versus roughly a 6% drop for all postsecondary enrollment; the for-profit sector's market share has fallen to 5.9% from 9.6% over the same period. While the declines should get less worse, based on EY-Parthenon's macro-economic analysis, we do not expect for-profit enrollments to bottom until the 2021-2022 school year.

Exhibit 80: U.S. For-Profit Enrollment at Degree-Granting Postsecondary Institutions (Fall 1976 to Fall 2022E)



Note: Shaded areas represent U.S. recessionary periods. Reliance restricted for EY-Parthenon data. Does not constitute assurance or legal advice. EY takes no responsibility for the achievement of projected results.
Source: BMO Capital Markets estimates based on a macro-economic analysis from EY-Parthenon and historical data from the U.S. Department of Education National Center for Education Statistics.

More recent data shows continued declines at for-profit schools

More up-to-date enrollment data has been compiled by the National Student Clearinghouse Research Center, although data is available only for for-profit four-year schools. While enrollments have declined for all of higher education since fall 2011, negative trends have been most profound in the for-profit sector, where enrollments at four-year for-profit institutions have declined annually for 14 consecutive intake periods; we assume trends at for-profit two-year schools (data not provided) have been fairly similar.

Exhibit 81: Annual Change in Postsecondary Enrollment (Fall 2010 to Spring 2018)

	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018
Four-year public	1.6%	2.0%	1.4%	-0.1%	-0.6%	-1.1%	2.5%	2.9%	0.7%	0.9%	0.8%	0.6%	0.2%	0.6%	-0.2%	-0.2%
Four-year private nonprofit	2.7%	1.8%	3.3%	3.8%	0.5%	0.5%	1.3%	2.0%	1.6%	-0.2%	-0.3%	0.7%	-0.6%	-0.2%	-0.4%	-0.4%
Four-year for-profit	**14.8%**	**9.0%**	**-3.8%**	**-9.3%**	**-7.2%**	**-8.7%**	**-9.7%**	**-4.9%**	**-0.4%**	**-4.9%**	**-13.7%**	**-9.3%**	**-14.5%**	**-10.1%**	**-7.1%**	**-6.8%**
Two-year public	0.3%	-3.9%	-1.6%	-1.1%	-3.1%	-3.6%	-5.6%	-5.2%	-4.4%	-4.8%	-2.9%	-2.8%	-2.6%	-3.0%	-1.7%	-2.0%
All schools	**2.3%**	**0.2%**	**0.2%**	**-0.3%**	**-1.8%**	**-2.3%**	**-3.4%**	**-0.8%**	**0.6%**	**-3.6%**	**-1.7%**	**-1.4%**	**-1.4%**	**-1.5%**	**-2.9%**	**-1.3%**

Source: National Student Clearinghouse Center.

Postsecondary education may have some counter-cyclical trends

Historically, one of the most widely debated matters for investors in postsecondary education stocks was their economic sensitivity. Conventional wisdom is that enrollment trends are countercyclical; a 2003 study conducted by economists Harris Dellas and Plutarchos Sakellaris (using BLS data from 1968 to 1988) found that a 1% increase in the U.S. unemployment rate led to roughly a 2% increase in enrollments at U.S. postsecondary institutions. This made intuitive sense (at least to us), as enrollment growth should accelerate as the economy contracts (and labor markets loosen) since the opportunity cost of enrolling in higher education is lower.

Enrollment growth rates: inversely correlated with economic growth

For the most part, NCES data appear to corroborate that thesis. While the trends vary, for the most part, overall enrollment growth in postsecondary schools begins to accelerate in the year just before a recession. Growth remains somewhat strong during the recession year, as well as in the year following the recession, before beginning to slow as the economy expands. This pattern held for the period around the Great Recession (December 2007-June 2009), as enrollment growth accelerated in the 2007-2008 school year and continued thereafter before slowing and then declining in fall 2011.

Exhibit 82: Economic Sensitivity: All Postsecondary Degree-Granting Schools Total Enrollment Growth

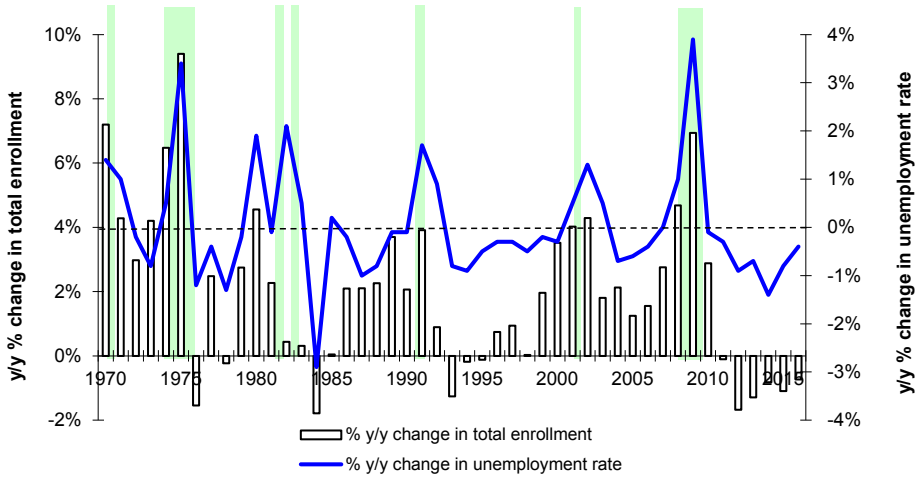
	Annual Enrollment Growth - All Postsecondary Degree-Granting Schools								
Recessionary Periods	**4 Years Prior**	**3 Years Prior**	**2 Years Prior**	**Year Prior**	**Year Of**	**Year After**	**2 Years After**	**3 Years After**	**4 Years After**
Oct. 1969 - Mar. 1970	N.A.	N.A.	8.2%	8.7%	6.5%	7.2%	4.3%	3.0%	4.2%
July 1974 - Mar. 1975	7.2%	4.3%	3.0%	4.2%	6.5%	9.4%	-1.5%	2.5%	-0.2%
Apr. 1980- Sept. 1980	-1.5%	2.5%	-0.2%	2.8%	4.6%	2.3%	0.4%	0.3%	-1.8%
Oct. 1981 - Mar. 1982	2.5%	-0.2%	2.8%	4.6%	2.3%	0.4%	0.3%	-1.8%	0.0%
July 1990 - Mar. 1991	2.1%	2.1%	2.3%	3.7%	2.1%	3.9%	0.9%	-1.3%	-0.2%
Mar. 2001 - Nov. 2001	0.9%	0.0%	2.0%	3.5%	4.0%	4.3%	1.8%	2.1%	1.2%
Dec. 2007 - June 2009	2.1%	1.2%	1.6%	2.8%	4.7%	6.9%	2.9%	-0.1%	-1.7%
Average	**2.2%**	**1.7%**	**2.8%**	**4.3%**	**4.4%**	**4.9%**	**1.3%**	**0.7%**	**0.2%**

N.A. – Not Available. Source: BMO Capital Markets, U.S. Department of Education National Center for Education Statistics, and National Bureau of Economic Research

Enrollment growth rates: more correlated to unemployment rate

This relationship was confirmed by noted industry researcher Mark Kantrowitz (when he was at www.finaid.org) in an August 2010 paper entitled Countercyclicality of College Enrollment Trends. He compared annual fall enrollments with the U.S. unemployment rate in June of that year. We have updated his analysis for more current data and there continues to appear to be a strong correlation in the annual changes of both these metrics – i.e., as the unemployment rate increases, so follow changes in enrollments (and vice versa).

Exhibit 83: Annual Changes in Total Enrollment at All Postsecondary Degree-Granting Schools and Unemployment Rate (1970–2017)



Note: Data represents annual change in fall enrollment compared to June unemployment rate each year. Shaded area represents recessionary period. Source: www.finaid.org and BMO Capital Markets.

Even stronger impact in for-profit sector

A 2003 paper by Dr. Sarah Turner at the University of Virginia focused on the same impact at for-profit institutions, concluding that "for-profit institutions may generate a greater enrollment response to cyclical fluctuations than counterparts in the not-for-profit and public sectors," citing evidence that shows these schools can be more flexible than their not-for-profit peers in responding to economic shocks (e.g., as demand increases they can more easily add classroom space and do not face budget constraints from lower tax revenues as the not-for-profit sector does).

As the historical data for the for-profit sector was not available prior to the 1976-1977 school year, a similar analysis for changes in total enrollment for-profit sector alone is somewhat limited (historical data for new enrollment growth was even more limited). Nevertheless, we believe, even with the data available, one can see an analogous, and perhaps even stronger, pattern just before and after a recession – including the Great Recession.

Exhibit 84: Economic Sensitivity: For-Profit Postsecondary Degree-Granting Schools Total Enrollment Growth

	Annual Enrollment Growth - For-Profit Degree Granting Schools								
Recessionary Periods	4 Years Prior	3 Years Prior	2 Years Prior	Year Prior	Year Of	Year After	2 Years After	3 Years After	4 Years After
Apr. 1980- Sept. 1980	N.A.	17.5%	26.3%	8.3%	56.7%	36.3%	16.2%	8.9%	-1.3%
Oct. 1981 - Mar. 1982	17.5%	26.3%	8.3%	56.7%	36.3%	16.2%	8.9%	-1.3%	3.1%
July 1990 - Mar. 1991	10.8%	-12.0%	15.4%	4.1%	-6.9%	7.8%	0.0%	-1.5%	3.6%
Mar. 2001 - Nov. 2001	7.9%	10.9%	18.1%	4.6%	17.2%	12.7%	19.8%	23.7%	14.8%
Dec. 2007 - June 2009	23.7%	14.8%	5.4%	11.3%	23.9%	18.1%	16.6%	-2.7%	-8.1%
Average	**15.0%**	**11.5%**	**14.7%**	**17.0%**	**25.4%**	**18.2%**	**12.3%**	**5.4%**	**2.4%**

Source: BMO Capital Markets, U.S. Department of Education National Center for Education Statistics, and National Bureau of Economic Research.

Counter-cyclicality is stronger at schools with shorter programs; this cycle, shorter programs doing "less worse"

We have long opined that enrollment trends at schools with shorter programs (i.e., less than two-year and two-year) are more sensitive to economic cycles than trends at four-year schools. Given the "lower-quality" student base, students at less than two-year and two-year programs would likely be "less serious" in pursuing their education in a strong economic environment. Conversely, in a weaker economic environment, enrollment trends should improve at a greater rate at these schools relative to their four-year counterparts.

We believe the data bear this out. While enrollment growth accelerates, on average, during the three-year period encompassing a recession (i.e., before, during, and after), the rate of acceleration appears a bit stronger the more one "moves down the food chain", i.e., at both two-year schools and less than two-year schools. However, this volatility also extends to the period thereafter and the rate of decelerating growth – or even declines – is strongest at those schools that grew the fastest over the recessionary period. We believe this trend holds true whether these schools are for-profit or not-for-

profit. For-profit companies that focus on shorter-term programs include Lincoln Educational Services (LINC) and Universal Technical Institutes (UTI).

Exhibit 85: Economic Sensitivity: Annual Total Enrollment Growth by School Type

	Annual Enrollment Growth - 4 Year Schools								
Recessionary Periods	4 Years Prior	3 Years Prior	2 Years Prior	Year Prior	Year Of	Year After	2 Years After	3 Years After	4 Years After
Oct. 1969 - Mar. 1970	10.6%	6.7%	6.6%	6.0%	3.8%	5.5%	1.7%	1.4%	2.0%
July 1974 - Mar. 1975	5.5%	1.7%	1.4%	2.0%	3.5%	5.8%	-1.2%	1.6%	-0.2%
Apr. 1980- Sept. 1980	-1.2%	1.6%	-0.2%	1.7%	3.0%	1.1%	0.0%	1.1%	-0.4%
Oct. 1981 - Mar. 1982	1.6%	-0.2%	1.7%	3.0%	1.1%	0.0%	1.1%	-0.4%	0.1%
July 1990 - Mar. 1991	1.4%	2.1%	2.4%	2.5%	2.3%	1.5%	0.7%	-0.3%	0.1%
Mar. 2001 - Nov. 2001	1.1%	1.4%	2.0%	1.8%	3.3%	4.2%	3.3%	3.0%	2.5%
Dec. 2007 - June 2009	3.0%	2.5%	2.2%	3.5%	4.3%	6.4%	3.3%	1.2%	-0.1%
Average	**3.1%**	**2.3%**	**2.3%**	**2.9%**	**3.0%**	**3.5%**	**1.3%**	**1.1%**	**0.6%**

	Annual Enrollment Growth - 2 Year Schools								
Recessionary Periods	4 Years Prior	3 Years Prior	2 Years Prior	Year Prior	Year Of	Year After	2 Years After	3 Years After	4 Years After
Oct. 1969 - Mar. 1970	18.6%	13.0%	14.1%	18.5%	15.3%	12.2%	11.2%	6.9%	9.3%
July 1974 - Mar. 1975	12.2%	11.2%	6.9%	9.3%	13.0%	16.6%	-2.2%	4.1%	-0.4%
Apr. 1980- Sept. 1980	-2.2%	4.1%	-0.4%	4.7%	7.3%	4.2%	1.2%	-1.0%	-4.1%
Oct. 1981 - Mar. 1982	4.1%	-0.4%	4.7%	7.3%	4.2%	1.2%	-1.0%	-4.1%	0.0%
July 1990 - Mar. 1991	3.3%	2.1%	2.1%	5.7%	1.7%	7.9%	1.2%	-2.7%	-0.6%
Mar. 2001 - Nov. 2001	0.8%	-2.1%	1.9%	6.4%	5.1%	4.5%	-0.5%	0.8%	-0.9%
Dec. 2007 - June 2009	0.8%	-0.9%	0.5%	1.5%	5.3%	7.9%	2.1%	-2.4%	-4.5%
Average	**5.4%**	**3.9%**	**4.2%**	**7.6%**	**7.4%**	**7.8%**	**1.7%**	**0.2%**	**-0.2%**

	Annual Enrollment Growth - Less than 2 Year Schools								
Recessionary Periods	4 Years Prior	3 Years Prior	2 Years Prior	Year Prior	Year Of	Year After	2 Years After	3 Years After	4 Years After
Oct. 1969 - Mar. 1970	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
July 1974 - Mar. 1975	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Apr. 1980- Sept. 1980	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Oct. 1981 - Mar. 1982	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
July 1990 - Mar. 1991	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Mar. 2001 - Nov. 2001	N.A.	-2.3%	-0.3%	12.4%	10.9%	2.6%	1.5%	3.8%	-6.0%
Dec. 2007 - June 2009	3.8%	-6.0%	1.8%	-4.5%	14.0%	12.7%	4.9%	-1.1%	-9.5%
Average	**N.A.**	**-4.1%**	**0.8%**	**4.0%**	**12.4%**	**7.6%**	**3.2%**	**1.3%**	**-7.8%**

Note: Data measures enrollments at degree-granting institutions. N.A.- Not Available. Source: BMO Capital Markets, U.S. Department of Education National Center for Education Statistics, and National Bureau of Economic Research.

Demand for working-adult-focused programs may actually be less counter-cyclical...

Companies with a larger working-adult student population, such as Strategic Education (STRA), complicate the debate about the effect of economic cycles on for-profit enrollment trends. During the prior economic expansion, when many for-profit publicly held companies began to see enrollment growth slow (mid- to late-2004), these companies were somewhat less affected. We believe this reflects the nature of their older students, who may take a longer-term perspective on the benefits of advanced schooling than the younger generation. In addition, many of these students may have been required by their companies to gain more skills for their current jobs, thereby providing a support level for continued demand, even as hiring markets picked up. As an economic recovery matures and the labor market tightens, employer-sponsored tuition reimbursement programs typically increase, potentially boosting enrollment growth rates. Therefore, we believe programs aimed at working adults could be considered somewhat cyclical, or at least less counter-cyclical relative to other programs in the sector. However, we acknowledge that even this component of the sector is not necessarily immune from the current adverse environment.

...at least at for-profit schools

The National Student Clearinghouse Research Center data cited above, also estimate enrollment by age, dividing the sector between traditional-age students (24 and under) and working adults (over 24). At not-for-profit schools, trends have been worse for working adults when compared with traditional-age students, while at for-profit schools it has been just the opposite, i.e., traditional-age students, for the most part, have underperformed their working adult peers.

Exhibit 86: Annual Change in Postsecondary Enrollment (Fall 2010 to Spring 2018)

	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Spring 2018
Four-year public:																
24 and under	1.0%	1.8%	1.7%	0.4%	0.1%	-0.1%	3.6%	4.1%	1.6%	1.3%	1.3%	1.3%	0.9%	1.1%	0.6%	1.0%
Over 24	2.9%	2.6%	0.7%	-1.1%	-2.2%	-3.3%	0.0%	0.2%	-1.4%	-0.1%	-0.3%	0.2%	-1.5%	-1.7%	-2.2%	-2.9%
Four-year private nonprofit:																
24 and under	1.9%	1.4%	2.5%	2.7%	0.8%	0.5%	0.7%	2.1%	1.6%	-0.1%	-0.2%	0.0%	-0.9%	-0.5%	0.3%	0.1%
Over 24	4.0%	2.3%	4.6%	5.4%	-0.1%	0.7%	2.3%	1.9%	1.7%	-0.4%	-0.5%	2.2%	-0.1%	-0.3%	-1.5%	-1.8%
Four-year for-profit:																
24 and under	**7.1%**	**4.2%**	**-2.6%**	**-9.7%**	**-8.3%**	**-10.2%**	**-14.7%**	**-5.8%**	**2.8%**	**-0.3%**	**-11.0%**	**-14.6%**	**-21.3%**	**-13.7%**	**-7.1%**	**-6.8%**
Over 24	**16.9%**	**10.2%**	**-4.1%**	**-9.2%**	**-7.0%**	**-8.4%**	**-8.5%**	**-4.7%**	**-1.2%**	**-6.0%**	**-14.3%**	**-8.0%**	**-12.8%**	**-9.3%**	**-7.1%**	**-6.8%**
Two-year public:																
24 and under	-0.7%	-4.4%	-0.9%	0.0%	-1.6%	-1.7%	-3.7%	-3.1%	-2.4%	-2.9%	-1.0%	-1.9%	-1.1%	-1.0%	-0.3%	-0.5%
Over 24	1.8%	-3.1%	-2.5%	-2.7%	-5.2%	-6.2%	-8.5%	-8.3%	-7.6%	-7.7%	-6.2%	-5.6%	-5.2%	-5.0%	-4.3%	-4.6%
All Schools:																
24 and under	**1.2%**	**-0.3%**	**0.4%**	**0.3%**	**-0.7%**	**-1.4%**	**-0.4%**	**0.7%**	**-0.5%**	**-0.8%**	**-0.4%**	**-0.7%**	**-0.2%**	**-0.2%**	**0.2%**	**0.3%**
Over 24	**4.1%**	**0.8%**	**-0.1%**	**-1.1%**	**-3.4%**	**-3.6%**	**-3.4%**	**-3.1%**	**-2.8%**	**-3.6%**	**-4.1%**	**-2.4%**	**-3.5%**	**-3.6%**	**-3.4%**	**-4.0%**

Source: BMO Capital Markets and National Student Clearinghouse Research Center.

Great Recession had positive impact on new enrollment, while it has fallen since the recession passed

Unfortunately, the data are not as illuminating (and available) for analyzing the impact of economic cycles on new enrollment. Nevertheless, we believe new enrollment trends are also countercyclical, with growth accelerating in the periods encompassing a recession and enrollment declining once the recession has well passed. Those trends were very apparent following the Great Recession.

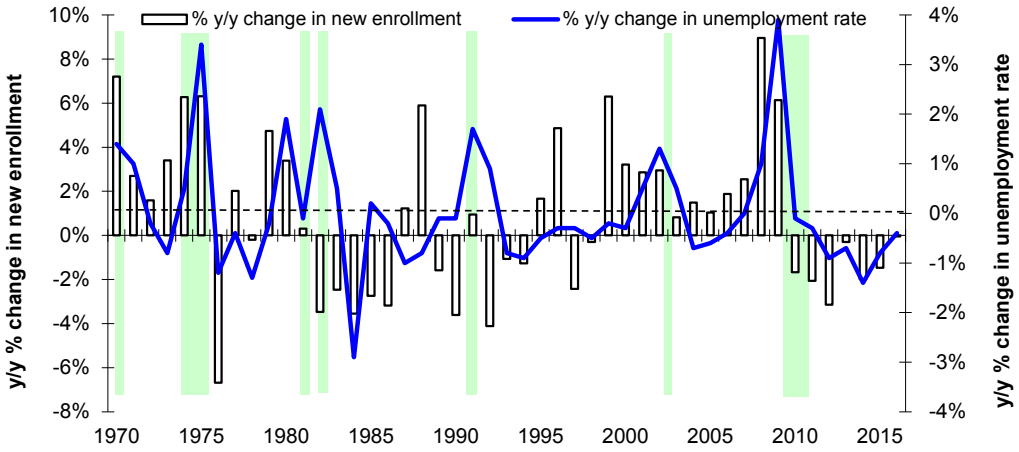
Exhibit 87: Economic Sensitivity: All Postsecondary Degree-Granting Schools New Enrollment Growth

	Annual New Enrollment Growth - All Postsecondary Degree-Granting Schools								
Recessionary Periods	**4 Years Prior**	**3 Years Prior**	**2 Years Prior**	**Year Prior**	**Year Of**	**Year After**	**2 Years After**	**3 Years After**	**4 Years After**
Oct. 1969 - Mar. 1970	17.7%	7.8%	5.6%	15.4%	3.9%	4.9%	2.7%	1.6%	3.4%
July 1974 - Mar. 1975	4.9%	2.7%	1.6%	3.4%	6.3%	6.3%	-6.7%	2.0%	-0.2%
Apr. 1980- Sept. 1980	-6.7%	2.0%	-0.2%	4.7%	3.4%	0.3%	-3.5%	-2.5%	-3.6%
Oct. 1981 - Mar. 1982	2.0%	-0.2%	4.7%	3.4%	0.3%	-3.5%	-2.5%	-3.6%	-2.7%
July 1990 - Mar. 1991	-3.2%	1.2%	5.9%	-1.6%	-3.6%	0.9%	-4.1%	-1.1%	-1.3%
Mar. 2001 - Nov. 2001	-2.4%	-0.3%	6.3%	3.2%	2.9%	2.9%	0.8%	1.5%	1.0%
Dec. 2007 - June 2009	1.5%	1.0%	1.9%	2.5%	9.0%	6.1%	-1.7%	-2.1%	-3.1%
Average	**2.0%**	**2.0%**	**3.7%**	**4.4%**	**3.2%**	**2.6%**	**-2.1%**	**-0.6%**	**-0.9%**

Source: BMO Capital Markets, U.S. Department of Education National Center for Education Statistics, and National Bureau of Economic Research.

Using the aforementioned Kantrowitz analysis and comparing annual changes in new fall enrollment to changes in the U.S. unemployment rate, the prior June shows some impact of counter-cyclicality as well, though not as strong as the trend in total enrollment – at least until recently.

Exhibit 88: Annual Changes in New Enrollment at All Postsecondary Degree-Granting Schools and Unemployment Rate (1970–2016)



Note: Data represents annual change in fall enrollment compared with June unemployment rate each year. Shaded area represents recessionary period. Source: www.finaid.org and BMO Capital Markets.

Two-year schools experienced greater volatility in new enrollments

When drilling down by school type, it can be seen that much of the accelerating growth during the Great Recession came from two-year schools, at both public not-for-profit (i.e., community colleges) and private schools. However, those groups have also experienced the largest declines in the post-Great Recession period (unfortunately, we were unable to segment the private-school growth between for-profit and not-for-profit schools).

Exhibit 89: Economic Sensitivity: Annual New Enrollment Growth by School Type

	Annual New Enrollment Growth - By School Type								
	4 Years Prior	3 Years Prior	2 Years Prior	Year Prior	Year Of	Year After	2 Years After	3 Years After	4 Years After
Most Recent Recession	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Public Not-for-Profit:									
Four-Year Schools	0.7%	3.1%	3.8%	3.4%	3.0%	3.5%	1.8%	1.8%	-0.2%
Two-Year Schools	0.5%	-3.2%	3.7%	0.3%	16.8%	7.5%	-2.9%	-3.5%	-4.8%
Private (Not-for-Profit and For-Profit):									
Four-Year Schools	4.6%	7.9%	-1.4%	5.8%	6.4%	5.9%	-5.4%	-2.6%	-2.2%
Two-Year Schools	1.9%	-10.4%	-11.7%	-2.3%	7.4%	17.9%	1.9%	-18.5%	-21.4%

N.A. – Not Available. Source: BMO Capital Markets, U.S. Department of Education National Center for Education Statistics, and National Bureau of Economic Research.

Economic expansion likely means slower growth

On the whole, we believe an improving economy has a detrimental effect on the for-profit sector in terms of potentially slower growth rates and margin expansion, although these changes tend to lag behind changes in economic cycles (i.e., enrollment growth for many for-profit providers did not begin to accelerate until the second half of 2008, well after the recession began in December 2007). Conversely, a slowing economy could benefit many companies, specifically those specializing in non-degreed programs. However, over the long term, we still believe these companies can continue to show both solid top-line and bottom-line growth even during an economic expansion, owing to the many secular growth attributes cited earlier. We have summarized what we believe are the effects of economic cycles beyond enrollment on this group below.

Exhibit 90: Analysis of Cyclical Effect on For-Profit Postsecondary Companies

Impact of Improving Economy	Impact of Worsening Economy	Acyclical Considerations
Negative: Rate of enrollment growth decelerates, as opportunity cost of attending school (i.e., working) increases	**Positive:** Rate of enrollment growth accelerates, as opportunity cost of attending school (i.e., working) declines (school becomes "safe haven" in the face of a challenging economy)	Sizable financial aid remains an attractive option for students in both good and bad economic times
Negative: Higher attrition (drop-out) rate as students find it easier to find work without higher education	**Positive:** Lower attrition (drop-out) rate owing to fewer job alternatives	Continued education is advantageous: in good economic times it is valuable in pursuing promotions and crucial to getting hired in a bad economic environment
Negative: Competition from not-for-profits intensifies as improving state tax revenues result in budgetary increases and potentially smaller annual tuition increases	**Positive:** Competition from not-for-profits weaken as lower state tax revenues result in budgetary cuts and hikes in tuition	High barriers to entry created through grueling accreditation process
Negative: Tightening labor markets make it more difficult to recruit faculty members	**Positive:** Loosening labor markets make it easier to recruit faculty members	
Negative: More expensive real estate market and higher interest rates for opening/expanding campuses (although could lag changes in economic cycle)	**Positive:** Cheaper real estate market and interest rates for opening/expanding campuses (although could lag changes in economic cycle)	
Positive: Completion rates may actually improve, as fewer students are forced to work part-time owing to need	**Negative:** Completion rates may decline as more students are forced to work part-time owing to need	
Positive: Job placement rates and graduate starting salaries improve, providing a positive datapoint for marketing to new students and retaining current ones	**Negative:** Job placement rates decline and graduate starting salaries stagnate, providing a negative data point for marketing to new students and retaining current ones	
Positive: Tighter labor markets spur increases in tuition reimbursement programs (benefits working-adult focused programs such as those run by APOL and STRA)	**Negative:** Looser labor markets slow growth in tuition reimbursement programs (hurts working-adult focused programs)	
Positive: Lower default rates on student loans (although data is published on a lagged basis)	**Negative:** Increased default rates on student loans (although data is published on a lagged basis)	

Source: BMO Capital Markets.

We provide a summary of recent enrollment growth statistics for the publicly held for-profit companies (where data is more easily available), including the following:

- Total enrollments,
- Year-over-year total enrollment growth,
- Year-over-year new student enrollment (i.e., starts) growth, which would include the impact of recent acquisitions, but is nevertheless a good leading indicator of future changes in total enrollment, in our view.

Exhibit 91: Select For-Profit Postsecondary School Operators Total Enrollment (Fall 2007–Fall 2017; YTD FY2017-FY2018)

			Fall enrollment (CY)											07-10	'10-17	YTD	YTD	YTD '17'-'18'
Company	*Ticker*	*FYE*	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	CAGR	CAGR	FY2017	FY2018	% chg.
Adtalem Global Education	ATGE	6	4,965	17,178	20,455	24,712	39,809	43,803	49,460	58,706	87,472	116,081	117,237	70.7%	24.9%	117,542	117,249	-0.2%
American Public Education (APUS)	APEI	12	25,290	38,900	55,300	66,000	87,300	103,000	105,200	100,200	94,200	84,600	81,000	37.7%	3.0%	81,900	80,050	-2.3%
Bridgepoint Education	BPI	12	12,716	30,547	54,894	77,179	90,597	91,358	68,566	59,552	49,982	47,831	42,132	82.4%	-8.3%	44,922	40,810	-9.2%
Career Education (Univ. segment)	CECO	12	N.A.	36,600	44,000	50,900	42,200	36,900	32,500	31,300	31,400	31,900	32,700	N.A.	-6.1%	33,350	32,400	-2.8%
Capella Education	STRA	12	20,268	24,063	30,738	38,634	35,755	34,989	34,503	35,220	36,683	37,708	37,223	24.0%	-0.5%	38,195	37,984	-0.6%
Grand Canyon Education	LOPE	12	13,448	21,957	34,218	42,286	44,486	52,253	59,914	68,122	75,073	82,422	91,230	46.5%	11.6%	78,919	86,499	9.6%
Laureate Education	LAUR	12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	967,297	1,026,203	1,047,400	1,079,700	N.A.	N.A.	1,078,000	1,053,850	-2.2%
Lincoln Educational Services	LINC	12	18,185	20,665	28,898	31,952	22,712	18,233	14,956	14,153	7,852	7,667	11,360	20.7%	-13.7%	10,256	10,428	1.7%
National Amer. Univ. Holdings	NAUH	5	N.A.	4,960	6,059	8,225	9,390	10,350	10,743	10,890	8,185	6,832	5,917	N.A.	-4.6%	7,022	6,046	-13.9%
Strategic Education	STRA	12	28,461	34,176	42,516	52,221	47,790	44,236	38,627	36,403	37,221	38,813	41,679	22.4%	-3.2%	43,399	46,526	7.2%
Universal Technical Institute	UTI	9	16,882	16,481	18,802	21,000	18,500	17,000	16,300	15,500	14,200	12,900	10,900	7.5%	-8.9%	10,186	9,802	-3.8%
TOTAL			**356,758**	**499,308**	**654,937**	**771,554**	**742,915**	**719,755**	**675,644**	**1,583,862**	**1,571,908**	**1,548,616**	**1,581,539**	**24.0%**	**-1.9%**	**379,013**	**350,544**	**-7.5%**

Note: Enrollments are headcount provided for the periods closest to fall of each calendar year. Some historical comparisons may be misleading owing to restatements. Year-to-date enrollment represents quarterly averages where available for fiscal year. Net course registrations used for APEI. ATGE includes Medical & Healthcare and Technology and Business (i.e., Brazil) schools. N.A. – Not Available. Source: BMO Capital Markets and company reports.

Exhibit 92: Select For-Profit Postsecondary School Operators Y/Y Change in Total Enrollment (Fall 2007–Fall 2017; YTD FY2017-FY2018)

			Fall enrollment (CY)											07-10	'10-17	Avg. YTD	
Company	*Ticker*	*FYE*	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	CAGR	CAGR	FY2017	FY2018
Adtalem Global Education	ATGE	6	15%	246.0%	19.1%	20.8%	61.1%	10.0%	12.9%	18.7%	49.0%	32.7%	1.0%	70.7%	24.9%	16.5%	-0.2%
American Public Education (APUS)	APEI	12	71%	53.8%	42.2%	19.3%	32.3%	18.0%	2.1%	-4.8%	-6.0%	-10.2%	-4.3%	37.7%	3.0%	-7.9%	-2.3%
Bridgepoint Education	BPI	12	N.A.	140.2%	79.7%	40.6%	17.4%	0.8%	-24.9%	-13.1%	-16.1%	-4.3%	-11.9%	82.4%	-8.3%	-9.9%	-9.2%
Career Education (Univ. segment)	CECO	12	N.A.	N.A.	20.2%	15.7%	-17.1%	-12.6%	-11.9%	-3.7%	0.3%	1.6%	2.5%	N.A.	-6.1%	1.8%	-2.8%
Capella Education	STRA	12	23.8%	18.7%	27.7%	25.7%	-7.5%	-2.1%	-1.4%	2.1%	4.2%	2.8%	-1.3%	24.0%	-0.5%	-0.4%	-0.6%
Grand Canyon Education	LOPE	12	31.6%	63.3%	55.8%	23.6%	5.2%	17.5%	14.7%	13.7%	10.2%	9.8%	10.7%	46.5%	11.6%	-0.6%	9.6%
Laureate Education	LAUR	12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	6.1%	2.1%	3.1%	N.A.	N.A.	1.9%	-2.2%
Lincoln Educational Services	LINC	12	2.3%	13.6%	39.8%	10.6%	-28.9%	-19.7%	-18.0%	-5.4%	-44.5%	-2.4%	48.2%	20.7%	-13.7%	0.5%	0.0%
National Amer. Univ. Holdings	NAUH	5	N.A.	N.A.	22.2%	35.7%	14.2%	10.2%	3.8%	1.4%	-24.8%	-16.5%	-13.4%	N.A.	-4.6%	-13.0%	-13.9%
Strategic Education	STRA	12	18.9%	20.1%	24.4%	22.8%	-8.5%	-7.4%	-12.7%	-5.8%	2.2%	4.3%	7.4%	22.4%	-3.2%	6.0%	7.2%
Universal Technical Institute	UTI	9	-3.7%	-2.4%	14.1%	11.7%	-11.9%	-8.1%	-4.1%	-4.9%	-8.4%	-9.2%	-15.5%	7.5%	-8.9%	-10.9%	-3.8%
MEDIAN			**17.0%**	**20.1%**	**27.6%**	**19.3%**	**-8.1%**	**-7.4%**	**-7.1%**	**-4.8%**	**-7.2%**	**-2.4%**	**-1.3%**	**22.4%**	**-4.6%**	**-0.4%**	**-2.2%**

Note: Enrollments are headcount provided for the periods closest to fall of each calendar year. Year-over-year change includes acquisitions. Some historical comparisons may be misleading owing to restatements. YTD change measures average of annual change for quarters reported in current fiscal year over same period in prior fiscal year. Change in net course registrations used for APEI. ATGE includes Medical & Healthcare and Technology and Business (i.e., Brazil) schools. N.A. – Not Available.
Source: BMO Capital Markets and company reports.

Exhibit 93: Select For-Profit Postsecondary School Operators Y/Y Change in New Student Enrollment Fall 2007–Fall 2017; YTD FY2017-FY2018)

			Fall Enrollment (CY)											07-10	'10-17	Avg. YTD	
Company	*Ticker*	*FYE*	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	CAGR	CAGR	FY2017	FY2018
Adtalem Education Group	ATGE	6	63.7%	213.1%	57.8%	14.2%	35.5%	21.4%	12.7%	26.6%	178.7%	38.6%	-6.9%	70.4%	29.3%	18.7%	-1.7%
American Public Education	APEI	12	71.3%	48.8%	36.3%	16.4%	46.1%	1.8%	-8.4%	-8.1%	-19.6%	-22.1%	-8.5%	33.1%	-4.6%	-12.6%	-6.4%
Career Education	CECO	12	N.A.	N.A.	11.8%	9.1%	-23.6%	-24.0%	-15.7%	10.6%	-1.5%	-0.5%	7.9%	N.A.	-7.7%	4.9%	-9.6%
Capella Education	STRA	12	N.A.	N.A.	N.A.	44.4%	-29.3%	-44.2%	26.9%	25.4%	7.2%	-0.9%	-2.1%	N.A.	-4.8%	-4.4%	8.3%
Laureate Education	LAUR	12	N.A.	N.A.	N.A.	N.A.	18.4%	11.7%	4.9%	13.8%	12.2%	0.6%	1.5%	N.A.	8.8%	1.6%	4.0%
Lincoln Educational Services	LINC	12	7.1%	12.4%	37.2%	-0.9%	-39.6%	-11.7%	-17.6%	-10.9%	-45.4%	49.2%	-0.9%	15.2%	-15.2%	-3.6%	6.8%
Strategic Education	STRA	12	16.0%	29.0%	20.0%	-2.0%	-15.0%	4.0%	-23.0%	5.0%	-0.7%	13.0%	7.0%	16.1%	-4.7%	8.0%	6.5%
Universal Technical Institute	UTI	9	-6.3%	7.3%	19.2%	-2.2%	-14.1%	-8.2%	0.7%	-12.2%	93.0%	-12.5%	-0.8%	8.2%	-8.4%	-11.0%	-8.0%
MEDIAN			**12.7%**	**24.3%**	**31.6%**	**6.4%**	**-14.5%**	**-10.0%**	**1.9%**	**7.8%**	**3.3%**	**6.3%**	**-0.9%**	**15.6%**	**-7.7%**	**0.7%**	**-1.7%**

Note: Data for American Public Education represents change in new student net course registrations (company does not disclose new students). Some historical comparisons may be misleading owing to restatements. YTD change measures average of annual change for quarters reported in current fiscal year over same period in prior fiscal year. ATGE includes Medical & Healthcare and Technology and Business (i.e., Brazil) schools. N.A. – Not Available.
Source: BMO Capital Markets and company reports.

U.S. For-Profit Postsecondary Schools – Revenue Trends

Favorable cash flow dynamics

We believe the economics of for-profit postsecondary schools are very favorable. On the whole, these schools are cash flow positive as most students prepay their tuition prior to the start of their coursework, or at least early on. In addition, as the bulk of financing for most of these schools comes from federally funded financial aid (i.e., Title IV), the credit risks, for the most part, are minimal.

An analysis of revenue trends for a select group of for-profit providers can be found in the table below.

Exhibit 94: Select For-Profit Postsecondary School Operators Revenues (FY2007-FY2018 to Date)

REVENUES - FISCAL YEAR *Company*	*Ticker*	*FYE*	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	'07-10 CAGR	'10-17 CAGR	YTD FY2017	YTD FY2018
Adtalem Global Education	ATGE	6	$933.5	$1,091.8	$1,461.5	$1,915.2	$2,182.4	$2,085.9	$1,969.0	$1,923.4	$1,909.9	$1,843.5	$1,207.9	27.1%	-6.4%	$1,207.9	$1,231.2
American Public Education	APEI	12	69.1	107.1	149.0	198.2	260.4	313.5	329.5	350.0	327.9	313.1	299.2	42.1%	6.1%	147.9	147.8
Bridgepoint Education	BPI	12	85.7	218.3	454.3	713.2	933.3	943.4	751.4	638.7	561.7	527.1	478.4	102.6%	-5.5%	254.1	238.9
Career Education	CECO	12	1,668.3	1,660.6	777.7	913.3	843.4	668.1	578.1	535.5	549.9	562.3	569.6	-18.2%	-6.5%	285.7	278.5
Capella Education	CPLA	12	226.2	272.3	334.6	426.1	430.0	421.9	415.6	422.0	416.5	429.4	440.4	23.5%	0.5%	221.4	223.5
Graham Holdings Company	GHC	12	933.3	1,160.6	1,539.6	1,913.1	1,399.6	1,149.4	1,080.9	1,010.1	849.6	617.0	547.3	27.0%	-16.4%	283.5	250.2
Grand Canyon Education	LOPE	12	99.3	161.3	261.9	385.8	426.7	511.3	598.3	691.1	778.2	873.3	974.1	57.2%	20.3%	466.5	512.5
Laureate Education	LAUR	12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	4,291.7	4,244.2	4,377.9	N.A.	N.A.	2,133.3	2,133.2
Lincoln Educational Services	LINC	12	327.8	376.9	552.5	639.5	508.8	397.2	196.2	188.7	181.9	232.2	261.9	25.0%	-12.0%	127.1	123.0
National Amer. Univ. Holdings	NAUH	5	44.4	49.5	62.6	89.8	104.8	115.0	129.2	127.8	117.9	96.1	86.6	26.4%	-0.5%	86.6	58.0
Strayer Education	STRA	12	318.0	396.3	512.0	636.7	627.4	562.0	503.6	446.0	434.4	441.1	454.9	26.0%	-4.7%	227.6	231.1
Universal Technical Institute	UTI	9	353.4	343.5	366.6	435.9	451.9	413.6	380.3	378.4	362.7	347.1	324.3	7.2%	-4.1%	242.9	236.7
Total			**$7,292.2**	**$8,537.6**	**$9,802.9**	**$12,371.9**	**$12,556.4**	**$11,624.0**	**$10,490.1**	**$9,933.4**	**$11,632.2**	**$10,526.5**	**$10,022.4**	**19.3%**	**-3.0%**	**$3,551.3**	**$3,531.5**

Y/Y CHANGE IN REVENUES *Fiscal years*			FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	YTD '16-'17	YTD '17-'18
Adtalem Global Education	ATGE	6	11%	17%	34%	31%	14%	-4%	-6%	-2%	-1%	-3%	-34%	-34%	2%
American Public Education	APEI	12	73%	55%	39%	33%	31%	20%	5%	6%	-6%	-5%	-4%	-8%	0%
Bridgepoint Education	BPI	12	199%	155%	108%	57%	31%	1%	-20%	-15%	-12%	-6%	-9%	-6%	-6%
Career Education	CECO	12	-7%	0%	-53%	17%	-8%	-21%	-13%	-7%	3%	2%	1%	-1%	-3%
Capella Education	CPLA	12	26%	20%	23%	27%	1%	-2%	-1%	2%	-1%	3%	3%	4%	1%
Graham Holdings Company	GHC	12	9%	24%	33%	24%	-27%	-18%	-6%	-7%	-16%	-27%	-11%	-12%	-12%
Grand Canyon Education	LOPE	12	38%	62%	62%	47%	11%	20%	17%	15%	13%	12%	12%	12%	10%
Laureate Education	LAUR	12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	-1.1%	3.2%	-0.2%	0.0%
Lincoln Educational Services	LINC	12	6%	15%	47%	16%	-20%	-22%	-51%	-4%	-4%	28%	13%	49%	-3%
National Amer. Univ. Holdings	NAUH	5	10%	11%	27%	43%	17%	10%	12%	-1%	-8%	-18%	-10%	-10%	-33%
Strayer Education	STRA	12	21%	25%	29%	24%	-1%	-10%	-10%	-11%	-3%	2%	3%	4%	2%
Universal Technical Institute	UTI	9	2%	-3%	7%	19%	4%	-8%	-8%	-1%	-4%	-4%	-7%	-7%	-3%
Median			**15%**	**20%**	**30%**	**25%**	**4%**	**-4%**	**-8%**	**-4%**	**-4%**	**-3%**	**1%**	**-1%**	**0%**

Note: Data includes acquisitions. Some historical comparisons may be misleading owing to restatements. N.A. – Not Available. Source: BMO Capital Markets and company reports.

Funding sources for higher education

Funding for all types of higher education comes from numerous sources, including, but not limited to, the following:

- Student tuition and fees (most of which comes from Title IV financial aid)
- Federal government funds (beyond Title IV financial aid)
- State and local government funds
- Endowments funds, gifts, and grants
- Auxiliary funds and other income (e.g., businesses run by schools, such as medical imaging centers)
- Tuition reimbursement programs (usually corporate sponsored)

We have summarized the funding sources for the publicly held providers in the following table; information is based on both disclosed data and our estimates. A number of companies with high percentages of private lending (e.g., ITT Educational Services [ESI]), have reduced their exposure to this funding source since the funding crisis hit in the latter part of the prior decade.

Exhibit 95: Funding Sources for Publicly Held For-Profit Postsecondary School Operators

Company Ticker Period covered	Adtalem Global Education ATGE FY2017	Amer. Public Educ. APEI FY2017	Bridgepoint Educ. BPI FY2017	Career Educ. CECO FY2017	Capella Educ. STRA FY2017	Graham Holdings Corp. (Kaplan) GHC FY2017	Grand Canyon Educ. LOPE FY2017	Lincoln Educ. Services LINC FY2017	Natl. American Univ. NAUH FY2017	Strayer Educ. STRA FY2016	Univ. Tech. Inst. UTI FY2017
Title IV/ Other Govt.	**57%**	**41%**	**81%**	**78%**	**76%**	**74%**	**72%**	**80%**	**83%**	**75%**	**71%**
Grants (mostly Pell)	0%				3%		13%				16%
Stafford Loans											55%
FDL					73%						55%
PLUS Loans											
Other Title IV											< 2%
Private Loan Exposure	**1%**			**<1%**	**<1%**	**<1%**					
Other sources (incl. cash)	**42%**	**59%**	**19%**	**22%**	**24%**	**25%**	**29%**	**20%**	**17%**	**25%**	**27%**
Cash		13%	19%								
Internally/externally funded											
Dept. of Defense/Veterans		46%			9%						19%
Employers										x	
Scholarships/State grants											

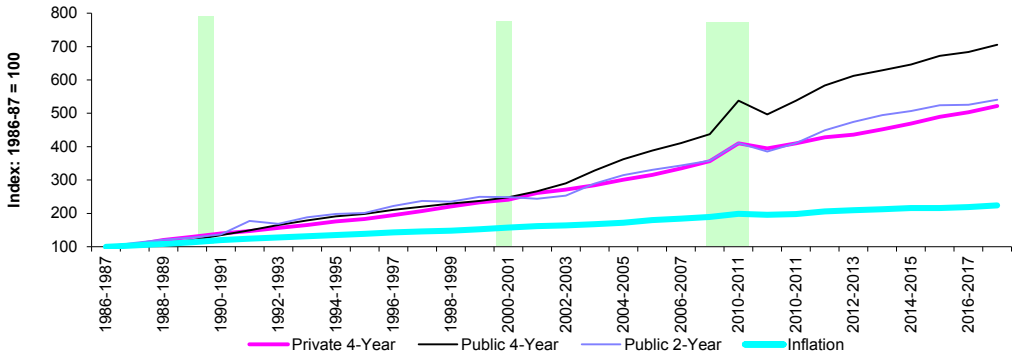
Source: BMO Capital Markets and company reports.

In the rest of this section, we discuss the various revenue and funding sources for the postsecondary sector.

Annual tuition increases handily outpace inflation, though the rate of increases has slowed

Tuition and fees. For most of their history, for-profit schools have had significant pricing power, in our opinion, as they typically are protected by the "umbrella" of tuition rate trends at not-for-profit schools. According to the College Board, the cost of higher education has increased significantly since the 1986-1987 school year, with tuition, room, and board rising 6.6% annually at private four-year institutions and 7% at public four-year schools and 6.4% at public two-year schools. This is roughly twice the rate of the 3.6% annual increase in inflation over that period. However, the rate of change has slowed in recent years.

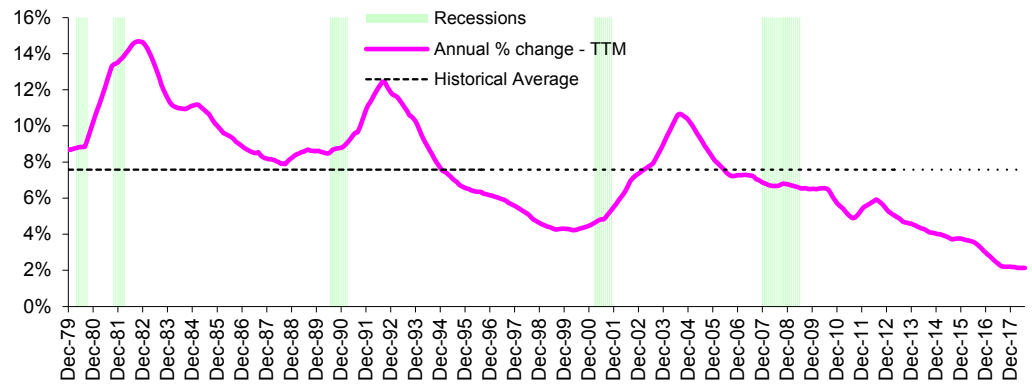
Exhibit 96: Index of Not-For-Profit Postsecondary Institution Tuition and Fees vs. Inflation (1986-1987 to 2017-2018 School Years)



Note: Shaded areas represent U.S. recessionary periods.
Source: BMO Capital Markets analysis based on data from College Board's Trends in College Pricing and Bureau of Labor Statistics.

This is also apparent when looking at another measure – the CPI Index: College Tuition and Fees as measured the Bureau of Labor Statistics (BLS). However, the rate of recent increases has slowed to around the 2% range – well below the historical 7.6% average since 1979.

Exhibit 97: Inflation for US College Tuition and Fees (1979-2018YTD)



Note: Shaded areas represent U.S. recessionary periods. Source: Bureau of Labor Statistics.

For-profit tuition increased at relatively slower rates, but is among the most expensive, especially for shorter-duration programs

While comparable historical data was not available for for-profit schools, we believe the trends have been fairly similar. Since the 2005-2006 school year (and using a different data source [ED]), average tuition and fees at for-profit institutions has increased annually roughly 1.5-3.8% — below the annual increases at most public and private not-for-profit sector institutions. We note that recent initiatives, such as the Excelsior Scholarship offering free tuition for those New York State residents attending CUNY or SUNY schools and meeting certain criteria are meant to stem the tide of increasing tuition rates.

Tuition and fees at for-profit schools tend to be much more expensive than at not-for-profit schools for shorter-duration programs (i.e., non-degreed programs at less than two-year schools, associate degrees). However, for the longer programs (i.e., four-year schools offering bachelor's and graduate programs), for-profit tuition tends to be less expensive than at private not-for-profit institutions, although more expensive than at most public not-for-profit schools. That trend appears to have been fairly consistent over this time period. We note that in recent years, tuition inflation at for-profit institutions has been slower than that at their not-for-profit counterparts, likely owing to both public and regulatory pressures.

Exhibit 98: Average Annual Tuition and Required Fees by School Type (2005–2006 to 2017–2018 School Years)

	2005-2006 School Year			2017-2018 School Year			CAGR: 2005-2006 to 2017-2018		
	Less than 2-year	2-year	4-year	Less than 2-year	2-year	4-year	Less than 2-year	2-year	4-year
Public:									
In-district	$5,002	$2,105	$5,226	$7,437	$3,600	$8,309	3.4%	4.6%	3.9%
In-state	5,024	2,502	5,228	7,437	4,235	8,336	3.3%	4.5%	4.0%
Out-of-state	5,305	5,512	12,660	8,578	8,186	18,674	4.1%	3.4%	3.3%
Private not-for-profit	10,569	8,702	17,093	14,667	14,572	27,963	2.8%	4.4%	4.2%
Private for-profit	**$10,618**	**$11,483**	**$13,645**	**$17,106**	**$14,749**	**$16,200**	**4.1%**	**2.1%**	**1.4%**
As % of private for-profit									
Public:									
In-district	47%	18%	38%	43%	24%	51%			
In-state	47%	22%	38%	43%	29%	51%			
Out-of-state	50%	48%	93%	50%	56%	115%			
Private not-for-profit	100%	76%	125%	86%	99%	173%			

Source: BMO Capital Markets and U.S. Department of Education National Center for Education Statistics.

When including all costs, for-profits are fairly expensive, though rates have increased at slower rates than at most not-for-profits

The analyses above excludes other costs beyond tuition, such as books and supplies, room, and board, and transportation, which in many cases equal roughly the cost of tuition, especially for those students not living with family. When including other costs, the average annual price of attendance at for-profit schools ranks high for virtually all types of programs and living arrangements. However, average annual rates of increases at the for-profit schools generally have been slightly below most of their not-for-profit counterparts (except at less-than-two year institutions) since the 2001-2002 school year.

Exhibit 99: Average Annual Price of Attendance by School Type (2001–2002 to 2017–2018 School Years)

	2001-2002 School Year			2017-2018 School Year			CAGR: 2001-2002 to 2017-2018		
	Less than 2-Year	2-Year	4-Year	Less than 2-Year	2-Year	4-Year	Less than 2-Year	2-Year	4-Year
Public not-for-profit:									
On campus:									
In-district	N.A.	$7,877	$11,704	$15,796	$15,035	$23,049	N.A.	4.1%	4.3%
In-state	N.A.	8,003	11,700	15,796	15,670	23,076	N.A.	4.3%	4.3%
Out-of-state	N.A.	10,077	17,576	16,937	19,621	33,414	N.A.	4.3%	4.1%
Off campus (not with family):									
In-district	$11,661	10,150	12,746	$20,896	17,457	23,254	3.7%	3.4%	3.8%
In-state	11,747	10,486	12,744	20,896	18,092	23,281	3.7%	3.5%	3.8%
Out-of-state	12,081	13,081	18,470	22,037	22,043	33,619	3.8%	3.3%	3.8%
Off campus (with family):									
In-district	7,229	5,118	7,224	12,370	9,077	13,550	3.4%	3.6%	4.0%
In-state	7,315	5,454	7,222	12,370	9,712	13,577	3.3%	3.7%	4.0%
Out-of-state	7,649	8,049	12,948	13,511	13,663	23,915	3.6%	3.4%	3.9%
Private not-for-profit:									
On campus	N.A.	15,487	22,606	N.A.	28,467	42,433	N.A.	3.9%	4.0%
Off campus (not with family)	17,692	17,141	22,814	28,245	30,455	42,692	3.0%	3.7%	4.0%
Off campus (with family)	12,050	10,839	17,262	18,543	20,611	32,966	2.7%	4.1%	4.1%
Private for-profit:									
On campus	**N.A.**	**18,952**	**23,192**	**18,161**	**29,133**	**32,537**	**N.A.**	**2.7%**	**2.1%**
Off campus (not with family)	**17,423**	**19,038**	**20,860**	**32,610**	**29,909**	**30,237**	**4.0%**	**2.9%**	**2.3%**
Off campus (with family)	**12,179**	**13,982**	**15,504**	**22,555**	**20,761**	**21,486**	**3.9%**	**2.5%**	**2.1%**

N.A. – Not Available. Source: BMO Capital Markets and U.S. Department of Education National Center for Education Statistics.

Tuition and fees have been the fastest-growing component of undergraduate education, though may not be the largest

In its annual report *Trends in College Pricing*, the College Board breaks down the annual cost of attendance for undergraduate students (two-year and four-year not-for-profit schools) by their components (similar data was not available for for-profit schools). While tuition is the largest component at both private four-year schools and public four-year schools for out-of-town students, room and board are actually the larger costs for students at two-year schools and for "in-state" students at four-year schools. For the most part, tuition and fees have been the fastest-growing component in the total cost of attendance for undergraduates since the 2008-2009 school year.

Exhibit 100: Average Undergraduate Budgets (2008–2009 vs. 2017-2018 School Years)

	Public Two-Year Commuter	Public Four-Year In-State On-Campus	Public Four-Year Out-of-State On-Campus	Private Nonprofit Four-Year On-Campus
Average cost 2017-2018 school year:				
Tuition and fees	$3,570	$9,970	$25,620	$34,740
Room and board	8,400	10,800	10,800	12,210
Books and supplies	1,420	1,250	1,250	1,220
Transportation	1,780	1,170	1,170	1,030
Other expenses	2,410	2,100	2,100	1,700
Total	**$17,580**	**$25,290**	**$40,940**	**$50,900**
Average cost 2008-2009 school year:				
Tuition and fees	$2,402	$6,585	$17,452	$25,143
Room and board	7,341	7,748	7,748	8,989
Books and supplies	1,036	1,077	1,077	1,054
Transportation	1,380	1,010	1,010	807
Other expenses	1,895	1,906	1,906	1,397
Total	**$14,054**	**$18,326**	**$29,193**	**$37,390**
CAGR since 2008-2009 school year:				
Tuition and fees	4.5%	4.7%	4.4%	3.7%
Room and board	1.5%	3.8%	3.8%	3.5%
Books and supplies	3.6%	1.7%	1.7%	1.6%
Transportation	2.9%	1.6%	1.6%	2.7%
Other expenses	2.7%	1.1%	1.1%	2.2%
Total	**2.5%**	**3.6%**	**3.8%**	**3.5%**

Source: College Board's Annual *Trends in College Pricing*.

For-profits provide relatively less in grants and scholarships, though that is changing

Most students pay less than the "sticker price," owing to grant and scholarship aid. In the 2015-2016 school year (latest data available), students at public-not-for-profit schools typically pay 60-68% of the total price of attendance, those at their private not-for-profit peers pay 55-85%, while those attending for-profit institutions pay 79-84%. A number of for-profit providers have begun providing discounts and/or scholarships, which has slightly reduced this percentage in recent years.

Exhibit 101: Net Price as Percentage of Total Price of Attendance (2015-2016 School Year)

	Sticker Price			Net Price			Net as % of Sticker Price		
	Less than 2-Year	2-Year	4-Year	Less than 2-Year	2-Year	4-Year	Less than 2-Year	2-Year	4-Year
Public not-for-profit:									
Students receving any grant aid	$15,256	$12,300	$19,588	10,369	7,405	12,449	68%	60%	64%
Students receving Title IV aid	15,241	12,372	19,657	10,387	7,327	13,072	68%	59%	67%
Private not-for-profit:									
Students receving any grant aid	24,638	25,537	39,453	20,203	19,091	22,242	82%	75%	56%
Students receving Title IV aid	24,013	25,574	39,615	20,359	19,746	21,901	85%	77%	55%
Private for-profit:									
Students receving any grant aid	**27,359**	**26,362**	**27,696**	**22,358**	**20,917**	**21,930**	**82%**	**79%**	**79%**
Students receving Title IV aid	**27,118**	**26,218**	**27,823**	**22,665**	**21,354**	**22,452**	**84%**	**81%**	**81%**

Source: BMO Capital Markets and U.S. Department of Education National Center for Education Statistics (NCES 2017-150rev).

Out-of-pocket costs at for-profit institutions have actually fallen in recent years— the only sector where this has occurred

Interestingly, despite the negative publicity the sector receives, out-of-pocket costs have recently increased for students across all school types except for those attending for-profit institutions, where they have actually fallen since the 2007-2008 school year—the only sector where this has occurred.

Exhibit 102: Annual Out-of-Pocket Costs and Total Price of Postsecondary Education (1999–2000 to 2011–2012 School Years)

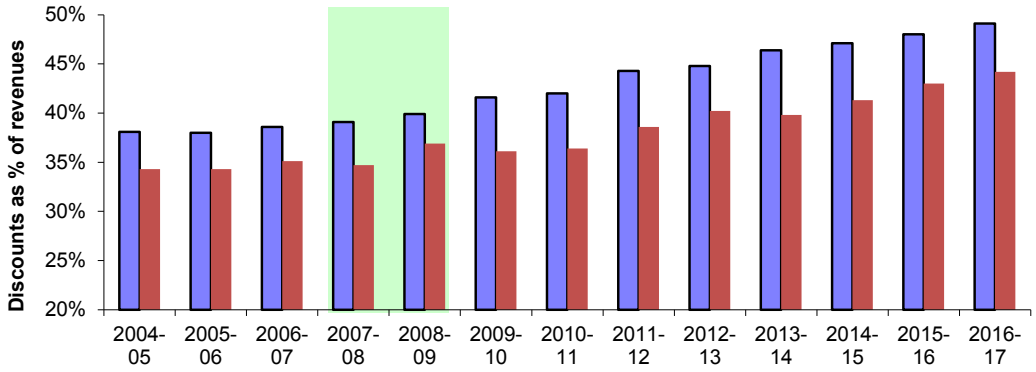
	1999-2000	2003-2004	2007-2008	2011-2012	1999-2000 2007-2008 CAGR	2007-2008 2011-2012 CAGR
Public 2-year:						
Out-of-pocket net price	$9,400	$9,400	$9,600	$9,900	0.3%	0.8%
Other aid	200	200	200	300	0.0%	10.7%
Work-study	100	200	200	100	9.1%	-15.9%
Loans	700	800	1,200	1,400	7.0%	3.9%
Grants	1,800	2,200	2,300	3,400	3.1%	10.3%
Total price	$12,100	$12,700	$13,600	$15,000	1.5%	2.5%
Public 4-year:						
Out-of-pocket net price	$10,100	$10,500	$10,800	$11,800	0.8%	2.2%
Other aid	700	900	1,100	1,500	5.8%	8.1%
Work-study	200	300	300	200	5.2%	-9.6%
Loans	3,100	3,400	4,200	4,500	3.9%	1.7%
Grants	2,800	3,400	4,100	5,200	4.9%	6.1%
Total price	$16,900	$18,500	$20,400	$23,200	2.4%	3.3%
Private nonprofit 4-year:						
Out-of-pocket net price	$16,700	$17,500	$17,600	$18,100	0.7%	0.7%
Other aid	1,600	1,900	2,100	2,900	3.5%	8.4%
Work-study	600	700	700	700	1.9%	0.0%
Loans	5,100	5,600	7,300	6,200	4.6%	-4.0%
Grants	9,000	9,800	11,100	15,600	2.7%	8.9%
Total price	$33,000	$35,400	$38,800	$43,500	2.0%	2.9%
For-profit						
Out-of-pocket net price	$14,200	$13,000	$19,000	$15,000	3.7%	-5.7%
Other aid	1,500	1,300	1,000	2,000	-4.9%	18.9%
Work-study	0	100	100	100	N.A.	0.0%
Loans	6,100	6,700	8,800	8,100	4.7%	-2.1%
Grants	2,800	3,800	2,800	4,100	0.0%	10.0%
Total price	**$24,700**	**$24,900**	**$31,700**	**$29,300**	**3.2%**	**-1.9%**

N.A. – Not Available. Source: BMO Capital Markets and U.S. Department of Education National Center for Education Statistics (NCES 2014-166).

Discounts are very common at not-for-profit schools; percentage increased after Great Recession

The National Association of College and University Business Officers (NACUBO) publishes an annual Tuition Discounting Report for private not-for-profit schools. For the 2017-2018 school year, the average discount was 44.8% (measured as a percentage of gross tuition and fees) for all undergraduates and 49.9% for first-time freshmen – both all-time survey highs and continuing increasing trends following the Great Recession.

Exhibit 103: Private Not-for-Profit Schools' Discounts as a Percentage of Gross Revenues (2004-2005 to 2017-2018 School Years)

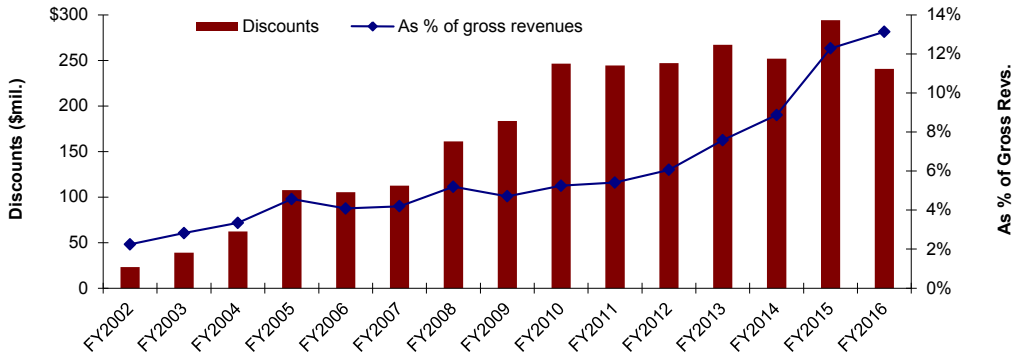


Note: Shaded area represents recessionary period. Source: BMO Capital Markets and NACUBO.

At Apollo Education Group, one of the few formerly public companies that discloses discounting exposure each quarter, discounting had risen

While we believe most for-profit schools also offer some discounting – typically in the form of scholarships – it is likely not nearly as high as that offered by their not-for-profit counterparts. Nevertheless, it has likely increased as well. Most of the publicly held companies do not disclose their discount amounts with the exception of Apollo Education Group (which went private in February 2017), which typically disclosed tuition discounts as a percentage of gross revenues in its public filings. In recent years, discounts as a percentage of gross revenues has been increasing, reaching 13.7% for FY2016 (latest disclosed publicly), which we believe was an all-time high for the company.

Exhibit 104: Apollo Education Group: Discounts as Percentage of Gross Revenues (FY2002-FY2016)



Source: BMO Capital Markets and company reports.

Examples of scholarships at for-profit institutions

We believe the most common discounts are for military students; e.g., Strategic Education's (STRA) Capella University has historically offered discounts of 10-15% to military students. However, many companies have selective promotions (e.g., waiving application fees) that are periodically put in place and available for all new students. Examples of scholarships at the publicly held providers can be found below.

Exhibit 105: Examples of Scholarships by Publicly Held Providers

Ticker	Company	Scholarships/Grants	2016	2017	Other	Other Comments
ATGE	Adtalem Global Education Inc	Various, Academic	N.A.	N.A.	N.A.	Empower Scholarship Fund provides scholarships to ATGE institutions
APEI	American Public Education	Academic, Other	Scholarship assistance of $18 million	Scholarship assistance of $17.9 million	N.A.	Scholarship assistance
BPI	Bridgepoint Ed Inc	Academic (on campus), Military	Institutional scholarships of $96.3 million (17% of revenues)	Institutional scholarships of $100.3 million (21% of revenues)	Leadership Development Grant for corporate tuition launched in 2015.	Leadership Development Grant for corporate tuition launched in 2015.
CPLA	Capella Education Company	Persistence-Based, Academic, Military, Corporate and educational relationships	24% of students received scholarships	18% of students received scholarships	Learner success (persistence) grants	Over $30 million in scholarships offered to students
CECO	Career Education Corp	Various, Academic	N.A.	N.A.	"AIU Milestone Grant" for new students equal to the cost of the first class	"AIU Milestone Grant" for new students equal to the cost of the first class for students that enroll in a second class.
GHC	Graham Holdings Co. (Kaplan)	Various, Academic, Military	N.A.	N.A.	N.A.	N.A.
LOPE	Grand Canyon Ed Inc	Academic, Religious	Scholarships of $179 million (21% of revenues)	Scholarships of $196 million (20% of revenues)	N.A.	Increasing use of academic scholarships to attract high performing students
LINC	Lincoln Edl Svcs Corp	Need-Based, Other	N.A.	N.A.	N.A.	Revenue was lower in 2015 due to higher scholarship recognition in comparison to 2014. Scholarship discounts increased by $0.7 million for the year ended December 31, 2015 as compared to the prior year
STRA	Strayer Ed Inc	Academic	N.A.	N.A.	Strayer Graduation Fund (25% of tuition)	The increase in graduate revenue per student was due primarily to lower scholarships compared to the same period in 2013.
UTI	Universal Technical Inst Inc	Need-Based, Academic, Other	35% of students benefit from UTI scholarships	48% of students benefit from UTI scholarships	N.A.	Institutional grant initiative plus scholarships

N.A. – Not Available. Source: BMO Capital Markets and company reports.

