

Zhou Hei Ya – the Dark Side of the Duck

March 1, 2019

The Basics	
Ticker:	1458.HK
Recent Price:	HK\$3.6
Market Cap:	HK\$8.6bn

Emerson Analytics Forecast
Target Price: HK\$2.4 (-34%)

Zhou Hei Ya produces and retails braised duck and duck parts in Mainland China. In 1H18, its spectacular growth since 2013 came to an abrupt halt with a 1.3% year-on-year (YoY) revenue drop and a 17.3% net profit decline. On January 30, 2019, it warned the market that full year 2018 profit would drop by approximately 30% YoY.

During 3Q18, we examined in detail Zhou Hei Ya's retail operations in Central China provinces, which contributed to about 54.2% of total revenue. Our investigation focused on the region's true business volume, and was done mainly by obtaining a sales slip within the last hour of operation from each point-of-sale (POS) machine at the 524 retail stores in the region. The following anomalies are uncovered:

- At Zhou Hei Ya's Hunan and Jiangxi stores, shopkeepers often create "purchases" when no customer is around. Our analysis of sales slips marked "Deal Canceled" suggests that shops there inflate their volume by 28.0%;
- The 174 average daily sales volume (ADSV) per store for Central China implied by Zhou Hei Ya's disclosures was 38.7% more than the true ADSV of 125 that we surveyed; and
- Our monitoring of average transaction value in Central China shows that it is about 6.8% below the Rmb65.8 national average that Zhou Hei Ya reported for 1H18.

Zhou Hei Ya – the Dark Side of the Duck

Juewei Food is a Chinese-listed company that produces and retails braised duck and duck parts much like Zhou Hei Ya, though the former tends to rely more on franchised stores. Based on their respective IPO prospectuses, Zhou Hei Ya's average revenue per store in 2015 was 5.6x that of Juewei Food for all stores, and 2.9x for self-operated stores despite having a lower proportion of railway station and airport stores. This gap is simply too big to be credible.

Combined, the 38.7% volume exaggeration and the 6.8% average value gap imply that Zhou Hei Ya's actual revenue in Central China was probably 32.8% below that reported for 1H18.

Assuming Zhou Hei Ya's gross margin was indeed 60% as reported, and that other cost figures were accurate, we believe the company's actual net profit in 2018 was only Rmb255m, or 52.2% below the Rmb533m projected by the company.

Based on 8.8x full year 2018 P/E and taking into account the Rmb2.63bn net cash on hand, we value the stock at HK\$2.4 a share, a downside of 33.5% from the current level.

Zhou Hei Ya – the Dark Side of the Duck

Table of Contents

Part 1 Hunan and Jiangxi Stores Inflate Volume through "Deal Canceled"	6
1.1 Implied ADSV for Stores in Central China was 174 in 1H2018	6
1.2 Order No. on Last Sales Slip Reveals Sales Volume	8
1.3 Large Numbers of "Deal Canceled" Sales Slips	10
1.4 Sales Slip Volume 28.0% Above True Sales Volume.....	11
1.5 "Deal Canceled" Not for "Borrowing Member ID"	13
Part 2 Central China Volume Exaggerated by 38.7%.....	16
2.1 How to Obtain Sales Slips Within One Hour of Closing Time?	16
2.2 Implied Number 38.7% Above Real Volume in Central China	17
2.3 Majority of Shops Achieved Less Than Half of Implied ADSV	18
2.4 Are Our Counts Sufficiently Representative?.....	19
Part 3 True ASPO in Central China 6.8% Below National Average Claimed.....	23
3.1 Hubei Province's ASPO Slightly Higher than the National Average	23
3.2 ASPO for Other Provinces in Central China about Rmb40.9.....	25
3.3 ASPO in Central China 6.8% Lower than National Average Reported.....	27
3.4 Central China ASPO Depressed by High Proportion of Stores in Low-tier Cities.....	28
Part 4 Financials and Valuation	29
4.1 Abnormally high ARPS	29
4.2 Gradual Slide in ARPS - a Hint of Fake IPO Disclosures.....	31
4.3 Real Revenue from Central China Stores 1/3 Below Reported.....	33
4.4 Real Profit 52.2% Below Projected	34
4.5 Valuation.....	35
Appendix I Revenue Breakdown and Operating Data by Region.....	36
Appendix II Delivery Orders, Never Used Machines and Hourly Sales Slips.....	38
II.1 Does Order No. on In-store Sales Slip Count Delivery Orders?.....	38
II.2 Infrequently Used and Never Used POS Machines	39
II.3 Returning Hourly for Sales Slips.....	40
Appendix III Real Sales Volume in Central China.....	41
Appendix IV List of Companies Challenged by Emerson Analytics.....	53

Zhou Hei Ya – the Dark Side of the Duck

List of Exhibits

Exhibit 1 – "The Central China ASPO do (<i>sic</i>) not have big difference from other areas"	7
Exhibit 2 – Central China ADSV about 174 for 1H18.....	8
Exhibit 3 – A typical sales slip in Hubei province and the relevant sales invoice	9
Exhibit 4 – A typical sales slip in other provinces	9
Exhibit 5 – Nine consecutive "Deal Canceled" sales slips	10
Exhibit 6 – "Deal Canceled" and subsequent real transaction sales slip.....	11
Exhibit 7 – Store No.330 hourly transaction numbers.....	12
Exhibit 8 – Sales slip volume 28.0% above true sales volume at 11 retail stores	12
Exhibit 9 – "Borrowing member ID" comparison.....	13
Exhibit 10 – Subsequent "Deal Canceled" sales slips	14
Exhibit 11 – No membership information on subsequent sales slip	15
Exhibit 12 – Partial list of sales slip volume	17
Exhibit 13 – From sales slip volume to true sales volume	18
Exhibit 14 – Distribution of Central China retail stores by daily volume	19
Exhibit 15 – Daily sales volume during a week at a certain retail store.....	21
Exhibit 16 – Hubei province's railway passenger throughput in 2017 (k)	22
Exhibit 17 – Distribution of sales volume by types of retail stores in Hubei province	24
Exhibit 18 – Partial list of transaction values at store No.378 (Rmb)	24
Exhibit 19 – ASPOs for different types of retail stores (Rmb)	25
Exhibit 20 – Hubei province overall ASPO (Rmb).....	25
Exhibit 21 – Central China revenue by province for 2017 (Rmb m)	26
Exhibit 22 – ASPO in other provinces 42% below Hubei province (Rmb).....	27
Exhibit 23 – ASPO in Central China 6.8% lower than national average (Rmb).....	27
Exhibit 24 – Distribution of retail stores by city tiers.....	28
Exhibit 25 – Franchised and self-operated stores: Juwei Food Vs Zhou Hei Ya.....	29
Exhibit 26 – Self-operated stores: Juwei Food Vs Zhou Hei Ya.....	30
Exhibit 27 – 2013-18 ARPS (Rmb k).....	31
Exhibit 28 – Half Year ARPS (1H15-1H18)	32
Exhibit 29 – Peer comparison: 1H18 Vs 1H17 (Rmb m).....	32
Exhibit 30 – Real revenue from Central China retail stores 1/3 below reported	33
Exhibit 31 – Real net profit 52.2% below projected	34
Exhibit 32 – Valuation - downside of 33.5%	35
Exhibit 33 – Revenue breakdown 2013-1H18	36
Exhibit 34 – Operating data (2013-1H18) by region	37
Exhibit 35 – Two different types of delivery sales slips	38
Exhibit 36 – Usage comparison between frequently-used and infrequently-used POS machines.....	39
Exhibit 37 – Hourly sales slips from store No.399	40

Zhou Hei Ya – the Dark Side of the Duck

Disclaimer

We are a group of seasoned equities analysts with many years of experience in the research of economic and political trends as well as individual stocks around the world. With background in various international investment banks, we have followed the development of the Chinese equities market right from day one.

We are determined to expose as much of the fraud in the Chinese stock market as we can. The most widespread and serious fraud is probably that undertaken by listed companies, in fabricating non-existent businesses and stealing shareholders money, among other tricks.

In exposing these crimes we challenge the listed companies to prove the integrity of their announcements and financial statements. The listed companies, of course, want everybody to believe that their announcements and financial statements are true. Their auditors, employees, independent directors, lawyers, shareholders and even the general public all hope that these announcements and financial statements are true.

We have made our best effort to ascertain that everything we say in this report is accurate. We have obtained our information from public sources that we believe to be accurate and reliable, or from sources whom we believe are not insiders or connected parties to the companies mentioned herein. However, we are certainly NOT in the business of making investment recommendations. This is not an investment report and should not be regarded as such. Read and use our reports at your own risk. Most important of all, DO YOUR OWN RESEARCH BEFORE YOU COMMIT OTHER PEOPLE'S MONEY.

We and/or our associates/partners may have long or short positions in the equities and/or their derivatives at the time of publication of our reports, and we and/or our associates/partners may maintain or change our positions at any time.

Zhou Hei Ya – the Dark Side of the Duck

Part 1 Hunan and Jiangxi Stores Inflate Volume through "Deal Canceled"

Zhou Hei Ya International Holdings Company Limited (Zhou Hei Ya), which mainly produces and retails braised duck and duck parts, was listed in Hong Kong in November 2016.

It has continued to grow its revenue rapidly since listing, achieving compound annual growth rate of 28% over the 2013-17 period. Its profit of Rmb762m in 2017 was about three times that in 2013.

For the first half of 2018, Zhou Hei Ya reported a 1.3% YoY revenue decline with net profit falling 17.3%. Although the management of Zhou Hei Ya declared at the interim results briefing that its business would improve in the second half of 2018¹, the company warned the market on January 30, 2019 that full year 2018 profit would drop by 30% YoY.

But even the significantly weaker projected number for 2018 fails to accurately represent Zhou Hei Ya's actual performance. Investigations by Emerson Analytics show that the company's actual profit for 2018 was 52.2% probably below its projected number.

The situation at Zhou Hei Ya is reminiscent of Shenguan Holdings (Group) Limited (0829.HK), whose financial statement was challenged in 2014. Both are engaged in relatively simple and clear-cut businesses, and carry little interest-bearing debts on the books.

