



Education investments in a COVID-19 era

May 2020

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- ▶ These slides are for educational purposes only and are not intended to be relied upon as accounting, tax or other professional advice. Please refer to your advisors for specific advice.

Summary observations

- ▶ The COVID-19 crisis will have far-reaching impacts across the US and global economy; education is not immune to this.
- ▶ Historically, many subsegments of education have been countercyclical, though there may be notable differences in this cycle and with distancing needs.
- ▶ The macro economy sets the backdrop, but government funding levels and stimulus will also affect education spend in the United States.
- ▶ Short-term and long-term impacts are quite variable across education subsegments, but there are likely to be structural changes in spending.

Agenda

- ▶ **Macro impact**
- ▶ Supporting materials

Macro impact

Our sophisticated, yet pragmatic, approach to economic modeling results in insights that are fully integrated across sectors and value chains

EY-Parthenon COVID-19 macroeconomic response “hub”

- ▶ EY-Parthenon is using sector-by-sector production scenarios as its primary tool for analyzing the effect of the COVID-19 shock on the US economy.
- ▶ Scenarios are updated frequently in response to new data on the economy and the spread of the virus.
- ▶ These production scenarios will be translated into detailed spending scenarios in EY-Parthenon’s macroeconomic model of the US economy.
- ▶ Approximately 1,500 variables are covered — 300 exogenous and 1,200 endogenous (of which 400 are behavioral).
- ▶ Extensive spending detail is identified for sectors such as consumer, housing, business equipment and structures.
- ▶ Drivers from the macro model form the foundation for modeling and forecasting of more detailed market growth or company growth.



Nigel Gault

EY-Parthenon Chief Economist
nigel.gault@parthenon.ey.com
+1 617 990 6429

Nigel is a managing director and EY-Parthenon’s chief economist based in the firm’s Boston office.

Nigel is well known as a skilled analyst and forecaster of the US and international economies, based on 35 years of experience in the United States and Europe. He advises corporate clients on issues relating to their strategies, market growth and pricing.

Nigel was most recently chief US economist at IHS Global Insight, where he was a seven-time winner of the MarketWatch Forecaster of the Month accolade for key economic indicators. He has also served as chief European economist in London for Standard & Poor’s/Data Resources and for Decision Economics. Nigel received an MA in Economics from Cambridge University with double first-class honors; he received a PhD in Economics from Harvard University.



A dedicated team of EY-Parthenon economic analysts enabling a “hub-spoke” approach to supporting:

Sector strategy



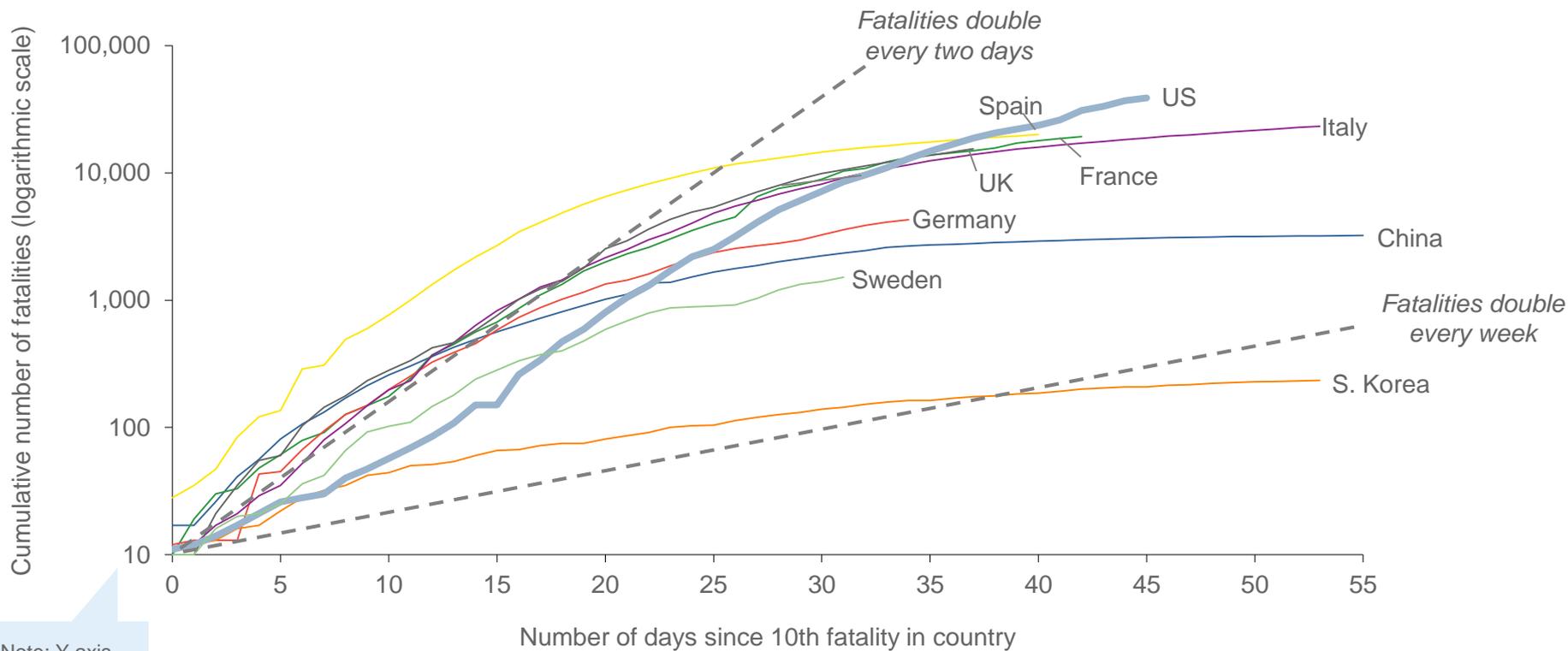
Private equity

Corporate M&A

Macro impact

The US is beginning to bend its case fatality curve, suggesting social distancing initiatives are slowing the spread of the virus

Log of cumulative number of COVID-19 fatalities since 10th death in country by country
Updated through 4/19/2020



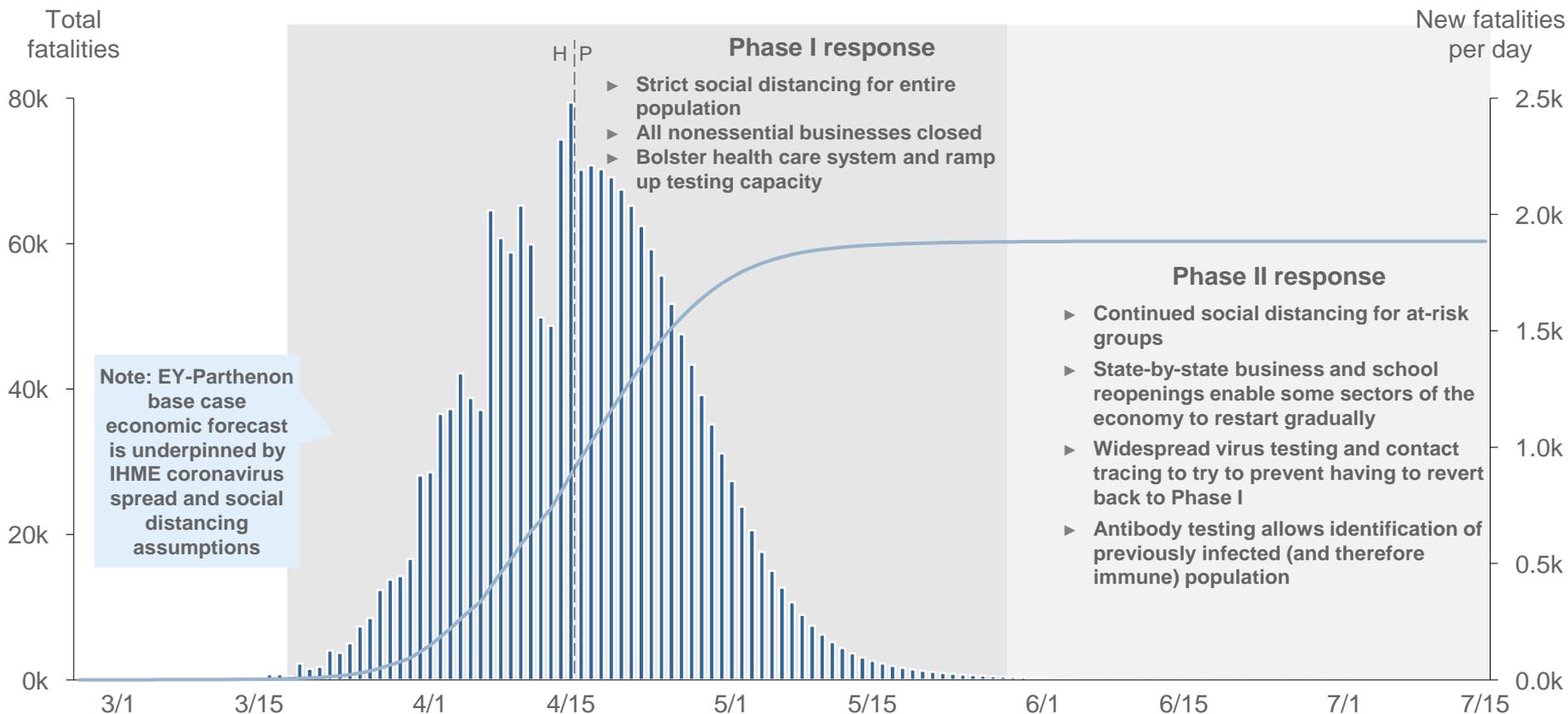
Note: Y axis represents *logged* figures

Macro impact

Economic scenarios are dictated by contagion spread and severity — IHME’s “fatality curve” informs key assumptions used in current macro scenario models

Institute for Health Metrics and Evaluation (IHME) US COVID-19 cumulative and daily fatality projections

Note: assumes continued social distancing measures until “infections minimized and containment implemented”
2/26/2020–7/15/2020



Note: EY-Parthenon base case economic forecast is underpinned by IHME coronavirus spread and social distancing assumptions

IHME’s forecast for total US fatalities has changed significantly since early April, with its current view being that there will be approx. 60k fatalities.