Price increases have historically accelerated into a recession and after one, although the Great Recession was a bit different (at least for public two-year schools)

Economic cycles and pricing trends. There appears to be some lag between economic cyclicality and pricing trends. That is, the rate of annual tuition increases tends to accelerate during a downturn and then continues to accelerate for some time after a recession ends. This relationship was apparent using College Board tuition data for not-for-profit schools (both public and private) in the four U.S. recessions prior to the most recent one. We believe this occurs as other revenue sources (e.g., state and local appropriations, endowment income) slow during a downturn, forcing these schools to charge higher prices. Interestingly, the trend in the Great Recession was a bit different—specifically for public not-for-profit two-year schools (i.e., community colleges), where prices were relatively flat in the 2008-2009 school year (the depths of the recession) but increased significantly thereafter.

Exhibit 106: Economic Sensitivity: Not-for-Profit Schools' Annual Tuition Increases

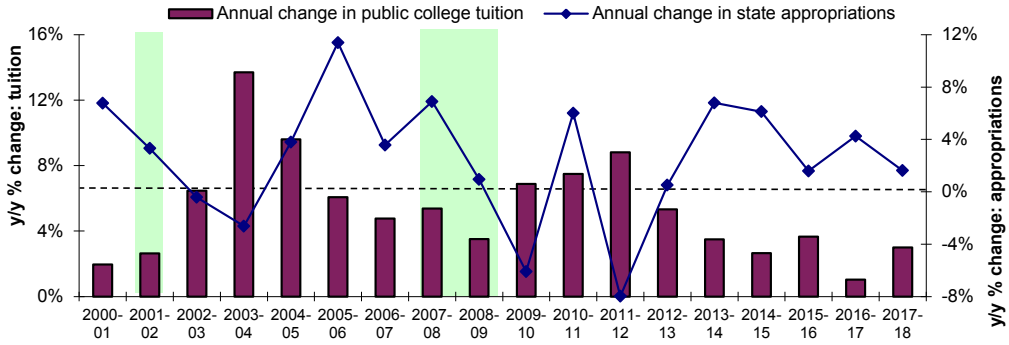
				Annual Tuition Increase					
Private Not-for-Profit Four-Year Schools:									
Prior Recessionary Periods	**4 Years Prior**	**3 Years Prior**	**2 Years Prior**	**Year Prior**	**Year Of**	**Year After**	**2 Years After**	**3 Years After**	**4 Years After**
Apr. 1980- Sept. 1980	N.A.	6.6%	9.6%	9.0%	12.2%	13.7%	12.8%	9.8%	9.1%
Oct. 1981 - Mar. 1982	6.6%	9.6%	9.0%	12.2%	13.7%	12.8%	9.8%	9.1%	10.2%
July 1990 - Mar. 1991	8.8%	5.9%	13.6%	8.2%	7.8%	5.1%	6.5%	5.4%	6.5%
Mar. 2001 - Nov. 2001	6.1%	6.7%	5.5%	3.6%	8.1%	3.9%	4.9%	5.8%	4.7%
Dec. 2007 - June 2009	5.8%	4.7%	6.3%	6.4%	6.0%	4.4%	3.9%	4.4%	2.0%
Average	**6.8%**	**6.7%**	**8.8%**	**7.9%**	**9.6%**	**8.0%**	**7.6%**	**6.9%**	**6.5%**
Public Not-for-Profit Four-Year Schools:									
Prior Recessionary Periods	**4 Years Prior**	**3 Years Prior**	**2 Years Prior**	**Year Prior**	**Year Of**	**Year After**	**2 Years After**	**3 Years After**	**4 Years After**
Apr. 1980- Sept. 1980	N.A.	6.2%	5.0%	7.6%	8.6%	13.1%	13.4%	11.3%	7.0%
Oct. 1981 - Mar. 1982	6.2%	5.0%	7.6%	8.6%	13.1%	13.4%	11.3%	7.0%	7.3%
July 1990 - Mar. 1991	7.3%	5.0%	6.3%	7.5%	12.5%	10.4%	10.8%	8.6%	6.7%
Mar. 2001 - Nov. 2001	4.6%	4.4%	3.5%	4.3%	7.4%	8.8%	13.3%	10.4%	7.1%
Dec. 2007 - June 2009	10.4%	7.1%	5.7%	6.6%	6.6%	6.5%	8.3%	8.4%	5.0%
Average	**7.1%**	**5.5%**	**5.6%**	**6.9%**	**9.6%**	**10.4%**	**11.4%**	**9.1%**	**6.6%**
Public Not-for-Profit Two-Year Schools:									
Prior Recessionary Periods	**4 Years Prior**	**3 Years Prior**	**2 Years Prior**	**Year Prior**	**Year Of**	**Year After**	**2 Years After**	**3 Years After**	**4 Years After**
Apr. 1980- Sept. 1980	N.A.	8.1%	6.9%	8.6%	10.1%	11.0%	9.0%	11.6%	10.6%
Oct. 1981 - Mar. 1982	8.1%	6.9%	8.6%	10.1%	11.0%	9.0%	11.6%	10.6%	9.8%
July 1990 - Mar. 1991	3.0%	12.0%	8.1%	5.3%	7.7%	29.2%	-4.7%	11.6%	5.2%
Mar. 2001 - Nov. 2001	7.0%	-0.8%	6.1%	-0.4%	-2.1%	4.1%	14.0%	8.9%	5.0%
Dec. 2007 - June 2009	8.9%	5.0%	3.8%	4.2%	0.5%	7.3%	6.6%	9.2%	5.7%
Average	**6.7%**	**6.2%**	**6.7%**	**5.5%**	**5.5%**	**12.1%**	**7.3%**	**10.4%**	**7.3%**

Source: BMO Capital Markets, College Board's Trends in College Pricing, and National Bureau of Economic Research. N.A. – Not Available.

Public not-for-profit schools shift funding increases to students in "bad economies"

Under normal circumstances, as public not-for-profit schools tend to rely on state and local tax revenues for a sizeable portion of their funding (roughly 22% in the 2015-2016 school year per the NCES; latest data available), we believe the level of this funding may be the key driver for tuition increases at these schools (i.e., when state and local budgets are under pressure, public not-for-profit schools tend to impose sizable tuition increases). This can be seen by comparing annual changes in public not-for-profit tuition with annual changes in state appropriations to higher education, as there appears to be somewhat of an inverse correlation between these two data streams.

Exhibit 107: Annual Change in State Appropriations and Public Not-For-Profit College Tuition (2000–2001 to 2017–2018 School Years)



Note: Shaded area represents recessionary period. State appropriations exclude stimulus funding in the 2008-2009 and 2009-2010 school years. Source: BMO Capital Markets, College Board's Trends in College Pricing, and Illinois State University's Center for the Study of Education Policy.

Tuition increases at public not-for-profits historically tend to lag increases in state unemployment rates

In a 2003 paper, Dr. Sarah Turner at the University of Virginia showed that the rate of tuition increases at public not-for-profit institutions is somewhat counter-cyclical, albeit with a lag. A regression analysis of state unemployment rates, which most economists agree are "later-cycle" data, showed that a 10% increase in state unemployment rates was likely to lead to an 11% reduction in state appropriations to higher education and a 13% increase in state tuition levels on average. The opposite should hold true as well, i.e., a ***decrease*** in state unemployment rates should lead to greater state appropriations to higher education and likely a ***lower rate of increase*** in state tuition levels (we do not expect tuition levels to decline).

There is limited historical data for tuition changes at for-profit schools so it is difficult to ascertain any trends. Nevertheless, we have provided a similar analysis for the for-profit schools using NCES data. Trends varied across school types during and after the Great Recession, with the largest annual increases at two-year schools.

Exhibit 108: Economic Sensitivity: For-Profit Schools' Annual Tuition Increases

	4 Years Prior	3 Years Prior	2 Years Prior	Year Prior	Year Of	Year After	2 Years After	3 Years After	4 Years After
Four-Year Schools									
Mar. 2001 - Nov. 2001	7.9%	N.A.	N.A.	**N.A.**	**1.9%**	**5.8%**	5.2%	8.5%	4.5%
Dec. 2007 - June 2009	8.5%	4.5%	3.6%	**5.5%**	**3.5%**	**1.6%**	0.3%	-3.1%	1.0%
Two-Year Schools									
Mar. 2001 - Nov. 2001	6.3%	N.A.	N.A.	**N.A.**	**6.7%**	**6.4%**	6.3%	2.5%	2.1%
Dec. 2007 - June 2009	2.5%	2.1%	0.6%	**6.9%**	**5.1%**	**10.4%**	1.9%	-3.3%	1.4%
Less Than Two-Year Schools									
Mar. 2001 - Nov. 2001	N.A.	N.A.	N.A.	**N.A.**	**N.A.**	**N.A.**	N.A.	N.A.	8.1%
Dec. 2007 - June 2009	N.A.	8.1%	4.9%	**10.4%**	**0.9%**	**4.0%**	4.8%	6.7%	-3.6%

Source: BMO Capital Markets, National Center for Education Statistics, and National Bureau of Economic Research. N.A. – Not Available.

"Pricing umbrella" has likely closed

Even should tuition increases accelerate at public institutions, we believe the "pricing umbrella" that many of the for-profit providers had historically claimed (i.e., ability to raise tuition annually by roughly 4-6%) has closed. Indeed, while "price cuts" are still rare, many schools are reducing costs to students through such methods as providing scholarships or changing course lengths. While some companies—most notoriously Apollo Education Group—had historically raised prices at certain programs based on changes in Title IV limits, they have become more sensitive to public scrutiny and, as such, we believe policies such as these are a thing of the past. In addition, the gainful employment regulations have actually forced some providers to cut tuition levels to comply (see details later in this section).

We have provided revenue per student data for a select group of for-profit providers. While there are many ways to calculate this, we use trailing-12-month (TTM) revenues divided by the average enrollments over that period, using five enrollment data points (beginning enrollments for each quarter plus ending enrollments for the last quarter). Unfortunately, there was limited data available. Revenues per student vary widely, with American Public Education as the lowest (military focus, more part-time students) and Universal Technical Institutes as the highest (auto technician programs are heavily capital intensive and therefore more expensive). In addition, schools that focus on working adults, such as those owned by Apollo Education Group, Bridgepoint Education (BPI), Grand Canyon Education (LOPE) and Strategic Education (STRA), tend to have lower annual revenue per student given that many students attend part time. In addition, changes in mix shift (i.e., degree type, program type) can have an impact on this calculation.

Exhibit 109: Select For-Profit Postsecondary School Operators Revenue per Student (FY2007-FY2018 to Date)

TTM Revenues/Student (5 qtr. avg.)			Fiscal Year											'07-10	'10-17	YTD	YTD
Company	*Ticker*	*FYE*	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	CAGR	CAGR	FY2017	FY2018
Adtalem Global Education	ATGE	6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	$10,297	N.A.	N.A.	$10,297	$10,355
American Public Education (APUS)	APEI	12	$3,087	$2,967	$2,984	$3,122	$3,152	$3,148	$3,161	$3,203	$3,118	$3,244	3,250	0.4%	0.6%	3,232	4,506
Bridgepoint Education	BPI	12	9,453	9,341	9,978	10,419	10,905	10,546	10,309	10,484	10,747	10,900	10,983	3.3%	0.8%	10,982	11,018
Career Education (Univ. segment)	CECO	12	N.A.	N.A.	18,010	18,083	17,134	17,291	17,034	16,713	17,140	17,258	16,982	N.A.	-0.9%	17,124	17,039
Capella Education	STRA	12	11,351	11,299	11,227	11,337	11,263	11,533	11,631	11,810	11,267	11,342	11,650	0.0%	0.4%	11,464	11,694
Grand Canyon Education	LOPE	12	8,196	8,459	8,583	9,811	10,069	8,992	10,815	10,025	11,121	10,982	11,562	6.2%	2.4%	11,416	11,758
Laureate Education	LAUR	12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	4,059	4,094	N.A.	N.A.	3,982	4,106
Lincoln Educational Services	LINC	12	18,427	18,947	20,638	20,319	19,653	21,313	22,638	23,201	24,056	24,881	23,810	3.3%	2.3%	26,242	24,105
National Amer. Univ. Holdings	NAUH	5	N.A.	N.A.	N.A.	12,116	11,248	10,950	11,489	11,501	11,457	11,500	11,935	N.A.	-0.2%	11,811	10,838
Strategic Education	STRA	12	9,955	10,435	10,980	11,439	11,354	11,171	11,063	10,921	10,649	10,542	10,238	4.7%	-1.6%	10,597	10,185
Universal Technical Institute	UTI	9	22,055	22,628	22,887	23,338	24,192	24,734	25,054	25,881	26,865	28,269	29,827	1.9%	3.6%	30,037	31,401
MEDIAN			**$12,778**	**$13,419**	**$16,430**	**$17,543**	**$16,694**	**$16,104**	**$16,824**	**$14,289**	**$12,887**	**$11,342**	**$11,606**	**3.2%**	**0.6%**	**$11,464**	**$11,694**

y/y change

Company	*Ticker*		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	YTD '16-'17	YTD '17-'18
Adtalem Global Education	ATGE	6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.6%
American Public Education (APUS)	APEI	12	N.A.	-3.9%	0.6%	4.6%	1.0%	-0.1%	0.4%	1.3%	-2.6%	4.0%	0.2%	1.3%	39.4%
Bridgepoint Education	BPI	12	N.A.	-1.2%	6.8%	4.4%	4.7%	-3.3%	-2.2%	1.7%	2.5%	1.4%	0.8%	1.5%	0.3%
Career Education (Univ. segment)	CECO	12	N.A.	N.A.	N.A.	0.4%	-5.2%	0.9%	-1.5%	-1.9%	2.6%	0.7%	-1.6%	-1.2%	-0.5%
Capella Education	CPLA	12	2.0%	-0.5%	-0.6%	1.0%	-0.7%	2.4%	0.9%	1.5%	-4.6%	0.7%	2.7%	2.9%	2.0%
Grand Canyon Education	LOPE	12	5.8%	3.2%	1.5%	14.3%	2.6%	-10.7%	20.3%	-7.3%	10.9%	-1.3%	5.3%	3.8%	3.0%
Laureate Education	LAUR	12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0.9%	170.7%	3.1%
Lincoln Educational Services	LINC	12	4.9%	2.8%	8.9%	-1.5%	-3.3%	8.5%	6.2%	2.5%	3.7%	3.4%	-4.3%	17.3%	-8.1%
National Amer. Univ. Holdings	NAUH	5	N.A.	N.A.	N.A.	N.A.	-7.2%	-2.6%	4.9%	0.1%	-0.4%	0.4%	3.8%	2.8%	-8.2%
Strategic Education	STRA	12	3.9%	4.8%	5.2%	4.2%	-0.7%	-1.6%	-1.0%	-1.3%	-2.5%	-1.0%	-2.9%	-0.7%	-3.9%
Universal Technical Institute	UTI	9	3.8%	2.6%	1.1%	2.0%	3.7%	2.2%	1.3%	3.3%	3.8%	5.2%	5.5%	5.7%	4.5%
MEDIAN			**3.4%**	**2.9%**	**4.6%**	**4.1%**	**-0.1%**	**-0.3%**	**0.9%**	**-0.6%**	**1.1%**	**0.7%**	**0.8%**	**2.9%**	**0.4%**

N.A. – Not Available. Note: Revenue per student calculated using TTM revenues divided by enrollments over that period (five data points). Some historical comparisons may be misleading owing to divestitures and other reasons (such as ATGE). Source: BMO Capital Markets and company reports.

It is difficult to compare program costs across the for-profit providers, even when measured on a standard credit hour basis, as they tend to vary geographically, by program type (i.e., bachelor's programs are typically more expensive on a per credit hour basis when compared with associate's programs) as well as by delivery method (i.e., campus-based versus online). Nevertheless, we have attempted to compile average program tuition costs for the publicly held for-profit providers.

Exhibit 110: Average Program Costs for Select For-Profit Postsecondary Companies

		Full Program Cost			
Company/Ticker	Certificate/ Diploma	Associates	Bachelors	Masters	Doctoral
Adtalem Global Education (ATGE; DeVry University)	N.A.	$33,000	$73,000	$34,000	N.A.
American Public Education (APEI)	N.A.	16,000	32,000	13,000	N.A.
Bridgepoint Education (BPI)	N.A.	27,000	53,000	36,000	N.A.
Capella Education (STRA)	22,000	N.A.	45,000	27,000	73,000
Career Education (CECO)	N.A.	30,000	59,000	25,000	60,000
Grand Canyon Education (LOPE)	N.A.	N.A.	50,000	22,000	77,000
Lincoln Educational Services (LINC)	22,000	48,000	60,000	N.A.	N.A.
National American University (NAUH)	23,000	40,000	75,000	23,000	N.A.
Strayer Education (STRA)	N.A.	19,000	39,000	25,000	N.A.
Universal Technical Institutes (UTI)	N.A.	36,000	N.A.	N.A.	N.A.
MEDIAN	**$22,000**	**$31,500**	**$53,000**	**$25,000**	**$73,000**

N.A. – Not Available. Source: BMO Capital Markets and company reports.

For-profits: Tuition and fees and key revenue source

As most for-profit postsecondary schools are eligible for only limited direct federal and state/local funding (outside of Title IV funding for their students), they tend to rely mostly on student tuition and fees to fund current operations and growth. For-profit schools received about 90% of their revenues in the 2015-2016 school year (latest available) from tuition and fees. By contrast, the public not-for-profit schools and private not-for-profit schools generated roughly 21% and 40% of their revenues, respectively, from that source.

Exhibit 111: Funding Sources by Institution Type (2015-2016 School Year)

($ in millions)	Public Not-for-Profit					
	2-Year Schools		4-Year Schools		All Schools	
	Revenues	% of Total	Revenues	% of Total	Revenues	% of Total
Tuition and fees	**$9,056.0**	**16.3%**	**$64,152.1**	**22.1%**	**$73,208.1**	**21.2%**
Federal funding	10,586.8	19.1%	38,576.0	13.3%	49,162.9	14.2%
State/local funding	29,625.5	53.4%	72,192.4	24.9%	101,817.9	29.4%
Endowments, investment income, gifts and grants	750.1	1.4%	13,344.2	4.6%	14,094.3	4.1%
Auxiliary and other income	5,508.1	9.9%	101,975.0	35.1%	107,483.1	31.1%
Total	$55,526.6	100.0%	$290,239.7	100.0%	$345,766.3	100.0%

	Private Not-for-Profit					
	2-Year Schools		4-Year Schools		All Schools	
	Revenues	% of Total	Revenues	% of Total	Revenues	% of Total
Tuition and fees	**$675.1**	**80.1%**	**$71,441.3**	**39.3%**	**$72,116.3**	**39.5%**
Federal funding	43.4	5.1%	23,413.9	12.9%	23,457.2	12.8%
State/local funding	6.5	0.8%	2,155.5	1.2%	2,162.0	1.2%
Endowments, investment income, gifts and grants	42.2	5.0%	25,843.9	14.2%	25,886.2	14.2%
Auxiliary and other income	75.1	8.9%	58,877.8	32.4%	58,953.0	32.3%
Total	$842.3	100.0%	$181,732.4	100.0%	$182,574.7	100.0%

	For-Profit					
	2-Year Schools		4-Year Schools		All Schools	
	Revenues	% of Total	Revenues	% of Total	Revenues	% of Total
Tuition and fees	**$3,115.8**	**89.7%**	**$12,232.7**	**90.0%**	**$15,348.4**	**90.0%**
Federal funding	193.9	5.6%	519.4	3.8%	713.3	4.2%
State/local funding	14.6	0.4%	32.1	0.2%	46.7	0.3%
Endowments, investment income, gifts and grants	6.7	0.2%	35.7	0.3%	42.4	0.2%
Auxiliary and other income	143.2	4.1%	764.9	5.6%	908.1	5.3%
Total	$3,474.2	100.0%	$13,584.8	100.0%	$17,059.0	100.0%

Source: BMO Capital Markets and U.S. Department of Education National Center for Education Statistics.

For-profits generate less per FTE student relative to their not-for-profit counterparts

Private for-profit institutions generate relatively less revenue per FTE student when compared with their not-for-profit counterparts, given their relative lack of direct federal and state funding (excluding Title IV funds). In the 2015-2016 school year (latest data available) private for-profit institutions generated $17,057 per FTE student—much lower than the $33,468 and $60,320 generated at public not-for-profit and private not-for-profit institutions, respectively.

Exhibit 112: Funding Sources per FTE Student (2015-2016 School Year)

	Public-Not-For-Profit			Private-Not-For-Profit			Private-For-Profit		
	Two-year Schools	Four-year Schools	All Schools	Two-year Schools	Four-year Schools	All Schools	Two-year Schools	Four-year Schools	All Schools
Tuition and fees	$2,562	$9,868	$7,380	$16,715	$21,451	$21,394	$15,955	$15,769	$15,806
Federal funding	2,995	5,735	4,802	1,073	7,030	6,959	993	670	735
State/local funding	8,382	11,074	10,157	160	647	641	75	41	48
Endowments, investment income, gifts and grants	212	2,419	1,667	3,489	3,489	3,489	34	46	44
Auxiliary and other income	1,558	16,032	11,103	1,861	17,679	17,489	733	986	935
Total	$15,541	$43,177	$33,468	$19,352	$60,869	$60,320	**$17,041**	**$17,061**	**$17,057**
As % of total:									
Tuition and fees	16.5%	22.9%	22.1%	86.4%	35.2%	35.5%	93.6%	92.4%	92.7%
Federal funding	19.3%	13.3%	14.3%	5.5%	11.5%	11.5%	5.8%	3.9%	4.3%
State/local funding	53.9%	25.6%	30.3%	0.8%	1.1%	1.1%	0.4%	0.2%	0.3%
Endowments, investment income, gifts and grants	1.4%	5.6%	5.0%	18.0%	5.7%	5.8%	0.2%	0.3%	0.3%
Auxiliary and other income	10.0%	37.1%	33.2%	9.6%	29.0%	29.0%	4.3%	5.8%	5.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: BMO Capital Markets and U.S. Department of Education National Center for Education Statistics.

Financial aid—biggest variable in driving enrollment growth

Very few students at for-profit institutions pay the entire amount of tuition and fees themselves, owing to a combination of the myriad financial aid sources and rising tuition costs. A 2001 study by Professor David Morgan at the University of Oklahoma concluded that the variable with the biggest impact on enrollment is the amount of financial aid available to students. As such, we believe it is in a school's best interest to maximize the amount of potential financial aid its students can access.

Federal financial aid for higher education has fallen from the 2011-2012 school year record high

Federal funds. The most well-known of the many types of financial aid available are federally funded student loans and grants, the bulk of which are regulated by Title IV of the Higher Education Act, overseen by the U.S. Department of Education (ED). According to the College Board, the federal government provided $125.4 billion in financial aid for higher education in the 2016-2017 school year (this excludes any education-related tax benefits); this was the fifth consecutive year of declines from the record $154.6 billion available in the 2011-2012 school year. The vast majority (roughly $113 billion) of the 2016-2017 amount was provided through various programs regulated by Title IV (e.g., excludes veterans and military funding)—also down since peaking in the 2010-2011 school year.

Exhibit 113: Types of Financial Aid Available for Postsecondary Students

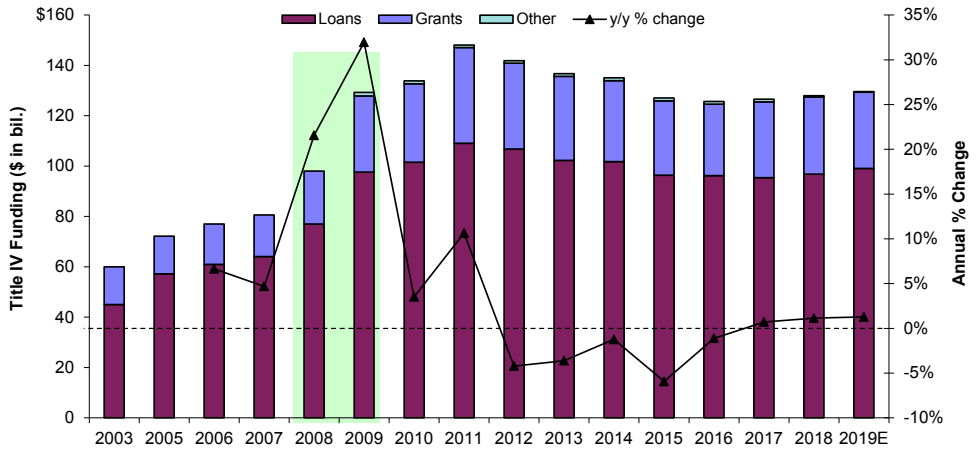
Program	Name	Type of Aid	Other Information	Annual Award Limits (2018-2019 School Year)	Disbursement	Total Available (2016-2017 School Year) ($ bil.)	% of total
Federal Grants	Pell Grant	Grant; does not have to be repaid	Undergraduates only	Up to $6,095	School acts as the agent for the US Dept. of Education	$26.6	11.9%
	Federal Supplemental Educational Opportunity Grant (FSEOG)	Grant; does not have to be repaid	Undergraduates only; not all schools can participate	Up to $4,000	School disburses funds to students	0.7	0.3%
	Other Federal Grants (e.g., LEAP, ACG and SMART)	Grant; does not have to be repaid	Various	Various	Various	0.0	0.0%
Other Loans/Grants	Veterans	Various loans and grants	N.A.	Various	N.A.	12.9	5.8%
	Military/Other	Various loans and grants	N.A.	Various	N.A.	0.0	0.0%
Direct Loan Programs	Federal Perkins Loans	Loan; must be repaid	Undergraduates and graduates; not all schools can participate	Undergraduate: up to $5,500 annually and $27,500 lifetime. Graduate: up to $8,000 annually and $60,000 lifetime (including undergraduate loans).	School disburses funds to students	1.1	0.5%
	Subsidized Stafford Loans	Loan; must be repaid	Dept. of Education pays interest while student is in school	Undergraduate: $3,500-$5,500; depending on grade level (lowest for first year undergrads) with lifetime limit of $23,000. Graduate:$8,500 with lifetime limit of $65,500.	School disburses funds to students, funds provided by federal government (direct loans)	21.7	9.7%
	Unsubsidized Stafford Loans	Loan; must be repaid	Borrower is responsible for interest for life of loan	Undergraduate: $2,000-$7,000; depending on grade level (lowest for first year undergrads) with lifetime limit of $57,500. Graduate:$12,000 with lifetime limit of $138,500.	School disburses funds to students, funds provided by federal government (direct loans)	49.9	22.3%
	PLUS Loans	Loan; must be repaid	Borrower is responsible for interest for life of loan	Cost of attendance minus any other financial aid received	School disburses funds to students, funds provided by federal government (direct loans)	12.6	5.6%
	Other Loans	Loan; must be repaid	Various	Various	Various	0.0	0.0%
Work Study	Federal Work Study (FWS)	Money is earned; does not have to be repaid	Undergraduates and graduates; not all schools can participate	No annual limit	School disburses funds to students	1.0	0.4%
Other Grants	State Grants	Grant; does not have to be repaid	Various	Various	Various	10.6	4.7%
	Institutional (i.e., school) Grants	Grant; does not have to be repaid	Various	Various	Various	58.7	26.3%
	Private/Employer Grants	Grant; does not have to be repaid	Various	Various	Various	15.9	7.1%
Non-Federal Loans	State Sponsored	Loan; must be repaid	Various	Various	Various	0.0	0.0%
	Private Sector	Loan; must be repaid	Various	Various	Various	11.6	5.2%
Total						$223.2	100.0%
Total Federal funding						$125.4	56.2%
Total Title IV						$112.5	50.4%

Source: U.S. Department of Education Federal Student Aid Information Center and College Board's Trends in Student Aid 2017.

Federal financial aid for higher education had fallen after peaking in FY2011, but has moved up recently

FY2011 (2010-2011 school year) was the peak year Title IV funding as enrollment was expected to continue to increase with the after-effects of the Great Recession. However, budgetary issues—along with constraints in enrollment—allowed the U.S. government to reduce funding thereafter, reaching a low of $125.6 billion in FY2016. The White House's most recent budget proposal for FY2019 calls for total funding to increase slightly from the prior year.

Exhibit 114: Title IV Financial Aid (FY2003–FY2019E)



Note: FY2004 data was not available. Estimates are based on White House proposals. Shaded area represents recessionary period. Source: BMO Capital Markets and U.S. Department of Education.

As such, students at these schools rank among the highest users of Title IV funds

Students at for-profit institutions rank among the largest users of Title IV funds, as they tend to skew towards more lower-income demographics. Each year, the ED compiles a list of Title IV financial aid used by students attending proprietary (i.e., for-profit) institutions to determine their compliance with the 90/10 regulation. This data were accumulated by OPE-ID number, not by school system; if the entire school system were used, schools such as Corinthian Colleges' Everest schools, and Education Management's Art Institutes schools would have been listed higher here. In addition, changes to OPE-ID numbers over this period (e.g., Education Management and ITT Technical Institutes consolidating OPE-ID numbers) may skew any comparisons.

Exhibit 115: Proprietary Institutions Ranked by Title IV Funds (Selected School Years; Ranked by 2015-2016 School Year)

($ in mil.)

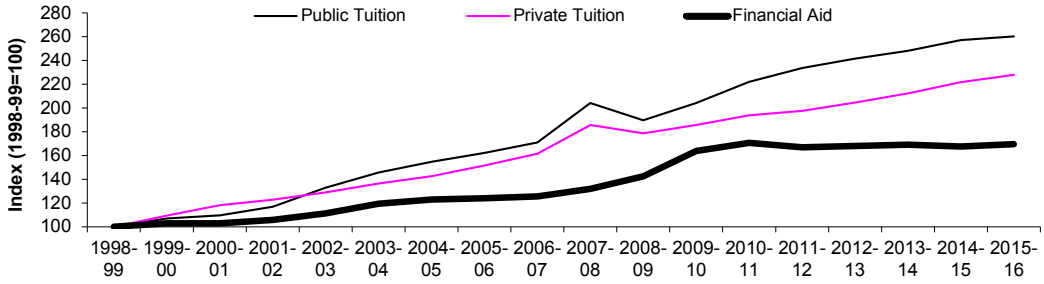
Rank	OPE-ID	School Name	City	State/Country	Ticker/Owner	2008-09 Title IV Funds ($ in mil.)	% of total	2011-12 Title IV Funds ($ in mil.)	% of total	2015-16 Title IV Funds ($ in mil.)	% of total	2008-09 - 2011-12 CAGR	2011-12 - 2015-16 CAGR
1	02098800	University of Phoenix	Tempe	AZ	Private	$4,713.6	4.6%	$4,050.1	2.9%	$1,664.7	1.4%	-4.9%	-19.9%
2	00732900	ITT Technical Institute	Indianapolis	IN	Private	94.8	0.1%	984.8	0.7%	592.5	0.5%	118.2%	-11.9%
3	00107400	Grand Canyon University	Phoenix	AZ	LOPE	362.0	0.3%	597.0	0.4%	553.1	0.5%	18.1%	-1.9%
4	00458600	Kaplan University	Davenport	IA	GHC	753.7	0.7%	766.4	0.5%	508.3	0.4%	0.6%	-9.8%
5	02504200	Walden University	Minneapolis	MN	LAUR	531.6	0.5%	785.5	0.6%	434.6	0.4%	13.9%	-13.8%
6	01072700	DeVry University	Chicago	IL	Private	867.7	0.8%	1,035.8	0.7%	386.9	0.3%	6.1%	-21.8%
7	00188100	Ashford University	San Diego	CA	BPI	482.4	0.5%	1,170.5	0.8%	384.8	0.3%	34.4%	-24.3%
8	00145900	Strayer University	Washington	DC	STRA	591.9	0.6%	723.8	0.5%	316.4	0.3%	6.9%	-18.7%
9	02179900	Argosy University	Orange	CA	Private	386.4	0.4%	493.3	0.4%	316.0	0.3%	8.5%	-10.5%
10	03267300	Capella University	Minneapolis	MN	CPLA	379.2	0.4%	539.4	0.4%	312.7	0.3%	12.5%	-12.7%
11	01303900	South University	Savannah	GA	Private	189.3	0.2%	313.5	0.2%	276.7	0.2%	18.3%	-3.1%
12	00638500	Chamberlain College of Nursing	Addison	IL	ATGE	48.9	0.0%	163.5	0.1%	274.1	0.2%	49.5%	13.8%
13	03010600	Virginia College	Birmingham	AL	Private	204.1	0.2%	283.6	0.2%	229.4	0.2%	11.6%	-5.2%
14	02362100	Full Sail University	Winter Park	FL	Private	128.3	0.1%	384.0	0.3%	223.0	0.2%	44.1%	-12.7%
15	02233300	St George's University, School of Medicine	St. Georges	Grenada	Private	125.4	0.1%	170.0	0.1%	212.7	0.2%	10.7%	5.8%
16	04051300	Art Institute of Phoenix (The)	Phoenix	AZ	Private	21.4	0.0%	376.5	0.3%	176.8	0.2%	159.9%	-17.2%
17	02246000	Ross University, School of Medicine	Portsmouth	Dominica	ATGE	165.3	0.2%	195.3	0.1%	148.2	0.1%	5.7%	-6.7%
18	00267800	Bryant & Stratton College	Buffalo	NY	Private	144.0	0.1%	195.6	0.1%	137.9	0.1%	10.8%	-8.4%
19	03819300	American Public University System	Charles Town	WV	APEI	38.0	0.0%	220.0	0.2%	136.3	0.1%	79.6%	-11.3%
20	01019800	ECPI University	Virginia Beach	VA	Private	117.3	0.1%	115.3	0.1%	124.0	0.1%	-0.5%	1.8%
21	00822100	Universal Technical Institute	Avondale	AZ	UTI	125.1	0.1%	154.0	0.1%	112.6	0.1%	7.2%	-7.5%
22	00793800	Lincoln College of Technology	Indianapolis	IN	LINC	29.2	0.0%	54.3	0.0%	102.2	0.1%	22.9%	17.1%
23	00753100	Academy of Art University	San Francisco	CA	Private	149.3	0.1%	207.1	0.1%	95.3	0.1%	11.5%	-17.6%
24	02217100	Pima Medical Institute	Tucson	AZ	Private	74.9	0.1%	99.8	0.1%	95.2	0.1%	10.1%	-1.2%
25	03698300	West Coast University	Los Angeles	CA	Private	19.8	0.0%	83.2	0.1%	93.1	0.1%	61.4%	2.9%
26	00747000	Art Institute of Pittsburgh (The)	Pittsburgh	PA	Private	173.2	0.2%	216.2	0.2%	87.3	0.1%	7.7%	-20.3%
27	02614200	Miller - Motte Technical College	Clarksville	TN	Private	38.1	0.0%	N.A.	N.A.	78.8	0.1%	N.A.	N.A.
28	03813300	Northcentral University	San Diego	CA	Private	N.A.	N.A.	59.7	0.0%	77.4	0.1%	N.A.	6.7%
29	02100500	Universal Technical Institute	Phoenix	AZ	UTI	114.2	0.1%	123.6	0.1%	74.8	0.1%	2.7%	-11.8%
30	02277900	Ross University School of Veterinary Medicine	West Farm	St.Kitts-Nevis	ATGE	53.7	0.1%	83.2	0.1%	72.4	0.1%	15.7%	-3.4%
31	02120700	San Joaquin Valley College	Visalia	CA	Private	60.8	0.1%	99.8	0.1%	71.6	0.1%	17.9%	-8.0%
32	00479900	Monroe College	Bronx	NY	Private	80.4	0.1%	72.2	0.1%	71.3	0.1%	-3.5%	-0.3%
33	00927000	Art Institute of Atlanta (The)	Atlanta	GA	Private	97.1	0.1%	143.6	0.1%	68.9	0.1%	13.9%	-16.8%
34	00974800	Carrington College	Sacramento	CA	ATGE	69.7	0.1%	58.6	0.0%	65.1	0.1%	-5.6%	2.7%
35	02244400	American University of the Caribbean	Cupecoy	St. Maarten	ATGE	53.7	0.1%	81.1	0.1%	63.8	0.1%	14.7%	-5.8%
36	00140100	Post University	Waterbury	CT	Private	17.5	0.0%	67.5	0.0%	62.3	0.1%	56.9%	-2.0%
37	02362000	Universal Technical Institute	Houston	TX	UTI	53.1	0.1%	69.8	0.0%	60.6	0.1%	9.6%	-3.5%
38	02572000	Vista College	El Paso	TX	Private	8.8	0.0%	34.1	0.0%	60.0	0.1%	57.0%	15.2%
39	01246100	Lincoln Technical Institute	Iselin	NJ	LINC	47.0	0.0%	44.9	0.0%	57.8	0.0%	-1.5%	6.5%
40	00739400	Berkeley College	New York	NY	Private	38.0	0.0%	62.4	0.0%	53.0	0.0%	18.0%	-4.0%
41	02158400	Harrison College	Indianapolis	IN	Private	55.5	0.1%	78.3	0.1%	52.6	0.0%	12.2%	-9.5%
42	01111200	Fashion Institute of Design & Merchandising -	Los Angeles	CA	Private	75.4	0.1%	83.6	0.1%	49.5	0.0%	3.5%	-12.3%
43	04121500	Columbia Southern University	Orange Beach	AL	Private	12.8	0.0%	72.4	0.1%	48.6	0.0%	78.4%	-9.5%
44	02305800	Florida Career College	Miami	FL	Private	56.7	0.1%	69.6	0.0%	48.1	0.0%	7.1%	-8.8%
45	01049000	Regency Beauty Institute	Blaine	MN	Private	43.3	0.0%	94.6	0.1%	48.1	0.0%	29.8%	-15.6%
46	03095500	ASA College	Brooklyn	NY	Private	48.1	0.0%	55.0	0.0%	47.4	0.0%	4.5%	-3.6%
47	02117100	Art Institute of Houston (The)	Houston	TX	Private	33.4	0.0%	78.8	0.1%	47.3	0.0%	33.1%	-12.0%
48	02559300	United Education Institute	Huntington Park	CA	Private	65.9	0.1%	104.8	0.1%	46.5	0.0%	16.8%	-18.4%
49	02218700	Florida Technical College	Orlando	FL	Private	16.3	0.0%	35.9	0.0%	45.9	0.0%	30.2%	6.4%
50	00750200	Berkeley College	Woodland Park	NJ	Private	31.6	0.0%	38.8	0.0%	44.5	0.0%	7.1%	3.5%
		Top 50 OPE-IDs				13,919.8	13.5%	17,651.0	12.6%	9,410.7	8.1%	8.2%	-14.5%
		All Other Proprietary OPE-IDs				8,765.5	8.5%	8,913.6	6.4%	7,483.7	6.5%	0.6%	-4.3%
		All Proprietary OPE-IDs				22,685.3	21.9%	26,564.6	18.9%	16,894.4	14.6%	5.4%	-10.7%
		Non-Proprietary OPE-IDs				80,760.7	78.1%	113,760.4	81.1%	99,015.6	85.4%	12.1%	-3.4%
		Total				**$103,446.0**	**100.0%**	**$140,325.0**	**100.0%**	**$115,910.0**	**100.0%**	**10.7%**	**-4.7%**

N.A. – Not Available. Note: Data provided by OPE-ID number and may not reflect the entire school system. Source: Federal Student Aid Data Center, College Board (total Title IV funds) and BMO Capital Markets.

Rates of tuition increases have outpaced available financial aid

Private loans. In recent years, the amount of available financial aid (excluding private loans and educational tax benefits) has grown at a slower rate than tuition levels. When measured in constant dollars (2016), the amount of available financial aid increased 3% annually from the 1998-1999 to 2016-2017 school years per FTE student, versus average annual increases of 5.6% and 4.9% for public and private tuition, respectively. We note this gap had been widening in recent years, as financial aid has been relatively flat.

Exhibit 116: Annual Growth in Financial Aid and Tuition in Constant Dollars (1998-1999 to 2016-2017 School Years)



Note: Financial aid excludes private loans and educational tax benefits. Source: BMO Capital Markets analysis based on data from College Board's Trends in Student Aid, Trends in College Pricing and Bureau of Labor Statistics.

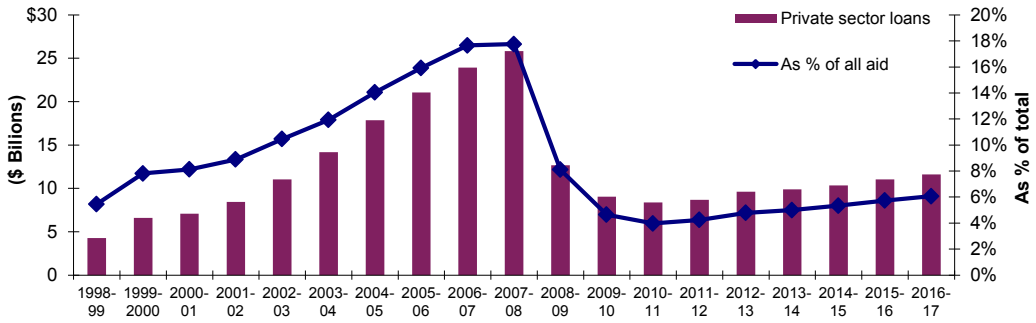
Private loans had been one of the fastest-growing sources of financial aid . . .

According to the NCES, private loans have historically been used most often by students at for-profit institutions to help mitigate this funding gap, though in recent years this gap has narrowed (*at least relative to students at private not-for-profit institutions). Also known as "alternative loans" or nonfederal loans, these loans became more popular in the 1980s as annual tuition rate increases accelerated and the amount of federally funded financial aid was unable to make up much of the difference (some of that gap was diminished in the 1990s). The growing use of private financing occurred despite the tendency for the loans to be more expensive than those provided by the federal government.

. . . but declined after peaking in the 2007-2008 school year, though they have rebounded a bit since troughing in the 2010-2011 school year

Owing to a combination of pressures from the "credit crunch" and the reduction in profitability and increase in risk in Title IV programs following the passage of the College Cost Reduction and Access Act (H.R. 2669), which became effective on October 1, 2007, most private lenders reduced their student loan exposure. After peaking at roughly $25.8 billion (19% of total financial aid excluding tax benefits) in the 2007-2008 school year, private loans fell by over 68% to roughly $8.4 billion (4.4% of total) in the 2010-2011 school year. That was despite (or potentially the cause of) an overall 50% increase in other types of financial aid over the same period. Since that time, private loans have increased a bit, reaching nearly $11.6 billion (6.1% of the total) in the 2016-2017 school year, but still well below the prior peak.

Exhibit 117: Private Loans in Dollars and Percentage of Financial Aid (1998–1999 to 2016–2017 School Years)



Note: Measured in current dollars. Shaded areas represent recessionary periods. Source: BMO Capital Markets and College Board's Trends in Student Aid.

We believe the impact of this reduction has been felt more by students at for-profit institutions, as they tended to have a greater portion of students considered "subprime borrowers," typically those with lower FICO scores. The "ceiling" to be considered subprime had moved up in recent years, with anecdotal evidence showing a requirement of a score of nearly 700 (sometimes higher) to qualify for a private student loan.

Examples of internal lending programs

Unfortunately, many schools themselves have also reduced their own institutional lending given accusations of impropriety (e.g., onerous lending, limited transparency) at such institutions as Corinthian Colleges and ITT Educational Services. While some institutions still have their own lending programs (e.g., Universal Technical Institutes), they tend to be much smaller.

Exhibit 118: Internal Lending Programs of Select For-Profit Providers

Company	Ticker	Internal Loan/Payment Plan	Current Status/Amounts Outstanding
Career Education	CECO	Extended payment program. Discontinued in 2011.	$2.3m non-current related receivables as of June 31, 2018
Lincoln Educational Services	LINC	Loans directly to students	$54.3 m as of June 31, 2018 ($39.9m excluding interest).
Universal Technical Institute	UTI	New loan program began June 29, 2013 (prior one expired). Tuition revenue only recognized when loans are repaid.	$66.0m loans outstanding as of Sept 30, 2017 (net of $8m collected and $18m written off)

Source: BMO Capital Markets and company reports.

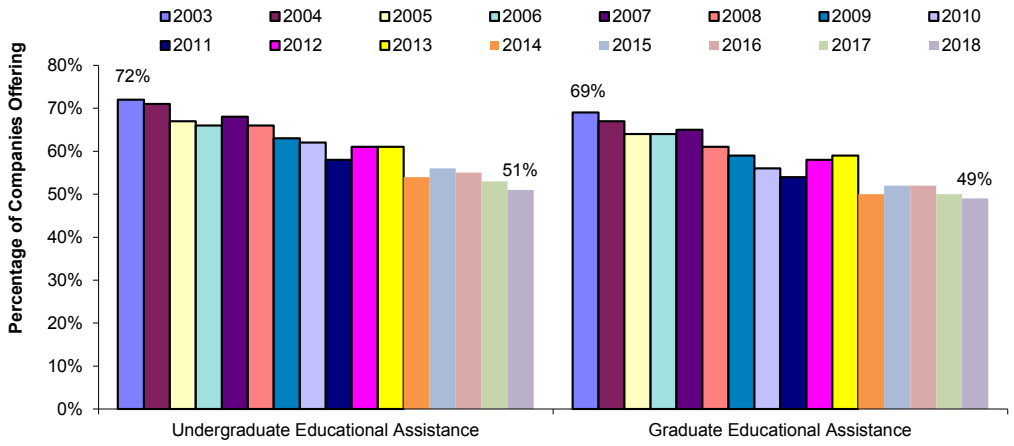
Billions spent each year

Tuition assistance/reimbursement programs. There are varied estimates of the size of this market. According to the Association for Talent Development (formerly ASTD), $18 billion was spent on tuition reimbursement in 2012. EdAssist estimates the market was $22 billion in that year and was projected to grow to $28 billion in 2016. The Georgetown Center on Education and the Workforce estimates that roughly 16% of corporate training spending in used for tuition reimbursement programs (2015 report).

The percentage of companies offering tuition assistance has been falling…

According to the Society for Human Resource Management (SHRM), 51% of employers offered undergraduate educational assistance and 49% offered graduate educational assistance in 2018. However, these percentages, for the most part, have been declining since peaking in 2003 at 72% and 69%, respectively, with the 2018 survey results at all-time survey lows. This corresponds with a slight shift to more companies providing student loan repayment assistance – at 4% of employers in 2018, up from 3% in 2015.

Exhibit 119: Percentage of Companies Providing Educational Assistance (2003–2018)

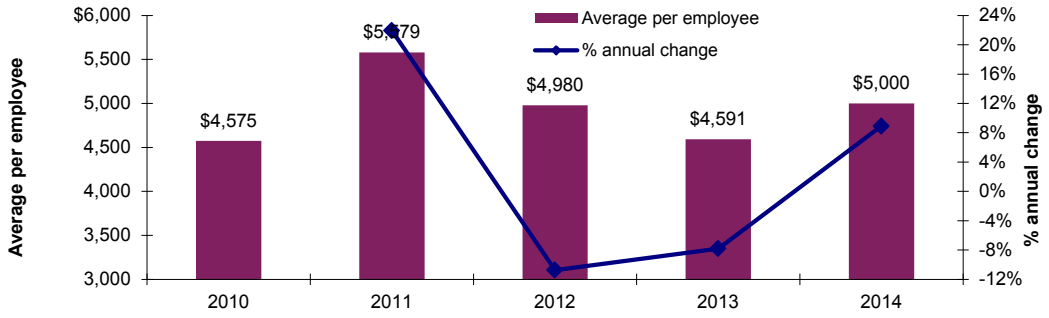


Source: BMO Capital Markets and Society for Human Resource Management. Note: Prior to 2003, educational assistance was not separated into graduate and undergraduate.

. . . though the amount per employee has been increasing

Per its annual benchmarking study, SHRM estimates that in 2014 (latest available), companies spent an average of $5,000 per employee for those it had provided tuition reimbursement—the highest since its 2011 survey. We believe this amount may be somewhat capped by the $5,250 limit on tax-free tuition assistance that employers can provide per employee annually.

Exhibit 120: Tuition Reimbursement—Average per Employee (2010–2014)



Source: BMO Capital Markets and Society for Human Resource Management.

Low participation rate

Even for those companies that offer such benefits, few employees take advantage. A 2007 study by SHRM found that fewer than 10% of employees at firms with such programs actually participated. In a 2009 survey by Bersin & Associates, 60% of survey respondents reported participation rates of just 1% to 7%, while less than a quarter of organizations had 8% or more of employees participating.

Examples of corporate partnerships

A number of schools are expanding relationships with corporations, not only as a way of drawing potential students and tuition support, but also helping to better position their students for employment once they have completed their programs. We have provided examples of such partnerships below.

Exhibit 121: Examples of Corporate Partnerships

School	Corporation	Programs	Financial incentives	Employee requirements	Enrollment
All (accredited institutions)	McDonalds (MCD)	Manager pre-approved courses	Upfront tuition assistance of $2,500 to $3,000 / year	Employees that have worked for one year and at least 15 hours / week	400,000 eligible workers
All (accredited institutions)	Chipotle Mexican Grill (CMG)	Associate's / Bachelor's / Master's	90% reimbursement of tuition and fees up to $5,250 / year	All hourly and salaried employees	53,000 eligible workers
All (accredited institutions)	American Hotel and Lodging Association	Online Associates and Bachelor's	Fully covered expenses for associate's degrees, some subsidies for Bachelor's degrees	Dependent on company	N/A
Arizona State University	Starbucks (SBUX)	Online bachelor's	Fully reimbursed tuition at end of each semester	Employees that work at least 20 hours / week	2,000 enrolled / 140,000 eligible
Champlain College	U.S. Office of Personnel Management	Champlain's online courses. Bachelor or master's degree	Online, students get a roughly 70 percent discount to study on their own time	N/A	More than 1,000 online working adults
Lincoln Educational Services (LINC)	Haas Automation / Hurco Companies (HURC)	Computerized Numerical Controls (CNC) machining programs	Corporate scholarships / internships	NA	N/A
Southern New Hampshire (College for America)	Anthem	Competency-based Associate's / Bachelor's	Fully reimbursed tuition ($2,500 / yr)	Full-time or part-time employee that works 20+ hours / week and employed for at least 6 months	55,000 eligible
Strayer University (STRA)	Fiat Chrysler Automobiles (FCAU); TeleTech	Associate's / Bachelor's / Master's	Fully (upfront) corporate-paid tuition and fees	Full-time or part-time dealership employees that have worked for 30 days	120,000 eligible at Fiat; 8,000 eligible at TeleTEch
Universal Technical Institute (UTI)	Roush Yates Engines; Fiat Chrysler Automobiles (FCAU) BMW North America	Computerized Numerical Controls (CNC) machining program; Mopar Technical Education Curriculum	N/A	N/A	Roush Yates - CNC Machinist School; Fiat - Mooresville, NC campus BMW - Gound Prairie campus

N/A – Not Available. Source: BMO Capital Markets and company reports.

Some cyclical sensitivity

We believe there is somewhat of a lag between economic cycle trends and the percentage of companies offering this assistance, as while these programs are more popular as labor markets tighten (i.e., recruitment and retention benefits), they likely take some time to be implemented. Anecdotal data show that during the 2001 economic downturn, few companies actually disbanded these programs, but rather cut the amount of program funding or limited employee participation either directly or indirectly (e.g., required multiple internal approvals, changed policy to require employees to pay with reimbursement contingent on minimum grade levels). There may have been more such actions in the deeper Great Recession; a January 2009 Challenger, Gray & Christmas, Inc. survey of human resources executives found that 10.8% had eliminated or reduced tuition reimbursement programs during that period.

For those companies that focus on working adult students, such as Apollo Education Group and Strategic Education (STRA), corporate and government tuition reimbursement programs are an important source of revenues. While neither of these companies breaks out the percentage of revenues from these programs (i.e., many times students get the monies directly from their employers and then pay the institutions without stating the source, making it difficult to track the original source of funds), we believe a sizable number of students at these companies receive at least some form of tuition reimbursement.

Military and Veterans Markets

Military market had been expanding share, though we believe this may have reversed

Military market. In the 2011-2012 school year (latest data available), roughly 1.29 million students (4.8% of the total) attending U.S. postsecondary institutions were classified as military and veterans students – up from 4.4% in the 2007-2008 school year. While there is limited current data, we believe this share may have shrunk a bit due to funding constraints.

Exhibit 122: Military Students Enrolled in Postsecondary Institutions (2011-2012 School Year)

	Undergraduates		Graduates		Total	
	No. (in 000s)	% of total	No. (in 000s)	% of total	No. (in 000s)	% of total
Military students:						
Veterans	657	3.1%	107	3.1%	764	3.1%
Military service members						
Active duty	139	0.7%	29	0.8%	168	0.7%
Reserves	76	0.4%	9	0.3%	85	0.3%
Total	**872**	**4.2%**	**145**	**4.2%**	**1,017**	**4.2%**
Non-military students	20,055	95.8%	3,312	95.8%	23,367	95.8%
Total	20,927	100.0%	3,457	100.0%	24,384	100.0%

Source: National Center for Educational Statistics.

Using a difference data series, we can analyze military and veterans enrollment by school type. As of fall 2012 (latest data available), for-profit schools enrolled roughly 15.7% of military and veteran students – a higher proportion than their overall share of 8.8% of total enrollment that year. Military and veteran students represented roughly 9% of students enrolled at for-profit schools that year.

Exhibit 123: Military Service Members and Veterans Enrolled in Postsecondary Institutions (Fall 2012)

	Military Students		All Postsec. Students	
Institution Type	Number	% by Inst. Type	Number	Military as % of Total
Public two-year	307,700	36.4%	8,092,602	3.8%
Private not-for-profit two-year	20,700	2.5%	37,698	54.9%
Public four-year	265,300	31.4%	8,092,602	3.3%
Private not-for-profit four-year	118,400	14.0%	3,913,690	3.0%
Private for-profit four-year	**132,300**	**15.7%**	**1,470,346**	**9.0%**
Total	844,500	100.0%	21,606,938	3.9%

Source: National Center for Educational Statistics.

We have segmented our discussion between active duty/reservists and veterans.

Active duty military and reservists. According to the U.S. Department of Defense (DoD), there are roughly 1.3 million personnel on active duty in the U.S. armed forces (including Coast Guard; data as of June 30, 2018) and over 800,000 members in the reserves and National Guard (data as of June 30, 2017). We note this number has been mostly declining in recent years and the US government has cut back on military personal spending.

Exhibit 124: Active Duty Military and Reserve Personnel

	Army	Navy	Marine Corps	Air Force	Coast Guard	Total
Active Duty:						
Officers	92,215	55,401	21,582	62,783		231,981
Enlisted	372,667	268,340	163,637	258,129		1,062,773
Cadets-Midshipmen	3,449	4,503	0	4,310		12,262
Total	468,331	328,244	185,219	325,222	42,104	1,307,016
Reserves:						
Officers	82,680	14,016	4,399	28,925	1,053	131,073
Enlisted	441,166	43,629	33,834	146,418	5,088	670,135
Total	523,846	57,645	38,233	175,343	6,141	801,208
As % of total						
Active Duty:						
Officers	7.1%	4.2%	1.7%	4.8%		17.7%
Enlisted	28.5%	20.5%	12.5%	19.7%		81.3%
Cadets-midshipmen	0.3%	0.3%	0.0%	0.3%		0.9%
Total	35.8%	25.1%	14.2%	24.9%	3.2%	100.0%
Reserves						
Officers	10.3%	1.7%	0.5%	3.6%	0.1%	16.4%
Enlisted	55.1%	5.4%	4.2%	18.3%	0.6%	83.6%
Total	65.4%	7.2%	4.8%	21.9%	0.8%	100.0%

Source: U.S. Department of Defense. Active and reserve duty data as of June 30, 2018.

Each year, about 300,000 new service members are enlisted or commissioned to replace retiring or separating members. However, this number could decrease if the military continues to downsize.

Active military market underpenetrated

A relatively small portion of the military-enlisted population (i.e., non-officers) are college educated; according to the Pew Research Center (2015 data), only 7% of enlisted personnel have a bachelor's degree, compared with 19% of all adults ages 18 to 44. In addition, military servicemen and women are now encouraged to gain either associate degrees or bachelor degrees for consideration in promotions to the next rank (and pay raises) in their military career. As such, we believe this market is relatively underpenetrated. In addition, we believe the demanding work schedules, along with the geographic distribution of this population is ideal for an online delivery format (discussed in greater detail later in this section).

Budgetary pressures have added limits to tuition assistance

Each year, the DoD allocates funding for "voluntary education" whereby military personnel receive tuition assistance for roughly 100% of students' costs through its Uniform Tuition Assistance program. For postsecondary classes, the limit is currently $250 per credit hour, with a maximum annual benefit of $4,500 (except for the Coast Guard, which is $187.50 per credit hour and $3,375 per year). This rate was increased in FY2003 as an enticement to increase military enlistment. However, recent budgetary pressures have affected these limits, with several military branches announcing changes to their tuition that took effect in federal fiscal year 2014. For example, the Army now requires service members to complete one year of service after graduation from Advanced Individual Training in order to be eligible for tuition assistance and has reduced the total benefit per service member per year from $4,500 to $4,000, the Coast Guard has also reduced total per service member annual benefits, and the Marine Corps now requires Marines to have 24 months on active duty prior to being eligible to apply for tuition assistance.

As the per-credit rate is below the price points of most for-profit providers—at least at the undergraduate level—many institutions offer military discounts to serve this sector.

Military tuition assistance—down roughly 24% from FY2012 to FY2017

The amount of DoD tuition assistance spent peaked in FY2012 at $568 million, falling over 24% to $430 million in FY2017 owing to budget pressures. The Army and Air Force are still the biggest users of this program, with the largest percentage declines in the Army and Marine Forces.

Exhibit 125: Department of Defense Tuition Assistance Courses Taken and Cost (FY2011-FY2017)

	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	CAGR FY2011-17
Courses Taken (000s)								
Army	377.2	380.2	350.0	428.5	352.0	265.0	228.0	
Navy	136.9	134.5	133.4	125.9	134.0	135.0	130.0	
Marine Corps	78.8	77.2	68.7	40.9	49.0	49.0	49.0	
Air Force	273.9	282.3	275.0	247.2	225.0	233.0	230.0	
DoD Total	**866.8**	**874.1**	**827.0**	**842.5**	**760.0**	**682.0**	**637.0**	
As % of total								
Army	43.5%	43.5%	42.3%	50.9%	46.3%	38.9%	35.8%	
Navy	15.8%	15.4%	16.1%	14.9%	17.6%	19.8%	20.4%	
Marine Corps	9.1%	8.8%	8.3%	4.9%	6.4%	7.2%	7.7%	
Air Force	31.6%	32.3%	33.2%	29.3%	29.6%	34.2%	36.1%	
DoD Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
% annual change								
Army	3.1%	0.8%	-7.9%	22.4%	-17.9%	-24.7%	-14.0%	-8.0%
Navy	-5.4%	-1.8%	-0.8%	-5.6%	6.4%	0.7%	-3.7%	-0.9%
Marine Corps	2.5%	-2.0%	-11.0%	-40.4%	19.7%	0.0%	0.0%	-7.6%
Air Force	1.2%	3.1%	-2.6%	-10.1%	-9.0%	3.6%	-1.3%	-2.9%
DoD Total	**1.0%**	**0.8%**	**-5.4%**	**1.9%**	**-9.8%**	**-10.3%**	**-6.6%**	**-5.0%**
Total Cost ($ mil.)								
Army	$224.1	$224.7	$209.4	$250.0	$232.8	$162.0	$140.0	
Navy	90.4	89.5	89.6	85.2	90.8	92.0	90.0	
Marine Corps	58.2	56.3	47.7	28.8	34.3	34.0	35.0	
Air Force	189.6	197.6	193.7	174.0	160.7	166.0	165.0	
DoD Total	**$562.3**	**$568.1**	**$540.4**	**$538.0**	**$518.6**	**$454.0**	**$430.0**	
As % of total								
Army	39.9%	39.6%	38.8%	46.5%	44.9%	35.7%	32.6%	
Navy	16.1%	15.8%	16.6%	15.8%	17.5%	20.3%	20.9%	
Marine Corps	10.4%	9.9%	8.8%	5.4%	6.6%	7.5%	8.1%	
Air Force	33.7%	34.8%	35.8%	32.3%	31.0%	36.6%	38.4%	
DoD Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
% annual change								
Army	N.A.	0.3%	-6.8%	19.4%	-6.9%	-30.4%	-13.6%	-7.5%
Navy	N.A.	-1.0%	0.2%	-5.0%	6.6%	1.3%	-2.2%	-0.1%
Marine Corps	N.A.	-3.3%	-15.4%	-39.6%	19.1%	-0.9%	2.9%	-8.1%
Air Force	N.A.	4.2%	-2.0%	-10.2%	-7.6%	3.3%	-0.6%	-2.3%
DoD Total	N.A.	**1.0%**	**-4.9%**	**-0.5%**	**-3.6%**	**-12.5%**	**-5.3%**	**-4.4%**
Average Cost per Course								
Army	$594	$591	$598	$583	$661	$611	$614	
Navy	660	666	672	677	678	681	692	
Marine Corps	739	730	694	704	700	694	714	
Air Force	692	700	704	704	714	712	717	
DoD Total	**$649**	**$650**	**$654**	**$639**	**$682**	**$666**	**$675**	
% annual change								
Army	N.A.	-0.5%	1.3%	-2.5%	13.4%	-7.6%	0.4%	0.6%
Navy	N.A.	0.8%	1.0%	0.7%	0.1%	0.6%	1.6%	0.8%
Marine Corps	N.A.	-1.3%	-4.9%	1.4%	-0.5%	-0.9%	2.9%	-0.6%
Air Force	N.A.	1.1%	0.6%	-0.1%	1.5%	-0.2%	0.7%	0.6%
DoD Total	**N.A.**	**0.2%**	**0.5%**	**-2.3%**	**6.9%**	**-2.4%**	**1.4%**	**0.7%**

N.A. – Not Available. Army includes Reserves data. Source: BMO Capital Markets and Council of College and Military Educators (CCME).

Students attending for-profit schools received higher level of funding

As in prior years students attending for-profit schools received the largest portion of TA funding in FY2017 (latest data available). In addition, these students received relatively more per course than those attending public not for-profit institutions, though this could be because more graduate programs were taken (higher funding per course). We believe as a group, for-profit schools have done a better job helping students target this funding source. This funding source helps these institutions stay below the 90/10 threshold, which limits Title IV as a percentage of cash-basis revenue to 90%, as DoD tuition assistance is excluded from the numerator. This practice has created some controversy (see more details in the Regulatory Trends section later in this document).

Exhibit 126: Department of Defense Tuition Assistance by School Type (FY2017)

Sector	# of institutions	# of students (in 000s)	# of courses (in 000s)	TA paid (in $ mil.)	TA paid per course	TA paid per user
Private for-profit	**186**	**98**	**284**	**$206**	**$725**	**$2,102**
Private not for-profit	563	63	187	133	$711	$2,111
Public not for-profit	1,215	94	256	147	$574	$1,564
All sectors	1,964	256	727	$486	$669	$1,898
As % of total:						
Private for-profit	**9.5%**	**38.3%**	**39.1%**	**42.4%**		
Private not for-profit	28.7%	24.6%	25.7%	27.4%		
Public not for-profit	61.9%	36.7%	35.2%	30.2%		
All sectors	100.0%	100.0%	100.0%	100.0%		

Source: BMO Capital Markets and Council of College and Military Educators (CCME).

A list of the largest providers with students using the DoD tuition assistance program in FY2017 (latest data available) can be found below. As shown, three of the top six providers are for-profit schools, including American Public Education's (APEI) American Military University, Bridgepoint Education's (BPI) Ashford University, and Columbia Southern Education Group. APEI is by far the largest provider to this sector across all metrics and we believe serves the largest share of students in each of the four major armed forces (Army, Navy, Air Force, and Marine Corps).

