

GSX Techedu (GSX US)

A leading online K12 AST service provider

GSX is a leading online K-12 after school tutoring service provider, focusing on high-GPM, livestream dual-teacher large class model. China's online K-12 AST market is estimated to grow at 25.4% in 2020-25E, providing ample growth potential. GSX would rationalize ad spending, enhance customer satisfaction and increase retention rate to achieve more sustainable growth. Share price has been volatile recently due to policies and unwinding of hedge fund holdings. GSX trades at 4.5x FY21E P/S, below peers' average of 6.2x and near the low-end of its P/S trading range.

- **Rationalize ad spending to achieve sustainable growth.** 4Q20 adj. net loss reduced QoQ from RMB864mn in 3Q20 to RMB554mn in 4Q20. OPM QoQ improved by 18.9ppt to -31.5% in 4Q20, led by 13% QoQ decrease of selling expenses. Operating cash flow returned to RMB636mn (vs RMB679mn outflow in 3Q20). After equity raising in Dec 2020, GSX had RMB7.7bn net cash in FY20 year-end. In 2020, online education sector sharply increased ad spending in 2020 as online education demand increased amid COVID-19 outbreak. News (source: qq.com) said the sector had raised RMB53.9bn in 2020 to replenish capital. GSX plans to reduce some ad spending in social media platforms (quite expensive and traffic overlapped) and explore new customer acquisition channels such as short-video, livestreaming platform, offline channels, etc.
- **Enhance lesson quality to raise retention ratio.** GSX lowered its student-to-tutor ratio from <300 in FY19 to <200 in FY20. Although this increased teachers' costs, the reduced class size of after-class small group lesson improved customers' satisfaction. Retention rate of primary grades courses increased in FY20. Higher retention ratio could save ad spending.
- **Increase primary grades student mix to extend customer life-cycle.** Primary grades student mix accounts for one-third of K-12 students. GSX targets to increase primarily student mix through better course quality. Coupled with increase in retention ratio, GSX could provide itself with more secondary grade students and could trim ad spending in future.
- **Policies to come in 2021.** MOE revealed it will release policies this year to further strengthen the regulation of K12 AST sector and reduce students' workloads and burdens. We think the coming policies would accelerate sector consolidation and will be positive to leading sector players.
- **FY21E outlook.** GSX guided a 40-43% net revenue YoY growth in 1Q21E. The lowered growth (vs 137% in 4Q20) was mainly due to class scheduling impact from a later spring semester and a shorter winter break in 2021. Management expects growth rate to improve in 2H21E, supported by low base and adult courses, and targets 70-80% growth in FY21E. **Key risks:** (1) unwinding of hedge funds holdings, (2) policies.

Earnings Summary

(YE 31 Dec)	FY19A	FY20A	FY21E	FY22E	FY23E
Revenue (RMB mn)	2,115	7,125	12,083	17,866	24,113
YoY growth (%)	432	237	70	48	35
Net profit (RMB mn)	188	(1,393)	(1,196)	(240)	1,181
Adj. NP (RMB mn)	248	(1,154)	(1,398)	(437)	1,523
Adj. EPADS (RMB)	1.251	(4.819)	(4.984)	(1.212)	13.675
YoY growth (%)	na	(485)	3	(76)	(1,228)
Adj. P/E (x)	na	na	na	na	15.6
P/S (x)	27.2	8.1	4.5	3.0	2.2
P/B (x)	34.2	10.0	13.6	15.8	9.9

Source: Company data, Bloomberg consensus

NOT RATED

Current Price

US\$32.75

China Online Education

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Stock Data

Mkt Cap (US\$ mn)	8,340
Avg 3 mths t/o (US\$ mn)	717.38
52w High/Low (US\$)	149.05/27.06
Total Issued Shares (mn)	159.1

Source: Bloomberg

Shareholding Structure

Larry Chen	46%
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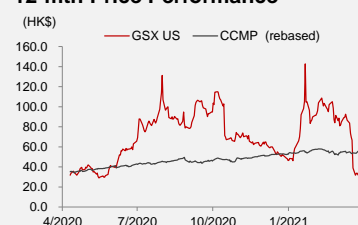
Source: Company data

