

GSX: Minimal Market Share; ~90% Fake Enrollment and Unlawful Operations

May 25, 2020

Last week, we conducted a market survey among K12 parents who registered their child(ren) for at least one class with Gaotu and/or GSX platforms over the past 6 months. The survey enrolled a total of 2,222 K12 parents in eight Chinese T2 cities (Wuhan, Zhengzhou, Nanjing, Hangzhou, Shijiazhuang, Jinan, Hefei and Xian) resulting in the registration of 300 Gaotu/GSX users. There was no restriction on the semester nor the subject of the enrollment. The survey automatically closed when 300 Gaotu/GSX parents were reached and surveyed.

This survey generated highly consistent results when compared with a previous survey conducted in March (sample size=2,500 parents, all tiers of cities included). In both surveys (Exhibit 1 and 2), Gaotu (GSX's primary K12 class app) has ~3% market share, meaningfully lagging the other online K12 players. Specifically, TAL Online had 25% market share in May, lower than 31% in March due to the exclusion of T1 cities; EDU Online ~20% in both surveys; ZYB ~19% in May and 16% in March; and YFD ~17% in May and ~22% in March.

Market penetration analysis disqualifies GSX as a leading online K-12 large-class after-school tutoring service provider claimed by the company's management. Our data suggests that GSX is outperformed by every one of its competitors.

Exhibit 1-2: K12 Online Class Market Share Surveys Comparison – May vs March 2020

| May 2020, N=2222, T2 cities =100% | | |
|------------------------------------------------------------|-------------|---------------|
| Which online class(es) have you enrolled in last 6 months? | | |
| Providers of online classes (multiple) | Count | % |
| TAL Online | 1503 | 24.5% |
| EDU Online | 1222 | 19.9% |
| ZYB live class | 1154 | 18.8% |
| YFD live class | 1064 | 17.3% |
| Zhangmen 1-on-1 | 389 | 6.3% |
| VIPkids | 363 | 5.9% |
| GSX | 104 | 1.7% |
| Gaotu | 210 | 3.4% |
| Youdao | 118 | 1.9% |
| Others | 10 | 0.2% |
| Total | 6137 | 100.0% |

| March 2020 Survey N=2500, T1, 2 =50% | | |
|-------------------------------------------------------------|-------------|---------------|
| Which online class(es) have you enrolled in last 12 months? | | |
| Providers of online classes (multiple) | Count | % |
| TAL Online | 1325 | 31.0% |
| YFD live class | 925 | 21.6% |
| EDU Online | 850 | 19.9% |
| ZYB live class | 675 | 15.8% |
| Zhangmen 1-on-1 | 400 | 9.4% |
| Gaotu | 100 | 2.3% |
| Total | 4275 | 100.0% |

Sources: JL Warren Capital LLC

Among the 300 parents, 14 registered for both Gaotu and GSX classes. 2,222 parents were included in the survey with registered for 6,137 classes over the last 6 months (December 2019 – May 2020). 52%, 28% and 21% parents registered for 3 (or more), 2, and 1 class, respectively, K12 online class adoption obviously has benefited from COVID19. The purpose of the survey was to assess Gaotu and GSX’s market share in the lower tier cities, class sizes, pricing and conversion rate. Understanding that GSX is in a different category of teaching from the industry leader TAL who specializes in the test prepping for academic “high achievers”, GSX’s addressable market is the middle-range of K12 students in smaller cities. Nevertheless, our surveys find little tractions of GSX, even in the markets that GSX appears to have committed significant resources, including local connections, staffing and real estate investments.

>90% Accounts and Live Class Enrollments Were Fake

30% parents responded that there were under 100 in the class with their children, 35% reported between 100 and 300. 70% of parents believe that there are fewer than 600 students in their registered Gaotu and/or GSX classes. This estimate is material lower than the company reported (average of ~2,000 enrollments per class in Q1), but consistent with our classes (full paying) we enrolled in for the spring semester.