Exhibit 127: Top 50 Schools Based on Students Receiving Department of Defense Tuition Assistance (FY2017)

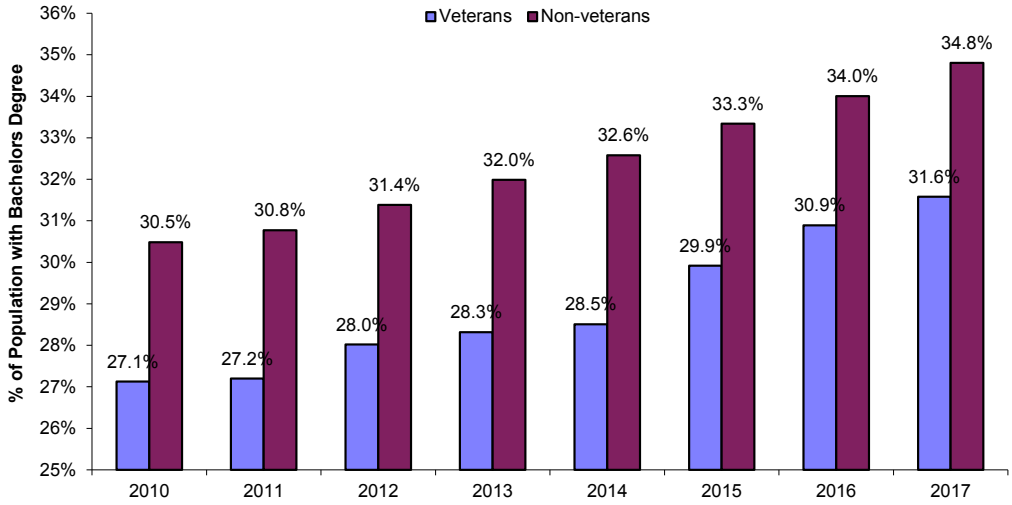
Rank (previous)	School or system	Headquarters or main campus	Sector	Level	Students using TA	TA received ($ mil.)	FY 2017 ($ mil.)	TA as % of TTM rev.
1 (1)	**American Public Education Inc. (APEI)**	**Charles Town, W.Va.**	**For-profit**	**Master's**	**45,765**	**$91.0**	**$299.8**	**30.3%**
2 (2)	University System of Maryland	Adelphi, Md.	Public	Doctoral	29,768	51.6		
	University of Maryland University College				*26,431*	*46.0*		
	University of Maryland University College-Asian Division				*2,072*	*3.2*		
	University of Maryland University College-European Division				*1,112*	*1.9*		
3 (3)	**Bridgepoint Education (BPI)**	**San Diego**	**For-profit**	**Master's**	**14,002**	**31.8**	**493.0**	**6.5%**
	Ashford University				*13,995*	*31.8*		
4 (4)	Central Texas College	Killeen, Texas	Public	Associate or lower	11,704	13.4		
5 (5)	Embry-Riddle Aeronautical University	Daytona Beach, Fla.	Private	Doctoral	9,683	19.1		
6 (6)	**Columbia Southern Education Group Inc.**	**Orange Beach, Ala.**	**For-profit**	**Master's**	**7,985**	**14.5**		
	Columbia Southern University				*7,232*	*12.6*		
	Waldorf University				*753*			
7 (8)	Excelsior College	Albany, N.Y.	Private	Master's	7,200	13.1		
8 (9)	Liberty University	Lynchburg, Va.	Private	Doctoral	6,813	**14.6**		
9 (11)	**Kaplan Higher Education Corp.**	**Fort Lauderdale, Fla.**	**For-profit**	**Doctoral**	**6,325**	**13.3**		
	Kaplan University				*6,323*	**13.3**		
10 (10)	Park University	Parkville, Mo.	Private	Master's	5,649	**11.4**		
11 (17)	**Trident University International**	**Cypress, Calif.**	**For-profit**	**Doctoral**	**4,860**	**11.8**		
12 (12)	Columbia College	Columbia, Mo.	Private	Master's	3,766	**7.6**		
13 (20)	Southern New Hampshire University	Manchester, N.H.	Private	Doctoral	3,679	7.9		
14 (16)	North Carolina Community College System	Raleigh, N.C.	Public	Associate or lower	3,503	**2.2**		
	Fayetteville Technical Community College				2,472	**1.5**		
15 (11)	**University of Phoenix**	**Phoenix**	**For-profit**	**Doctoral**	**3,396**	**7.6**		
16 (14)	Saint Leo University	Saint Leo, Fla.	Private	Doctoral	3,300	**7.2**		
17 (15)	*California Community College System*	*Sacramento, Calif.*	*Public*	*Bachelor's*	*3,179*	**3.3**		
	Coastline Community College				**2,581**	**3.1**		
18 (13)	**Grantham University**	**Lenexa, Kan.**	**For-profit**	**Master's**	**3,015**	**6.7**		
19 (18)	Thomas Edison State University	Trenton, N.J.	Public	Doctoral	2,822	5.4		
20 (19)	**Post University**	**Waterbury, Conn.**	**For-profit**	**Master's**	**2,774**	**5.4**		
21 (21)	National University System	La Jolla, Calif.	Private	Doctoral	2,505	**5.4**		
	National University - La Jolla				*2,422*	**5.2**		
22 (24)	**Grand Canyon University (LOPE)**	**Phoenix**	**For-profit**	**Doctoral**	**2,299**	**5.8**	**947.4**	**0.6%**
23 (23)	Virginia Community College System	Richmond, Va.	Public	Associate or lower	1,989	**2.2**		
	Tidewater Community College				*1,135*	**1.3**		
24 (22)	Webster University	St. Louis	Private	Doctoral	1,954	3.9		
25 (32)	Arizona Board of Regents	Phoenix	Public	Doctoral	1,878	**4.3**		
	Arizona State University				*1,630*	**3.7**		
26 (28)	Troy University	Troy, Ala.	Public	Doctoral	1,843	**3.8**		
27 (25)	*Washington State Board for Community and Technical Colleges*	*Olympia, Wash.*	*Public*	*Bachelor's*	*1,751*	**2.1**		
	Pierce College				1,198	**1.5**		
28 (27)	University of Management and Technology [3]	Arlington, Va.	For-profit	Doctoral	1,749	**4.7**		
29 (29)	**Career Education Corp. (CECO)**	**Schaumburg, Ill.**	**For-profit**	**Bachelor's**	**1,564**	**4.1**	**562.8**	**0.7%**
	Colorado Technical University				*1,031*	**2.6**		
30 (45)	Western Governors University	Salt Lake City	Private	Master's	1,292	**3.9**		
31 (33)	University of the Incarnate Word	San Antonio	Private	Doctoral	1,232	**2.8**		
32 (30)	*Vincennes University*	*Vincennes, Ind.*	*Public*	*Bachelor's*	*1,147*	**1.9**		
33 (34)	Chapman University	Orange, Calif.	Private	Doctoral	1,084	**2.4**		
34 (35)	*Florida State College at Jacksonville*	*Jacksonville, Fla.*	*Public*	*Bachelor's*	*1,020*	**0.9**		
35 (36)	North Dakota University System	Bismarck, N.D.	Public	Bachelor's	1,019	**1.4**		
35 (37)	University System of Georgia	Atlanta	Public	Bachelor's	1,019	**1.9**		
37 (44)	Norwich University	Northfield, Vt.	Private	Master's	1,007	**2.4**		
38 (31)	**DeVry University Inc. (ATGE)**	**Downers Grove, Ill.**	**For-profit**	**Master's**	**1,006**	**2.4**		
	DeVry University				837	**2.0**		
38 (37)	Southwestern College	Winfield, Kan.	Private	Doctoral	1,006	**2.1**		
	Southwestern College (main campus)	*Winfield, Kan.*			*985*	**2.0**		
40 (49)	Pennsylvania State University	University Park, Pa.	Public	Doctoral	971	2.1		
41 (47)	The State University and Community College System of Tennessee	Nashville, Tenn.	Public	Master's	893	**1.4**		
42 (46)	University of Oklahoma	Norman, Okla.	Public	Doctoral	863	**1.8**		
43 (42)	Barton County Community College	Great Bend, Kan.	Public	Associate or lower	839	**0.8**		
44 (43)	Colorado Community College System	Denver	Public	Associate or lower	827	**1.2**		
45	Bellevue University	Bellevue, Neb.	Private	Doctoral	804	**2.0**		
46 (41)	Wayland Baptist University	Plainview, Texas	Private	Doctoral	802	**1.7**		
47 (40)	State University of New York System	Albany, N.Y.	Public	Doctoral	800	**1.4**		
48	University of North Carolina	Greensboro, N.C.	Public	Doctoral	770	**1.1**		
49 (48)	**Strayer Education Inc. (STRA)**	**Herndon, Va.**	**For-profit**	**Master's**	**761**	**1.7**	**455.4**	**0.4%**
50	*State University System of Florida*	*Tallahassee, Fla.*	*Public*	*Doctoral*	*752*	**1.3**		

Note: Fiscal year end September 30. Public company data for TTM ending September 30, 2017 or closest thereto. Source: Military Times Edge Magazine.

Veterans market underpenetrated

Veterans. According to the Department of Veterans Affairs (VA) Predictive Analytics and Actuary Service, there were just over roughly 19.9 million veterans in the U.S. as of September 30, 2017. This group projects a decline in this population over the next 30 years, however, as more WWII and Vietnam veterans pass. While the number of Americans aged 25 and over with at least a bachelor's degree has increased in recent years, veterans still lag behind the non-veterans population, though the gap has narrowed in recent years; in 2017, 31.6% of veterans fit this category versus 34.8% of non-veterans. As such, we still believe that this market is underpenetrated—especially as recent and expected troop reductions should increase the number of newly minted veterans seeking to enhance their education.

Exhibit 128: Bachelor's Degree and Higher Educational Attainment: Veterans vs. Non-Veterans (2010-2017)



Source: BMO Capital Markets and Bureau of Labor Statistics.

Post 9/11 GI Bill

Historically, veterans have been eligible for education benefits mainly through the "GI bill," first enacted in 1944 as the Servicemen's Readjustment Act and then expanded in 1984 under the Veterans' Educational Assistance Act (the "Montgomery GI Bill"). In recent years, more funding for veterans' education has become available. On June 30, 2008, President Bush signed the Post-9/11 Veterans Educational Assistance Act of 2008, the so-called "new" or "Post-9/11 GI Bill," expanding education benefits for veterans who have served at least 90 days on active duty since September 11, 2001, including reservists and members of the National Guard; these benefits became available effective August 1, 2009. There have been a number of "tweaks" made to this funding source since then to increase access. In August 2017, Congress passed The Harry W. Colmery Veterans Educational Assistance Act of 2017, also known as the "Forever GI Bill" because one thing it does is remove the time limit in which veterans have to use their GI Bill, among other changes.

Annual amounts available under these programs are summarized below. We note these amounts exclude monthly housing allowances, books and supplies stipends and a one-time rural benefit for certain veterans. There is also additional funding available for active duty military through the Montgomery GI Bill.

Exhibit 129: Post 9/11 GI-Bill Funding Summary (2018-2019 School Year)

School Type	Maximum Tuition & Fee Reimbursement per Academic Year
Public school	All tuition and fee payments for an in-state student
Private or foreign school	Up to $23,671.94 per academic year National Maximum

Source: U.S. Department of Veterans Affairs.

Disproportionate amount of GI Bill funding

In July 2014, the Senate Health, Education, Labor and Pensions (HELP) Committee released a report entitled Is the *GI Bill Working?*, which focused on what appeared to be a disproportionate amount of GI Bill funding going to the for-profit sector. We note in that year, for-profit institutions enrolled roughly 8.8% of students enrolled at degree-granting postsecondary institutions.

Exhibit 130: GI Bill Funding by Institutional Type (2012–2013 School Year)

Institution Type	Number of Veterans	Amount Paid ($ mil.)	% of Veterans	% of Benefits	Cost per Veteran
Private not-for-profit	121,510	$1,007.8	17.4%	24.2%	$8,294
Public	347,772	$1,361.1	49.9%	32.6%	$3,914
For-Profit	213,702	$1,703.7	30.6%	40.9%	$7,972
Training program	13,082	$86.7	1.9%	2.1%	$6,628
Foreign	1,456	11.1	0.2%	0.3%	7,647
Total	**697,522**	**$4,170.5**	**100.0%**	**100.0%**	**$5,979**

Source: Senate HELP Committee.

A list of the top postsecondary institutions that received such funding in FY2017 can be found below. Note that for-profit schools represent four of the top six recipients. Nevertheless, the decline in students using such funding in FY2017 was attributable to the declining enrollments in most for-profit schools.

Exhibit 131: Top 50 Schools Based on Students Receiving GI Bill Funding (FY2017)

Rank (previous)	School or system	Headquarters or main campus	Sector	Level	GI Bill recipients	GI Bill Cost ($ mil.)	FY 2017 ($ mil.)	GI Bill as % of TTM rev.
1 (1)	**University of Phoenix**	**Phoenix**	**For-Profit**	**Doctoral**	**28,373**	**$191.9**		
	University of Phoenix-Online Campus				15,946	**99.4**		
2 (3)	University System of Maryland	Adelphi, Md.	Public	Doctoral	19,077	**85.2**		
	University of Maryland University College				12,828	**54.3**		
3 (2)	California Community College System	Sacramento, Calif.	Public	Bachelor's	18,503	8.9		
4 (4)	**American Public Education Inc. (APEI)**	**Charles Town, W.Va.**	**For-Profit**	**Master's**	**15,520**	**58.8**	**299.8**	**19.6%**
5 (5)	**Education Management Corp.**	**Pittsburgh**	**For-Profit**	**Doctoral**	**9,642**	**116.2**		
6 (6)	**Devry University Inc. (ATGE)**	**Downers Grove, Ill.**	**For-Profit**	**Master's**	**9,139**	**73.3**		
7 (8)	Washington State Board for Community and Technical Colleges	Olympia, Wash.	Public	Bachelor's	8,698	25.7		
8 (14)	Virginia Community College System	Richmond, Va.	Public	Associate or lower	8,289	22.8		
	Tidewater Community College-Virginia Beach				3,136	9.4		
9 (18)	Embry-Riddle Aeronautical University	Daytona Beach, Fla.	Private	Doctoral	7,983	44.5		
10 (9)	North Carolina Community College System	Raleigh, N.C.	Public	Associate or lower	7,925	11.6		
11 (7)	**Strayer Education Inc. (STRA)**	**Herndon, Va.**	**For-Profit**	**Master's**	**7,801**	**47.5**	**455.4**	**10.4%**
12 (13)	University System of Georgia	Atlanta	Public	Doctoral	7,686	38.7		
13 (11)	State University System of Florida	Tallahassee, Fla.	Public	Doctoral	7,546	39.1		
14 (10)	Liberty University	Lynchburg, Va.	Private	Doctoral	7,312	33.2		
15 (19)	The University of Texas System	Austin, Texas	Public	Doctoral	6,975	49.1		
16 (12)	**Career Education Corp. (CECO)**	**Schaumburg, Ill.**	**For-Profit**	**Doctoral**	**6,898**	**65.5**	**562.8**	**11.6%**
	Colorado Technical University-Online				3,649	35.2		
17 (15)	**Bridgepoint Education (BPI)**	**San Diego**	**For-Profit**	**Doctoral**	**6,829**	**32.1**	**493.0**	**6.5%**
	Ashford University-Online				6,419	30.8		
18 (20)	Arizona Board of Regents	Phoenix	Public	Doctoral	6,805	64.2		
	Arizona State University-Tempe				4,349	41.8		
19 (17)	California State University	Long Beach, Calif.	Public	Doctoral	6,466	30.1		
20 (22)	State University and Community College System of Tennessee	Nashville, Tenn.	Public	Doctoral	6,419	33.1		
21 (21)	University of North Carolina	Chapel Hill, N.C.	Public	Doctoral	6,299	46.9		
22 (23)	Southern New Hampshire University	Manchester, N.H.	Private	Doctoral	5,996	30.9		
	Southern New Hampshire University (main campus)	Manchester, N.H.			5,603	28.3		
23 (16)	State University Of New York System	Albany, N.Y.	Public	Doctoral	5,992	26.8		
24	**Kaplan Higher Education Corp. (GHC)**	**Fort Lauderdale, Fla.**	**For-Profit**	**Doctoral**	**4,900**	**29.3**		
	Kaplan University-Davenport				4,596	27.3		
25 (25)	Alamo Colleges	San Antonio	Public	Associate or lower	4,765	6.0		
26 (28)	Colorado Community College System	Denver	Public	Master's	4,615	14.9		
27 (26)	Texas A&M University System	College Station, Texas	Public	Doctoral	4,604	27.6		
28 (32)	**Grand Canyon University (LOPE)**	**Phoenix**	**For-profit**	**Doctoral**	**4,539**	**25.7**	**947.4**	**2.7%**
29 (30)	Technical College System of Georgia	Atlanta	Public	Associate or lower	4,333	8.3		
30 (37)	**Columbia Southern Education Group Inc.**	**Orange Beach, Ala.**	**For-Profit**	**Doctoral**	**4,084**	**12.9**		
	Columbia Southern University				3,817	11.7		
31 (34)	National University System	La Jolla, Calif.	Private	Doctoral	4,054	34.4		
	National University-San Diego				3,777	32.1		
32 (27)	Central Texas College	Killeen, Texas	Public	Associate or lower	4,048	5.6		
	Central Texas College Main Campus				3,216	3.7		
33 (31)	Maricopa Community College District	Tempe, Ariz.	Public	Associate or lower	4,030	5.9		
34	**Education Corporation of America**	**Birmingham, Ala.**	**For-Profit**	**Master's**	**4,016**	**41.3**		
35 (29)	Saint Leo University	Saint Leo, Fla.	Private	Doctoral	4,005	22.7		
36 (36)	**Novateur Education**	**Virginia Beach, Va.**	**For-Profit**	**Master's**	**3,981**	**44.4**		
37 (33)	South Carolina Technical College System	Columbia, S.C.	Public	Associate or lower	3,872	11.7		
38 (38)	Webster University	Saint Louis, Mo.	Private	Doctoral	3,696	18.6		
39 (42)	Park University	Parkville, Mo.	Private	Master's	3,634	15.9		
40 (24)	**Universal Technical Institute Inc. (UTI)**	**Scottsdale, Ariz.**	**For-Profit**	**Associate or lower**	**3,487**	**47.2**	**329.8**	**14.3%**
41 (39)	Minnesota State Colleges and Universities	St. Paul, Minn.	Public	Doctoral	3,472	13.7		
42 (41)	University of Hawaii Board of Regents	Hilo, Hawaii	Public	Doctoral	3,461	14.9		
43 (35)	The Pennsylvania State University	University Park, Pa.	Public	Doctoral	3,398	38.3		
44	Western Governors University	Salt Lake City	Private	Master's	3,288	13.0		
45 (40)	City University of New York	New York	Public	Doctoral	3,191	14.8		
46	University of Colorado	Colorado Springs, Colo.	Public	Doctoral	3,127	29.5		
47 (43)	**Full Sail University**	**Winter Park, Fla.**	**For-profit**	**Master's**	**3,120**	**43.7**		
48 (48)	University of Wisconsin System	Madison, Wis.	Public	Doctoral	3,098	19.9		
49 (46)	Keiser University	Fort Lauderdale, Fla.	Private	Doctoral	3,096	44.0		
50 (47)	Nevada System of Higher Education	Reno, Nev.	Public	Doctoral	2,977	10.2		

Note: Fiscal year end September 30. Public company data for TTM ending September 30, 2017 or closest thereto. Source: Military Times Edge Magazine.

Proposal to include military funding in 90/10 calculation

Unfortunately, this disproportionate amount of both DoD and VA funding at for-profit institutions has attracted a lot of unwanted attention. In June 2015, both the House (H.R. 4055) and the Senate (S. 1664) introduced the Military and Veterans Education Protection Act to change the 90/10 calculation (which limits the amount of Title IV funding at for-profit institutions to 90% of their annual cash-basis receipts) to include military and veterans' education benefits on the 90% side. We believe something like this could be incorporated in the discussions to renew the Higher Education Act (HEA; see later discussion).

Controversies surround military and veteran funding and for-profit colleges

There has also been some recent controversy regarding military and veterans' funding.

- On October 9, 2015, Apollo Education Group filed an 8K, disclosing that the DoD had placed its University of Phoenix (UoP) on probation status for its TA program, following allegations that the school had violated military rules relating to recruiting potential students. Under DoD probationary status, UoP was able to service previously accepted active-duty service members using TA funds but could not enroll new service members who pay with those funds. The company disclosed on January 15, 2016, that this probationary status was removed after a DoD review.

- On March 15, 2016, the VA began warning GI Bill participants of potential problems at DeVry University (DV), as a result of a January 2016 Federal Trade Commission lawsuit for deceptive advertising and a notice of intent issued by the Department of Education (now settled). As a result, it suspended the school's status as a "Principles of Excellence" institution, a sort of "seal of approval" for students seeking institutions for GI Bill funding. The agency also posted a warning on its online GI Bill Comparison Tool to call attention to the FTC lawsuit.

- On May 26, 2016, the Iowa State Approving Agency (ISSA) announced it will no longer continue to approve Bridgepoint Education's (BPI) Ashford University's programs for GI Bill benefits after June 30, 2016, due to the close of the Ashford campus. The Iowa Department of Education recommended the university seek approval through the State Approving Agency of jurisdiction for any location that meets the definition of a "main campus." Ashford University is currently applying for approval through the State Approval Agency in California. In September 2016, BPI disclosed that the Iowa Department of Education issued a stay on the ISSA's withdrawal of approval; following an appeal filed by Ashford University, the Iowa District Court for Polk County entered into a written order staying the department's action, until the entry of a final and appealable order and judgement. ISSA will continue to approve Ashford's programs for GI Benefits until then.

Sensitivity analysis: 90/10 including military funding

Given fears of expanding the 90/10 calculation to include military-related funding, we present a December 2016 analysis done by the Department of Education as summarized by The Brookings Institute which shows what the 90/10 calculation would like for the OPEIDs managed by the publicly held companies using 2013-2014 data. As shown, there are a number of companies with institutions that would have violated the 90/10 rule that year if such funding were included, though as we highlighted earlier, we would have expected them to more aggressively manage this ratio if they knew they were at-risk.

Exhibit 132: 90/10 Sensitivity Analysis Incl. Military Funding (2013-2014 School Year)

OPEID	Institution	City	State	Title IV as % of revenues	Title IV and VA as % of revenues	Title IV, VA and DoD as % of revenues
Adtalem Global Education (ATGE; formerly DeVry Education Group)				**75.8%**	**77.1%**	**77.2%**
02244400	American University of the Caribbean	Cupecoy	St. Maarten	80.7%	80.9%	80.9%
Carrington				75.9%	77.6%	77.6%
00974800	Carrington College	Sacramento	CA	77.2%	78.9%	78.9%
02100600	Carrington College	Phoenix	AZ	79.9%	81.3%	81.3%
02218000	Carrington College	Boise	ID	71.8%	75.4%	75.4%
03042500	Carrington College	Portland	OR	74.4%	74.7%	74.7%
Chamberlain				64.6%	67.7%	67.8%
00638500	Chamberlain College of Nursing	Addison	IL	64.6%	67.7%	67.8%
DeVry University				68.2%	70.1%	70.7%
01072700	DeVry University	Chicago	IL	68.2%	70.1%	70.7%
Ross				82.7%	82.7%	82.7%
02246000	Ross University, School of Medicine	Portsmouth	Dominica	80.3%	80.3%	80.3%
02277900	Ross University School of Veterinary Medicine	West Farm	St. Kitts-Nevis	85.1%	85.1%	85.1%
American Public Education (APEI)				**63.2%**	**72.8%**	**88.3%**
03819300	American Public University System	Charles Town	WV	45.8%	62.4%	93.4%
04074300	Hondros College	Westerville	OH	80.5%	83.2%	83.2%
Apollo Education Group				**74.2%**	**81.9%**	**82.6%**
02098800	University of Phoenix	Tempe	AZ	82.6%	95.5%	96.2%
02171500	Western International University	Tempe	AZ	65.8%	68.3%	69.0%
Bridgepoint Education (BPI)				**86.6%**	**93.5%**	**96.6%**
00188100	Ashford University	San Diego	CA	85.6%	92.4%	98.4%
03545300	University of the Rockies	Colorado Springs	CO	87.6%	94.7%	94.8%
Career Education (CECO)				**84.5%**	**91.9%**	**92.5%**
02113600	American InterContinental University	Schaumburg	IL	86.3%	95.9%	96.4%
01014800	Colorado Technical University	Colorado Springs	CO	82.8%	87.9%	88.7%
Capella Education (CPLA)				**78.0%**	**82.7%**	**82.8%**
03267300	Capella University	Minneapolis	MN	78.0%	82.7%	82.8%
Education Management (EDMC)				**72.0%**	**82.1%**	**82.1%**
Argosy				77.3%	80.0%	80.1%
02179900	Argosy University	Orange	CA	77.3%	80.0%	80.1%
Art Institutes				70.6%	77.7%	77.7%
00747000	Art Institute of Pittsburgh (The)	Pittsburgh	PA	81.0%	89.7%	89.8%
00748600	New England Institute of Art (The)	Brookline	MA	68.5%	71.7%	71.7%
00781900	Art Institute of Portland (The)	Portland	OR	69.8%	77.7%	77.7%
00835000	Art Institute of Philadelphia (The) -	Philadelphia	PA	74.0%	77.1%	77.1%
00887800	Miami International University of Art & Design	Miami	FL	58.2%	69.0%	69.0%
00927000	Art Institute of Atlanta (The)	Atlanta	GA	70.9%	85.1%	85.1%
01019500	Art Institute of Fort Lauderdale (The)	Fort Lauderdale	FL	71.7%	77.1%	77.1%
01024800	Art Institutes International Minnesota (The)	Minneapolis	MN	66.5%	69.9%	69.9%
01258400	Illinois Institute of Art (The)	Chicago	IL	75.9%	80.3%	80.3%
02078900	Art Institute of Colorado (The)	Denver	CO	62.7%	72.2%	72.2%
02117100	Art Institute of Houston (The)	Houston	TX	68.4%	84.9%	84.9%
02128600	Art Institute of Cincinnati (The)	Cincinnati	OH	81.5%	81.5%	81.5%
02291300	Art Institute of Seattle (The)	Seattle	WA	55.2%	69.7%	69.7%
02525600	Art Institute of New York City (The)	New York	NY	73.6%	78.5%	78.5%
02557800	Art Institute of York (The) - Pennsylvania	York	PA	72.0%	75.3%	75.3%
04051300	Art Institute of Phoenix (The)	Phoenix	AZ	79.7%	82.8%	82.8%
Brown Mackie				80.9%	149.7%	149.7%
00675500	Brown Mackie College (the -)	Salina	KS	80.9%	149.7%	149.7%
South University				80.2%	87.6%	87.9%
01303900	South University	Savannah	GA	80.2%	87.6%	87.9%
Graham Holdings Corp. (GHC)				**84.8%**	**86.9%**	**87.1%**
Kaplan Career Institute				84.9%	86.9%	86.9%
00491000	Kaplan Career Institute	Harrisburg	PA	88.3%	89.2%	89.2%
00743600	Kaplan Career Institute	Pittsburgh	PA	80.8%	83.2%	83.2%
00778100	Kaplan Career Institute	Broomall	PA	82.8%	86.0%	86.0%
02289800	Kaplan Career Institute	Philadelphia	PA	81.7%	83.6%	83.6%
02326200	Kaplan College	Nashville	TN	87.1%	88.0%	88.0%
02582900	Kaplan Career Institute	Brooklyn	OH	88.8%	91.4%	91.4%
Kaplan University				80.8%	85.5%	86.9%
00458600	Kaplan University	Davenport	IA	80.8%	85.5%	86.9%
Texas School of Business				88.3%	88.3%	88.3%
02312200	Texas School of Business	Houston	TX	88.3%	88.3%	88.3%
Lincoln Educational Services (LINC)				**78.7%**	**82.7%**	**82.7%**
00730300	Lincoln Technical Institute	New Britain	CT	80.6%	81.5%	81.5%
00793600	Lincoln College of Technology	Columbia	MD	68.6%	77.6%	77.6%
00793800	Lincoln College of Technology	Indianapolis	IN	78.2%	85.2%	85.2%
00940700	Lincoln College of New England	Southington	CT	78.4%	81.5%	81.6%
01246100	Lincoln Technical Institute	Edison	NJ	83.6%	84.7%	84.7%
03316300	Lincoln Technical Institute - Hartford	Hartford	CT	76.4%	78.4%	78.5%
03390300	Lincoln Technical Institute	Fern Park	FL	85.3%	89.8%	89.8%
Grand Canyon Education (LOPE)				**78.5%**	**81.5%**	**82.1%**
00107400	Grand Canyon University	Phoenix	AZ	78.5%	81.5%	82.1%
National American University (NAUH)				**89.3%**	**95.0%**	**96.4%**
00405700	National American University	Rapid City	SD	89.3%	95.0%	96.4%
Strayer Education (STRA)				**74.4%**	**89.6%**	**90.0%**
00145900	Strayer University	Washington	DC	74.4%	89.6%	90.0%
Universal Technical Institutes (UTI)				**67.6%**	**85.6%**	**85.6%**
00822100	Universal Technical Institute	Avondale	AZ	68.2%	81.0%	81.0%
02100500	Universal Technical Institute	Phoenix	AZ	66.1%	87.9%	87.9%
02362000	Universal Technical Institute	Houston	TX	68.6%	87.8%	87.8%
Total (average)				**74.6%**	**81.3%**	**82.0%**

Source: Brookings Institute analysis using Department of Education data.

U.S. For-Profit Postsecondary Schools – Other Operating Factors

Fastest-growing occupations in healthcare; many do not require much education beyond high school

Given the increasing importance of preparing students for career employment, many institutions are expanding their presence in these areas. The following table contains a list of the expected fastest-growing occupations through 2026, according to the BLS, which updates these projections every two years. While there surprisingly has been some turnover in this list recently, it is still dominated by healthcare, driven by jobs related to the aging population. We note that many of these projected fastest-growing jobs do not require much education beyond high school.

Exhibit 133: Expected Fastest-Growing Occupations (2016-2026E)

		Employed (000's)		Change				
Rank	Title	2016	2026E	No.	%	2017 Median Pay	Entry Level Education/Training	Occupational Group
1	Solar photovoltaic installers	11	23	12	104.9%	$39,490	High school diploma or equivalent	Construction and extraction
2	Wind turbine service technicians	6	11	6	96.3%	53,880	Postsecondary nondegree award	Installation, Maintenance and Repair
3	Home health aides	912	1,343	431	47.3%	23,210	High school diploma or equivalent	Healthcare
4	Personal care aides	2,016	2,794	778	38.6%	23,100	High school diploma or equivalent	Healthcare
5	Physician assistants	106	146	40	37.3%	104,860	Master's degree	Healthcare
6	Nurse practitioners	156	212	56	36.1%	103,880	Master's degree	Healthcare
7	Statisticians	37	50	13	33.8%	84,060	Master's degree	Math
8	Physical therapist assistants	88	116	27	31.0%	57,430	Doctoral or professional degree	Healthcare
9	Software developers, applications	831	1,087	255	30.7%	101,790	Bachelor's degree	Computer and information technology
10	Mathematicians	3	4	1	29.7%	103,010	Master's degree	Math
11	Physical therapist aides	52	67	15	29.4%	25,730	Doctoral or professional degree	Healthcare
12	Bicycle repairers	12	16	4	29.3%	28,390	High school diploma or equivalent	Installation, Maintenance and Repair
13	Medical assistants	634	818	184	29.0%	32,480	Postsecondary nondegree award	Healthcare
14	Genetic counselors	3	4	1	29.0%	77,480	Master's degree	Healthcare
15	Occupational therapy assistants	39	51	11	28.9%	59,310	Postsecondary nondegree award	Healthcare
16	Information security analysts	100	129	29	28.5%	95,510	Bachelor's degree	Computer and information technology
17	Physical therapists	240	307	67	28.0%	86,850	Doctoral or professional degree	Healthcare
18	Operations research analysts	114	145	31	27.4%	81,390	Bachelor's degree	Math
19	Forest fire inspectors and prevention specialists	2	2	1	26.6%	37,380	High school diploma or equivalent	Protective Service
20	Massage therapists	160	202	42	26.3%	39,990	Postsecondary nondegree award	Healthcare
21	Health specialties teachers, postsecondary	234	294	61	25.9%	97,870	Doctoral or professional degree	Life, physical and social science
22	Derrick operators, oil and gas	11	14	3	25.7%	46,140	No formal educational credential	Construction and extraction
23	Roustabouts, oil and gas	50	62	12	24.8%	36,960	No formal educational credential	Construction and extraction
24	Occupational therapy aides	8	9	2	24.7%	29,200	High school diploma or equivalent	Healthcare
25	Phlebotomists	123	153	30	24.5%	33,670	Postsecondary nondegree award	Healthcare
26	Nonfarm animal caretakers	242	300	59	24.2%	22,950	High school diploma or equivalent	Healthcare
27	Rotary drill operators, oil and gas	17	21	4	24.2%	53,980	No formal educational credential	Construction and extraction
28	Nursing instructors and teachers, postsecondary	68	84	16	24.0%	71,260	Doctoral or professional degree	Healthcare
29	Occupational therapists	130	161	31	23.8%	83,200	Master's degree	Healthcare
30	Service unit operators, oil, gas, and mining	41	51	10	23.4%	48,290	No formal educational credential	Construction and extraction

Source: Bureau of Labor Statistics and BMO Capital Markets.

Earnings vary by major despite little difference in cost of degrees

In May 2015, the Georgetown University Center on Education and the Workforce published The Economic Value of College Majors, which compared earnings across various fields of study. We note there is a wide range of economic value despite little difference in the cost of these degrees (i.e., few schools charge different prices by major). In addition, the most popular majors (i.e., business) may not necessarily be the most lucrative (e.g., architecture and engineering).

Exhibit 134: Wages and Popularity by Major (2013)

Major	Median annual wages (age 21-24)	Median annual wages (age 25-59)	Share of college graduates	Graduate degree attainment (age 25-59)
Architecture and engineering	$50,000	$83,000	8.3%	38.2%
Computer, statistics and mathematics	$43,000	$76,000	5.6%	33.3%
Health	$41,000	$65,000	7.5%	33.8%
Business	$37,000	$65,000	26.1%	22.2%
Physical sciences	$32,000	$65,000	2.5%	50.0%
All majors	**$33,000**	**$61,000**		**35.1%**
Social sciences	$33,000	$60,000	6.9%	41.4%
Agriculture and natural resources	$30,000	$56,000	1.5%	27.9%
Biology and life sciences	$29,000	$56,000	3.3%	57.7%
Law and public policy	$31,000	$54,000	2.6%	24.2%
Communications and journalism	$31,000	$54,000	5.2%	20.8%
Humanities and liberal arts	$30,000	$52,000	8.6%	41.4%
Industrial arts, consumer svcs. and recreation	$27,000	$52,000	2.7%	24.2%
Arts	$28,000	$49,000	4.8%	23.2%
Psychology and social work	$28,000	$47,000	5.2%	45.3%
Education	$32,000	$45,000	9.4%	44.6%
High school graduate	**$22,000**	**$36,000**		

Source: Georgetown University Center on Education and the Workforce.

We provide a list of major program offerings for the publicly held for-profit providers in the exhibit below.

Exhibit 135: Select For-Profit Postsecondary School Operators Fields of Study Offered (as Percentage of Enrollments)

Company Name	Ticker	Art & Design	Auto Tech/ Trades	Business	Criminal Justice Legal, Public Service & Safety	Culinary/ Hospitality	Education	Electronics & Engineering	Health & Human Services	IT	Social Sciences	Other
Adtalem Global Education	ATGE			24%					62%	12%		2%
American Public Education	APEI			23%	25%		3%		11%	16%	22%	
Bridgepoint Education	BPI			43%			19%		23%		13%	2%
Career Education	CECO			74%					11%	15%		
Capella Education	CPLA			25%			11%		20%		38%	6%
Grand Canyon Education	LOPE			16%			32%		33%			19%
Laureate Education	LAUR			27%	6%		5%		23%	17%		22%
Lincoln Educational Services	LINC		43%	3%		5%			27%			22%
National Amer. Univ. Holdings	NAUH			38%	9%				42%	6%		5%
Strayer Education	STRA			69%						10%		21%
Universal Technical Institute	UTI		100%									

Note: X- offers programs although percentage of enrollment not available. N.A. – Not Available. For most companies, this is the latest annual data available.
Source: BMO Capital Markets and company reports.

Attrition/retention gaining greater investor focus

Monitoring attrition (i.e., drop-out) rates and their complementary retention rates (100% minus the attrition rate) are important to investors, in our view, not only because of regulatory pressures, but owing to the beneficial impact on profitability if students remain longer in their programs. Although definitions vary, we will use the following terms in our analysis:

- Persistence rates describe the percentage of students still enrolled intra-year (i.e., from semester to semester).
- Retention rates describe the percentage of students still enrolled from school year to school year.
- Attrition (drop-out) rates describe the complements (i.e., 100% minus the rate) for both retention and persistence rates.

Persistence and retention at for-profit institutions lower than that of all other four-year institutions

An annual survey from the National Student Clearinghouse Research Center shows that in the most recent data series (students who began in fall 2016; latest data available), persistence and retention at four-year for-profit institutions was the lowest of all four-year schools – continuing a trend seen most of this decade – with the rate declining from recent peaks. We believe the relatively poorer demographics

of this student base as well as the open enrollment policy at most for-profit institutions are the main reasons for this disparity.

Exhibit 136: First-Year Persistence and Retention Rates (Fall 2009 to Fall 2016)

	Fall 2009 Entering Cohort	Fall 2010 Entering Cohort	Fall 2011 Entering Cohort	Fall 2012 Entering Cohort	Fall 2013 Entering Cohort	Fall 2014 Entering Cohort	Fall 2015 Entering Cohort	Fall 2016 Entering Cohort
Persistence rate:								
All institutions	71.6%	71.6%	71.7%	72.4%	73.4%	73.6%	73.4%	73.9%
Four-year public	82.3%	82.3%	81.9%	82.5%	82.6%	82.2%	81.7%	83.0%
Four-year private non-profit	87.5%	87.2%	87.1%	86.1%	86.1%	85.3%	84.9%	85.0%
Two-year public	61.0%	60.7%	60.2%	61.3%	62.2%	62.7%	62.7%	62.2%
Four-year private for-profit	**N.A.**	**50.2%**	**50.9%**	**51.3%**	**55.8%**	**56.3%**	**55.7%**	**52.9%**
Retention rate:								
All institutions	59.0%	59.1%	59.1%	59.4%	60.5%	60.6%	61.1%	61.6%
Four-year public	69.5%	69.5%	69.1%	69.5%	70.1%	69.4%	69.7%	71.2%
Four-year private non-profit	74.9%	74.5%	74.8%	74.0%	74.6%	74.0%	74.7%	73.6%
Two-year public	48.0%	47.9%	47.2%	47.4%	48.1%	48.5%	49.1%	48.9%
Four-year private for-profit	**N.A.**	**44.4%**	**45.3%**	**45.8%**	**49.8%**	**51.0%**	**50.3%**	**46.2%**

N.A. – Not Available. Source: National Student Clearinghouse Research Center.

Sequential persistence rates for the publicly held companies have increased in recent quarters

We have provided the available sequential persistence rates for the publicly held companies in the following table. As the sequential persistence rates may be somewhat seasonal (we have calendarized the data to make comparisons more meaningful), trends have been somewhat lumpy, but have increased, for the most part, in recent quarters.

Exhibit 137: Publicly Held For-Profit Postsecondary School Operators Sequential Persistence Rates (CY1Q16-CY2Q18)

			Calendar Year									
Company	***Ticker***	***FYE***	**1Q16**	**2Q16**	**3Q16**	**4Q16**	**1Q17**	**2Q17**	**3Q17**	**4Q17**	**1Q18**	**2Q18**
Adtalem Global Education (DeVry Undergrad)	ATGE	6	73.2%	83.8%	68.5%	85.3%	71.3%	82.4%	66.9%	83.1%	69.7%	84.7%
American Public Education	APEI	12	90.1%	74.6%	88.2%	85.9%	91.8%	77.6%	90.0%	86.9%	92.0%	80.8%
Career Education	CECO	12	76.1%	70.7%	73.8%	76.2%	71.8%	71.7%	72.5%	73.4%	73.3%	69.4%
Laureate Education	LAUR	12	82.0%	92.5%	82.9%	96.0%	82.3%	92.3%	83.4%	95.9%	76.9%	91.8%
Lincoln Educational Services	LINC	12	112.3%	71.4%	30.9%	113.8%	65.3%	70.8%	69.0%	81.1%	68.5%	67.9%
National Amer. Univ. Holdings	NAUH	5	83.2%	80.2%	83.1%	83.8%	83.2%	80.2%	83.1%	83.8%	83.2%	80.2%
Universal Technical Institute	UTI	9	76.4%	74.4%	70.9%	73.2%	77.8%	74.6%	56.8%	83.5%	78.7%	74.5%
MEDIAN			**76.4%**	**74.4%**	**72.3%**	**84.5%**	**74.8%**	**76.1%**	**70.7%**	**83.3%**	**76.0%**	**77.4%**
Y/Y change			0.3%	-0.1%	1.0%	10.8%	-1.6%	1.8%	-1.6%	-1.2%	1.2%	1.2%

Source: BMO Capital Markets estimates and company reports. N.A. – Not Available. Note: We have attempted to remove the estimated impact of acquisitions to calculate sequential persistence for these companies.

Most investors in this group have become more aware that a large portion of students who enroll at postsecondary institutions – whether they are for-profit or not-for-profit – do not actually complete their programs. Comparing completion rates across schools can be somewhat misleading given that many students do not complete their degrees at the institutions where they first begin. In addition, a number of different studies are available, many with conflicting data when analyzed by school type.

Completion rates: two-year for-profit schools better than their not-for-profit counterparts

In December 2017, the National Student Clearinghouse Center published "*Completing College: A State-Level View of Student Attainment Rates*" in which it analyzed the accomplishments of first-time degree-seeking postsecondary students that began in fall 2011. As shown in the following table, the next six years, 57% had completed their degrees. Results were mixed for those attending for-profit institutions, which perform better than their not-for-profit counterparts at two-year institutions, but lag significantly at four-year institutions. We note these metrics include students who transferred to other institutions.

Exhibit 138: Six-Year Completion and Attrition Rates by Institution Type (2011-2012 Cohort Through 2017)

	Total Completion Rate	Completed at Starting Institution	Completed at Different Institution		Still Enrolled at Any Institution	Not Enrolled at Any Institution
			Four-Year	Two-Year		
All institutions	56.9%	45.4%	11.5%		11.7%	31.4%
Public not-for-profit:						
Four-year institution	64.7%	53.5%	7.8%	3.4%	11.1%	24.2%
Two-year institution	37.5%	26.5%	7.7%	3.3%	15.2%	47.3%
Private not-for-profit:						
Four-year institution	76.0%	63.7%	2.3%	10.0%	7.2%	16.7%
Private for-profit:						
Four-year institution	**76.0%**	**22.1%**	**2.0%**	**11.2%**	**10.6%**	**54.1%**

Source: BMO Capital Markets and National Student Clearinghouse Center.

NCES defines graduation rates as those who have completed their programs within 150% of "normal program completion time", i.e., finishing a two-year associates degree in three years or a four-year bachelor's degree in six years. Graduation rates are relatively lower at private for-profit institutions, except at two-year institutions (i.e., relative to community colleges).

Exhibit 139: Graduation Rates by Institution Type (Cohort Years 2010 and 2013)

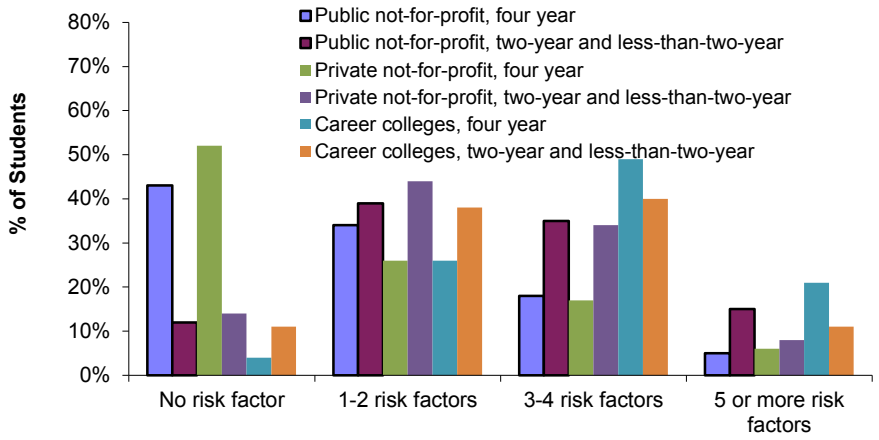
	Cohort Year 2010		Cohort Year 2013	
	All four-year institutions	Bachelors or equivalent four-year institutions	All two-year institutions	Less than two-year institutions
All institutions	54.8%	59.8%	32.8%	69.2%
Public not-for-profit	54.7%	58.9%	25.4%	73.3%
Private not-for-profit	64.0%	65.9%	60.1%	67.3%
Private for-profit	**27.9%**	**25.6%**	**61.2%**	**68.8%**

Source: BMO Capital Markets and National Center for Education Statistics.

Lag in completion rates at for-profits likely due to enrolling "riskier" students

We believe these metrics at for-profit institutions may lag as it appears these schools attract "riskier" students relative to their not-for-profit peers. The NCES periodically publishes studies analyzing the number of first-time beginning postsecondary students when measured by the five major risk factors for not completing a degree – low-income dependents, parents did not attend college, students with dependents, students working full-time, and black or Hispanic. Students attending for-profit institutions tend to have greater portion of these risk factors than those at their not-for-profit counterparts.

Exhibit 140: Entering Students With Risk Factors by Institution Type (2011-2012 School Year)



Source: Imagine America Foundation using NCES data.

In addition, as relatively more students at for-profit institutions attend part-time, it takes those students relatively longer to graduate.

Exhibit 141: Time to Degree by Institution Type (1992-1993, 1999-2000 and 2007-2008 Graduation Years)

	1992-1993	1999-2000	2007-2008
Average number of months to bachelors degree:			
Public nopnrofit four-year institutions	77.3	79.6	71.7
Private nonprofit four-year institutions	83.3	81.1	74.7
Private for-profit four-year institutions	**92.8**	**149.2**	**146.6**
All institutions	79.7	81.2	76.1
Median number of months to bachelors degree:			
Public nopnrofit four-year institutions	56.0	57.0	56.0
Private nonprofit four-year institutions	47.0	46.0	45.0
Private for-profit four-year institutions	**N.A.**	**107.0**	**104.0**
All institutions	56.0	57.0	52.0

N.A. – Not Available. Source: BMO Capital Markets and National Center for Education Statistics.

Oversight lies with accrediting agencies and states

For the most part, the federal government leaves it up to accrediting agencies and states to create the standards that postsecondary institutions use to calculate placement rates, as well as their oversight. The only exception is for short-term job training programs, which must have placement rates of at least 70% to remain eligible to participate in Title IV funding. In addition, most nationally accredited programs must meet the minimum 70% placement rate threshold.

It was difficult to obtain placement information across the postsecondary landscape because of various definitions of the metrics. In addition, few of the publicly held companies disclose placement rates. Furthermore, for companies such as Strategic Education (STRA), placement rates were historically somewhat meaningless, given that working adults make up the bulk of their student bodies and are pursuing their education not necessarily to get a job, but rather to advance at their current place of employment (this is changing as well).

Mixed employment outcomes from for-profit sector

Nevertheless, we believe the for-profit sector as a whole does a relatively better job placing for full-time employment (when employed), though overall employment rates are lower. In January 2014, the ED published a report entitled *Baccalaureate and Beyond: A First Look at the Employment Experiences and Lives of College Graduates, 4 Years On* which analyzed employment outcomes four-years after for students completing their bachelor degree in the 07-08 academic year.

Exhibit 142: Percent Employed and Salaries Four Years After Graduation (Spring 2008)

	2007-08 Bachelor degree recipients
Public four-year institution:	
Percent in labor force	92.5%
Percent employed	70.0%
Percent employed full-time	85.3%
Median salary	$45,000
Private nonprofit four-year institution:	
Percent in labor force	92.2%
Percent employed	67.7%
Percent employed full-time	82.9%
Median salary	$47,500
For-profit four-year institution:	
Percent in labor force	**87.2%**
Percent employed	**65.2%**
Percent employed full-time	**85.5%**
Median salary	**$54,000**

N.A. – Not Available. Source: National Center for Education Statistics' Baccalaureate and Beyond: A First Look at the Employment Experiences and Lives of College Graduates, 4 Years On (NCES 2014-141)

Placement rates for tend to be cyclical

There were a number of allegations made against certain for-profit institutions regarding how they calculated job placement rates and, as such, many no longer publicly disclose this data. We believe this metric is somewhat cyclical, however, and has likely improved from recessionary levels.

Margins can vary by school type and size

A summary of historical EBITDA and EBITDA margins, operating income and operating margins, and free cash flow trends for a select group of publicly held for-profit providers is found below. We note that margins vary across the spectrum, but that companies with a larger component of online enrollment (i.e., American Public Education, Grand Canyon Education) typically have higher margins since that delivery system is typically more profitable. In addition, there are some scale benefits, with some of the larger campus-based providers (i.e., Adtalem Global Education) also having relatively higher margins.

Exhibit 143: EBITDA and Margins for Select For-Profit Providers (FY2007-FY2018 to Date) ($ in mil.)

EBITDA - FISCAL YEAR														'07-10	'10-17	YTD	YTD	YTD '17-18
Company	*Ticker*	*FYE*	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	CAGR	CAGR	FY2017	FY2018	% chg.
Adtalem Global Education	ATGE	6	$142.6	$217.4	$309.3	$493.4	$587.2	$460.9	$368.7	$337.3	$327.0	$310.1	$279.7	51.3%	-7.8%	$279.7	$282.1	0.8%
American Public Education	APEI	12	18.5	31.6	47.3	59.3	75.3	83.8	85.0	87.3	80.3	72.9	62.4	47.3%	0.7%	28.4	28.9	2.0%
Bridgepoint Education	BPI	12	5.2	35.9	134.2	232.9	297.1	233.6	119.0	65.1	46.9	25.2	27.2	254.7%	-26.4%	20.5	18.2	-11.3%
Career Education	CECO	12	213.0	189.2	290.8	320.3	243.1	65.5	29.1	59.3	84.2	90.3	103.2	14.6%	-14.9%	51.5	56.0	8.8%
Capella Education	CPLA	12	1.3	1.7	2.5	3.6	3.5	2.8	2.8	3.2	3.6	3.6	3.5	40.9%	-0.8%	1.8	2.3	25.6%
Grand Canyon Education	LOPE	12	11.7	24.8	64.5	85.8	107.4	149.7	185.0	227.8	264.4	304.1	354.3	94.4%	N.A.	165.0	184.8	N.A.
Laureate Education	LAUR	12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	773.5	703.4	765.6	831.9	N.A.	N.A.	390.5	408.7	4.7%
Lincoln Educational Services	LINC	12	43.5	56.7	116.4	157.8	79.1	26.0	12.0	7.8	22.2	7.9	2.4	53.7%	-45.1%	(7.6)	(5.5)	-27.5%
National Amer. Univ. Holdings	NAUH	5	(0.5)	2.2	7.7	19.2	19.4	13.5	15.8	12.8	18.1	(1.3)	(1.9)	442.1%	-172.1%	(1.9)	(6.3)	223.0%
Strayer Education	STRA	12	58.1	57.0	55.3	54.1	47.8	45.8	42.5	42.6	42.9	43.4	44.8	-2.3%	-2.7%	22.3	22.7	1.7%
Universal Technical Institute	UTI	9	42.5	28.5	36.7	67.6	70.6	39.5	29.8	29.2	24.1	0.6	18.2	16.7%	-17.1%	14.8	(10.1)	-168.3%
Total			**$1,257.1**	**$1,578.1**	**$2,339.6**	**$3,185.1**	**$2,941.6**	**$1,453.8**	**$1,196.1**	**$2,164.9**	**$1,823.1**	**$1,705.8**	**$1,776.6**	**36.3%**	**-8.0%**	**$1,002.1**	**$983.2**	**-1.9%**

EBITDA MARGINS - FISCAL YEAR														YTD	YTD
Company	*Ticker*	*FYE*	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2017	FY2018
Adtalem Global Education	ATGE	6	15.3%	19.9%	21.2%	25.8%	26.9%	22.1%	18.7%	17.5%	17.1%	16.8%	23.2%	23.2%	22.9%
American Public Education	APEI	12	26.8%	29.5%	31.8%	29.9%	28.9%	26.7%	25.8%	24.9%	24.5%	23.3%	20.8%	19.2%	19.6%
Bridgepoint Education	BPI	12	6.1%	16.4%	29.5%	32.7%	31.8%	24.8%	15.8%	10.2%	8.4%	4.8%	5.7%	8.1%	7.6%
Career Education	CECO	12	12.8%	11.4%	37.4%	35.1%	28.8%	9.8%	5.0%	11.1%	15.3%	16.1%	18.1%	18.0%	20.1%
Capella Education	CPLA	12	0.6%	0.6%	0.7%	0.9%	0.8%	0.7%	0.7%	0.7%	0.9%	0.8%	0.8%	0.8%	1.0%
Grand Canyon Education	LOPE	12	11.8%	15.4%	24.6%	22.2%	25.2%	29.3%	30.9%	33.0%	34.0%	34.8%	36.4%	35.4%	36.1%
Laureate Education	LAUR	12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	16.4%	18.0%	19.0%	18.3%	19.2%
Lincoln Educational Services	LINC	12	13.3%	15.0%	21.1%	24.7%	15.6%	6.6%	6.1%	4.1%	12.2%	3.4%	0.9%	-6.0%	-4.5%
National Amer. Univ. Holdings	NAUH	5	-1.1%	4.5%	12.2%	21.4%	18.5%	11.8%	12.2%	10.0%	15.3%	-1.3%	-2.2%	-2.2%	-10.8%
Strayer Education	STRA	12	18.3%	14.4%	10.8%	8.5%	7.6%	8.1%	8.4%	9.6%	9.9%	9.8%	9.8%	9.8%	9.8%
Universal Technical Institute	UTI	9	12.0%	8.3%	10.0%	15.5%	15.6%	9.5%	7.8%	7.7%	6.7%	0.2%	5.6%	6.1%	-4.3%
Median			**13.3%**	**15.4%**	**21.2%**	**23.7%**	**22.9%**	**11.8%**	**12.2%**	**11.1%**	**13.8%**	**9.8%**	**9.3%**	**9.8%**	**7.6%**

Note: Data represent fiscal years. Excludes discontinued operations where available. We have removed stock-based compensation costs where disclosed. N.A. – Not Available. Source: BMO Capital Markets and company reports.

Exhibit 144: Operating Income and Margins for Select For-Profit Providers (FY2007-FY2018 to Date) ($ in mil.)

OPERATING INCOME - FISCAL YEAR

Company	*Ticker*	*FYE*	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	'07-10 CAGR	'10-17 CAGR	YTD FY2017	YTD FY2018	YTD '17-18 % chg.
Adtalem Global Education	ATGE	6	$93.2	$171.8	$251.3	$421.1	$508.4	$353.7	$260.0	$229.8	$201.6	$202.2	$205.5	65.3%	-9.7%	$205.5	$212.5	3.4%
American Public Education	APEI	12	15.7	27.4	42.1	52.8	66.0	72.6	71.5	71.2	61.9	53.5	43.6	49.8%	-2.7%	18.9	20.1	6.1%
Bridgepoint Education	BPI	12	4.0	35.0	128.3	224.4	284.3	216.2	97.3	28.7	26.1	12.1	18.4	N.A.	-30.1%	15.8	14.7	-7.5%
Career Education	CECO	12	139.5	117.6	225.1	312.2	229.2	225.1	26.3	36.5	65.7	44.7	95.5	30.8%	-15.6%	46.4	50.3	8.4%
Capella Education	CPLA	12	127.2	153.3	200.4	98.7	88.2	64.3	65.2	75.4	76.9	74.6	71.6	-8.1%	-4.5%	36.5	39.0	6.9%
Grand Canyon Education	LOPE	12	8.1	19.5	56.7	73.0	89.7	125.8	155.9	194.5	210.4	237.2	282.8	47.9%	N.A.	131.7	148.6	12.8%
Laureate Education	LAUR	12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	337.0	382.9	357.0	N.A.	N.A.	181.1	238.3	31.6%
Lincoln Educational Services	LINC	12	27.7	38.8	92.1	131.5	50.7	11.2	(3.5)	11.5	0.9	(6.6)	(6.3)	68.0%	-164.8%	(11.8)	(9.7)	18.3%
National Amer. Univ. Holdings	NAUH	5	(2.2)	0.0	5.4	16.6	14.4	5.2	10.0	6.3	11.8	(7.6)	(7.2)	N.A.	-188.8%	(7.2)	(11.1)	-53.0%
Strayer Education	STRA	12	107.8	138.0	183.2	227.8	192.4	119.1	96.7	90.8	69.7	57.7	56.7	28.3%	-18.0%	30.4	29.9	-1.7%
Universal Technical Institute	UTI	9	34.7	16.0	23.3	52.4	55.1	22.5	13.8	8.5	4.4	(18.5)	0.1	14.8%	-62.2%	1.1	(23.0)	-2222.0%
Total			**$1,156.5**	**$1,494.9**	**$2,307.9**	**$3,115.9**	**$2,778.4**	**$1,873.2**	**$1,262.1**	**$1,080.4**	**$872.6**	**$716.0**	**$804.7**	**30.8%**	**-27.1%**	**$678.5**	**$710.8**	**4.8%**

OPERATING MARGINS - FISCAL YEAR

Company	*Ticker*	*FYE*	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	YTD FY2017	YTD FY2018
Adtalem Global Education	ATGE	6	10.0%	15.7%	17.2%	22.0%	23.3%	17.0%	13.2%	11.9%	10.6%	11.0%	17.0%	17.0%	17.3%
American Public Education	APEI	12	22.7%	25.6%	28.3%	26.6%	25.3%	23.2%	21.7%	20.3%	18.9%	17.1%	14.6%	12.8%	13.6%
Bridgepoint Education	BPI	12	4.6%	16.0%	28.2%	31.5%	30.5%	22.9%	12.9%	4.5%	4.6%	2.3%	3.8%	6.2%	6.1%
Career Education	CECO	12	8.4%	7.1%	28.9%	34.2%	27.2%	33.7%	4.5%	6.8%	12.0%	8.0%	16.8%	16.2%	18.1%
Capella Education	CPLA	12	56.2%	56.3%	59.9%	23.2%	20.5%	15.2%	15.7%	17.9%	18.5%	17.4%	16.3%	16.5%	17.4%
Grand Canyon Education	LOPE	12	8.2%	12.1%	21.7%	18.9%	21.0%	24.6%	26.1%	28.1%	27.0%	27.2%	29.0%	28.2%	29.0%
Laureate Education	LAUR	12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	7.9%	9.0%	8.2%	8.5%	11.2%
Lincoln Educational Services	LINC	12	8.5%	10.3%	16.7%	20.6%	10.0%	2.8%	-1.8%	6.1%	0.5%	-2.8%	-2.4%	-9.3%	-7.9%
National Amer. Univ. Holdings	NAUH	5	-4.9%	0.0%	8.6%	18.5%	13.7%	4.5%	7.7%	4.9%	10.0%	-7.9%	-8.4%	-8.4%	-19.1%
Strayer Education	STRA	12	33.9%	34.8%	35.8%	35.8%	30.7%	21.2%	19.2%	20.4%	16.0%	13.1%	12.5%	13.4%	12.9%
Universal Technical Institute	UTI	9	9.8%	4.7%	6.4%	12.0%	12.2%	5.4%	3.6%	2.2%	1.2%	-5.3%	0.0%	0.4%	-9.7%
Median			**10.0%**	**15.7%**	**21.7%**	**22.0%**	**21.0%**	**17.0%**	**12.9%**	**8.2%**	**10.4%**	**10.8%**	**12.5%**	**12.8%**	**12.9%**

Note: Data represent fiscal years. Excludes discontinued operations where available. We have removed stock-based compensation costs and one-time items where disclosed. N.A. – Not Available. Source: BMO Capital Markets and company reports.

Exhibit 145: Free Cash Flow for Select For-Profit Providers (FY2007-FY2018 to Date) ($ in mil.)

Free Cash Flow - FISCAL YEAR

Company	*Ticker*	*FYE*	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	'07-10 CAGR	'10-17 CAGR	YTD FY2017	YTD FY2018	YTD '17-18 % chg.
Adtalem Global Education	ATGE	6	$86.6	$135.8	$175.5	$260.5	$272.3	$148.4	$152.2	$185.1	$114.4	$162.2	$159.3	44.4%	-6.8%	$159.3	$154.8	-2.8%
American Public Education	APEI	12	10.7	19.7	26.0	24.6	45.5	17.9	38.8	36.4	31.2	42.2	37.1	32.1%	6.0%	12.5	16.6	32.7%
Bridgepoint Education	BPI	12	(2.9)	54.9	107.5	163.4	186.3	124.7	70.8	13.8	24.2	9.2	(7.5)	481.8%	-164.3%	(13.8)	(10.5)	23.9%
Career Education	CECO	12	164.5	132.9	214.2	145.0	152.1	(54.7)	(105.3)	(131.8)	(33.4)	1.8	(28.1)	-4.1%	-179.1%	(36.4)	12.0	-133.0%
Capella Education	CPLA	12	21.1	30.5	52.6	62.9	50.7	41.6	50.6	44.6	42.0	64.2	41.6	43.9%	-5.7%	23.1	30.3	30.9%
Grand Canyon Education	LOPE	12	(0.3)	1.9	36.4	21.5	16.6	39.3	39.5	(1.6)	(30.8)	40.0	191.3	514.1%	36.7%	83.2	64.8	-22.1%
Laureate Education	LAUR	12	$9.1						(223.7)	(147.6)	(173.5)	(55.7)	(143.3)	N.A.	N.A.	(292.4)	(91.9)	68.6%
Lincoln Educational Services	LINC	12	(9.0)	34.0	49.2	72.1	(1.3)	27.5	15.6	4.6	12.1	(9.7)	(16.1)	299.9%	-180.7%	(21.6)	(14.1)	34.5%
National Amer. Univ. Holdings	NAUH	5	(2.1)	(0.8)	8.4	8.4	9.1	(0.3)	(13.2)	3.0	7.5	6.0	(10.4)	257.9%	-203.1%	(10.4)	(21.2)	103.6%
Strayer Education	STRA	12	65.9	67.9	111.3	116.8	124.4	57.3	75.4	70.2	64.2	31.3	38.1	21.0%	-14.8%	24.3	21.4	-11.9%
Universal Technical Institute	UTI	9	(6.9)	3.4	20.6	30.6	29.0	7.2	17.4	15.3	(20.5)	(3.2)	(12.3)	263.9%	-187.8%	(27.9)	(39.5)	41.7%
Total			**$477.6**	**$658.4**	**$1,217.1**	**$1,562.8**	**$1,258.9**	**$391.5**	**$299.1**	**$217.2**	**$62.0**	**$292.3**	**$249.7**	**48.5%**	**-26.3%**	**($100.2)**	**$122.6**	**222.4%**

As % of revenues

Fiscal years	*Ticker*		FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	YTD FY2017	YTD FY2018
Adtalem Global Education	ATGE	6	9.3%	12.4%	12.0%	13.6%	12.5%	7.1%	7.7%	9.6%	6.0%	8.8%	13.2%	13.2%	12.6%
American Public Education	APEI	12	15.5%	18.4%	17.4%	12.4%	17.5%	5.7%	11.8%	10.4%	9.5%	13.5%	12.4%	8.4%	11.2%
Bridgepoint Education	BPI	12	-3.4%	25.1%	23.7%	22.9%	20.0%	13.2%	9.4%	2.2%	4.3%	1.7%	-1.6%	-5.4%	-4.4%
Career Education	CECO	12	9.9%	8.0%	27.5%	15.9%	18.0%	-8.2%	-18.2%	-24.6%	-6.1%	0.3%	-4.9%	-12.7%	4.3%
Capella Education	CPLA	12	9.3%	11.2%	15.7%	14.8%	11.8%	9.8%	12.2%	10.6%	10.1%	15.0%	9.4%	10.5%	13.6%
Grand Canyon Education	LOPE	12	-0.3%	1.2%	13.9%	5.6%	3.9%	7.7%	6.6%	-0.2%	-4.0%	4.6%	19.6%	17.8%	12.6%
Laureate Education	LAUR	12	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	-4.0%	-1.3%	-3.3%	-13.7%	-4.3%
Lincoln Educational Services	LINC	12	-2.8%	9.0%	8.9%	11.3%	-0.3%	6.9%	7.9%	2.4%	6.7%	-4.2%	-6.1%	-17.0%	-11.5%
National Amer. Univ. Holdings	NAUH	5	-4.8%	-1.6%	13.4%	9.4%	8.7%	-0.2%	-10.2%	2.4%	6.4%	6.3%	-12.0%	-12.0%	-36.6%
Strayer Education	STRA	12	20.7%	17.1%	21.7%	18.3%	19.8%	10.2%	15.0%	15.7%	14.8%	7.1%	8.4%	10.7%	9.3%
Universal Technical Institute	UTI	9	-2.0%	1.0%	5.6%	7.0%	6.4%	1.7%	4.6%	4.0%	-5.6%	-0.9%	-3.8%	-11.5%	-16.7%
MEDIAN			**9.3%**	**10.1%**	**14.8%**	**13.0%**	**12.1%**	**6.9%**	**7.3%**	**3.2%**	**6.0%**	**5.4%**	**3.4%**	**1.5%**	**6.8%**

Note: Data represent fiscal years. Excludes discontinued operations where available. N.A. – Not Available. Source: BMO Capital Markets and company reports.

For-profits are more "profitable" than their public not-for-profit peers, though less "profitable" than private not-for-profit schools

We have attempted to create a common-size income statement on a per full-time equivalent (FTE) student basis using ED data. For-profit schools are more "profitable" than their public not-for-profit peers when measured on a percentage basis – likely not a surprising conclusion to anyone. However, in recent years, they have become less profitable than private not-for-profit schools owing to enrollment pressure, along with improving endowment performance at private not-for-profit schools.

Exhibit 146: Common Size Income Statement on Per FTE Student Basis (2015-2016 School Year).

	Public-Not-For-Profit			Private-Not-For-Profit			Private-For-Profit		
	Two-year Schools	Four-year Schools	All Schools	Two-year Schools	Four-year Schools	All Schools	Two-year Schools	Four-year Schools	All Schools
Revenues	$15,541	$43,177	$33,468	$19,352	$60,869	$60,320	$17,041	$17,061	$17,057
Instructional costs	6,322	12,539	10,422	6,646	17,996	17,860	5,277	4,052	4,298
Gross margins	9,219	30,638	23,047	12,706	42,873	42,460	11,764	13,009	12,759
Non-instructional costs:									
Students svcs., academic and inst. support	2,975	5,844	4,802	7,902	9,528	9,509	4,415	4,969	4,857
Research and public service	234	7,306	4,898	82	6,339	6,264	10	20	18
Auxiliary enterprises	632	4,257	3,023	982	5,008	4,960	381	409	404
Net grant aid, scholarships and fellowships	1,446	1,520	1,495	4,431	7,677	7,638	5,068	5,469	5,388
Other expenses (includes hospital services)	3,525	10,469	7,821	1,262	9,853	9,750	2,124	997	1,224
Total non-instructional costs	8,812	29,395	22,038	14,659	38,405	38,120	11,999	11,863	11,891
Surplus/deficit	$407	$1,243	$1,008	($1,953)	$4,468	$4,340	($234)	$1,145	$868
As % of revenues									
Revenues	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Instructional costs	40.7%	29.0%	31.1%	34.3%	29.6%	29.6%	31.0%	23.8%	25.2%
Gross margins	59.3%	71.0%	68.9%	65.7%	70.4%	70.4%	69.0%	76.2%	74.8%
Non-instructional costs:									
Students svcs., academic and inst. support	19.1%	13.5%	14.3%	40.8%	15.7%	15.8%	25.9%	29.1%	28.5%
Research and public service	1.5%	16.9%	14.6%	0.4%	10.4%	10.4%	0.1%	0.1%	0.1%
Auxiliary enterprises	4.1%	9.9%	9.0%	5.1%	0.1%	8.2%	2.2%	2.4%	2.4%
Net grant aid, scholarships and fellowships	9.3%	3.5%	4.5%	22.9%	12.6%	12.7%	29.7%	32.1%	31.6%
Other expenses (includes hospital services)	22.7%	24.2%	23.4%	6.5%	16.2%	16.2%	12.5%	5.8%	7.2%
Total non-instructional costs	56.7%	68.1%	65.8%	75.7%	63.1%	63.2%	70.4%	69.5%	69.7%
Surplus/deficit (i.e. operating margins)	2.6%	2.9%	3.0%	-10.1%	7.3%	7.2%	-1.4%	6.7%	5.1%

Note: Data in constant 2015-2016 dollars. Source: BMO Capital Markets and US Department of Education National Center for Education Statistics.

U.S. Postsecondary Schools—Legal and Regulatory Issues

The U.S. postsecondary education market is highly regulated. Most postsecondary schools must meet the requirements of three regulatory bodies to be eligible for Title IV funding (i.e., federal financial aid): regional or national accreditation for degree programs, state approval for licensing, and federal regulations regarding financial aid eligibility.

Navigating through regulations could be a barrier to entry

Navigating these regulations poses both an entry barrier to new competition and a competitive edge for schools that can do so successfully. However, it also creates additional investment risk and can add to stock volatility as new regulations and/or changes to existing regulations are proposed or passed by legislative bodies. In this section, we summarize the major regulations affecting this sector.

Accreditation and degree approval. Accreditation is a process in which a school submits to ongoing reviews by an organization of peer institutions ("commissions") to examine the school's academic quality and its administrative and financial operations. Importantly, accreditation is necessary for a school to have access to federal student loans and is viewed as confirmation that it meets generally accepted academic standards and has the resources necessary to perform its educational mission. Typically, accreditation is given for a 10-year period, and a thorough review is conducted near the end of the period before accreditation is renewed.

A list of officially recognized accrediting agencies can be found in the following tables.