Share Performance

	Absolute	Relative
1-mth	-64.2%	-66.2%
3-mth	-29.5%	-34.4%
6-mth	-65.5%	-71.9%

Source: Bloomberg

12-mth Price Performance

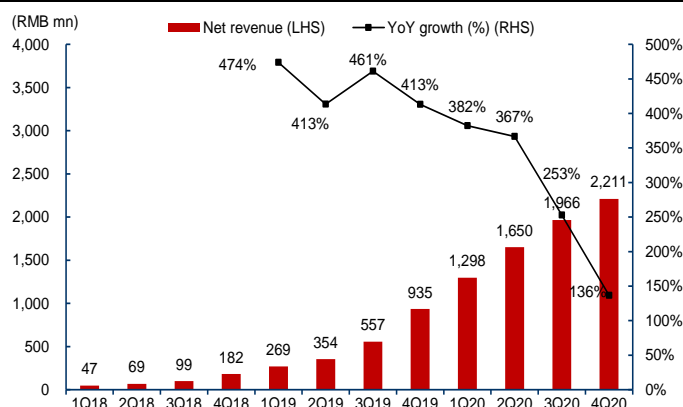


Source: Bloomberg

Auditor: Deloitte Touche Tohmatsu

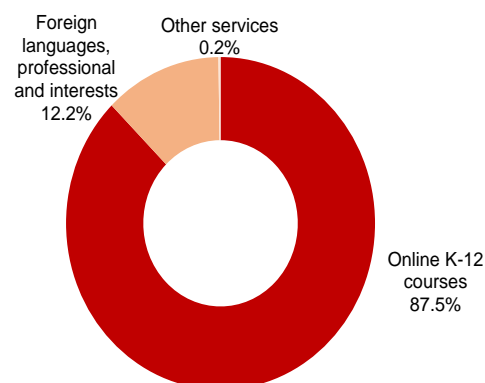
Focus Charts

Figure 1: Quarterly net revenue and YoY growth



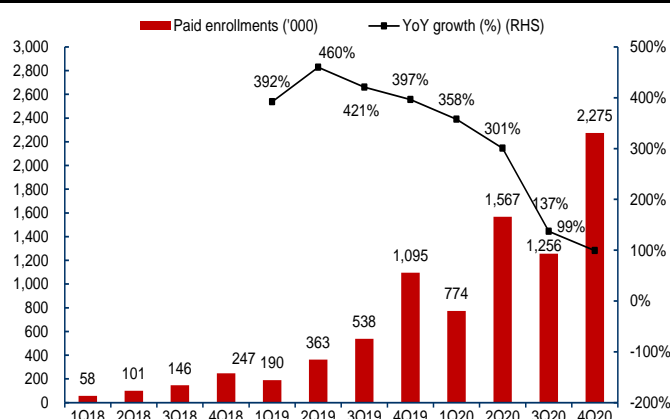
Source: Company data

Figure 2: Revenue breakdown by segment in FY20



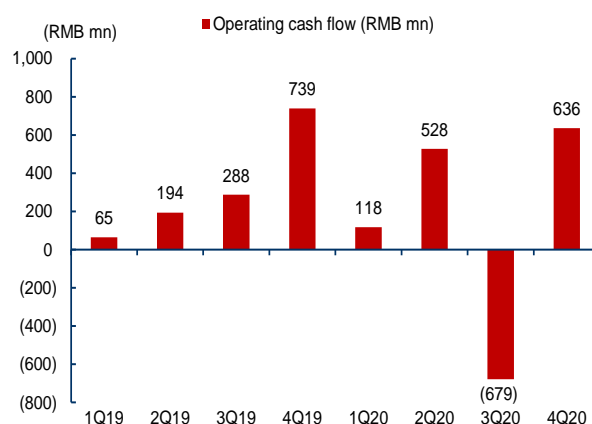
Source: Company data

Figure 3: Quarterly paid enrollment +99% YoY in 4Q20



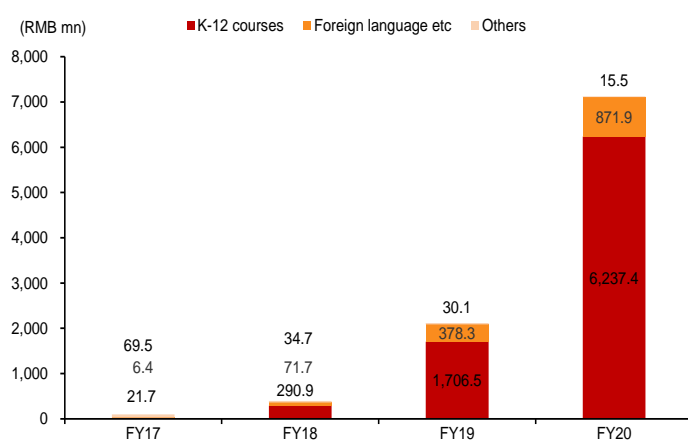
Source: Company data

Figure 4: Operating cash flow returned positive in 4Q20



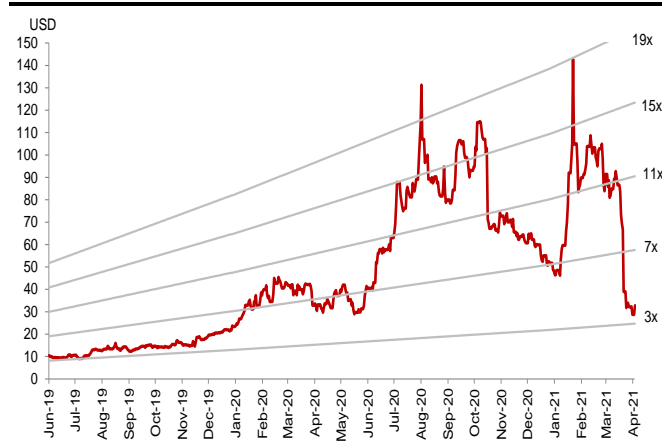
Source: Company data

Figure 5: Revenue grew at 318% CAGR from FY17 to FY20



Source: Company data

Figure 6: P/S band chart



Source: Company data

Company overview

GSX, commenced operations in Jun 2014 and listed in US in Jun 2019, is a technology-driven education company focusing on online K-12 courses. K-12 courses, operated under Gaotu brand, covers all primary and secondary grades and contributed 87.5% of total revenue in FY20. GSX offers foreign language, professional and interest courses. The Company also offers offline business consulting courses targeting principals and officers of private education institutions who want to improve their management and operation skills.

Total paid enrollments jumped from 168.4% from 2.187mn in FY19 to 5.817mn in FY20. GSX adopted online live large-class format to deliver its courses. We think this is an effective and scalable model to provide limited quality teaching resources to students in China, thus supporting it to have above peers' GPM of 75.3% in FY20.

Figure 7: Gaotu brand covers K-12 after school tutoring business



Source: website

Figure 8: Genshuixue brand covers foreign language, professional and interest courses



Source: website

K-12 after-school tutoring