IHME total US fatality projections by IHME forecast release date	
Date of release	Forecast No. of US fatalities
April 1	95k
April 6	80k
April 19 (current view)	60k

— Total fatalities (left-hand axis)
█ New fatalities per day (right-hand axis)

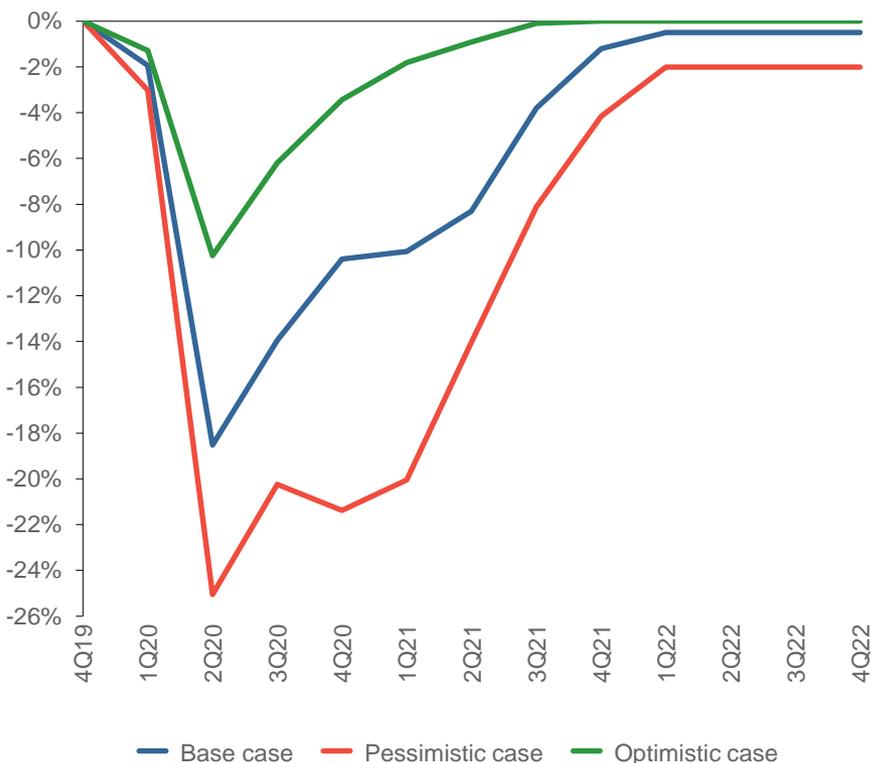
Source: IHME/University of Washington

Macro impact

EY-Parthenon's base case macroeconomic scenario has GDP declining nearly 20% below trendline in 2Q20, with a recovery that lasts through 2021

GDP deviation relative to trend*
1Q20–4Q22

*Trend refers to smoothed EY-P “base case” forecast pre-COVID-19 (assumes 1.5% annualized growth rate)



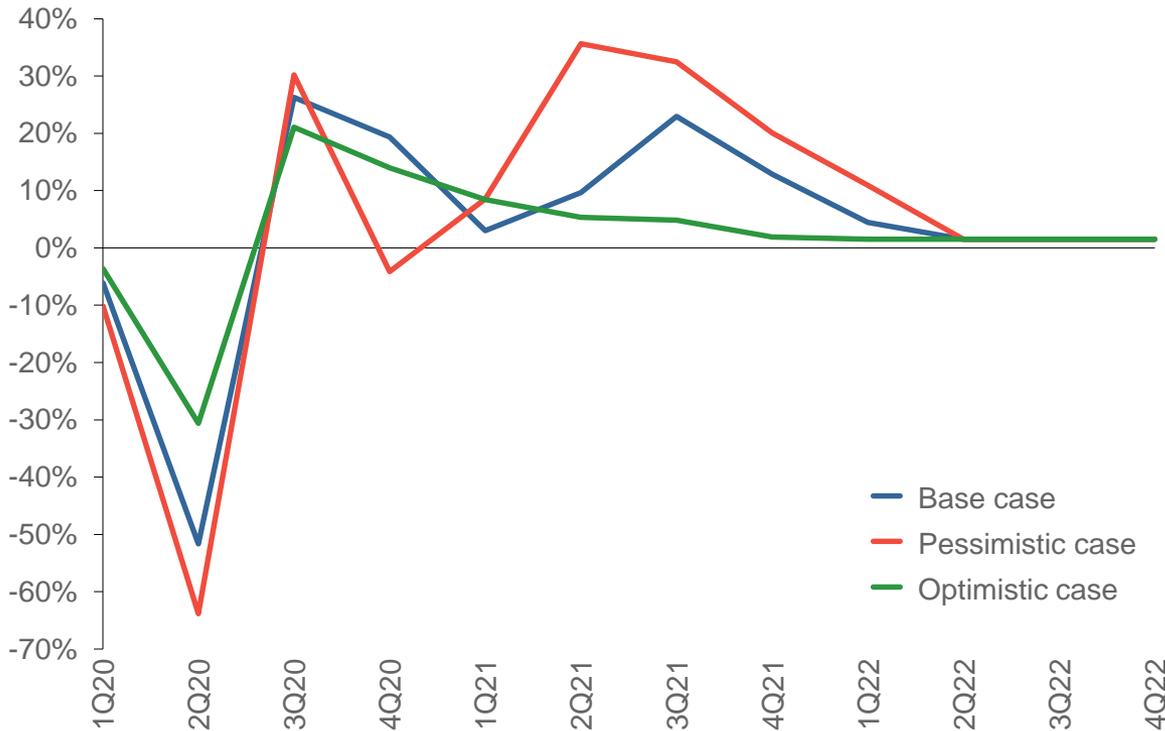
Coronavirus impact modeling scenarios

EY-P scenario	Description
1 <div style="background-color: #ADD8E6; padding: 10px; text-align: center;"> Base case </div>	<ul style="list-style-type: none"> ▶ GDP falls approximately 19% below trendline in 2Q20 (simple rate) due to extreme social distancing in force for most of the quarter. ▶ A combination of ramped-up testing to identify who has the virus, new blood tests to identify who is immune, and improved treatments of those who are sick allow gradual relaxation of social distancing in 2H20 and an initial economic recovery. ▶ Full relaxation is not possible until a vaccine is available sometime in mid-2021, at which time the economic recovery accelerates.
2 <div style="background-color: #FFB6C1; padding: 10px; text-align: center;"> Pessimistic case </div>	<ul style="list-style-type: none"> ▶ Similar initial trend to base case scenario, although this view assumes a steeper initial GDP fall due to more pessimistic assumptions about sector-level impacts. ▶ Social distancing is relaxed in 3Q20, but medical advances don't match those in the baseline, and a second wave of the virus in fall 2020 forces the reimposition of severe social distancing. ▶ Vaccine arrives in mid-2021, but the long-term economic damage is more severe than in the base case.
3 <div style="background-color: #C8E6C9; padding: 10px; text-align: center;"> Optimistic case </div>	<ul style="list-style-type: none"> ▶ GDP damage is less severe than feared in 2Q20. ▶ More rapid medical advances and sophisticated containment measures (fast-response testing, rapid contact tracing and more effective isolation/quarantining of infected patients) than in the base case allow a more rapid relaxation of social distancing. ▶ Full recovery arrives with the vaccine in mid-2021.