Exhibit 147. Accrediting Agencies Recognized by the U.S. Department of Education

Category	Accrediting Agency
Regional Accrediting Agencies	Middle States Commission on Higher Education (MSCHE)
	Middle States Commission on Secondary Schools (MSCSS)
	New England Association of Schools and Colleges (NEASC)
	North Central Association of Colleges and Schools (NCACS), the Higher Learning Commission
	Northwest Commission on Colleges and Universities (NCCU)
	Southern Association of Colleges and Schools (SACS)
	Western Association of Schools and Colleges, Accrediting Commission for Community and Junior Colleges
	Western Association of Schools and Colleges, Senior Colleges and University Commission
National Accrediting Agencies	
Acupuncture And Oriental Medicine	Accreditation Commission for Acupuncture and Oriental Medicine
Allied Health	Accrediting Bureau of Health Education Schools
Art And Design	National Association of Schools of Art and Design, Commission on Accreditation
Bible College Education	Association for Biblical Higher Education, Commission on Accreditation
Chiropractic	The Council on Chiropractic Education, Commission on Accreditation
Christian Education	Transnational Association of Christian Colleges and Schools, Accreditation Commission
Continuing Education	Accrediting Council for Continuing Education and Training
Cosmetology	National Accrediting Commission of Career Arts and Sciences
Dance	National Association of Schools of Dance, Commission on Accreditation
Dental And Dental Auxiliary Programs	American Dental Association, Commission on Dental Accreditation
Dietetics	Academy of Nutrition and Dietetics, Accreditation Council for Education in Nutrition and Dietetics
Distance Education And Training	Distance Education Accrediting Commission
English Language Program	Commission on English Language Program Accreditation
Funeral Service Education	American Board of Funeral Service Education, Committee on Accreditation
Healthcare	Accrediting Bureau of Health Education Schools
Jewish Studies	Association of Institutions of Jewish Studies
Law	American Bar Association, Council of the Section of Legal Education and Admissions to the Bar
Massage Therapy	Commission on Massage Therapy Accreditation
Medicine	Liaison Committee on Medical Education
Midwifery Education	Midwifery Education Accreditation Council
Midwifery Education	Accreditation Commission for Midwifery Education
Montessori Teacher Education	Montessori Accreditation Council for Teacher Education, Commission on Accreditation
Music	National Association of Schools of Music
Naturopathic Medicine Education	Council on Naturopathic Medical Education
Nurse Anesthesia	Council on Accreditation of Nurse Anesthesia Educational Programs
Nursing	Commission on Collegiate Nursing Education
Nursing	Accreditation Commission for Education in Nursing
Nutrition	Academy of Nutrition and Dietetics, Accreditation Council for Education in Nutrition and Dietetics
Occupational Education	Accrediting Commission of Career Schools and Colleges of Technology
Occupational Education	Council on Occupational Education
Occupational Therapy	American Optometric Association, Accreditation Council on Optometric Education
Optometry	American Optometric Association, Accreditation Council on Optometric Education
Osteopathic Medicine	American Osteopathic Association, Commission on Osteopathic College Accreditation
Other	New York State Board of Regents, the Commissioner of Education
Pastoral Education	Association for Clinical Pastoral Education, Inc., Accreditation Commission
Pharmacy	Accreditation Council for Pharmacy Education
Physical Therapy	American Physical Therapy Association, Commission on Accreditation in Physical Therapy Education
Podiatry	American Podiatric Medical Association, Council on Podiatric Medical Education
Psychology	American Psychological Association, Committee on Accreditation
Public Health	Council on Education for Public Health
Rabbinical And Talmudic Education	Association of Advanced Rabbinical and Talmudic Schools, Accreditation Commission
Radiologic Technology	Joint Review Committee on Education in Radiologic Technology
Speech-Language Pathology And Audiology	American Speech-Language-Hearing Association, Council on Academic Accreditation in Audiology and Speech-Language Pathology
Teacher Education	National Council for Accreditation of Teacher Education
Teacher Education	Montessori Accreditation Council for Teacher Education
Theater	National Association of Schools of Theatre, Commission on Accreditation
Theology	Commission on Accrediting of the Association of Theological Schools
Veterinary Medicine	American Veterinary Medical Association, Council on Education

Source: BMO Capital Markets and US Department of Education.

Regional accreditation is viewed as the higher form of accreditation

The table below shows the accreditors of schools run by the publicly held for-profit providers. As shown, most are nationally accredited, as opposed to regionally accredited. Regional accreditation is typically viewed as a higher standard as the bulk of well-recognized not-for-profit schools (e.g., Ivy League) are regionally accredited institutions. In general, regionally accredited credits will transfer more easily to regionally accredited schools than will credits from nationally accredited schools.

Exhibit 148: Accrediting Agencies for Selected For-Profit Postsecondary Schools

Company	Ticker	School	Accrediting Agency	Regional	National	Other
		American University of the Caribbean	Accreditation Commission on Colleges of Medicine (ACCM), National Committee on Foreign Medical Education and Accreditation of ED			X
Adtalem Global Education	ATGE					
		Becker Professional Education	Accrediting Council for Continuing Education & Training (ACCET)	x		
		Carrington College	ACCJC/WASC	X		
		Chamberlain College of Nursing	HLC, Comm. on Collegiate Nursing Education (CCNE)	X		
		Adtalem Brasil	Brazilian Ministry of Education			X
		DeVry University (associate degree health information technology	Commission on Accreditation for Health Informatics and Information Management		X	
		DeVry University (baccalaureate electronics engineering technology	Electronics Technology Accreditation Commission of ABET		X	
		DeVry University (includes Keller Graduate School)	HLC	X		
		DeVry University (undergraduate and graduate degree programs in business and accounting)	Accreditation Council for Business Programs and Schools (ACBSP) Project Management Institute Global Accreditation Center		X	
		DeVry University (clinical laboratory science program)	National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)		x	
		Ross University School of Medicine	Dominican Medical Board, US Liaison Committee on Medical Education, Caribbean Accreditation Authority for Education in Medicine and other Health Professions			X
		Ross Veterinary School	Government of Federation of St. Christopher and Nevis ("St. Kitts"), American Veterinary Medical Association			X
		American Public University	Higher Learning Commission of the North Central Assoc. of Colleges and Schools (HLC)	X		
American Public Education	APEI					
		American Public University (nursing)	Commission on Collegiate Nursing Education			
		Hondros College of Nursing (HCON)	Accrediting Bureau of Health Education Schools (ABHES) - pending Accrediting Council for Independent Colleges and Schools (ACICS) National League for Nursing Commission For Nursing Education Commission on Collegiate Nursing Education (CCNE)		X	
Bridgepoint Education	BPI	Ashford University	Western Assoc. of Schools and Colleges (WASC)	X		
		University of the Rockies	HLC	X		
Career Education	CECO	American InterContinental University	HLC	X		
		Colorado Technical University	HLC	X		
Grand Canyon Education	LOPE	Grand Canyon University	HLC	X		
		College of Education	Arizona State Board of Education, National Council for Accreditation of Teacher Education (NCATE)			X
		Colangelo College of Business	Accreditation Council for Business Schools and Programs (ACBSP)		X	
		College of Nursing and Health Sciences	Comm. on Collegiate Nursing Education (CCNE), The Commission on Accreditation of Athletic Training Education, National Addiction Studies Accreditation Commission		X	
Laureate Education	LAUR	Kendall College	HLC	X		
		Walden University	HLC	X		
		New School of Architecture and Design	WASC		X	
		St. Augustine of Health Sciences	WASC		X	
Lincoln Educational Services	LINC	15 locations	ACCSC		X	
		1 locations	NEASC	X		
		7 locations	ACICS		X	
National American University	NAUH	National American University	HLC	X		
Strategic Education	STRA	Capella University	HLC	X		
		Strayer University	MSACS	X		
Universal Technical Institute	UTI	All locations	ACCSC		X	

Source: BMO Capital Markets and company reports.

Accreditors under increasing scrutiny, system could be overhauled

Accreditation. Institutions of higher education need accreditation for students to receive Title IV (e.g., federal financial aid) funds. For many years, accreditation has been a controversial means of regulation. However, scrutiny and criticism have increased in recent years as student debt levels have ballooned while student outcomes have remained relatively poor.

On September 22, 2016, the **ED announced it had decided to withdraw and terminate recognition of the Accrediting Council for Independent Colleges and Schools (ACICS).** This concurred with prior recommendations from ED analysts and the National Advisory Committee on Institutional Quality and Integrity (NACIQI) for the ED to deny renewed recognition of ACICS (announced in July 2016). The ED's letter noted that the ACICS was in violation of several regulations and stated, "These violations reveal fundamental problems with the agency's functions as an accreditor." It noted issues related to ACICS's accreditation standards and the monitoring of its accredited institutions, among other areas. In December 2016, the Secretary of Education, John B. King Jr. adopted the decision and terminated the ED's recognition of ACICS.

On April 3, 2018, ED Secretary Betsy DeVos signed an order to reinstate the federal recognition of ACICS in response to a federal district court judge's March 2018 ruling that former secretary John King failed to consider key evidence before terminating the recognition of ACICS. Even if the Secretary determines that full recognition for ACICS is not warranted, it may be extended continued recognition for up to 12 months to demonstrate compliance with federal criteria. If it receives full recognition, the accreditor could be recognized through December 2021. The department of Education is currently conducting a review of the ACICS's petition for recognition.

Of the stocks we cover, we believe only American Public Education's (APEI) Hondros's Colleges is ACICS accredited, although its programs have other accreditation as well (e.g., its RN-to-BSN program is accredited by the Commission on Collegiate Nursing Education; all of its locations and programs also have state approval). In 2016, Hondros represented about 10% and 5% of APEI's total revenues and EBITDA, by our estimates. On June 18, 2018, Hondros announced it had received official notification of institutional accreditation by the Accrediting Bureau of Health Education Schools (ABHES).

State licensing. Postsecondary institutions must seek licensing from each state in which they operate. The intensity of the review process varies by state and can sometimes take more than one year. Once granted, however, licenses are typically renewed with little fanfare, barring any major changes, such as to curricula or the existence of any prior regulatory concerns.

Change of ownership could lead to loss of Title IV eligibility

Federal regulation. To have access to federal Title IV aid, schools must be accredited and meet the eligibility requirements of state agencies. In most cases, the ED certifies Title IV eligibility for three years for provisionally certified institutions and six years for full certification. However, each school may be subject to special terms and conditions set forth in its program participation agreement with the ED.

If a school is being certified for the first time, or has undergone a change of ownership, it will be placed on provisional certification. We believe the ownership rule has been a key reason for the lack of M&A in the industry in recent years, as potential acquirers are not willing to risk losing Title IV eligibility. Provisional certification may also result from failure to satisfy certain financial or administrative standards.

A school under provisional certification may still participate in the Title IV program; however, it must also comply with any additional conditions imposed by the ED and must seek approval before adding a new location or program or making other significant changes. The ED may revoke Title IV eligibility if it determines the school can no longer meets its prior participation requirements.

Program reviews

Periodically, the ED conducts program reviews to ensure each institution's continuing compliance and ability to meet certain criteria. However, other issues, including an increase in student aid recipient complaints, can trigger major program reviews by the ED.

Criteria used by the ED to determine Title IV compliance include:

Cohort default rates (CDRs) are an important metric for the sector

Cohort default rates (CDR). CDRs measure the percentage of borrowers who default on their Stafford loans (both Direct and Federal Family Education (FFEL) loans). A **FFEL loan is in default if delinquent for 270 days**, and **a direct loan is in default if delinquent for 360 days.** CDRs are not measured by the school system or the company as a whole, but by the Office of Postsecondary Education Identification Numbers (OPEID), which may include a single institution or a group of institutions. A school faces various penalties based on whether its CDR exceeds certain thresholds, which can include loss of Title IV eligibility or delayed cash disbursements.

Exhibit 149: Student-Loan Default Ceilings

Cohort Default Rate	Consequence for Institution
Three-year rate of 15% or more for one year	Delayed cash disbursements for first-year, first-time undergraduate students
Three-year rate of 30% or more for three consecutive years	Becomes ineligible for participation for the fiscal year in which the ineligibility determination is made and for the two succeeding fiscal years.
40% or more for one year	Begins immediate limitation, suspension, or termination proceedings from all federal aid programs.

Source: US Department of Education.

The ED released the latest FY2014 cohort default rate data on September 28, 2017. FY2014 cohort measures the percentage of defaults in the October 1, 2013, to September 30, 2016, period. A summary of these results follows.

Cohort default rates (CDRs) worsened for the proprietary sector

Three-year CDRs increase a bit (including at for-profit school providers). The three-year FY2014 CDR rate for all higher education institutions increased slightly to 11.5% from 11.3% in FY2013. This was driven in part by higher rates for the proprietary (for-profit) sector, as default rates increased to 15.5% from 15% the prior fiscal year, as well as at private (not-for-profit) schools, where default rates increased to 7.4% from 7% the prior fiscal year.

Exhibit 150: Three-Year Cohort Default Rates by Institution and School Type (FY2005–FY2014)

Institution Type	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014
All Private:	**4.2%**	**4.5%**	**6.5%**	**7.6%**	**7.5%**	**8.2%**	**7.2%**	**6.8%**	**7.0%**	**7.4%**
Private less than 2 year				26.2%	23.1%	21.8%	25.0%	22.4%	20.6%	19.8%
Private 2 year	12.2%	13.2%	16.2%							
Private 2-3 year				16.7%	14.5%	14.2%	12.0%	14.6%	15.3%	17.6%
Private 4 year	4.1%	4.3%	6.3%	7.4%	7.3%	8.0%	7.0%	6.3%	6.5%	7.0%
All Public:	**7.1%**	**7.7%**	**9.7%**	**10.8%**	**11.0%**	**13.0%**	**12.9%**	**11.7%**	**11.3%**	**11.3%**
Public less than 2 year				14.7%	16.2%	16.5%	13.6%	12.2%	13.0%	13.8%
Public 2 year	13.3%	13.9%	16.2%							
Public 2-3 year				18.0%	18.3%	20.9%	20.6%	19.1%	18.5%	18.3%
Public 4 year	5.0%	5.5%	7.1%	8.0%	7.9%	9.3%	8.9%	7.6%	7.3%	7.5%
All Proprietary:	**17.2%**	**18.8%**	**21.2%**	**25.0%**	**22.7%**	**21.8%**	**19.1%**	**15.8%**	**15.0%**	**15.5%**
Proprietary less than 2 year				27.7%	21.5%	20.9%	20.6%	17.7%	16.9%	17.0%
Proprietary 2-3 year				28.0%	22.9%	21.4%	19.8%	17.7%	16.8%	17.5%
Proprietary 4 year				22.7%	23.0%	22.1%	18.6%	14.7%	14.0%	14.6%
All	**8.4%**	**9.2%**	**11.8%**	**13.8%**	**13.4%**	**14.7%**	**13.7%**	**11.8%**	**11.3%**	**11.5%**
Proprietary % of defaults	**41.8%**	**43.5%**	**44.2%**	**47.6%**	**46.9%**	**46.1%**	**44.3%**	**38.5%**	**35.2%**	**33.4%**

Source: BMO Capital Markets and U.S. Department of Education.

Mixed trends across public proprietary schools

Trends were mixed across schools owned by public company operators. The lowest CDRs among this group are **Capella Education** at 6.9% (though up slightly from 6.5%), **Laureate Education's** Walden University at 7.5% (though up from 6.7%), and **Grand Canyon Education** at 8.5% (down from 9.2%). We attribute these low default rates to Grand Canyon's high-quality student base (which also includes working adults) and the attraction of its campus model, and Laureate's Walden and Capella's focus on working adults and graduate-level programs. **Publicly held companies with schools at risk for high default rates** include **Adtalem Global Education, Career Education,** and **Universal Technical Institute,** each with several of their schools exceeding the 15% default rate threshold (several of Career Education's schools at risk are in a teach-out or closing process). **Trends were notably mixed at Adtalem Global Education**, with low default rates (though picking up) in the medical schools and Chamberlain, and worsening trends at the DeVry University and Carrington schools. Rates rose at **Strayer University**, though they remained below the overall for-profit sector total.

We provide a summary analysis of three-year CDRs for the publicly held companies below.

Summary of three-year CDRs for the public for-profits

Exhibit 151: Summary of Three-Year Cohort Default Rates for Public Postsecondary School Operators (FY2005–FY2014)

Company	*Ticker*	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Adtaelm Global Education (formerly DeVry Education Group; median)	**ATGE**	**13.7%**	**13.4%**	**14.6%**	**9.5%**	**10.9%**	**10.8%**	**12.3%**	**10.3%**	**10.6%**	**11.1%**
Schools measured		8	8	8	9	9	9	8	8	8	8
Schools at or above 15%		4	4	5	4	3	4	4	3	1	3
Schools at or above 30%		1	1	1	0	0	0	0	0	0	1
American Public Education (APUS)	**APEI**	**N.A.**	**N.A.**	**3.3%**	**11.1%**	**7.2%**	**11.9%**	**13.0%**	**23.3%**	**20.1%**	**23.6%**
Schools measured		N.A.	N.A.	1	2	2	2	2	2	2	2
Schools at or above 15%		N.A.	N.A.	0	0	0	0	0	1	1	1
Schools at or above 30%		N.A.	N.A.	0	0	0	0	0	0	0	0
Bridgepoint Education (Ashford)	**BPI**	**8.8%**	**6.1%**	**17.4%**	**20.0%**	**19.8%**	**16.3%**	**15.3%**	**15.3%**	**14.5%**	**14.9%**
Schools measured		2	2	2	2	2	2	2	2	2	2
Schools at or above 15%		0	0	1	1	1	1	1	1	0	0
Schools at or above 30%		0	0	0	0	0	0	0	0	0	0
Capella Education	**STRA**	**4.4%**	**3.7%**	**5.5%**	**6.5%**	**9.7%**	**10.9%**	**13.0%**	**8.9%**	**6.5%**	**6.9%**
Schools measured		1	1	1	1	1	1	1	1	1	1
Schools at or above 15%		0	0	0	0	0	0	0	0	0	0
Schools at or above 30%		0	0	0	0	0	0	0	0	0	0
Schools at or above 40%		0	0	0	0	0	0	0	0	0	0
Career Education (median)	**CECO**	**21.2%**	**18.3%**	**19.7%**	**20.4%**	**26.3%**	**24.0%**	**21.4%**	**23.1%**	**20.4%**	**22.7%**
Schools measured		24	24	24	24	25	25	23	20	20	10
Schools at or above 15%		19	17	16	20	22	22	21	18	16	9
Schools at or above 30%		2	0	0	0	1	1	1	1	0	0
Education Management (median)	**EDMC**	**12.3%**	**11.8%**	**15.2%**	**14.5%**	**21.5%**	**20.0%**	**19.2%**	**14.9%**	**14.7%**	**14.9%**
Schools measured		22	22	22	23	19	19	19	19	19	18
Schools at or above 15%		4	5	9	10	14	18	16	8	9	8
Schools at or above 30%		1	1	1	0	0	0	0	0	0	0
Grand Canyon Education	**LOPE**	**3.0%**	**2.7%**	**2.9%**	**7.4%**	**15.1%**	**19.5%**	**15.8%**	**10.3%**	**9.2%**	**8.5%**
Schools measured		1	1	1	1	1	1	1	1	1	1
Schools at or above 15%		0	0	0	0	1	1	1	0	0	0
Schools at or above 30%		0	0	0	0	0	0	0	0	0	0
Laureate Education	**LAUR**							**7.8%**	**6.8%**	**6.7%**	**7.5%**
Schools measured								1	1	1	1
Schools at or above 15%								0	0	0	0
Schools at or above 30%								0	0	0	0
Lincoln Educational Services (median)	**LINC**	**21.8%**	**23.2%**	**25.0%**	**24.6%**	**27.2%**	**27.7%**	**25.4%**	**16.4%**	**12.0%**	**11.8%**
Schools measured		16	16	16	14	12	12	7	7	6	5
Schools at or above 15%		13	13	16	12	12	12	7	4	1	0
Schools at or above 30%		1	1	1	3	5	4	0	0	0	0
Strategic Education	**STRA**	**9.3%**	**10.5%**	**13.0%**	**12.8%**	**13.8%**	**15.2%**	**14.9%**	**11.6%**	**11.3%**	**13.2%**
Schools measured		1	1	1	1	1	1	1	1	1	1
Schools at or above 15%		0	0	0	0	0	1	0	0	0	0
Schools at or above 30%		0	0	0	0	0	0	0	0	0	0
Universal Technical Institute (median)	**UTI**	**15.0%**	**17.3%**	**13.7%**	**13.1%**	**16.0%**	**20.2%**	**19.5%**	**18.3%**	**18.6%**	**15.8%**
Schools measured		3	3	3	3	3	3	3	3	3	3
Schools at or above 15%		2	2	0	0	2	3	3	3	3	2
Schools at or above 30%		0	0	0	0	0	0	0	0	0	0

Source: Department of Education and BMO Capital Markets.

CDRs by specific institution

CDRs for specific institutions. A detailed analysis of the three-year CDRs for the schools owned by the publicly held companies (based on schools currently owned) is shown below. We caution investors that, owing to reporting nuances, this may not be an exhaustive analysis. Nevertheless, we believe it is indicative of recent trends.

Exhibit 152: Three-Year Cohort Default Rates for Public Postsecondary School Operators

OPEID		3-Year CDRs FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014
	Adtalem Global Education (ATGE; formerly DeVry Education Group)								
	Range								
	Maximum	24.4%	28.0%	25.6%	27.2%	23.2%	17.5%	17.9%	19.0%
	Minimum	0.0%	0.5%	0.0%	0.8%	0.3%	0.0%	0.5%	0.2%
	Median	14.6%	9.5%	10.9%	10.8%	12.3%	10.3%	10.6%	11.1%
022444	American University of the Caribbean	N.A.	2.4%	1.6%	1.1%	1.5%	0.0%	0.5%	1.2%
022180	Carrington College (Boise)	12.0%	11.8%	14.4%	13.9%	12.3%	10.3%	13.1%	11.1%
021006	Carrington College (Phoenix)	23.3%	23.4%	23.5%	25.4%	21.3%	17.5%	17.9%	19.0%
030425	Carrington College (Portland)	19.9%	15.6%	13.8%	16.4%	16.5%	15.7%	11.1%	17.2%
009748	Carrington College of California (Sacramento)	24.4%	28.0%	25.6%	27.2%	23.2%	15.1%	13.6%	15.2%
006385	Chamberlain College of Nursing (formerly Deaconess)	N.A.	7.3%	7.9%	6.7%	5.8%	3.8%	3.6%	3.4%
010727	DeVry University	17.1%	19.6%	24.1%	23.4%	18.5%	12.6%	10.6%	12.5%
022460	Ross University - Medicine	0.6%	0.9%	0.8%	1.1%	0.8%	0.4%	0.7%	0.7%
022779	Ross University - Veterinary	0.0%	0.5%	0.0%	0.8%	0.3%	0.6%	0.7%	0.2%
	American Public Education (APEI)								
038193	American Public University System	3.3%	11.1%	7.2%	11.9%	13.0%	23.3%	20.1%	23.6%
040743	Hondros College	N.A.	N.A.	6.4%	12.7%	12.1%	11.8%	11.4%	11.4%
	Apollo Education Group								
020988	University of Phoenix	15.9%	21.2%	26.4%	26.0%	19.0%	13.5%	13.3%	12.8%
021715	Western International Univ.	26.5%	16.3%	13.7%	10.8%	12.0%	14.7%	12.2%	10.5%
	Bridgepoint Education (BPI)								
001881	Ashford University	17.4%	20.0%	19.8%	16.3%	15.3%	15.3%	14.5%	14.9%
035453	University of the Rockies	0.0%	2.6%	3.3%	8.0%	6.7%	4.3%	3.8%	5.5%
	Career Education (CECO)								
	Maximum	32.6%	28.5%	31.5%	31.6%	26.6%	25.9%	23.8%	17.2%
	Minimum	7.7%	12.1%	12.2%	11.6%	12.6%	10.5%	8.7%	11.8%
	Median	19.7%	20.4%	26.3%	24.0%	21.4%	23.1%	20.4%	22.7%
	American InterContinental University Atlanta/Buckhead, GA (Atlanta/Dunwoody, GA; Weston, FL, Los Angeles, CA, Houston, TX;								
021136	London, England, Online)	19.7%	21.6%	27.3%	23.2%	20.9%	17.7%	14.9%	17.2%
020757	Briarcliffe College, Bethpage, NY	17.1%	20.7%	21.2%	20.0%	15.1%	16.7%	16.3%	16.0%
	Colorado Technical University (Colorado Springs & Denver, CO; North Kansas City,								
010148	MO; and Sioux Falls, SD; Online)	22.3%	23.1%	24.9%	22.8%	19.4%	17.7%	14.5%	16.7%
020552	Harrington College of Design, Chicago, IL	7.7%	12.1%	12.2%	13.6%	13.1%	11.5%	9.3%	11.8%
	Sanford Brown Institute								
022023	Pittsburgh, (Monroeville, PA)	22.3%	15.5%	24.3%	26.6%	24.2%	22.3%	23.5%	30.0%
	Other Cooking/Hospitality Schools								
025693	Le Cordon Bleu (Austin, TX)	13.3%	22.1%	28.8%	29.7%	31.6%	30.5%	19.6%	24.1%
023522	Le Cordon Bleu (Chicago, IL)	12.1%	18.7%	28.2%	23.2%	26.6%	27.5%	24.6%	27.5%
032103	Le Cordon Bleu (Pasadena, CA)	8.4%	14.9%	20.6%	26.7%	25.9%	23.6%	20.0%	21.2%
030226	Le Cordon Bleu (Portland, OR)	12.5%	19.8%	23.9%	24.0%	22.6%	24.5%	24.4%	26.8%
026167	Le Cordon Bleu (Scottsdale, AZ)	17.0%	20.1%	26.4%	28.5%	26.2%	25.7%	21.3%	24.9%

Source: Department of Education and BMO Capital Markets.

Exhibit 152: Three-Year Cohort Default Rates for Public Postsecondary School Operators (cont'd.)

OPEID		3-Year CDRs FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014
	Education Management (EDMC)								
	Maximum	30.9%	22.6%	28.6%	26.2%	24.9%	20.2%	19.3%	20.9%
	Minimum	2.5%	2.7%	10.4%	13.7%	11.4%	9.7%	9.3%	12.8%
	Median	15.2%	14.5%	21.5%	20.0%	19.2%	14.9%	14.7%	14.9%
009270	Art Institute of Atlanta (The)	15.7%	18.9%	26.5%	23.5%	22.3%	15.3%	16.6%	18.7%
021286	Art Institute of Cincinnati (The)	2.5%	12.5%	25.6%	20.0%	16.2%	15.2%	12.8%	13.9%
020789	Art Institute of Colorado (Denver)	12.6%	11.9%	17.0%	18.5%	18.7%	12.8%	15.0%	15.8%
010195	Art Institute of Fort Lauderdale (The)	18.1%	14.9%	21.4%	19.4%	19.2%	14.9%	14.6%	15.6%
021171	Art Institute of Houston (The)	21.9%	20.4%	25.4%	25.2%	22.8%	19.7%	18.5%	14.9%
008350	Art Institute of Philadelphia (The)	15.2%	18.2%	24.0%	20.1%	16.6%	14.9%	14.4%	14.9%
040513	Art Institute of Phoenix (The)	N.A.	20.3%	26.3%	26.2%	24.6%	18.1%	19.3%	20.9%
007470	Art Institute of Pittsburgh (The)	13.0%	17.5%	23.3%	25.4%	24.9%	20.2%	19.0%	20.4%
007819	Art Institute of Portland (The)	8.4%	6.7%	12.4%	13.7%	11.4%	9.7%	10.2%	14.2%
022913	Art Institute of Seattle (The)	10.6%	12.5%	14.6%	17.2%	16.3%	11.6%	11.6%	12.8%
025578	Art Institute of York (The) - Pennsylvania	7.6%	10.5%	10.4%	18.3%	19.5%	16.1%	14.0%	12.8%
010248	Art Institute of Minnesota, Minneapolis, MN	10.0%	10.8%	15.7%	15.9%	13.4%	11.6%	12.7%	13.1%
012584	Illinois Institute of Art, Chicago, IL	12.1%	12.0%	18.7%	19.9%	18.9%	14.3%	15.4%	15.2%
008878	Miami International University of Art & Design, Miami FL	16.2%	18.2%	23.4%	22.2%	20.5%	13.0%	14.7%	13.7%
007486	The New England Institute of Art, Boston, MA	11.1%	12.4%	14.5%	17.1%	14.7%	12.0%	9.3%	13.1%
021799	Argosy University (all locations reported as one university)	5.3%	5.7%	13.4%	15.8%	19.4%	13.2%	13.9%	15.2%
013039	South University (all locations reported as one)	16.4%	16.5%	21.5%	23.0%	23.1%	17.0%	15.8%	14.8%
006755	Brown Mackie College (all locations)	25.4%	22.6%	23.1%	20.1%	19.2%	18.0%	19.3%	20.8%

Source: Department of Education and BMO Capital Markets.

Exhibit 152: Three-Year Cohort Default Rates for Public Postsecondary School Operators (cont'd.)

		3-Year CDRs							
		FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014
	Grand Canyon Education (LOPE)								
001074	Grand Canyon University	2.9%	7.4%	15.1%	19.5%	15.8%	10.3%	9.2%	8.5%
	Laureate Education (LAUR)								
025042	Walden University	3.0%	3.0%	4.2%	5.4%	7.8%	6.8%	6.7%	7.5%
	Lincoln Educational Services (LINC)								
	Maximum	42.2%	41.5%	36.2%	38.8%	26.5%	18.8%	15.4%	13.6%
	Minimum	16.7%	14.8%	16.8%	19.0%	16.6%	11.9%	10.5%	5.2%
	Median	25.0%	24.6%	27.2%	27.7%	25.4%	16.4%	12.0%	11.8%
009407	Lincoln College of New England (fka Briarwood)	25.4%	23.0%	16.8%	19.0%	16.6%	12.4%	10.5%	5.2%
007936	Lincoln College of Technology: Columbia, MD	26.7%	26.9%	28.1%	29.9%	26.0%	18.8%	15.4%	13.6%
007938	Lincoln College of Technology: Indianapolis, IN	25.5%	27.6%	33.9%	34.0%	26.1%	17.9%	12.9%	12.3%
012461	Lincoln Technical Institute: Edison, NJ	29.0%	31.6%	31.0%	27.3%	25.4%	16.6%	12.1%	8.4%
007303	Lincoln Technical Institute: New Britain, CT	16.8%	19.7%	24.0%	30.4%	26.5%	16.4%	10.6%	11.8%
	Strategic Education (STRA)								
001459	Strayer University	13.0%	12.8%	13.8%	15.2%	14.9%	11.6%	11.3%	13.2%
032673	Capella University	5.5%	6.5%	9.7%	10.9%	13.0%	8.9%	6.5%	6.9%
	Universal Technical Institute (UTI)								
	Maximum	14.1%	13.1%	16.4%	21.6%	21.6%	18.9%	18.9%	18.3%
	Minimum	13.5%	11.1%	14.3%	18.9%	18.8%	17.1%	14.5%	13.9%
	Median	13.7%	13.1%	16.0%	20.2%	19.5%	18.3%	18.6%	15.8%
008221	Universal Technical Institute: Avondale, AZ	13.5%	11.1%	14.3%	18.9%	18.8%	17.1%	14.5%	13.9%
021005	Universal Technical Institute: Phoenix, AZ	14.1%	13.1%	16.0%	20.2%	19.5%	18.9%	18.9%	18.3%
023620	Universal Technical Institute: Houston, TX	13.7%	13.1%	16.4%	21.6%	21.6%	18.3%	18.6%	15.8%

Source: Department of Education and BMO Capital Markets.

Following the Great Recession, we believe rising CDRs became a major concern for the industry. However, we believe most schools have been effective in keeping CDRs below threshold levels, owing to the various debt management tools available to them. These principally include the use of loan forbearance, deferments, and consolidations.

- Forbearance is granted when students are unable to pay their loans and enables them to stop or reduce monthly payments for up to 12 months.
- A deferment is granted for similar reasons and can last up to three years.
- Consolidations can also reduce payments and/or interest payments for a specified period.

While one may argue these methods simply push an inevitable default out beyond the CDR measurement window, the ED actively encourages the use of these debt management tools, and we believe the for-profit industry is very effective in ensuring their students take advantage of them.

"90/10" rule. A for-profit institution that derives more than 90% of its cash-basis revenues from Title IV funding for any two consecutive fiscal years cannot participate in this program for the subsequent two years. An institution can regain eligibility by meeting state licensing, accreditation, and financial responsibility requirements for at least the subsequent two fiscal years. If a school exceeds the 90% threshold for one year, the ED will place it on provisional certification for at least two years.

As part of the reauthorized Higher Education Opportunity Act (HEOA) in August 2008, the violation period was expanded to two years from one. The two-year rule gives schools a year to get their "house in order" before they become ineligible. 90/10 rates are typically measured on an institution's fiscal year and are usually reported in each company's 10K.

Non-Title IV revenues (which must be at least 10% of total cash revenues) can include (but are not limited to) the following:

- Cash payments, including those from non-Title IV eligible students (e.g., international) in eligible programs.
- Loans from sources outside of the institution (third-party or alternative loans).
- Payments on institutional loans (those provided by the school itself). Effective July 1, 2012, institutional loan revenues are calculated on the cash basis accounting model (prior to this, schools could count revenue from internal loans on an accrual method based on revenues earned).

- Scholarships provided by an organization independent of the institution.
- Sale proceeds on nonrecourse loans and/or receivables.
- Department of Defense tuition assistance.
- State grants.

The 90/10 rule applies only to for-profit institutions

The 90/10 rule applies only to for-profit institutions ("Section 102 institutions"). We believe this puts an artificial constraint on the sector and adds another layer of red tape that schools must negotiate to stay within compliance. An August 2013 analysis by Mark Kantrowitz of Edvisors noted that if all schools needed to comply with this regulation, public two-year schools (community colleges) would fail when measured as a group as they received 98% of their cash receipts from Title IV funds in aggregate; only 20% of such schools would have been in compliance in the 2011-2012 school year. In addition, as federal loans increased, this had typically led schools to raise tuition to ensure the Title IV portion of total revenue remains below 90%.

Recent 90/10 relief has expired

The reauthorized HEOA (enacted on August 14, 2008) did provide some initial 90/10 relief to for-profit schools, although this provision has since expired. That rule allowed institutions to count the $2,000 increase in Stafford loan limits (effective July 1, 2008) as part of the 10% non-Title IV revenues through the 2010-2011 academic year (ending June 2011). In addition, institutional aid (school lending) and scholarships were included in the 10% through the end of the 2011-2012 academic year (ending June 2012). While this may have allowed some schools to avoid raising tuition rates, most schools did not implement tuition rate freezes in either of those years.

Examples of how some institutions manage their 90/10 risk

We believe companies have several tools to help manage 90/10 levels. Historically, schools would just raise tuition. However, given the need to keep prices down, this is not a very desirable option for many institutions, in our view. Other methods being used to manage 90/10 include the following:

- **Collecting cash from students.** Some schools have required minimum cash payments from students in an attempt to remain below the 90% threshold.
- **Teaching out non-complying locations.** Companies such as Career Education (CECO) and Lincoln Educational Services (LINC) have taught out locations to reduce locations with poor outcomes and other non-complying regulatory measures.
- **Corporate tuition reimbursement/corporate training programs.** We believe that corporate tuition reimbursement represents the Holy Grail for this industry and that most schools have some program in place to build this channel. However, it remains difficult for schools to build this to a large component of overall revenue. Strategic Education's (STRA) Strayer University likely has the largest corporate revenue base, estimated at 20-25% of revenues, but we estimate that this exposure is in the mid- to low-single-digit range for the rest of the industry.
- **Acquiring businesses that generate non-Title IV sourced cash.** A recent trend has been the acquisition of coding schools, including Capella Education's purchase of Hackbright Academy (April 2016) and DevMountain (May 2016); and Strayer Education's (now Strategic Education; STRA) purchase of the New York Code and Design Academy (January 2016).
- **Generating ancillary revenues.** Career Education (CECO) had operated a chain of student-run restaurants called Technique, tied to its Le Cordon Bleu culinary schools. In December 2015, the company announced plans to teach out its network of these schools.
- **Consolidating OPEIDs.** Many schools have sought to combine locations into one OPEID to engineer a more favorable blended 90/10 ratio. However, this requires approval from the ED, accreditors, and state regulators and is not always successful. In late July 2012, CECO announced it had withdrawn plans to consolidate as many as 19 of its OPEIDs into one, owing to the complexities and delays in the process.

- **Deferring taking Title IV funds.** CECO delayed the receipt of $24.3 million in Title IV funds from 2012 to 2013, while Corinthian Colleges delayed the receipt of $87 million in Title IV funds from June 2011 to July 2012, thereby ensuring their respective institutions were below the 90% threshold in 2012 and FY2011.

- **Military and veterans tuition assistance programs.** While revenues from these programs are currently included in the 10% component of the calculation, there are efforts under way to change this, as discussed later.

Title IV exposure for most for-profits has stabilized

We have provided historical Title IV percentages for a select group of for-profit providers in the following table. On a consolidated basis, most companies remain relatively safely below the 90% threshold. While we had expected 90/10 rates to increase as companies increased their use of scholarships and discounts, this has not had a material impact to date, in our view.

Exhibit 153: Title IV Contribution for Selected For-Profit Providers (FY2007–FY2017)

Company	*Ticker*	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Adtalem Global Education	ATGE	70%	75%	77%	77%	81%	75%	72%	68%	66%	85%	85%
American Public Education	APEI	14%	19%	N.A.	N.A.	N.A.	43%	46%	36%	32%	43%	41%
Bridgepoint Education (Ashford Univ.)	BPI	83.9%	86.8%	82.5%	85%	86.8%	86.4%	85.6%	83.4%	80.9%	81.2%	80.8%
Career Education	CECO	62.7%	69.2%	80.1%	82%	83%	80%	78%	78%	77%	76%	78%
Capella Education	STRA	74%	75%	78%	78%	79%	79%	78%	77%	75%	77%	76%
Grand Canyon Education	LOPE	74%	78.6%	82.5%	84.9%	80.2%	80.3%	78.5%	76.5%	74.8%	72.3%	71.5%
Laurate Education	LAUR	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	74.0%	73.0%	73.0%	73.0%
Lincoln Educational Services (avg.)	LINC	80%	79%	81%	83%	84%	83%	80%	80%	80%	79%	80%
National Amer. Univ. Holdings	NAUH	63%	68%	72%	76%	79%	84.7%	89.7%	89.3%	89.2%	86.8%	82.6%
Strategic Education	STRA	72%	N.A.	N.A.	N.A.	N.A.	74%	74%	73%	74%	75%	N.A
Universal Technical Institute	UTI	68%	72%	73%	73%	75%	75%	68%	66%	73%	72%	73%
MEDIAN		**71%**	**72%**	**80%**	**82%**	**81%**	**79%**	**77%**	**77%**	**75%**	**77%**	**77%**

Note: Data reflects school or fiscal years and measures percentage of cash receipts. N.A. – Not Available. Source: BMO Capital Markets and company reports.

Financial responsibility standards. A blended score of three financial ratios—equity (measures the institution's capital resources, financial viability, and ability to borrow; 40% weighting), profitability (measures the institution's profitability or ability to operate; 30% weighting), and reserve strength (measures the institution's viability and liquidity; 30% weighting)—is used to ensure the institution is financially viable for its students to be eligible for Title IV funding.

An institution's financial ratios must yield a composite score of at least 1.5 (of a possible 3.0) for it to be deemed financially responsible without the need for further federal oversight. For scores of 1-1.4, the school is considered financially responsible but additional oversight is required (e.g., subject to heightened cash monitoring, which, in essence, delays the receipt of future Title IV funds). An institution with a score below 1 is considered not financially responsible and must submit a letter of credit of at least 50% of its prior year's Title IV funding. The school may be permitted to participate in the Title IV program under provisional certification with a smaller letter of credit, with a minimum of 10% of its Title IV funding.

A listing of historical financial-responsibility ratios for the publicly held providers is found in the following table.

Exhibit 154: Selected For-Profit Postsecondary School Operators Financial-Responsibility Ratios (FY2007–FY2017)

Company	*Ticker*	*FYE*	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Adtalem Global Education	ATGE	6	> 1.5	> 1.5	> 1.5	> 1.5	> 1.5	> 1.5	> 1.5	>1.5	>1.5	>1.5	>1.5
American Public Education	APEI	12	3.0	3.0	3.0	3.0	3.0	3.0	3.0	N.A.	N.A.	N.A.	N.A.
Bridgepoint Education (Ashford Univ.)	BPI	12	0.6	1.6	2.9	3.0	3.0	3.0	3.0	2.7	1.8	2.0	2.5
Career Education	CECO	12	> 1.5	> 1.5	> 1.5	> 1.5	> 1.5	1.6	1.5	1.5	1.7	1.9	3.0
Capella Education	STRA	12	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	N.A.
Grand Canyon Education	LOPE	12	> 1.5	> 1.5	>1.5	2.5	2.2	2.9	3.0	3.0	2.6	2.5	3.0
Lincoln Educational Services	LINC	12	1.8	1.8	2.0	1.8	2.1	1.6	1.5	1.3	1.9	1.5	1.1
National Amer. Univ. Holdings	NAUH	5	0.2	0.5	1.6	2.4	3.0	2.7	2.4	2.3	3.0	1.8	1.8
Strategic Education	STRA	12	3.0	3.0	N.A.	> 1.5	> 1.5	> 1.5	> 1.5	>1.5	>1.5	>1.5	>1.0
Universal Technical Institute	UTI	9	>1.5	>1.5	> 1.5	> 1.5	> 1.5	> 1.5	> 1.5	>1.5	1.4	1.7	2.2
MEDIAN			**2.4**	**2.4**	**2.7**	**2.5**	**3.0**	**2.9**	**2.9**	**2.7**	**2.3**	**1.9**	**2.2**

Note: N.A. – Not Available. Source: BMO Capital Markets and company reports.

Heightened cash monitoring. The ED occasionally places some colleges under extra scrutiny, known as heightened cash monitoring (HCM), which has the following restrictions:

- HCM 1: Colleges must disburse student aid funds prior to requesting reimbursement from the ED. Ordinarily, colleges are allowed "advance payment," by which they can submit requests for student aid before disbursing funds.
- HCM 2: In addition to prior disbursement of funds, schools must also submit additional documentation specified by the ED on a case-by-case basis. Once placed on this list, schools remain there for five years.

Colleges can be placed under HCM 1 status for a variety of reasons, which range from a low financial responsibility score (an ED measure of financial health) to issues related to timely audits and administrative capability. Colleges are placed under the more severe HCM 2 status when there are serious ED concerns over the financial integrity of the institution. We note that roughly 10% of all colleges that participate in federal student aid programs are under HCM (for-profit colleges comprise the majority of these institutions).

As of June 2018, the following public companies have schools under HCM 1 status: Adtalem Global Education (ATGE), Career Education (CECO), Education Management (EDMC) and Laureate Education (LAUR). No public companies had schools under HCM 2 status. A list of the schools under HCM status owned by publicly held companies is in the following table.

Exhibit 155: Department of Education Heightened Cash Monitoring List (Public Company-Owned Schools—June 2018)

OPE ID	Institution Name	City	State	Ticker	Institution Type	Stop Pay/Monitor Method	Method/Reason Description
02179900	Argosy University	Orange	CA	EDMC	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility
00927000	Art Institute of Atlanta (The)	Atlanta	GA	EDMC	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility
02078900	Art Institute of Colorado (The)	Denver	CO	EDMC	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility
01019500	Art Institute of Fort Lauderdale (The)	Fort Lauderdale	FL	EDMC	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility
02117100	Art Institute of Houston (The)	Houston	TX	EDMC	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility
00835000	Art Institute of Philadelphia (The)	Philadelphia	PA	EDMC	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility
04051300	Art Institute of Phoenix (The)	Phoenix	AZ	EDMC	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility
00747000	Art Institute of Pittsburgh (The)	Pittsburgh	PA	EDMC	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility
00781900	Art Institute of Portland (The)	Portland	OR	EDMC	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility
02291300	Art Institute of Seattle (The)	Seattle	WA	EDMC	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility
01014800	Colorado Technical University	Colorado Springs	CO	CECO	Proprietary	HCM - Cash Monitoring 1	Administrative Capability
01072700	DeVry University	Chicago	IL	ATGE	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility
01258400	Illinois Institute of Art (The)	Chicago	IL	EDMC	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility
00170300	Kendall College	Chicago	IL	LAUR	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility
01303900	South University	Savannah	GA	EDMC	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility
03171300	University of St. Augustine for Health Sciences	San Marcos	CA	LAUR	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility
02504200	Walden University	Minneapolis	MN	LAUR	Proprietary	HCM - Cash Monitoring 1	Financial Responsibility

Source: BMO Capital Markets and US Department of Education.

The HCM list gained more attention following the collapse of Corinthian Colleges. On June 19, 2014, the ED announcement that it had placed the company on HCM due to the delay in answering requests for information regarding placement rates and other issues, putting a 21-day delay on its receipt of Title IV federal financial aid, which the company claimed could lead to its shutdown, due to its inability to meet its interest obligations following the delay. On June 23, 2014, Corinthian announced it had reached a memorandum of understanding (MOU) with the ED to, in essence, wind down its operations. On May 4, 2015, Corinthian Colleges, Inc. and 24 of its subsidiaries filed a Chapter 11 bankruptcy in the U.S. Bankruptcy Court for the District of Delaware.

Key Rule Changes From the Obama Administration

In his first address to Congress in February 2009, President Obama highlighted education as a chief policy priority and asked that every American commit to obtaining an additional year of higher education or training. He also set a goal that by 2020 America would have the highest proportion of college graduates in the world.

President Obama's 2009 appointments to the ED (Martha Kanter as undersecretary and Robert Shireman as deputy undersecretary) were key in driving the regulatory battle that raged during most of his first term and ultimately caused transformative changes in the for-profit industry. Given Kanter and Shireman's backgrounds (chancellor of the Foothill-De Anza Community College District and founder of Institute for College Access and Success, respectively), we were not particularly surprised at the ED's efforts to cast community colleges in a more favorable light as less costly alternatives to for-profit schools. For example, in July 2009, Obama proposed the American Graduation Initiative to spend $12 billion over 10 years to boost community colleges. However, this proposal was dropped in 2010. We note that Shireman left this post in June 2010, while Kanter left in the fall 2013.

Under their tenure, however, significant changes were made, particularly affecting the for-profit sector under the negotiated rulemaking ("neg-reg") sessions held in the summer and fall 2009; most of these became effective in July 2011. We summarize two of the main issues that affected the for-profit sector below.

Recruiter-based incentive compensation ("incentive-compensation rule"). This rule prohibited schools from paying bonuses to recruiters based on how many students they enroll. While this had already been illegal prior to this neg-reg, there were certain "safe harbors" that had been in place since 2002 that essentially provided loopholes for the industry. The new rules banned these safe harbors. We believe this has had a profound impact on the industry as many for-profit schools had to reorganize their salesforces from a commission-based system to a salary-based system. While the schools have managed through this change, we believe it has permanently altered their selling strategies. The specific safe harbors are shown in the following table.

Exhibit 156: "Safe Harbors" for Incentive Compensation Rule

Safe Harbor #	Issue	Details
1	Adjustments to employee compensation	A school may make **up to two adjustments** (upward or downward) to a covered employee's annual salary or fixed hourly wage rate **within any 12-month period** without the adjustment being considered an incentive payment, provided that no adjustment is based solely on the number of students recruited, admitted, enrolled, or awarded financial aid. **One cost-of-living increase that is paid to all** or substantially all of the school's full-time employees will not be considered an adjustment under this safe harbor. In addition, with regard to overtime, if the basic compensation of an employee is not an incentive payment, neither is overtime pay required under the Federal Fair Labor Standards Act.
2	Recruitment into programs that are not eligible for (Federal Student Aid) FSA program funds	A school **may provide incentive compensation** to recruiters based upon their recruitment of students who enroll only in programs that are not eligible for FSA funds.
3	Payment for securing contracts with employers	This safe harbor addresses payments to recruiters who arrange contracts between a school and an employer, where the employer pays the tuition and fees for its employees (either directly to the school or by reimbursement to the employee). As long as there is no direct contact by the school's representative with prospective students, and as long as the employer is paying at least 50% of the training costs, **incentive payments to recruiters who arrange for such contracts are not covered by the incentive payment prohibition,** provided that the incentive payments are not based on the number of employees who enroll, or the amount of revenue generated by those employees.
4	Profit-sharing or bonus payments	Profit-sharing and bonus payments to all or substantially all of a school's full-time employees are **not incentive payments** based on success in securing enrollments or awarding financial aid. As long as the profit-sharing or bonus payments are substantially the same amount or the same percentage of salary or wages, and as long as the payments are made to all or substantially all of the school's full-time professional and administrative staff, compensation paid as part of a profit-sharing or bonus plan is not considered a violation of the incentive payment prohibition. In addition, such payments can be limited to all or substantially all of the full-time employees at one or more organizational levels at the school, except that an organizational level may not consist predominantly of recruiters, the admissions staff, or the financial aid staff.
5	Compensation based upon students completing their programs of study	Compensation that is based upon students successfully completing their educational programs, or one academic year of their educational programs, whichever is shorter, **does not violate the incentive compensation prohibition**. Successful completion of an academic year means that the student has earned at least 24 semester or trimester credit hours or 36 quarter credit hours, or has successfully completed at least 900 clock hours of instruction at the school . (Time may not be substituted for credits earned.) In addition, the 30 weeks of instructional time element of the definition of an academic year does not apply to this safe harbor. Therefore, this safe harbor applies when a student earns, for example, 24 semester credits, no matter how short or long a time that takes.
6	Payments to employees for pre-enrollment activities	A school **may make incentive payments to individuals whose responsibilities are limited to pre-enrollment activities** that are clerical in nature. However, soliciting students for interviews is a recruitment activity, not a pre-enrollment activity, and individuals may not receive incentive compensation based on their success in soliciting students for interviews. In addition, since a recruiter's job description is to recruit, it would be very difficult for a school to document that it was paying a bonus to a recruiter solely for clerical pre-enrollment activities.
7	Compensation paid to managerial and supervisory employees not involved in	The incentive payment prohibition does not extend beyond first line supervisors or managers. Direct supervisors are included in this prohibition because their actions generally have a direct and immediate impact on the individuals who carry out these covered activities.
8	Token gifts	The **maximum cost of a token, noncash gift** that may be provided to an alumnus or student is **$100**, provided that: the gifts are not in the form of money; and no more than one gift is provided annually to an individual. The cost basis of a token noncash gift is what the school paid for it. The value is the fair market value of the item. A high value item for which the school paid a minimal cost would not be considered a token gift.
9	Profit distributions	**Profit distributions to owners are not payments** based on success in securing enrollments or awarding financial aid. Therefore any owner, whether an employee or not, is entitled to a share of the organization's profits to the extent they represent a proportionate share of the profits based upon the employee's ownership interest.
10	Internet-based recruiting activities	This safe harbor **permits a school to award incentive compensation for Internet-based recruitment** and admission activities that provide information about the school to prospective students, refer prospective students to the school, or permit prospective students to apply for admission online.
11	Payments to third parties for services to the school that do not include recruitment activities	A school **may make incentive payments to third parties for other types of services,** including tuition-sharing arrangements, marketing, and advertising that are not covered by the incentive compensation prohibition.
12	Payments to third parties for services that include recruitment activities	If a school uses an outside entity to perform activities for it, including covered activities, **the school may make incentive payments** to the third party without violating the incentive payment prohibition as long as the individuals performing the covered activities are not compensated in a way that is prohibited by the incentive payment compensation rule.

Source: Knutte & Associates.

The ED provided further clarification of the incentive compensation ban in March 2011.

Exhibit 157: Incentive Compensation: Covered vs. Exempt Activities in ED Dear Colleague Letter (March 2011)

Covered Activities Activities that are ALWAYS subject to the ban on incentive compensation.	Exempt Activities Activities not subject to the ban on incentive compensation include the following, unless the activities of the employee or entity also involve a covered activity.
Recruitment activities, including: • Targeted information dissemination to individuals • Solicitations to individuals • Contacting potential enrollment applicants • Aiding students in filling out enrollment application information	**Marketing activities, including:** • Broad information dissemination • Advertising programs that disseminate information to groups of potential students; • Collecting contact information • Screening pre-enrollment information to determine whether a prospective student meets the requirements that an institution has established for enrollment in an academic program • Determining whether an enrollment application is materially complete, as long as the enrollment decision remains with the institution
Services related to securing financial aid, including: • Completing financial aid applications on behalf of prospective applicants (including activities which are authorized by the Department, such as the FAA Access tool, which can be used to enter, correct, verify, or analyze financial aid application data)	**Student support services offered after the point at which financial aid is allowed to be disbursed for a payment period, including:** • General student counseling • Career counseling • Financial aid counseling, including loan • management • Online course support - both professional services and computer hardware and software • Academic support services, including tutoring, aimed at student retention, whether that support is provided prior to attendance in classes or after attendance has begun
	Policy decisions made by senior executives and managers related to the manner in which recruitment, enrollment, or financial aid will be pursued or provided, such as, e.g., decisions to admit only high school graduates

Source: US Department of Education.

Lead generators also affected

While we believe most third-party lead generation services would be "exempt" under the new incentive compensation ban, some schools announced a restructuring of their agreements with their lead generators to ensure compliance with the new rules. In addition, we believe most "lead gen" providers chose to err on the side of caution and not engage in activity that could be in that gray area of the rules.

The rules did allow payments to unaffiliated third parties if the services they provide are based on enrollment levels (i.e., online course delivery), and also allowed bonus payments to senior executives for performance related to "non-covered" activities.

Gainful Employment (GE) 2.0. While in early August 2018, the Department of Education proposed rescinding these regulations, we believe it is important for investors to understand GE and its impact on the sector.

Gainful employment rules: a "game changer" for the sector

The initial GE rules were justified under the Higher Education Act of 1965, which states that Section 102 schools (proprietary or for-profit providers) needed to provide programs that deliver "gainful employment in a recognized occupation" to be eligible to receive Title IV (federal financial aid) funds. This rule applies to all for-profit programs (except liberal arts baccalaureate degree programs), as well as to non-degreed programs at not-for-profit institutions (career colleges).

On October 30, 2014, ED released the final GE regulations, which were posted to the Federal Register on November 1, 2014, and became effective July 1, 2015. To comply, programs must meet at least one of the following criteria:

1. **Annual debt-to-earnings (aDTE) ratio.** Annual student loan payments must be less than 12% of typical graduates' total earnings. A program is in the "zone" if payments are over 8%.
2. **Debt-to-discretionary income (dDTE) ratio.** Annual student loan payments must be less than 30% of typical graduates' discretionary income (150% of the poverty level, or $11,770 for a family of one, according to the U.S. Department of Health and Human Services for 2015). A program is in the "zone" if payments are over 20%.

Potential loss of Title IV funding. Programs **that fail both of these two metrics in two of any three consecutive years** or are in the **zone (on at least one metric) for four consecutive years** would be ineligible for Title IV funding for the subsequent three years. We summarize the key provisions below.

Exhibit 158: Summary of Provisions for Gainful Employment 2.0

Accountability	
Certifications	Institutions must certify that each of their gainful employment programs meet state and federal licensure, certification, and accreditation requirements.
Metric	To maintain title IV eligibility, gainful employment programs will be required to meet minimum standards for the debt vs earnings of their graduates
PASS	Programs whose graduates have annual loan payments less than 8% of total earnings OR less than 20% of discretionary earnings
ZONE	Programs whose graduates have annual loan payments between 8% and 12% of total earnings OR between 20% and 30% of discretionary earnings
FAIL	Programs whose graduates have annual loan payments greater than 12% of total earnings AND greater than 30% of discretionary earnings.
INELIGIBLE	Programs that fail in 2 out of any 3 consecutive years OR are in the zone for 4 consecutive years.
Transparency	
Disclosures	Institutions will be required to make public disclosures regarding the performance and outcomes of their gainful employment programs. The disclosures will include information such as costs, earnings, debt and completion rates

Source: U.S. Department of Education and BMO Capital Markets.

Other details include:

- The minimum program size for analysis is 30 students.
- The population measured is those that have completed these programs.
- Annual loan payments are calculated using an annual interest rate and amortization period for the median loan debt (both public and private) related to tuition (plus an estimate for books and equipment per program) and for the cohort of students in the program.

Amortization periods are the following:

- 10 years for undergraduate associate and certificate programs
- 15 years for bachelor's and master's degree programs
- 20 years for doctoral and first professional degree programs

Earnings data are obtained from the Social Security Administration and are measured for the most recently completed calendar year. The data for the 2014-2015 award year (first year of release) was released to the public on January 9, 2017.

- The debt to earnings rates were calculated using earnings (obtained from the Social Security Administration) for calendar year 2014 and the median loan debt (with average interest rate) of the applicable student cohort.

- The applicable student cohort for the 2014-2015 award year was as follows: two-year cohort 2010-2011 and 2011-2012 completed years; and four-year cohort 2008-2009, 2009-2010, 2010-2011, and 2011-2012 competed years.

Assuming a program fails for the first two consecutive years (2014-2015 and 2015-2016 award years), we believe the earliest it would become ineligible for Title IV funding would be late 2017. However, most experts we have spoken with believe this date may be delayed a bit, given the delays already seen in GE 2.0 implementation.

What is the impact of GE on the sector?

What is the impact of GE on the sector? The proprietary (for-profit) sector of the industry is most at risk of losing Title IV funding from noncompliance to GE. More than 800 programs "failed" the 2014-2015 GE test, nearly all (98%) of which were programs run by the proprietary (for-profit) institution.

We have summarized the 2014-2015 award-year data released by the ED (released in January 2017), comparing "fail" and "zone" rates to the data from the FY2012 informational rates released in March 2014.

- Roughly 9.3% of all programs failed (up slightly from 9% for the FY2012 informational rates). Another 14% were in the "zone" (down from the prior 17%).
- For the for-profit sector, roughly 14% failed (up from 12%), and nearly another 21% were in the "zone" (down slightly from prior 22%).

Exhibit 159: Gainful Employment Analysis of D/E Rates Compliance (2014-2015 Award Year)

	Institution Type	Credential Level	Programs	FAIL	PASS	ZONE	FAIL	PASS	ZONE
Public	2-3 years	Undergraduate Certificate	1,896		1,890	6	--	100%	0%
		Post-Baccalaureate Certificate	2		2		--	100%	--
	4 years or more	Undergraduate Certificate	239		238	1	--	100%	0%
		Post-Baccalaureate Certificate	15		15		--	100%	--
		Graduate Certificate	48		48		--	100%	--
	Less than 2 years	Undergraduate Certificate	293		291	2	--	99%	1%
	All Public	**All**	**2,493**	**0**	**2,484**	**9**	**--**	**100%**	**0%**
Private	2-3 years	Undergraduate Certificate	172	6	128	38	3%	74%	22%
		Post-Baccalaureate Certificate	1		1		--	100%	--
	4 years or more	Undergraduate Certificate	144	7	120	17	5%	83%	12%
		Post-Baccalaureate Certificate	25		23	2	--	92%	8%
		Graduate Certificate	43	3	40		7%	93%	--
	Less than 2 years	Undergraduate Certificate	78		70	8	--	90%	10%
	All Private	**All**	**463**	**16**	**382**	**65**	**3%**	**83%**	**14%**
For-Profit	2-3 years	Undergraduate Certificate	1,388	77	1,083	228	6%	78%	16%
		Associates Degree	650	155	312	183	24%	48%	28%
		Bachelors Degree	3	3			100%	--	--
		Post-Baccalaureate Certificate	1		1		--	100%	--
	4 years or more	Undergraduate Certificate	416	26	294	96	6%	71%	23%
		Associates Degree	812	279	293	240	34%	36%	30%
		Bachelors Degree	595	157	330	108	26%	55%	18%
		Post-Baccalaureate Certificate	4		4		--	100%	--
		Masters Degree	267	21	232	14	8%	87%	5%
		Doctoral Degree	47		44	3	--	94%	6%
		Professional Degree	11	3	3	5	27%	27%	45%
		Graduate Certificate	22	2	20		9%	91%	--
	Less than 2 years	Undergraduate Certificate	1,456	63	1,106	287	4%	76%	20%
		Associates Degree	2	1	1		50%	50%	--
		Professional Degree	1		1		--	100%	--
		Graduate Certificate	1		1		--	100%	--
	All For-Profit	**All**	**5,676**	**787**	**3,725**	**1,164**	**14%**	**66%**	**21%**
Foreign Schools	**All**	**Professional Degree**	**5**		**4**	**1**	**--**	**80%**	**20%**
All	**Total**	**All**	**8,637**	**803**	**6,595**	**1,239**	**9%**	**76%**	**14%**

Source: U.S. Department of Education and BMO Capital Markets.

We summarize the 2014-2015 award year results for programs run by publicly held providers below. There are many caveats with this analysis, including the following:

- This data is somewhat backward-looking, as this cohort (for the most part) measures students graduated between July 1, 2010, and June 30, 2012.
- Over the past few years, most, if not all, of these companies have restructured their programs in an attempt to comply with some sort of GE-type regulation, including teach-outs of reductions in cost and/or length of the programs.
- This data has not been vetted by the specific companies and could have errors.
- Enrollment data for these programs were not available.

Least at-risk companies: American Public Education (APEI), Bridgepoint Education (BPI), Capella Education (now part of Strategic Education; STRA), Grand Canyon Education (LOPE), and Universal Technical Institutes (UTI) had no failing programs in this release.

Most at-risk companies: Companies with the most risk include Education Management, with the highest percentage of failing programs in this release, although we believe many of these programs have been restructured.

Exhibit 160: Summary of GE Informational Rates by Company (FY2014 Actual vs. FY2012 Informational)

		FY 2014 G.E Debt-to-Earnings Rates			FY 2014 G.E. Programmatic Results									FY2012 GE 2.0 Programmatic Results				
					Programs					Enrollments				Programs				
Company/School	Ticker	Total Earnings	Discretionary Earnings	Average Earnings	Number of Programs	Fail #	% Fail	Zone #	% Zone	Students (estimated)	Fail #	% Fail	Zone #	% Zone	Number of Programs	Fail #	% Fail	Zone #	% Zone
Adtalem Global Education (formerly DeVry Education Group	**ATGE**	**7.9%**	**48.9%**	**40,471**	**92**	**5**	**5%**	**15**	**16%**	**39,748**	**1,827**	**5%**	**5,530**	**14%**	**80**	**1**	**1%**	**22**	**28%**
American University of the Caribbean		6.7%	7.5%	148,187	1	0	0%	0	0%	361	0	0%	0	0%	N.A.	N.A.	N.A.	N.A.	N.A.
Carrington		7.8%	72.8%	30,518	54	2	4%	10	19%	11,217	69	1%	1,635	15%	52	0	0%	18	35%
Chamberlain		5.3%	7.6%	66,088	3	0	0%	0	0%	3,962	0	0%	0	0%	2	0	0%	0	0%
DeVry University		9.0%	17.4%	45,847	29	3	10%	4	14%	22,417	1,758	8%	3,466	15%	13	0	0%	4	31%
Keller		0.0%	0.0%	54,930	3	0	0%	0	0%	261	0	0%	0	0%	12	0	0%	0	0%
Ross Veterinary School		19.7%	25.4%	79,105	1	0	0%	1	100%	429	0	0%	429	100%	1	1	100%	0	0%
Ross School of Medicine		7.2%	8.0%	155,442	1	0	0%	0	0%	1,101	0	0%	0	0%	N.A.	N.A.	N.A.	N.A.	N.A.
American Public Education	**APEI**	**2.7%**	**4.6%**	**49,240**	**26**	**0**	**0%**	**0**	**0%**	**2,013**	**0**	**0%**	**0**	**0%**	**28**	**0**	**0%**	**0**	**0%**
American Public University		2.4%	4.0%	49,816	24	0	0%	0	0%	1,500	0	0%	0	0%	N.A.	N.A.	N.A.	N.A.	N.A.
Hondros College		6.9%	12.2%	42,322	2	0	0%	0	0%	513	0	0%	0	0%	N.A.	N.A.	N.A.	N.A.	N.A.
Apollo Education Group		**6.6%**	**21.9%**	**47,491**	**111**	**7**	**6%**	**10**	**9%**	**126,403**	**17,772**	**14%**	**13,098**	**10%**	**116**	**2**	**2%**	**8**	**7%**
Univ. of Phoenix		6.9%	24.0%	46,133	97	7	7%	10	10%	125,561	17,772	14%	13,098	10%	98	2	2%	8	8%
Western International		4.7%	7.5%	56,904	14	0	0%	0	0%	842	0	0%	0	0%	18	0	0%	0	0%
Bridgepoint Education	**BPI**	**6.2%**	**18.0%**	**37,951**	**27**	**0**	**0%**	**3**	**11%**	**12,318**	**0**	**0%**	**2,118**	**17%**	**18**	**0**	**0%**	**0**	**0%**
Ashford University		5.9%	18.4%	37,168	24	0	0%	3	13%	11,926	0	0%	2,118	18%	16	0	0%	0	0%
University of the Rockies		8.7%	15.0%	44,217	3	0	0%	0	0%	392	0	0%	0	0%	2	0	0%	0	0%
Capella Education	**STRA**	**6.2%**	**9.4%**	**61,057**	**69**	**0**	**0%**	**1**	**1%**	**6,397**	**0**	**0%**	**75**	**1%**	**96**	**0**	**0%**	**0**	**0%**
Career Education	**CECO**	**8.1%**	**34.9%**	**40,373**	**46**	**8**	**17%**	**9**	**20%**	**61,644**	**10,064**	**16%**	**13,013**	**21%**	**56**	**3**	**26%**	**7**	**18%**
AIU		10.1%	52.7%	29,350	13	5	38%	2	15%	10,747	458	4%	4,479	42%	15	3	20%	3	20%
CTU		7.3%	27.9%	44,715	33	3	9%	7	21%	10,794	2,079	19%	1,892	18%	41	0	0%	4	10%
Education Management	**EDMC**	**13.7%**	**62.1%**	**30,261**	**351**	**165**	**47%**	**89**	**25%**	**39,004**	**17,805**	**46%**	**8,471**	**22%**	**366**	**90**	**25%**	**66**	**18%**
Argosy		11.5%	29.4%	39,967	52	13	25%	11	21%	9,671	2,212	23%	1,892	20%	32	1	3%	3	9%
Art Institutes		14.2%	63.1%	26,984	252	136	54%	65	26%	25,399	14,417	57%	5,878	23%	284	87	31%	55	19%
South		11.8%	38.1%	40,045	36	15	42%	8	22%	3,325	1,135	34%	514	15%	14	0	0%	1	7%
Brown Mackie		8.2%	33.5%	29,228	11	1	9%	5	45%	609	41	7%	187	31%	36	2	6%	7	19%
Graham Holdings Co	**GHC**	**7.7%**	**68.7%**	**23,769**	**193**	**10**	**5%**	**42**	**22%**	**50,215**	**3,083**	**6%**	**11,429**	**23%**	**185**	**3**	**2%**	**39**	**21%**
Grand Canyon Education	**LOPE**	**5.3%**	**9.5%**	**52,847**	**30**	**0**	**0%**	**4**	**13%**	**11,902**	**0**	**0%**	**657**	**6%**	**33**	**0**	**0%**	**3**	**9%**
Laureate Education (Walden University)	**LAUR**	**7.1%**	**12.0%**	**55,516**	**23**	**1**	**4%**	**1**	**4%**	**9,632**	**98**	**1%**	**288**	**3%**	**17**	**0**	**0%**	**2**	**12%**
Lincoln Educational Services	**LINC**	**8.0%**	**90.7%**	**24,051**	**58**	**5**	**9%**	**13**	**22%**	**22,866**	**537**	**2%**	**3,500**	**15%**	**118**	**3**	**3%**	**36**	**31%**
National Amer. Univ. Holdings	**NAUH**	**9.4%**	**24.3%**	**37,177**	**14**	**2**	**14%**	**5**	**36%**	**1,037**	**135**	**13%**	**284**	**27%**	**25**	**0**	**0%**	**1**	**4%**
Strategic Education	**STRA**	**6.6%**	**12.1%**	**42,620**	**19**	**0**	**0%**	**3**	**16%**	**9,236**	**0**	**0%**	**423**	**5%**	**24**	**0**	**0%**	**0**	**0%**
Universal Technical Institutes	**UTI**	**7.2%**	**17.5%**	**32,384**	**12**	**0**	**0%**	**3**	**25%**	**21,653**	**0**	**0%**	**7,248**	**33%**	**12**	**0**	**0%**	**3**	**25%**

N.A. – Not Available. Source: U.S. Department of Education and BMO Capital Markets.