The Company adopts online live dual-teacher large-class format, which consists of several components, including online live classes as well as other activities during the online period such as teaching materials, quizzes before, during and after the classes, summary of lessons after each class. Each large-class is split into many smaller groups of students and one tutor is assigned to each group to monitor and assist students before, during and after each lesson. As of 31 Dec 2019, GSX employed 232 teachers and 3,736 tutors.

The Company has a highly selective hiring process to bring onboard superior instructor, showed by only 2% of candidates were employed during 1Q19. The Company develops a systematic orientation training program and on-the-job training sessions to ensure the capability of instructors in delivering course materials effectively. The instructors had an average of over 11 years of teaching experience.

In 2019, gross billing per paid enrollment was RMB1,500. In 4Q20, average class size was around 2,600 students. With such large class size, the average compensation of its instructors in 2018 were among the highest in the online education services market in China, according to Frost & Sullivan.

Figure 9: K-12 after-school tutoring courses

Grade	Primary school						Middle school			High school		
	1	2	3	4	5	6	7	8	9	10	11	12
Mathematics	X	X	X	X	X	X	X	X	X	X	X	X
English	X	X	X	X	X	X	X	X	X	X	X	X
Chinese	X	X	X	X	X	X	X	X	X	X	X	X
Physics							X	X	X	X	X	X
Chemistry									X	X	X	X
Biology										X	X	X
History										X	X	X
Geography											X	X
Political Science												X

Source: Company data

Foreign language, professional and interest courses

GSX offers English, Japanese and Korean language courses to students who intend to learn or improve a foreign language. Its professional courses mainly contain courses designed for working adults preparing for professional qualification exams such as CFA designation, securities qualification exams and others. Furthermore, GSX offers personal interest courses such as yoga, fashion, guitar and Chinese calligraphy, designed to address students' interests.