Macro impact

GDP is expected to exhibit a severe initial decline followed by relatively high recovery growth rates, conditional upon virus containment measures

GDP quarter over quarter seasonally adjusted annualized growth, % annualized change in GDP from prior quarter* 1Q20–4Q22



GDP annual growth, % change in annual average GDP from prior year 2020–2022

Scenario	2020	2021	2022
Base case	-9.7%	7.7%	7.2%
Pessimistic case	-16.0%	8.7%	12.5%
Optimistic case	-3.7%	6.4%	2.2%

Note: annualized growth in GDP represents rate of change in GDP on an **annualized basis** in each quarter relative to the prior quarter

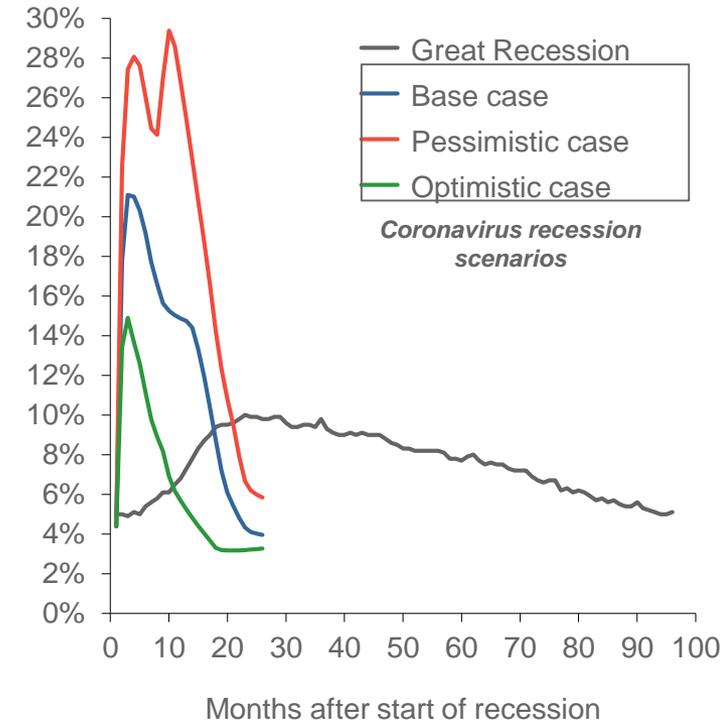
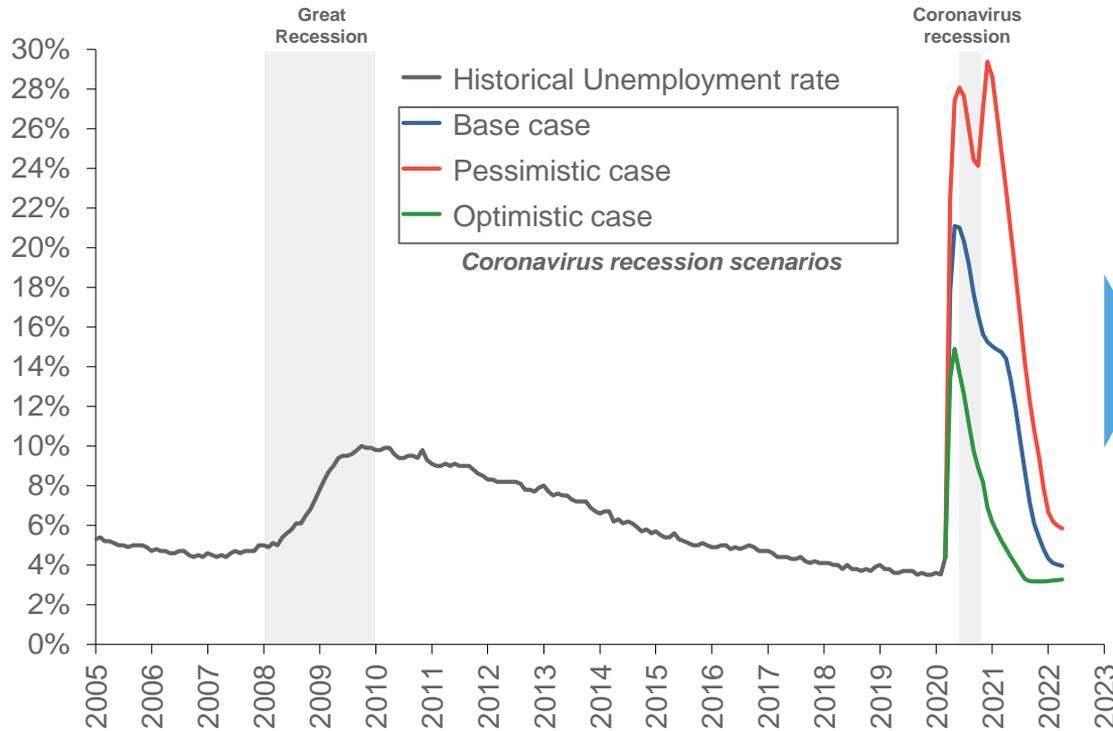
Note: annual growth in GDP shown represents anticipated average % change in GDP relative to the prior year – it is not Q4/Q4 growth

Macro impact

COVID-19 is expected to generate a far more severe but shorter-lived spike in unemployment than that of the 2008–09 Great Recession

US historical and projected unemployment rate
2005–2022P

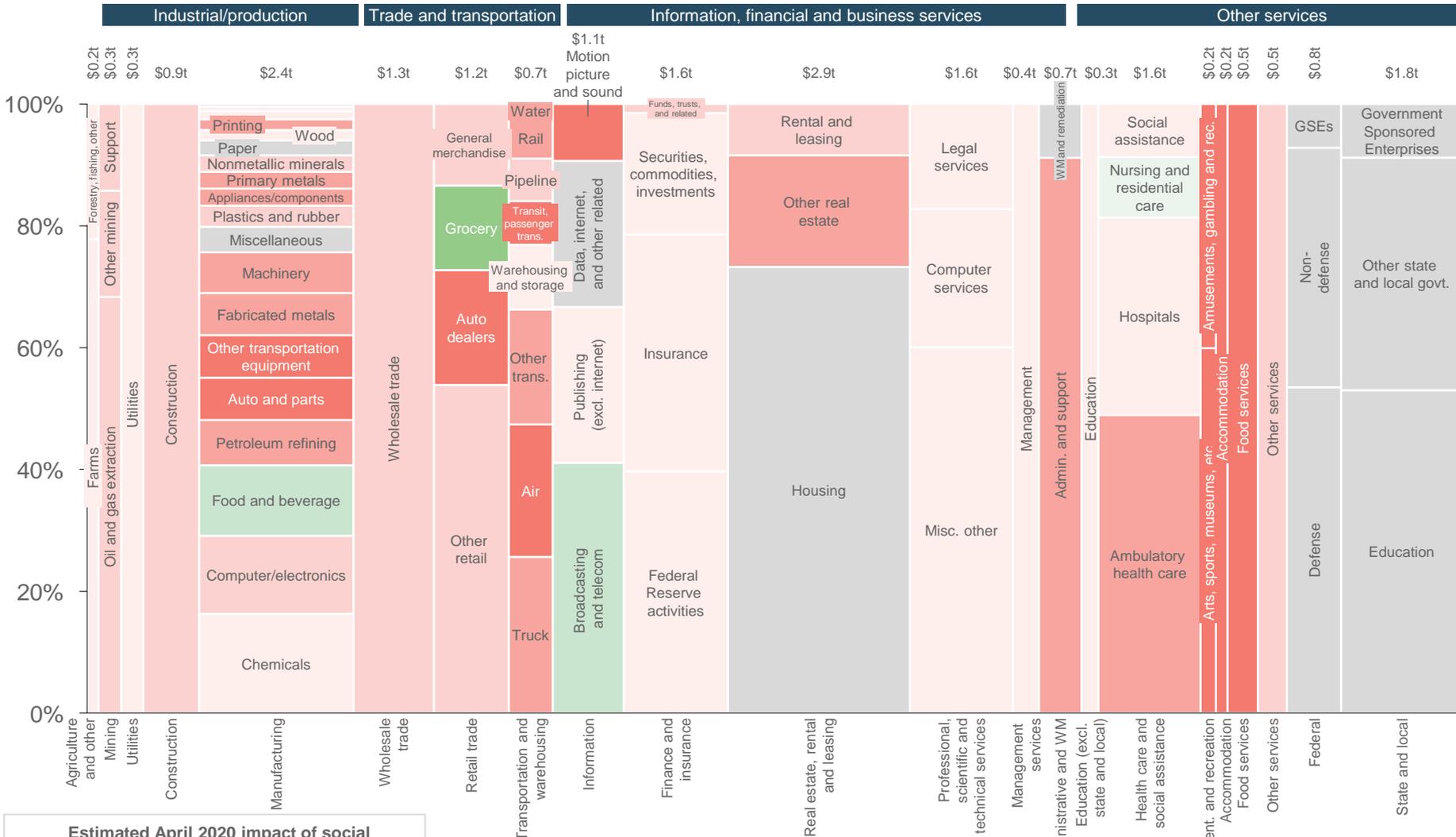
Unemployment rate by month after start of recession:
Great Recession vs.
coronavirus recession



Macro impact

Magnitude of subsector impact is expected to vary based on relative level of exposure to social distancing measures and consumer demand

US GDP by subsector, 2019



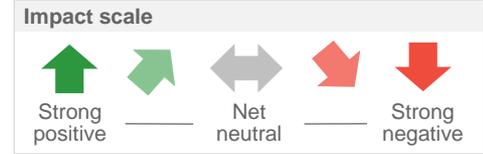
Estimated April 2020 impact of social distancing measures on GDP

Severe challenges ■ ■ ■ ■ ■ Potential uplift

Note: Impact estimates are preliminary and represent best estimates based upon available data

Macro impact

Core education institutions and providers will likely observe a negative impact over the mid to long term