Compliance to GE

In recent years, most companies have dramatically overhauled their programs to comply with GE 2.0, even before the rules became effective. Examples included the following:

- More intense screening during the admissions process to "weed out" student that would likely fail;
- Orientation programs when students first enrolled to ensure a smoother on-boarding process;
- Enhanced students services to improve retention, graduation, and placement;
- An increased use of scholarships to reduce the amount of debt students would incur;

Closing and/or restructuring programs that would likely not comply with GE 2.0 (e.g., bachelor's degree in Culinary Arts).

Trump administration impact

Regulation "rollback" in higher education. In June 2017, the U.S. Dept. of Education (ED) announced plans to revisit two regulations rolled out during the Obama administration that adversely affected the for-profit college sector. The borrower defense to repayment rule (BDTR) was set to take effect in July 2017, allowing student loan forgiveness following claims of misrepresentation or other misconduct. The gainful employment rule (GE), which set Title IV eligibility based on meeting certain debt/earnings criteria, has been in effect since July 2015. The process will be via negotiated rulemaking, which requires federal agencies to seek public input via hearings and to appoint a committee of experts and stakeholders. **While this process will likely take some time, we view this as a positive for the sector.**

- **"Gainful employment" rule**, which applies mostly to the proprietary (for-profit) sector and sets hurdle rates for Title IV eligibility based on meeting certain debt/earnings ratios. In terms of GE (using FY2014 data; latest available), of the companies we cover, only Adtalem Global Education's (formerly DeVry Education Group) had any programs that would have failed GE that year, although we believe the company has revised or is in the process of revising these programs to comply. While all our covered companies had some programs in the "zone" (at risk of later noncompliance), the highest-profile program was ATGE's Ross Veterinary School. In August 2018, the ED announced a proposal to repeal the gainful employment rules and display program-level metrics on student outcomes on the College Scorecard (or similar online tool).

- **"Borrower defense to repayment" (BDTR) rule** allowed repayment forgiveness for student loans following claims that a school misled the student or engaged in other misconduct in violation of certain state laws. BDTR rules were slated to affect all higher institutions, but were mostly used in such high-profile cases as Corinthian Colleges and ITT Educational Services (both no longer around). Nevertheless, it was a cloud hanging over the sector with fears that the ED could seek repayment from the institutions themselves for such loan forgiveness. In July 2018, the ED announced a proposed overhaul of the federal rule to provide a more restrictive process for borrowers for pursuing discharge. The framework provide relief for students if they demonstrate their institution knowingly made false statements in advertising or recruitment materials and only for borrower in default. We expect the regulatory overhaul to reduce the number of borrower claims.

Competency-based education

Competency-based education (CBE). In recent years, we have seen an increased acceptance of programs where Title IV financial aid may be awarded based on students' mastery of "competencies" rather than their accumulation of credits. We believe the increased acceptance of this competency-based model could spur continued growth in postsecondary education, especially for nontraditional students. In 2013 (latest data available), nearly 200,000 students were enrolled in competency-based programs, up from 50,000 in 1990.

The pioneer of this type of program was Western Governors University (WGU), which was incorporated in 1997 as an online, competency-based university. In March 2013, the ED announced that higher education institutions could apply to provide Title IV financial aid to students enrolled in competency-based programs and spelled out a process for doing so. Since that time, we have seen a number of new entrants in this area.

We note that compiling a full list of colleges that offer competency-based programs is difficult because of the rapidly changing landscape of providers and disagreements about what should be considered competency-based education. According to an October 2016 report by RPK Group, there were 200-600 institutions developing CBE programs. A January 2015 report from the American Enterprise Institute identified 52 colleges with CBE programs either in existence or announced as of spring 2014. This list excludes colleges with competency-based programs that do not have at least partial eligibility for federal financial aid. In June 2018, AIR and Eduventures launched a National Survey of Postsecondary Competency-Based Education (NSPCBE), whose results should be published in Fall 2018.

Exhibit 161: List of Colleges with Competency-Based Education Programs (Spring 2014)

Operational as of Spring 2014	Not Yet Operational
Alverno College	Antioch University
Bellevue College	Argosy University (EDMC)
Broward College	Austin Community College
Capella University (CPLA)	Brandman University
Charter Oak State College	Central Wyoming College
Colorado State University Global	City University of Seattle
Columbia Basin College	Community College of Philadelphia
Davenport University	Golden Gate University
DePaul University	Indiana University–Purdue University Indianapolis
Edmonds Community College	LeTourneau University
Empire State College	Los Angeles Trade-Technical College
Excelsior College	The New School
George Mason University	Pace University
Granite State College	Paul Smith's College
Ivy Tech Community College	Salt Lake Community College
John F. Kennedy University	Texas A&M University-Commerce and
Kalamazoo Valley Community College	South Texas College
Kentucky Community and Technical College	University of New England
Lipscomb University	Valdosta State University
Lone Star College System	
Marylhurst University	
Northern Arizona University (Personalized	
Rio Salado College	
Sinclair Community College	
SNHU's College for America	
Spokane Falls Community College	
Thomas Edison State College	
University of Maine at Presque Isle	
University of Maryland University College	
University of Toledo	
University of Wisconsin Flex Option	
Valencia College	
Western Governors University	
Westminster College	

Source: American Enterprise Institute.

We note both accrediting bodies and the ED have been supportive of competency-based education programs. In June 2014, the Council of Regional Accrediting Commissions, which represents seven regional accreditors, issued a common framework to assess and approve competency-based programs. The ED also followed with a letter to accreditors that echo similar points.

A new breed of CBE program is designed around self-pacing for students, so-called "direct assessment programs" that do not rely on the credit-hour standard. Capella Education's (now part of Strategic Education; STRA) Capella University was one of the first to receive accreditor and department approval for its direct assessment program (FlexPath). We believe only a few other institutions have received similar approvals, including Brandman University, Northern Arizona University, Southern New Hampshire University, the Texas State College system, University of Wisconsin Colleges and Walden University (owned by Laureate Education; LAUR).

The market for direct assessment degrees is still small (learners in such programs account for less than 0.5% of the 1.6 million addressable market of working adult learners, according to Capella University's management). Capella's management estimated that of this addressable market as much as 40% could shift to flexible programs (from credit hour programs), which could translate to a potential addressable market size of more than $5 billion (based on $8,000 assumed tuition a year per learner).

We note a number of drivers for future growth, including the following:

- Flexibility: strong demand from working adults for more flexible education programs that can fit working schedules.
- Affordability: programs that take less time (and thus lower cost) to complete.
- Technology: flexible degrees can be modular, personalized, and streamlined to an individual.
- Regulatory support: Department of Education (ED) continues to approve direct assessment degrees.
- Supply of programs: strong interest from other higher education institutions in launching competency-based programs (which should raise awareness).

The regulatory and legal issues faced by several of the publicly held companies are numerous and are in a constant state of flux. In the following exhibits, we have provided some of the regulatory and legal-related issues that have affected the companies in the sector.

Exhibit 162: Accreditation-Related Issues

BPI	Accreditation	Sep-10	Initiated process of seeking accreditation from Western Association of Schools and Colleges (WASC)	Closed	July 2012: denied initial accreditation for Ashford University. Re-application approved July 2013
BPI	Accreditation	Jun-12	Notification from HLC that Ashford must demonstrate by Dec.1, 2012 that it has "substantial presence" in the north central region.	Closed	We believe this issue is made moot by WASC approval, subject to approval by the ED
BPI	Accreditation	Jul-12	Notification from HLC that Ashford University will be placed on special monitoring in light of (1) WASC denial, and (2) non-financial data requiring further commission review	Closed	We believe this issue is made moot by WASC approval, subject to approval by the ED
BPI	Accreditation	Jul-12	HLC inquiry into University of Rockies regarding non-financial data	Closed	We believe this issue is made moot by WASC approval, subject to approval by the ED
CECO	Accreditation	Jul-05	Higher Learning Commission, North Central Association of Colleges and Schools, Middle States Commission on Higher Education, Accrediting Bureau of Health Education Schools inquiries into placement rates	**Ongoing**	
CECO	Accreditation	Feb-04	ABHES issues show cause order to SBI - White Plains as to why accreditation should not be withdrawn	Closed	December 19, 2005 - show cause order vacated
CECO	Accreditation	Jun-04	SACS places AIU on probationary/warning status citing issues	Closed	December 10, 2007, AIU removed from probationary status
CECO	Accreditation	Jun-04	ACCJC places Brooks College on probationary status	Closed	June 29, 2005, removed from probation
CECO	Accreditation	Jun-07	ACCJC places Brooks College on probationary status	Closed	February 2008, removed from probation
CECO	Accreditation	Nov-11	ACICS show cause order	Closed	Vacated May 2012; 24 campuses put on increased oversight (along with 36 already on increased oversight), 4 put on probation owing to low placement rates
CECO	Accreditation	Apr-12	HLC, Middle States, Pennsylvania ED, Arizona State Board for Private Postsecondary Education, Minnesota Office of Higher Education, Florida Commission for Independent Education - inquiry into placement rate reporting	Closed	CECO is responding
CECO	Accreditation	Jun-12	ACCSC show cause order	Closed	CECO is responding
CECO	Accreditation	Jan-10	HLC review of American Intercontinental University finds no compliance issues related to program integrity	Closed	Approved June 2010; Review of new credit structure expected in 2011-2012
CECO	Accreditation	Jan-10	HLC review of AIU transition to new undergraduate credit structure	Closed	
CECO	Accreditation	Jun-11	Middle States accreditor extends Briarcliffe accreditation for one year, and requires progress reports owing to NY Attorney General investigation	Closed	Accreditation continued, next periodic review in 2017
LINC	Accreditation	Jul-08	ACCSCT - Show cause order, Lincoln Technical Institute, Philadelphia, PA	Closed	Vacated December 5, 2008 - immaterial

Source: Company filings and press releases.

Exhibit 163: Class Action-Related Issues

BPI	Class Action	Aug-10	Allege company made false and misleading statements	Closed	Dismissed December 2011
BPI	Class Action	Jan-11	Fraudulent and illegal recruitment of students.	Closed	Dismissed by the court
BPI	Class Action	Feb-11	Denied wage and hour protections in California.	Closed	Settlement reached April 2012 $10.8 million
BPI	Class Action	Feb-15	Alleges that company made false, misleading statements and withheld materials	**Ongoing**	Case pending; defendant filed motion to dismiss
BPI	Class Action	Jan-12	Alleges misrepresentation and unlawful behavior to recruit and retain students.	Closed	Settlted for immaterial amount
BPI	Class Action	Jul-12	Filed suit for false and misleading statements, specifically concealment of accreditation problems.	Closed	Settled for $15.5 million, funded by company's insurance carriers
BPI	Class Action	Oct-12	Wrongful termination allegations	Closed	Settlted for immaterial amount
BPI	Class Action	Oct-16	Wage and hour claims for failure to pay overtime and wages	**Ongoing**	Case pending
CECO	Class Action	Oct-03	Employees allege overtime pay was denied	Closed	
CECO	Class Action	Dec-03	The suits alleges that CECO violated SEC rules by insider trading after falsifying financial data	Closed	$4.9 million settlement reached in September 2008
CECO	Class Action	Mar-05	Plaintiffs allege admissions reps at Brooks Institute of Photography and AIU made a variety of misrepresentations to them.	Closed	Settled April 29, 2008 for $12.4 million
CECO	Class Action	Jun-05	Plaintiffs allege admissions reps Ultrasound Technology Services made a variety of misrepresentations to them.	Closed	Plaintiff moved to dismiss
CECO	Class Action	Aug-05	Plaintiffs allege admissions reps at Katherine Gibbs made a variety of misrepresentations to them.	Closed	Settled in August 2006
CECO	Class Action	Aug-05	The suit filed by admissions advisors alleges that AIU Online failed to pay overtime.	Closed	Settled in October 2008
CECO	Class Action	Sep-05	Plaintiffs allege admissions reps at Allentown Business School made a variety of misrepresentations to them.	Closed	Arbitration was set for December 2006, no updates since
CECO	Class Action	Mar-06	Plaintiffs allege admissions reps at Ultrasound Technology Services made a variety of misrepresentations to them.	Closed	Settled
CECO	Class Action	Sep-07	The suit alleges that CCA made a variety of misrepresentations to the plaintiff class relating to the school's reputation and the value of the education.	Closed	Settled November 2010 for $40 million
CECO	Class Action	Oct-07	The suit filed by admissions advisors alleges CECO failed to pay during meal periods worked.	Closed	Settled
CECO	Class Action	Feb-08	The plaintiff's are students who allege that CECO misrepresented transferability of credits, job placement potential and quality of education and instruction.	Closed	
CECO	Class Action	Mar-08	Plaintiffs allege deceptive acts including misrepresenting job placement and post-graduation salary potential and quality of education and instruction.	**Ongoing**	Plaintiff seeking claim for punitive damages to class complaint. The final amount based on valid returned claim forms has been determined to be approx $11.1 million, of which $4.9 million was recorded during the 2Q18. An initial payment of $3 million was made in Jun-18 and accordingly, as of Jun-30, 2018, the Company has a remaining reserve of $8.1 million related to this matter. These amounts are expected to be paid during the 3Q18
CECO	Class Action	Mar-08	Alleges several misrepresentations relating to the school's reputation and the value of its education.	Closed	Oral arguments were expected March 2, 2010
CECO	Class Action	Jun-08	Alleges that defendants committed fraud and violated the California Unfair Competition Law and the California Consumer legal Remedies Act.	**Ongoing**	Pending - $17.5 million in settlements paid, though not all class has settled
CECO	Class Action	Jun-08	Alleges that SBC admissions representatives made material misrepresentations to prospective students.	Closed	Settlement reached around mid-2009
CECO	Class Action	Aug-10	Violations of Telephone Consumer Protections Act	Closed	Settled June 2012 - $6 million
CECO	Class Action	Dec-10	Violated Fair Labor Standards Act	Closed	Settled April 2011, $0.2 million
CECO	Class Action	Jan-12	Violation of SEC rules	Closed	Settled June 2013 - $27.5 million
CECO	Class Action	May-12	Misrepresentation to students about outcomes	Closed	Administratively closed the case pending arbitration
CECO	Class Action	Sep-12	Violations of Telephone Consumer Protections Act	Closed	Settled July 15, 2013
CECO	Class Action	Jan-13	Misrepresentation to students about outcomes	Closed	Administratively closed the case pending arbitration
CECO	Class Action	Jun-13	Misrepresentation to students about outcomes	Closed	Court filed motion to strike class allegation, plaintiffs appealed. Court stayed the case pending a ruling on the appeal.
CECO	Class Action	Jul-18	The suit alleges that WCI made a variety of misrepresentations to the plaintiff class relating to the school's palcement statistics employment prospects upon graduation	**Ongoing**	The outcome of this audit is uncertain at this point because of the many questions of fact and law that may arise.
LINC	Class Action	Nov-10	Allege the company's directors made false and misleading statements	Closed	Dismissed April 2011

Source: Company filings and press releases.

Exhibit 164: Department of Education-Related Issues

BPI	Dept. of Education	May-08	OIG Audit of administration of Title IV funds and compliance with other regulations (March 2005-June 2009)	Closed	Final audit determination Feb. 2017. Ashford owed $0.3 million as a resuld of incorrect refund calculations.
BPI	Dept. of Education	Jul-12	Department of Education to assess University of the Rockies administration of Title IV programs for 2010-2011 and 2011-2012	Closed	Department has scheduled an on-site program review from August 20 - 24, 2012.
BPI	Dept. of Education	Jul-14	Program review of Ashford University's administration of Title IV programs for 2012-2013 and 2013-2014	Closed	Company provided final program review report.
BPI	Dept. of Education	Dec-16	Program review of Ashford University's administration of Title IV programs for 2015-2016 and 2016-2017	**Ongoing**	On-site review commenced January 2017
CECO	Dept. of Education	Jan-04	Program Review - Gibbs College, Livingston NJ	Closed	CECO closed (taught out) school in 1Q10
CECO	Dept. of Education	Jan-05	OIG audit to determine 90/10 compliance at SBC	Closed	November 22, 2005; School met 90/10 but must enhance 90/10 reporting capability
CECO	Dept. of Education	Jan-05	OIG audit to determine 90/10 compliance at SBI - Atlanta	Closed	January 18, 2006; School met 90/10 but must enhance 90/10 reporting capability
CECO	Dept. of Education	Feb-05	Program review of Brooks College - Long Beach	Closed	Final review in May 2006, paid $9K to ED and $15K to other lenders
CECO	Dept. of Education	Jun-05	ED imposed growth restrictions until conclusion of 10-12 program reviews	Closed	Compliance issues were resolved and growth restrictions lifted on January 19, 2007
CECO	Dept. of Education	Feb-06	ED reviewing 2004 compliance audit opinions	Closed	No outcome announced
CECO	Dept. of Education	May-06	ED reviewing 2005 compliance audit opinions	Closed	No outcome announced
CECO	Dept. of Education	Jul-06	Program Review - Briarcliffe College	Closed	Final review required $0.9 million refund
CECO	Dept. of Education	Oct-06	Program Review - The Cooking & Hospitality Inst. Chicago		
CECO	Dept. of Education	Nov-06	Program Review - Brooks Institute	Closed	Final determination issued 2Q08 - no material impact
CECO	Dept. of Education	Nov-06	Program Review - AIU	Closed	Final determination issued 1Q08 - no material impact
CECO	Dept. of Education	Nov-06	Program Review - Gibbs College, Boston; MA	Closed	Final determination issued 4Q07- no material impact
CECO	Dept. of Education	Nov-06	Program Review - Lehigh Valley College		Final determination issued 3Q07 - no material impact
CECO	Dept. of Education	Nov-06	Program Review - Gibbs College, Vienna; VA	Closed	Final determination issued 2Q07- no material impact
CECO	Dept. of Education	Nov-06	Program Review - Sanford Brown Institute, Atlanta	Closed	Final determination issued 4Q07 - no material impact
CECO	Dept. of Education	Nov-06	Program Review - Int. Academy of Design and Tech. Chicago	Closed	Final determination issued 4Q07 - no material impact
CECO	Dept. of Education	Nov-06	Program Review - Katherine Gibbs School, NY	Closed	CECO closed (taught out) school in 1Q10
CECO	Dept. of Education	Nov-06	Program Review - California Culinary Academy	Closed	Final determination issued 2Q08 - no material impact
CECO	Dept. of Education	Dec-06	OIG to investigate LCB-Atlanta school relating to Title IV administration	Closed	Closed investigation with no action on August 8, 2007
CECO	Dept. of Education	Jan-07	Program Review - Western School of Health & Bus. Careers/Sanford Brown Institute - Pittsburgh	Closed	Final determination issued 3Q09 - no material impact
CECO	Dept. of Education	Nov-09	Program review found flaws in AIU's enrollment and attendance policies	Closed	Closed findings in June 2012 with no further requirements
CECO	Dept. of Education	Jun-10	OIG Title IV compliance audit of Colorado Technical University; documentation of attendance and returns of Title IV funds from student withdrawals	**Ongoing**	Refered to the Department's Audit Follow-up Official for dispute resolution; $1 million reserve recorded related to matter.
CECO	Dept. of Education	Dec-11	Inquiry into placement rates	**Ongoing**	CECO on heightened Cash Monitoring 1 status
CECO	Dept. of Education	FY2008	Program Review - Brooks Institute	Closed	Final determination issued 2Q08 - no material impact
CECO	Dept. of Education	FY2008	Program review of Collins, initial report in July 2004		Settled with ED in April 2006 for $23K, and closed program
CECO	Dept. of Education	FY2006	Program review of PCI	Closed	Final review in February 2006, paid fines of $487,000
CECO	Dept. of Education	Jun-10	Office of Inspector General compliance audit; issues related to calculation of return of Title IV program funds	Ongoing	Under dispute resolution. Company has $1 million reserve recorded in the matter.
LINC	Dept. of Education	Jan-06	Program Review - Lincoln College of Technology (fka Denver Automotive Diesel College)	Closed	No update available
LINC	Dept. of Education	Feb-08	Program Review - Southwester College	Closed	Final letter May 29, 2008 - $0.2 million repaid to ED
LINC	Dept. of Education	Apr-10	All institutions put on provisional Title IV certification following change of control	Closed	Expired September 2013
LINC	Dept. of Education	Jan-11	Program review of Philadelphia campus (FY2010 and FY2011)	Closed	Report issued February 2011, no liabilities assessed. Closed April 2011
LINC	Dept. of Education	Feb-11	Program review of Dayton campus (FY2010 and FY2011)	Closed	Began in March 2011, final program review issued April 2011, no monetary liabilities assessed
LINC	Dept. of Education	Jul-11	Program review of Grand Prairie, TX, campus (title IV administration for FY2010 and FY2011)	Closed	Completed August 2011, no liabilities found
LINC	Dept. of Education	Aug-11	Program review of Philadelphia campus (FY2010 and FY2011)	Closed	Completed November 2011, no liabilities found

Source: Company filings and press releases.

Exhibit 165: False Claims Act/Qui-Tam Lawsuits

BPI	False Claims Act/Qui Tam	Jul-10	Violation of Federal False Claims Act in falsely certifying compliance with incentive compensation rules	Closed	DOJ declined to intervene in January 2013. Settlted for immaterial amount
BPI	False Claims Act/Qui Tam	Mar-11	Violation of Federal False Claims Act in falsely certifying compliance with various Title IV regulations	Closed	DOJ filed notice stipulating to dismissal and Court granted June 2013
BPI	False Claims Act/Qui Tam	Jun-15	Alleged violation of California WARN Act for back pay and benefits associated with termination of employment	Closed	Settlted for immaterial amount
BPI	False Claims Act/Qui Tam	Jun-15	Alleged violation of California law for failure to pay overtime, minimum wages and failure to provide rest and meal breaks	Closed	Settlted for immaterial amount
CECO	False Claims Act/Qui Tam	Dec-02	Alleges violations of the False Claims Act and the Higher Education Act	Closed	June 20, 2005 - case dismissed
CECO	False Claims Act/Qui Tam	Jul-09	Alleges violations of the False Claims Act and the Higher Education Act	Closed	Settled in February 2017; company to pay $10 million to U.S. and $22 million to attorneys representing relators.
CECO	False Claims Act/Qui Tam	Apr-13	Alleges violations of the False Claims Act and the Higher Education Act	**Ongoing**	Summary judgement in defendants favor. Relator can seek certiorari to the Supreme Court.
CECO	False Claims Act/Qui Tam	Apr-13	Alleged violation of the False Claims Act, including allegedly providing false certifications to the federal government regarding compliance with certain provisions of the Higher Education Act and accreditation standards	**Ongoing**	The company filed a motion to dismiss in June 2014; company cooperating with the DOJ
CECO	False Claims Act/Qui Tam	Feb-17	Alleges violations of the False Claims Act	Closed	Settlement agreement with the private plaintiffs. Under the terms of the agreement, the Company will pay $10 million to the United States. DOJ declined to intervene.

Source: Company filings and press releases.

Exhibit 166: Other Civil Issues

CECO	Other Civil	Jun-06	AIU London sues The Open University for wrongful termination of accreditation agreement	Closed	Settled in June 2007, AIU-London accredited by another body
CECO	Other Civil	Jun-11	The suit alleges that CCA made a variety of misrepresentations to the plaintiff class relating to the school's reputation and the value of the education.	Closed	Stayed related to Amador case. Company agreed to pay $2.2 million in April 2014
CECO	Other Civil	Jun-11	The suit alleges that CCA made a variety of misrepresentations to the plaintiff class relating to the school's reputation and the value of the education.	Closed	Stayed related to Amador case. Company agreed to pay $2.2 million in April 2014
CECO	Other Civil	Aug-11	The suit alleges that CCA made a variety of misrepresentations to the plaintiff class relating to the school's reputation and the value of the education.	Closed	Stayed related to Amador case. Company agreed to pay $2.2 million in April 2014
CECO	Other Civil	Aug-11	Employee recruiter allegations for change in compensation plan	**Ongoing**	Plaintiff filed petition for rehearing which was denied, can seek certiorari to Supreme Court
CECO	Other Civil	Sep-11	Employee mistreatment allegations	Closed	Settled
CECO	Other Civil	Dec-12	Labor violations	Closed	Reached an agreement to settle for an immaterial amount in November 2013
CECO	Other Civil	Apr-13	Labor violations	Closed	Settlement in July 2013
LINC	Other Civil	Dec-15	Maryland's Attorney General has requested from the Company documents and detailed information relating to its Columbia, Maryland campus.	**Ongoing**	The Company has responded to this request and intends to continue cooperating with the Maryland Attorney General's Office.

Source: Company filings and press releases.

Exhibit 167: Other Federal Agency Issues

BPI	Other Federal Agency	Aug-15	Investigation related acts and practices related to advertising, marketing and origination of private student loans	Closed	Payment of $8 million in penalties and $5 million for restitution for students; $18.6 million student loan forgiveness
BPI	Other Federal Agency	Jul-16	Misstated Title IV refund revenue or overstated revenue associated with private loan programs	**Ongoing**	Company cooperating with DOJ
CECO	Other Federal Agency	Aug-15	Civil Investigative Demand information request related to deceptive or unfair practices	**Ongoing**	Company cooperating
CECO	Other Federal Agency	Jun-05	Chicago DOJ grand jury investigation	Closed	Closed investigation on April 19, 2007
CECO	Other Federal Agency	May-06	Reviewing allegations of false statements to the ED	Closed	Closed August 2007, no actions taken
CECO	Other Federal Agency	Aug-11	CTU compliance survey found incorrect certification of monthly housing allowance	Closed	Paid $3.6 million

Source: Company filings and press releases.

Exhibit 168: SEC-Related Issues

BPI	SEC related	Jul-14	SEC sends subpoena relating to BPI's accounting practices relating to its disclosed intention to restate financial statements.	Closed	Period from January 2009 to the date of the announcement. SEC letter does not recommend enforcement action.
BPI	SEC related	May-14	SEC notifies company to reassess revenue recognition and allowance for doubtful accounts when student lose aid	Closed	BPI restated 2011-2013 financial statements; concludes material internal control weakness in bad debt recognition
CECO	SEC related	Jan-04	SEC Investigation from Midwest regional office, no details available	Closed	Investigation completed with no action on January 17, 2008
CECO	SEC related	Apr-12	Chicago regional SEC inquiry related to placement rate practices	Closed	Investigation concluded and SEC did not recommend any action to the company
CECO	SEC related	Jun-16	Request for document regarding 4Q14 classification of Le Cordon Bleu Culinary Arts campuses as held for sale	**Ongoing**	Company responded to request

Source: Company filings and press releases.

Exhibit 169: Shareholder Derivative Actions

BPI	Shareholder Derivative Action	Jul-12	Alleges breach of fiduciary duties of candor, good faith and loyalty, wasted corporate assets and were unjustly enriched	**Ongoing**	Case pending
BPI	Shareholder Derivative Action	Nov-13	Alleges breach of fiduciary duties of candor, good faith and loyalty, wasted corporate assets and were unjustly enriched	**Ongoing**	Case stayed during discovery of underlying securities action
BPI	Shareholder Derivative Action	Dec-13	Alleges breach of fiduciary duties related to tender offer commenced on November 2013, and were unjustly enriched	**Ongoing**	Case is currently under appeal (filed by plaintiffs) with the US Court of Appeals for the Ninth Circuit
BPI	Shareholder Derivative Action	Jan-14	Alleges breach of fiduciary duties related to tender offer commenced on November 2013, and were unjustly enriched	Closed	Court dismissed the case in November 2014
BPI	Shareholder Derivative Action	Mar-15	Alleges breach of fiduciary duties of candor, good faith and loyalty, wasted corporate assets and were unjustly enriched	**Ongoing**	Case stayed during discovery of Zamir case
BPI	Shareholder Derivative Action	Jul-17	Breach of fiduciary duty against current and former officers and directors, seeks monetary relief	**Ongoing**	Parties to respond
CECO	Shareholder Derivative Action	Jan-04	Alleges breach of fiduciary duties for insider stock sales and misappropriation of information	Closed	Dismissed May 30, 2007
CECO	Shareholder Derivative Action	Jul-04	The lawsuit alleged breach of fiduciary duty for personal profit by the individual defendants	Closed	Dismissed June 27, 2007
CECO	Shareholder Derivative Action	Nov-04	The lawsuit alleges breach of fiduciary duty for insider stock sales and misappropriation of confidential information,	Closed	Last action in March 2005
CECO	Shareholder Derivative Action	Jun-05	Alleges breach of fiduciary duties for insider stock sales and misappropriation of information	Closed	Last action in March 2007
CECO	Shareholder Derivative Action	Aug-05	Plaintiffs allege admissions reps at SBC made a variety of misrepresentations to them.	Closed	Settlement reached in 1Q07
CECO	Shareholder Derivative Action	Dec-11	Breach of fiduciary duty...	Closed	Dismissed in February 2014
CECO	Shareholder Derivative Action	Dec-11	Breach of fiduciary duty...	Closed	Dismissed in February 2014
CECO	Shareholder Derivative Action	Nov-12	Breach of fiduciary duty...	Closed	Dismissed in February 2014
LINC	Shareholder Derivative Action	Dec-10	Allege breach of fiduciary duties	Closed	Dismissed October 2011
LINC	Shareholder Derivative Action	Feb-11	Allege breach of fiduciary duties	Closed	Dismissed November 2011
LINC	Shareholder Derivative Action	Mar-11	Allege breach of fiduciary duties	Closed	Dismissed October 2011

Source: Company filings and press releases.

Exhibit 170: State-Related Issues

Ticker	Type	Date	Nature of Issue	Status	Outcome/Disposition
BPI	State regulators	Jan-16	Ashford University received a final audit report from the OIG regarding the compliance audit commenced in May 2008 and covering the period July 1, 2006 through June 30, 2007.	**Ongoing**	The outcome of this audit is uncertain at this point because of the many questions of fact and law that may arise. At present, the Company cannot reasonably estimate a range of loss for this action based on the information available to the Company.
BPI	State regulators	Feb-11	Iowa Office of the Attorney General Investigation	Closed	Compliance with consumer laws (Jan. 2008 to March 2011). Entered into Assurance of Voluntary Compliance with AG in May 2014, which includes a $7.25 million payment for restitution, and the appointment of a settlement administrator for three years.
BPI	State regulators	May-11	Compliance with consumer laws (March 2005 to Aug. 2011).	**Ongoing**	The Company is cooperating with the investigation and cannot predict the eventual scope, duration or outcome of the investigation at this time
BPI	State regulators	Sep-11	Compliance with consumer laws (Jan. 2008 to Sept. 2011).	**Ongoing**	The Company is cooperating with the investigation and cannot predict the eventual scope, duration or outcome of the investigation at this time
BPI	State regulators	Sep-12	Iowa's College Student Aid Commission: Information request on several issues	Closed	Successfully accredited by WASC
BPI	State regulators	Jan-13	Period of March 2009 to date of announcement	**Ongoing**	Investigative Subpoenas in January and June 2014. Continues to discuss potential resolution. Cost recorded of $8m in expense. CA AG files suit.
BPI	State regulators	Jul-14	Period of January 2006 to date of announcement, regarding compliance with state's consumer laws	**Ongoing**	Company cooperating with investigation.
BPI	State regulators	May-16	Will no longer approve Ashford for GI Bill benefits (due to campus closure)	**Ongoing**	Ashford applying for approval with State Approving Agency in California
CECO	State regulators	May-05	New Jersey Department of Labor and Workforce Development raised concerns about Sanford Brown Institute - Iselin following 60 Minutes story	Closed	SBI receives license renewal on Aril 26, 2006
CECO	State regulators	Jul-05	California Bureau for Private Postsecondary and Vocational Education places Brooks Inst. Of Photograph on conditional approval for two years	Closed	State rules on May 20, 2006 that Brooks can be on full approval pending results of official review
CECO	State regulators	Jul-05	Office of Attorney General in Pennsylvania found lending irregularities at Lehigh Valley College	Closed	February 19, 2008 agreement with AG to pay fine of $0.2 million and assure compliance
CECO	State regulators	Oct-05	Texas Higher Education Coordinating Board found Texas Culinary Institute to have insufficient testing requirements	Closed	Finished audit on March 13, 2007 and lifted restrictions after CECO met compliance
CECO	State regulators	Apr-06	New York State Education Department, compliance review of Gibbs-NY	Closed	NYSED imposed enrollment caps in April 2008. School has subsequently been taught out.
CECO	State regulators	Jan-07	California Bureau for Private Postsecondary and Vocational Education reviewing application for license renewal of Brooks Institute of Photography	Closed	Issued 5-year license on April 19, 2007
CECO	State regulators	Nov-10	Florida State Attorney General investigation of Sanford Brown	**Ongoing**	Information on Sanford Brown fair trade laws (Jan. 2001 to Feb. 2011)
CECO	State regulators	May-11	New York Attorney General investigation, related to consumer protection and misrepresentation of placement rates	Closed	Paid $10 million settlement in August 2013
CECO	State regulators	Dec-11	Illinois State Attorney General investigation into consumer protection violations	**Ongoing**	Company is cooperating
CECO	State regulators	Jan-12	Oregon Dept. of Justice Investigation related to consumer protection laws	**Ongoing**	Company is cooperating
CECO	State regulators	Sep-12	Massachusetts Attorney General investigative demand	**Ongoing**	Company is cooperating
CECO	State regulators	Aug-13	Colorado State Attorney General investigation into consumer protection violations	**Ongoing**	Company is cooperating
CECO	State regulators	Jan-14	Civil investigative Demand inquiries from 18 states relating to recruitment, graduate placement, etc., led by Connecticut AG	**Ongoing**	Company is cooperating
LINC	State regulators	May-11	New York Attorney General investigation into compliance with consumer protection laws (may 2005 to May 2011).	Closed	LINC is cooperating with information request
LINC	State regulators	Nov-12	Massachusetts attorney general civil investigative demand over consumer protection laws	**Ongoing**	LINC is cooperating with information request. LINC responded to follow-ups on July 2013 and January 2014
LINC	State regulators	Jul-15	Alleged violation of Massachusetts Consumer Protection Act since 2010 through 2013	Closed	The company agreed to pay $850,000 to the AG and forgive $165,000 of debt
LINC	State regulators	N.A.	Texas Workforce Commission placed Grand Prairie, TX campus on conditional certificate owing to low employment metrics.	Closed	Campus must submit improvement plan by August 2011, employment must improve for 2011 award year or TWC will withdraw approval.

Source: Company filings and press releases.

U.S. Online Postsecondary School Market

In our view, online higher education continues to gain acceptance among students, schools, regulators, and employers, and is increasingly becoming a part of mainstream education. We believe this, along with improving technology, internet access, demand for flexible education alternatives, and pressure to reduce costs will continue to drive demand for online or blended learning models in both the for-profit and not-for-profit industries.

The Online Learning Consortium (formerly known as the Sloan Consortium), an educational research group, defines the online postsecondary market as shown in the following table.

Exhibit 171: Delivery Method Classifications

Proportion of Content Delivered Online	Type of Course	Typical Description
0%	Traditional	Course with no online technology used — content is delivered in writing or orally.
1% - 29%	Web Facilitated	Course which uses web-based technology to facilitate what is essentially a face-to-face course. May use a course management system (CMS) or web pages to post the syllabus and assignments.
30% - 79%	Blended/Hybrid	Course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has a reduced number of face-to-face meetings.
80+%	Online	A course where most or all of the content is delivered online. Typically have no face-to-face meetings.

Source: Online Learning Consortium.

Benefits of online learning are shown in the following exhibit.

Exhibit 172: Benefits of Online vs. Traditional Postsecondary Schools

Users	Cost benefits—saves travel-related and opportunity costs from time saved
	Personalized —can tailor content and delivery to virtually each individual learner
	Convenience—can learn on your own time, "anytime, anywhere"
	Real-time updates—can make learning experience more relevant
	Self-paced—can review until information is fully grasped without "holding up" the class; asynchronous platform reaches students that may not respond to synchronous learning
	Efficient—potentially faster and higher completion rates, according to some anecdotal evidence
	Expands community—can interact with others in different geographic locations and enroll in programs that may not be available at local schools
	Greater oversight—via better tracking and management capabilities
Providers	Scalability—offers cost-effective way of increasing potential revenue base
	Penetrate new markets—can offer access to services beyond geographic boundaries
	Consistent quality—although customizable, quality may improve through consistency
	Brand exposure—increases marketing reach of institutions beyond traditional channels
	Cost savings—enables schools to automate many tasks associated with teaching, and to leverage curriculum across a wider student base

Source: BMO Capital Markets.

Not-for-profits have been gaining share online at the expense of the for-profit sector, though for-profits still have disproportionate share

In recent years, the U.S. Department of Education (ED) has been providing an annual detailed analysis of distance education enrollment. In fall 2016 (2016-2017 school year; latest data available), nearly 3 million postsecondary students enrolled in exclusively distance education courses, growing 3% CAGR from roughly 2.64 million students in fall 2012. All of this growth came from not-for-profit schools, as during this period, online enrollment fell at for-profit students, driving its market share to 23.5% of total online enrollment from 35% in fall 2012. Nevertheless, this is still higher than the 5.9% share of total enrollment these for-profit schools held in fall 2016.

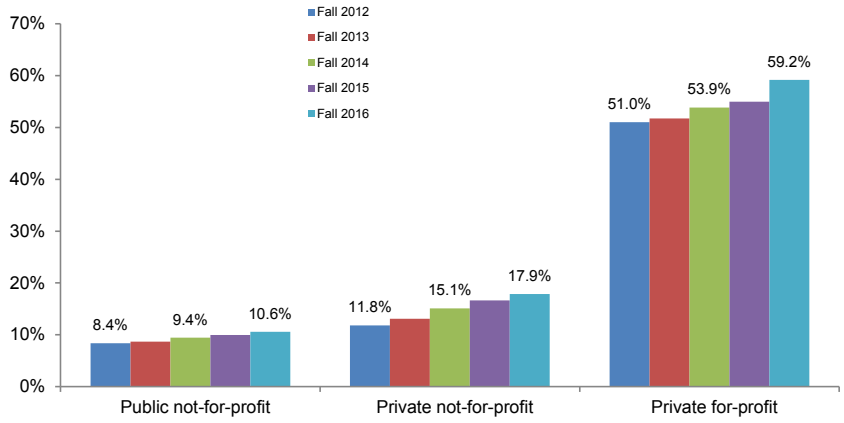
Exhibit 173: Exclusive Online Enrollment by Institution Type (Fall 2012–Fall 2016)

	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	CAGR
Exclusively online students (in 000s)						
Public not-for-profit	1,248.0	1,281.9	1,381.9	1,456.1	1,545.5	5.5%
Private not-for-profit	467.5	520.4	604.2	668.6	728.6	11.7%
Private for-profit	923.2	856.9	838.2	747.1	698.5	-6.7%
Total	2,638.7	2,659.2	2,824.3	2,871.8	2,972.6	3.0%
Percentage of total online						
Public not-for-profit	47.3%	48.2%	48.9%	50.7%	52.0%	
Private not-for-profit	17.7%	19.6%	21.4%	23.3%	24.5%	
Private for-profit	35.0%	32.2%	29.7%	26.0%	23.5%	
Total	100.0%	100.0%	100.0%	100.0%	100.0%	
Non-exclusively online students (in 000s)						
Public not-for-profit	13,632.4	13,463.7	13,273.1	13,116.2	13,037.5	-1.1%
Private not-for-profit	3,486.1	3,453.6	3,391.9	3,353.7	3,349.2	-1.0%
Private for-profit	885.7	799.3	718.0	612.0	481.8	-14.1%
Total	18,004.2	17,716.6	17,383.0	17,081.9	16,868.4	-1.6%
Percentage of total non-exclusively online						
Public not-for-profit	75.7%	76.0%	76.4%	76.8%	77.3%	
Private not-for-profit	19.4%	19.5%	19.5%	19.6%	19.9%	
Private for-profit	4.9%	4.5%	4.1%	3.6%	2.9%	
Total	100.0%	100.0%	100.0%	100.0%	100.0%	
Total students (in 000s)						
Public not-for-profit	14,880.3	14,745.6	14,655.0	14,572.3	14,583.0	-0.5%
Private not-for-profit	3,953.6	3,974.0	3,996.1	4,022.3	4,077.8	0.8%
Private for-profit	1,808.9	1,656.2	1,556.3	1,359.1	1,180.2	-10.1%
Total	20,642.8	20,375.8	20,207.4	19,953.7	19,841.0	-1.0%
Percentage of total students						
Public not-for-profit	72.1%	72.4%	72.5%	73.0%	73.5%	
Private not-for-profit	19.2%	19.5%	19.8%	20.2%	20.6%	
Private for-profit	8.8%	8.1%	7.7%	6.8%	5.9%	
Total	100.0%	100.0%	100.0%	100.0%	100.0%	

Source: US Department of Education and BMO Capital Markets.

Nevertheless, the majority of students that attend for-profit institutions do so online. As of fall 2016 (2016-2017 school year), over 59% of students attending private for-profit institutions did so online—a significantly higher proportion than the other sectors and one that has been expanding this decade.

Exhibit 174: Exclusive Online Enrollment by School Type (Fall 2012–Fall 2016)

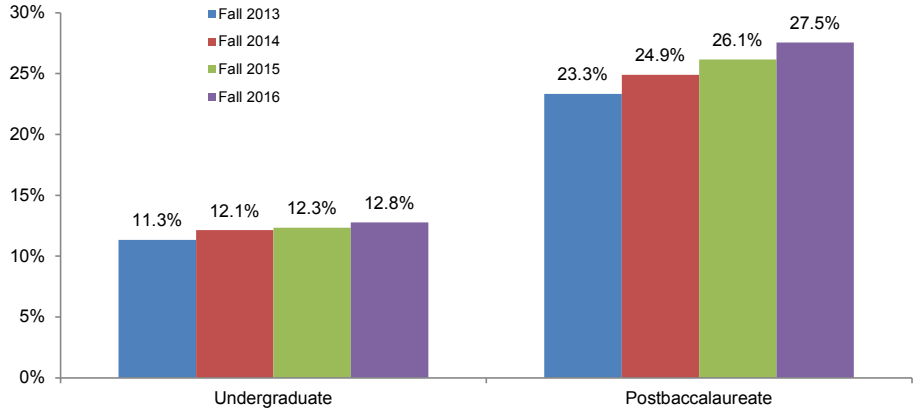


Source: US Department of Education and BMO Capital Markets.

Relatively more graduate than undergraduate students attend school online

When segmenting the data between undergraduate and post-baccalaureate (i.e., graduate) programs, the latter has much greater penetration, which has been increasing at a faster rate. This makes intuitive sense (at least to us) as many of those attending graduate programs tend to do so part-time, which makes the online format more attractive.

Exhibit 175: Exclusive Online Enrollment by Program Type (Fall 2013–Fall 2016)



Source: US Department of Education and BMO Capital Markets.

Surprisingly, most online students tend to be local

Historically, most online schools focused more heavily on their local markets. To gain traction, schools such as Bridgepoint Education's (BPI) Ashford University and University of the Rockies and Grand Canyon Education's (LOPE) Grand Canyon University anchored their online platforms to physical campuses that were well known regionally. Initially, we believe that students may have been hesitant to enroll in courses in which they did not have the option to interact with instructors/teaching assistants in a face-to-face setting for support. Recent surveys by The Learning House and Aslanian Market Research and The Learning House, Inc. show the majority of online students live within 50 miles of the campus whose online programs they attend.

Exhibit 176: Distance Online Students Living From Campus (2018)

Under 25 miles	44%
25-49 miles away	22%
50-100 miles away	12%
101-250 miles away	4%
More than 250 miles away	9%
Not sure	10%

Source: The Learning House and Aslanian Market Research.

Most popular online programs

Although virtually all types of programs are offered online, the most popular appear to be those with fewer "hands on" requirements. The exhibit below shows the most popular online degreed programs. As shown, programs are dominated by business, healthcare, information technology and education (the latter more so at the graduate level).

Exhibit 177: Most Popular Postsecondary Online Degreed Programs (2014-2018; ranked by 2018)

Undergraduate:	2014	2016	2017	2018
Business	28%	26%	23%	23%
Health and medicine	17%	16%	20%	19%
Computers and IT	14%	15%	13%	13%
Social sciences, criminal justic	11%	9%	11%	11%
Arts and humanities	9%	12%	14%	10%
Education and teaching	8%	8%	7%	9%
Science, technology, engineer	6%	9%	7%	7%
Counseling, human services	6%	4%	6%	5%
Graduate:				
Business	28%	26%	24%	21%
Health and medicine	11%	12%	12%	16%
Computers and IT	9%	20%	19%	15%
Education and teaching	22%	14%	17%	14%
Science, technology, engineer	6%	7%	10%	11%
Social sciences, criminal justic	10%	9%	9%	8%
Counseling, human services	8%	5%	4%	8%
Arts and humanities	7%	6%	6%	5%

Note: Data not available in 2015. Source: The Learning House and Aslanian Market Research.

Online courses may be more expensive on a per credit basis

While conventional wisdom holds that an online degree may cost less than one obtained at a bricks and mortar school, that may not necessarily be the case. While acknowledging that different programs may require different numbers of credits, the average per credit, in-state cost for an online bachelor's program was $277, compared with $243 per credit at brick-and-mortar schools based on an August 2013 (latest data available) U.S. News analysis of about 300 ranked programs. A more recent U.S. News study (2015) of 136 online bachelor's degree programs at public colleges and universities found about 46% charge in-state and out-of-state students the same tuition per credit, negating the in-state discount most residents get when attending on campus. A February 2017 survey of higher education institutions by WCET Frontiers yielded some interesting insight, including:

- More than half (54.2%) of the respondents reporting that distance students pay more than on-campus students when tuition and fees are added.
- About three-quarters (75.1%) of institutions indicated that tuition was the same, but the added fees continue to result in the price to students of distance courses being more.
- While roughly 57% of the respondents believes that delivering online education cost the institutions themselves the same as to deliver a campus-based course, the other 43% stated it was more costly (none state online was a lower cost delivery model).

Analysis of empirical research favors online education

A study released in June 2009 by the ED compiled the results of empirical research dating back to 1996 and drew positive conclusions about the effectiveness of online education. The analysis found that "students who took all or part of their class online performed better, on average, than those taking the same course through traditional face-to-face instruction." However, we note that a July 2010 paper by the Community College Research Center at Columbia University's Teachers College refuted some of these findings and cited flaws with the study.

Repeal of 50% rule helped spur online growth and investment

We believe the removal of the "50% rule" in 2006 was critical to spurring growth in this industry. This rule had limited schools from participating in federal student loan programs if more than half of their courses were online. We believe this also helped set off an era of private equity investment in not-for-profit schools to convert them to for-profit models. Among the notable conversions were Bridgepoint Education's (BPI) Ashford University and University of the Rockies, Grand Canyon Education's (LOPE) Grand Canyon University and Trident University (formerly Touro International University).

Military service learners are a significant segment and growth driver for online education

We believe online programs are also well suited to members of the military, who can take courses online while on deployment or away at base. Research by the Online Learning Consortium (fall 2007) showed that for-profit schools were more than twice as likely (23.9%) to have online programs designed specifically for military students as public not-for-profits (9.2%). While the percentages may have changed, we still believe for-profit schools have a disproportionate share of the military online market. As funding for military and veterans students are currently excluded from the 90/10 ratio, we believe this has also spurred growth in online education at for-profit institutions.

We have listed some of the advantages and disadvantages that we believe nonprofit schools have over for-profit schools when it comes to online learning:

Advantages:

- **Brand name.** Provides benefits in marketing programs to local adult learners in bachelor's completion or executive education programs—a core market of for-profit schools.
- **Public subsidies.** Can take the long view as they are not under pressure to be immediately profitable as are for-profit schools.
- **Less regulatory scrutiny.** Nonprofit schools are not subject to the same regulatory requirements as for-profit schools (i.e., gainful employment).

Disadvantages:

- **Less experience running profitable online programs.** While not-for-profit schools have had online courses for some time, fully online programs are relatively new.
- **New costs and management demands.** Online programs require more faculty training and the build-out of online infrastructure, including investments in technology, help desk, and administrative functions.
- **Less marketing experience.** For-profit schools have a long history of marketing online programs and reaching targeted audiences. This has spurred the development of not-for-profit consortiums, such as the American Association of Community Colleges, to share resources to be more effective in marketing online offerings.

Largest online schools still dominated by for-profits; though not-for-profits gaining share

Vanta Education's (formerly known as Apollo Education Group) University of Phoenix (UOP) remains the largest for-profit online school (we believe roughly 85-90% of UOP students are fully online), though virtually all the publicly held for-profit universities have rolled out online initiatives, albeit with varying degrees of success. However, in FY2016 (latest data available), 11 of the top 20 institutions with the largest online enrollments were *not-for-profit schools*, with many of them seeing increases in enrollment—contrary to the declines seen by most for-profit schools. We believe this not-for-profit group has expanded and will continue to expand as the not-for-profit sector gains share.

Exhibit 178: Top 20 Online Enrollments at U.S. Postsecondary Institutions (ranked by online students in 2016)

Rank	Institution	Ticker	Sector	Online students Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	2012-16 CAGR
1	University of Phoenix		For-profit	257,534	212,268	206,386	176,167	138,711	-14%
2	Western Governors University		Private nonprofit	41,369	46,733	57,821	70,504	84,289	19%
3	Grand Canyon University	LOPE	For-profit	44,006	51,263	50,286	54,543	68,542	12%
4	Liberty University		Private nonprofit	69,935	69,686	73,365	72,519	67,766	-1%
5	Arizona State University		Public nonprofit	36,095	38,389	43,530	52,352	66,999	17%
6	Southern New Hampshire University		Private nonprofit	11,286	22,728	41,329	56,371	63,973	54%
7	Walden University (Laureate)	LAUR	For-profit	50,209	51,016	52,188	52,799	52,565	1%
8	University of Maryland-University College		Public nonprofit	42,165	39,492	47,891	48,677	50,932	5%
9	American Public University System	APEI	For-profit	58,115	55,422	57,539	52,361	48,623	-4%
10	Kaplan University	GHC	For-profit	50,873	56,341	56,965	49,880	42,585	-4%
11	Excelsior College		Private nonprofit	39,728	39,897	41,527	43,123	41,658	1%
12	Ashford University	BPI	For-profit	76,722	57,235	50,541	42,046	41,343	-14%
13	Strayer University	STRA	For-profit	31,063	27,472	30,750	35,731	39,626	6%
14	Capella University	STRA	For-profit	35,754	34,007	35,061	34,365	37,569	1%
15	University of Central Florida		Public nonprofit	21,782	29,009	30,928	33,034	36,107	13%
16	Brigham Young University-Idaho		Private nonprofit	11,763	17,408	26,667	33,551	35,826	32%
17	Ivy Tech Community College		Public nonprofit	42,821	37,374	37,791	34,103	34,811	-5%
18	DeVry University	ATGE	For-profit	59,364	50,478	45,762	38,474	32,333	-14%
19	University of Florida		Public nonprofit	23,180	26,182	26,201	28,838	30,720	7%
20	Florida International University		Public nonprofit	25,028	21,000	23,709	26,341	30,126	5%
	Total Top 20			1,028,792	983,400	1,036,237	1,035,779	1,045,104	0%
	Total other			1,258,376	1,435,255	1,758,095	1,829,693	1,929,732	11%
	Grand Total (exclusively distance education)			2,287,168	2,418,655	2,794,332	2,865,472	2,974,836	7%

			Market share Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016
1	University of Phoenix	For-profit	11.3%	8.8%	7.4%	6.1%	4.7%
2	Western Governors University	Private nonprofit	1.8%	1.9%	2.1%	2.5%	2.8%
3	Grand Canyon University	LOPE For-profit	1.9%	2.1%	1.8%	1.9%	2.3%
4	Liberty University	Private nonprofit	3.1%	2.9%	2.6%	2.5%	2.3%
5	Arizona State University	Public nonprofit	1.6%	1.6%	1.6%	1.8%	2.3%
6	Southern New Hampshire University	Private nonprofit	0.5%	0.9%	1.5%	2.0%	2.2%
7	Walden University (Laureate)	LAUR For-profit	2.2%	2.1%	1.9%	1.8%	1.8%
8	University of Maryland-University College	Public nonprofit	1.8%	1.6%	1.7%	1.7%	1.7%
9	American Public University System	APEI For-profit	2.5%	2.3%	2.1%	1.8%	1.6%
10	Kaplan University	GHC For-profit	2.2%	2.3%	2.0%	1.7%	1.4%
11	Excelsior College	Private nonprofit	1.7%	1.6%	1.5%	1.5%	1.4%
12	Ashford University	BPI For-profit	3.4%	2.4%	1.8%	1.5%	1.4%
13	Strayer University	STRA For-profit	1.4%	1.1%	1.1%	1.2%	1.3%
14	Capella University	For-profit	1.6%	1.4%	1.3%	1.2%	1.3%
15	University of Central Florida	Public nonprofit	1.0%	1.2%	1.1%	1.2%	1.2%
16	Brigham Young University-Idaho	Private nonprofit	0.5%	0.7%	1.0%	1.2%	1.2%
17	Ivy Tech Community College	Public nonprofit	1.9%	1.5%	1.4%	1.2%	1.2%
18	DeVry University	ATGE For-profit	2.6%	2.1%	1.6%	1.3%	1.1%
19	University of Florida	Public nonprofit	1.0%	1.1%	0.9%	1.0%	1.0%
20	Florida International University	Public nonprofit	1.1%	0.9%	0.8%	0.9%	1.0%
	Total Top 20		45.0%	40.7%	37.1%	36.1%	35.1%
	Total other		55.0%	59.3%	62.9%	63.9%	64.9%
	Grand Total (exclusively distance education)		100.0%	100.0%	100.0%	100.0%	100.0%

N.A. – Not Available. Source: BMO Capital Markets and e-lietrate.com.

Online enablers are accelerating the adoption of postsecondary online programs

Online program management (OPM) changing the postsecondary landscape. Several companies categorized as "online enablers" or "online program management companies" have emerged that specialize in helping universities transform proprietary curriculum into online courses and offer many services, including IT support, recruiting, and marketing. Per Eduventures, about 80% of the more than 2,600 colleges delivering online education outsource the management of these programs. Most models work on a revenue-sharing basis, which is attractive to the more risk-averse not-for-profit postsecondary community.

According to Eduventures, the OPM market generated $1.1 billion in revenues in 2015, representing 32% annual growth from the $360 million estimated in 2011. The firm projects another 18% CAGR, with the industry reaching $2.5 billion in revenues in 2020. Virtually every U.S. higher education institution now offers some form of online courses, with many having fully online programs.

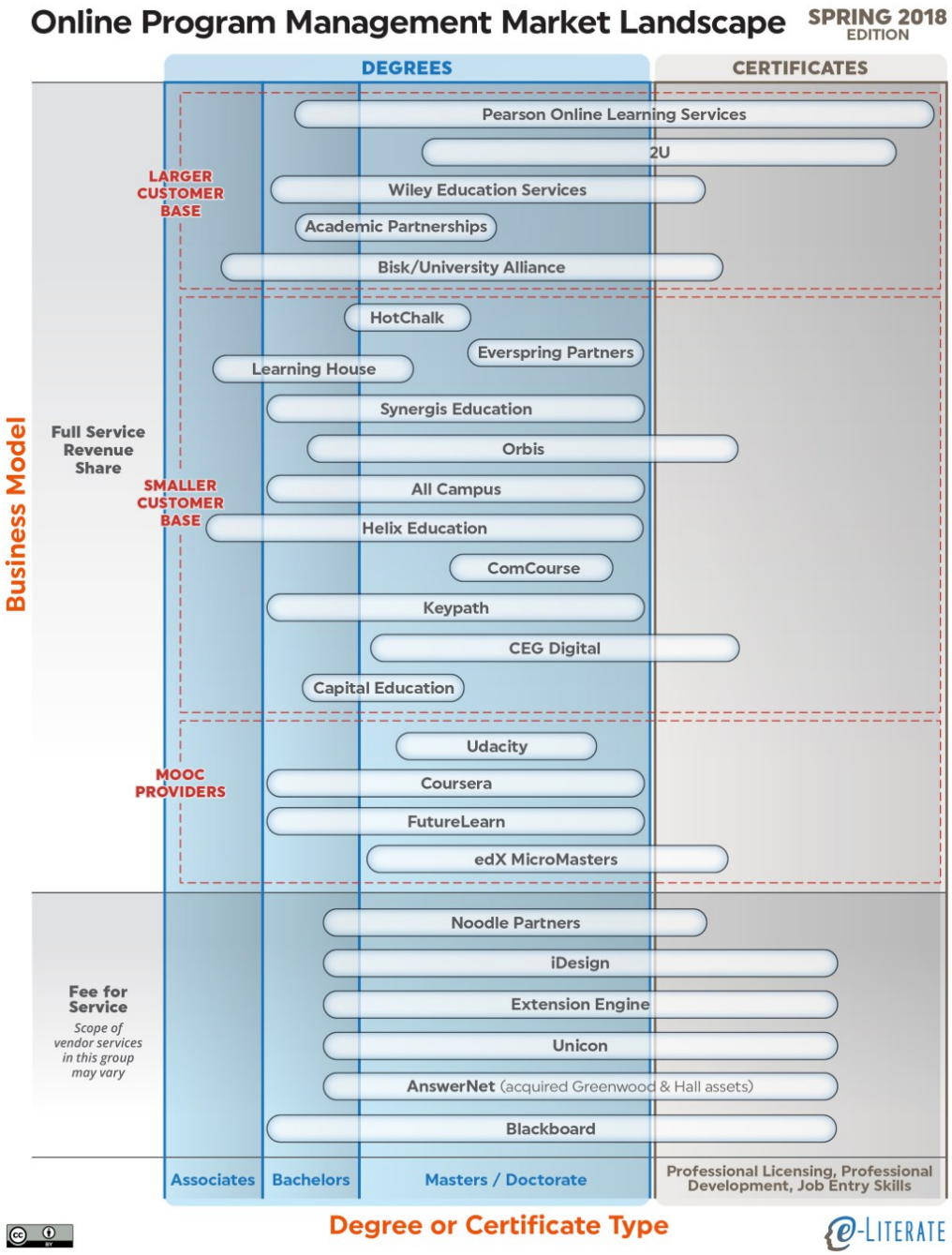
Exhibit 179: Online Program Management Market (2011–2020E)

	2011	2015	2020E
Market size ($ mil.)	$360	$1,100	$2,500
No. of institutions	150	350	500
As % of total	6%	12%	18%
CAGR	25%	32%	18%

Source: Eduventures

A summary of some of the largest OPM players is shown below. Others that participate in this area include StraighterLine and Trilogy Education.

Exhibit 180: Online Program Management Market Landscape (Spring 2018)



Source: e-Literate.

We are seeing the blending of postsecondary institutions and OPM companies, including the following:

- **The "acquisition" of for-profit postsecondary Kaplan University by not-for-profit Purdue University** and creating a new online public university called Purdue University Global. Purdue stated this was driven to address "two striking new realities": demand by working adults and online education. The transaction was approved by the Department of Education in September 2017 and by Purdue's accrediting body, the Higher Learning Commission (HLC) in March 2018. Purdue University Global launched in early April 2018.

- **The conversion of Grand Canyon Education (LOPE)'s Grand Canyon University (GCU) to a non-profit university**, which was approved by the HLC in March 2018 and completed in July 2018. The public company is now an OPM serving GCU along with other potential clients. The consideration was roughly $875 million (after post-close adjustments) via a seller-financed seven-year 6% senior secured note - at the high-end of the previously estimated range of $825-$875 million. LOPE and New GCU have entered into a long-term master services agreement (an initial 15-year term with renewal options) where LOPE will provide technological, marketing, promotional, financial aid, and other support services for a share of New GCU's tuition and fee revenue; the revenue share is approximately 60%. The transaction is mildly dilutive to LOPE earnings, though we believe the benefits more than offsets this, including the following:

    - The ability for the institution to now be eligible for new types of grants and philanthropy;

    - The potential for the school to separate itself from the stigma and potential future risks surrounding the for-profit sector (including the ability to recruit students at certain schools previously prohibited);

    - The potential for the school to minimize (or even avoid) certain property and income taxes (e.g., we estimate that the bulk of the expected $14 million in property taxes to be paid by the institution in 2018 could be saved); and

    - The creation of a public company that should be valued at a higher multiple similar to other OPMs given that sector has better long-term growth prospects and fewer risks than the for-profit school sector.

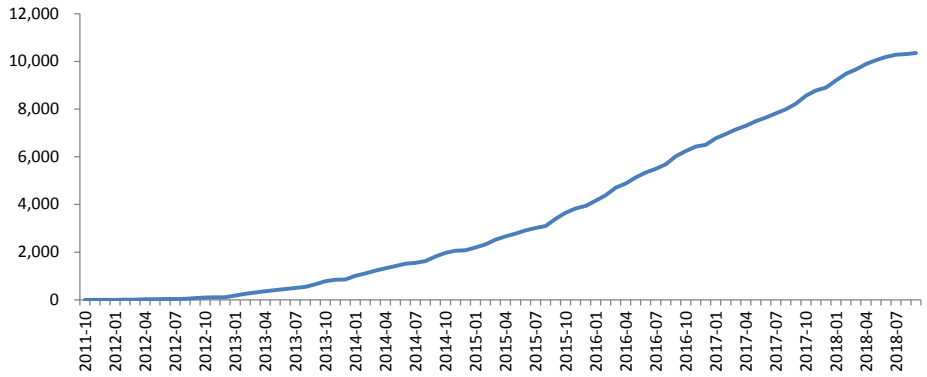
- The March 2018 announcement by **Bridgepoint Education (BPI) to merge its two universities, Ashford University and University of the Rockies, and the conversion of Ashford (the larger of the two entities) to a not-for-profit institution.** BPI would then become an OPM serving Ashford and potentially other institutions. The conversion and merger will require approval from state and federal regulators, as well as the WASC Senior College and University Commission, which is Ashford's regional accreditor.

Given the apparent increase in the number of OPMs, there are some concerns regarding whether the demand for these programs will (and has) outstripped the potential supply. While we were unable to find data to support either position, we do envision some pricing pressure over time, as it is likely the many cost-conscious universities will push pack on renewing contracts where they give up a sizeable portion of revenues (as much as 60+% in some instances). We believe the model may move toward more unbundling of services, similar to what has occurred in the K-12 sector, where some clients have taken back portions of services offered (e.g., student recruiting) in hopes of keeping more of the revenue stream. In addition, we are seeing some OPMs broaden their offerings beyond traditional degreed courses. This was the exemplified by 2U's July 2017 acquisition of Get Smarter, a company that focuses on shorter, non-degreed online programs.

Massive open online courses (MOOCs) having less impact than expected. These are online course delivery platforms (a type of learning management system) that enable anybody anywhere to take a course online and usually for free. Among the larger MOOC providers are Coursera, edX, Udacity, and Udemy. While MOOCs users have soared into the millions, we believe they generally attract a different type of student than those attending for-profit institutions. In addition, monetization models are still emerging. Some companies that are developing pricing models include Udemy, where professors design their own courses and set the fees themselves, and UniversityNow, which also offers low-cost courses with some credit opportunities. Other funding models include selling student data to recruiters or charging students for completion certificates (both adopted by Coursera). We also see news of various schools developing articulation arrangements with MOOCs under which students can earn transferable credit for completed courses.

We believe there was a tremendous amount of hype that surrounded the early days of these programs, way back in late 2011. While the pundits who predicted the end of higher education as we know it have been proven wrong, in our view, the number of MOOC courses has grown exponentially. According to Class Central, there were nearly 10,400 MOOC courses that have been started and scheduled from when the first MOOC was tracked (October 2011) through September 2018.

Exhibit 181: Cumulative MOOC Courses Started/Scheduled (October 2011–September 2018)



Source: Class Central.

More non-U.S. universities beginning to offer MOOCs

Class Central tracks the number of universities with MOOCs as shown below. While 8 of the top 10 universities offering such programs are based in the U.S., we have seen an influx of non-U.S. universities increase their presence here.

Exhibit 182: Universities With the Most MOOCs (July 2018)

Rank	University	Country	Number	Mkt. Share
1	Massachusetts Institute of Technology	USA	180	1.7%
2	Stanford University	USA	174	1.7%
3	University of Pennsylvania	USA	147	1.4%
4	Harvard University	USA	145	1.4%
5	University of Michigan	USA	138	1.3%
6	University of Naples Federico II	Italy	134	1.3%
7	University of Illinois at Urbana-Champaign	USA	131	1.3%
8	University of California, Irvine	USA	110	1.1%
9	Georgia Institute of Technology	USA	108	1.0%
10	Peking University	China	105	1.0%
11	École Polytechnique Fédérale de Lausanne	France	97	0.9%
12	Johns Hopkins University	USA	95	0.9%
13	University of California, San Diego	USA	94	0.9%
14	Higher School of Economics	Russia	91	0.9%
15	Delft University of Technology	Netherlands	89	0.9%
16	IIT (Indian Institute of Technology Kharagpur)	India	82	0.8%
17	IIT (Indian Institute of Technology Madras)	India	81	0.8%
18	Rice University	USA	80	0.8%
19	Universitat Politècnica de València	Spain	79	0.8%
20	IIT (Indian Institute of Technology Kampur)	India	79	0.8%
21	The Open University	United King	76	0.7%
22	Moscow Institute of Physics and Technology	Russia	75	0.7%
23	University of California, Berkeley	USA	70	0.7%
24	Duke University	USA	68	0.7%
25	Arizona State University	USA	65	0.6%
	Top 25		2,593	24.8%
815	Others		7,850	75.2%
840	Total		10,443	100.0%

Source: Class Central.