Other courses and service offerings

GSX provides other courses, including offline business consulting courses targeting principals and officers of private education institutions who want to improve their management and operation skills. It also operates Weishi, an interactive learning platform on WeChat for users, including instructors and students.

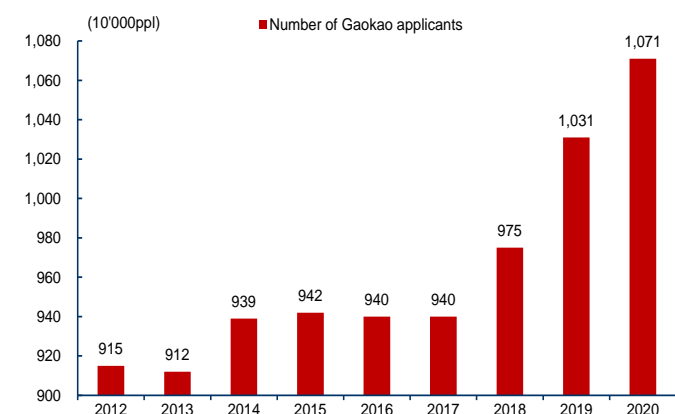
China's K-12 after school tutoring market

Market size to grow at 20.5% CAGR from 2020 to 2024

Market size of China's K-12 after school tutoring market grew from RMB377.5bn in 2015 to RMB619.1bn in 2019, representing a CAGR of 13.2%, and is estimated to increase at a CAGR of 20.5% to RMB1,173.1bn in 2024, according to Frost & Sullivan. The growth is mainly driven by the increase in penetration rate of K-12 after school tutoring across various subjects into lower-tier cities and rural areas, and the increasing demand for being admitted to quality schools and universities.

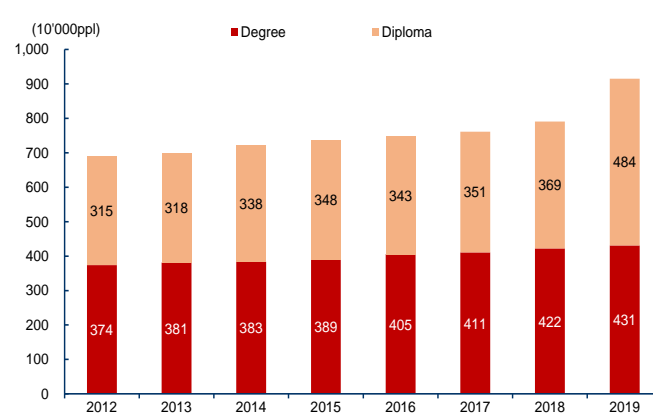
Driven by the increasing number of Gaokao repeaters, growth of number of Gaokao applicants accelerated beginning 2017, with 3.1% CAGR from 2016 to 2019. At the same time, the number of students admitted to degree program only increased at 2.1% CAGR in the same period. That means the competition for degree program, especially programs in top universities, becomes fiercer. This should increase the demand for K-12 after-school tutoring services.

Figure 10: Number of Gaokao applicants increased at 3.1% CAGR from 2016 to 2019



Source: MOE, CMBIS

Figure 11: Number of students admitted to degree program grew at 2.1% CAGR from 2016 to 2019