View current as of 04-22-20

Segment	What to expect	COVID-19 impact	
		Short term	Mid to long term
Childcare	<ul style="list-style-type: none"> ▶ Most national and regional chains have temporarily shut down ▶ A limited number of chain platforms and many nonprofit centers continue operating; some have expanded capacity to support essential workers ▶ CARES Act has allocated \$3.5b to providers serving parents with childcare subsidies so that essential workers can access childcare ▶ Nonessential staff furloughed; rents and rates deferred — cost offsetting ▶ As parents return to work through the economic recovery, demand will likely return 		
K-12	<ul style="list-style-type: none"> ▶ Schools/districts are providing remote learning with a wide range of implementations and some are offering remote learning during the summer ▶ Districts are in the process of reducing budgets and cutting spend ▶ Most states have already canceled their standardized tests ▶ CARES Act has allocated approx. \$13.5b to school districts based on Title I allocations ▶ Longer-term outlook also negative as funding is from state and local sources, which will be negatively impacted as income and sales taxes decrease due to the shutdown 		
	<ul style="list-style-type: none"> ▶ Fees have been collected for the current term, with minor risk of parent negotiation for refunds or discount; loss of ancillary revenue streams for the current term ▶ International student demand in steep decline and may take a longer time to normalize as international travel restrictions get lifted 		
Higher education	<ul style="list-style-type: none"> ▶ Fees have been collected for the current term ▶ Immediate impact limited by rapid move to online instruction ▶ Loss of ancillary revenue (e.g., summer programs, housing, dining) for current term ▶ Unpredictable fall matriculation at the undergraduate level in upcoming terms ▶ Reduction in endowments and greater endowment volatility in the future ▶ Increased operating costs driven by remote delivery and refunds ▶ Unemployment pool may drive greater demand or graduate-level programs ▶ International student demand in steep decline ▶ Growing investment in online and blended programs in the long term 		
Corporate training	<ul style="list-style-type: none"> ▶ Corporate training spend (travel, etc.) is declining severely as bulk of spend is instructor-led training ▶ Strong negative mid- to long-term impact as corporate training is cyclical ▶ Vended market may be more resilient; some B2B training vendors (e.g., Pluralsight, Skillsoft) have seen learner base growing (e.g., furloughed employees with unused allowances) ▶ Health care sector training demand growing significantly as state boards increase caps 		

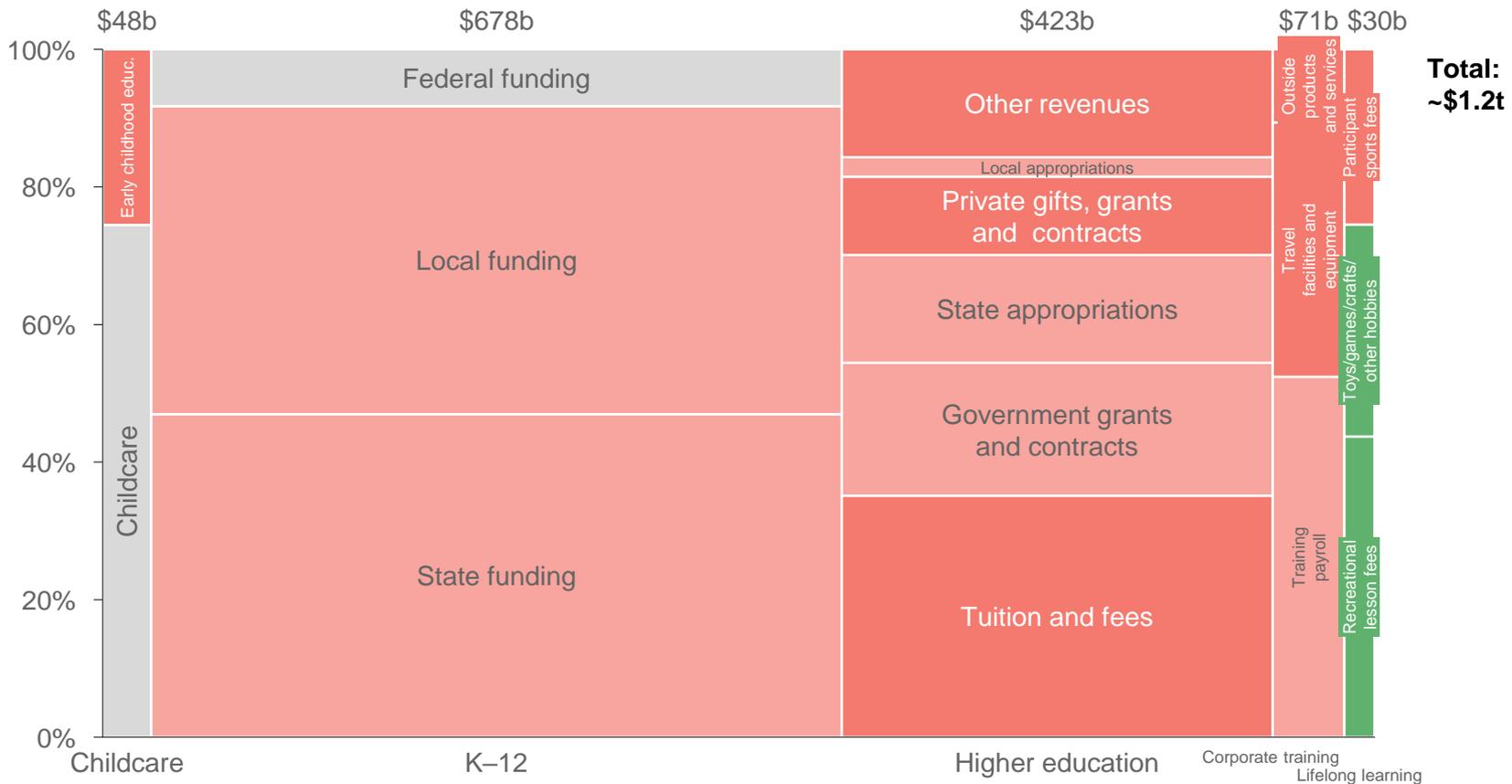
Macro impact

The education sector generated approx. \$1.2t in total revenues in 2016 ...

Estimated 6–12-month impact of social distancing measures on GDP
 Most negative impact [Red] [Grey] [Green] Most positive impact

View current as of 04-22-20

Education sector revenues, 2016¹



Note:(1) Most recent K12 funding sources reported in 2016, thus 2016 revenues are used across categories to remain consistent
 Source: BEA; CBO; NCES; IPEDS; Training Mag; BLS; ESRI; EY-Parthenon Analysis

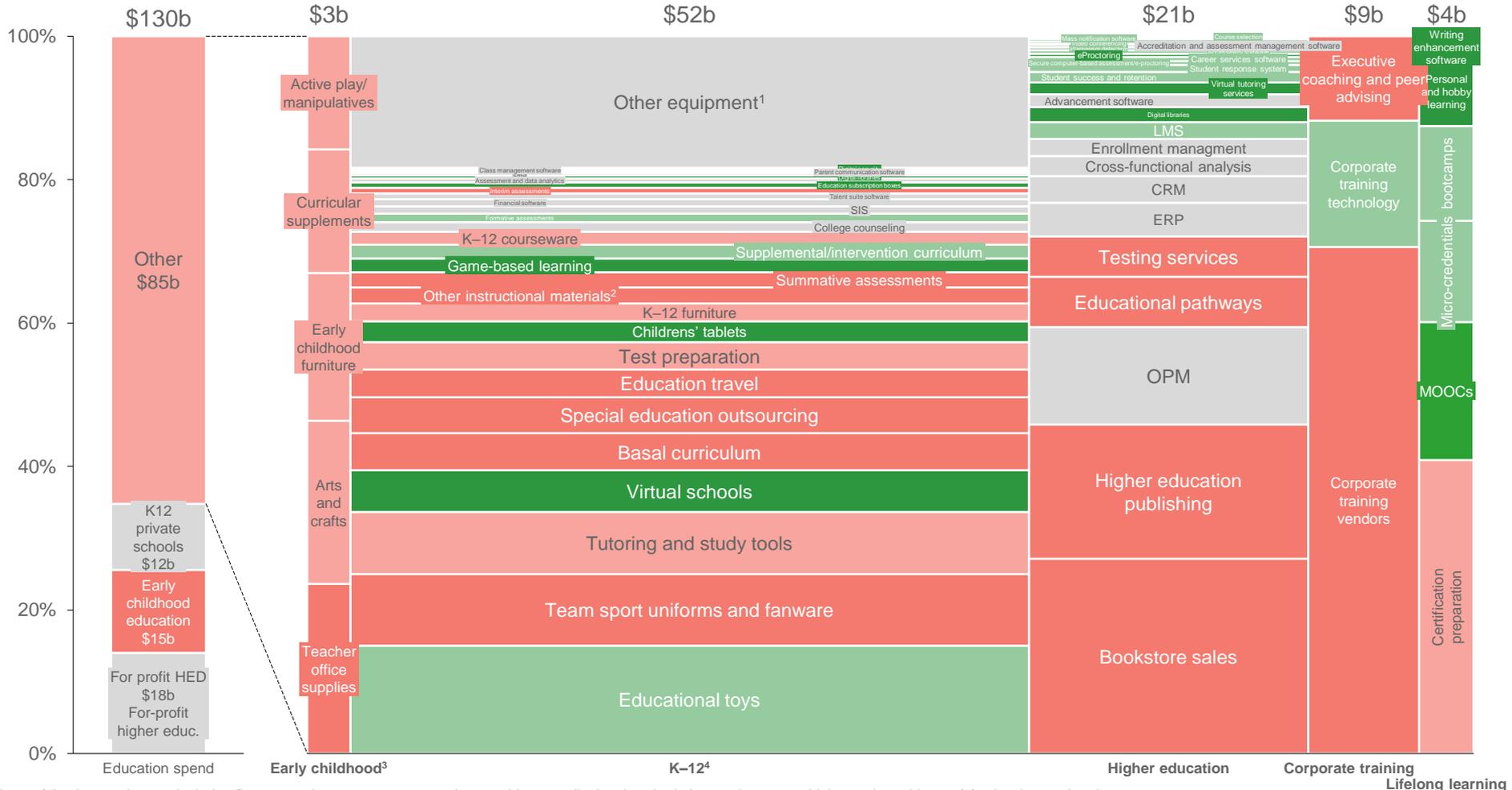
Macro impact

... of which the current investable education market is approx. \$130b in size

Estimated 6-12-month impact of social distancing measures on GDP
 Most negative impact [Red] [Grey] [Green] Most positive impact