Characteristics of Superior For-Profit Postsecondary Schools

We believe investors should focus on additional unique attributes when investing in specific proprietary postsecondary institutions:

- **Types of programs offered**. For-profit schools are generally more flexible and able to quickly offer programs that correspond with job demand. While some verticals have become saturated in recent years, such as business and criminal justice, we believe healthcare-related and/or education programs remain in relatively higher demand owing to better job prospects.
- **Degree versus non-degree.** In general, degree-based programs offer greater investment returns owing to the higher revenue per student and longer duration of the program. However, in some cases shorter-term non-degree programs may provide more countercyclical benefits as students may rush to shorter vocational programs in weak job markets to prepare themselves for a job rebound. Additionally, we believe degree programs face more competition from traditional schools and may have more branding difficulties, whereas non-degree programs face more competition from local schools or community colleges.
- **Student-loan default rates.** The lower the better, as this implies a higher ability of graduates to pay off debt.
- **Job placement rates or change in salary**. The higher the better.
- **Percentage exposure online.** In the current environment, we believe schools that are more online have some degree of a competitive edge as fixed costs are lower and capacity utilization is less of an issue. However, in some instances, ground-based schools offer better branding opportunities and a higher level of student services.

- **Accreditation.** Regional or national accreditation is necessary to participate in government lending programs.

A summary of these factors for a selected group of publicly held postsecondary institutions is shown in the following exhibit.

Exhibit 183: Key Characteristics of Selected U.S. Postsecondary Institutions

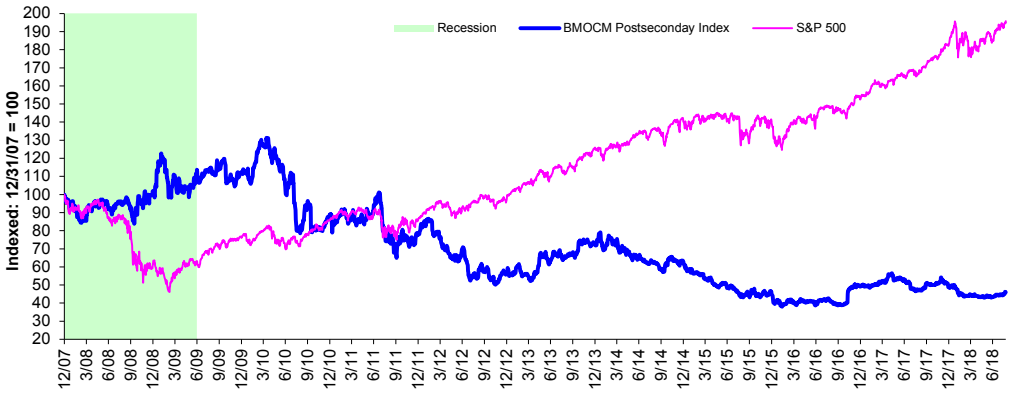
Company/ Ticker	FY	Students	Primary Programs Offered	Degree Type	% Title IV Revenue	Cohort Default Rates	Job Placement	Student Profile	Online Enrollment/% of Total
Adtalem Global Education (ATGE)	6	118,233	Business (24%), Medical and Health (62%), Technology (12%), Other (2%)	Bachelor's (57%) Master's (27%) Doctorate (16%)	2017; 85%; 2016; 85%	**FY2014 3-yr:** 11.5% **FY2013 3-yr:** 11.3%	91% (2013)	16.9% (24 and under) 58.8% (25-39) 24.3% (40 and over)	N.A
American Public Education (APEI)	12	76,800	Security & Global Studies (25%); Business (23%); Arts & Humanities (22%); Science, Technology, Engineering & Math (16%), Public Service & Health (11%); Education (3%)	Associate's (21%) Bachelor's (43%) Master's (34%), Doctoral's (2%)	2017; 41%; 2016; 43%	**APUS** **FY2014 3-yr:** 23.6% **FY2013 3-yr:** 20.1% **FY2012 3-yr:** 23.3% **HCN** **FY2014 3-yr:** 11.4% **FY2013 3-yr:** 11.4% **FY2012 3-yr:** 11.8%	N.A.	Military/TA: 36% VA: 24% FSA/Title IV: 26% Other: 14%	76,800; 100%
Bridgepoint Education (BPI)	12	41,523	Business (43%), Healthcare/ Psychology (23%), Education (19%), Social Science (13%)	Associates (3%) Bachelor's (79%) Master's (14%) Doctoral (2%) Other (2%)	2017; 81%; 2016; 81%	Ashford University **FY2014 3-yr:** 14.9% **FY2013 3-yr:** 14.5% **FY2012 3-yr:** 15.3% University of the Rockies **FY2014 3-yr:** 5.5% **FY2013 3-yr:** 3.8% **FY2012 3-yr:** 4.3%	N.A.	Avg Age: 35 Male (30%) Female (70%) Minority (56%)	40,730; 100%
Career Education (CECO)	12	33,100	Business (74%), Health (11%), IT (15%)	Associate's (16%), Bachelor's (72%) Doctoral & Master's (12%)	2017; 78%; 2016; 76%	**FY2014 3-yr:** 16.6%-17.1% **FY2013 3-yr:** 14.0%-14.7% **FY2012 3-yr:** 17.7%-17.7%	N.A.	3% (under 21) 36% (21-30) 61% (over 30)	0%
Capella University (STRA)	12	37,786	Business and Technology (25%), Health and Human Services (20%), Education (11%), Public Service Leadership (38%)	Bachelor's (26%), Master's (47%), Doctoral (24%), Other (3%)	2017; 76%; 2016; 77%	**FY2014 3-yr:** 6.9% **FY2013 3-yr:** 6.5% **FY2012 3-yr:** 8.9%	N.A.	50% people of colour 78% Female, 22% Male Average age 39 years	37,517; 100%
Graham Holdings Company's Kaplan Education (GHC)	12	29,193	Healthcare, Business, Information Technology, Education, Criminal Justice, Paralegal	Certificate (4.4%) Associate's (25%) Bachelor's (48.4%) Master's (22.2%)	2017; 74%; 2016; 77%	**FY2012 3-yr:** 12.9% **FY2011 3-yr:** 20.4% **FY2010 3-yr:** 26.2%	N.A.	0.1% (Under 20) 27% (20-29) 38% (30-39) 23% (40-49) 13% (50-64) 0.5% (Over 65)	N.A.
Grand Canyon Education (LOPE)	12	81,620	STEM (33%), Education (32%) Liberal Arts (19%), Business (16%)	Bachelor's (49.5%), Master's and Doctoral (50.5%)	2017; 72%; 2016; 72%	**FY2014 3-yr:** 8.5% **FY2013 3-yr:** 9.2% **FY2012 3-yr:** 10.3%	N.A.	86.1% online / working adutls, age 25+ 94.5% traditional campus student under 25	71,455; 79%
Laureate Education (LAUR)	12	1,041,000	Business (27%), Medicine & Health (23%), Engineering & IT (17%), Architecture (8%), Law & Legal (6%), Education (5%), Communication (5%), Other (9%)	Undergraduate (60%) Graduate (13%) Technical (16%) Working Adult (7%) High School (4%)	2016; 73%; 2017; 73%	**FY2014 3-yr:** 7.5% **FY2013 3-yr:** 6.7% **FY2012 3-yr:** 6.8%	N.A.	Walden University: Working professionals	58,900; 5.7%
Lincoln Educational Services (LINC)	12	10,484	Auto (43%), Health Sciences (27%), Skilled Trades (22%), Hospitality Services (5%), IT/ Business (3%)	Diploma/Certificate (82%); Associate's (17%): Bachelor's (1%)	2017; 80%; 2016; 79%	**FY2014 3-yr:** 5.2%-13.6% **FY2015 3-yr:** 7.6%-13.2%	N.A.	23% (High School) 77% (19 and older)	N.A.
National American University Holdings (NAUH)	5	5,981	Business (38%), Allied Health (27%), Legal (9%), IT (6%), Nursing (15%), Doctoral (2%), Cont. Ed (3%)	Doctoral (2%) Bachelor (47%) Associate (33%) Masters (7%) Diploma (9%) Continued Educ. (2%)	2017; 83%; 2016; 87%	**FY2014 3-yr:** 24.1% **FY2013 3-yr:** 23.4% **FY2012 3-yr:** 20.6%	90% (2015)	Average age is 35	4,691, 70%
Strategic Education (STRA)	12	84,654	Business/Economics/Accounting (69%), Information Systems (10%), Other (21%)	Bachelor's (72%), Master's (24%), Associate's (3%), Other (1%)	2017; N.A; 2016; 75%	**FY2014 3-yr:** 13.2% **FY2013 3-yr:** 11.3% **FY2012 3-yr:** 11.6%	N.A.	64% age 31+; 66% female; 76% minorities	85%
Universal Technical Institute (UTI)	9	10,005	Automotive Technician and Collision Repair (75%), Motorcycle and Marine Technicians (25%)	Associate's Diploma Certificate	2017; 73%; 2016; 72%	**FY2014 3-yr:** 15.5% **FY2013 3-yr:** 15% **FY2012 3-yr:** 15.8%	86% (2016)	60% (recent high school grads,18-21) 40% (adult learners, >25)	N.A

N.A. – Not Available. Note: Enrollment from most recent quarter. Source: Primary programs, degree type, Title IV funding and student profiles from most recent 10-K, analyst presentations or other company reports. Cohort default rates from Department of Education website.

Postsecondary Schools: Valuation Trends

How have the stocks been performing? The BMO Capital Markets Postsecondary Index significantly underperformed the broader market in recent years. While there was some "post-Trump" bounce, postsecondary stocks as a group have underperformed for most of this decade.

Exhibit 184: BMO Capital Markets Private Sector Postsecondary Index vs. S&P 500 (12/02-8/18)

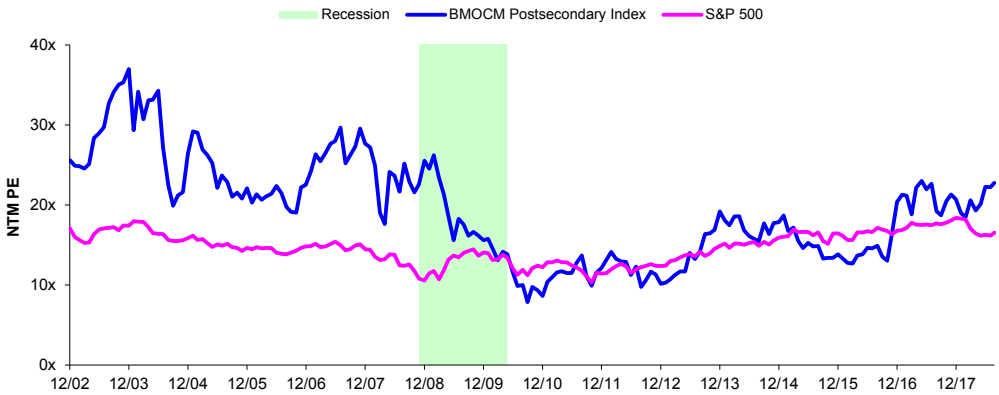


Note: Shaded area indicates recessionary period. Source: FactSet Research and BMO Capital Markets.

Historical valuation multiples

What do current valuations look like? We compare the historical median forward-looking P/E multiples for the education group. Historically, the group's forward-looking P/E multiples tend to peak just before a recession and trough at the height of economic expansions. The current forward-looking P/E multiple is 22.1x versus 17.3x for the S&P 500. This is well above the 7.8x trough multiple reached in August 2010, and just above the group's historical median of 21.5x.

Exhibit 185: Forward-Looking P/E: BMO Capital Markets Private Sector Postsecondary Index vs. S&P 500 (12/02-8/18)



Note: Shaded area indicates recessionary period. Source: FactSet Research and BMO Capital Markets.

Exhibit 186: Forward-Looking P/E Milestones: BMO Capital Markets Private Sector Postsecondary Index (12/02-8/18)

BMOCM NTM PE

	Trough	Date	Peak	Date	Median
2000s Expansion (12/01-11/07)	17.6x	Mar-08	37.0x	Nov-03	25.5x
2007-2009 Recession (12/07-6/09)	9.9x	Jun-10	26.2x	Jan-09	17.4x
Current Cycle (7/09-Present)	7.8x	Aug-10	23.0x	Apr-17	15.2x
All-time	**7.8x**		**37.0x**		**21.5x**

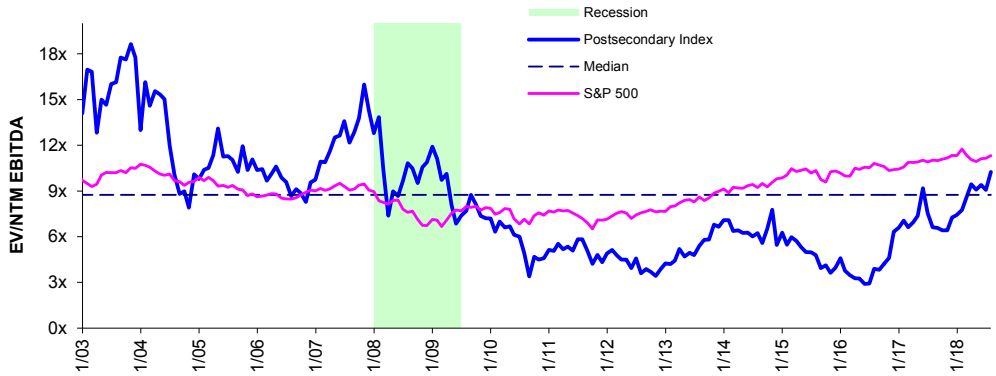
Current NTM PE multiples

BMOCM NTM PE	22.1x
S&P 500	17.3x

Source: FactSet Research and BMO Capital Markets.

The group's current median EV/NTM EBITDA multiple of 8.1x is well above the all-time low of 2.9x (June 2016) and just below the group's historical median of 8.7x.

Exhibit 187: EV/NTM EBITDA: BMO Capital Markets Postsecondary (12/02-8/18)



Note: Shaded area indicates recessionary period. Source: FactSet Research and BMO Capital Markets.

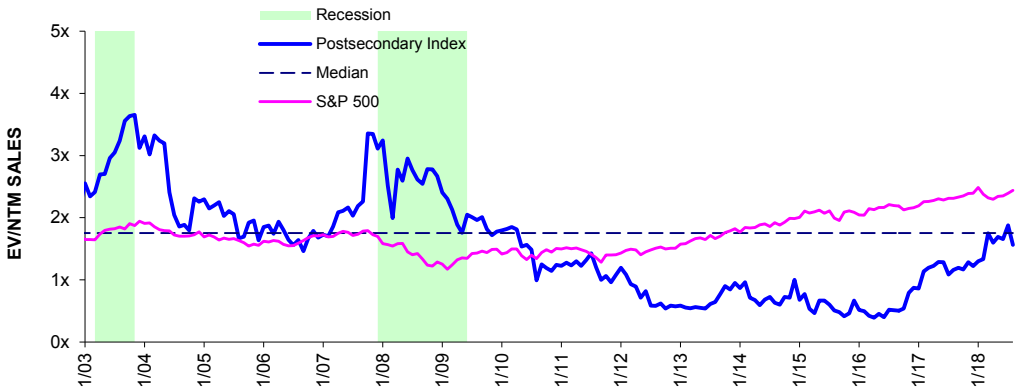
Exhibit 188: EV/NTM EBITDA Milestones: BMO Capital Markets Postsecondary Index (12/02-8/18)

	Trough	Date	Peak	Date	Median
2000s Expansion (12/01-11/07)	7.9x	Oct-04	21.5x	Apr-02	12.8x
2007-2009 Recession (12/07-6/09)	6.8x	May-09	14.3x	Nov-07	10.3x
Current Recovery (7/09-Present)	2.9x	May-16	10.2x	Jul-18	5.5x
All-time	**2.9x**		**21.5x**		**8.7x**
BMOCM Index	**8.1x**				
S&P 500	**11.5x**				

Source: FactSet Research and BMO Capital Markets.

The group's current median EV/NTM sales multiple of 1.6x is well above the all-time low of 0.4x (October 2015), and just below its historical median of 1.8x.

Exhibit 189: EV/NTM Sales: BMO Capital Markets Postsecondary Index vs. S&P 500 (12/02-8/18)



Note: Shaded area indicates recessionary period. Source: FactSet Research and BMO Capital Markets estimates.

Exhibit 190: EV/NTM Sales Milestones: BMO Capital Markets Postsecondary Index (12/02-8/18)

	Trough	Date	Peak	Date	Median
2000s Expansion (12/01-11/07)	1.5x	Sep-06	3.7x	Nov-03	2.2x
2007-2009 Recession (12/07-6/09)	1.8x	May-09	3.3x	Nov-07	2.6x
Current Recovery (7/09-Present)	0.4x	Apr-16	2.0x	Jun-09	0.9x
All-time	**0.4x**		**3.7x**		**1.8x**
BMOCM index	**1.6x**				
S&P 500	**2.4x**				

Source: FactSet Research and BMO Capital Markets.

We provide recent operating and fundamental statistics for a number of publicly held companies in the following table.

Exhibit 191: Trailing 12-Month Operating and Valuation Metrics: Selected Publicly Held Postsecondary School Operators

	Postsecondary Education										
	Adtalem Global Education ATGE	American Public Education APEI	Bridgepoint Education BPI	Career Education CECO	Laureate Education LAUR	Grand Canyon LOPE	Lincoln Educ. Services LINC	Natl Amer. University Holdings NAUH	Strategic Education STRA	Universal Technical Inst. UTI	POSTSEC GROUP MEDIAN
Rating	Outperform	Market Perform	N.A.	N.A.	Outperform	Outperform	N.A.	N.A.	Outperform	N.A.	
Price Target	$56	$43	N.A.	N.A.	$18	$130	N.A.	N.A.	$152	N.A.	
Operating Performance											
FY End	6	12	12	12	12	12	12	5	12	9	
LTM Qtr. End	6/18	6/18	6/18	6/18	6/18	6/18	6/18	5/18	6/18	6/18	
Revenue ($MM)	$1,231.2	$299.1	$463.2	$578.2	$4,377.8	$1,020.1	$257.7	$77.2	$458.4	$318.0	
Gross Profit ($MM)	585.6	164.9	266.2	443.3	916.4	612.9	132.7	47.6	209.8	136.4	
EBITDA ($MM)	265.4	54.2	24.9	58.0	404.2	355.0	4.4	(4.0)	71.4	(6.7)	
EBIT ($MM)	212.5	36.1	17.2	47.1	477.5	299.6	(4.2)	(8.6)	51.8	(24.1)	
Pretax Income ($MM)	198.7	35.8	5.2	49.6	78.9	302.9	(5.0)	(12.3)	36.5	(25.8)	
Net Income ($MM)	113.9	23.8	13.9	(14.4)	605.6	227.3	(4.8)	(12.2)	14.4	(22.4)	
Free Cash Flow ($MM)	172.7	42.2	(4.2)	20.3	53.7	171.6	(8.6)	NA	35.2	(21.3)	
Gross Margins (in %)	47.6%	55.1%	57.5%	76.7%	20.9%	60.1%	51.5%	61.7%	45.8%	42.9%	**53.3%**
EBITDA (in %)	21.6%	18.1%	5.4%	10.0%	9.2%	34.8%	1.7%	(5.1%)	15.6%	(2.1%)	**9.6%**
EBIT (in %)	17.3%	12.1%	3.7%	8.1%	10.9%	29.4%	(1.6%)	(11.1%)	11.3%	(7.6%)	**9.5%**
Pretax Income (in %)	16.1%	12.0%	1.1%	8.6%	1.8%	29.7%	(2.0%)	(16.0%)	8.0%	(8.1%)	**4.9%**
Net Income (in %)	9.3%	8.0%	3.0%	(2.5%)	1.8%	29.7%	(2.0%)	(16.0%)	3.1%	(7.1%)	**2.4%**
Free Cash Flow Yield (in %)	5.9%	7.2%	(1.2%)	1.8%	1.5%	3.0%	(16.1%)	NA	1.2%	(31.1%)	**1.5%**
ROIC	6.3%	7.6%	5.2%	(10.0%)	1.7%	21.6%	(12.5%)	(31.9%)	10.4%	(4.7%)	**3.4%**
ROE: LTM	2.2%	7.3%	8.2%	(10.8%)	(13.1%)	20.6%	(25.1%)	(71.8%)	9.9%	(10.6%)	**(4.2%)**
Valuation Metrics											
FY End	6	12	12	12	12	12	12	5	12	9	
LTM Qtr. End	6/18	6/18	6/18	6/18	6/18	6/18	6/18	5/18	6/18	6/18	
Price (08/24/18)	$48.75	$35.65	$13.00	$16.51	$15.60	$120.02	$2.17	$0.89	$135.01	$2.72	
Shares Outstanding (MM)	59.9	16.4	27.0	69.7	224.1	48.2	24.6	24.3	21.6	25.2	
Market Cap ($MM)	$2,919.8	$585.5	$350.8	$1,151.1	$3,495.3	$5,788.2	$53.5	$21.7	$2,912.2	$68.5	
Net Debt/(Cash) ($MM)	(142.2)	(193.6)	(193.6)	(190.1)	2,388.6	(235.0)	12.7	13.9	(171.6)	(27.3)	
Enterprise Value ($MM)	2,785.9	399.8	162.0	991.4	5,891.8	5,575.3	65.9	35.5	1,364.8	41.2	
CY EPS:											
2017A	$2.63	$1.29	$0.59	($0.45)	($1.20)	$4.22	($0.48)	N.A.	$3.11	($0.54)	
2018E	2.69	1.61	0.64	0.97	1.97	4.86	(0.09)	N.A.	3.95	(1.45)	
2019E	3.00	1.77	0.66	1.15	0.72	5.11	0.10	N.A.	5.27	(1.20)	
Two-Year CAGR	6.8%	17.3%	5.4%	N.A.	N.A.	10.1%	N.A.	N.A.	30.1%	49.1%	**13.7%**
P/E:											
2017A	18.6x	27.7x	22.0x	N.M.	N.M.	28.5x	N.M.	N.A.	43.4x	N.M.	**27.7x**
2018E	18.1	22.2	20.3	17.1	7.9	24.7	N.M.	N.A.	34.2	N.M.	**20.3**
2019E	16.3	20.1	19.8	14.4	21.8	23.5	21.7x	N.A.	25.6	N.M.	
EV/Rev. (NTM)	2.2	1.3	0.3	1.6	1.3	7.5	0.2	N.A.	1.6	0.1x	**1.3**
EV/EBITDA (NTM)	9.4	7.2	5.8	N.A.	7.4	18.2	5.6	N.A.	8.8	N.M.	**7.4**
EV/EBIT (NTM)	12.1	10.5	7.8	9.0	14.6	20.6	19.9	N.A.	10.8	N.M.	**11.4**
EV/Free Cash Flow (NTM)	17.0	8.7	N.A.	16.8	N.A.	22.5	N.A.	N.A.	14.3	N.A.	**16.8**
Student Metrics (TTM)											
Total Student Population	142,502	77,000	40,730	34,700	1,070,900	81,620	11,235	5,917	43,411	10,900	**42,071**
Revenue/Student	$8,640	$3,885	$11,372	$16,663	$4,088	$12,498	$22,939	$13,044	$10,559	$29,178	**$11,935**
EBITDA/Student	1,862	704	610	1,671	377	4,349	396	(668)	1,646	(614)	**657**
Operating Profit/Student	1,492	468	422	1,357	446	3,671	(371)	(1,453)	1,193	(2,210)	**457**
Free Cash Flow/Student	1,212	548	(102)	585	50	2,103	(767)	N.A.	811	(1,954)	**548**
EV/Student	19,550	5,193	3,977	28,570	5,502	68,308	5,862	6,003	31,439	3,780	**5,932**

N.A. – Not Available. N.M. – Not Meaningful. Source: BMO Capital Markets and FactSet Research.

Limited number of recent school IPOs

There have been a limited number of postsecondary school IPOs:

- In April 2007, Camden Learning Corporation was incorporated as a special purpose acquisition company (SPAC) formed to serve as a vehicle for the acquisition of an operating business. On November 23, 2009, Camden Learning completed a business combination with Dlorah, Inc., a privately held company doing business as National American University, whereby Dlorah continued to own and operate National American University, and Camden, now known as National American University Holdings, Inc. (NAUH) became the publicly traded holding company of Dlorah.

- On November 20, 2008, Grand Canyon Education (LOPE), which operates Grand Canyon University, went public at $12 per share. The initial company valuation was roughly $523 million. This was the first IPO on a U.S. exchange in any industry since August 2008, ending one of the longest IPO droughts in the market's history.
- On April 15, 2009, Bridgepoint Education (BPI), which operates Ashford University and University of the Rockies, went public at $10.50 per share. The initial company valuation was roughly $558 million, or about 9x EV/TTM EBITDA (through March 31, 2009).
- On February 1, 2017, Laurate Education (LAUR) returned to the public markets at $14 a share. The initiation company's enterprise valuation was roughly $5.57 billion, or about 7.3x EV/TTM EBITDA (through December 31, 2016).

In addition, on March 29, 2014, online-enabler 2U (TWOU) went public at $13 per share, with an initial valuation of $506 million or roughly 6.1x sales. The company was not profitable (on either an earnings or EBITDA level) when it went public, and it positioned itself as a tech company (education as a service).

Going private transactions

Conversely, there have been a number of publicly held postsecdonary school operators than have gone private.

- Education Management was acquired by Providence Capital Partners and Goldman Sachs Capital Partners on June 1, 2006. The final takeout price was roughly $3.2 billion, or about **11.4x EV/LTM EBITDA**. When the deal was announced on March 6, 2006, the stock was trading at 9.7x EV/LTM EBITDA (versus the industry median of 10.2x), implying roughly a 17.5% premium for the takeout. The $43 per share price was a **16% premium** to the stock's close prior to the announcement ($36.98) and a 26% premium to the average closing price of $34.02 during the previous 30 trading days. EDMC went public again on October 1, 2009.
- Concorde Career Colleges was acquired by Liberty Partners on September 1, 2006, for roughly $99 million, or about **12.9x EV/LTM EBITDA** (based on the data available at the time of the announcement, though likely calculated off a depressed ["trough"] EBITDA base). When the deal was announced on June 21, 2006, the proposed $19.80 per share price represented roughly a **34% premium** over Concorde's prior close.
- On August 17, 2007, Laureate Education completed its merger with a private investor group led by its CEO Doug Becker and a consortium of firms, including Kohlberg Kravis Roberts & Co. (KKR), Citi Private Equity, and S.A.C. Capital Management. When the transaction was initially announced on January 28, 2007, the $3.8 billion price ($60.50 per share) was roughly 17.1x EV/LTM EBITDA, about a 10% premium to the 15.6x EV/LTM EBITDA multiple for the stock at the time (the group was trading at roughly 11x EV/LTM EBITDA). The proposed purchase price of $60.50 per share was an **11% premium** over the stock's prior close ($54.41), though a 23% premium over the closing price of the stock on January 4, 2007, the day the company's Special Committee began negotiating on this transaction. Prior to closing, the price was raised to $62 per share ($3.82 billion), implying a takeout value of roughly **15.5x LTM EBITDA** (through June 30, 2007), by our estimates.
- In February 2017, the acquisition of Apollo Education Group (now called Vanta Education) was completed by a consortium of investors, including Apollo Global Management, LLC (APO), which marked the first successful large go-private transaction in the space in recent years, though it took roughly 13 months from the date of the announcement for the transactions to be completed, given the amount of regulatory approval (e.g., change of control provision) necessary. The final acquisition price of $10.00 per share or roughly $1.1 billion in cash, or about **0.9x EV/LTM EBITDA**, which represented a **44% premium** over the stock's closing price the day before the offer.

While not a going-private transaction, on July 2, 2018, Grand Canyon Education (LOPE) completed the sale of Grand Canyon University to Gazelle University for $875 million, including post-close adjustments. The transaction was financed with seller-financed, senior secured note, with annual rate of 6% and maturity of June 30, 2025. Using the provided pro-forma historical financials, the purchase multiple

represents roughly **13.8x EV/EBIT (2017)** multiple for the school (pro forma EBITDA data was not available). The public company has transformed into an online program management company serving Grand Canyon University and potentially other institutions.

What could foreshadow other such transactions was the October 2017 announcement of the proposed merger of Strayer Education (STRA) and Capella Education (formerly CPLA). The combination is via an all-stock merger of equals transaction. CPLA shareholders received 0.875 shares of STRA per CPLA share. The transaction is expected to achieve annual cost savings of $50 million and be accretive by 20-25% to Strayer's EPS by 2019. The combined company will pay an annualized dividend of $2.00 per share. On August 1, 2018, the merger was completed to create Strategic Education, SEI. The multiples used at the time of the transaction announcement were:

Challenges for potential transactions

- **CPLA: EV/2018E EBITDA of 7x-10x; price/2018E EPS of 18x-24x**
- **STRA: EV/2018E EBITDA of 8x-11.5x; price/2018E EPS of 17.5x-21.5x**

We believe **financing remains difficult**, as lenders are cautious about investing in a sector with deteriorating fundamentals (the Apollo transaction was all-cash while the Strayer/Capella merger is all-stock). As it certainly feels as though enrollment is bottoming out, we think lenders still prefer a bit more visibility before getting involved. GE 2.0 also added another level of uncertainty, in our view, though to a lesser extent now that the regulation has been "finalized."

Given that the accrediting bodies need to approve any "change of control" and what is perceived as a negative bias against private equity transactions in the space, this may also limit such transactions. There have been at least two instances—Rochester College (February 2010) and Dana College (June 2010)— in which the accrediting agency (Higher Learning Commission [HLC]) did not approve a change of control to private equity-related entities, and Dana was actually forced to close as it was in financial distress. These were both regional accreditation agencies, and there are those that speculate that change of control approvals may be easier for schools that are nationally accredited, given that those agencies are much more familiar with for-profit institutions.

Other potential transaction headwinds include:

- **Buyers' reluctance to buy when enrollment trends are negative.** While we believe the worst is over, we do not foresee total enrollment beginning to grow again for the sector for some time, although some companies could be slightly ahead of this curve.
- **Sellers' reluctance to sell at trough valuations.** Some cited that it may be difficult for public companies to recommend to their boards any potential going-private transactions at current valuation levels. The recent rebound in the stocks in this group may have alleviated this concern.

Landmark merger of two for-profit institutions

Nevertheless, Adtalem Global Education (ATGE) is in the process of virtually giving away two of its institutions.

- On December 5, 2017, ATGE announced it had signed an agreement to transfer ownership of DeVry University and its Keller Graduate School of Management (collectively DVU) to Cogswell Education LLC, owner of Cogswell College, a privately-held regionally accredited institution and the second oldest operating college in California. No consideration will be paid to ATGE at closing, though the agreement includes an earn-out up to $20 million paid over 10 years based on DVU's free cash flow. On June 28, 2018, the ED tentatively approved this transaction, though is still awaiting regulatory approval from the Higher Learning Commission ("HLC").
- On June 29, 2018, the company announced that it had signed an agreement to transfer ownership of its Carrington College to San Joaquin Valley College, Inc. No consideration will be paid to ATGE at closing. ATGE will also make a capital contribution of $11.5 million to Carrington College for working capital and transaction-related expenses. The transaction is expected to be completed in mid-F2019.

Last decade, we saw a pickup in acquisitions of not-for-profit institutions by either private equity firms or private sector institutions. Many of these transactions incorporated a not-for-profit conversion to a for-profit entity. Institutions that were acquired are usually facing some financial issues, limiting their viability. We believe the repeal of the 50% rule effective July 1, 2006, (which had limited institutions to have under 50% of courses offered via "telecommunications courses" (i.e., online) or else lose Title IV eligibility) increased interest in this type of transactions, as the new entity typically uses the acquired platform (and often regional accreditation) as a base to dramatically expand its online presence.

Exhibit 192: For-Profit Purchases of Not-For-Profit Institutions (2004–2012)

Date	Target	Acquirer	Comments
Feb-04	Grand Canyon University	Grand Canyon Education (LOPE)	LOPE went public in November 2008; the University returned to its not-for-profit status in July 2018
Oct-04	Post University (formerly Teikyo Post University)	Generation Partners	
Mar-05	The Franciscan University of the Prairies	Bridgepoint Education (BPI)	Subsequently renamed Ashford University; BPI went public in April 2009
Apr-05	Salem International University	Palm Ventures LLC	
Jul-05	New England College of Finance	Whitney International University System (Best Associates)	Part of Whitney International University System
Nov-05	Barat College (DePaul University)	American College of Education (Best Associates)	
Apr-07	Sierra Nevada College	Knowledge Universe Learning Group LLC	
Apr-07	Heald College	Palm Ventures LLC	Sold to Corinthian Colleges in January 2010
Aug-07	Touro International University	Summit Partners	Subsequently renamed Trident University
Sep-07	Colorado School of Professional Psychology	Bridgepoint Education (BPI)	Subsequently renamed University of the Rockies; BPI went public in April 2009
May-08	Myers University	SignificantFederation	Subsequently renamed Chancellor University, then renamed Jack Welch Management Institute; now part of Strayer Education (STRA)
Mar-09	InterAmerican College	SignificantFederation	Subsequently renamed United States University
Apr-09	Waldorf College	Columbia Southern University	
Jul-08	Kendall College	Laureate Education (LAUR)	
Jun-09	Daniel Webster College	ITT Educational Services	Acquires 1st regionally accredited institution
Jul-09	College of Santa Fe	Laureate Education (LAUR)	Lease with purchase option
Dec-09	Crichton College	SignificantFederation	Subsequently renamed Victory University
Jul-12	Patten University	UniversityNow	

Source: BMO Capital Markets, Bloomberg, and company reports.

However, given regulatory scrutiny, financial distress and other issues, we are now seeing a shift where for-profit institutions are selling themselves to and/or converting to become non-for profit entities. Initially, there were some roadblocks in this process.

- In June 2010, the Higher Learning Commission of the North Central Association of Colleges and Schools (HLC) rejected two "change of control" requests to have accreditation continue with the purchases of not-for-profit colleges—the proposed acquisition of Dana College by Dana Education Corporation (a group of investors and an unnamed private equity firm) and Rochester College by University Education, a subsidiary of K12 (LRN). This decision subsequently led to the closure of Dana College after 126 years of operation. The HLC cited a new set of policies that required the purchaser to maintain the school's mission post-transaction to keep its accreditation, to stop what it deemed to be "accreditation shopping." Some believe this was a reaction to the increased scrutiny that HLC has been under following the December 2009 OIG report, which asked the ED to review its actions when accrediting Career Education's (CECO) American Intercontinental University (AIU) for possible violations. Nevertheless, decisions such as these could limit the number of future transactions between not-for-profit institutions and for-profit entities.
- In March 2014, HLC denied the request of not-for-profit and financially struggling Thunderbird School of Management to join the global network of for-profit provider Laureate Education, after complaints from some alumni, trustees, and faculty members that the proposed joint venture would be a "radical shift in the school's mission, objectives, scope, structure, and governance." In July 2014, Thunderbird signed a letter of intent to become part of not-for-profit Arizona State University (ASU). The deal was finalized in December 2014.

For-profit and not-for-profit combinations

- In October 2014, Grand Canyon Education (LOPE) applied to its accrediting body, the Higher Learning Commission (HLC) to place its university in a not-for-profit entity and keep the public company as a management services provider, after finding it difficult to raise financing for a potential not-for-profit conversion. In March 2016, HLC refused to approve this application. However, the company persevered and reapplied, receiving accreditor approval in March 2018, with the transaction completed in July 2018.
- In March 2017, the Dream Center Foundation, announced plans to buy Education Management's (EDMC) Argosy University, South University and the Art Institutes, with plans to convert the schools into nonprofits. In July 2017, the Middle States Council on Higher Education, the accreditor for the Art Institute of Pittsburgh and Art Institute of Philadelphia, rejected the sale of these institutions.

However, there have been a number of successful conversions/purchases in recent years, as shown below.

Exhibit 193: For-Profit Sales/Conversions to Not-For-Profit Institutions (2011–2018)

Date	Target	Acquirer	Comments
Jan-11	Keiser University	Everglades College Inc.	Included "huge donation" from Keiser family
Jan-11	Remington College	Remington College Inc.	
Dec-12	Stevens-Henager College, CollegeAmerica, and California College San Diego	The Center for Excellence in Higher Education	
Jan-14	Ramussen College		Transitioned to public benefit corporation
Apr-17	Kaplan University	Purdue University	Renamed Purdue University Global
Oct-17	Education Management	Dream Center Foundation	
Jul-18	Grand Canyon University	Gazelle University	Returns to not-for-profit roots
Pending	Ashford University/University of the Rockies		Plans to combine and convert to not-for-profit status
Pending	University Now	National University System	Operates Patten University
Pending	Northcentral University	National University System	Transaction pending regulatory and other approvals

Source: BMO Capital Markets, Bloomberg, and company reports.

A listing of recent acquisition activity of U.S. postsecondary school operators can be found in the following table.

Exhibit 194: U.S. Postsecondary School Operators Transactions (2011–2018)

Annc. Date	Target	Acquiror	Transaction Value	Transaction Value/LTM Revenue	Transaction Value/LTM EBITDA
			(US$ mm)	(ratio)	(ratio)
Jul-18	Northcentral University	National University System	n.a.	n.a.	n.a.
May-18	Penn Foster Education Group, Inc.	Bain Double Impact	n.a.	n.a.	n.a.
Apr-18	University of St. Augustine for Health Sciences	Altas Partners	$400.0	4.5x	11.6x
Jan-18	Assets And Current Programs Of Kendall College	National-Louis University	n.a.	n.a.	n.a.
Dec-17	Devry University Inc. and DeVry New York Inc.	Cogswell Education, LLC	$20.0	n.a.	n.a.
Oct-17	Capella Education Company	Strayer Education, Inc.	$801.6	1.8x	8.6x
Jul-17	Henley-Putnam University	National American University Holdings, Inc.	n.a.	n.a.	n.a.
Apr-17	Iowa College Acquisition Corporation (Kaplan University)	Purdue University	n.a.	n.a.	n.a.
Mar-17	Education Management Corporation, Substantially All Assets	Dream Center Foundation	n.a.	n.a.	n.a.
May-16	Apollo Education Group	Apollo Global Mgmt.; Vistria	$1,140.7	0.6x	6.0x
Nov-15	CleanEdison	Kaplan, Inc.	n.a.	n.a.	n.a.
Oct-15	Proflight Aviation Services	Tempus Applied Solutions LLC	n.a.	n.a.	n.a.
Aug-15	Missouri College	Weston Education Group	n.a.	n.a.	n.a.
Jun-15	Brooks Institute	gphomestay	n.a.	n.a.	n.a.
Feb-15	Kaplan, 38 college campuses	Education Corporation of America	n.a.	n.a.	n.a.
Jan-15	Ogle School	NCK Capital, LLC	n.a.	n.a.	n.a.
Jan-15	Georgia Perimeter College	Georgia State University	n.a.	n.a.	n.a.
Dec-14	Mountain State University	West Virginia University	$8.0	n.a.	n.a.
Nov-14	Corinthian Colleges (56 Everest and WyoTech Campuses)	Zenith Education Group, Inc.	$24.0	n.a.	n.a.
Sep-14	Platt College	STVT-AAI Education, Inc.	n.a.	n.a.	n.a.
Aug-14	Florida Career College (14 Campuses)	IEC Corp.	$2.0	n.a.	n.a.
Jul-14	Thunderbird School of Global Management	Arizona State University-Tempe	n.a.	n.a.	n.a.
Jun-14	Ex'pression College for Digital Arts	SAE Institute USA, Endowment Arm	$13.0	n.a.	n.a.
May-14	Crimson Technical College	Sterling Partners	n.a.	n.a.	n.a.
May-14	Aviation Academy of America Inc.	Vision Technologies Aerospace Incorporated	$0.8	n.a.	n.a.
Feb-14	Health Science Center of Colorado University	Continuum Partners, LLC	$30.0	n.a.	n.a.
Dec-13	Health Career Institute	Florian Education Investors	n.a.	n.a.	n.a.
Dec-13	YTI Career Institute	The Porter & Chester Institute, Inc.	n.a.	n.a.	n.a.
Dec-13	Arizona School of Real Estate & Business	Hondros College of Business	n.a.	n.a.	n.a.
Aug-13	Hondros College	American Public Education, Inc.	$46.0	1.9x	n.a.
Jul-13	Unitek Information Systems	Cressey & Company	n.a.	n.a.	n.a.
Jan-13	Spartan College of Aeronautics and Technology	Sterling Partners	n.a.	n.a.	n.a.
Oct-12	InfiLaw	ABRY Partners	n.a.	n.a.	n.a.
Oct-12	Southern Technical Institute	The Wicks Group of Companies	n.a.	n.a.	n.a.
Oct-12	Midwest Technical Institute	Summer Street Capital	n.a.	n.a.	n.a.
Jun-12	Texas Wesleyan University School of Law	Texas A&M University	$25.0	n.a.	n.a.
Jun-12	Tribeca Flashpoint Media Arts Academy	Sterling Partners	n.a.	n.a.	n.a.
Mar-12	Anthem Education Group	Florida Career College	n.a.	n.a.	n.a.
Feb-12	Emergency Training Services	International Education Corporation	n.a.	n.a.	n.a.
Feb-12	B Street Design School Of International Hair Styling	Scope Beauty Enterprises	n.a.	n.a.	n.a.
Feb-12	The Career Training Academy	HCP & Company	n.a.	n.a.	n.a.
Nov-11	Chancellor University, Jack Welch Management Institute	Strayer Education	$7.0	1.2x	n.a.
Oct-11	Cortiva Group Inc	Steiner Leisure Ltd	$33.0	1.3x	n.a.
Aug-11	Full Sail (minority stake)	TA Associates	n.a.	n.a.	n.a.
Jun-11	Boston Reed	Ascend Learning	n.a.	n.a.	n.a.
			Mean	**1.9x**	**8.7x**
			Median	**1.6x**	**8.6x**

Source: BMO Capital Markets and Capital IQ.

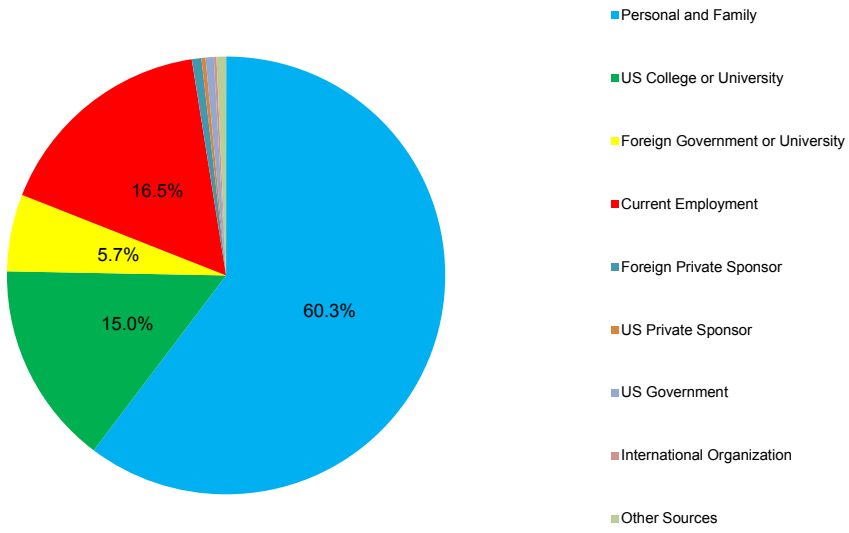
Study Abroad Programs

Study abroad students represent over 2% of worldwide postsecondary enrollment; higher in OECD countries

According to UNESCO, nearly 4.9 million students were enrolled in higher education institutions outside their country of origin in the 2015-2016 school year (latest data available)—about 2.2% of worldwide tertiary enrollment of roughly 215.9 million. This represents a 6% average annual increase from 1.8 million in the 1998-1999 school year and a 10.5% annual increase from roughly 82,000 in the 1974-1975 school year—well outpacing growth of worldwide tertiary enrollment over that period. In certain countries, the outbound penetration rate is even higher; according to OECD's Education at a Glance 2016, 6% of OECD students enrolled in tertiary education abroad in 2014.

Due to the lack of government-sponsored financial aid in many countries, international students have become an attractive audience base for universities to target through marketing. Over 60% of all foreign students cited personal or family resources as the primary source of funding for their higher education.

Exhibit 195: International Students by Primary Source of Funding (2016–2017 School Year)



Source: Institute of International Education and BMO Capital Markets.

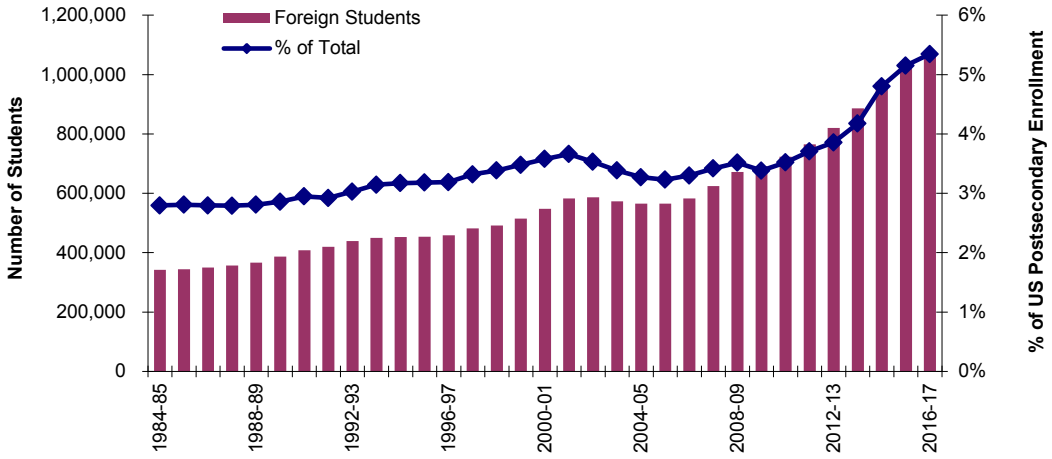
Number of foreign students coming to the U.S. is slowing

Historically, the U.S. has attracted a proportionately larger number of students from outside the country—a potential revenue booster as foreign students are generally not eligible for Title IV funding and tend to pay "full price." While this pipeline shrunk in the first half of the last decade—largely attributed to limitations placed on foreign students who wish to travel to the U.S. in the post-September 11 environment—it began to grow again beginning in the 2006-2007 school year. However, growth has slowed recently, attributed by some to policies (or fears of policies) of the Trump administration.

Foreign students—5.3% of total U.S. postsecondary enrollment, an all-time high

According to the Institute of International Education (IIE), there were roughly 1.08 million foreign students enrolled in U.S. postsecondary institutions in the 2016-2017 school year (latest data available), up 3.4% over the prior year, though the slowest increase since the 2009-2010 school year. However, foreign students represented approximately 5.3% of the total U.S. postsecondary student population in 2016-2017 - an all-time high. According to the IIE, international students contributed more than $39 billion to the U.S. economy in 2016.

Exhibit 196: Foreign Students as Percentage of U.S. Postsecondary Enrollment (1984–1985 to 2016–2017 School Years)



Source: Institute of International Education and BMO Capital Markets.

Factors driving this growth

Prior to the recent slowdown, we attribute the accelerated growth primarily to improvements in the visa process, stronger recruitment efforts by U.S. schools (e.g., increase usage of paid recruiters), and to a lesser extent, the declining U.S. dollar during much of that time (though this trend has been volatile). However, in addition to these "pull" factors, we believe there are several "push" factors that drive foreign students to the U.S.; among these are the often limited and low quality of educational options in a student's home country and the increased availability of student financing, along with higher family incomes that enable travel abroad.

Pressures on U.S. foreign enrollment grow

Nevertheless, competition among countries for students is increasing and will likely intensify as countries continue to invest in their educational systems. Some of the pressures on U.S. foreign enrollment growth include the following:

- **Countries trying to hold onto their own students.** A number of foreign governments have implemented policies to entice their potential postsecondary population to stay at home rather than go abroad. For example, China has significantly increased its spending on postsecondary education (one of the reasons we believe its participation rate increased), while in December 2006, South Korea created an English-only town with the express purpose of giving students a chance to learn English without having to study abroad. According to a March 2007 report titled, *The Race to Attract International Students* by Education Sector and the U.S. General Accountability Office (GAO), other countries, such as New Zealand and Germany, have introduced comprehensive marketing campaigns. In addition, European countries launched the "European Higher Education Area" (the Bologna Process) in March 2010, with hopes for greater student mobility and degree comparability within the EU, thereby potentially reducing the number of foreign students wishing to study in the U.S.
- **Increasing competition for foreign students**. A number of other countries have taken advantage of this opportunity to more aggressively court international students. This competition has particularly been intense from English-speaking countries, such as Australia, Canada, New Zealand, and the U.K., with educators indicating that in light of the Great Recession, international student recruitment is even more important. Even other countries, where English is not the native language, such as Finland, have been expanding their English-language offerings to entice these students. In addition, Europe's move to adopt the Bologna Process in 2010, whereby its schools offer three-year bachelor's degrees has begun to intensify this foreign competition. Countries such as Canada and the U.K. have recently enacted rules enabling foreign students to stay and work in their countries for a few years after graduation, hoping to entice more foreign students to their schools.

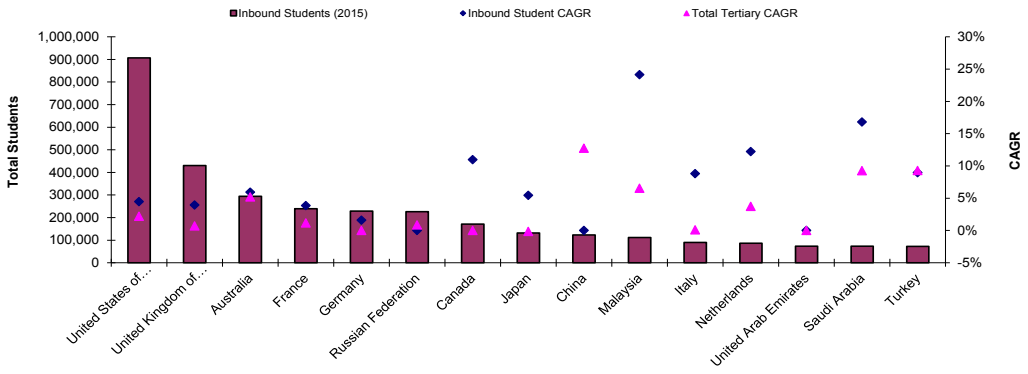
This pressure could continue as other regions are not standing idly by. China, in particular, has made strides in recent years in attracting foreign students. A government report, *National Outline for Medium and Long-Term Education Reform and Development,* provides a roadmap for university recruitment efforts and has set a goal of 500,000 foreign students annually by 2020 (per UNESCO, China had nearly 123,000 inbound students in the 2015-2016 school year, up from roughly 80,000 in the 2010-2011 school year).

- **The "Great Recession" and its aftermath.** The Great Recession forced many U.S. institutions to raise prices and cut costs. Given that most foreign students are not eligible for Title IV funds, we believe those students may be more sensitive to tuition increases at U.S. institutions as they cannot rely as much on financial aid sources. In addition, schools may be less likely to provide stipends for graduate students. We also believe that the sluggish U.S. job market has taken its toll on recruiting some foreign students and that many foreign schools in countries with slightly better outlooks may be using this to their advantage.
- **Becoming more competitive in the U.S.** Many more U.S. institutions are now looking overseas for financial reasons. According to Inside Higher Ed's July 2013 survey of college and university business officers, 37% of those surveyed described recruiting more international students as a very important strategy in increasing institutional revenues (this question was not asked more recent surveys). Additionally, many community colleges are starting to pursue a strategy of attracting foreign students as a gateway to entering U.S. universities. Community colleges can offer foreign students a lower-cost option and a chance to get into a university to which they otherwise might not be accepted.
- **Immigration and visa issues**. While the debate over immigration reform lingers, many foreign students—especially those in graduate programs—may be hindered in their pursuit of U.S. degrees. Fears of hardline immigration policies under the Trump administration have caused some concern that this growth may be abated in the coming school years.

U.S. is largest destination among foreign students, but other markets growing faster

As shown in the following exhibit, while the U.S. still has the largest number of inbound foreign enrollees (over 907,000 in the 2014-2015 school year, or 2015 using UNESCO data), though its market share of foreign tertiary students enrolled has decreased from nearly 23% to just above 19% since 1999 (the 1998-1999 school year). Still the 4.5% CAGR in foreign students into the U.S. from 1999 to 2015 is much higher than the 2.2% CAGR for total U.S. tertiary enrollment over the same period. Top markets where inbound students have grown faster relative to their total tertiary growth since 1999 include Italy and the UK as these countries have become more aggressive marketers in attracting foreign students.

Exhibit 197: Top 15 Student Inbound Destinations (2016)



Note: Data represents latest years while growth rates are CAGR from 1999 or closest period. Source: UNESCO and BMO Capital Markets.

China aggressively courting foreign students

Although China's total tertiary growth rate of 12.7% CAGR over this period was the fastest among this group by a large margin, historical comparisons of inbound student growth were not available owing to a lack of data; however, inbound students grew by roughly 14.2% (CAGR) from 2006 to 2015. We expect this growth rate was just as high (if not higher) during the earlier period, given China's efforts to attract foreign enrollment.

In a recent survey (released December 2017), HSBC asked 500 parents across 15 countries their thoughts about international postsecondary education for their children. On average, 42% stated they would consider university abroad for their children – up from 35% in the prior year survey.

Exhibit 198: Preference for University Abroad Destinations (2016 and 2017 Surveys; Ranked by 2017)

Country	2016	2017
United Arab Emirates	58%	64%
India	47%	62%
Indonesia	60%	61%
China	44%	49%
Hong Kong	54%	52%
Malaysia	43%	51%
Singapore	43%	47%
Mexico	31%	43%
USA	29%	43%
Taiwan	38%	37%
Egypt	10%	36%
Canada	21%	27%
France	16%	25%
UK	22%	22%
Australia	16%	17%
Survey Average	**35%**	**42%**

Source: HSBC.

Australia, Singapore, and the U.S. are most expensive for study abroad students

In an older report (September 2014), HSBC released an analysis of the average annual cost of studying abroad for international students. As shown in the following table, Australia was the most expensive region for the second-straight year, followed by Singapore and the U.S.

Exhibit 199: Average Annual Cost of Studying Abroad for International Students (2012–2013 and 2013–2014 School Year)

			2012-2013 School Year			2013-2014 School Year			Annual % change		
Rank (2012-13)	Rank (2013-14)	Country	Fees	Cost of Living	Total costs	Fees	Cost of Living	Total costs	Fees	Cost of Living	Total costs
1	1	Australia	$25,375	$13,140	$38,516	$24,081	$18,012	$42,093	-5.1%	37.1%	9.3%
6	2	Singapore	14,885	9,363	24,248	18,937	20,292	39,229	27.2%	116.7%	61.8%
2	3	United States	25,226	10,479	35,705	24,914	11,651	36,564	-1.2%	11.2%	2.4%
3	4	United Kingdom	19,291	11,034	30,325	21,365	13,680	35,045	10.8%	24.0%	15.6%
7	5	Hong Kong	13,182	9,261	22,443	13,444	18,696	32,140	2.0%	101.9%	43.2%
5	6	Canada	18,474	7,537	26,011	16,646	13,201	29,947	-9.9%	75.1%	15.1%
N.R.	7	France	N.A.	N.A.	N.A.	247	16,530	16,777	N.A.	N.A.	N.A.
N.R.	8	Malaysia	N.A.	N.A.	N.A.	2,453	10,488	12,941	N.A.	N.A.	N.A.
N.R.	9	Indonesia	N.A.	N.A.	N.A.	4,378	8,527	12,905	N.A.	N.A.	N.A.
N.R.	10	Brazil	N.A.	N.A.	N.A.	59	12,569	12,627	N.A.	N.A.	N.A.
11	11	Taiwan	3,270	4,987	8,257	3,338	8,573	11,911	2.1%	71.9%	44.3%
N.R.	12	Turkey	N.A.	N.A.	N.A.	1,276	10,089	11,365	N.A.	N.A.	N.A.
10	13	China	3,983	4,783	8,766	3,844	6,886	10,729	-3.5%	44.0%	22.4%
N.R.	14	Mexico	N.A.	N.A.	N.A.	750	8,710	9,460	N.A.	N.A.	N.A.
N.R.	15	India	N.A.	N.A.	N.A.	581	5,062	5,642	N.A.	N.A.	N.A.

N.R. – Not Ranked. N.A. – Not Available. Note: All costs in US dollars. Source: HSBC.

China, India, South Korea, and Saudi Arabia are the most popular sources of foreign students in the U.S.

We have done a bit more analysis on the leading countries of origin for those postsecondary students choosing to come to the U.S. As shown in the following table, the most popular countries of origin (2016-2017 school year) were China, India, South Korea, and Saudi Arabia, which together represented well over half of all foreign postsecondary students studying in the U.S. We note that since the 1995-1996 school year, China and India had gained the most "share" of foreign-sourced students, at the expense of Japan, Taiwan, and Malaysia, among others.

Exhibit 200: Leading Countries of Origin for U.S. Inbound Postsecondary Students (1995–1996 vs. 2016–2017 School Years)

1995-1996 School Year			2016-2017 School Year			
Rank	Country	Market Share	Rank	Country	Number	Market Share
1	Japan	10.1%	1	China	350,755	32.5%
2	China	9.3%	2	India	186,267	17.3%
3	South Korea	8.1%	3	South Korea	58,663	5.4%
4	India	6.7%	4	Saudi Arabia	52,611	4.9%
5	Taiwan	6.7%	5	Canada	27,065	2.5%
6	Canada	5.0%	6	Vietnam	22,438	2.1%
7	Malaysia	3.2%	7	Taiwan	21,516	2.0%
8	Thailand	2.9%	8	Japan	18,780	1.7%
9	Indonesia	2.7%	9	Mexico	16,835	1.6%
10	Hong Kong	2.4%	10	Brazil	13,089	1.2%
11	Germany	2.0%	11	Iran	12,643	1.2%
12	Mexico	2.0%	12	Nigeria	11,710	1.1%
13	Turkey	1.8%	13	Nepal	11,607	1.1%
14	United Kingdom	1.6%	14	United Kingdom	11,489	1.1%
15	Brazil	1.3%	15	Turkey	10,586	1.0%
	Top 15	65.7%		Top 15		76.6%
	Total			Total	1,078,822	

Source: Institute of International Education and BMO Capital Markets.

The most popular destinations for these students are typically "brand name" not-for-profit institutions—both private (e.g., NYU, USC, Columbia) and public (Arizona State, University of Illinois, UCLA). For many of these schools, international enrollment represents a sizeable portion of the total; of the top 25, Boston's Northeastern University had the largest exposure with nearly 65% of its students coming from outside the U.S. Many states are forming their own consortia, such as Study Washington and Study Oregon, to attract overseas students to their states.

Exhibit 201: Most Popular Destination for U.S. Inbound Postsecondary Students (2016-2017 School Year; ranked by international enrollment)

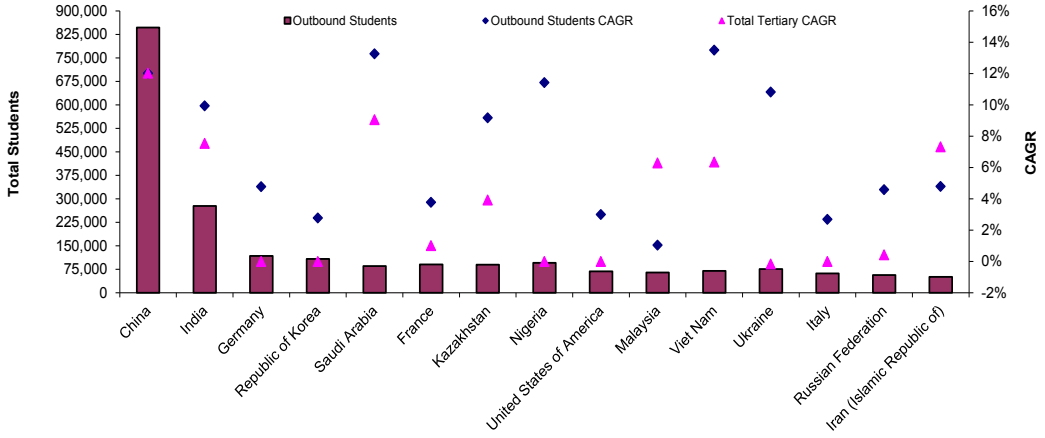
					Intl. Enrollment		Total Enrollment	
Rank	Institution	Location	Institution Type	Program Length	Number	Market Share	Number	Intl. as % of
1	New York University	New York, NY	Private not-for-profit	Four-year	17,326	1.6%	50,550	34.3%
2	University of Southern California	Los Angeles, CA	Private not-for-profit	Four-year	14,327	1.3%	43,871	32.7%
3	Columbia University	New York, NY	Private not-for-profit	Four-year	14,096	1.3%	29,372	48.0%
4	Northeastern University - Boston	Boston, MA	Private not-for-profit	Four-year	13,201	1.2%	20,381	64.8%
5	Arizona State University - Tempe	Tempe, AZ	Public not-for-profit	Four-year	13,164	1.2%	51,869	25.4%
6	University of Illinois - Urbana-Champaign	Champaign, IL	Public not-for-profit	Four-year	12,454	1.2%	46,951	26.5%
7	University of California - Los Angeles	Los Angeles, CA	Public not-for-profit	Four-year	12,199	1.1%	43,548	28.0%
8	Purdue University - West Lafayette	West Lafayette, IN	Public not-for-profit	Four-year	11,288	1.0%	41,513	27.2%
9	University of Texas - Dallas	Richardson, TX	Public not-for-profit	Four-year	9,305	0.9%	26,793	34.7%
10	Pennsylvania State University - University Pa	University Park, PA	Public not-for-profit	Four-year	9,134	0.8%	47,789	19.1%
11	University of California - San Diego	La Jolla, CA	Public not-for-profit	Four-year	9,065	0.8%	34,979	25.9%
12	Boston University	Boston, MA	Private not-for-profit	Four-year	8,992	0.8%	32,695	27.5%
13	University of Michigan - Ann Arbor	Ann Arbor, MI	Public not-for-profit	Four-year	8,163	0.8%	44,718	18.3%
14	University of Washington	Seattle, WA	Public not-for-profit	Four-year	8,019	0.7%	45,591	17.6%
15	University of California - Berkeley	Berkeley, CA	Public not-for-profit	Four-year	8,000	0.7%	40,154	19.9%
16	Michigan State University	East Lansing, MI	Public not-for-profit	Four-year	7,779	0.7%	50,340	15.5%
17	Ohio State University - Columbus	Columbus, OH	Public not-for-profit	Four-year	7,684	0.7%	59,482	12.9%
18	Carnegie Mellon University	Pittsburgh, PA	Private not-for-profit	Four-year	7,653	0.7%	13,258	57.7%
19	Indiana University - Bloomington	Bloomington, IN	Public not-for-profit	Four-year	7,502	0.7%	49,695	15.1%
20	University of Texas - Arlington	Arlington, TX	Public not-for-profit	Four-year	7,277	0.7%	45,282	16.1%
21	SUNY University at Buffalo	Buffalo, NY	Public not-for-profit	Four-year	7,252	0.7%	30,184	24.0%
22	University of Minnesota - Twin Cities	Minneapolis, MN	Public not-for-profit	Four-year	7,197	0.7%	51,579	14.0%
23	University of Florida	Gainesville, FL	Public not-for-profit	Four-year	7,107	0.7%	52,367	13.6%
24	Texas A&M University - College Station	College Station, TX	Public not-for-profit	Four-year	6,960	0.6%	65,632	10.6%
25	University of California - Irvine	Irvine, CA	Public not-for-profit	Four-year	6,792	0.6%	32,754	20.7%
	Top 25 Total				241,936	22.4%	1,051,347	23.0%
	Other Schools				836,886	77.6%	19,133,653	4.4%
	Total				1,078,822	100.0%	20,185,000	5.3%

Source: Institute of International Education and BMO Capital Markets.

China is the largest "student exporter" to other countries

Similarly, we believe it is worthwhile to look at which countries are supplying the highest number of *outbound* students, as these countries are essentially driving the growth in student mobility (these countries are exhibiting the *push* factors). As shown in the table below, China is by far the largest supplier of outbound students with over 847,000 in the 2016-2017 school year (latest data available), with a 12% CAGR since the 1998-1999 school year, roughly in line with its total tertiary enrollment growth rate.

Exhibit 202: Top 15 Student Exporting Countries (1998–1999 to 2015–2016 School Years)

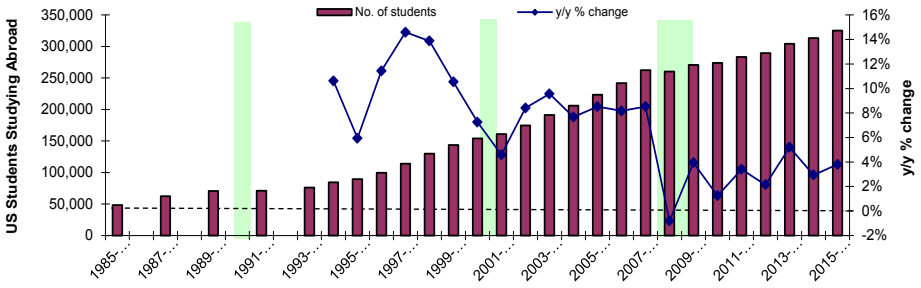


Note: Data represents latest years while growth rates are CAGR from 1999 to 2013 or closest period. Source: UNESCO and BMO Capital Markets.

Study abroad programs from the U.S. growing again

We have drilled down a bit further into the U.S. market to analyze study-abroad trends for U.S.-based students. According to the IIE's Open Doors project, over 325,000 U.S. postsecondary students studied abroad in the 2015-2016 school year, increasing 3.8% from the prior school year. The number of outbound U.S. students has increased at a 6.6% CAGR from the roughly 48,400 students that studied abroad in the 1985-1986 school year, although growth slowed during and just after the Great Recession.

Exhibit 203: U.S. Postsecondary Students Studying Abroad (1985–1986 to 2015–2016 School Years)



Note: Shaded area represents US recessionary period. Source: Institute of International Education and BMO Capital Markets.