Prior to our challenge, Shenguan reported net profit of as much as Rmb771m in 2013. By 2017, it was left with a mere Rmb56m net profit, a massive 93% collapse. The stock tumbled 84% from HK\$2.80 on September 2, 2014 to HK\$0.45 on March 1, 2019. Is Zhou Hei Ya another Shenguan?

1.1 Implied ADSV for Stores in Central China was 174 in 1H2018

The basic information of Zhou Hei Ya is as follows and the data are for 1H18. Please see [Appendix I: Revenue Breakdown and Operating Data by Region](#) for more historical data.

- The company has always relied on its self-operated retail stores to distribute its products. This division accounted for 86.3% of the company's total revenue;
- Revenue achieved at retail stores includes those from online ordering and delivery services (hereinafter simply delivery services), which contributed 9.9% of retail stores revenue;
- Central China accounted for 43.5% of all retail stores and contributed 62.8% of retail stores revenue. Central China covers Hubei, where the company's headquarters are located, Hunan, Henan, Jiangxi and Anhui provinces;
- Central China's average revenue per store (ARPS) was about Rmb1,787k, 88.4% higher than that of Northern China, second highest of all regions. The ARPS is derived by dividing the revenue for the period by the simple average of the number of stores at the beginning and end of the period.

¹ <https://www.zhitongcaijing.com/content/detail/149020.html>

Zhou Hei Ya – the Dark Side of the Duck

Our investigations and this report are therefore focused on the reality of retail stores in Central China.

ARPS is driven by two factors, average spending per order (ASPO) and average daily sales volume (ADSV), calculated as follows to eliminate the value-added tax (VAT) that is excluded from the income statement:

$$\text{ARPS} = \text{ASPO} / (1 + \text{VAT rate}) \times \text{ADSV} \times \text{number of days in period}$$

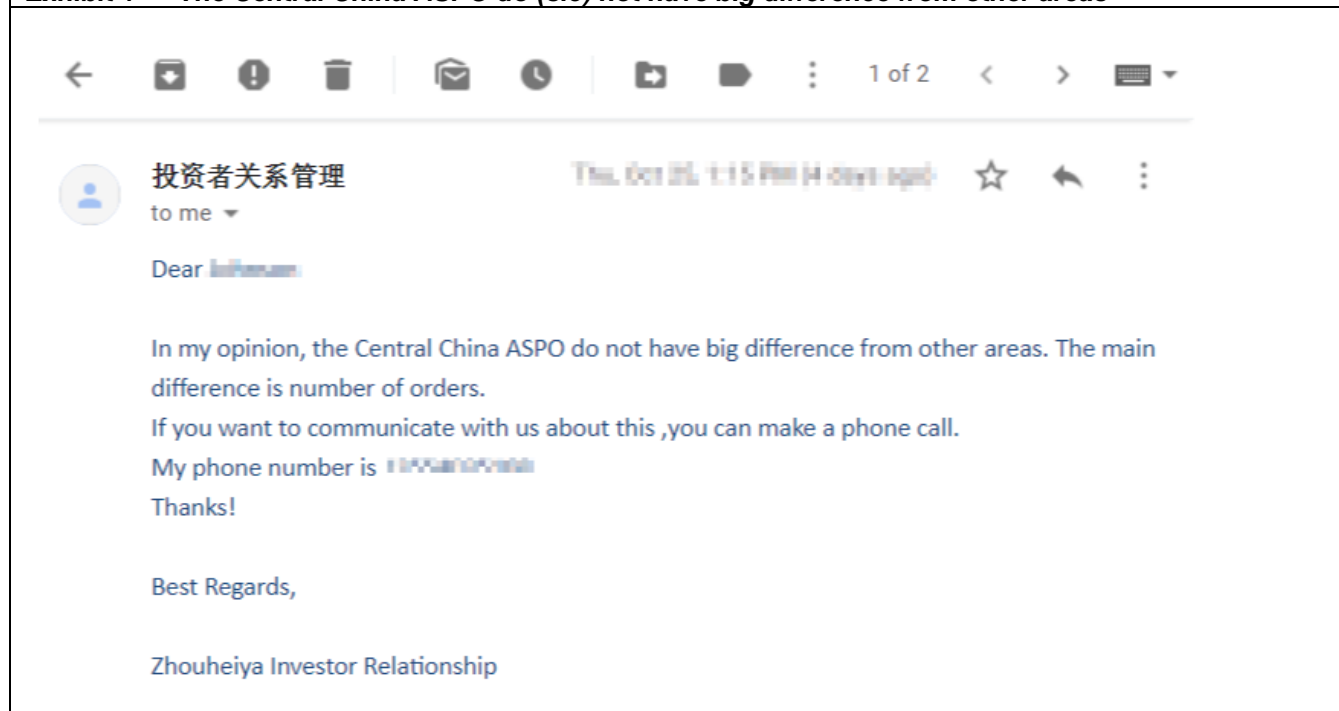
(1) From May 1, 2018, the VAT rate in China was reduced from 17% to 16%². The effective VAT rate for 1H18 was therefore 16.7% (= 17% x 4 / 6 + 16% x 2 / 6).

(2) Zhou Hei Ya reported ASPO of Rmb65.8 for 1H18³. This implies ASPO excluding VAT of Rmb56.4 (= 65.8 / (1 + 16.7%)).

What about Central China's ASPO? We asked Zhou Hei Ya's investors relations department via email IR@zhouheiya.cn, and the company's reply is shown in Exhibit 1: "The Central China ASPO do (*sic*) not have big difference from other areas".

We can therefore assume that the Central China ASPO is about the same as the national average claimed. We will further discuss this issue in Part 3: True ASPO in Central China 6.8% Below National Average Claimed.

Exhibit 1 – "The Central China ASPO do (*sic*) not have big difference from other areas"



Source: Zhou Hei Ya

² <http://www.chinatax.gov.cn/n810341/n810755/c3377945/content.html>

³ <https://www.zhouheiya.cn/ir/wcs/Upload/201808/5b87a52d798ea.pdf>, p.5

Zhou Hei Ya – the Dark Side of the Duck

(3) By turning the above formula around, we can calculate the ADSV of Central China stores, as shown in Exhibit 2 below.

Central China achieved ADSV of 174 in 1H18, 33.2% below that for 2015.

Year end Dec 31	2014	2015	2016	2017	1H18
ARPS (Rmb k)	4,146	4,561	4,537	4,167	1,787
/ (ASPO / (1 + VAT rate)) (Rmb)	44.2	48.1	50.6	51.7	56.4
/ 365 (or (365 / 2))	365	365	365	365	(365 / 2)
ADSV Calculated	257	260	245	221	174

Sources: Zhou Hei Ya, Emerson Analytics

1.2 Order No. on Last Sales Slip Reveals Sales Volume

We present in Exhibit 3 below a typical sales slip issued by retail stores in Hubei province. The upper part of the slip contains the usual sales information, while the lower part shows two QR codes. The first QR code allows one to obtain a formal sales invoice (in electronic format) from the tax authorities. It can then be emailed and printed. We obtained about 2,230 sales slips during our investigations into all Zhou Hei Ya retail stores across Central China. The second QR code is for customer appraisal of the transaction in question.

As seen from Exhibit 3, the serial number of a sales slip in Hubei province is made up of Year-Month-Day + POS (point-of-sales) machine No. + Order No. The serial number of a sales slip issued by other provinces is made up of POS machine No. + Year-Month-Day-Hour-Minute + Order No. (please see Exhibit 4 below).

Zhou Hei Ya – the Dark Side of the Duck

Exhibit 3 – A typical sales slip in Hubei province and the relevant sales invoice

Zhou Hei Ya (Sales Slip)
周黑鸭 (销售单)

流水号: 2018-010128 收银员: [redacted]

Serial Number: Y-M-D Pos No. Order No.

品名	单价	数量	优惠	金额
卤风爪【颗粒150g】	25	1	0	25
小计		1	0	25
应收: 25			优惠: 0	
实收: 25			支付: 25	
找零: 0				

现金: 25

服务电话: 400 1717 917
www.zhouheiya.cn

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请用微信扫描二维码, 进行评价抽取优惠券



湖北增值税电子普通发票

发票代码: [redacted] 发票号码: [redacted]
开票日期: 2018年[redacted]月[redacted]日 校验码: [redacted]

机器编号: [redacted]

名称	规格型号	单位	数量	单价	金额	税率	税额
货物或应税劳务、服务名称 "热肉制品"卤风爪【颗粒150g】		磅	1	21.55	21.55	16%	3.45
合计							
价税合计(大写)						¥21.55	¥3.45
(小写)¥25.00							

纳税人名称: 湖北世纪联泰商贸有限公司
纳税人识别号: 91420102669539796R
地址、电话: 武汉市江岸区胜利街128-134号新源大厦307室027-51900305
开户行及账号: 工商银行湖北支行3202003019771482153

收款人: 胡圆 复核: 汪卓银 开票人: 曾世花 销售方: [redacted]

发票专用章

Source: Emerson Analytics

Exhibit 4 – A typical sales slip in other provinces

Zhou Hei Ya (Sales Slip)
周黑鸭 (销售单)

单号: 0011800000061

Serial Number: (Pos No.) Y-M-D-H-M Order No. [redacted]

收银员: [redacted]

品名	单价	数量	金额
周小伴 (打气)	4.0	1.0	4.0
卤鸭脖【小盒】	19.0	1.0	19.0
应收合计: 23.0			
实收合计: 25.00			
实收现金: 25.00			
找零: 2.00			

服务热线: 400-1717-917
www.zhouheiya.cn
请用微信扫码开发票, 有效期一个月

Source: Emerson Analytics

Zhou Hei Ya – the Dark Side of the Duck

Whatever the differences, the Order No. printed on the last sales slip should reveal the day's true sales volume, subject to two adjustments:

- Order No. on in-store sales slips in Hubei province does not count delivery orders, contrary to the practice in other provinces. For a detailed explanation of this issue, please see [Appendix II.1: Does Order No. on In-store Sales Slip Count Delivery Orders?](#)
- Retail stores in Hunan and Jiangxi provinces exaggerate business volume by 28.0% through "Deal Canceled" operation. Details are in sections 1.3 to 1.5 below.