Exhibit 3: Class Size Reported by GSX Parents

| # of students | # of students in your kid's class? | | | | | |
|---------------|------------------------------------|-------------|------------|-------------|------------|-------------|
| | Gaotu | % | GSX | % | GT + GSX | % |
| Under 100 | 68 | 32% | 27 | 26% | 95 | 30% |
| 100-300 | 76 | 36% | 32 | 31% | 108 | 35% |
| 300-600 | 23 | 11% | 21 | 20% | 44 | 14% |
| 600-1000 | 22 | 10% | 12 | 12% | 34 | 11% |
| 1000-2000 | 13 | 6% | 7 | 7% | 20 | 6% |
| 2000-5000 | 8 | 4% | 4 | 4% | 12 | 4% |
| Total | 210 | 100% | 103 | 100% | 313 | 100% |

Sources: JL Warren Capital LLC

We had previously shared with our clients a confidential call recording with a brusher hired by GSX management to inflate the class enrollments and publish glowing reviews for the teachers. To find more data points and to deepen our understating of the mechanics and economics of brushing – i.e. using bot and/or live brushers to play customers – we consulted a few more brushers in China. We’ve learned some commonly used techniques to detecting fake accounts on social media and live broadcasting programs from the experts who make a living on brushing. Brushers are low-waged IT workers who are at 1-2 USD per hour. Fake accounts operated by real human demonstrate patterns, but only detectable by a trained eye.

We studied the behavior pattern of registered “students” in classes, with the help from brushing experts. We detected ~80%+ of those logged in “students” were fakes operated by brushers. We detected two types of recurring brushing activities in GSX classes (including Gauto) and both can be done in house and/or outsourced to third party groups. First group is “silent fakes” which are entry level, low maintenance fakes, typically just a name that remains silent throughout the classes. One individual brusher can manually operate hundreds of silent accounts via batches of mobile phones connecting to one or multiple servers/IP addresses. Silent accounts are used to boost the perceived headcounts. Unlike a real user who signs on and off individually and therefore instantly, fake accounts require time to log on and off as they are manually done by one brusher behind the scenes. This explains the “Early Joiners” described in Muddy Waters’ report on GSX on May 18th. We also noticed that there are hundreds of accounts lingering in the “classroom” even after the session completes, as the brushers likely must sign off the apps one by one himself and he can’t do all simultaneously.

Second group of fakes is what we call “active fakes”. Those brushed accounts participate in class discussion following scripts given by the company. They also give quick praises and comments back and forth with the instructors and tutors who they barely know during the first sessions of a program. “Active fakes” are relatively premium service that includes a fake enrollment as well as active class participation and after class reviews. Brushers managing active fakes are required to interact with the instructors, tutors and other students in the class, typically via positive comments with high frequencies. Since those comments are written by brushers, not K12 kids, they appear outlandish and out of place. Typing speed can also be a telltale, among others. For the class we audited with our brusher consultants, most of the comments were posted by the brushers.

The following example is to illustrate how we detect fake headcounts in one live class session. Exhibit 4 -6 are three screenshots of a randomly selected K5 English class that we enrolled with full paying price of 1,850 RMB to Gauto. In class, students are offered “golden coins” after they signed in and answered one simple question to confirm that they were present. One must open a red envelop before claiming the golden coins, otherwise the red envelop blocks the screen. Therefore, only those students who not only signed in but also claimed the coins can continue the class. Among 399 signed in headcounts, only 76 students claimed the coins. The rest 323 didn’t have access to the class throughout the session. We safely deduct that the actual paying students in this class can not

be more than 76, or 19% of signed in students. Among the 76 students with coins, there can be many active fake accounts.

Exhibit 4-6: Full Price Only Live Class on May 25th - English for K8



399 students “raised hands” indicating their presence in and throughout class.



Among the 399 sign-ins, only 76 students collected “golden coins”.



“golden coins” are presented in a red envelopes, without opening which students are blocked to enter the “classroom”.