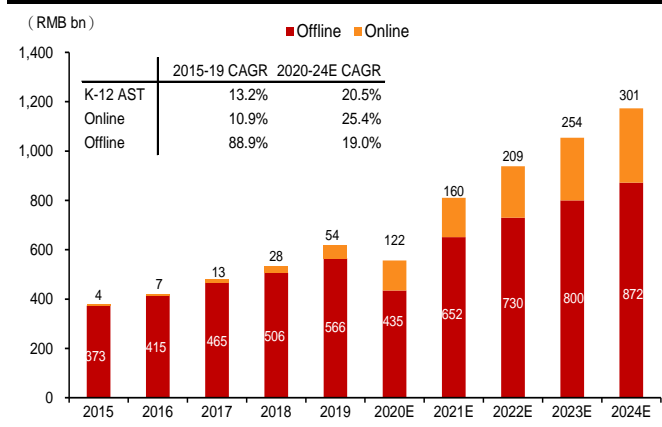
Source: MOE, CMBIS

Online K-12 after school tutoring market to grow at 25.4% CAGR from 2020 to 2024

The penetration online K-12 after school tutoring by student population increased from 1.8% in 2015 to 14.5% in 2019, and is expected to further increase to 45.8% in 2024. We think the reasons behind the increase in online penetration are (1) advancement of technology facilitates more interactive environment; (2) online education allows students to attend courses anytime and anywhere; (3) online courses (~RMB50-60/hour) are cheaper than offline courses (RMB100+/hr); and (4) students in lower-tier cities, where quality teachers are scarce, could access top teaching talent.

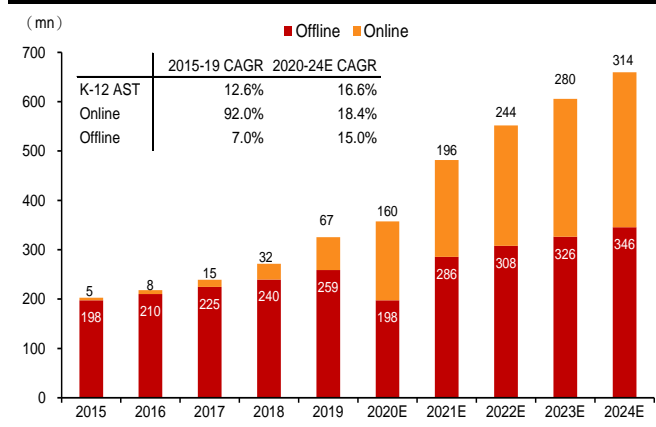
Online K-12 after school tutoring market is forecast to grow at 25.4% CAGR from 2020 to 2024, outperforming offline market's CAGR of 19.0%, driven by 18.4% CAGR of student enrollment.

Figure 12: Online K-12 after school tutoring market to grow at 25.4% CAGR in 2020-24



Source: Frost & Sullivan

Figure 13: Online K-12 after school tutoring enrolment to grow at 18.4% CAGR in 2020-24

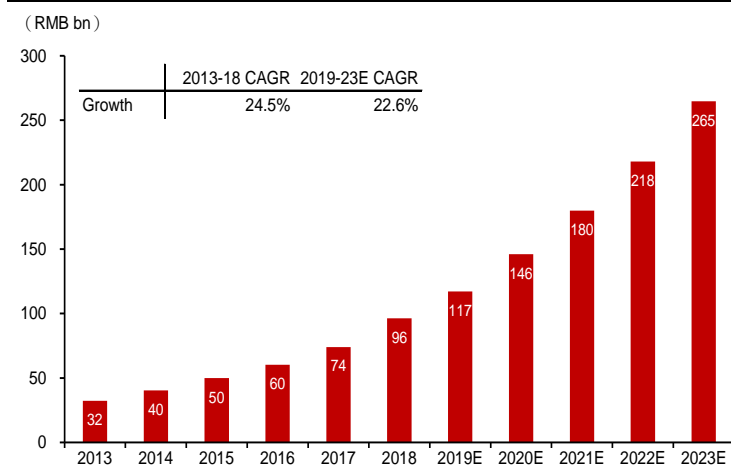


Source: Frost & Sullivan

Online foreign language, professional and interest education market to grow at 22.8% CAGR from 2020 to 2024

The market provides an option for people to utilize their fragmented time to pursue continuing studies in an effective way. As income level rises, people could spend more on education to equip themselves better for career development. In terms of gross billings, the market expanded from RMB32.2bn in 2013 to RMB96.2bn in 2018, equivalent to a CAGR of 24.5%. It is expected to grow further at 22.6% CAGR from 2019 to 2023, reaching RMB264.7bn.