1.3 Large Numbers of "Deal Canceled" Sales Slips

During our retail store survey, we noticed that there were large numbers of sales slips marked with "Deal Canceled" in Hunan and Jiangxi provinces.

Shopkeepers in these two provinces often operated their POS machines when there was no customer around, printing out a large number of "Deal Canceled" sales slips with sequential order numbers (Click [here](#) for a video clip of a shopkeeper in action).

A certain retail store in Hunan province recorded more than 250 "Deal Canceled" sales slips on the day we visited the shop. In Exhibit 5 below, we present nine consecutive "Deal Canceled" sales slips, numbered from 0107 to 0115, that were generated within two minutes.

Exhibit 5 – Nine consecutive "Deal Canceled" sales slips

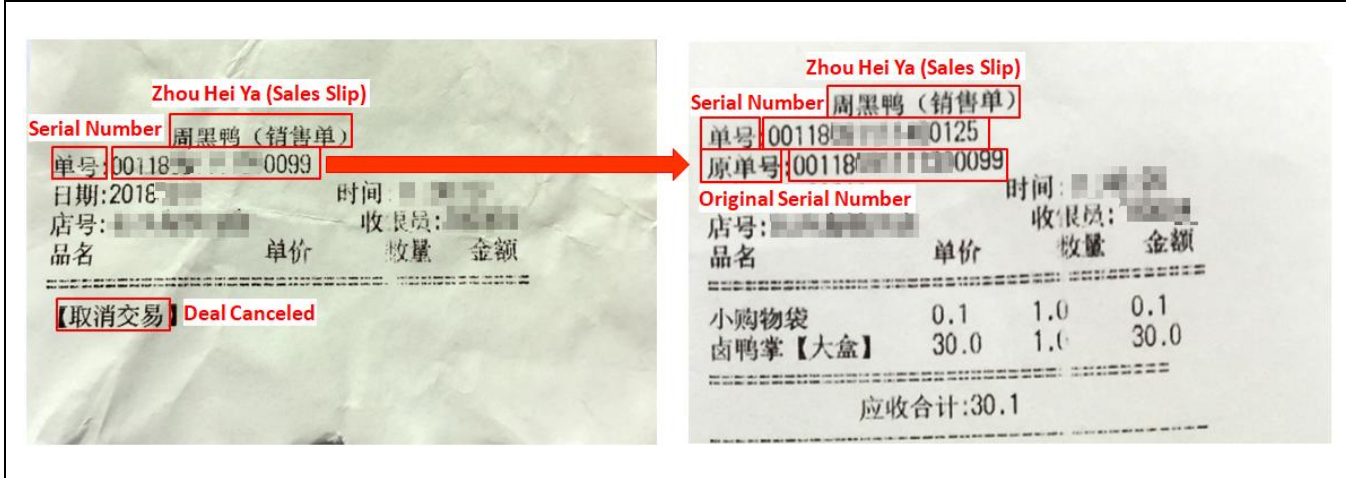
<p>周黑鸭 (销售单)</p> <p>单号:00118 [010] 日期:2018 时间:32: 店号: 收银员: 品名 单价 数量 金额</p> <p>【取消交易】</p>	<p>周黑鸭 (销售单)</p> <p>单号:00118 [0108] 日期:2018 时间:33: 店号: 收银员: 品名 单价 数量 金额</p> <p>【取消交易】</p>	<p>周黑鸭 (销售单)</p> <p>单号:00118 [0109] 日期:2018 时间:33: 店号: 收银员: 品名 单价 数量 金额</p> <p>【取消交易】</p>
<p>周黑鸭 (销售单)</p> <p>单号:00118 [0110] 日期:2018 时间:33: 店号: 收银员: 品名 单价 数量 金额</p> <p>【取消交易】</p>	<p>Serial Number 周黑鸭 (销售单)</p> <p>单号:00118 [0111] 日期:2018 时间:33: 店号: 收银员: 品名 单价 数量 金额</p> <p>【取消交易】 Deal Canceled</p>	<p>周黑鸭 (销售单)</p> <p>单号:00118 [0112] 日期:2018 时间:33: 店号: 收银员: 品名 单价 数量 金额</p> <p>【取消交易】</p>
<p>周黑鸭 (销售单)</p> <p>单号:00118 [0113] 日期:2018 时间:34: 店号: 收银员: 品名 单价 数量 金额</p> <p>【取消交易】</p>	<p>周黑鸭 (销售单)</p> <p>单号:00118 [0114] 日期:2018 时间:34: 店号: 收银员: 品名 单价 数量 金额</p> <p>【取消交易】</p>	<p>周黑鸭 (销售单)</p> <p>单号:00118 [0115] 日期:2018 时间:34: 店号: 收银员: 品名 单价 数量 金额</p> <p>【取消交易】</p>

Source: Emerson Analytics

Zhou Hei Ya – the Dark Side of the Duck

Our tracking of the "Serial Number" of a "Deal Canceled" sales slip often revealed that it would subsequently show up and be identified as an "Original Serial Number" in a real transaction sales slip. As seen from Exhibit 6 below, the "Original Serial Number" is smaller than the "Serial Number".

Exhibit 6 – "Deal Canceled" and subsequent real transaction sales slip



Source: Emerson Analytics

Clearly, "Deal Canceled" operation allows the company to inflate its sales volume substantially. Our investigations show that sales slips with "Original Serial Number" are often seen in Hunan and Jiangxi provinces, occasionally in Henan and Anhui provinces, and not at all in Hubei province.

1.4 Sales Slip Volume 28.0% Above True Sales Volume

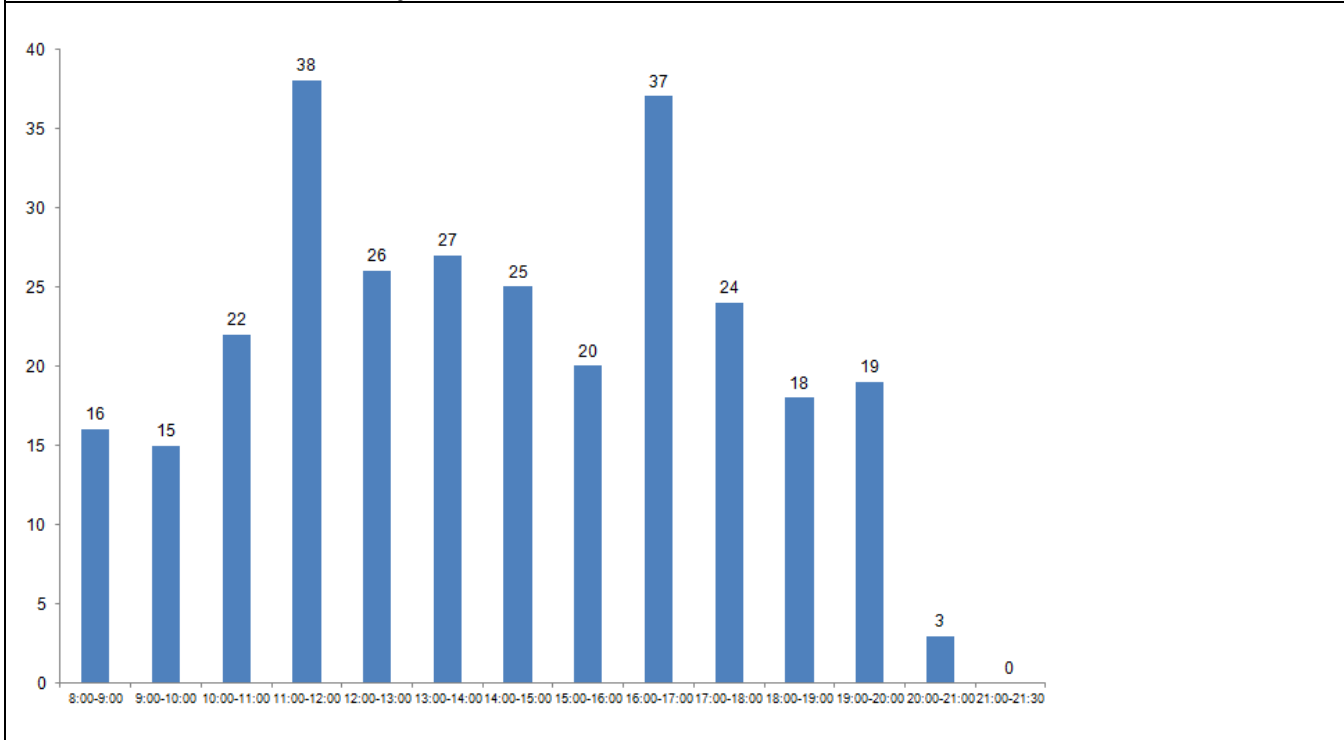
So, by how much does Zhou Hei Ya exaggerate its sales volume through "Deal Canceled" operation? We can find out by comparing the real number of transactions with the sales slip volume. The real number of transactions was obtained through our real-time monitoring of a retail store's activities.

In Exhibit 7 below, we present the hourly transaction numbers at store No.330. This shop is located at a railway station in Nanchang, capital of Jiangxi province. Our monitoring began in the morning, shortly after the shop opened, through 21:30, when it closed down. There were a total of 290 transactions on the day of our monitoring. It can be seen from the chart that business volume was the lowest during 20:00-21:30, while 08:00-09:00 and 09:00-10:00 also saw few transactions. Business peaked during 11:00-12:00 and then 16:00-17:00, when there were nearly 40 sales an hour.

On the other hand, the last sales slip that day carries an Order No. of 444, a volume 53.1% higher than the number of transactions that we monitored.

Zhou Hei Ya – the Dark Side of the Duck

Exhibit 7 – Store No.330 hourly transaction numbers



Source: Emerson Analytics

In the two provinces of Hunan and Jiangxi, we conducted real-time monitoring on 11 retail stores with relatively large business volumes. Among them, store No.466 was the most outrageous. Its two POS machines registered total order numbers of 349 towards the close of business, when we only counted 179 transactions, for an exaggeration of 95.0%!