Source: Gaotu App, JL Warren Capital LLC

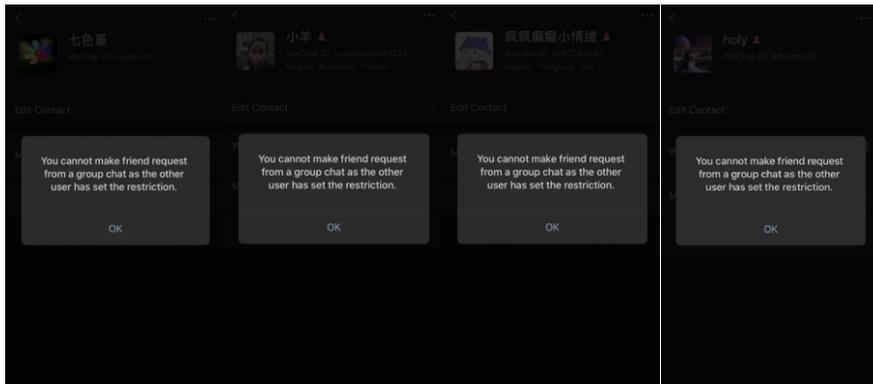
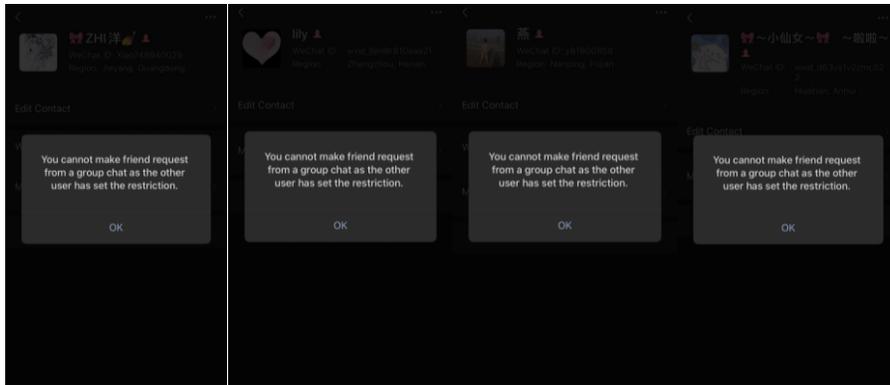
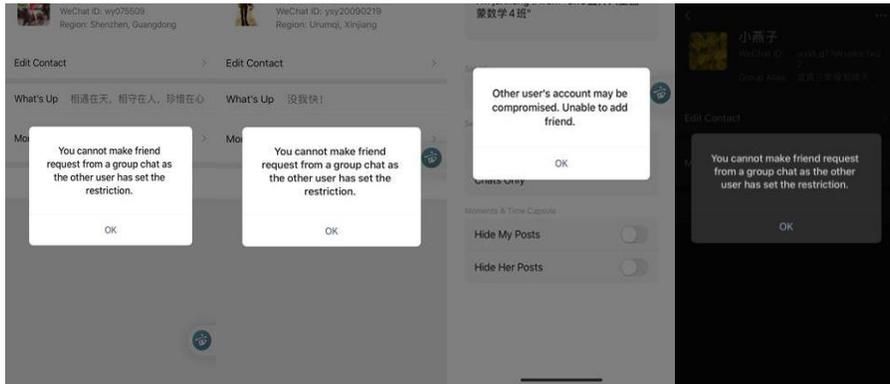
Fake WeChat Parents Groups:

It is hard to find anything that is not fake about GSX. Exhibit 7 includes three partial lists of fake parents' IDs in GSX WeChat parent groups (K5 English, Chinese, Math respectively). Our team enrolled in those groups in order to purchase full paying classes. WeChat IDs starting with "wxid_" followed with machine generated, random combinations of signs, numbers and letters are the original form of IDs upon initial registrations. WeChat then asked users to replace them with personalized and easy-to-tell IDs. 95%+ users do personalize ID names and keep them. We collected all the IDs from the parents' group and about ~30% of them are IDs that are personalized. Even for the personalized users who we tried to befriend; 95% of our invites were blocked.

[Exhibit 7: Partial List of Fake Accounts in Gaotu/GSX Parents Group](#)