Figure 14: foreign language, professional and interest education market to grow at 22.8% CAGR from 2020 to 2024



Source: Frost & Sullivan

Strengthening the regulation of K12 after school tutoring sector

Strengthen sector regulation is a priority of MOE in 2021

On 26 Mar 2021, there was a document “Report on the Trial Working Seminar Regarding Reduction of Burdens of Workloads and After School Tutoring of Students at Compulsory Education Stage” (关于教育部“双减”试点工作座谈会精神的情况汇报) circulated in media. Share prices of the sector was volatile after this news. The key points of the documents are:

- Beijing, Shanghai, Shenyang, Guangzhou, Chengdu, Zhengzhou, Changzhi, Weihai and Nantong are selected for the 1-year trial working on reduction of student burdens
- Restrict number of K12 AST institutions, tutorial period and pricing
- Day-time formal schools provide after school services up to off-work time of parents and provide 1-day services to train student's personal attributes during weekend for students' voluntary participation
- The authority do not approve any new offline AST institutions theoretically
- Advertisements of online and offline AST are not allowed in centralized and local main media, public area, residential district and internet platforms.

On 27 Mar 2021, MOE clarified such news on its official weibo account. The regulation of K12 AST as well as the reduction of workloads and AST of students is a recurring duty of MOE. Policies, if any, would be released on official channels. People should be beware of any incorrect information circulating in media.

On a press conference on 31 Mar 2021, Mr. Lu Yugang, Head of Fundamental Education Section of MOE, commented on news regarding reducing students' workload at compulsory education stage and in K12 after school tutoring (AST). Due to the issues of over-expansion of K12 AST sector, teaching ahead of curriculum, overpricing of certain courses, unfriendly refund policy and insolvency of certain institutions, MOE believes the society has strong response that such issues have increased burdens of parents and students. Therefore, MOE will put tackling these issues as top priority in 2021, to further strengthen the regulation of K12 AST sector. The authority will strictly review the approval of new K12 AST institutions, innovate management of tuition fees payment, regulate tutorials, strengthen monitoring of course content and inspect any illegal operations.

Policies would accelerate sector consolidation and be positive to leading players

There will be more policies in 2021 regarding the regulation of K12 AST sector as mentioned by the officials of MOE but the details are not finalized yet. We think the further regulation would accelerate sector consolidation and be positive to leading players on their better brand names, large school networks and financial strengths. Online K12 AST operators could reduce their advertising spending actively (switching from social platforms whose traffic is expensive and overlapped) or passively (if any policies). This would reduce their selling expenses. At the same time, their revenue growth might be affected if advertising is restricted.