Exhibit 8 – Sales slip volume 28.0% above true sales volume at 11 retail stores

Store No.	District	Sales slip volume	True sales volume by field survey	Exaggeration
56	Changsha, Hunan province	269	244	10.2%
76	Changsha, Hunan province	452	384	17.7%
125	Changsha, Hunan province	526	465	13.1%
155	Changsha, Hunan province	825	640	28.9%
237	Changsha, Hunan province	215	210	2.4%
294	Changsha, Hunan province	165	153	7.8%
330	Nanchang, Jiangxi province	444	290	53.1%
442	Changsha, Hunan province	726	470	54.5%
466	Changsha, Hunan province	349	179	95.0%
477	Nanchang, Jiangxi province	590	515	14.6%
516	Changsha, Hunan province	708	568	24.6%
Total		5,269	4,118	28.0%

Source: Emerson Analytics

Zhou Hei Ya – the Dark Side of the Duck

These 11 retail stores reported a total of 5,269 orders during the days of our monitoring, when we counted only 4,118 transactions. Aggregate sales volume was exaggerated by 28.0%.

The practice of exaggerating business volume by "Deal Canceled" operation means that the real volume in Hunan and Jiangxi provinces is considerably lower than the sales slip volume. Applying the 28.0% ratio to retail stores in these two provinces, we can arrive at their respective true sales volume.

1.5 "Deal Canceled" Not for "Borrowing Member ID"

It is inconceivable that the management of Zhou Hei Ya can be completely ignorant of such prevalent "Deal Canceled" phenomena.

Some shopkeepers told our investigators that they initiated "Deal Canceled" operation for the purpose of "borrowing member ID". When a non-member customer came to make a purchase, they would sometimes record the purchase as being made by a member. This way, the member would accrue points for use in the future.

It is easy to imagine a few shopkeepers playing such tricks for the benefit of some friends or relatives who are members. But it is difficult to understand why a large scale "borrowing member ID" is necessary and who these "members" might be. How does the company implement "precision marketing strategies analysis and improve repeat purchase"⁴ based on such "members" data?

(1) The "Deal Canceled" practice is completely unnecessary

During our survey of retail stores in Hubei province, we observed a different kind of "borrowing member ID". Exhibit 9 below shows a comparison of "borrowing member ID".

Exhibit 9 – "Borrowing member ID" comparison		
	Hunan & Jiangxi provinces	Hubei province
Procedures	<ul style="list-style-type: none"> • Stores a large number of member information in POS machines in advance • Recalls the information stored earlier when an actual transaction takes place 	<ul style="list-style-type: none"> • Inputs the information of a certain member for the non-member customer just before charging
Frequency	<ul style="list-style-type: none"> • Takes place frequently, in large numbers 	<ul style="list-style-type: none"> • Rarely occurs, in small quantity
Outcome	<ul style="list-style-type: none"> • Produces "Deal Canceled" sales slips • Creates "Original Serial Number" line • Increases "Order No." on sales slips 	<ul style="list-style-type: none"> • No "Deal Canceled" sales slip • No "Original Serial Number" line • Does not increase "Order No."

Source: Emerson Analytics

⁴ <https://www.zhouheiya.cn/ir/wcs/Upload/201808/5b87a52d798ea.pdf>, p.19

Zhou Hei Ya – the Dark Side of the Duck

Clearly, if it is really a simple case of "borrowing member ID", the shopkeeper only needs to input the information of a certain member just before charging the current transaction initiated by a non-member. There is no need to execute any "Deal Canceled" operation.

(2) Subsequent "Deal Canceled" sales slips

A "Deal Canceled" sales slip and a subsequent one for a real transaction have been shown in Exhibit 6 above. To our surprise, sometimes a subsequent sales slip was another "Deal Canceled" slip. Occasionally, there were more than one subsequent "Deal Canceled" sales slips (red dotted box in Exhibit 10) until a real transaction took place. A certain retail store in Hunan province had 50 such occurrences on the day of our survey. We cannot imagine any need to do this except to inflate the sales volume.

Exhibit 10 – Subsequent "Deal Canceled" sales slips

周黑鸭 (销售单)

单号: 00118
日期: 2018
店号:
品名 单价 数量 金额

【取消交易】

周黑鸭 (销售单)

单号: Serial Number
原单号: Original Serial Number
日期: 2018
店号:
品名 单价 数量 金额

【取消交易 Deal Canceled】

周黑鸭 (销售单)

单号: 00118
原单号: 00118
日期: 2018
店号:
品名 单价 数量 金额

【取消交易】

周黑鸭 (销售单)

单号: 00118
原单号: 00118
日期: 2018
店号:
品名 单价 数量 金额

品名	单价	数量	金额
小购物袋	0.1	1.0	0.1
卤鸭脖【大盒】	36.0	1.0	36.0
卤鸭舌【小盒】	26.0	1.0	26.0

应收合计: 62.1

折扣: 0.1

实收合计: 62.00

会员号: Member ID
累积积分: Member Points

Source: Emerson Analytics

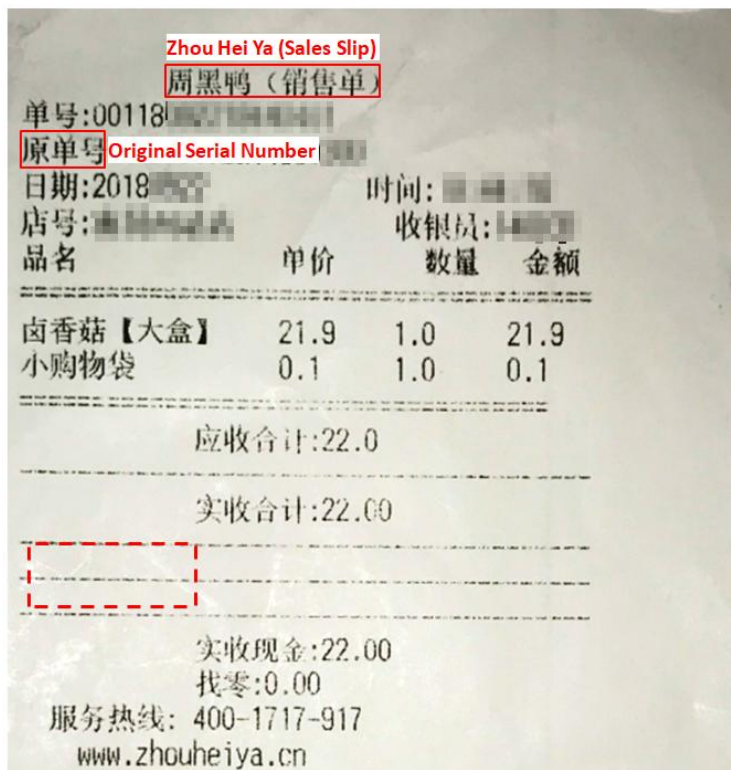
Zhou Hei Ya – the Dark Side of the Duck

(3) Subsequent sales slips without membership information

If the "Deal Canceled" operation was done to enable "borrowing member ID", the subsequent true transaction sales slip should carry the relevant membership information such as member ID and member points (please see Exhibit 10 above).

But there are some subsequent sales slips without any membership information. As can be seen from Exhibit 11 below, the red dotted box, where there should be membership information, is blank.

Exhibit 11 – No membership information on subsequent sales slip



Source: Emerson Analytics

The above analysis clearly shows that the purpose of "Deal Canceled" operation is absolutely not "borrowing member ID". There is simply no reason for doing this, except to inflate sales volume registered by the POS machine.

Zhou Hei Ya might say that although the "Deal Canceled" operation would inflate slip volume, the company had always disclosed the true figures. However, if the company had always disclosed the true data rather than the inflated numbers, there would have been no need to conduct any "Deal Canceled" operation.

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Part 2 Central China Volume Exaggerated by 38.7%

In Part 1 above, we demonstrate that retail stores in Hunan and Jiangxi provinces inflated their aggregate sales volume through "Deal Canceled" operation.

In this part, we will show that, based on the sales slips of all Central China retail stores, its ADSV that implied by the company's disclosures was inflated by 38.7%.

Our investigations also show that numerous retail stores perform poorly, with 57% of them achieving less than half of the implied ADSV.

2.1 How to Obtain Sales Slips Within One Hour of Closing Time?

As we have explained earlier at the end of section 1.2, the Order No. on the last sales slip in a day reflects the true sales volume registered on that day except for two adjustments. In reality, it is very difficult to obtain the very last sales slip of the day. We therefore tried our best to obtain sales slips within the last hour of business.

Zhou Hei Ya's webpage <http://www.zhouheiya.cn/index.php/index-show-tid-5.html?id=0-7-0-8> discloses reasonably up-to-date information of the company's self-operated retail stores. There were 532 of them on August 31, 2018.

From July to September 2018, our investigators physically visited all Zhou Hei Ya retail stores in Central China, and found that 12 had ceased to exist while four had been converted to vending machines outlets. We also found eight new shops not disclosed on the company's webpage. The final tally of 524 turned out to be slightly different from the 520 outlets as at June 30, 2018.

Of these 524 retail stores, 318 were in Hubei province while the rest were in other Central China provinces. They had a total of 662 POS machines.

- During the days of our survey, we identified 45 POS machines that were never used at all on the day. Please see details in Appendix II.2: Infrequently Used and Never Used POS Machines.
- Out of the other 617 POS machines, 573 of them generated sales slips within one hour of closing. We were not able to obtain last-hour sales slips from the remaining 44 POS machines. Thirty-one of these 44 POS machines at 22 railway and airport stores terminated operation in advance after the peak business hours. The remaining 13 POS machines at 13 retail stores were hardly ever used.
- For the 44 POS machines without last-hour sales slips, we began to obtain sales slips during the peak hour and then returned every hour to obtain further sales slips. The last sales slip of the relevant POS machine was thus within one hour of the machine's cease of operation, though not within the closing time of the store. A detailed discussion can be found in Appendix II.3: Returning Hourly for Sales Slips.

Zhou Hei Ya – the Dark Side of the Duck

Obviously, if a store has only one POS machine, the Order No. of the last sales slip of that machine is the sales volume for the store. If there are two or more POS machines in a store, the Order No. of the last sales slip of each machine will be added together to get to the sales volume for the store.