View current as of 04-22-20

Investable US education market, 2019



Notes: (1) other equipment includes fixtures such as computers, copying machines, audiovisual and printing equipment, vehicles and machinery; (2) other instructional materials include manipulatives, trade books and magazines; (3) subcategories of educational products distribution include both pre-K and K-12 but are shown here within early childhood; (4) some categories in discretionary consumer K-12 spend (e.g., game-based learning, education toys, subscription boxes) also include early years but have been categorized as K-12 to reflect the majority of spend.
 Source: EY-Parthenon Analysis

Macro impact

Expected *short-term* impact (next 6–12 months) of COVID-19 on investable education segments

Expected short-term impact

View current as of 04-22-20

Category	Investable segments by expected <i>short-term</i> impact				
	Strong negative	Moderate negative	Net neutral	Moderate positive	Strong positive
Core education institutions and providers	<ul style="list-style-type: none"> ▶ Childcare ▶ Corporate training ▶ Higher education 	<ul style="list-style-type: none"> ▶ Public K–12 (\$678b¹) 	<ul style="list-style-type: none"> ▶ Private K–12 ▶ For-profit higher education 		
Pre-K–12 education products and services	<ul style="list-style-type: none"> ▶ Core curriculum ▶ Summative assessments ▶ Interim assessments ▶ On-site tutoring and study tools ▶ On-site test preparation ▶ Education travel ▶ Special education outsourcing ▶ Education products distributions ▶ Educational pathways 	<ul style="list-style-type: none"> ▶ Supplemental content² ▶ Intervention content ▶ K–12 furniture ▶ Online test preparation 	<ul style="list-style-type: none"> ▶ K–12 front-end software ▶ K–12 back-end software ▶ College counseling 	<ul style="list-style-type: none"> ▶ Formative assessments 	<ul style="list-style-type: none"> ▶ Virtual schools ▶ Online tutoring and study tools ▶ Pre-K–12 digital libraries ▶ Children’s tablets ▶ Game-based learning ▶ Education subscription boxes
Higher education products and services	<ul style="list-style-type: none"> ▶ Testing services ▶ Traditional publishing ▶ Bookstore sales 		<ul style="list-style-type: none"> ▶ Digital/OER content ▶ Higher education back-end software ▶ OPM² 	<ul style="list-style-type: none"> ▶ Higher education front-end software 	<ul style="list-style-type: none"> ▶ E-proctoring/computer-based assessments ▶ Digital book lending platforms
Corporate training and lifelong learning	<ul style="list-style-type: none"> ▶ Executive coaching and peer advising ▶ Corporate training vendors 	<ul style="list-style-type: none"> ▶ Certification preparation 		<ul style="list-style-type: none"> ▶ Microcredentials ▶ Bootcamps ▶ Corporate training technology 	<ul style="list-style-type: none"> ▶ Personal and hobby learning ▶ Writing enhancement software

Note: (1) public K–12 is not an investable segment, but businesses selling into public K–12 are investable; (2) observing uplift in demand, which may or may not be translating to revenue gain in the short term.

Source: EY-Parthenon Analysis

Macro impact

Expected *mid- to long-term* impact (after 12 months) of COVID-19 on investable education segments

Expected mid- to long-term impact

View current as of 04-22-20

Category	Investable segments by expected <i>mid- to long-term</i> impact				
	Strong negative	Moderate negative	Net neutral	Moderate positive	Strong positive
Core education institutions and providers	<ul style="list-style-type: none"> Higher education Corporate training 	<ul style="list-style-type: none"> Childcare Public K–12 (\$678b¹) Private K–12 For-profit higher education 			
Pre-K–12 education products and services	<ul style="list-style-type: none"> Core curriculum Education travel Education products distribution K–12 furniture Educational pathways 	<ul style="list-style-type: none"> On-site test preparation College counseling 	<ul style="list-style-type: none"> Supplemental content Summative assessments Interim assessments Center-based testing On-site tutoring and study tools Special education outsourcing 	<ul style="list-style-type: none"> Formative assessments K–12 back-end software Online test preparation Pre-K–12 digital libraries Children’s tablets Game-based learning Edu. subscription boxes 	<ul style="list-style-type: none"> Intervention content K–12 front-end software Virtual schools Online tutoring and study tools
Higher education products and services	<ul style="list-style-type: none"> Traditional publishing Bookstore sales 			<ul style="list-style-type: none"> Digital/OER content Higher education back-end software Testing services 	<ul style="list-style-type: none"> Higher education front-end software OPM E-proctoring/computer-based assessments Digital book lending platforms
Corporate training and lifelong learning	<ul style="list-style-type: none"> Corporate training vendors 		<ul style="list-style-type: none"> Certification preparation Corporate training technology 	<ul style="list-style-type: none"> Bootcamps Personal/hobby learning Writing enhancement software Executive coaching and peer advising 	<ul style="list-style-type: none"> Microcredentials

Note: (1) public K–12 is not an investable segment, but businesses selling into public K–12 are investable.

Macro impact

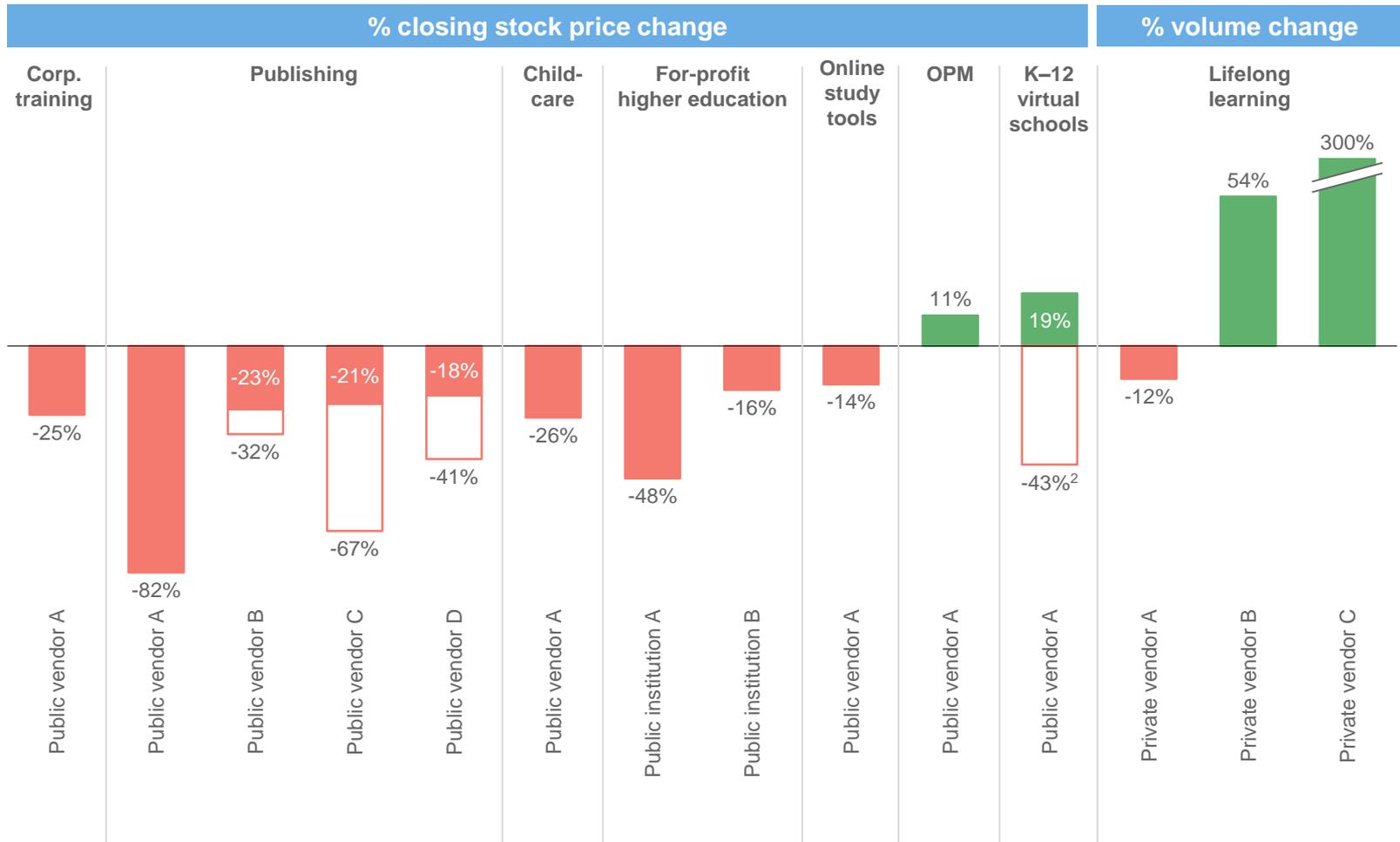
Large, public vendors across a variety of education segments have begun feeling the impact of COVID-19 on stock performance and user volume ...