Valuation

Figure 15: Peers valuation table

	Ticker	Rating	Mkt Cap (US\$ m)	Price	Year end	FY1	P/E (x) FY2	FY3	FY1	P/S (x) FY2	FY3	Adj. EPS growth (%) FY1	FY2	FY3	Revenue growth (%) FY1	FY2	FY3
Online education services providers																	
iHuman	iH US	Buy	682	12.79	Dec-20	158.3	130.3	20.2	4.2	2.3	1.9	82	21	546	108	78	22
TAL Education	TAL US	NR	35,089	58.45	Feb-20	508.3	66.7	32.7	8.1	5.6	4.1	1,050	662	104	33	43	37
Koolearn	1797 HK	NR	2,330	18.12	May-20	na	na	na	10.7	5.9	3.7	59	(16)	(42)	39	72	57
GSX	GSX US	NR	8,340	32.75	Dec-20	na	na	15.7	4.5	3.0	2.2	(42)	(76)	(1,225)	70	48	35
Youdao	DAO US	NR	3,252	26.23	Dec-20	na	na	na	3.5	2.3	1.7	9	(44)	(98)	91	51	33
Average						333.3	98.5	22.8	6.2	3.8	2.8	232	110	(143)	68	58	37
K12 after school tutoring services providers																	
New Oriental Education	EDU US	NR	25,268	14.74	May-20	48.5	30.7	22.3	6.1	4.6	3.6	(90)	58	38	15	34	29
New Oriental Education	9901 HK	NR	24,646	111.80	May-20	47.8	31.4	22.6	5.9	4.4	3.5	(89)	52	39	16	33	28
Koolearn	1797 HK	NR	2,330	18.12	May-20	na	na	na	10.7	5.9	3.7	59	(16)	(42)	39	72	57
TAL Education	TAL US	NR	35,089	58.45	Feb-20	508.3	66.7	32.7	8.1	5.6	4.1	1,050	662	104	33	43	37
GSX	GSX US	NR	8,340	32.75	Dec-20	na	na	15.7	4.5	3.0	2.2	(42)	(76)	(1,225)	70	48	35
Onesmart Education	ONE US	NR	391	2.42	Dec-20	na	16.2	8.3	0.6	0.5	0.4	8	(224)	95	18	28	15
Scholar Education	1769 HK	NR	616	8.62	Dec-19	18.8	15.4	14.2	3.3	2.5	2.3	126	22	9	60	33	8
Beststudy Education	3978 HK	Buy	297	2.72	Dec-20	8.7	7.0	na	0.8	0.7	na	43	25	(100)	39	20	na
Average						126.4	27.9	19.3	5.0	3.4	2.8	133	63	(135)	36	39	30
Non-formal vocational education services provider																	
China East Education	667 HK	Buy	4,718	16.70	Dec-20	27.2	23.3	20.0	6.3	5.5	4.9	123	17	17	34	14	13
K12 education services providers																	
Tianli Education	1773 HK	NR	2,181	7.83	Dec-20	26.6	18.8	13.4	8.0	5.9	3.8	35	41	40	36	36	53
Wisdom Education	6068 HK	Buy	992	3.54	Aug-20	10.1	8.7	7.2	2.7	2.4	2.0	16	16	22	31	16	20
Maple Leaf	1317 HK	NR	797	2.07	Aug-20	8.1	7.1	6.4	2.5	2.2	2.0	31	14	10	38	12	9
Virscend Education	1565 HK	NR	628	1.58	Dec-20	8.9	6.5	4.2	1.7	1.4	0.9	25	35	58	27	23	59
Bright Scholar	BEDU US	NR	710	5.95	Aug-20	15.3	11.5	8.3	1.3	1.1	1.0	16	33	39	8	17	10
Average						13.8	10.5	7.9	3.2	2.6	1.9	25	28	34	28	21	30
Higher Education services providers																	
China Education	839 HK	NR	4,074	13.94	Aug-20	19.5	15.7	13.6	7.1	6.0	5.4	23	25	16	40	18	10
Yuhua Education	6169 HK	NR	2,580	5.98	Aug-20	13.1	11.4	10.4	6.1	5.5	5.1	22	15	9	14	11	8
Hope Education	1765 HK	Buy	2,666	2.60	Aug-20	18.3	13.6	11.3	7.0	5.4	4.6	38	34	21	57	31	17
Kepei Education	1890 HK	NR	1,387	5.35	Dec-20	11.7	9.9	7.9	7.1	6.0	4.7	26	19	25	46	19	27
Cahtay Media	1981 HK	NR	1,486	6.96	Dec-20	21.8	16.8	13.8	8.4	6.6	5.1	10	29	22	46	27	28
Edvantage	382 HK	NR	1,057	7.67	Aug-20	15.7	11.1	8.9	5.8	4.3	3.7	35	42	25	48	34	18
New Higher Education	2001 HK	NR	918	4.50	Aug-20	10.1	7.9	6.7	3.9	3.4	3.0	34	29	17	4	16	12
JH Educational Tech	1935 HK	NR	768	3.73	Dec-20	16.5	14.9	na	7.3	6.2	na	12	11	na	22	17	na
Minsheng Education	1569 HK	NR	776	1.43	Dec-20	8.7	7.2	5.8	2.6	2.3	1.8	31	20	24	74	13	29
Xinhua Education	2779 HK	Buy	480	2.32	Dec-20	8.1	7.0	5.6	5.2	4.4	4.1	20	16	26	26	18	7
Huali University	1756 HK	NR	390	2.53	Aug-20	6.4	5.2	4.4	2.8	2.4	2.0	12	23	18	20	18	17
Neusoft Education	9616 HK	NR	437	5.10	Dec-20	11.3	9.1	6.1	1.7	1.5	1.3	(8)	24	47	48	19	15
Average						13.4	10.8	8.6	5.4	4.5	3.7	21	24	23	37	20	17