Exhibit 12 below presents a summary of retail stores that we surveyed. Store No.1 is a retail store with two POS machines located in Wuhan, capital of Hubei province. It closes at 21:30, and our investigators obtained two separate sales slips on a Wednesday from both machines at about 21:00. Their order numbers are 70 and 14, respectively, implying a total volume of 84 for the day.

Exhibit 12 – Partial list of sales slip volume

Store No.	District	Closing time	Day of the week	Sales slip volume
1	Wuhan, Hubei province	21:30	Wed	84
2	Nanchang, Jiangxi province	22:00	Tue	71
3	Luoyang, Henan province	24:00	Wed	54
4	Hefei, Anhui province	22:00	Tue	113
5	Wuhan, Hubei province	21:00	Thur	52
.....				
.....				
520	Wuhan, Hubei province	21:00	Mon	49
521	Wuhan, Hubei province	22:00	Fri	38
522	Jingzhou, Hubei province	21:30	Sun	78
523	Nanchang, Jiangxi province	22:00	Tue	45
524	Wuhan, Hubei province	22:00	Thur	114
Total				63,800

Source: Emerson Analytics

To ensure the personal safety of our investigators, the list only shows the district of a retail store's location but not the shop name. The exact time and date of the sales slip have also been masked, showing only the day of the week. The listing is done in no particular order.

We are sharing the full details of our survey, including the exact location of the retail stores, the exact dates and times of the sales slips, etc., with the Securities and Futures Commission of Hong Kong (SFC).

2.2 Implied Number 38.7% Above Real Volume in Central China

Exhibit 13 below presents the sales slip volume and the adjusted true sales volume in the five Central China provinces. To account for the impact of delivery orders, the sales slip volume of Hubei province is divided by (1 – 9.9%) to arrive at the true sales volume. To adjust for volume inflation in Hunan and

Zhou Hei Ya – the Dark Side of the Duck

Jiangxi provinces, we divide the sales volume of all retail stores there except for those 11 subject to real-time monitoring by (1 + 28.0%). To give the company the benefits of the doubt, we don't adjust sales volume shown on the sales slips in Henan and Anhui provinces.

	Sales slip volume	True sales volume	Method
Hubei province	42,962	47,683	Sales slip volume / (1 - 9.9%)
Hunan province	7,564	5,915	
Monitored stores	4,235	3,313	Field survey data
Non-monitored stores	3,329	2,602	Sales slip volume / (1 + 28.0%)
Henan province	4,708	4,708	Sales slip volume
Jiangxi province	5,925	4,628	
Monitored stores	1,034	805	Field survey data
Non-monitored stores	4,891	3,823	Sales slip volume / (1 + 28.0%)
Anhui province	2,641	2,641	Sales slip volume
Total	63,800	65,574	

Source: Emerson Analytics

The true business volume during our survey period should be 65,574 transactions. The 174 ADSV for Central China implied by Zhou Hei Ya's disclosures was 38.7% more than true ADSV of 125 (= 65,574 / 524).

Detailed data are presented in [Appendix III: Real Sales Volume in Central China](#).

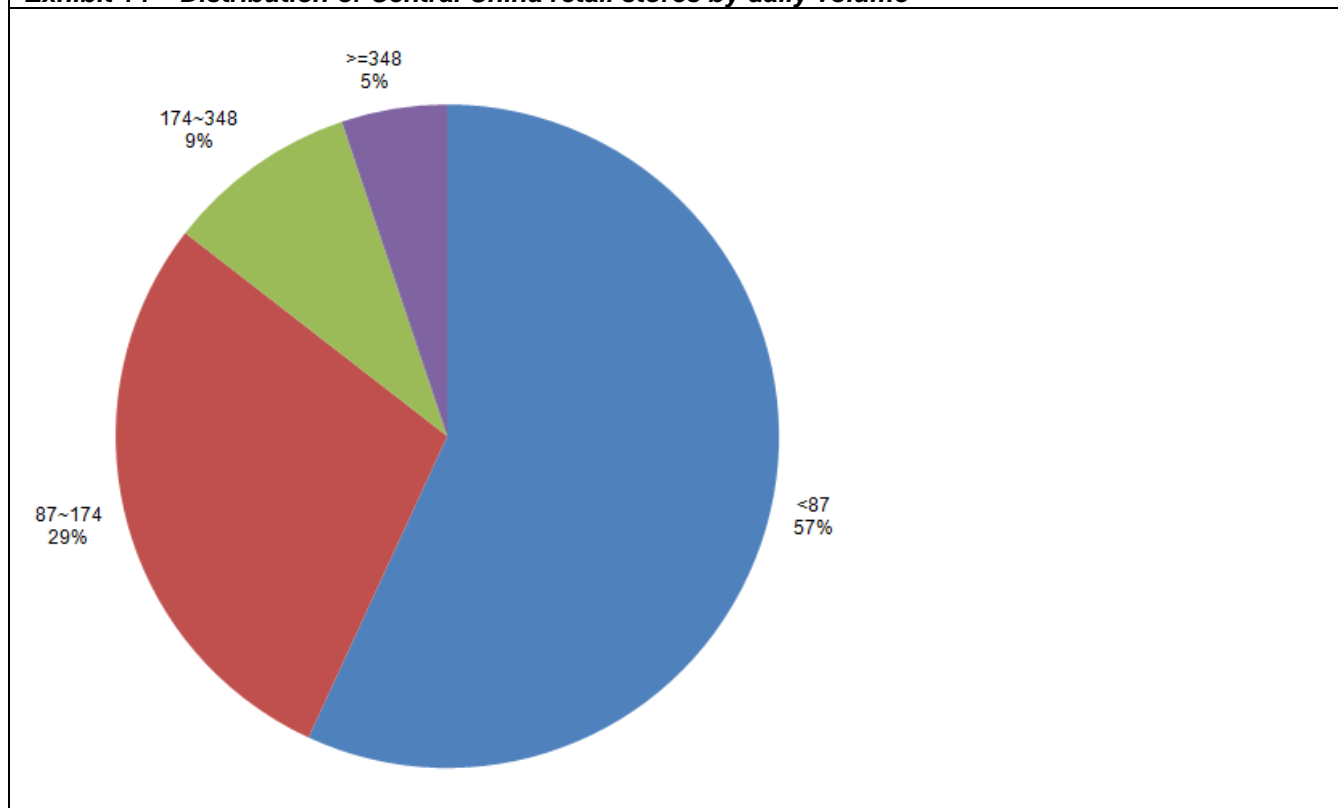
2.3 Majority of Shops Achieved Less Than Half of Implied ADSV

It can be seen from the detailed data that there is a huge difference in the business volume among retail stores. The retail store listed as No.299 had the highest number of daily orders at 2,605. It is located at a railway station in Wuhan and has seven POS machines. The retail store listed as No.95 recorded the lowest number of daily orders at merely eight. It is located in Changsha, capital of Hunan province, and has one POS machine.

The pie chart in Exhibit 14 below analyzes the volume performance of retail stores. We can see that only 14% of its retail stores achieved 174 transactions or more per day. For the remaining 86% of retail stores, most of them – a staggering 57% of all stores – managed less than half of the implied ADSV!

Zhou Hei Ya – the Dark Side of the Duck

Exhibit 14 – Distribution of Central China retail stores by daily volume



Source: Emerson Analytics

According to Zhou Hei Ya's 1H18 disclosures, the company's transport hub stores accounted for nearly 50% of its total revenue. Transport hub stores include railway stores, airport stores and subway station stores. However, from a volume point of view, subway station stores are nowhere comparable with railway and airport stores.

In Wuhan, for example, the railway and airport stores averaged 730 orders a day. But the subway station stores averaged merely 104 transactions a day. This is actually in line with all non-railway and non-airport stores. Accordingly, we analyze retail stores by "railway & airport stores" and "other stores".

Some investors focus their attention solely on "railway & airport stores", which achieve significantly higher volume. But if they had spent some time investigating into "other stores", they would notice that many "other stores" were doing very little business and would then be able to detect the forgery in volume.

2.4 Are Our Counts Sufficiently Representative?

Readers may pose a question with respect to this report: Are your counts sufficiently representative? More specifically, they may well ask:

Zhou Hei Ya – the Dark Side of the Duck

- Could your last-hour sales slips accurately reflect the real sales volume of the day?
- Was there a weekend factor that might affect the validity of your data? And
- Was your survey done at a time when sales volume might be adversely affected by seasonal factor?

(1) Deviation of sales slip timing to closing time has little impact

For the 573 POS machines that generated last-hour sales slips:

- We have taken stock of the timing of sales slips against the closing times of the relevant retail stores, and it shows that on average we obtained our sales slips at 44 minutes before closing;
- A Zhou Hei Ya retail store usually tallies its business for the day about half an hour before closing. During this time shopkeepers generally are reluctant to sell products as that interrupts their tallying;
- Thus, the effective business time left after we obtained our sales slips was only 14 minutes.

Most of Zhou Hei Ya retail stores open at 9:00 and close at 21:30. Excluding the last half hour of stock-taking time, the effective business hours tend to be 12 hours a day. Can the last 14 minutes really make a lot of difference?

Further, business volume slows significantly during the last hour. Take store No.330, for example (please see Exhibit 7 above). During 20:00-21:00 there were only three orders, substantially fewer than during the previous hour. From 21:00 onward there was no order at all. This means that the number of orders during the last 1.5 hours was only 1% of the day's volume.

For the other 44 POS machines that generated sales slips within the last hour of their cease of operation, the timing impact is similar to that for the above 573 POS machines.

We therefore believe this timing difference had little impact on the real sales volume.