View current as of 04-22-20

Examples of COVID-19 impact on education vendors

■ **COVID-19 impact:** Jan. 22 (first CDC-confirmed case in US) to Apr. 17

■ **Reference:** returns from Oct. 2007 to Mar. 2009 (Great Recession) where available



Note: (2) public vendor A was listed in December 2007.
 Source: Nasdaq; NBER; Analyst Coverage; EY-Parthenon Interviews

Macro impact

... and anecdotal evidence suggests that these vendors are positioned to weather the crisis to varying degrees of success (1 of 3)

View current as of 04-22-20

Anecdotal data of COVID-19 impact on education vendors

Segment	Company	Observed impact Through 4/17	Anecdotal commentary on performance and short-term outlook
Childcare	Private vendor A	<ul style="list-style-type: none"> ▶ 26% decline in stock price ▶ Immediate closure of approx. 50% of US centers 	<ul style="list-style-type: none"> ▶ No tuition refunds in March, so revenue impact will be observed in April ▶ Personnel costs constitute 60% of cost of sales; employees at closed centers served their notice period in March ▶ Demand is expected to recover fully once the pandemic is over unless there is a recession ▶ Difficult to comment on impact on full service center sales cycle, which ranges from 12 to 18 months ▶ In a recessionary case, analysts forecast an 8%–15% cut to FY20 and FY21 EPS
	Private vendor B	<ul style="list-style-type: none"> ▶ Closures of centers 	<ul style="list-style-type: none"> ▶ Had to shut locations, took PPP loans and drew down on the revolver ▶ Instituted better daily reporting on sources of funding and cash balances ▶ Not reliant on government subsidies so are optimistic for when the markets reopen
K–12 virtual schools	Private vendor A	<ul style="list-style-type: none"> ▶ 19% growth in stock price 	<ul style="list-style-type: none"> ▶ Analyst coverage forecasts a positive tipping point for virtual schools as a result of COVID-19, and K–12 is well positioned to capture growing demand as a scaled vendor
	Private vendor B	<ul style="list-style-type: none"> ▶ Growth in YoY application volume 	<ul style="list-style-type: none"> ▶ For open schools, vendor has received more than 2k applications, compared with 750 in the prior school year ▶ Several closed schools are reopening; administrators in both existing states and states where virtual schooling does not yet exist are reaching out to discuss large-scale solutions
Publishing	Private vendor A	<ul style="list-style-type: none"> ▶ Revenue shielded due to timing of crisis; positive tailwinds as professors transition to digital 	<ul style="list-style-type: none"> ▶ Revenue shielded given timing of the crisis as sales cycle ended in January and fall sales are still a bit away ▶ Customer service is based in US (unlike competition) and was not disrupted during the crisis, which allowed them to win customers who were previously using or evaluating other publishers ▶ Holdout professors who were using physical textbooks are more quickly migrating to digital content ▶ Focusing heavily on cash management with 6.5x debt on the books; July is the low point in a normal year ▶ Uncertain of the impact to adult learning segment and how it will impact the company
	Private vendor B	<ul style="list-style-type: none"> ▶ 12k incremental B2B institution installs 	<ul style="list-style-type: none"> ▶ Vendor of supplemental digital content has observed a land grab for customers as institutions scramble to go online ▶ Many vendors are offering free content
	Private vendor C	<ul style="list-style-type: none"> ▶ 8m incremental student sign-ups 	<ul style="list-style-type: none"> ▶ Vendor of supplemental digital content has observed massive growth in student sign-ups (East Winds Webinar April 2020)
K–12 assessments	Private vendor A	<ul style="list-style-type: none"> ▶ Business up 7x 	<ul style="list-style-type: none"> ▶ PE firm notes that vendor is up 7x (East Winds Webinar April 2020)
Team sport uniforms	Private vendor A	<ul style="list-style-type: none"> ▶ 70% decline in revenue 	<ul style="list-style-type: none"> ▶ Business has been affected severely by the school shutdown and reduction of nonessential expenses

Macro impact

... and anecdotal evidence suggests that these vendors are positioned to weather the crisis to varying degrees of success (2 of 3)

View current as of 04-22-20

Anecdotal data of COVID-19 impact on education vendors

Segment	Company	Observed impact Through 4/17	Anecdotal commentary on performance and short-term outlook
Higher education	Private institution A	<ul style="list-style-type: none"> ▶ Running a deficit for the first time in 30 years ▶ Severely declining enrollments 	<ul style="list-style-type: none"> ▶ Will run a deficit this year for the first time in 30 years, partly due to the reduction of executive education enrollments (which are currently at zero compared with an average of 10k at this time of year) (GSV Webinar April 2020) ▶ Admitted students have called to withdraw their enrollment because they need to work for the next couple of years to support their families, whose financial situation is still unclear (GSV Webinar April 2020)
For-profit higher education	Private institution A	<ul style="list-style-type: none"> ▶ Some softness in demand for summer sessions 	<ul style="list-style-type: none"> ▶ Institution transitioned seamlessly to 100% online in less than 24 hours ▶ Student retention has not shown softness relative to prior year's session ▶ Inquiries for summer starts stopped on March 13 but have resumed as of April 8; the institution projects weak enrollment in summer sessions as students grapple with their own futures in the context of COVID-19 ▶ Management team is more optimistic for the fall as the unemployment pool will create a huge market of potential students
OPM	Private vendor A	<ul style="list-style-type: none"> ▶ 11% increase in stock price 	<ul style="list-style-type: none"> ▶ Limited formal commentary has been released, but CEO argues that the crisis will drive a fundamental shift in how online programs are perceived and has noted that institutions without an OPM pre-COVID-19 have been engaging the company ▶ Analyst coverage forecasts that a recession would benefit OPMs disproportionately, driving both institutional demand for OPMs and student demand for online programs
Online study tools	Public vendor A	<ul style="list-style-type: none"> ▶ 14% decline in stock price 	<ul style="list-style-type: none"> ▶ Vendor has reported strong 4Q19 performance and balance sheet position heading into 1Q20, with \$1b in cash to tide through a negative cycle ▶ Business serves college students and remains relevant as institutions move online ▶ No impact to core textbook business as the typical buying season happens in January ▶ In a worst-case scenario of extended school closures, analysts forecast a small monthly reduction (approx. 1.5%) in services business revenue; institutions are unlikely not to utilize their existing online infrastructure ▶ Overall business is forecast to remain countercyclical, implying a larger opportunity size in the case of a recession ▶ Analysts forecast revenue CAGR of 20%+ between FY19 and FY23 ▶ CEO has announced plans to cut pricing of several products in half (GSV Webinar April 2020)
Writing enhancement software	Private vendor A	<ul style="list-style-type: none"> ▶ Softness in new bookings 	<ul style="list-style-type: none"> ▶ Vendor notes softness in new bookings, though usage among existing customers is stable

Macro impact

... and anecdotal evidence suggests that these vendors are positioned to weather the crisis to varying degrees of success (3 of 3)

View current as of 04-22-20

Anecdotal data of COVID-19 impact on education vendors

Segment	Company	Observed impact Through 4/17	Anecdotal commentary on performance and short-term outlook
Lifelong learning	Private vendor A	▶ 300% growth in user volume	▶ Vendor reports 300% growth in user base driven by social isolation measures and expects business to perform strongly in the coming months
	Private vendor B	▶ Varies by end market	▶ Nurse training business is outperforming, and vendor expects loosening of enrollment caps ▶ Personal fitness training business is suffering due to gym closures ▶ OSHA training business has not yet observed an impact but will likely suffer as it is tied to employment and manufacturing
	Private vendor C	▶ Outperforming pre-COVID-19 volume expectations; revenue has not declined	▶ Business is outperforming expectations with respect to volume, with a large increase in training volume for existing clients and new client onboardings; revenue has not declined ▶ Offering free 90-day trials
	Private vendor D	▶ Outperforming	▶ Business is up and proving countercyclical
	Private vendor E	▶ Outperforming	▶ Language learning platform notes strong growth in paid user base
Corporate training	Private vendor A	▶ 25% decline in stock price	▶ Vendor's salesforce is grounded but sales into existing customers less so; 25% of billings is generated from new customers and will be impacted negatively in coming months ▶ Analyst coverage reports that new billings are still forecast to grow among existing accounts
Bootcamps	Private vendor A	▶ Outperforming	▶ Vendor moved programs online immediately ▶ Has made courses free and in the first week 25k expressed interest (GSV Webinar April 2020)
Educational tours	Private vendor A	▶ Severe decline	▶ Business has cratered with elimination of travel

Agenda

- ▶ Macro impact
- ▶ **Supporting materials**

Supporting materials

Pre-K–12 education segment impact (1 of 4)