Source: Company data, Bloomberg estimates, CMBIS estimates

Financial Summary

Income statement

YE 31 Dec (RMB mn)	FY17A	FY18A	FY19A	FY20A
Revenue	98	397	2,115	7,125
K12 courses	22	291	1,707	6,237
Foreign language, professional, etc.	6	72	378	872
Other courses and services	70	35	30	15
Cost of sales	(25)	(143)	(536)	(1,763)
Gross profit	73	255	1,579	5,362
Selling expenses	(75)	(122)	(1,041)	(5,816)
R&D expenses	(52)	(74)	(212)	(734)
Administrative expenses	(37)	(40)	(110)	(567)
EBIT	(92)	19	216	(1,755)
Finance income	0	2	9	3
Realized gains from investment	0	0	11	70
Other income and expenses, net	1	0	6	254
Profit before tax	(91)	21	242	(1,428)
Income tax	5	(3)	(17)	35
Net profit	(0)	1	1	0
Loss from equity method	(39)	(39)	(38)	0
Net profit	(126)	(19)	188	(1,393)
Share based compensation	6	6	60	238
Adj. net profit	(120)	(13)	248	(1,154)

Cash flow summary

YE 31 Dec (RMB mn)	FY17A	FY18A	FY19A	FY20A
Profit before tax	(87)	20	227	na
Share-based compensation	6	6	60	na
D&A	1	5	4	na
Change in working capital	25	213	na	na
Others	1	(1)	na	na
Net cash fr. operating act.	(50)	242	1,285	603
Capex	(8)	(190)	(1,334)	na
Others	(2)	(9)	(1,170)	na
Net cash fr. investing act.	(10)	(199)	(2,505)	na
Equity raised	0	0	1,367	na
Interest paid	57	(29)	(34)	na
Others	0	0	(87)	na
Net cash fr. financing act.	57	(29)	1,246	na
Net change in cash	(3)	14	27	na
Cash at the beginning of the year	23	19	33	74
Exchange difference	(0)	0	14	na
Cash at the end of the year	19	33	74	355

Balance sheet

YE 31 Dec (RMB mn)	FY17A	FY18A	FY19A	FY20A
Non-current assets	5	29	33	34
PPE	2	5	7	8
ROU assets	0	13	15	15
Intangible assets	0	8	8	8
Other non-current assets	3	3	3	3
Current assets	163	883	1,703	2,162
Inventories	21	17	25	30
Account receivables	20	47	98	174
Prepayments	17	39	81	144
Cash	105	780	1,499	1,814
Current liabilities	183	256	1,050	1,474
Account payables	10	20	45	80
Deferred revenue	72	142	850	1,119
Other payables	101	89	150	270
Others	0	5	5	5
Non-current liabilities	0	6	8	9
Operating leases	0	6	8	9
Total net assets	(14)	649	678	713
Shareholders' equity	(14)	649	678	713

Key ratios

YE 31 Dec	FY17A	FY18A	FY19A	FY20A
Sales mix (%)				
K12 courses	22.2	73.2	80.7	87.5
Foreign language, professional, etc.	6.6	18.1	17.9	12.2
Other courses and services	71.2	8.7	1.4	0.2
Total	100.0	100.0	100.0	100.0
P&L ratios (%)				
Gross margin	74.4	64.1	74.7	75.3
EBIT margin	(94.7)	4.8	10.2	(24.6)
Net margin	(129.0)	(4.9)	8.9	(19.6)
Adj. net margin	(123.1)	(3.4)	11.7	(16.2)
Balance sheet ratios				
Current ratio (x)	0.3	0.8	1.1	2.0
Quick ratio (x)	0.3	0.8	1.1	2.0
Inventory turnover days	na	na	3	6
Net cash (RMB mn)	(37)	196	1,547	7,686
Returns (%)				
Adj. ROAE	na	na	32.5	na
Adj. ROAA	na	na	16.2	na
Per share				
Adj. EPADS (RMB)	na	na	1.25	(4.82)
DPADS (RMB)	0.00	0.00	0.00	0.00
BVPADS (RMB)	na	na	6.61	22.50

Source: Company data

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