(2) The weekend factor has little impact

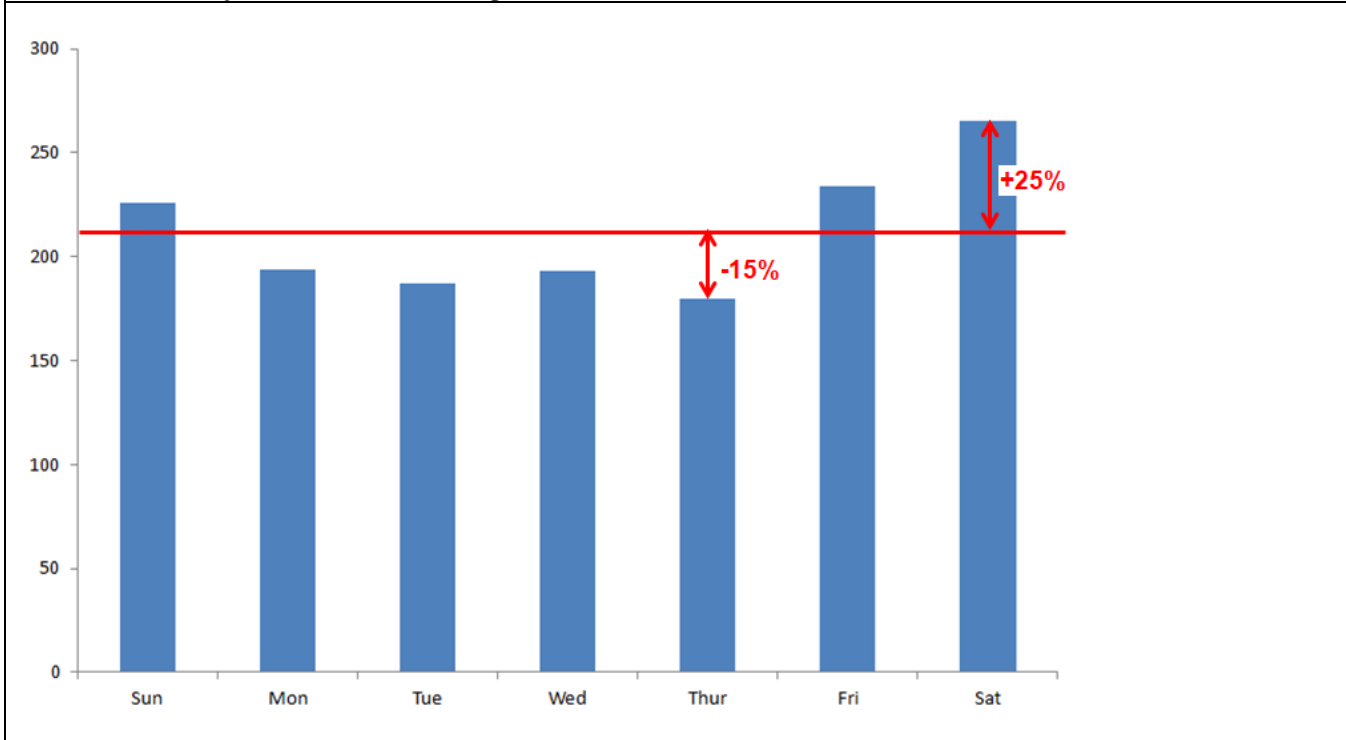
The sales volume of a retail store in any particular day is affected by many factors, many of which are unpredictable. The weather is an obvious factor: heavy rain or stormy conditions will obviously affect business adversely.

Exhibit 15 below shows the variation of sales volume during a whole week of our monitoring of a certain retail store. One can see higher volume during the weekend. On Saturday, the shop recorded the highest number of orders at 25% above the daily average for the week. Business was lowest on Thursday with the number of orders at 15% below the average. This is in line with our general perception.

Zhou Hei Ya – the Dark Side of the Duck

If our survey of retail stores had all been done on Thursdays, the result would have been 15% lower than the average. As it turned out, our survey straddled about three months. On the day of our survey, we chose our target retail stores at random, except for ease of access consideration.

Exhibit 15 – Daily sales volume during a week at a certain retail store



Source: Emerson Analytics

To estimate the degree of possible variance, we have attempted an adjustment based on the deviation of the day's volume to the daily average of the week. For example, if the number of orders was obtained on a Saturday, that number would be divided by (1 + 25%) to arrive at an estimated daily average. After adjusting all data similarly, we arrived at an estimated total volume of 66,406 orders, about 1.3% higher than the unadjusted sum.

We had monitored two other retail stores for a whole week and attempted adjustments based on their daily patterns. The adjusted volume was -0.2% and 0.8%, respectively.

We therefore believe that, given our rather large sample size, the day of the week has no appreciable impact on the validity of our survey.

(3) Sales volume we surveyed should be higher than those in other quarters

Although the company claimed that "our products are not seasonal"⁵, sales volume we surveyed should be higher than those in other quarters.

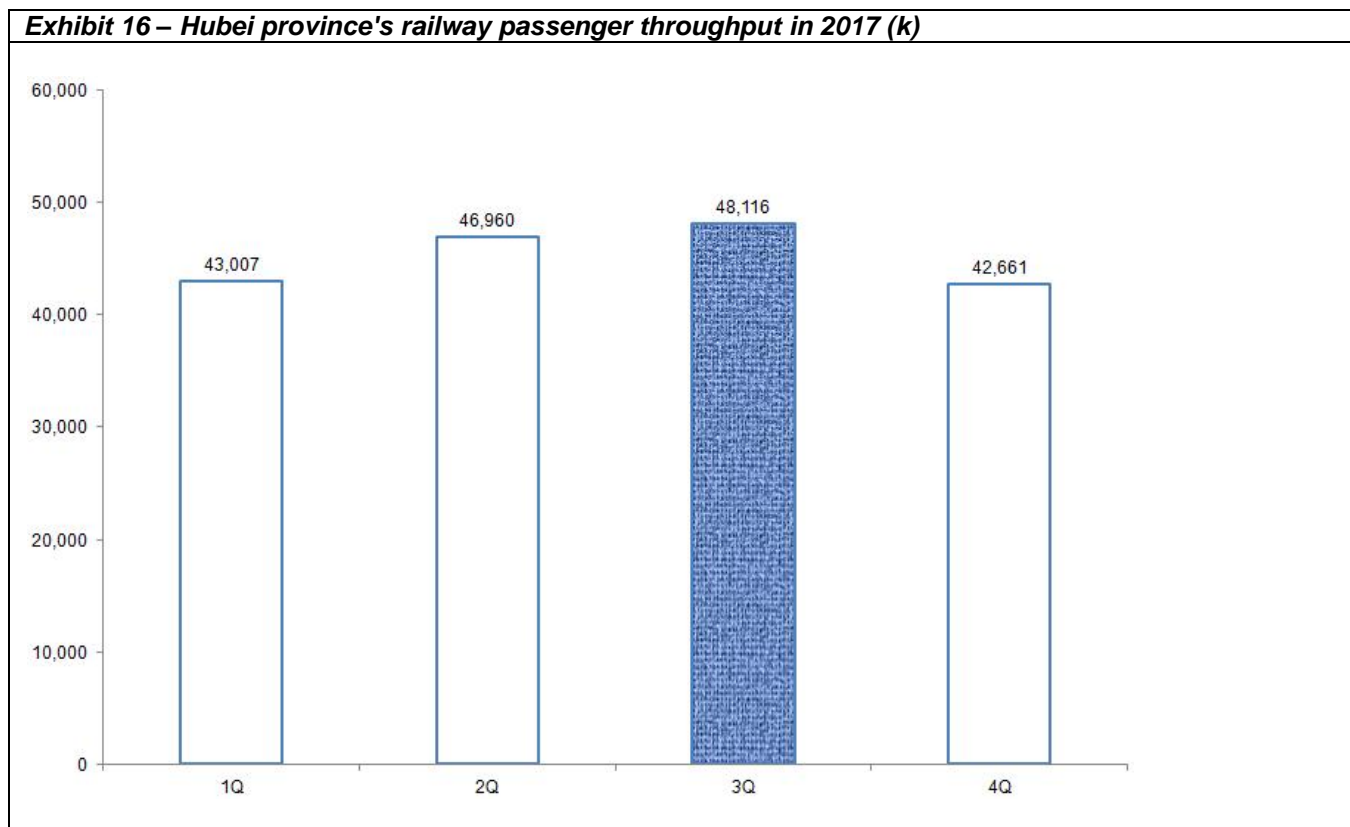
⁵ <http://www3.hkexnews.hk/listedco/listconews/SEHK/2016/1101/LTN20161101047.pdf>, p.127

Zhou Hei Ya – the Dark Side of the Duck

Our survey was done in the third quarter of 2018. Given that university retail stores (inside or near universities) registered lower volume during the summer holiday, we revisited these stores during October. We adopt the higher numbers obtained in October in our analysis.

Except these university stores, sales volume in the third quarter should be higher than those in other quarters because:

- Zhou Hei Ya's products are preserved by refrigeration. These products tend to sell better during the summer than in other seasons;
- According to our survey of real sales volume across all 524 Central China stores, the top 20 outlets were all railway stores and they accounted for 28% of total volume. As seen from Exhibit 16 below, the July to September period is the highest season for traveling. Our survey was done in 3Q18, the same peak season represented in the blue column below.



Source: Hubei Province Bureau of Statistics

Although volume in the third quarter should be seasonally high and better than the annual average, our surveyed volume of 125 ADSV is 27.9% less than the 174 implied by Zhou Hei Ya's disclosures.

All in all, our daily counts are sufficiently representative.

Zhou Hei Ya – the Dark Side of the Duck

Part 3 True ASPO in Central China 6.8% Below National Average Claimed

In the previous two sections, we analyze in great details the sales volume of Zhou Hei Ya retail stores in Central China. We conclude that implied sales volume for Central China of 174 in 1H18 was exaggerated by 38.7%.

Zhou Hei Ya has disclosed nationwide ASPO of Rmb65.8 for 1H18. For Central China's ASPO, the company's investors relations department told us that it does "not have big difference from other areas" (see Exhibit 1 above). But what is it, really?

Let us begin with Zhou Hei Ya's ASPO for Hubei province and then extrapolate the ASPOs in neighboring provinces to finally arrive at ASPO for Central China.

Our analysis shows that the true ASPO for Central China is about 6.8% below the national average reported by Zhou Hei Ya.

3.1 Hubei Province's ASPO Slightly Higher than the National Average

In Part 2, we demonstrate that we can estimate a retail store's sales volume for the day by obtaining sales slips towards the closing time. Similarly, we hoped to arrive at a particular retail store's ASPO for the day by monitoring the sales value of all transactions.