| K5 Chinese 语文曾曦老师 Total =100; Abnormal=40; 30% | K5 Math 数学张镇 Total =140; Abnormal=41;29% | K5 Math 西蒙 Total =146; Abnormal=47, 32% |
|---------------------------------------------------|---------------------------------------------|--------------------------------------------|
| Abnormal Users | Abnormal Users | Abnormal Users |
| wxid_dp54a10ih19u22 | wxid_d63vs1v2zmc522 | a13296548reh |
| wxid_yv3dg1ny0pt722 | wxid_pqar68p1hq0q21 | a147258369780 |
| wxid_4ecfl7kp47j722 | wxid_i04guj2i3w4h22 | C13956409554 |
| wxid_wjbtuegdynn122 | wxid_eqzfi8p1ucjr22 | eerr159259359 |
| wxid_uv8iwpwgnej022 | wxid_8uctzikgrezq22 | g13478883851 |
| wxid_fpslrs2e6g7f22 | wxid_tydb1mm8upn422 | L15049458297 |
| wxid_wq3fuxe8u5th22 | wxid_6ujozl7cjcvc22 | s52018195094455 |
| wxid_nrn6ktzck4au22 | wxid_88925drz2qm522 | w1483781971 |
| wxid_mjw13ilzbozq22 | wxid_t0r4q0fa4k5a22 | WC13190168695 |
| wxid_wub17na9tped22 | wxid_5fx4ebicibi122 | ww396964345 |
| wxid_rnmkzgx9krxr22 | wxid_3ld0b78rcigj22 | wxid_3zm785ygg64422 |
| wxid_gjspmboppstd21 | wxid_x043hp6xe0622 | wxid_4r5hp50mq43y12 |
| wxid_887a8zkzwn3122 | wxid_y99yf522xbz622 | wxid_5unh2tef3put22 |
| wxid_3ble75fbrocv22 | wxid_w7d3jumpqo3u22 | wxid_6x9s3u3eraws32 |
| wxid_2jumi16qyx2s22 | wxid_bvjyjd7d6o5a22 | wxid_7i5s2zxlbg2s22 |
| wxid_25g12z1lwesne22 | wxid_aoiq19q80e4x22 | wxid_7kgdcwk2v8eu22 |
| wxid_9fhltk1hest722 | wxid_d45qr5qvbfdz22 | wxid_8aol0uvtkac222 |
| wxid_1efyld1jvw3b21 | wxid_z5gt3d6kbm2f12 | wxid_a04dgy7ytq1m22 |
| wxid_s7o33arl7xu921 | wxid_fsz3imvz6s4x21 | wxid_blcnyhp87am822 |
| wxid_06ssscs8thri22 | wxid_rdz2foshtb7p21 | wxid_c8syeeewji6xr21 |
| wxid_7313723136311 | wxid_nqwytdtbj9il21 | wxid_dfip19q0h6y02 |
| wxid_8drzf6ktd2n811 | wxid_r01hye14sjsk22 | wxid_dw15gu1wckjx21 |
| wxid_k22fsq4xix412 | wxid_pedxvorfnvtd21 | wxid_f4wsxmbofnhi22 |
| wxid_fjp7tuvcspt322 | wxid_4volmzxcg3hh821 | wxid_fsvwx6mx29yh22 |
| wxid_6i7707u8r7v922 | wxid_9g3cfwz43ssk22 | wxid_i5jv3zmof22222 |
| wxid_7cf4g7289wvs22 | wxid_r4b7pfsdfcyn22 | wxid_jwblyoxni4yk22 |
| wxid_wp6iujf5mqeu22 | wxid_beaymhzzsx8412 | wxid_k37geoujpspt12 |
| wxid_95yalygem3r22 | wxid_vrjuhh06io0g22 | wxid_kpwf719ivy4h22 |
| wxid_7byns7ob726622 | wxid_ggmjnxdu3jvs22 | wxid_lj5zdpk5k3ka22 |
| wxid_yb2ozebc4fmi21 | wxid_ucwjz1tr7wa022 | wxid_msixi1dyfg9u22 |
| wxid_6jni8r810aaa21 | wxid_4v267skfqs2i22 | wxid_ony89s9l8mi22 |
| wxid_e9jgbmcm98xb22 | wxid_0wfdhu43xycy22 | wxid_pckj777a73sb22 |
| wxid_q77ekypklc1w22 | wxid_nnhpnuz7857c12 | wxid_pyhdcaakr2i12 |
| wxid_px6zgw00n8o422 | wxid_ar4g1yb452ua22 | wxid_qnekjhh6txmy22 |
| wxid_1qwzii5ujp9721 | wxid_scgsimtnwvqs22 | wxid_rapsh46k5ept12 |
| wxid_nv43ayksolqf22 | wxid_okylsek78q1p21 | wxid_s2k0xvvg4mcp22 |
| wxid_ii1ojhjbezhv22 | wxid_16howns5xou321 | wxid_sk8a0481vtaj21 |
| wxid_w73gm0gvyabm22 | wxid_qbw3b2mf8aka12 | wxid_tcj247bfqjx22 |
| wxid_oqxto6ffqehs22 | wxid_e2yfqsks485d21 | wxid_u97jjbo7kanr22 |
| | wxid_tnpsl78kvl0321 | wxid_ukg7gfbufe2p12 |
| | wxid_vfgfl05rthpq12 | wxid_v8abkfm6jxam22 |
| | | wxid_xhq8au07ajso22 |
| | | wxid_yam1usk8bfqf12 |
| | | wxid_zj0a5mgtqea022 |
| | | yUejingS0ng5597 |
| | | zc622722ma |
| | | wxid_puf5ucgq4z422 |
| | | wxid_9klu10ggydx122 |
| | | wxid_0beefa07k80d22 |