Impact scale

 Strong positive
 _____
 Net neutral
 _____
 Strong negative

View current as of 04-22-20

Segment	Current estimated vended market	What to expect	COVID-19 impact		
			Short term	Mid to long term	
Pre-K–12 education	Early childhood education	\$14.4b	<ul style="list-style-type: none"> ▶ Early childhood education centers have temporarily shut down and are likely to observe a strong negative impact as parents substitute for at-home care and education through the crisis ▶ Once states start opening up, parents may continue to be risk-averse and avoid sending children to early childhood education centers 		
	Private K–12 schools	\$12b	<ul style="list-style-type: none"> ▶ Fees have been collected for the current term, with some risk of parent negotiation for refunds or discount; loss of ancillary revenue streams ▶ Private schools will invest in credible online solutions to justify fees ▶ Some schools might benefit as parents substitute from public schools to private ones as public schools struggle to provide quality online delivery ▶ International student demand at high school levels might decline sharply, and impact private schools more dependent on that revenue stream 		
	Educational toys	\$7.8b	<ul style="list-style-type: none"> ▶ Temporary boost in performance as parents and caretakers search for “digital nannies” while continuing to work from home ▶ Demand should normalize post-social isolation 		
	Publishing	\$5.4b	<ul style="list-style-type: none"> ▶ Core curriculum: strong negative impact in short term as funding for upcoming adoption cycle is cut; subsequent adoption cycles in states likely delayed, driving spend down significantly in the midterm ▶ Supplemental content: volume momentum in the short term offset by revenue loss due to timing of crisis during peak bookings season; potential consolidation as smaller vendors struggle to manage balance sheet ▶ Intervention content: rationalization in the short term; strong positive medium-term impact driven by ineffective online program delivery during crisis 		
					
					

Supporting materials

Pre-K–12 education segment impact (2 of 4)

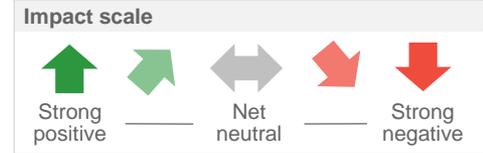


View current as of 04-22-20

Segment	Current estimated vended market	What to expect	COVID-19 impact	
			Short term	Mid to long term
Pre-K–12 education	Team sport uniforms and fanware	<ul style="list-style-type: none"> ▶ Team uniform demand will decline severely as institutions extend their use of existing uniforms as a cost-cutting measure, replacing old uniforms only if absolutely necessary ▶ Fanware spend will similarly decline significantly, driven by institution closures, canceled events and declining disposable income 	↓	↓
	Tutoring and study tools	<ul style="list-style-type: none"> ▶ On-site: immediate closure of on-site tutoring sites; nonessential staff furloughed, rents and rates deferred — cost offsetting 	↓	↔
		<ul style="list-style-type: none"> ▶ Online: digital tutoring and study tools outperform as substitutes for on-site tutoring supported by site closures and general shift to online learning 	↑	↑
	Educational products distribution	<ul style="list-style-type: none"> ▶ Steep revenue decline driven by elimination of nonessential spend ▶ Sustained downward impact as institutions cut budgets and substitute for lower-cost alternatives (e.g., less expensive art supplies) ▶ Providers with B2C offerings/better e-commerce capabilities may be better positioned to weather the crisis 	↓	↓
	Virtual schools	<ul style="list-style-type: none"> ▶ Short-term impact limited due to enrollment caps for remainder of year ▶ Widespread use of platforms during crisis likely to help destigmatize virtual schools and drive greater utilization and penetration 	↗	↑
	K–12 software	<ul style="list-style-type: none"> ▶ Front end: classroom software (e.g., LMS) will observe a net neutral short-term impact and strong positive growth in the mid to long term as districts centralize their decision-making to deploy more robust, consistent classroom software 	↔	↑
<ul style="list-style-type: none"> ▶ Back end: back-end software (e.g., talent suite, admin, SIS) will observe a net neutral short-term impact and moderate growth in the mid to long term 		↔	↗	

Supporting materials

Pre-K–12 education segment impact (3 of 4)

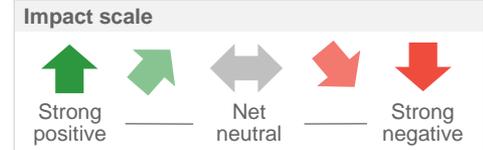


View current as of 04-22-20

Segment	Current estimated vended market	What to expect	COVID-19 impact		
			Short term	Mid to long term	
Pre-K–12 education	Special education outsourcing	\$2.6b	<ul style="list-style-type: none"> Staffing vendors observing steep decline while virtual tools (e.g., telemedicine platforms) observe uptick in demand; individual education program (IEP) may be suspended until students return to campuses 		
	Test preparation	\$2b	<ul style="list-style-type: none"> On-site: immediate closure of test preparation sites; cancellation of college entrance tests; nonessential staff furloughed, rents and rates deferred 		
			<ul style="list-style-type: none"> Online: digital test preparation platforms and self-study products outperform as substitutes for on-site test preparation, supported by site closures 		
	Education travel	\$2b	<ul style="list-style-type: none"> In the short term, all revenue will be driven to zero Sustained period of negative impact as international travel is restricted, attitudes toward travel remain unfavorable, and consumers bear economic hardships post-crisis and seek to limit discretionary spending Wealthier families may still seek differentiation for admission to top programs and demand may recover more quickly in this segment 		
	K–12 assessment	\$1.1b	<ul style="list-style-type: none"> Summative: cancellation of end-of-year tests driving steep decline, which may translate directly to revenue impact if contracts do not include payment obligation until tests are delivered; V-shaped recovery curve to normalcy 		
		\$600m	<ul style="list-style-type: none"> Formative: moderately positive short-term and mid- to long-term impact driven by inconsistency of student learning and progress during crisis and resulting need to assess students on a widespread basis more frequently 		
\$400m		<ul style="list-style-type: none"> Interim: cancellation of tests driving steep decline; V-shaped recovery 			

Supporting materials

Pre-K–12 education segment impact (4 of 4)



View current as of 04-22-20

Segment	Current estimated vended market	What to expect	COVID-19 impact		
			Short term	Mid to long term	
Pre-K–12 education	Children’s tablets	\$1.5b	<ul style="list-style-type: none"> ▶ More parents will seek to purchase tablets to provide children access to digital content; supply chains dependent on disrupted manufacturers may limit medium-term growth 	↑	↗
	Pre-K–12 furniture	\$1.3b	<ul style="list-style-type: none"> ▶ Steep revenue decline driven by elimination of nonessential spend (furniture can survive an extra year or two); impact will be felt in fall 2020 ▶ Vendors may observe weak summer selling season and sustained downward impact in the mid to long term 	↘	↓
	Game-based learning	\$1b	<ul style="list-style-type: none"> ▶ Boost in performance as parents and caretakers search for “digital nannies” while continuing to work from home 	↑	↗
	College counseling	\$700m	<ul style="list-style-type: none"> ▶ Net neutral impact in short term as counseling platforms and independent counselors transition delivery fully online; negative impact in mid to long term as fewer students attend college 	↔	↘
	Education subscription boxes	\$400m	<ul style="list-style-type: none"> ▶ Should be impacted positively as parents and caretakers seek solutions to buy curated content/educational toys to engage children 	↗	↗
	K–12 digital libraries	\$200m	<ul style="list-style-type: none"> ▶ Should have a positive impact as parents and caretakers search for a substitute to enable children to read outside the classroom 	↑	↗
	Digital security	\$125m	<ul style="list-style-type: none"> ▶ Districts need to ensure that all students have devices so that students can learn remotely; instruction primarily takes place online 	↑	↑
	Other equipment	\$9.5b	<ul style="list-style-type: none"> ▶ Products for which spend can be deferred (e.g., playground equipment, whiteboards) will decline significantly ▶ This decline will be offset partially in the short term by growing spend on products facilitating the transition to digital instruction (e.g., laptops, tablets) ▶ Negative long-term impact as districts and institutions cut spend on nonessential products 	↔	↘

Supporting materials

Higher education segment impact (1 of 2)

Impact scale

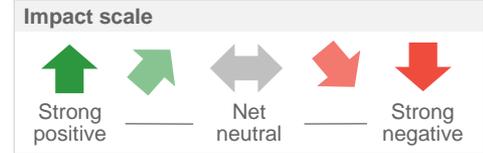
Strong positive Net neutral Strong negative

View current as of 04-22-20

Segment	Current estimated vended market	What to expect	COVID-19 impact		
			Short term	Mid to long term	
Higher education	For-profit higher education	<ul style="list-style-type: none"> ▶ Focus on online education by several for-profit institutions might be beneficial in the short run ▶ Institutions with weaker outcomes will be more susceptible to enrollment losses in the medium term as students decide not to return/find lower-cost options ▶ While unemployment pool will likely create a large market of potential students, ability to pay and demand for for-profit programs may be low 			
	Bookstore sales	<ul style="list-style-type: none"> ▶ With institutions not all opening for in-person instruction in the fall, bookstore sales should decline ▶ With consolidation in higher education, and portions of bookstore sales being discretionary, sales are expected to decline with bookstore closures and reduced sales for discretionary categories in the medium term 			
	Higher education software	\$2.1b	<ul style="list-style-type: none"> ▶ Front end: classroom software (e.g., LMS) will observe a somewhat positive short-term impact and strong positive growth in the mid to long term given higher levels of institutional penetration than K-12 software; vendors will be able to upsell more robust products; medium- to longer-term growth may be tempered by institutional closures 		
		\$3.4b	<ul style="list-style-type: none"> ▶ Back end: back-end software (e.g., business and finance, facilities and food service) will observe a net neutral short-term impact and moderate growth in the mid to long term as institutions virtualize administrative offices; medium- to longer-term growth may be tempered by institutional closures 		
	Publishing	\$4b	<ul style="list-style-type: none"> ▶ Traditional: will observe longer replacement cycles and faster overall decline as institutions move online more rapidly 		
<ul style="list-style-type: none"> ▶ Digital/OER: vendors with strong online offerings will outperform and observe accelerated adoption curve post-COVID-19 with price pressures and as institutions invest more heavily in digital strategy 					