Compared with the attempt to obtain sales slips, monitoring the sale value of all (or nearly all) sales orders at each retail outlet is an impossible mission because we cannot afford to do so out of concern for the personal safety of our investigators. For most of the retail stores, our investigators cannot stand near a POS machine for a long time to monitor the sales value of each transaction.

A possible approach is to categorize the retail stores and select certain outlets that are easy to be monitored. This will provide us with some indications of the average order value and finally allow us to calculate the overall ASPO. While this may not be very accurate, we believe the result is a good enough guidance.

(1) Wuhan "railway & airport stores" account for 37% of Hubei province volume

In Part 2.3 above, we categorize retail stores according to their volume into "railway & airport stores" and "other stores". This distinction is also significant for ASPO. Compared with "other stores", "railway & airport stores" have higher proportion of tourists. Zhou Hei Ya's products, regarded as the "name card" of Wuhan, are often bought by tourists to be presented as gifts to their friends and relatives. People tend to buy more products as gifts than for their own consumption. Thus "railway & airport stores" should have higher ASPO than "other stores".

Zhou Hei Ya – the Dark Side of the Duck

Outside Wuhan, there are also a number of "railway & airport stores" in other cities, but the proportion of gift buying at such retail stores is significantly lower than that in Wuhan. We therefore do not make this distinction with respect to retail stores in other cities. Rather, we assume that all retail sales in other cities have the same ASPO as that for "other stores" in Wuhan.

The 318 retail stores in Hubei province achieve a daily sales volume of 47,683. Exhibit 17 below shows the distribution of business volume. The "railway & airport stores" in Wuhan account for 37% of the total.

Exhibit 17 – Distribution of sales volume by types of retail stores in Hubei province

	Sales volume	Percent
"Railway & airport stores" in Wuhan	17,517	37%
"Other stores" in Wuhan	19,291	40%
Stores in other cities	10,875	23%
Total	47,683	

Source: Emerson Analytics

(2) ASPOs for different types of retail stores

We picked two outlets from each category to monitor their sales value per order. Exhibit 18 below presents the value of orders at a railway store No.378 in August 2018. One of its POS machines generated 194 orders during a six-hour period that day, with an average sales value of Rmb99.9. The spending amounts are listed at random and rounded up to the nearest Rmb10.

Exhibit 18 – Partial list of transaction values at store No.378 (Rmb)

Count No.	Time	Spending
1	11:15	100.0
2	16:02	50.0
3	12:15	40.0
4	11:44	90.0
5	14:18	50.0
	
	
190	13:09	120.0
191	14:46	40.0
192	13:54	70.0
193	12:54	60.0
194	14:13	90.0
Average		99.9

Source: Emerson Analytics

Zhou Hei Ya – the Dark Side of the Duck

Exhibit 19 below shows our tally of sales values at the four retail stores. We monitored store No.378 and store No.314 twice, on different days about one-and-a-half months apart. Our monitoring shows that the "railway & airport stores" achieved weighted ASPO of Rmb104.5 while the "other stores" achieved only Rmb50.4, about half of that for "railway & airport stores".

Store type	Store No.	Date	Number of orders	ASPO	Weighted ASPO
"Railway & airport stores"	378	August x	194	99.9	104.5
	378	October x	161	97.3	
	509	August x	166	117.0	
"Other stores"	314	August x	62	48.5	50.4
	314	October x	53	56.5	
	75	October x	68	47.4	

Source: Emerson Analytics

(3) Hubei province's ASPO approximately Rmb70.3

Based on the above retail store classifications and their corresponding ASPOs, the overall ASPO for Hubei province would be about Rmb70.3, slightly higher than the national average of Rmb65.8 reported by Zhou Hei Ya.

	Sales volume	ASPO
"Railway & airport stores" in Wuhan	17,517	104.5
"Other stores" in Wuhan	19,291	50.4
Stores in other cities	10,875	50.4
Total/Overall	47,683	70.3

Source: Emerson Analytics

3.2 ASPO for Other Provinces in Central China about Rmb40.9

Zhou Hei Ya has created a food retailing subsidiary in each Central China province to handle the operations and management of its retail stores in the province. Retail stores in each province operate as a branch of the relevant provincial subsidiary. Thus all retail stores in Hunan province, for example, operate

Zhou Hei Ya – the Dark Side of the Duck

as branches of Hunan Quanfuyu Commerce & Trade Co., Ltd. (Hunan Quanfuyu, 湖南全富裕商貿有限公司).

Exhibit 21 below is a summary of the revenue reported by each of the five provincial subsidiaries, as reported in the Enterprise Credibility Information System (ECIS). In 2017, Hunan Quanfuyu reported revenue of Rmb140m, the second highest of the five. In aggregate, revenue for 2017 as reported by these five subsidiaries in ECIS was about 3.4% higher than the figure reported by Zhou Hei Ya for Central China. This may be because these subsidiaries included direct sales in their revenue figures.

Central China	Corporate name	Corporate name - Chinese	Revenue
Hubei province	Hubei Shiji Yuanjing Commerce & Trade Co., Ltd.	湖北世紀願景商貿有限公司	1,441
Hunan province	Hunan Quanfuyu Commerce & Trade Co., Ltd.	湖南全富裕商貿有限公司	140
Henan province	Henan Zhou Hei Ya Commerce & Trade Co., Ltd.	河南周黑鴨商貿有限公司	91
Jiangxi province	Jiangxi Yuanjing Commerce & Trade Co., Ltd.	江西願景商貿有限公司	90
Anhui province	Anhui Shiji Yuanjing Commerce & Trade Co., Ltd.	安徽世紀願景商貿有限公司	0
ECIS			1,761
Zhou Hei Ya's claim			1,704
ECIS data % higher than company's claim			3.4%

Sources: ECIS, Zhou Hei Ya

Zhou Hei Ya established the subsidiary in Anhui province on September 22, 2017. It achieved revenue of merely Rmb101k for the year. To allow for a meaningful comparison, we have excluded Anhui province from the calculation of provincial ASPOs.

From Exhibit 21, we can calculate that Hubei province accounted for 81.8% of Central China revenue ($= 1,441 / (1,441 + 140 + 91 + 90)$), leaving 18.2% for all other provinces in 2017. We assume an unchanged ratio for 2018.

From Exhibit 13 earlier, we can calculate that Hubei province accounted for 72.4% ($= 47,683 / (47,683 + 7,564 + 4,708 + 5,925)$) of Central China volume, leaving 27.6% to the rest. The volume amounts in Hunan and Jiangxi provinces are based on the sales slip volume rather than on true sales volume because the company's disclosures should be based on the former.

Zhou Hei Ya – the Dark Side of the Duck

Exhibit 22 below shows the revenue and volume split between Hubei province and three other Central China provinces (excluding Anhui province). With 27.6% of total volume, these three provinces contributed only 18.2% of total revenue, implying an ASPO 42% (= (18.2% / 27.6%) / (81.8% / 72.4%) - 1) below that of Hubei province. This in turn works out to Rmb40.9.

Exhibit 22 – ASPO in other provinces 42% below Hubei province (Rmb)	
Revenue split	
Hubei province	81.8%
Other provinces	18.2%
Volume split	
Hubei province	72.4%
Other provinces	27.6%
ASPO	
Other provinces % below Hubei province	-42%
Hubei province	70.3
Other provinces	40.9

Source: Emerson Analytics

3.3 ASPO in Central China 6.8% Lower than National Average Reported

The overall ASPO for Central China is calculated as follows in Exhibit 23, and turns out to be 6.8% lower than national average reported.

Exhibit 23 – ASPO in Central China 6.8% lower than national average (Rmb)		
	Sales Volume	ASPO
Hubei province	47,683	70.3
Other provinces	20,838	40.9
Total/Average	68,521	61.4
National average reported		65.8
Difference		-6.8%

Sources: Zhou Hei Ya, Emerson Analytics

Zhou Hei Ya – the Dark Side of the Duck

3.4 Central China ASPO Depressed by High Proportion of Stores in Low-tier Cities

Chinese cities are classified into six tiers based on such benchmarks as total GDP, per capita GDP, per capita income, concentration of business resources⁶. Higher ranking implies stronger consumption power and more business opportunities.

Even though Hubei province is the home market of Zhou Hei Ya, for Central China as a whole 27% of the retail stores are located in Tier 3-5 cities. This is in stark contrast to the situation in other regions, which have only 2% of their retail stores in Tier 3-5 cities, as shown in Exhibit 24 below. As a result, it is not surprising that Central China's ASPO is lower than the national average.

Exhibit 24 – Distribution of retail stores by city tiers

	Central China	Southern China	Eastern China	Northern China	Southwestern China	Subtotal of other regions
Tier 1	0	177	102	109	0	388
New Tier 1	308	18	126	39	75	258
Tier 2	75	18	11	31	0	60
Tier 3	78	5	4	2	0	11
Tier 4	45	0	0	0	0	0
Tier 5	18	0	0	0	0	0
Total*	524	218	243	181	75	717
Proportion in Tier 3-5 cities	27%					2%

Sources: Zhou Hei Ya, Emerson Analytics

* Based on data in the "STORE DISTRIBUTION" section of the company's website, slightly higher than that in the company's 1H18 report

⁶ <https://baike.baidu.com/item/中国城市新分级名单/12702007>

Zhou Hei Ya – the Dark Side of the Duck

Part 4 Financials and Valuation

Having analyzed Zhou Hei Ya's ADSV and ASPO in its Central China region, we will now move on to the abnormal financial situation and real profitability of the company as a whole.

Zhou Hei Ya has reported significantly higher ARPS than those of its peers in 2015. In 1H18, its competitors have generally achieved healthy revenue and net income growth, but the company has reported a significantly lower bottom line on stagnant top line.

Based on our surveyed ADSV and estimated ASPO, we can calculate that Zhou Hei Ya's real profitability was probably 52.2% below 2018 number projected.

4.1 Abnormally high ARPS

There are two other listed companies in Mainland China that mainly engage in the production and sale of braised duck and duck parts: Juewei Food Co., Ltd. (絕味食品股份有限公司, 603517.SH) and Jiangxi Huangshanghuang Group Food Co., Ltd. (江西煌上煌集團食品股份有限公司, 002695.SZ). Contrary to Zhou Hei Ya, Juewei Food and Jiangxi Huangshanghuang mainly rely on franchisees.