Exhibit 8: Numerous Fakes in GSX Parents WeChat Group





A fake “parent” copy-pastes the same pre-K recruitment repeated day likely to keep his/her account live.



“My kid missed class tonight because he had piano class, is there replay?”

8 mins later by the same user before the replay question was answered –

“Public school does not teach this amazing calculation method. This is extremely helpful.”



A “parent” account posted the same house listing repeatedly in WeChat moments for months.

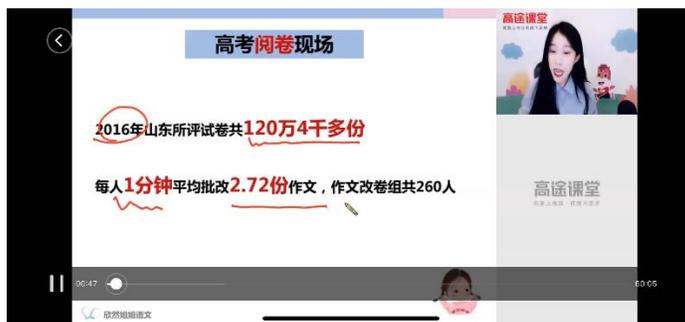
Sources: GSX WeChat Parent Group; JL Warren Capital LLC

Numerous Violations of Regulations by China's Ministry of Education:

We worked with industry experts to ascertain the quality of GSX and Gaotu classes, and their compliance with the MoE regulations. China's Ministry of Education has extensive and frequently updated rules on digital learning for K12 tutoring service providers. More recently given the accelerating adoption of online teaching, the MoE has stepped up its compliance supervision on content providers. The following illustrations are blatant examples of violations of the MoE regulations.

1. Selling on Anxiety: In a K11 Chinese class, the instructor stated: "In 2016, 1,204,000 essays were reviewed for the College Entrance Exam in Shandong province alone. The average time spent grading each essay was ~20 seconds." This is entirely false information to hype up students' anxiety. The unethical behavior in the classroom to sell services on anxiety is strictly banned by the MoE and local education authorities since 2016.

Exhibit 9: K10 Chinese Summer Session in 2020



Source: gaotu100.com

2. Teaching advanced class material ahead of the MoE syllabi. China's State Council published *Regulation on Tutoring Institutions* in 2018 that bans the after-school tutoring providers to teach content "beyond the scope of the syllabi". This is to alleviate the mounting academic burden and anxiety suffered by both children and parents. China's MoE published a *Negative List* for each grade, listing all contents are not allowed in classes, including "Teaching English phonetic symbols to primary school students". Gaotu turns a blind eye to the policies by teaching content that is banned by the MoE.

Exhibit 10: K4 English Summer Session in 2020



Source: gaotu100.com

Exhibit 11. Negative List for English Subject Teaching

英语负面清单

| 主题 | 超标内容 |
|----|-------------------------------------------------------------------------------------------|
| 书写 | ● 要求一、二年级学生进行英语书写训练 |
| 音标 | ● 在小学阶段讲授国际音标 |
| 词汇 | ● 要求学生掌握超出《义务教育英语课程标准（2011年版）》所规定的词汇要求 |
| 语法 | ● 要求学生掌握超出《义务教育英语课程标准（2011年版）》所规定的语法项目要求（例如，小学阶段要求学生掌握现在完成时，主从复合句等。初中阶段要求学生掌握定语从句，虚拟语气等。） |

“Negative List for English Teaching” Explicitly Bans AST Teaching Phonetics to K1-6-year students.”