Supporting materials

Higher education segment impact (2 of 2)



View current as of 04-22-20

Segment	Current estimated vended market	What to expect	COVID-19 impact		
			Short term	Mid to long term	
Higher education	Online program managers	\$2.9b	<ul style="list-style-type: none"> ▶ Strong demand momentum as institutions invest in their long-term online program strategies, which will likely not translate to revenue immediately ▶ Acceleration of student demand driven by greater unemployment and positive shift in attitudes toward online education; medium- to longer-term growth may be tempered by institutional closures 		
	Educational pathways	\$1.5b	<ul style="list-style-type: none"> ▶ Strong negative impact driven by formal travel restrictions and sustained effect of unfavorable attitudes toward travel over the mid to long term 		
	Testing services	\$1.2b	<ul style="list-style-type: none"> ▶ Isolation measures driving steep decline in utilization; V-shaped recovery ▶ Some vendors deploy online tests and will need security selectively in attempt to mitigate impact ▶ Contracts may prevent changes as prices are locked for a few years but contracts up for renewal may be impacted 		
	Digital libraries	\$450m	<ul style="list-style-type: none"> ▶ Consumption of (and demand for) e-books and audio books should be up sharply in the short term; although public library spend declined during the Great Recession, a similar decline now is more likely to impact spend on staff and print collections than digital collections, for which demand should grow, especially during the COVID-19 crisis as more readers are socially distant 		
	E-proctoring	\$100m	<ul style="list-style-type: none"> ▶ Growth in at-home testing driving uptick in demand, which could be sustained over the mid and long term ▶ Efficacy is coming under pressure as some vendor platforms are revealed not to identify all instances of cheating 		

Supporting materials

Lifelong learning segment impact



View current as of 04-22-20

Segment	Current estimated vended market	What to expect	COVID-19 impact		
			Short term	Mid to long term	
Lifelong learning	Certification preparation	\$1.7b	<ul style="list-style-type: none"> Demand tied to new employment growth, which will decline severely in the short term; vendors specializing in nonessential sectors (e.g., fitness training) hit hardest V-shaped recovery curve to normalcy as consumers return to the market and companies shift to online delivery in the mid and long term, with quicker recovery for some certifications that are considered more essential 		
	Micro-credentials	\$585m	<ul style="list-style-type: none"> Rapid growth in new user base and utilization Sustained positive impact over mid to long term driven by growing unemployment and demand for more affordable ways to re-skill (though this is discretionary) 		
	Bootcamps	\$550m	<ul style="list-style-type: none"> Immediate campus closures for onsite bootcamp vendors; some coworking spaces remain open but unstaffed Transition to live online delivery limits short-term impact for capable vendors Positive long-term impact driven by unemployment and booming tech sector 		
	Personal and hobby learning	\$400m	<ul style="list-style-type: none"> Rapid growth in new user base and utilization with sustained positive impact in the short term; growth may be more modest over mid to long term driven by growing unemployment, though underlying acceptance of online hobby learning will gain traction 		
	Writing enhancement software	\$120m	<ul style="list-style-type: none"> Growing online instruction and unemployment have positive impact, supporting demand to support execution of high-stakes assignments, job applications, etc. 		

Supporting materials

Corporate training segment impact

Impact scale

 Strong positive
 _____
 Net neutral
 _____
 Strong negative

View current as of 04-22-20

Segment	Current estimated vended market	What to expect	COVID-19 impact		
			Short term	Mid to long term	
Corporate training	Corporate training vendors	\$6b	<ul style="list-style-type: none"> ▶ Spend on external corporate training is highly procyclical and will decline severely over both the short and mid to long term as unemployment rises 		
	Corporate training technology	\$1.5b	<ul style="list-style-type: none"> ▶ Social isolation measures are driving increase in utilization, but this will likely level off in the mid to long term ▶ B2B training vendors (e.g., Pluralsight, Skillsoft) have seen learner base growing (e.g., furloughed employees with unused allowances) ▶ Health care sector training demand growing significantly as state boards increase caps 		
	Executive coaching and peer advising	\$1b	<ul style="list-style-type: none"> ▶ Despite growing need, vendors serving small- and medium-sized businesses will observe steep decline in demand as companies rationalize their cost base and lose ability to pay ▶ Utilization may grow among large enterprise customers with ability to pay ▶ Slower recovery curve among small- and medium-sized business as company leaders deprioritize executive coaching and peer advising 		

EY-Parthenon Education practice leadership

Ernst & Young LLP United States leadership

United States



Robert Lytle

Principal, Head of Global Education, EY-Parthenon Ernst & Young LLP Boston, MA USA



Kate Kruger

Principal, EY-Parthenon Ernst & Young LLP Boston, MA USA



Haven Ladd

Principal, EY-Parthenon Ernst & Young LLP Boston, MA USA



Chris Librizzi

Principal, EY-Parthenon Ernst & Young LLP New York, NY USA



Kasia Lundy

Principal, EY-Parthenon Ernst & Young LLP Boston, MA USA



Seth Reynolds

Principal, EY-Parthenon Ernst & Young LLP Boston, MA USA



Chris Ross

Principal, EY-Parthenon Ernst & Young LLP Boston, MA USA



Phil Vaccaro

Principal, EY-Parthenon Ernst & Young LLP Boston, MA USA



Varun Jain

Vice President, EY-Parthenon Ernst & Young LLP San Francisco, CA USA



Malavika Dhawan

Vice President, EY-Parthenon Ernst & Young LLP Boston, MA USA



Ali Huberlie

Vice President, EY-Parthenon Ernst & Young LLP Boston, MA USA



Jourdan Sutton

Vice President, EY-Parthenon Ernst & Young LLP San Francisco, CA USA

EY-Parthenon Education practice leadership

Global leadership

Europe



Matt Robb

Partner, EY-Parthenon
Ernst & Young LLP (UK)
London, UK



Julia Amsellem

Partner, EY-Parthenon
Ernst & Young Advisory
Paris, France



Derrick Betts

Managing Director,
EY-Parthenon
Ernst & Young LLP (UK)
London/Dubai



Guéric Jacquet

Partner, EY-Parthenon
Ernst & Young Advisory
Paris, France



Anna Grotberg

Director, EY-Parthenon
Ernst & Young LLP (UK)
London, UK



Jérôme Fabry

Partner, EY-Parthenon
Ernst & Young Advisory
Paris, France



Corey Dixon

Director, EY-Parthenon
Ernst & Young LLP (UK)
London, UK



Irvin Faneyte

Partner, EY-Parthenon
Ernst & Young Advisory
Rotterdam, Netherlands



Ashwin Gopalakrishnan

Director, EY-Parthenon
Ernst & Young LLP (UK)
London, UK



Alessandro Fazio

Vice President, EY-Parthenon
EY Advisory S.p.A.
Milan, Italy



Raunaq Sabharwal

Director, EY-Parthenon
Ernst & Young LLP (UK)
London, UK



Michael Rzesnitzek

Partner
EY-Parthenon GmbH
Hamburg, Germany

China



Li Lin

Managing Director, EY-Parthenon
EY Parthenon (Shanghai)
Advisory Limited
Shanghai



Jieqi Zhou

Partner, EY-Parthenon
EY Parthenon (Shanghai)
Advisory Limited
Beijing

Latin America



Eduardo Tesche

Partner, EY-Parthenon
Ernst & Young Assessoria
Empresarial Ltda.
Sao Paulo, Brazil



Felipe Miglioli

Partner, EY-Parthenon
Ernst & Young Assessoria
Empresarial Ltda.
Sao Paulo, Brazil



Alfredo Vieyra Molina

Partner, EY-Parthenon
Mancera, S.C.
Mexico City, Mexico



Martha Belden

Vice President, EY-Parthenon
Mancera, S.C.
Mexico City, Mexico

Oceania



Catherine Friday

Partner
Ernst & Young
Melbourne, Australia



Sin Yin Long

Partner, EY-Parthenon
Ernst & Young
Sydney, Australia



Jeremy Barker

Partner, EY-Parthenon
Ernst & Young
Sydney, Australia

MENA and Southeast Asia



Amitabh Jhingan

Partner, EY-Parthenon
Ernst & Young LLP, India
New Delhi, India



Ajay Kathuria

Vice President, EY-Parthenon
Ernst & Young LLP, India
Mumbai, India



Archana Sarathy

Vice President, EY-Parthenon
Ernst & Young LLP, India
Mumbai, India



Rishi Gajendra

Vice President, EY-Parthenon
Ernst & Young LLP, India
Mumbai, India



Nicolas de Geeter

Partner
Ernst & Young LLP
Singapore



Beatrice Cernuta

Vice President, EY-Parthenon
Ernst & Young - Middle East
Dubai

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