The U.K. is the most popular destination for U.S. students but China and Italy have gained share

The U.K. has remained the top destination for outbound U.S. students every year that this data has been measured, likely because of similar language and the strong reputation of its institutions. However, its "market share" has declined to 12% of outbound U.S. students in the 2015-2016 school year (latest data available; outbound data lags by one year) from 22.5% in the 1995-1996 school year, as a number of countries have become more popular destinations, including China (share increased to 3.6% from 1.6%) and Italy (share increased to 10.7% from 8.8%).

Exhibit 204: Leading Destinations for U.S. Outbound Postsecondary Students (1995–1996 vs. 2015–2016 School Years)

Leading Destinations - Outbound US students

1995-1996 School Year				2015-2016 School Year			
Rank	Country	Number	Market Share	Rank	Country	Number	Market Share
1	United Kingdom	20,062	22.5%	1	United Kingdom	39,140	12.0%
2	Spain	8,135	9.1%	2	Italy	34,894	10.7%
3	Italy	7,890	8.8%	3	Spain	29,975	9.2%
4	France	7,749	8.7%	4	France	17,214	5.3%
5	Mexico	6,220	7.0%	5	Germany	11,900	3.7%
6	Germany	3,552	4.0%	6	China	11,688	3.6%
7	Australia	3,313	3.7%	7	Ireland	11,070	3.4%
8	Costa Rica	2,298	2.6%	8	Australia	9,536	2.9%
9	Japan	2,010	2.3%	9	Costa Rica	9,233	2.8%
10	Israel	1,667	1.9%	10	Japan	7,145	2.2%
11	Ireland	1,594	1.8%	11	South Africa	5,782	1.8%
12	Russia	1,482	1.7%	12	Mexico	5,178	1.6%
13	China	1,396	1.6%	13	Denmark	4,632	1.4%
	Top 13	67,368	75.4%		Top 13	197,387	60.7%
	Total	89,331	100.0%		Total	325,339	100.0%

Source: Institute of International Education and BMO Capital Markets.

There are a number of companies that help universities attract students from outside their home country, including Amerigo Education, Education Dynamics, Educo Global, Hobson's, Shorelight Education and StudyGroup.

U.S. Postsecondary Instructional Materials Market

Market size estimates vary

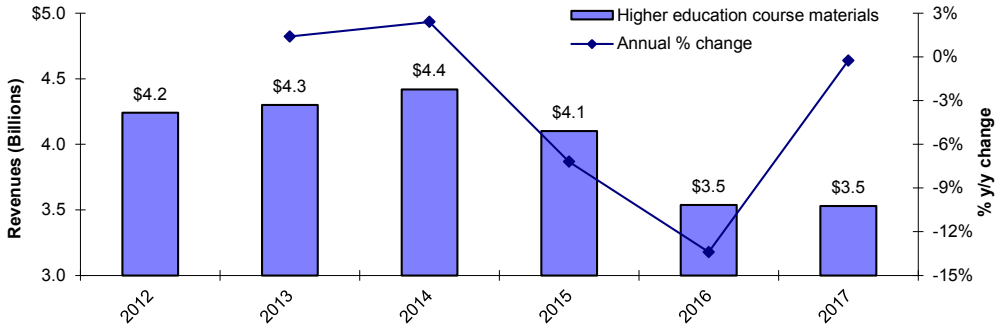
A number of different data sources estimate the postsecondary instructional materials market size. GSV estimates that just over $23 billion was spent in the U.S. in 2015 and forecasts roughly a 4% CAGR increase to $27.7 billion in 2020. The 2015 estimate comprises:

- Print textbooks ($12.4 billion expected to increase 3% CAGR to $14.4 billion in 2020);
- Print supplemental materials ($5.3 billion expected to increase 3% CAGR to $6.2 billion in 2020);
- Digital textbooks ($3.7 billion expected to increase 6% CAGR to $5 billion in 2020); and
- Digital supplemental materials ($1.6 billion expected to increase 6% CAGR to $2.1 billion in 2020).

Other data sources cite much smaller market sizes.

- In its annual report, McGraw-Hill Education cited a 2017 MPI estimate of $3.4 billion for "new instructional solutions" in the U.S.
- According to the American Association of Publishers (AAP), revenues for Higher Education course materials were roughly flat at $3.5 billion in 2017. This followed two years of consecutive annual declines.

Exhibit 205: U.S. Higher Education Course Materials Spending (2012–2017)



Source: American Association of Publishers.

Market controlled by three large players

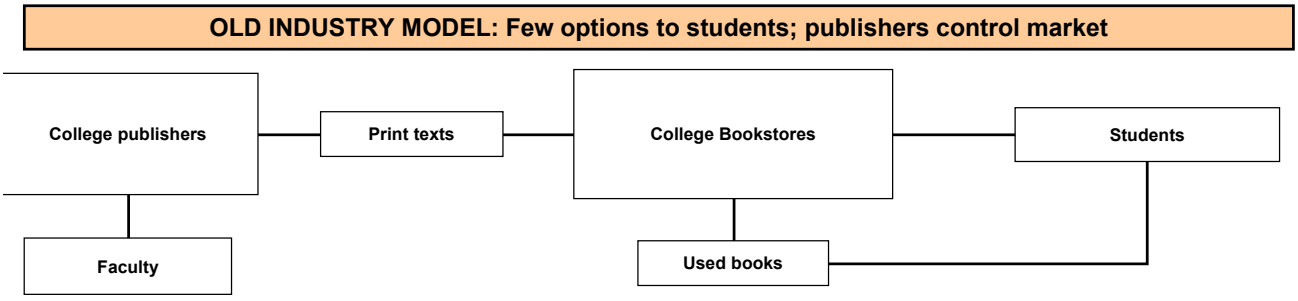
The U.S. postsecondary instructional materials market is somewhat of an oligopoly, as it is dominated by three large players: Pearson (PSO), Cengage Learning, and McGraw Hill Education; according to an October 2016 report by Fitch Ratings, these three companies combined hold about 75% market share, with Pearson the largest at about 40%. Reports cite Cengage as having "north of 20% share" of this market. In a recent filing, McGraw-Hill Education stated it was a top-three provider in the U.S. higher education market with 22% market share in 2017 gaining over 200 bps since 2012.

Faculty determine which books students buy

What we believe is unique about this industry is that while students make the end purchase, it is the school faculty that determines which materials they buy. Under this model, publishers typically market their materials to the faculty and not to the end consumer (i.e., the student). This market structure has been likened to the prescription drug industry, in which physicians prescribe the drug and the patient buys it.

Historically, the distribution model for college textbooks consisted of publishers distributing faculty-selected books to wholesalers (i.e., college bookstores), where the student transaction occurs. Under this model, market power was concentrated in the publishers' hands as end consumers had few purchasing options beyond buying assigned texts from the local bookstores. Competing publishers seeking to enter this market were faced with the high costs of developing new textbooks (it is estimated a new textbook can cost up to $1 million to develop), breaking up the entrenched relationships between existing publishers and faculty, and the advantageous business agreements between publishers and college bookstores.

Exhibit 206: Old Textbook Market Structure

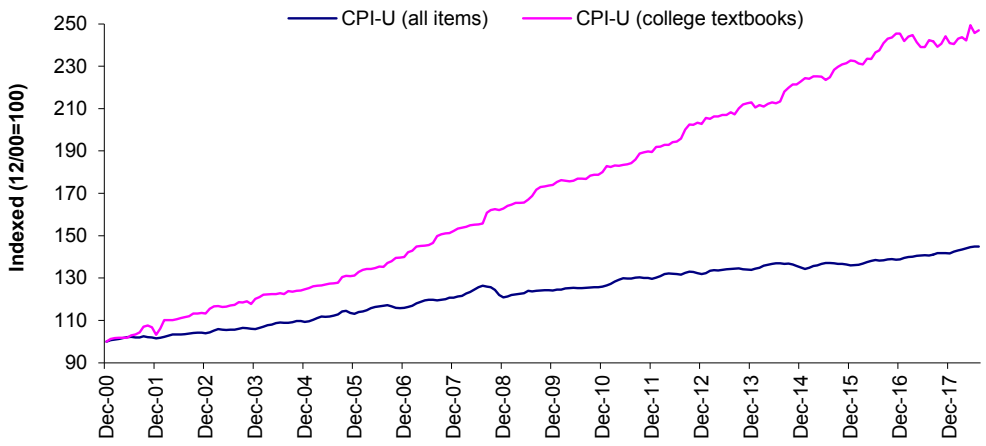


Source: Student Monitor and BMO Capital Markets.

New college textbook pricing has been inelastic, increasing at a much faster rate than inflation.

Under this structure, this market emerged as very inelastic, characterized by a strong disconnect between the consumer and the producer. This has manifested itself in terms of the steady increase in textbook prices over the past two decades. The Bureau of Labor Statistics' pricing data for "educational books and supplies" (i.e., textbooks) shows the price of college textbooks has increased over 147.0% since 2000, while the CPI-All Items has increased by roughly 44.8% over the same period.

Exhibit 207: Consumer Price Index—All Items vs. Educational Books and Supplies (12/2000–7/2018)

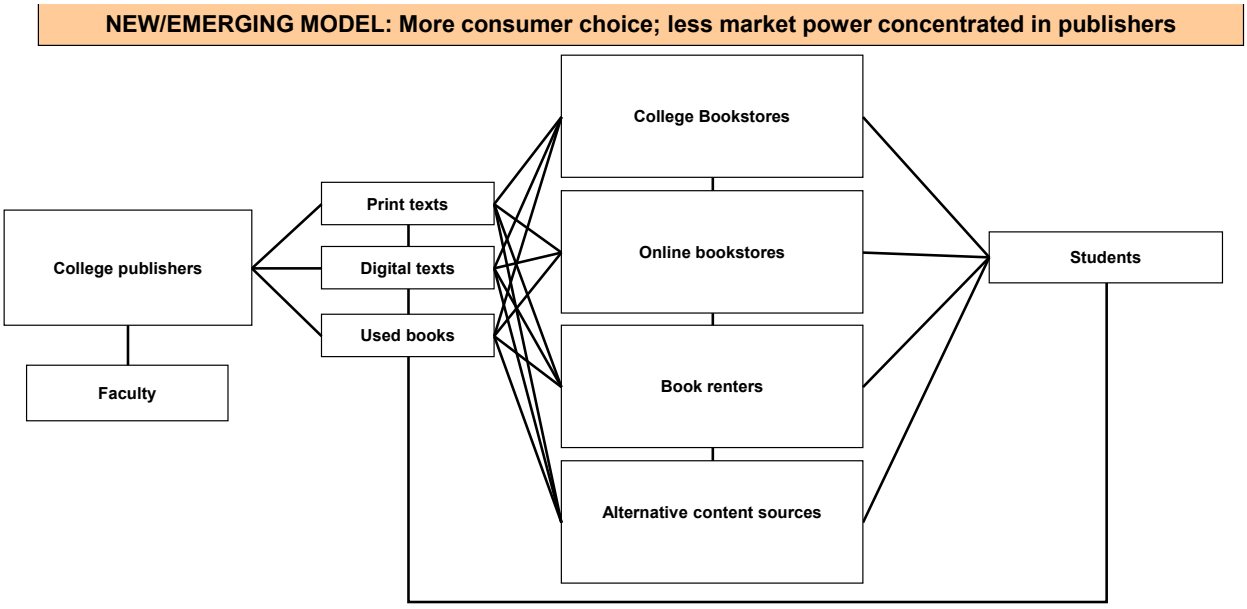


Source: Bureau of Labor Statistics and BMO Capital Markets.

Textbook market evolving to provide more purchasing options

In recent years, new forces have begun to reshape this market, driving innovation and competitive entries through online bookstores, book rental companies, publisher-direct, and/or acquire material through alternative sources, such as digital texts and free or low-cost online courseware.

Exhibit 208: New/Emerging Textbook Market Structure



Source: Student Monitor and BMO Capital Markets.

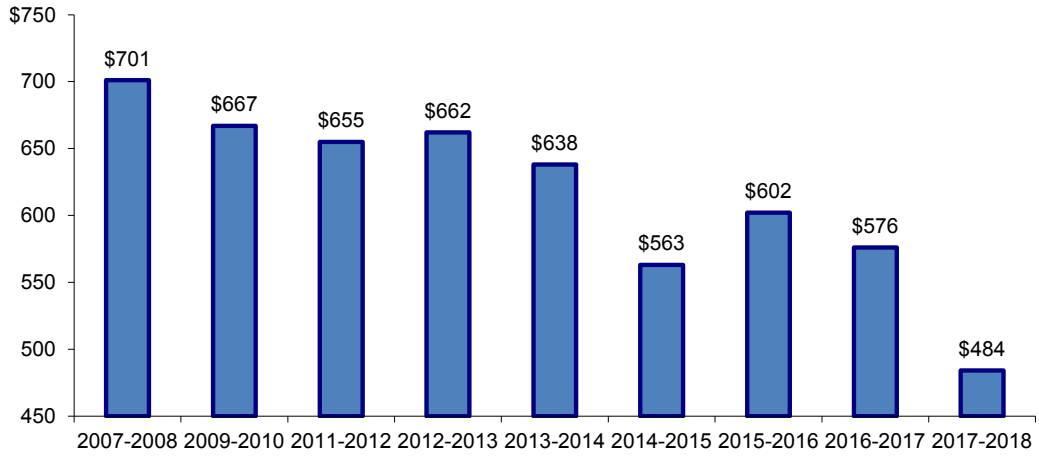
Average textbook life has lengthened

In addition, the rising costs of textbooks have led to somewhat of a revolt by students, who have put pressure on their professionals to use older textbooks rather than constantly use the latest version of materials. We believe this has lengthened the average life of a textbook, providing another avenue of pressure on the traditional print sector, as the renewal cycle has been extended out beyond the historical three-year norm.

New textbook alternatives are driving down total costs to students

For these and other reasons, annual spending on course materials by college students has actually been falling, according to the annual Student Watch survey by the National Association of College Stores (NACS). In the 2017-2018 school year, students spent an average of $484—down from $579 in the prior year and $701 in the 2007-2008 school year.

Exhibit 209: Average Annual Spending on Postsecondary Course Materials (2007–2008 to 2017–2018 School Years)

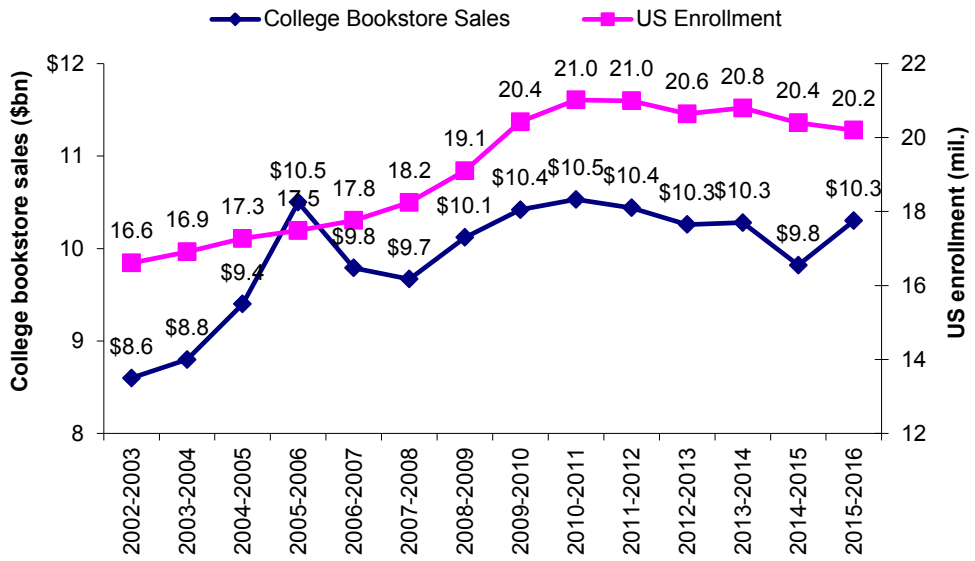


Note: Data not available for 2008-2009 and 2010-2011 school years. Source: National Association of College Stores and BMO Capital Markets.

Secular shift of revenue away from college bookstores

This trend is in line with the shift of where college students purchase course materials, moving away from college bookstores, the traditional source. As shown in the following exhibit, after steadily expanding through the first half of the last decade, college bookstore sales peaked in the 2010-2011 school year, and for the most part have fallen thereafter, as both enrollments decline and as students turn to alternative sources.

Exhibit 210: College Bookstore Sales vs. U.S. College Enrollment (2002–03 to 2015–16 School Years)



Source: Student Monitor conducted by National Association of College Stores. and BMO Capital Markets.

The following section takes a deeper look at the market dynamics of alternative textbook purchasing models including used books, rentals, digital books, and other online or free resources.

Used textbook market: less expensive (75% of new) and gaining share

Used textbook market. The used textbook market consists of thousands of online vendors, college bookstores and larger online sites, such as Amazon (AMZN) and eBay (EBAY). According to the National Association of College Stores (NACS), used textbooks are typically priced at 75% of the retail price of a new book, which excludes the potential proceeds of reselling it once done (though prices can vary wildly). NACS reports that, on average, used books make up 35% of their course materials inventory, with the percentage increasing annually.

Used textbooks can never fully replace new ones

The used textbook business is pretty straightforward: vendors purchase used books from students and then resell them through their distribution networks. We believe college bookstores are the largest purchasers of used textbooks as a group, but they may be more selective in what books they purchase relative to companies, such as Chegg (CHGG) (now outsourced to Ingram) or Amazon (AMZN), which serve a broader market. These companies themselves are also large purchasers of used textbooks to help expand their own inventory. Additionally, it has been observed that, in some instances, publishers will purchase used textbooks to reduce supply and drive more purchases of new second edition books.

In its semi-annual survey of college students, the NACS Student Watch has found that used print textbooks are purchased roughly as frequently as new print textbooks. However, we note that used books can only enter circulation after having been sold as new books. Hence, used print books can never fully replace new print books.

Exhibit 211: Frequency of Course Materials Format Purchased (Fall 2014–Fall 2017)

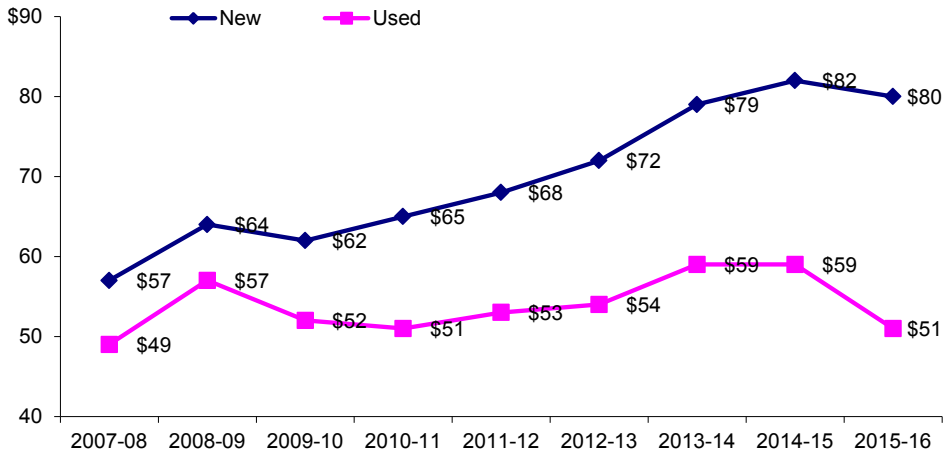
	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017
New print	71%	67%	70%	67%	74%	64%	63%
Used print	72%	68%	68%	68%	70%	63%	56%
Digital	21%	18%	15%	15%	23%	19%	25%

Note: Total adds to more than 100% due to multiple answers. Source: Student Watch surveys conducted by the National Association of College Stores.

Used textbook prices fell in most recent year to levels not seen in nearly 10 years

Pricing. Earlier this decade, the average price of new textbooks continued to rise, while of those of used textbooks stayed relatively stable. While that gap narrowed in the 2013-2014 and 2014-2015 school years, prices for both fell in the 2015-2016 school year – dramatically for used textbooks to levels not seen in nearly 10 years.

Exhibit 212: Used vs. New Textbook Prices (2007–08 to 2015–16 School Years)



Source: National Association of College Stores and BMO Capital Markets.

Rental textbook market; strong entry barriers

Textbook rental market. Textbook rental options have proliferated in recent years, with many traditional booksellers such as Barnes & Noble Education (BNED) and online vendors like Amazon (AMZN) and Half.com adding rental options to their textbook businesses. Other companies, such as CampusBookRentals.com and Chegg (CHGG) have focused almost exclusively on a rental model (at least in terms of their textbook business), and most large textbook publishers now also offer rental options through their own websites. Traditional college bookstores have also been in the rental business for some time, with more than 3,000 having rental options in fall 2012, according to the NACS 2012 Financial Survey of college stores, which found 78% of respondents offered rental options, compared with 68% the year prior.

Renting share appears to be relatively stable

It appears that textbook rentals are becoming more popular; according the NACS Student Watch Spring 2017 survey, roughly 45% of those students surveyed had rented textbooks, relatively stable with recent years. Despite the proliferation of other options, purchasing still represents the most frequent way that students get access to textbooks.

Exhibit 213: Frequency of Course Materials Acquisition Methods (Fall 2013–Fall 2017)

Frequency of acquisition methods	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017
Borrowed	13%	11%	11%	10%	12%	14%	13%
Downloaded	12%	5%	3%	11%	13%	14%	18%
Rented	40%	33%	40%	40%	43%	41%	45%
Purchased	86%	85%	86%	82%	86%	84%	84%

Note: Total adds to more than 100% due to multiple answers. Source: Student Watch surveys conducted by the National Association of College Stores.

We attribute much of this growth in rental to advances in technology that have enabled relatively easy set-up of online rental businesses and product tracking systems; Chegg's founders simply bought books on a credit card and rented them over a website. However, while on the surface this appears to be a simple and profitable business (i.e., buy a book for $100 and turn it three or four times for $40 each), we believe there are several complicating factors, including the following:

- **Highly capital intensive.** This requires vendors to make significant upfront cash outlays to build an inventory large enough to meet the demands of a large customer base. This is made more difficult by the fact that vendors may not know ahead of time which books to order or in what quantities. Chegg (CHGG), for example, has invested considerably in systems that track college course syllabi, forecast book demand, and set prices based on demand algorithms.
- **Distribution and shipping expertise.** The large volume of product shipped requires advanced tracking systems. Seasonality adds complications as there are only one or two busy shipping seasons, leaving warehouse facilities idle during much of the year.
- **Strong inventory management.** We believe students would prefer to rent all their textbooks from as few locations/websites as possible, and this favors large-scale operations that can make the capital investment in inventory and distribution. We note this presents complications for book publishers, which may have limited content and/or have not adequately invested in their distribution platforms (publishers generally distribute to college bookstores, not students directly). While campus book rental programs have the advantage of knowing which books to hold and are likely better able to forecast demand quantities, these businesses are unlikely to expand beyond the colleges they serve.
- **Competition.** With relatively low barriers to entry, we believe textbook rental companies have proliferated in recent years. In addition, we have seen an increase of other channels, such as book swapping services such as Bookmooch.com that allow students to swap textbooks with one another. However, owing to the difficulties mentioned above, we expect the market will concentrate over time in the hands of a few large players along with many small, local college bookstores. We believe the winners in this industry will be those companies that can successfully manage inventory levels and that have a relatively advanced distribution system. Additionally, we believe successful companies will likely have a differentiated product offering. Chegg (CHGG), for example, provides several "non-print" services to both students and businesses and is using the rental business as a marketing vehicle to build its student social hub. Nevertheless, we believe larger well-financed competitors, such as Amazon (AMZN) have many competitive advantages over upstarts. Over the past three years, Amazon has gained share in the course materials rentals segment based on annual Student Watch surveys from the NACS.

Exhibit 214: Sources for Course Material Rentals and Purchases (Fall 2013–Fall 2017)

	Course Material Purchases						
	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017
On-campus store	68%	66%	80%	73%	64%	62%	77%
Amazon (AMZN)	48%	42%	40%	37%	40%	38%	42%
Another student/peer	6%	5%	6%	8%	8%	10%	9%
Chegg (CHGG)	8%	7%	7%	6%	7%	5%	7%
Publishers	6%	11%	7%	6%	7%	6%	9%
Off-campus store	5%	4%	4%	5%	3%	3%	
eBay/Half.com	7%	5%	4%	3%	4%	3%	
Bookrenter							

	Course Material Rentals					
	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017
On-campus store	49%	45%	55%		57%	51%
Amazon (AMZN)	28%	28%	33%		36%	41%
Another student/peer						
Chegg (CHGG)	19%	19%	17%		15%	17%
Publishers	1%				2%	2%
Off-campus store	4%		4%		2%	3%
eBay/Half.com						
Bookrenter	4%		4%		1%	1%

Note: Total adds to more than 100% due to multiple answers. Source: Student Watch surveys conducted by the National Association of College Stores.

A Simba Information survey shows an even greater shift with digital media accounting for 42.2% of postsecondary course materials in 2015, up from just 31.5% in 2014.

In addition, we believe faculty members are becoming more comfortable using digital textbooks. In an annual survey conducted by Wakefield Research, 67% of faculty surveyed in 2014 stated they are recommending that students purchase an e-textbook—up from 52% in 2013 and 42% in 2011 (2012 results were unavailable).

We believe the digital textbook market is still in its infant stages, with unproven business models and evolving demand dynamics. Current issues shaping this industry include the following:

- **Pricing model.** Currently, price variation among vendors is relatively small, but subscription time can vary from a few months to up to a year. Some schools are also offering "course-fee" models in which students pay a fee for online access to all the digital materials during the course. These fees are charged by the school, which has negotiated an arrangement with the publisher.
- **Product evolution.** We believe digital texts are still early in the evolutionary cycle. While the majority of digital texts today are essentially printed versions in a digital format, we believe future digital texts will be much more interactive and configurable, where students may purchase only book snippets, chapters or individual modules, and the books may have online/social functions. This has the potential to greatly affect the pricing model.
- **The user platform.** Many of today's digital texts require users to pre-install some type of software e-reader to their devices. While the publishers may have their own e-reader versions, we believe many third parties are seeking to create agnostic reader platforms capable of optimizing digital content from multiple vendors across multiple operating systems. We view this as an additional point of differentiation that will ultimately influence user adoption rates and customer preference.

E-textbooks; less expensive than print, though gap may be narrowing

E-textbooks. Digital texts are also a steadily expanding medium and, in our view, will likely eventually represent the bulk of college course material (though this may take several years). We believe a central catalyst for this shift has been the proliferation of new online content-providers not bogged down by the legacy costs of the print publishing business. We believe this has put pressure on large publishers to increase digital offerings and expand their digital distribution capabilities, which, in turn, has driven them to partner with online distributors that already have an established online customer base (such as Chegg or Amazon). Traditional publishers are also going directly to the consumer with online offerings. VitalSource (formerly CourseSmart), for example, is a collaboration among the largest five textbook

Student still prefer print, but digital is expanding

publishers to offer all their digital texts in one place, and which claims to offer 90% of college course books. Several studies in recent years have pointed to the fact that students still prefer print textbooks over digital. This was primarily driven by a preference toward the look/feel of print and the ease of bookmarking/highlighting (as well as potential buybacks). NACS's most recent survey of the spring 2018 term found that one quarter (25%) of students who purchased at least one course material bought a digital version, an increase of 10% from spring 2016.

Alternative "free" content

Free resources. The volume of free or extremely low-cost online textbooks and other online course materials has skyrocketed in recent years as governments, colleges, nonprofits, and other organizations have made various learning materials available online to the general public. While we believe this puts some pressure on traditional textbook publishers, we view this market as very emerging and unstructured, with no clear market leaders. Additionally, we believe the added value is hard to assess given the difficulty of finding and assembling free online materials in a way that could effectively replace an assigned textbook. However, it is feasible that college professors may slowly migrate away from traditional textbooks in favor of requiring students to obtain various online free materials to use for a course. Still, we do not believe this trend is occurring in a massive way (yet), and believe many professors (and students) likely still prefer the convenience of single books.

Examples of free and/or low-cost textbook resources include Flat World Knowledge, Project Gutenberg, and TextbooksFree.org. Other organizations such as Khan Academy, Coursera, and other MOOCs offer free online courses that enable students to learn about certain subjects without purchasing separate course materials. Additionally, several universities, such as MIT and Stanford, have made course materials and other types of instructional videos freely available online.

The use of some of these types of materials, however, has been slow to catch on. A fall 2013 survey by OnCampus Research showed that only 2.8% of the class sections that were offered free or reduced cost materials for the most popular courses in the Washington Community and Technical College System (called Open Course Library of OCVL) actually used them.

Legislation aimed at curbing rising costs to students

In an effort to curb the rising cost of course materials to students, Senators Dick Durbin (D-IL), Al Franken (D-MN), and Angus King (I-ME), and Representatives Jared Polis (D-CO) and Kyrsten Sinema (D-AZ) proposed an updated version of The Affordable College Textbook Act (S. 1864/H.R. 3840) in September 2017. This act:

- Creates a grant program to support pilot programs at colleges and universities to create and expand the use of open textbooks with priority for those programs that will achieve the highest savings for students.
- Ensures that any open textbooks or educational materials created using program funds will be freely and easily accessible to the public.
- Requires entities who receive funds to complete a report on the effectiveness of the program in achieving savings for students.
- Improves existing requirements for publishers to make all textbooks and other educational materials available for sale individually rather than as a bundle.
- Requires the Government Accountability Office to provide an updated report on the price trends of college textbooks to Congress.

We note this is third time Congress has proposed this bill, which has yet to be voted on as of the date of this publishing.

Wide variety of course material providers

Beyond the traditional publishers, there are a number of different companies that provide course materials to postsecondary students, including the following:

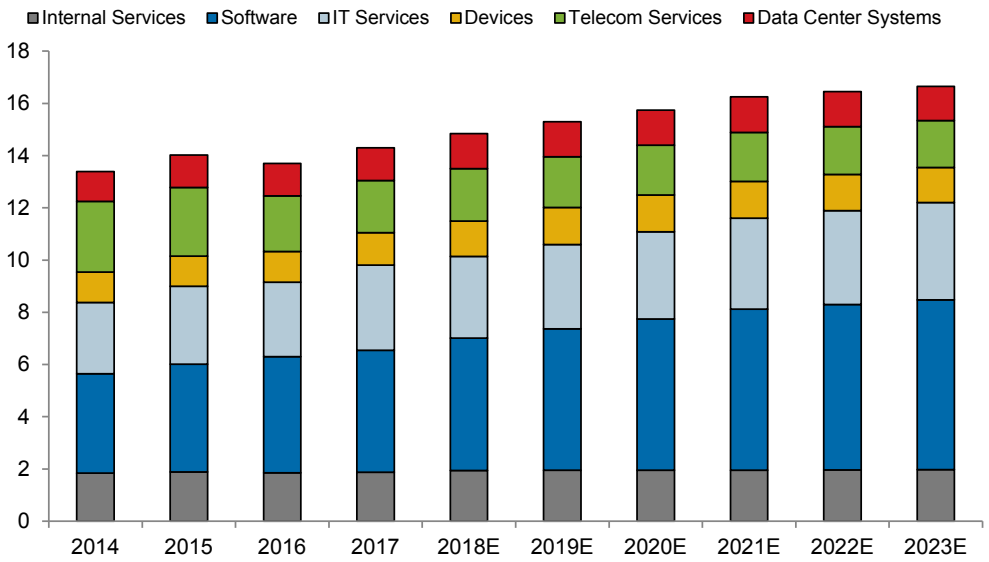
- College bookstore operators and educational content providers, such as Barnes & Noble Education (BNED), BBA Solutions, bn.com (the e-commerce platform of Barnes & Noble, Inc.), Chegg (CHGG) eCampus, Follett Corporation, IndiCo, (an entity created by National Association of College Bookstores or NACS), Texas Book Company, and Vital Source Technologies, Inc.
- Providers of eTextbooks, such as Apple iTunes, Blackboard, Google (GOOG), and Redshelf.
- Online bookstore solutions to colleges and universities, such as Akademos, Ambassador Educational Solutions, Chegg (CHGG), eCampus, edMap, EdTech, Follett Corporation, MBS Direct (owned by BNED), Texas Book Company, Tree of Life, and VitalSource Technologies, Inc.
- Digital student solutions providers that include Chegg (CHGG), CourseHero, Grammarly, Quizlet, Noodle Tools, and Turnitin (iParadigms).

U.S. Postsecondary Technology Market

Postsecondary technology market: 2.3% CAGR through 2023

Similar to the K-12 sector, a large number of technology providers serve the postsecondary sector. According to Gartner research, an estimated $14.8 billion will be spent on technology in the U.S. postsecondary sector in 2018. Based on Gartner forecasts, we estimate this spending will grow at roughly a 2.3% CAGR, reaching $16.7 billion in 2023, and mostly led by increases in the software and IT services segments.

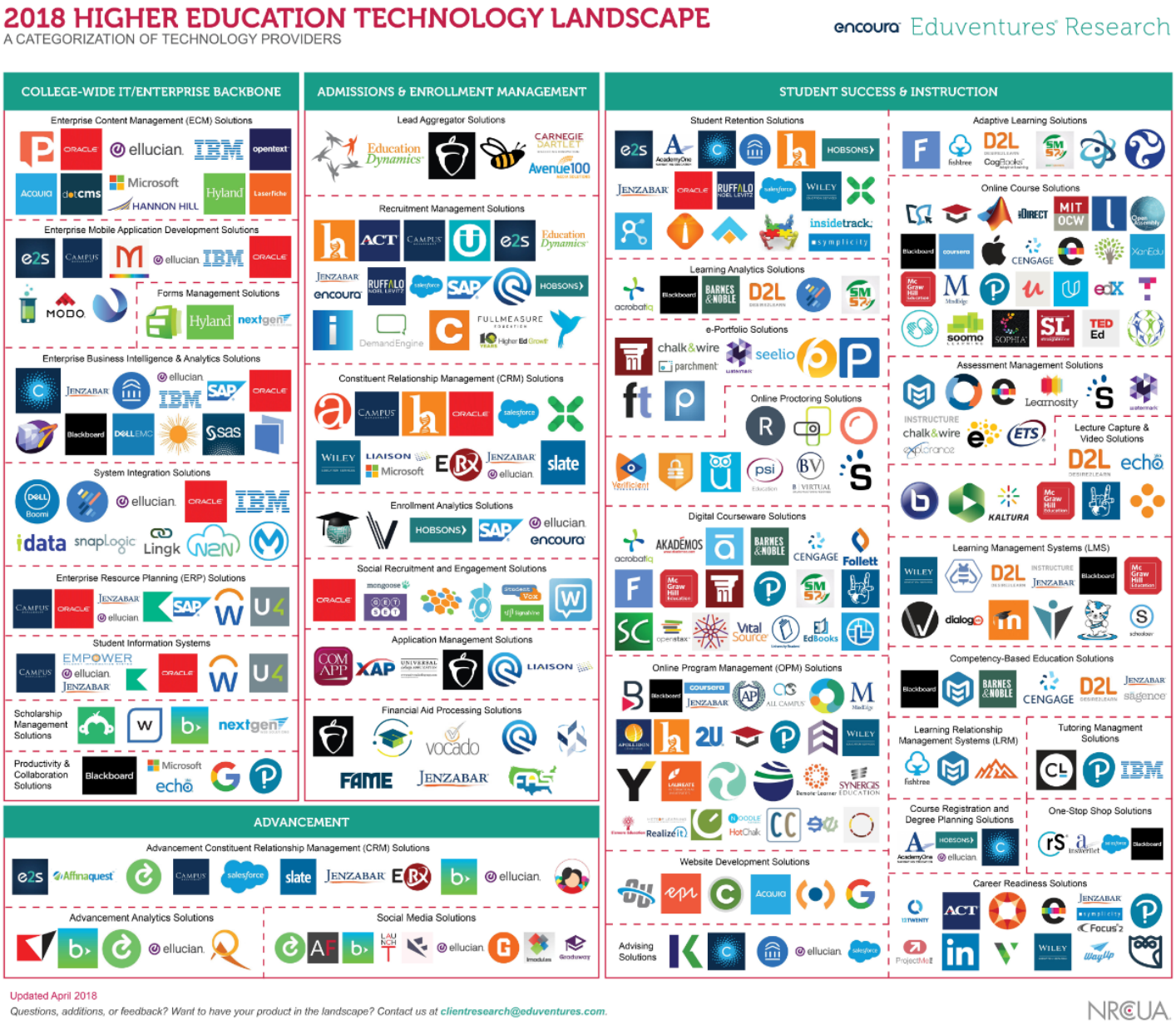
Exhibit 215: US Higher Education Technology Revenues (2014–2023E)



Source: Gartner estimates.

The higher education ed-tech market is quite large and constantly evolving. In February 2018, Eduventures published a snapshot of the companies serving this space, which we have reprinted below.

Exhibit 216: Higher Education Technology Landscape (2018)



Source: Eduventures.

Previously, Eduventures had segmented the postsecondary technology market into three groups (unfortunately, size estimates by market segment are a bit outdated):

- The **infrastructure computing market** comprises companies that provide technologies that support the connection of computer systems, voice, video, data storage, data security, and data analysis.
- The **administrative computing market** comprises companies that provide technology that facilitates the delivery, processing, and analysis of data for institutional administrative functions.
- The **academic computing market** comprises companies that provide technologies that support the learning objectives of an institution. While this is the smallest of the three types of content markets, it is also the fastest growing.

The two larger technology markets—academic and administrative computing—are served by traditional hardware and software providers, such as Apple (AAPL), Cisco (CSCO), Dell (private), privately held Ellucian (in January 2012 private equity firm Heller & Friedman's combined SunGard's higher education unit with its Datatel unit), HP Inc. (HPQ), IBM (IBM), and Oracle (ORCL). In addition, they are supported by such large consulting and professional service firms such as Accenture (ACN) and IBM (IBM). Along with the course management systems providers (to be discussed below), other software technology companies that focus almost exclusively on the education sector include CampusLogic, Campus Management, Civitas Learning, Fidelis Education, iParadigms, Jenzabar, LoudCloud Systems, Lumerit Education, Synergis Education, TargetX and Vocado.

For purposes of this report, we have chosen to drill down a bit further into the academic computing market, a market somewhat unique to the education sector and expected to be the fastest growing of the three postsecondary technology markets.

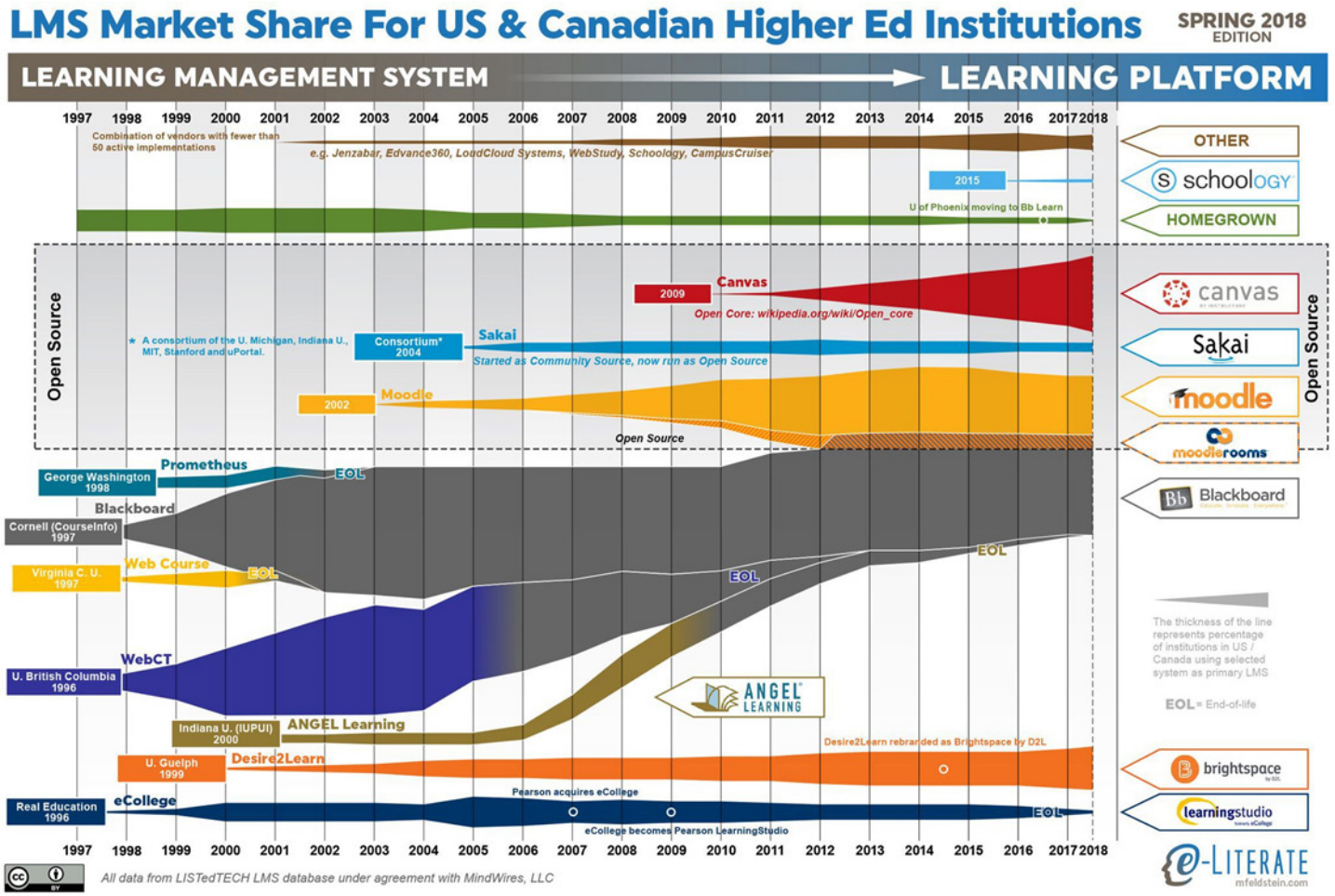
Postsecondary LMS

As with the K-12 sector, we believe Learning Management Systems (LMS) development is one of the fastest areas of growth in this segment. These systems provide Web-based platforms and front-end tools (i.e., collaborative) to augment traditional instruction, course design services and consulting, digital course materials (i.e., online bulk packs, Web-based library), content and research engines, and ASP hosting. In addition, we believe the LMS provider-infrastructure is expanding to incorporate enhanced social media tools and mobile applications, which are gaining in use across campuses.

We believe education LMS will remain fertile territory for M&A and venture capital for several years as the postsecondary education market is relatively underpenetrated by open-source Web 2.0 products such as Moodle (an acronym for "Martin's Object-Oriented Dynamic Learning Environment") and Sakai (built by four institutions, The University of Michigan, Indiana University, MIT, and Stanford University).

e-Literate, a weblog on educational technology and related topics co-published by Michael Feldstein and Phil Hill, has been tracking higher education LMS market share for a number of years. It reported in July 2018 that, for the first time, Instructure's (INST) Canvas had overtaken Blackboard's Learn for the top position based on the number of installations.

Exhibit 217: Higher Education LMS Market Share (Spring 2018)



Source: e-Literate weblog: Michael Feldstein and Phil Hill.

The authors highlight the following trends:

- The fastest-growing LMS since 2012 is Canvas, which is owned by Instructure (INST).
- Blackboard, the largest LMS provider, continues to lose market share, though the vast majority of this reduction over the past few years have been from customers leaving ANGEL.
- "Homegrown" systems now represent less than 1% of institutions.
- Pearson's end-of-life announcement of LearningStudio drove some large for-profit systems to move to D2L Brightspace and to Canvas.
- "Other" includes systems such as Jenzabar, Edvance360, LoudCloud Systems, WebStudy, Schoology, and CampusCruiser. Schoology is growing the most from this group, primarily from smaller private institutions.

Exhibit 218: LMS Market Share (Fall 2017)

LMS Market Share For US and Canadian Higher Ed Institutions

LMS Solution	Fall 2017 by Institutions	Fall 2016 by Institutions	Fall 2017 by Enrollments
Blackboard Learn	28%	31%	37%
Instructure Canvas	21%	17%	27%
D2L Brightspace	13%	11%	15%
Moodle	25%	25%	12%
Sakai	3%	3%	3%
Homegrown LMS	2%	2%	3%
Others	4%	6%	1%
BNED LoudCloud Learning	0%	0%	1%
Blackboard ANGEL	1%	1%	1%
Pearson LearningStudio	2%	4%	0%
Schoology LMS	1%	0%	0%

Source: e-Literate weblog: Michael Feldstein and Phil Hill.

Edutechnica posts periodic updates of postsecondary LMS market share. As of spring 2018, Blackboard was still the largest provider, though its share has declined over the years, with Instructure's Canvas gaining the most ground, in both the number of institutions and student enrollments.

Exhibit 219: Postsecondary LMS Market Share (Spring 2018)

	Institutions	% of Institutions	Enrollments	Avg. size
Angel	3	0.0%	3,222	1,074
Blackboard Learn	1,129	31.4%	6,987,086	6,200
Blackboard (total)	1,219	34.0%	7,507,765	N.A.
Canvas (INST)	893	24.9%	5,718,857	6,411
Desire2Learn	398	11.1%	2,317,030	5,822
Moodle	644	18.0%	2,454,441	3,811
Sakai	96	2.7%	666,356	6,941
Pearson (PSO)	45	1.3%	86,298	1,918
Other	380	10.6%	1,181,784	3,110

N.A. – Not Available. Source: EduTechnica and BMO Capital Markets.

Moving toward "learning ecosystem"

A July 2014 article in *Inside Higher Ed* cited a trend in which the industry is moving toward what some call a "learning ecosystem," i.e., an open platform in which faculty can browse and embed the tools they want to use, such as quizzes from Khan Academy, plagiarism detection from Turnitin, or a homegrown solution, regardless of what LMS they use. This can be seen, as the five largest LMS providers—Blackboard, Desire2Learn, Instructure, Moodle, and Sakai—have coalesced around some common standards. For example, they all support interoperability standards developed by the IMS Global Learning Consortium, which enable developers to create tools that work with any LMS. Another standard, known as Caliper, aims to standardize how learning analytics are tracked.

Postsecondary LMS market should grow at a high-single-digit rate

While it was difficult to estimate the size of the LMS market, we believe it represents the bulk of the academic computing market and should grow at the high-single-digit rate projected for all academic computing services.

We believe the core drivers of the postsecondary LMS market include the following:

- The ability to augment traditional education with online learning environments.
- Greater acceptance among professors who see online as a teaching aid and not a teaching replacement.
- Ease of course material delivery, online communication, grade distribution, and scaling ability to more students.
- Greater analytical capability.

Still, we believe the open-source market remains a difficult one to substantially penetrate and note that even Google ultimately pulled the plug on its LMS "Wave" platform in the summer of 2010 owing to slow user adoption (the product was launched in spring 2009). Therefore, there are considerable hurdles to successful LMS development, including technological, adoption, and patent litigation risk, in our view.

As with most technology-related products, the LMS space is not without its share of patent litigation risk. In this instance, Blackboard sued competitor Desire2Learn in July 2006, claiming infringement of a core technology patent. The case was ultimately settled in 2009, although we believe investors in this space should be aware of such risks.

U.S. Postsecondary Marketing and Recruiting

Sales and marketing expense—above 25% of revenues for many providers

Sales and marketing expenses are a large cost for companies in the for-profit education sector. While not all companies disclose this data, it can be above 25% of revenues for some publicly held companies, with almost half of that spent on external promotions and advertising, and the remainder on internal enrollment management and direct sales expenses. We believe this overall spending level dwarfs what not-for-profit postsecondary institutions spend (reliable data is difficult to obtain, although we believe the gap is narrowing) and is likely higher than the spending levels of most consumer goods companies. This is a major reason we believe that enrollment growth at for-profit institutions had historically outpaced that of their not-for-profit peers.

Competition will likely continue to intensify

However, we believe the competition for new students will continue to intensify. Specifically, we have seen a number of not-for-profit providers increase their marketing presence, whether for their traditional campuses or for new online programs. As many of these institutions have faced budgetary constraints, they are looking to increase their enrollments to expand their revenue streams and see this enhanced marketing spending as a viable investment.

Sales and marketing expense has been increasing as a percentage of revenues

As shown in the following exhibit, sales and marketing expenses as a percentage of revenues fell through FY2010 as revenue growth accelerated; however, it has increased since that time as revenue trends have reversed even as most companies have cut back on this expense. We believe roughly half of these dollars are spent on advertising, with the remainder on other marketing-related activities and staff.

Exhibit 220: Sales and Marketing Expense as Percentage of Revenue for Select For-Profit Providers (FY2007–FY2018 YTD)

SALES AND MARKETING - FISCAL YEARS

Company	*Ticker*	*FYE*	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	'07-10 CAGR	'10-17 CAGR	YTD FY2017	YTD FY2018	YTD '17-18 % chg.
American Public Education	APEI	12	$6.7	$12.3	$20.3	$34.1	$44.4	$59.4	$65.2	$68.7	$61.7	$58.4	$57.3	71.8%	7.7%	$29.1	$28.6	-1.7%
Bridgepoint Education	BPI	12	36.0	81.0	139.2	209.8	274.5	336.5	232.3	228.7	196.1	202.2	175.4	80.0%	-2.5%	88.5	88.1	-0.4%
Career Education	CECO	12	462.9	445.4	483.9	510.9	477.9	384.9	343.1	318.0	328.4	239.3	222.5	3.3%	-11.2%	113.0	110.0	-2.6%
Capella Education	STRA	12	69.1	81.9	99.2	120.0	135.0	130.4	128.7	127.5	127.2	132.0	137.7	20.2%	2.0%	69.4	69.6	0.2%
Grand Canyon Education	LOPE	12	45.9	80.7	104.4	135.9	145.2	140.9	163.3	181.4	195.8	215.9	236.4	43.6%	8.2%	117.0	127.2	8.7%
Lincoln Educational Services	LINC	12	60.5	69.7	77.2	90.7	81.3	68.0	65.4	61.4	58.8	56.5	59.3	14.5%	-5.9%	N.A.	N.A.	N.A.
Strategic Education	STRA	12	60.1	75.3	93.0	95.5	100.8	98.2	95.4	83.2	86.4	96.9	102.1	16.7%	1.0%	47.4	50.5	6.5%
Total			**$1,002.0**	**$1,200.5**	**$1,457.8**	**$1,753.8**	**$1,905.8**	**$1,858.8**	**$1,663.1**	**$1,596.0**	**$1,054.3**	**$1,001.3**	**$990.7**	**20.5%**	**-7.8%**	**$711.0**	**$726.2**	**2.1%**

AS % OF REVENUES - FISCAL YEAR

Company	*Ticker*	*FYE*	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2017	FY2018
American Public Education	APEI	12	9.7%	11.5%	13.6%	17.2%	17.0%	18.9%	19.8%	19.6%	18.8%	18.7%	19.2%	19.7%	19.4%
Bridgepoint Education	BPI	12	42.0%	37.1%	30.6%	29.4%	29.4%	35.7%	30.9%	35.8%	34.9%	38.4%	36.7%	34.8%	36.9%
Career Education	CECO	12	27.7%	26.8%	62.2%	55.9%	56.7%	57.6%	59.3%	59.4%	59.7%	42.6%	39.1%	39.6%	39.5%
Capella Education	CPLA	12	30.6%	30.1%	29.6%	28.2%	31.4%	30.9%	31.0%	30.2%	30.5%	30.8%	31.3%	31.4%	31.1%
Grand Canyon Education	LOPE	12	46.2%	50.0%	39.9%	35.2%	34.0%	27.6%	27.3%	26.3%	25.2%	24.7%	24.3%	25.1%	24.8%
Lincoln Educational Services	LINC	12	18.5%	18.5%	14.0%	14.2%	16.0%	17.1%	33.3%	32.5%	32.3%	24.3%	22.6%	N.A.	N.A.
Strategic Education	STRA	12	18.9%	19.0%	18.2%	15.0%	16.1%	17.5%	19.0%	18.6%	19.9%	22.0%	22.4%	20.8%	21.9%
Median			**23.4%**	**23.9%**	**25.8%**	**25.2%**	**25.9%**	**25.4%**	**29.1%**	**28.2%**	**30.5%**	**24.7%**	**24.3%**	**26.4%**	**26.4%**

Note: Data represent fiscal years. Excludes discontinued operations where available. N.A. – Not Available.
Source: BMO Capital Markets estimates and company reports.

Advertising has ranged between 9% and 14% of revenues for the median of the group

While advertising tends to be less than half of the total selling and marketing budget at the publicly held for-profit providers, it has received the most investor attention in recent years given its volatility (e.g., the Great Recession saw a decline in TV rates, which have since escalated) and greater profile. Fortunately, several companies report their advertising costs on an annual basis—even those that do not break out sales and marketing expenses. As shown in the following exhibit, while there is limited historical data, advertising expenses as a percentage of revenues has ranged between 9% and 14% for much of the last decade. By comparison, consumer goods giant Procter & Gamble (PG) spends roughly 10% of revenues on advertising costs.

Exhibit 221: Advertising Expense and as a Percentage of Revenue for Select For-Profit Providers (FY2007-FY2018 YTD)

ADVERTISING EXPENSE - FISCAL YEARS

Company	*Ticker*	*FYE*	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	'07-10 CAGR	'10-17 CAGR	YTD FY2017	YTD FY2018	YTD '17-18 % chg.
Adtalem Global Education	ATGE	6	$112.6	$135.1	$179.4	$224.1	$246.9	$266.0	$261.0	$259.0	$264.2	$227.2	$209.9	25.8%	-0.9%	209.9	N.A.	N.A.
American Public Education	APEI	12	2.9	6.4	12.1	22.0	29.3	41.9	47.0	41.9	42.2	39.5	39.8	96.3%	8.8%	N.A.	N.A.	N.A.
Bridgepoint Education	BPI	12	15.1	26.9	40.7	63.0	84.0	103.7	76.5	89.0	68.4	83.0	75.7	61.0%	2.7%	N.A.	N.A.	N.A.
Career Education	CECO	12	241.4	248.9	291.7	300.4	300.4	247.2	227.9	212.4	220.5	154.9	136.1	7.6%	-10.7%	71.8	62.9	-12.5%
Capella Education	STRA	12	35.1	42.5	51.6	64.3	80.7	82.4	78.1	78.1	68.9	67.0	71.3	22.3%	1.5%	N.A.	N.A.	N.A.
Grand Canyon Education	LOPE	12	10.2	18.5	24.8	35.6	45.6	51.0	61.0	65.8	76.2	88.2	98.6	51.6%	15.7%	N.A.	N.A.	N.A.
Lincoln Educational Services	LINC	12	31.1	33.8	40.9	46.7	38.1	30.1	15.6	18.0	28.2	28.0	27.0	14.5%	-7.5%	N.A.	N.A.	N.A.
National Amer. Univ. Holdings	NAUH	5	6.2	5.3	6.2	7.6	10.5	16.0	12.1	9.8	10.7	9.1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Universal Technical Institute	UTI	9	27.3	26.4	23.7	32.6	34.6	42.1	37.0	39.2	44.7	41.2	38.6	6.1%	2.4%	19.8	22.2	11.9%
Total			**$614.4**	**$709.4**	**$889.2**	**$1,055.9**	**$1,170.1**	**$1,178.5**	**$1,071.2**	**$1,065.2**	**$824.1**	**$738.1**	**$697.0**	**19.8%**	**-5.8%**	**$301.6**	**$85.0**	**-9.9%**

AS % OF REVENUES - FISCAL YEAR

Company	*Ticker*	*FYE*	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	YTD FY2017	YTD FY2018
Adtalem Global Education	ATGE	6	12.1%	12.4%	12.3%	11.7%	11.3%	12.8%	13.3%	13.5%	13.8%	12.3%	17.4%	17.4%	N.A.
American Public Education	APEI	12	4.2%	6.0%	8.1%	11.1%	11.3%	13.4%	14.3%	12.0%	12.9%	12.6%	13.3%	N.A.	N.A.
Bridgepoint Education	BPI	12	17.6%	12.3%	9.0%	8.8%	9.0%	11.0%	10.2%	13.9%	12.2%	15.7%	15.8%	N.A.	N.A.
Career Education	CECO	12	14.5%	15.0%	37.5%	32.9%	35.6%	37.0%	39.4%	39.7%	40.1%	27.6%	23.9%	25.1%	22.6%
Capella Education	CPLA	12	15.5%	15.6%	15.4%	15.1%	18.8%	19.5%	18.8%	18.5%	16.5%	15.6%	16.2%	N.A.	N.A.
Grand Canyon Education	LOPE	12	10.3%	11.5%	9.5%	9.2%	10.7%	10.0%	10.2%	9.5%	9.8%	10.1%	10.1%	N.A.	N.A.
Lincoln Educational Services	LINC	12	9.5%	9.0%	7.4%	7.3%	7.5%	7.6%	7.9%	9.5%	15.5%	12.1%	10.3%	N.A.	N.A.
National Amer. Univ. Holdings	NAUH	5	14.0%	10.8%	9.8%	8.5%	10.0%	13.9%	9.3%	7.7%	9.1%	9.5%	N.A.	N.A.	N.A.
Universal Technical Institute	UTI	9	7.7%	7.7%	6.5%	7.5%	7.7%	10.2%	9.7%	10.4%	12.3%	11.9%	11.9%	8.2%	9.4%
Median			**11.2%**	**11.1%**	**9.7%**	**9.8%**	**10.5%**	**11.9%**	**10.2%**	**11.5%**	**12.9%**	**12.3%**	**14.6%**	**17.4%**	**16.0%**

Note: Data represents fiscal years. Data used for Career Education, Corinthian Colleges and Lincoln Educational Services excludes discontinued operations where available. N.A. – Not Available. Source: BMO Capital Markets and company reports.

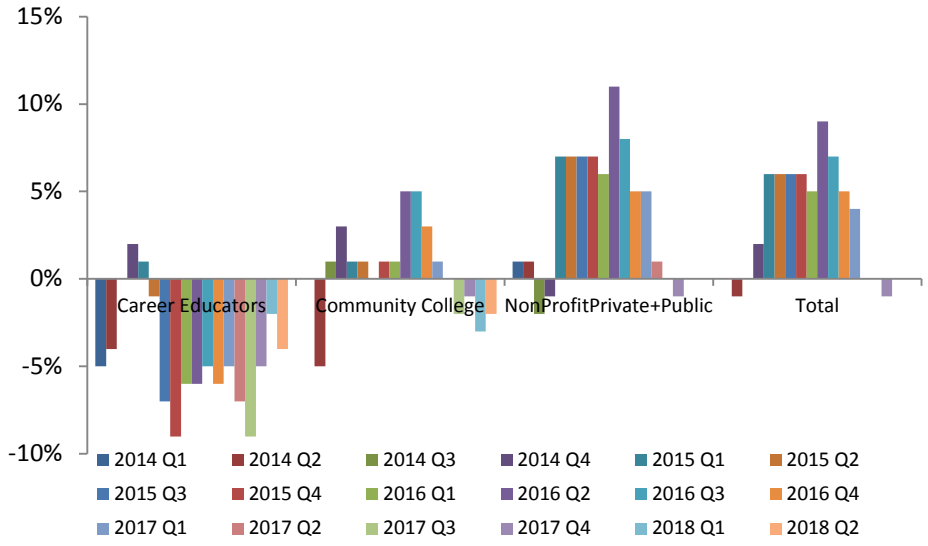
Internet - fastest growing source of new students

Over the past decade, we have seen a dramatic increase in the use of online advertising for both for-profit and not-for-profit schools. According to Google, in 2013, digital (the internet) was the top source for prospective students at 96% (up from 90% in 2012) and 94% of prospective students said they used search engines to perform research for schools (up from 85% in 2012). While few of the publicly held companies consistently disclose their new student enrollment by source, we believe the internet has

been their fastest-growing source of new students, taking share from such old media sources as TV, print, and radio, as well as referrals.

As the woes at for-profit schools continue, non-profit schools have been benefiting. Each quarter, Google tracks the number of education brand queries. As shown in the following table, while searches for all higher education schools have been slowing, those for for-profit schools ("career educators") have been most affected.

Exhibit 222: Annual Change in Higher Education Queries (1Q14–2Q18)



Source: Google's Quarterly Education Search Analysis.

Online lead costs could rise, following trends seen with traditional media leads

During the Great Recession, costs per online lead fell, as economic pressures led many third-party advertisers to increase their exposure to the education sector—one of the largest buyers of interactive leads—with this increased competition holding back increases in lead prices. However, as the economy rebounded, cost per online lead has increased, following trends seen with traditional media (e.g., cable TV) leads.

Scrutiny on the industry has led to slower growth in online leads

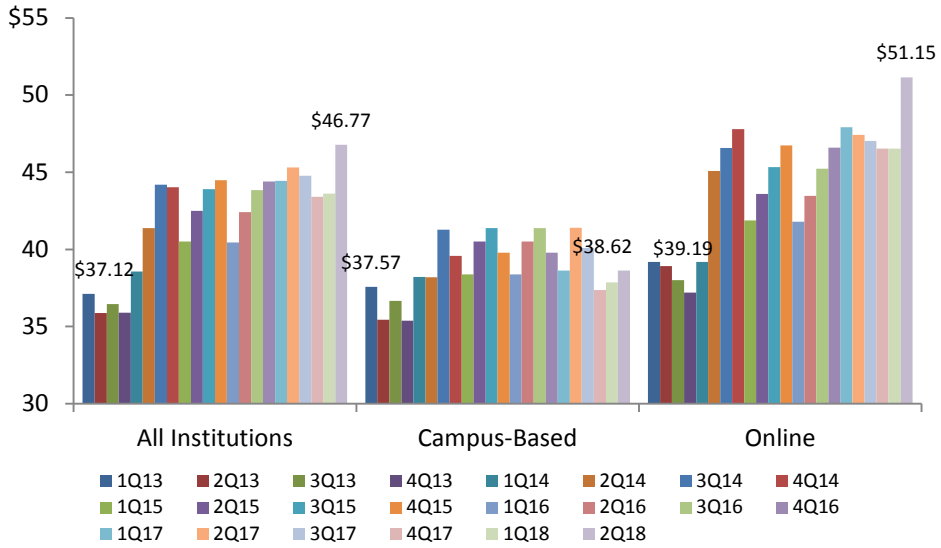
The regulatory and media scrutiny of the sector has led to many companies proactively slowing their recruiting efforts by shifting the focus to outcomes (e.g., retention and graduation rates) from inputs (e.g., new students). While this could lead to companies reducing their external marketing spending, it may shift the focus to higher converting leads (e.g., referrals, high school recruiting) rather than purchasing online leads. Many providers in the business have cited less reliance on so-called "lead aggregators," marketing firms that act as middlemen between the schools and affiliates, i.e., other websites that collect potential student leads, given their relatively lower conversion rates. While this may slow the purchase of online leads, we still believe online leads will be the largest lead source for most companies in the sector.

We note the trade-off between advertising spending and enrollment growth could be substantial; those companies that focus on managing these costs for the near term could be sacrificing future top-line growth. Nevertheless, while the for-profit sector was once notorious for its "if you spend it, they will come" mentality, we no longer believe that to be the case. However, competitive pressures from the not-for-profit sector has not allowed for-profit schools to reduce their marketing spending to a great extent.

Cost per inquiry increasing as focus shifts to high-quality providers

Historically, most investors were concerned with costs per inquiry (CPI, or cost per lead [CPL]), which had been rising by specific media type along with increasing advertising rates during last decade's economic expansion. CPIs typically vary based on the type of student being targeted (e.g., online versus campus, allied health versus MBA) and how targeted the schools wish to be (e.g., certain ZIP codes, age, etc.).the DMS Group, which provides marketing services for the higher education sector, publishes a quarterly CPI for both online and campus-based programs. As shown, CPIs have generally been increasing attributed to a greater focus on "higher quality" lead providers – a trend many of the publicly held for-profit providers have cited. Interestingly CPIs for campus-based programs have generally been higher than those for online programs.

Exhibit 223: Cost per Inquiry for Higher Education Programs (1Q13–2Q18)

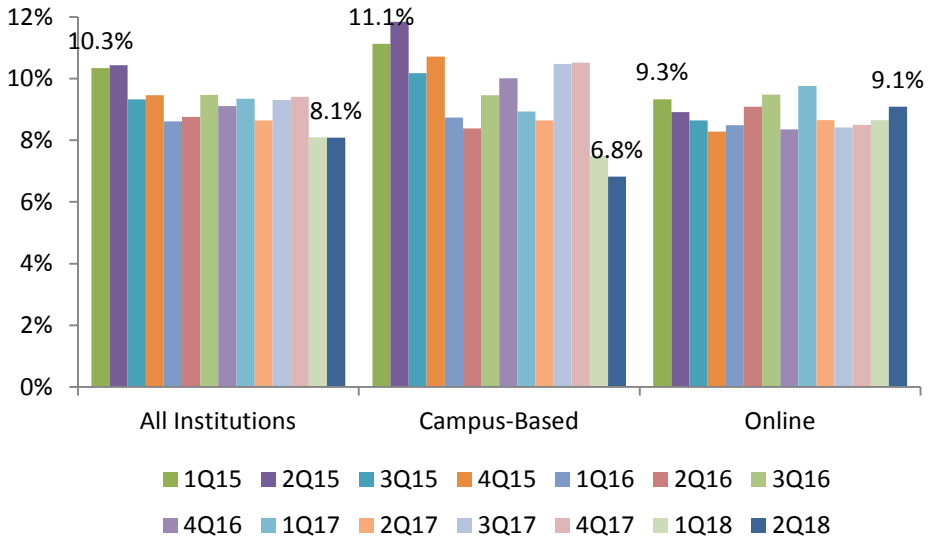


Source: The DMS Group.

Internet leads convert at various rates, but have recently been above those for campus-based institutions

Conversion rates for internet leads tend to vary dramatically depending on whether the lead is generated by networks that obtain single leads for multiple schools (known as co-registered), which have lower conversion rates (a low-single digit, according to The DMS Group data), or from a school's website, which tend to convert at higher rates (a high-single digit) as these students are likely more focused on attending a specific school. Many companies provide leads for postsecondary schools (to be discussed in detail later in this report), although a number of school operators have stated the quality of these leads can vary greatly. Using the DMS Group data, conversion rates have fallen for campus-based institutions, but have been relatively steady at online institutions.

Exhibit 224: Conversion Rates for Higher Education Programs (1Q15–2Q18)



Source: The DMS Group.

According to Rufallo Noel Levitz's Cost of recruiting an Undergraduate Student (2017), private not-for-profit institutions spend more on recruiting per student relative to their not-for-profit counterparts. Interestingly, public not-for-profit institutions spend relatively less per student to recruit international students when compared with recruiting domestically.

Exhibit 225: Median Costs of Recruiting Undergraduate Students (2017)

	Private Not-For-Profit Institutions	Public Not-For-Profit Institutions
A single undergraduate	$2,357	$536
A transfer student	302	32
An international student	735	400

N.A. – Not Available. Source: Rufallo Noel Levitz

There are a number of companies that help postsecondary institutions recruit students, including 160Over90, HigherEducation.com, Keypath Education (formerly Plattform), Liaison International, Ruffalo Noel Levitz and The Noodle Companies.