Source: Minister of Education, JL Warren Capital LLC

Caveat Emptor - “Buyer Beware”:

While we fully expect that Chinese corporates are less transparent than peers in the US, we nevertheless are appalled by the blatant misinformation and lies that management publicly presented to students, parents, media, society and global investors. GSX is one of the most aggressive operators – even by Chinese standards – in brushing up a startup business to look like billions of dollars in scale. Certain groups of shareholders justify the company’s unethical and unlawful practices as the necessary evil to survive and thrive in the intensely competitive market environment in China. They argue that in China, to win one must duck, cover and obfuscate to get your rivals, and even stakeholders to believe things that will be to your advantage. We consider that GSX supporters and related parties are the food chain that has created and encouraged the rampant existence of corporate fraud and assisted them to get listed in the US, stealing money from investors globally. The key loophole for the Chinese companies listing in the US (and any other western markets) is the lack of the extradition treaties between the two countries. Chinese executives who cook the books and steal money from the American investors know that the worst that

can happen to them on an individual level is that they can never visit the US. Nevertheless, they can continue to live large in China without consequence.

In our view, there is little difference between GSX and LK in ways of misrepresentations, accounting irregularities, and unlawful business practices. Worse than LK, GSX does not much hard assets other than the three office buildings in Zhengzhou -CEO's hometown - that he brought in January. The biggest one of three buildings is still under construction so valuation of the hard assets is pending.

Four independent researchers (Grizzly, Citron, Scorpio and Muddy Waters) independently conducted thorough primary research from various perspectives, all coming up with similar assessments that we agree with mostly. GSX is a blatant fraud that can NOT be ignored by the US regulators.

Assuming that the company is 10% of what it claims to be in revenue and 100 MM RMB EBITDA in 2020, using 20x EV/EBITDA (average of private market valuation for Chinese peers), that is 2 billion RMB, 280 MM USD market cap, 4% of its current market cap of 7.4 billion USD. In other words, we see 96% upside in shorting GSX.

Appendix: Survey Outcome MISC

| Which subject(s) of classes have you enrolled in? | | | |
|---------------------------------------------------|-------------|-------------|-------------|
| Subject | GT % | GSX % | Total % |
| Chinese | 24% | 25% | 25% |
| Math | 38% | 41% | 41% |
| English | 29% | 28% | 28% |
| Physics | 5% | 4% | 4% |
| Chemistry | 2% | 1% | 1% |
| Biology | 0% | 1% | 1% |
| Political Science | 0% | 1% | 1% |
| History | 0% | 0% | 0% |
| Geology | 0% | 0% | 0% |
| Total | 100% | 100% | 100% |

| Grade | Count | Percentage% |
|--------|-------|-------------|
| K1-6 | 216 | 72% |
| K7-9 | 49 | 16% |
| K10-12 | 35 | 12% |

| The reason(s) you choose to renew at Gaotu? (Multi-choices) | | | |
|-------------------------------------------------------------|-------------|-------------|-------------|
| Reasons to renew Gaotu | Percentage% | Percentage% | Percentage% |
| High quality class, good instructors | 30% | 35% | 31% |
| Caring and responsive tutor | 29% | 23% | 28% |
| Replay of the class is helpful for study | 24% | 24% | 24% |
| Fair pricing of the class | 17% | 18% | 17% |

| What are the reason(s) you don't renew your class(es)? | | | |
|--------------------------------------------------------|-------------|-------------|-------------|
| Reasons NOT to renew at Gaotu | Percentage% | Percentage% | Percentage% |
| Low quality because of large class size | 20% | 9% | 9% |
| Not enough teacher-student interaction | 12% | 19% | 19% |
| Tutor is not responsive | 16% | 13% | 13% |
| Full price is too expensive | 24% | 26% | 26% |
| Low quality of instructor | 16% | 19% | 19% |
| Kid graduated, no longer need tutoring | 13% | 15% | 15% |

| Monthly Income Before Tax | | |
|---------------------------|-------|-------------|
| Salary Range | Count | Percentage% |
| 8,000 - 9,999 RMB | 8 | 3% |
| 10,000-11,999 RMB | 84 | 28% |
| 12,000-14,999 RMB | 79 | 26% |
| 15,000 - 19,999 RMB | 70 | 23% |
| 20,000 RMB and above | 59 | 20% |

Sources: JL Warren Capital LLC

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