Corporate Training: Moving to Software-Driven Model

In recent years, corporate training has evolved from a standalone business function into a much more integrated part of a company's overall talent management process. While the key facets of the learning function (i.e., the transfer of knowledge and skills to employees, customers, and partners to retain employees and to improve speed and proficiency) remain, modern technologies continue to alter the way training is delivered and processed by organizations as online, asynchronous, and mobile delivery methodologies gain more traction.

In recent years, emerging companies in this space have been less focused on training content and more on delivery and assessment features driven by new technologies and talent management capabilities. In our view, such training management features provide a greater degree of measurable ROI, as they provide chief learning officers (CLOs) with hard data that can be evaluated against performance benchmarks. Nevertheless, while technology-enabled and blended learning continue to gain traction, instructor-led training (ILT) somewhat surprisingly still remains the dominant delivery model.

There are few publicly held, pure investment opportunities in corporate learning, as most training is provided in house by smaller companies or by larger companies that provide training as a smaller part of their core business. Some publicly held companies that focus on corporate training services include Franklin Covey (FC), GP Strategies (GPX), Learning Tree (LTRE), Pluralsight (PS), and SmartPros (owned by Kaplan, GHC). In addition, while several IT-services and software firms provide learning management tools and solutions, investment opportunities include Cornerstone OnDemand (CSOD) and other talent management solutions providers.

While we expect the U.S. corporate training industry to outperform in times of robust hiring and economic growth, we believe it has benefitted in recent years from secular tailwinds driving corporate spending on technology-based learning products, and, to some extent, regulatory changes in the health care and financial sectors, among others.

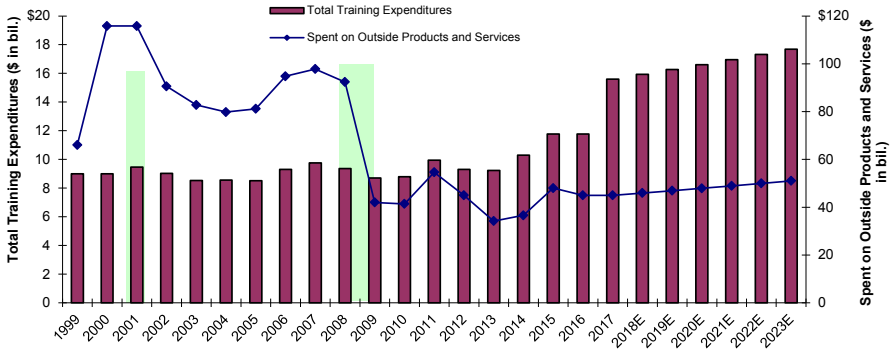
U.S. Corporate Training Market Overview

For many companies, employee development and training is a core strategic investment. While informal learning, or on-the-job training, is likely the largest source of learning for most employees, many organizations have designated CLOs responsible for developing structured employee education programs.

Outsourced training; 3% projected CAGR growth through 2023

While there are a number of measures of spending on corporate training, for purposes of this report, we use Training magazine's 2017 Training Industry Report, which excludes governmental spending. U.S. corporations spent roughly $93.6 billion on training in 2017, up 33% compared to 2016 levels. However, the bulk was spent on internal services, such as training staff payroll. Excluding internal training expenditures, outsourced corporate training services were roughly $7.5 billion in 2017 – flat with 2016. We forecast outsourced corporate training revenues to increase at roughly a 3% CAGR – close to its historical long-term average – reaching roughly $8.5 billion in 2023, though this is still well below last cycle's peak of $16.3 billion in 2007.

Exhibit 226: Total U.S. Corporate Training Expenditures (1999-2023E)

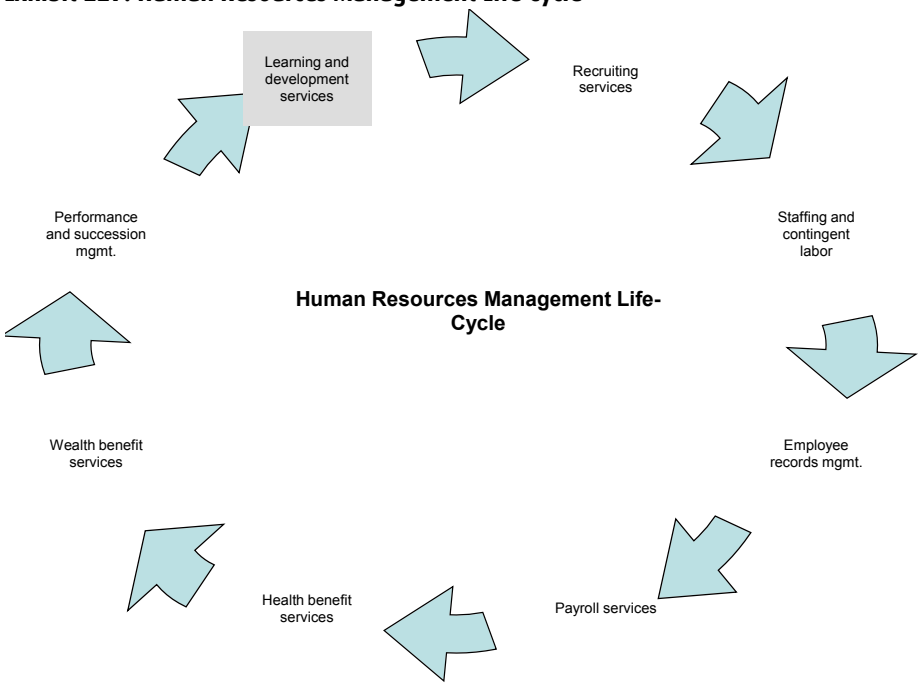


Note: Shaded area represents recessionary period. Source: Training Magazine and BMO Capital Markets estimates.

Human resource departments tend to control corporate training spending

Corporate training programs (sometimes called learning and development or L&D) often reside within a firm's human resources (HR) department, which is responsible for many employee-management functions. HR budgets must be spread across the entire HR life cycle, with learning and development just one piece of the cycle. Thus, we believe this adds a degree of funding risk to this segment, as L&D programs may at times be viewed as a less essential element of the HR cycle.

Exhibit 227: Human Resources Management Life Cycle

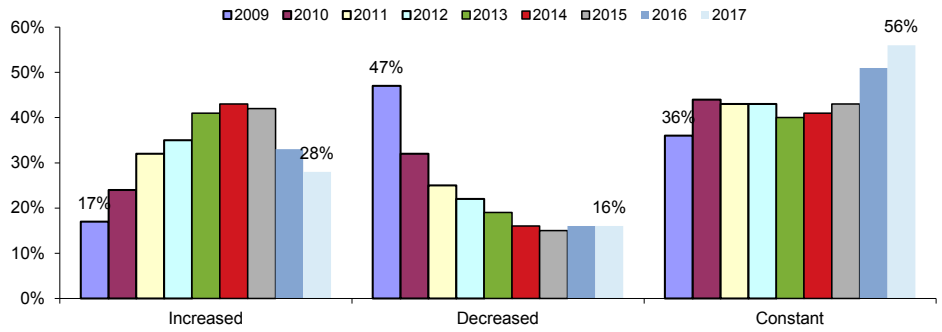


Source: IDC and BMO Capital Markets.

Sector recovering from impact of Great Recession

Total training budgets (includes both internal and external spending) mostly flat. While the bulk of firms have kept this level constant, in recent years fewer firms are decreasing their budgets and more firms are increasing them or keeping them constant. We believe the sector is recovering from the impact of the Great Recession, though most of the growth is focused on increasing the scope of training programs, internal training staff payroll, and the purchase of new technologies and equipment.

Exhibit 228: Annual Change in U.S. Corporate Training Budgets (2009- 2017)

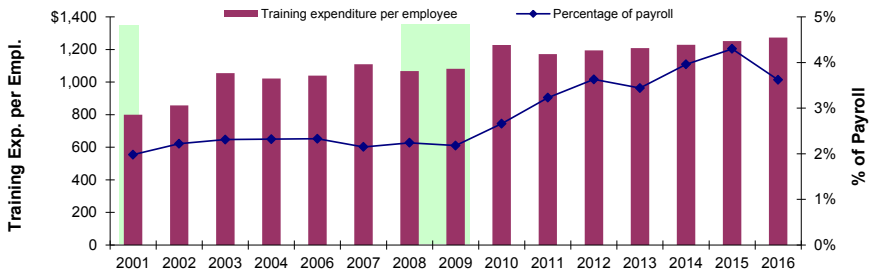


Source: Training Magazine and BMO Capital Markets estimates.

Average spending per employee hit all-time high in 2016

Average training expenditure per employee up. While this metric came under some pressure during the Great Recession, it has generally trended up since. In the past few years, expenditures have also been trending up slightly, reaching an all-time high of $1,273 per employee (2016; latest data available), though has declined in recent years as a percentage of payroll 93.6% in 2016). The top three areas of training content that year were managerial and supervisory (14%), mandatory and compliance (11%), and processes, procedures, and business practices (10%).

Exhibit 229: U.S. Corporate Training Expenditures per Employee (2001-2016)

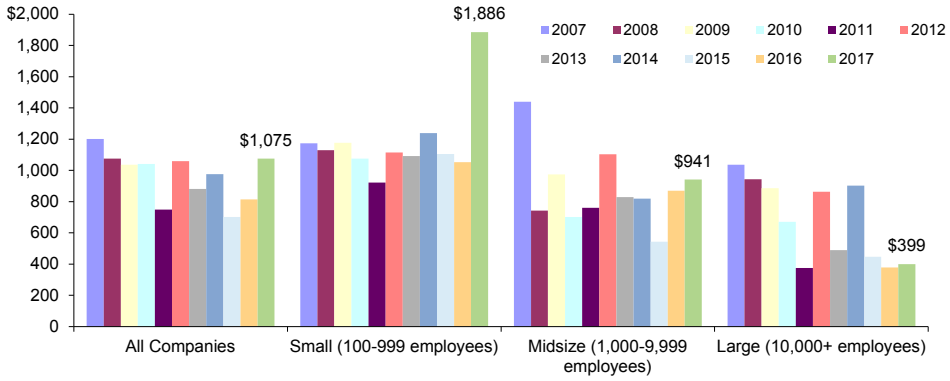


Note: Shaded area represents US recession. 2005 data not available. Source: BMO Capital Markets and Association for Talent Development (ATD)

Small companies spend the most per employee

Average training expenditure per learner higher for smaller companies. Using a different data series (Training magazine), average training expenditures per learner vary greatly by company size. Not surprisingly, smaller companies actually spend the most on a per employee basis, given their smaller base.

Exhibit 230: U.S. Corporate Training Expenditures per Employee (2007-2017)



Source: BMO Capital Markets and Training Magazine.

Content Type

Shift in training from hard skills to soft skills; mandatory/compliance training has also increased

Shift to "soft-skills." As today's providers offer a broad range of products, this market is difficult to segment by learning content. The Association of Talent Development (ATD) provides an annual update on content by learning area. As in past years, managerial and supervisory content had the largest number of content hours, and basic skills the lowest. As shown, over the past decade, companies have shifted training hours away from "hard skills" (e.g., profession/industry specific, IT and systems) and more toward "soft skills" (e.g., executive development, managerial/supervisory). Not surprisingly, mandatory/compliance training has also increased.

Exhibit 231: Corporate Training Hours by Content Type as % of Total (2006-2016)

Content Area	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2016
Managerial/supervisory	11.0%	11.7%	10.4%	10.4%	13.0%	12.6%	13.5%	11.5%	13.0%	12.4%	13.7%	2.7%
Mandatory/compliance	8.9%	10.7%	7.8%	7.8%	10.0%	10.6%	10.8%	11.5%	10.3%	11.1%	10.8%	1.9%
Processes, procedures, business practices	11.1%	11.1%	9.2%	9.2%	10.0%	11.6%	9.9%	9.1%	9.4%	9.8%	10.4%	-0.7%
Sales	6.3%	5.4%	6.7%	6.7%	6.0%	6.6%	9.1%	7.1%	7.6%	6.7%	8.9%	2.6%
New employee orientation	6.7%	6.2%	6.8%	6.8%	7.0%	6.3%	7.3%	7.6%	8.1%	7.7%	8.2%	1.5%
Profession/industry-specific	14.5%	14.2%	17.2%	17.2%	11.0%	11.6%	9.5%	10.8%	10.6%	9.4%	8.0%	-6.4%
IT and systems	10.2%	9.7%	9.3%	9.3%	7.0%	6.8%	7.4%	7.0%	6.7%	7.6%	7.9%	-2.3%
Interpersonal skills	5.8%	5.6%	6.8%	6.8%	7.0%	7.9%	6.4%	6.7%	7.3%	6.7%	7.8%	2.0%
Other	10.7%	8.0%	10.0%	10.0%	10.0%	9.6%	8.9%	1.3%	1.7%	2.0%	7.8%	-2.9%
Executive development	4.1%	4.8%	4.4%	4.4%	6.0%	5.9%	6.3%	6.8%	6.9%	7.1%	6.9%	2.8%
Customer service	6.2%	6.7%	6.8%	6.8%	7.0%	5.8%	6.1%	8.2%	6.5%	7.2%	6.7%	0.5%
Basic skills	4.5%	6.0%	4.8%	4.8%	6.0%	4.7%	4.6%	5.5%	5.5%	4.9%	2.9%	-1.6%
Product knowledge	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	6.9%	6.5%	7.5%	N.A.	N.A.

N.A. – Not Available. Source: BMO Capital Markets and ATD.

Top training companies. The content segment is very fragmented and includes a wide variety of companies, ranging from consulting firms to "pure-play" publishers. The following table lists the Trainingindustry.com's top 20 companies by type.

Exhibit 232: Top Training Companies (2016 - 2018)

Company	Ticker
Assessment and Valuation (2017):	
Aon	AON
APTMetrics	Private
Birkman	Private
BTS	Private
Caliper	Private
CEB	Private
CPP	Private
DDI	Private
DiSC	Private
Genos International	Private
GP Strategies	GPX
Hogan Assessments	Private
HumRRO	Private
Korn Ferry	Private
Mercer	Private
Multi-Heath Systems, Inc.	Private
Persona Labs	Private
PSI	Private
Select International	Private
Tilt 365	Private
IT Training (2017)	
CGS	Private
CTU	Private
ExecuTrain	Private
FastLane	Private
Firebrand	Private
Global Knowledge	Private
GP Strategies	GPX
InfoSec Institute	Private
LearningTree Intl.	LTRE
LearnQuest	Private
NetCom Learning	Private
New Horizons Computer Learning Centers	Private
NIIT	NIITLTD
ONLC Training Centers	Private
O'Reilly Media	Private
QA	Private
Simplilearn	Private
SkillSoft	Private
Tech Data	Private
The Training Associates	Private
Sales Training (2018)	
Action Selling	Private
BTS	Private
Corporate Visions	Private
Customer Centric Selling	Private
Dale Carnegie Training	Private
Double Digit	Private
Franklin Covey	FC
GP Strategies	GPX
Imparta	Private
Integrity Solutions	Private
Janek Performance Group	Private
Mercuri International	Private
Miller Heiman Group	Private
Performance Methods Inc.	Private
Richardson	Private
Sales Performance International	Private
Sandler Training	Private
The Brooks Group	Private
Value Selling Associates	Private
Wilson Learning	Private

Company	Ticker
Content Development (2018):	
Allen Communication Learning Services	Private
Allen Interactions	Private
Aptara	Private
Baker Communications, Inc	Private
Caveo Learning	Private
Cegos	Private
CGS	Private
CLD	Private
Conduent Learning	Private
CrossKnowledge (John Wiley)	JW.A
DuPont Sustainable Solutions	DD
General Dynamics Information Technology	GD
GP Strategies	GPX
Infopro Learning	Private
Kineo	Private
Leo Learning LLC	Private
NIIT	NIITLTD
Raytheon Professional Services	RTN
Sweetrush	Private
TIS (MPS Interactive Systems)	Private
Leadership Training (2018):	
AchieveForum	Private
BTS	Private
Cegos	Private
Center for Creative Leadership	Private
CrossKnowledge	JW.A
Dale Carnegie Training	Private
DDI	Private
Franklin Covey	FC
GP Strategies	GPX
Harvard Business Publishing	Private
Hemsley Fraser	Private
Impact	Private
Ken Blanchard Companies	Private
Linkage	Private
Mind gym	Private
Richardson	Private
SkillSoft	Private
The Center for Leadership Studies	Private
VitalSmarts	Private
Wilson Learning	Private
Training Delivery (2018)	
Adobe Systems Inc.	ADBE
Area9 Lyceum	Private
Axonify	Private
Baker Communications, Inc	Private
Bray Leino Learning	Private
Cisco	CSCO
CloudShare	Private
Fuse Universal	Private
G-Cube	Private
gomo Learning	Private
Hurix Systems Private Limited	Private
Inkling	Private
Intrepid by VitalSource	Private
Scrimmage	Private
STRIVR	Private
The Game Agency	Private
Training Orchestra	Private
Valamis	Private
Zoom	Private
Zoomi, Inc.	Private

Company	Ticker
Gamification (2017):	
Alchemy Systems	Private
Allen Interactions	Private
Allen Communication Learning Services	Private
Axonify	Private
Cognizant Technology Solutions	CTSH
Designing Digitally, Inc.	Private
Gamelearn	Private
G-Cube	Private
GP Strategies	GPX
Growth Engineering Ltd.	Private
mLevel	Private
NIIT	NIITLTD
Paradigm Learning	Private
Performance Development Group	Private
ProfitAbility L&D Services	Private
Raytheon Professional Services	RTN
Saffron Interactive	Private
Sweetrush	Private
TIS (MPS Interactive Systems)	Private
Virtual Heroes (Applied Research Associates)	Private
Online Learning Libraries (2018)	
Alchemy Systems	Private
BizLibrary	Private
CrossKnowledge	JW.A
Degreed	Private
EdCast	Private
eJ4	Private
Harvard Business Publishing	Private
Hemsley Fraser	Private
KPA LLC	Private
Litmos	Private
Media Partners	Private
Mind Tools	Private
OnCourse Learning	Private
O'Reilly Media	Private
Pryor Learning Solutions	Private
SafetySkills	Private
SimpliLearn	Private
SkillSoft	Private
Udemy	Private
Vector Solution	Private
Workforce Development Training (2016):	
Alchemy	Private
CARA	Private
CTU	Private
Cuyahoga Community College	Non-profit
Dale Carnegie Training	Private
American Management Assoc. Intl.	Private
DuPont Sustainable Solutions	DD
Global Knowledge	Private
Global Training Solutions, Inc.	Private
Eton Institute	Private
GP Strategies	GPX
InfoPro Learning	Private
LearnQuest	Private
Orgwide	Private
Pearson Learning Solutions	PSO
Performance Development Group	Private
Raytheon Professional Services	RTN
SkillSoft	Private
TATA Interactive Systems	Private
Wilson Learning	Private

Company	Ticker
Health & Safety (2018)	
360training.com	Private
Alchemy Systems	Private
Axonify	Private
BizLibrary	Private
Converge Training	Private
Driving Dynamics, Inc.	Private
DuPont Sustainable Solutions	DD
eJ4	Private
Global Training Solutions, Inc.	Private
GP Strategies	GPX
Knights Agency	Private
KPA LLC	Private
Pryor Learning Solutions	Private
Raytheon Professional Services	RTN
Safety Media	Private
SafetySkills	Private
SkillSoft	Private
TrainingToday	Private
UL EHS Sustainability	Private
Vector Solution	Private

Note: Listed in alphabetical order by subgroup. Source: TrainingIndustry.com.

Coding "bootcamps"

Coding bootcamps. A "hot," but competitive area in IT skills training is rapid training in coding and software writing sometimes known as "coding bootcamps," with many programs designed to create employable skills in months, not years. Companies that specialize in this include CodeAcademy, Galvanize, General Assembly, and Revature. In recent years, a number of postsecondary providers have expanded here (e.g., Strategic Education) to expand their revenues streams beyond Title IV (i.e., federal financial aid). In addition, there are other boot camps devoted to other verticals including tech sales (e.g., AlwaysHired).

Course Report, a website that tracks coding schools, estimates this sector will generate roughly $240 million in revenues in 2018, having grown at a 56% CAGR since 2014, though revenues are expected to decline somewhat from the prior year.

Exhibit 233: U.S. Coding Bootcamp Market (2013-2018)

	2013	2014	2015	2016	2017	2018	CAGR
Graduates	2,178	6,740	10,333	15,077	16,867	20,316	56%
Revenues ($ mil.)		$59	$172	$199	$266	$240	42%
Average tuition price		$9,900	$11,063	$11,451	$11,400	$11,900	5%
Avg. program length (weeks)		10.4	10.8	12.9	14.1	14.3	8%
No. of cities			51	69	74	86	
No. of states				34	40	44	
Full-time bootcamps					95	108	

Source: Course Report.

There have been a number of innovations by these bootcamps in terms of their business model. For example, some have instituted income sharing agreements where students do not pay any up-front tuition, but rather remit a percentage of their incomes for a number of years after they finish their program. There are also staffing and placement models where these companies guarantee employment, as the bootcamps themselves hire some of those that graduate from their programs. We have also seen a number of bootcamps expand their service offerings beyond IT into other areas (e.g., healthcare).

A list of the top coding bootcamps as compiled by Course Report can be found below.

Exhibit 234: Top Coding Bootcamps (2018)

Top Bootcamps	Location
App Academy	Seattle, Austin, New York City, Philadelphia, Los Angeles, San Francisco, Chicago
Bitmake General Assembly	Toronto
BrainStation	Ottawa, San Jose, Online, New York City, Vancouver, Toronto
CodeFellows	Seattle, Portland
CoderAcademy	Brisbane, Melbourne, Sydney
Coder Foundry	Greensboro, Dallas, Charlotte, New York City
Codesmith	Online, New York City, Los Angeles
Coding Dojo	Hybrid (Online & In-person), Oakland, Seattle, Dallas, Online, Tulsa, Silicon Valley, Los Angeles, San Francisco, Chicago, Washington
Coding Temple	Dallas, Schaumburg, Boston, Chicago, Washington
DecodeMTL	Online, Montreal
devCodeCamp	Madison, Milwaukee
DevMountain (STRA)	Dallas, Online, Phoenix, Provo, Salt Lake City
DevPoint Labs	Provo, Salt Lake City
DigitalCrafts	Houston, Atlanta
Eleven Fifty Academy	Indianapolis
Epicodus	Seattle, Online, Philadelphia, Portland
Flatiron School	London, Online, New York City, Houston, Washington
Fullstack Academy	Online, New York City, Chicago
Galvanize	Boulder, Fort Collins, Seattle, Online, Austin, New York City, Phoenix, San Francisco, London, Denver
General Assembly (ADEN-SW)	Hong Kong, Seattle, Melbourne, Dallas, Online, San Diego, Austin, New York City, Philadelphia, Sydney, Singapore, Los Angeles, San Francisco, Boston, Atlanta, London, Denver, Chicago, Washington
Grace Hopper Program	Online, New York City
Hackbright Academy (STRA)	San Jose, Oakland, San Francisco
HackerYou	Toronto
Hack Reactor	Online, Austin, New York City, Los Angeles, San Francisco
Holberton School	San Francisco
Ironhack	Barcelona, Madrid, Paris, Mexico City, Sao Paulo, Amsterdam, Miami, Berlin
Launch Academy	Online, Philadelphia, Boston, Washington
LearningFuze	Orange County, Irvine
Le Wagon	Bali, Barcelona, Milan, Paris, Brussels, Lille, Tel Aviv, Lisbon, Mexico City, Sao Paulo, Beirut, Bordeaux, Nantes, Marseille, Casablanca, Melbourne, Copenhagen, Kyoto, Recife, Montreal, Lyon, Tokyo, Rio de Janeiro, Belo Horizonte, Shanghai, Budapest, Buenos Aires, Sydney, Amsterdam, Chengdu, London, Berlin
Lighthouse Labs	London, Calgary, Halifax, Montreal, Victoria, Okanagan, Vancouver, Toronto
Makers Academy	London, Online
Make School	Hong Kong, Oakland, Seattle, Dallas, Online, Osaka, New York City, Tokyo, Beijing, Taichung City, Los Angeles, San Francisco, Atlanta, Chicago, Minneapolis, Washington
New York Code + Design Academy (STRA)	Jersey City, Westchester, Syracuse, East Hampton, Seattle, Raleigh, Austin, New York City, Philadelphia, Amsterdam, Atlanta, Salt Lake City, Washington
RED Academy	London, Vancouver, Toronto
Revature	Reston, Hybrid (Online & In-person), Scottsdale, Dallas, Tampa, New York City
Rithm School	San Francisco
Rutgers Bootcamps	Jersey City, Somerset, New Brunswick
Sabio	Orange County, Seattle, Online, Los Angeles
Skill Distillery	Denver
Software Guild	Louisville, Online, Akron, Atlanta, Minneapolis
Startup Institute	New York City, Boston, Chicago
Tech Elevator	Cincinnati, Cleveland, Columbus, Pittsburgh
Tech Talent South	Asheville, San Antonio, Greensboro, Jacksonville, New Orleans, Alpharetta, Raleigh, Columbus, Dallas, Charlotte, Phoenix, Wilmington, Atlanta
Turing	Denver
TurnToTech	New York City
V School	Beirut, Online, Provo, Cape Coast, Salt Lake City
We Can Code IT	Cleveland, Columbus
Wyncode	Fort Lauderdale, Miami Beach, Miami
Zip Code Wilmington	Wilmington

Note: Listed in alphabetical order. Source: Course Report.

But the sector is facing some growing pains

However, some of these bootcamps have struggled to develop a profitable business in this competitive arena. In July 2017, Kaplan announced plans to shut down Dev Bootcamp by the end of 2017; the company had acquired it in June 2014 and cited it "could not reach a sustainable business model." Shortly thereafter, Apollo Education Group disclosed it would close Iron Yard. Some in the industry have speculated that the combination of these start-ups with more established education providers did not work.

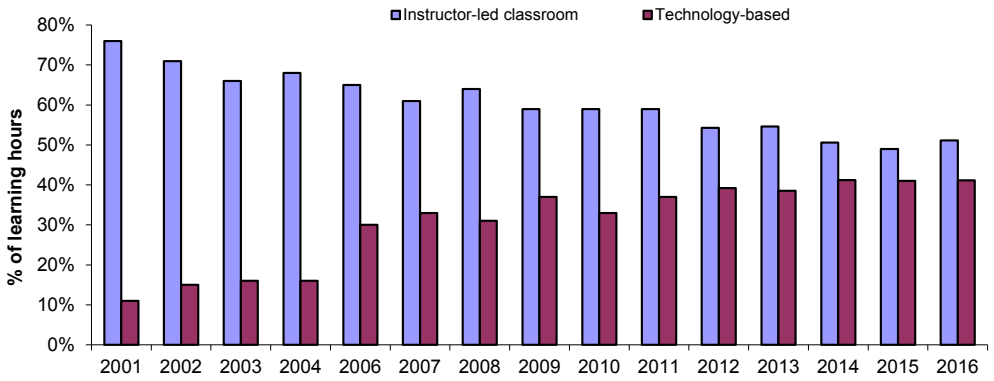
Content Delivery Channels

Corporate learning is delivered to the end user through three primary methods: 1) traditional instructor-led (classroom); 2) online and internet (e.g., CD-ROM, distance learning, or social media); and 3) a blended format of traditional and online learning. While the largest single method of corporate training remains classroom-based instructor-led training (ILT), online and blended methods have made substantial inroads in recent years.

Long-term trend of more technology-based learning hours

Shift to technology-based instruction. We continue to see a shift to technology-based learning away from instructor-led training (ILT), though the latter still dominates. According to ASTD's 2017 State of the Industry Report, technology-based learning has gained share in recent years, reaching 41% of learning hours in 2016, which is up from 11% in 2001 and hitting an all-time high. However, this rate has been relatively flat over the past gthree years, perhaps suggesting some sort of plateau.

Exhibit 235: Average % of Learning Hours by Delivery Channel (2001-2016)



Note: Survey data not available for 2005. Source: ASTD's annual State of the Industry Report and BMO Capital Markets.

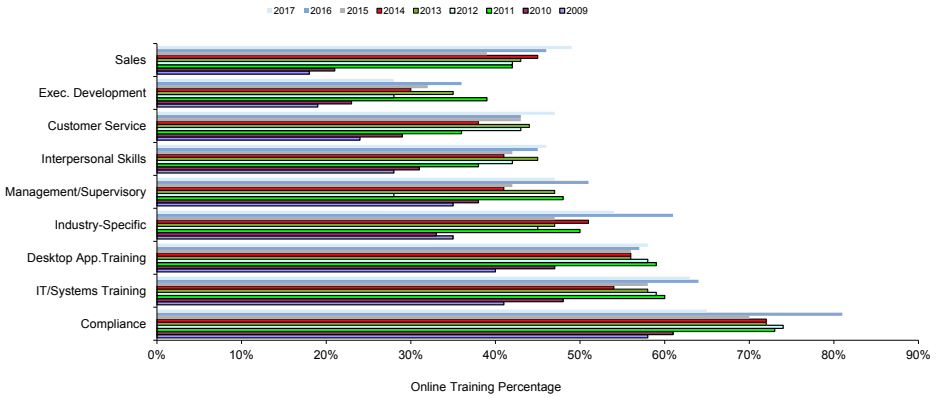
Delivery modalities offer different benefits

The costs and benefits of delivery methods vary. While ILT allows licensing content more cheaply, it requires greater real estate and staffing costs (e.g., instructors, travel, office space) versus technology-based providers. However, ILT tends toward better retention of training material, according to most experts. Online models, by contrast, may require higher up-front investments in fixed costs, but are more scalable in the long run and easier to update and refresh. In addition, we believe online models are becoming more effective as technology improves. For content providers, ILT is generally a much lower-margin enterprise owing to lack of scaling abilities.

Online modality more commonly used for "hard skills"

According to various surveys, certain skills are more easily learned in online formats while others do better in a classroom environment. Research by *Training* magazine found that corporations were more likely to use online content for "hard" skills, such as compliance or IT systems, as opposed to "soft" skills, such as sales training and executive development.

Exhibit 236: Online Training Modality as % of Total (2009-2017)



Source: *Training* magazine.

HR management software drives use of online content

Growing use of SaaS-based HR software. We believe the growing use of SaaS-based HR-management software from providers such as Cornerstone on Demand (CSOD) and Workday (WDAY) may also be helping to drive digital learning. This software makes it much easier for firms to integrate learning content into their existing ERPs, and enables better data capture and performance tracking.

Mobile learning gaining use

Other computer-based learning modalities, such as mobile technologies, video, and text, are also growing in popularity. IDC projects eLearning content to increase to 34% of IT education spending in 2022, up from 22% in 2013. Technology is changing the way content is accessed and consumed, and the way training leaders look to design training experiences. From mobile apps and e-learning to job aids and simulations, employees need multiple touches and ways to consume information and drive changing behavior, which transforms training from an event to an extended learning experience.

CLOs want to match content to best learning style

As content forms have evolved, we believe modality decisions are increasingly based on the content being learned – and not necessarily the available modality of that content. As shown above, some skills training is more effective using online asynchronous methods, while other skills remain better suited to the classroom environment. As this industry evolves, we believe the key determinant of modality will be matching the content to the appropriate learning style.

Training Technology Providers

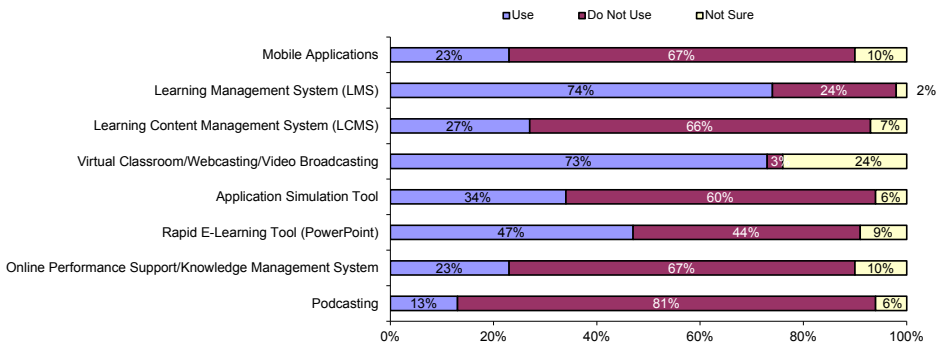
Modern e-learning providers have stronger value proposition

Many of the systems and technology providers that serve the K-12 and postsecondary markets also serve the corporate training sector. In addition, talent management solutions providers such as Cornerstone on Demand (COD) and other full-service enterprise resource planning companies (e.g., Oracle, SAP) tend to serve this market. There are also companies such as BurningGlass, Degreed and Parchment that aid in the employee recruiting and retention process. In this section, we focus briefly on e-learning (i.e., learning technologies) as it applies to the corporate training market.

While early investments in e-learning resulted in rather poor ROI and led to a pullback in the sector, we believe modern e-learning services have a much stronger value proposition than their predecessors did. Today's e-learning providers utilize SaaS-based technologies to lower the cost of implementation, improve scaling abilities, and provide services that are constantly updated and accessible anytime, anywhere. These technologies also enable access to much more content and allow users to customize learning modules or develop proprietary learning tools for specific business purposes. In addition, modern e-learning has become easier to integrate within existing talent management platforms, allowing easier performance tracking and data capture throughout the employee lifecycle.

Widespread use of LMS. In its 2017 report, *Training* magazine surveyed firms as to which learning technologies they used. We note the widespread use of learning management systems (LMS), as they are typically the technological platforms through which e-learning is administered.

Exhibit 237: Learning Technologies Used (2017)



Source: Trainingmag.com and BMO Capital Markets.

LMS integrates e-learning content

Learning management systems (LMS) are the software that integrate and assemble content from various e-learning publishers, and administer, track, and report on lessons (online or classroom based), and provide tracking and assessment. In addition, LMS provide data about training activities and enable companies to correlate training outcomes with performance. There are a number of estimates of the corporate LMS market size (though these estimates include both corporate and academic markets):

- Markets and Markets forecasts the global corporate LMS market to grow from $2.06 billion in 2018 to $7.12 billion by 2023, a **CAGR of over 28.2%**.
- Zion Market Research estimates the global LMS market was valued at around $5.19 billion in 2016 and is expected to reach approximately $19.05 billion in 2022, growing at a **CAGR of slightly above 24%** over that time.
- Transparency Market Research forecasts the global LMS market is projected to amount to $18.8 billion by 2024, rising from $3.4 billion in 2015, a **CAGR of nearly 20%.**
- Research firm IDC estimates the worldwide corporate e-learning spending on "management systems" was nearly $1.66 billion. The firm estimates this will increase to nearly $2.1 billion in 2020, a **CAGR of roughly 6.1%** (August 2016 forecast, latest available).

Bersin & Associates (now Bersin by Deloitte) estimated the global corporate LMS market is over $4 billion in size (2016), though it believes the market is about to be disrupted. The research firm notes that companies are starting to move away from their learning management systems towards new tools for digital learning and a new infrastructure to help employees learn. These include tools for external content curation; tools to build MOOCs internally; tools to deliver adaptive, micro-learning content; and tools to help recommend content, assess learning, practice, and identify skills gaps. Bersin believes that these are likely the emerging leaders in the market. According to Bersin, platforms like Degreed, Edcast, Fuse, Pathgather, Grovo, and vendors like NovoEd, Intrepid, Everwise, Axonify, Qstream, Practice, and others are reinventing the landscape.

A 2015 LMS study by Brandon Hall found 85% of companies have some LMS in place, with higher usage across larger companies (over 10,000 employees), where 97% use a LMS, compared with 61% among small employers (fewer than 1,000 employees). While penetration rates have remained relatively steady since 2012, we believe small businesses are still relatively underpenetrated. Traditionally, LMS was a costly investment for organizations. However, we believe the proliferation of low-cost and free SaaS-based LMS in recent years has likely driven more LMS adoption among smaller companies.

Available pricing data shows costs for these systems are widely varied, but are generally priced for volume (per learner, per-use or per-course) and contract length (one-time fees). In Decemb er 2016 (latest data available), Capterra quantified examples of the different pricing models. While these prices serve as a good framework for LMS costs, we believe the evolution of SaaS models in recent years has likely put downward pressure on prices.

Exhibit 238: Corporate LMS Pricing Models (2016)

Framework	Description	Price range	Examples
Pay per learner	Flat fee per learner (regardless of how much training they're receiving). Additionally, there's often a one-time setup fee.	Around $5/user/month, but prices go down as you scale, to as little as $0.50/user/month for large companies with many learners.	SkillSoft, Taleo, Latitude Learning, Evance 360
Pay per use	Variues, including a fee-per-user-per module, fee-per-course-per-user, a fee based on elements or materials delivered per course, or a fee based on number of class attendees	Depends on the specific model and your volume, but expect anywhere from $0.50-$10 per learner per course.	SuccessFactors, Cornerstone OnDemand, DigitalChalk
License fee	Either a one-time, upfront cost to access the software, or it is a fee to access the software for a specific period of time (monthly, annually, etc.). There may also be an annual support fee.	Less than $500 to tens of thousands of dollars (e.g. ,$20,000 annually).	Desire2Learn, Halogen, Meridian

Source: Capterra and BMO Capital Markets.

Most LMS systems are currently underutilized

While most companies have incorporated some form of LMS, we believe they remain largely underutilized. According to *Online Learning* magazine, "Despite the million-dollar price tags associated with purchasing and customizing an LMS, less than 20% of any company's employees will actually use the system." In addition, we have read numerous articles about LMS systems over-promising on features that end up going unused. We believe this has fueled demand for LMS that are more feature light, require less training, and are easily adaptable to the specific needs of its user.

Fragmented industry

We believe the LMS market is extremely fragmented and includes established industry providers, new SaaS-based upstarts, and legacy homegrown systems. Capterra provides a list of LMS providers with user information; we note this list includes both corporate and academic customers.

Exhibit 239: Top LMS Providers (ranked by users; 2017 data)

Name	Ticker	Customers	Users
Moodle	Private	70,570	89,238,000
Edmodo	Private	350,000	58,000,000
SuccessFactors	SAP	4,200	28,000,000
Blackboard	Private	20,000	20,000,000
TOPYX (Interactyx)	Private	300	20,000,000
SkillSoft	Private	6,700	19,000,000
Instructure	INST	2,000	18,000,000
Schoology	Private	1,400	15,000,000
Brightspace (Desire2Learn)	Private	2,000	15,000,000
Cornerstone on Demand	CSOD	1,610	12,400,000
Litmos	Private	2,500	4,000,000
eFront (Epignosis)	Private	1,010	3,780,000
Latitude Learning	Private	7,040	3,757,000
Docebo	Private	1,100	3,500,000
Edsby	Private	7,422	1,420,000
DigitalChalk	Private	3,675	655,000
Cypher Learning	Private	10,000	430,000
WizIQ	Private	70,515	364,700
Collaborize Classroom (Democrasoft)	Private	48,000	350,000
Educadium	Private	9,300	75,000

Source: Capterra and BMO Capital Markets.

Some emerging areas of online learning include the following:

- **Virtual instructor-led training (VILT).** VILT consists of live or synchronous training in which instructors deliver courses through web, video, and/or teleconferencing to remote attendees. Some examples include Cisco's (CSCO) WebEx and Microsoft (MSFT) Live Meeting. VILT courses are commonly blended with self-study e-learning, instructor-led training, or other print materials. Advantages include scale and cost savings owing to decreased travel needs.

- **Mobility.** While it is mostly used for informal content, we believe mobile learning is especially popular for organizations whose employees are frequently on the road or in less developed countries with a lower level of telecommunications infrastructure.
- **Social networking.** While corporations have made efforts to create proprietary social networks, wikis, and blogs, we believe future social-learning activities more likely will take place over existing social networks such as Facebook (FB) and Microsoft's (MSFT) LinkedIn as organizations learn to leverage these freely available tools. We believe this was one reason behind LinkedIn's 2012 purchase of Slideshare for $119 million, and its 2015 purchase of Lynda.com for $1.5 billion.
- **Gaming.** Gaming can be used to model complex organizational and market systems in a way that imparts strategic knowledge to employees. According to CLO Magazine, simulation-based learning experiences (think air traffic controllers) can help trainees master new subjects up to 40-70% faster and can reduce the time needed for new employees to reach a level of competent performance by 80%.
- **MOOCs.** Massively online open courses have been expanding at a tremendous rate in recent years as more colleges, universities, and other educators develop easy-to-use, free online courses that cover just about any subject.
- **"Self-published content."** According to Bersin & Associates (now Bersin by Deloitte), about 70% of all corporate learning takes place through on-the-job experiences. While blogs (self-published webpages) and wikis (self-published webpages that allow anyone to edit them) first gained acceptance outside the corporate environment, they have become more mainstream in many corporations, with some e-learning services companies offering products to help companies author their own learning content.
- **Tin Can API.** Tin Can is a relatively new specification for learning technology that makes it possible to collect data about the wide range of experiences and learning users have (offline and online) in a format that is sharable, quantifiable, and trackable.

Authoring systems market

Authoring systems. Authoring systems refer to software to help create e-learning content by allowing authors to add interactive content, videos, links, animations, response systems, and other features to create seamless, easy-to-use online course experiences with minimal need to write code. According to IDC estimates, the authoring systems sub segment may be the fastest growing within the e-learning infrastructure segment. Trainingindustry.com provides an annual list of top authoring companies.

Exhibit 240: Top Authoring Tools Companies (2018)

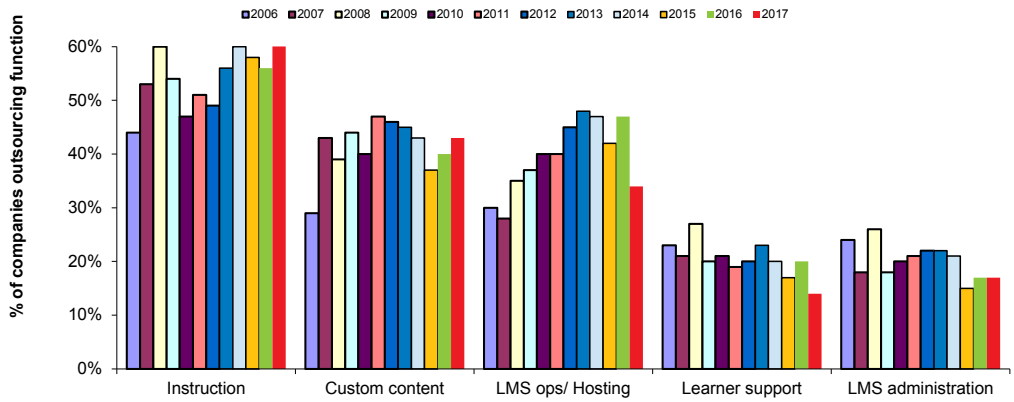
Company	Ticker
Adobe Systems	ADBE
Appitierre	Private
Articulate	Private
CD2 Learning	Private
CrossKnowledge	JW.A
domiKnow Learning Systems	Private
Elucidat	Private
Exact Learning Solutions	Private
Geenio	Private
Gomo Learning	Private
Growth Engineering Ltd.	Private
Gutenberg Technology	Private
iSpring Solutions	Private
Learnetic	Private
LearningMate Solutions	Private
Lectora	Private
Lumesse	Private
MOS - MindOnSite	Private
Talentsoft Learning	Private
Xyleme	Private

Source: TrainingIndustry.com.

Outsourcing of training functions increasing

Outsourcing all or parts of training functions. Outsourcing remains a significant part of training. In Training magazine's annual Industry Report, nearly 66% of firms said they outsourced all or part of their instruction tasks in 2017. The survey also shows that the outsourcing of LMS hosting has been steadily rising, an indication of further use of SaaS LMS systems, we believe.

Exhibit 241: Components of Training Outsourced (2006-2017)



Source: Training Magazine and BMO Capital Markets.

Top reasons for outsourcing are for access to experts and to reduce costs

A 2014 report by *Chief Learning Officer* magazine found that 50% of enterprises plan to use an outside provider to augment their learning function – this level has been relatively consistent over the past few years. Most companies choose outsourcing to gain better access to learning expertise or to deliver more learning than internal resources provide. Many often use outsourcing to supplement internal resources on an as-needed basis. The survey also found that, increasingly, organizations believe outsourcing to be a cost-effective method to create or deliver learning.

While we believe the positives outnumber the negatives of training outsourcing, we imagine it will take some time before entire learning functions are outsourced in the same manner as other HR processes, such as payroll, and note that some firms will likely always have some internally developed training that is proprietary and unique to that business.

Exhibit 242: Pros and Cons of Outsourcing Training Function

Pros	Cons
Desire for standardization of training practices	Internal opposition (i.e., current training department may not wish to put itself out of business)
Vendors benefit from attractive economies of scale not available to corporations	Current training may involve multiple departments, making it difficult to truly outsource
Ability to transfer fixed costs (e.g., staff, infrastructure) for corporations into variable costs for vendor	May be difficult to create performance benchmarks for vendor
Training is not a core competency for most companies	Current training may include proprietary information that corporations may be unwilling to outsource
Most companies lack expertise and/or do not have access to state-of-the-art procedures	Little industry success to date
Most companies are not as familiar with external vendors and their product offerings, leading to the need for third-party assistance	Greater risk of cost overruns

Source: BMO Capital Markets and IDC.

A list of the top training outsourcing companies as ranked by TrainingIndustry.com.

Exhibit 243: Top Companies in the Training and Development Outsourcing Industry (2018)

Company	Ticker
Aptara	Private
Cegos	Private
CGS Enterprise Learning	Private
Cognizant Technology Solutions	CTSH
Conduent Learning	CNDT
CrossKnowledge (John Wiley)	JW.A
Expertus	Private
Global Knowledge	Private
GP Strategies	GPX
Hemsley Fraser	Private
IBM	IBM
InfoPro Learning	Private
Lionbridge	Private
MicroTek	Private
NIIT	NIITLTD
Performance Development Group	Private
QA	Private
Raytheon Professional Services	RTN
TATA Interactive Systems	Private
The Training Associates	Private

Note: List is alphabetical. Source: TrainingIndustry.com and BMO Capital Markets.

Some of the more notable transactions include:

- April 2018: General Assembly acquired by Adecco Group AG for $413 million.
- April 2017: A group headed by Blackstone Partners LLC in April paid $2 billion in equity and debt for Ascend Learning, which focuses on medical-industry education and test prep.
- May 2016: ACAMS acquired by DeVry Education Group (now part of Adtalem Global Education; ATGE) for $333 million.
- April 2015: Lynda.com was acquired by LinkedIn for $1.5 billion.
- February 2015: Saba Software was taken private by Vector Capital for $300 million.
- August 2014: SkillSoft announced plans to acquire SumTotal Systems from Vista Equity Partners. The terms of the transaction were not disclosed.
- April 2014: Charterhouse Capital Partners acquired SkillSoft for an estimated $2+ billion from a private equity group headed by Berkshire Partners LLC, Advent International Corporation, and Bain Capital Partners, LLC. That group had taken the company private in May 2010 in a transaction valued at $1.2 billion.
- April 2014: John Wiley and Sons (JW-A) acquired LMS and e-learning development provider CrossKnowledge for $175 million.
- January 2014: GP Strategies Corporation (GPX) acquired the Effective-People and Effective-Learning companies, providers of human capital management solutions.
- December 2012: IBM (IBM) completed the acquisition of Kenexa, an HR consulting company, for $1.3 billion. Kenexa had previously acquired Outstart, a mobile learning solutions company, in February 2012.
- May 2012: Pearson (PSO) acquired certification exam provider Certiport for $140 million.
- February 2012: Oracle (ORCL) acquired talent management software provider Taleo for $1.9 billion.
- December 2011: SAP acquired employee management software provider SuccessFactors for $3.4 billion.
- July 2011: SumTotal Systems acquired workforce management software maker CyberShift and payroll services provider Accero. This followed the January 2011 acquisition of GeoLearning, a LMS provider. These were the latest in a string of acquisitions for this company since going private (in July 2009 for $160 million).
- September 2010: Taleo (TLEO) purchased LMS provider Learn.com for $125 million.
- In February 2010, Xerox (XRX) completed the acquisition of Affiliated Computer Services, a provider of BPO services, for $6.4 billion.

A list of recent mergers and acquisition activity in the corporate training sector is provided in the following table.

Exhibit 244: Corporate Training Recent Transactions (2014-2018)

Annc. Date	Target	Acquiror	Transaction Value	Transaction Value/LTM Revenue	Transaction Value/LTM EBITDA
			(US$ mm)	(ratio)	(ratio)
Aug-18	Total Training Solutions	OnCourse Learning Corp.	n.a.	n.a.	n.a.
Aug-18	XCEL Testing Solutions	Securities Training Corporation	n.a.	n.a.	n.a.
Dec-17	Precision Nutrition Inc.	BV Investment Partners	n.a.	n.a.	n.a.
Aug-18	Omega Performance Corporation	Moody's Corporation	n.a.	n.a.	n.a.
Apr-18	RAID International Pty Ltd	Kalkomey Enterprises, Inc.	n.a.	n.a.	n.a.
May-18	Allied Business Schools, Inc.	Colibri Group, Inc.	n.a.	n.a.	n.a.
May-18	IC Axon Inc.	GP Strategies Corporation	$33.5	n.a.	n.a.
Apr-18	General Assembly	Adecco Group AG	$412.5	4.1x	n.a.
Apr-18	Learndirect eAssessment	PSI Services LLC	n.a.	n.a.	n.a.
Apr-18	Keir Educational Resources	CeriFi, LLC	n.a.	n.a.	n.a.
Apr-18	TPC Training Systems, Inc. and JADE Learning LLC	Frontenac Company	n.a.	n.a.	n.a.
Mar-18	Vivid Learning Systems, Inc.	Health & Safety Institute, Inc.	n.a.	n.a.	n.a.
Feb-18	Electrical Infrastructure Services Business and Northwest Lineman College	Quanta Services, Inc.	$77.5	n.a.	n.a.
Jan-18	Wound Care Education Institute, Inc.	OnCourse Learning Corporation	n.a.	n.a.	n.a.
Jan-18	Global Training Aviation, S.L.	Indra Sistemas, S.A.	n.a.	n.a.	n.a.
Jan-18	Continuing Education Alliance, LLC	Renovus Capital Partners	n.a.	n.a.	n.a.
Dec-17	Hula Partners Llc	GP Strategies Corporation	n.a.	n.a.	n.a.
Dec-17	Being Human Pty Ltd	Prosci, Inc.	n.a.	n.a.	n.a.
Nov-17	FirstNet Learning, Inc.	NEOGOV, Inc.	n.a.	n.a.	n.a.
Nov-17	Bristow Academy, Inc.	Undisclosed Buyer	n.a.	n.a.	n.a.
May-17	SimplyDigi	Vector-Solutions.com, Inc.	n.a.	n.a.	n.a.
Apr-17	Ascend Learning, LLC	Blackstone; Canada Pension Plan Investment Board	$2,000.0	n.a.	n.a.
Apr-17	Inside Sales Bootcamp, Inc.	Sales Bootcamp	n.a.	n.a.	n.a.
Apr-17	Advanced Practice Strategies, Inc.	Relias Learning, LLC	n.a.	n.a.	n.a.
Mar-17	PADI (Professional Association of Diving Instructors)	Mandarinfish Holding	$700.0	n.a.	n.a.
Feb-17	Scenario Learning LLC	Vector-Solutions.com, Inc.	n.a.	n.a.	n.a.
Dec-16	Learnsmart LLC	Vector-Solutions.com, Inc.	n.a.	n.a.	n.a.
Nov-16	Crisis Prevention Institute, Inc.	FFL Partners	$400.0	n.a.	n.a.
Oct-16	Chalkable, Inc.	PowerSchool Group LLC	n.a.	n.a.	n.a.
Oct-16	Medic-CE.com, LLC	Career Step, LLC	n.a.	n.a.	n.a.
Sep-16	FIRE Solutions, Inc.	National Regulatory Services, Inc.	n.a.	n.a.	n.a.
Sep-16	Learner's Edge Inc.	L Squared Capital Partners; Avante Mezz.	n.a.	n.a.	n.a.
Jun-16	CPE Link	Wolters Kluwer's Tax and Accounting	n.a.	n.a.	n.a.
May-16	ACAMS	DeVry Education Group	$330.0	n.a.	n.a.
May-16	DevMountain	Capella Education	$20.0	n.a.	n.a.
Apr-16	Hackbright Academy	Capella Education	$18.0	n.a.	n.a.
Mar-16	Assessment & Intelligence Systems (AIS)	Relias Learning	n.a.	n.a.	n.a.
Feb-16	EnlightKS Limited	PSI Services LLC	n.a.	n.a.	n.a.
Feb-16	Lockheed Martin Commercial Flight Training	CAE Inc.	n.a.	n.a.	n.a.
Feb-16	Adapt Courseware	Fulcrum Labs	n.a.	n.a.	n.a.
Jan-16	New York Code and Design Academy, Inc.	Strayer Education, Inc.	$25.0	n.a.	n.a.
Jan-16	Devbridge Inc.	Bloc, Inc.	n.a.	n.a.	n.a.
Jan-16	Code3 CME LLC	Career Step, LLC	n.a.	n.a.	n.a.
Oct-15	AnalystSuccess.com	John Wiley and Sons Inc.	n.a.	n.a.	n.a.
Oct-15	RediLearning, LLC	Relias Learning, LLC	n.a.	n.a.	n.a.
Oct-15	AFA Project Management Ltd.	International Institute for Learning, Inc.	n.a.	n.a.	n.a.
Dec-15	SmartPros Ltd.	Kaplan, Inc.	$16.4	1.2x	11.0x
Oct-15	DevelopMentor, Inc.	Global Knowledge Training, LLC	n.a.	n.a.	n.a.
Oct-15	AFA Project Management Ltd.	International Institute for Learning, Inc.	n.a.	n.a.	n.a.
Sep-15	Langrich Co., Ltd.	EnglishCentral, Inc.	n.a.	n.a.	n.a.
Aug-15	Learner's Digest International, LLC	Wolters Kluwer's Health Division	$150.0	n.a.	n.a.
Aug-15	Ameriteach UCI, Inc.	360training.com, Inc.	n.a.	n.a.	n.a.
Aug-15	TSS Redmond, LLC	360training.com, Inc.	n.a.	n.a.	n.a.
Aug-15	Scrimmage	AMC and Academy for Healthcare Learning	n.a.	n.a.	n.a.
Jul-15	Cross Country Education, LLC	PESI, Inc.	n.a.	n.a.	n.a.
Jul-15	Docebo SRL	Klass Capital	n.a.	n.a.	n.a.
Jul-15	Masterlink Training LLC	360training.com, Inc.	n.a.	n.a.	n.a.
Jul-15	RegEd	Falfurrias Capital Partners	n.a.	n.a.	n.a.
Jun-15	Hibernia College UK	TES Global Limited	n.a.	n.a.	n.a.
May-15	Emergency Certifications, Inc.	Career Step, LLC	n.a.	n.a.	n.a.
Apr-15	Lynda.com	LinkedIn	$1,500.0	10.0x	n.a.
Feb-15	Learning Tree International Inc.	David C. Collins and Mary C. Collins	$24.4	0.2x	n.a.
Feb-15	Career Step	Revelstoke Capital Partners	n.a.	n.a.	n.a.
Jan-15	Bombardier Inc.	CAE Inc.	$15.9	n.a.	n.a.
Jan-15	PADI	Providence Equity Partners	n.a.	n.a.	n.a.
Jan-15	Skye Multimedia	Seth Obernman (President of Skye Multimedia)	n.a.	n.a.	n.a.
Jan-15	Sirius Computer Systems, Inc.	Training Umbrella LLC	n.a.	n.a.	n.a.
Jan-15	Lynda.com	TPG Capital	$1,000.0	6.7x	n.a.
Dec-14	Edu-Performance Canada Inc.	Andre Goli and Sylvain Dufour	$0.1	n.a.	n.a.
Dec-14	VectorLearning.com Inc.	Providence Equity Partners	$168.0	n.a.	n.a.
Dec-14	Summit Professional Education, LLC	Greybull Stewardship	n.a.	n.a.	n.a.
Dec-14	Oakstone Publishing LLC	A.D.A.M., Inc.	n.a.	n.a.	n.a.
Dec-14	Superior Training Solutions, Inc.	Lifeloc Technologies Inc.	n.a.	n.a.	n.a.
Dec-14	Employability and Skills Group	Interserve plc	n.a.	n.a.	n.a.
Nov-14	Zipfian, Inc.	Galvanize, LLC	n.a.	n.a.	n.a.
Nov-14	RealWeld Systems, Inc.	Lincoln Electric Holdings Inc.	n.a.	n.a.	n.a.
Nov-14	Global Knowledge	Rhone Capital LLC	n.a.	n.a.	n.a.
Nov-14	Infinite Skills Inc.	O'Reilly Media, Inc.	n.a.	n.a.	n.a.
Nov-14	Varsity Brands, Inc.	Charlesbank Capital Partners	n.a.	n.a.	n.a.
Oct-14	Challenge Training and Consulting, Inc.	Compunnel Software Group, Inc.	n.a.	n.a.	n.a.
Oct-14	Relias Learning	Bertelsmann	$540.0	n.a.	n.a.
Oct-14	Accent Training	Logical Operations	n.a.	n.a.	n.a.
Oct-14	QuickStart Intelligence, Inc.	360training.com	$2.8	n.a.	n.a.
Sep-14	OpenHelix, LLC	Cambridge Healthtech Institute, LLC.	n.a.	n.a.	n.a.
Sep-14	Training to YOU, Inc.	Center for Excellence in Higher Education	n.a.	n.a.	n.a.
Sep-14	CentreLearn Solutions, LLC	VectorLearning	n.a.	n.a.	n.a.
Sep-14	IPS Learning, LLC	ESI International Inc. (Providence Equity Partners)	n.a.	n.a.	n.a.
Aug-14	SumTotal Systems, LLC	SkillSoft Corporation	n.a.	n.a.	n.a.
Aug-14	Pluralsight LLC	ICONIQ, Insight Venture, and Sorenson	$1,000.0	26.3x	n.a.
Aug-14	TheraSim, Inc.	Medscape, LLC	n.a.	n.a.	n.a.
Aug-14	Interface Technical Training	lynda.com, Inc.	n.a.	n.a.	n.a.
Jul-14	Simbionix USA Corporation	3D Systems Corporation	$120.0	n.a.	n.a.
			Mean	**4.3x**	**16.8x**
			Median	**2.4x**	**11.0x**

NA – Not Available. Source: BMO Capital Markets and Capital IQ.

In addition, in March 2011, Cornerstone on Demand (CSOD) completed a successful initial public offering, selling $136.5 million in stock. This was the first IPO in the corporate training space in some time (though we note the transaction was not specifically marketed as such). Since that time, other companies have gone public in this space – such as Pluralsight (PS) - but again, not specifically marketed as corporate training providers.

We have provided some operating and valuation metrics for the publicly held corporate training companies.

Exhibit 245: Trailing 12-Month Operating and Valuation Metrics: Selected Publicly Held Corporate Training Companies

	Corporate (traditional)				Corporate (e-learning)	
	Franklin Covey FC	Pluralsight PS	GP Strategies GPX	GROUP MEDIAN	Cornerstone OnDemand CSOD	GROUP MEDIAN
Rating	Not Rated	Not Rated	Not Rated		Not Rated	
Price Target	N.A.	N.A.	N.A.		N.A.	
Operating Performance						
FY End	8	12	12		12	
LTM Qtr. End	5/18	6/18	6/18		6/18	
Revenue ($MM)	$204.5	$193.9	$514.3		$519.4	
Gross Profit ($MM)	132.5	134.9	80.5		372.4	
EBITDA ($MM)	12.6	(89.6)	27.0		17.3	
EBIT ($MM)	(2.5)	(114.2)	19.5		(17.9)	
Pretax Income ($MM)	(5.6)	(131.0)	14.4		(50.2)	
Net Income ($MM)	(3.0)	(182.5)	9.1		(52.1)	
Free Cash Flow ($MM)	7.2	N.A.	11.1		74.8	
Gross Margins (in %)	64.8%	69.6%	15.6%	**64.8%**	71.7%	**67.2%**
EBITDA (in %)	6.2%	-46.2%	5.2%	**5.2%**	3.3%	**4.3%**
EBIT (in %)	-1.2%	-58.9%	3.8%	**-1.2%**	-3.4%	**-2.3%**
Pretax Income (in %)	-2.7%	-67.5%	2.8%	**-2.7%**	-9.7%	**-6.2%**
Net Income (in %)	-1.5%	-94.1%	1.8%	**-1.5%**	-10.0%	**-5.7%**
Free Cash Flow Yield (in %)	2.0%	N.A.	3.6%	**2.8%**	2.3%	**2.3%**
ROIC: Annual	-2.5%	N.A.	4.4%	**0.9%**	-28.9%	**-2.5%**
ROE: LTM	-3.7%	N.A.	5.0%	**0.6%**	-141.3%	**-3.7%**
Valuation Metrics						
FY End	8	12	12		12	
LTM Qtr. End	5/18	6/18	6/18		6/18	
Price (08/24/18)	$25.55	$31.96	$18.75		$55.37	
Shares Outstanding (MM)	13.9	62.9	16.5		58.8	
Market Cap ($MM)	$355.3	$2,010.8	$310.0		$3,253.9	
Net Debt/(Cash) ($MM)	40.0	(206.1)	87.7		(102.3)	
Enterprise Value ($MM)	$395.4	$1,804.7	$397.7		$3,151.6	
CY EPS:						
2017A	($0.52)	N.A.	$1.35		0.41	
2018E	(0.20)	($0.67)	1.04		0.70	
2019E	0.16	(0.37)	1.49		1.09	
Two-Year CAGR	N.A.	N.A.	5.1%	**5.1%**	63.2%	**34.1%**
P/E:						
2017A	N.M.	N.A.	13.9x	**13.9x**	135.0x	**74.5x**
2018E	N.M.	N.M.	18.1	**18.1**	79.2	**48.7**
2019E	155.8x	N.M.	12.6	**84.2**	50.7	**50.7**
EV/Rev. (NTM)	1.7	6.7x	0.7	**1.7**	5.7	**3.7**
EV/EBITDA (NTM)	18.9	N.M.	8.6	**13.7**	29.2	**18.9**
EV/EBIT (NTM)	78.9	N.M.	12.5	**45.7**	40.0	**40.0**
EV/Free Cash Flow (NTM)	N.A.	N.M.	N.A.	**N.A.**	38.3	**38.3**

Other companies mentioned (priced as of close of 8/22/18):

2U, Inc. (TWOU, $80.94: Outperform)
Accenture Plc Class A (ACN , $164.61: Market Perform), covered by Keith Bachman
Adobe Systems Incorporated (ADBE, CHF251.5: Outperform), covered by Keith Bachman
Adtalem Global Education Inc. (ATGE, $48.50: Outperform)
Alphabet Inc. Class A (GOOGL, $1217.41: Market Perform) covered by Daniel Salmon
Amazon.com, Inc. (AMZN, $1883.42: Outperform), covered by Daniel Salmon
American Public Education, Inc. (APEI, $35.75: Market Perform)
Apple Inc. (AAPL, $215.04: Market Perform), covered by Tim Long
Bank of Montreal (BMO, $81.05: Not Rated)
Barnes & Noble Education, Inc. (BNED, $6.35: Not Rated)
Bridgepoint Education, Inc. (BPI, $13.04: Not Rated)
Bright Horizons Family Solutions, Inc. (BFAM, $117.19: Market Perform)
Cambium Learning Group, Inc. (ABCD, $13.62: Not Rated)
Career Education Corporation (CECO, $16.63: Not Rated)
Chegg, Inc. (CHGG, $30.97: Outperform), co-covered by Jeffrey Silber and Daniel Salmon
Cisco Systems, Inc. (CSCO, $45.78: Market Perform), covered by Tim Long
Citigroup Inc. (C, $71.24: Market Perform), covered by James Fotheringham
Cognizant Technology Solutions Corporation Class A (CTSH, $74.90: Outperform), covered by Keith Bachman
Conduent, Inc. (CNDT, $21.49: Market Perform), covered by Keith Bachman
Cornerstone Ondemand, Inc. (CSOD, $54.03: Not Rated)
eBay Inc. (EBAY, $34.53: Outperform), covered by Daniel Salmon
Facebook, Inc. Class A (FB, $172.62: Market Perform), covered by Daniel Salmon
Franklin Covey Co. (FC, $25.60: Not Rated)
Gartner, Inc. (IT, $144.13: Outperform)
General Dynamics Corporation (GD, $194.96: Not Rated)
GP Strategies Corporation (GPX, $18.80: Not Rated)
Graham Holdings Co. (GHC, $575.80: Not Rated)
Grand Canyon Education, Inc. (LOPE, $121.98: Outperform)
Houghton Mifflin Harcourt Company (HMHC, $6.20: Market Perform)
HP Inc. (HPQ, $24.49: Market Perform), covered by Tim Long
IAC/InterActiveCorp. (IACI, $189.24: Not Rated)
Instructure, Inc. (INST, $37.45: Not Rated)
International Business Machines Corporation (IBM, $145.97: Market Perform), covered by Keith Bachman
John Wiley & Sons, Inc. Class A (JW.A, $64.85: Not Rated)
K12 Inc. (LRN, $17.12: Outperform)
KKR & Co. Inc. Class A (KKR, $25.89: Not Rated)
Laureate Education, Inc. Class A (LAUR, $16.00: Outperform)
Learning Tree International, Inc. (LTRE, $0.90: Not Rated)
Lincoln Educational Services Corporation (LINC, $2.13: Not Rated)
Microsoft Corporation (MSFT, $105.98: Outperform), covered by Keith Bachman
National American University Holdings, Inc. (NAUH, $0.93: Not Rated)
News Corporation Class A (NWSA, $13.57: Not Rated)
Oracle Corporation (ORCL, $48.41: Outperform), covered by Keith Bachman
Pearson PLC Sponsored ADR (PSO, $11.86: Not Rated)
Pluralsight, Inc. Class A (PS, $32.27: Not Rated)
Providence Service Corporation (PRSC, MYR 66.71: Not Rated)
Raytheon Company (RTN, $200.60: Not Rated)
Scholastic Corporation (SCHL, $41.44: Not Rated)
School Specialty, Inc. (SCOO, $18.00: Not Rated)
Scientific Learning Corporation (SCIL, $0.68: Not Rated)
Strategic Education, Inc. (STRA, $137.76: Outperform)
Universal Health Services, Inc. Class B (UHS, $128.40: Market Perform), covered by Matt Borsch
Universal Technical Institute, Inc. (UTI, $2.65: Not Rated)
Workday, Inc. Class A (WDAY, $145.01: Market Perform), covered by Keith Bachman
Xerox Corporation (XRX, $27.81: Not Rated)

Source: FactSet Research.

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Hold	Market Perform	49.4%	16.6%	39.2%	46.8%	36.6%	37.9%
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