All three companies' operational and financial disclosures have deteriorated significantly since listing. Based on the IPO prospectuses of Juewei Food and Zhou Hei Ya, we can do a comprehensive analysis on their 2015 performance. Let's take a look at their ARPSs for all stores (franchised and self-operated) and for self-operated stores, respectively.

(1) All stores: Zhou Hei Ya ARPS averaged 5.6x that of Juewei Food on higher closure ratio

	Juewei Food	Zhou Hei Ya	Zhou Hei Ya /Juewei Food
Number of stores	7,172	641	
Store closure ratio	8.0%	10.5%	
Revenue (Rmb m)	4,572 ⁷	2,131	46.6%
Average number of stores	6,680	555	8.3%
ARPS (Rmb k)	684	3,844	5.6

Sources: Juewei Food, Zhou Hei Ya and Emerson Analytics

⁷ It is necessary to adjust the Rmb2,629m franchise revenue reported by Juewei Food to enable comparison with Zhou Hei Ya. According to our research, franchisees usually buy from Juewei Food at 60% of retail prices. This means the total retail revenue achieved by franchisees amounted to about Rmb4,382m. Combined with the revenue reported by its self-operated stores, the total retail revenue of Juewei Food was therefore Rmb4,572m.

Zhou Hei Ya – the Dark Side of the Duck

Sometimes retail outlets are closed down due to urban renewal, but a more likely reason is their poor profitability. Zhou Hei Ya reported a higher store closure ratio (number of stores closed in the year divided by number of stores at the beginning of the year) than did Juewei Food. This suggests that Zhou Hei Ya's retail stores are not particularly better than those of Juewei Food. It is therefore highly unusual that Zhou Hei Ya could achieve ARPS 5.6x that of Juewei Food.

(2) *Self-operated stores: Zhou Hei Ya ARPS averaged 3x that of Juewei Food despite lower "railway & airport stores" mix*

One may well argue that self-operated stores are likely to be more efficient than franchised stores. So, let's focus on their self-operated stores. At the end of 2015, Juewei Food had 128 self-operated retail stores, with 31 of them being "railway & airport stores". That's 24.2% of all self-operated stores.

	Juewei Food	Zhou Hei Ya	Zhou Hei Ya /Juewei Food
Number of stores	128	641	
Ratio of "railway & airport stores"	24.2%	8.1% ⁸	
Revenue (Rmb m)	190	2,131	11.2
Average number of stores	143	555	3.9
ARPS (Rmb k)	1,328	3,844	2.9

Sources: Juewei Food, Zhou Hei Ya and Emerson Analytics

The proportion of "railway & airport stores" for Zhou Hei Ya was about 8.1% as at October 23, 2016, the Latest Practicable Date. Assuming a similar proportion at the end of 2015, Zhou Hei Ya had a much lower proportion of "railway & airport stores" than Juewei Food. It is therefore strange that Zhou Hei Ya's ARPS was 2.9x that of Juewei Food's self-operated stores.

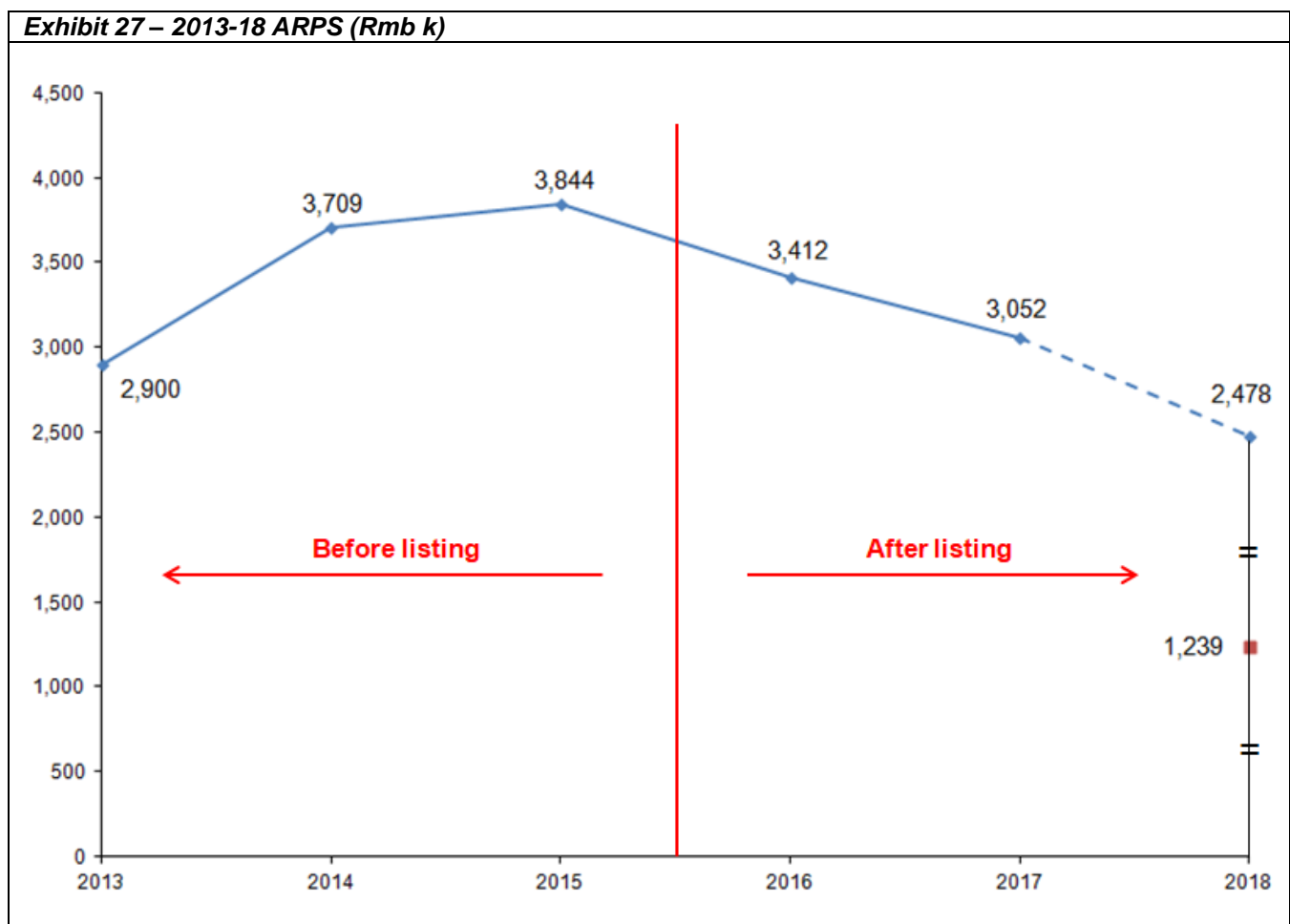
⁸ Zhou Hei Ya's IPO prospectus does not provide breakdown of the types of retail stores, but it reveals some relevant information as at October 23, 2016, the Latest Practicable Date. Zhou Hei Ya had 757 retail stores as at October 23, 2016. On that date, the company leased 203 transport hub stores, of which 28 were not in operation and the other 175 were in operation. These transport hub stores were located at eight airports, 28 railway stations and 128 subway stations. It would be reasonable to assume that Zhou Hei Ya had a store at each subway station, and that out of these 128 subway station stores, between zero and 28 of them were not yet operational. This implies 100-128 subway station stores and, consequently, 47-75 "railway & airport stores" in operation. The proportion of "railway & airport stores" was therefore anywhere between 6.2% and 9.9%, with a median value of 8.1%.

Zhou Hei Ya – the Dark Side of the Duck

4.2 Gradual Slide in ARPS - a Hint of Fake IPO Disclosures

Investigations into financial forgery, not only by us but also by many other analysts and scholars, have shown that many issuers tend to exaggerate their financial performance during the IPO process in order to maximize the fundraising proceeds. After listing, the "smart" crooks will try to fill their holes gradually, while the "dumb" crooks will continue the cover-up until it implodes at an unsustainable level.

We suspect Zhou Hei Ya had also inflated its profit at the IPO process, and then followed the "smart" path afterwards. This can be seen from the gradual decline in its ARPS following the IPO. As shown in Exhibit 27, Zhou Hei Ya's ARPS was only Rmb2,478k annualized in 2018, down a massive 35.5% from the 2015 level.



Sources: Zhou Hei Ya, Emerson Analytics

Some readers may think that the ARPS declined because the higher ARPS of the older stores had been diluted by the lower efficiency of the new ones. However, the decline in ARPS was not really caused by new store dilution but weakness in same-store performance:

Zhou Hei Ya – the Dark Side of the Duck

- New stores do not necessarily mean lower productivity. Take, for example, Anhui province, which Zhou Hei Ya first ventured into in late 2017. The ADSV of 126 transactions that we surveyed for all 21 stores in Anhui province was even higher than that for other Central China provinces;
- Zhou Hei Ya claims that its business has no seasonal pattern. As the number of retail stores increases steadily, ARPS should also contract accordingly. However, this is not the case, as shown in the following table;

	1H15	2H15	1H16	2H16	1H17	2H17	1H18
Revenue (Rmb m)	1,033	1,099	1,217	1,203	1,366	1,389	1,377
Number of stores	563	641	716	778	892	1,027	1,196
HoH (%)		13.9%	11.7%	8.7%	14.7%	15.1%	16.5%
ARPS (Rmb k)	2,003	1,825	1,794	1,611	1,636	1,448	1,239
HoH (%)		-8.9%	-1.7%	-10.2%	1.5%	-11.5%	-14.4%

Source: Zhou Hei Ya

- As the proportion of older stores with the higher ARPS declines, any dilution effect should be less pronounced. However, Zhou Hei Ya's ARPS has fallen a long way since listing, and in 1H18 the annualized value accelerated its decline.

In 1H18, Zhou Hei Ya's ARPS fell rapidly by 24.2% YoY, resulting in a 1.3% YoY revenue decline. Net profit, meanwhile, fell by a substantial 17.3% YoY. On the other hand, its two comparable peers, Juwei Food and Jiangxi Huangshanghuang, reported healthy growth in both revenue and net profit, as shown in the following table.

	1H17	1H18	YoY
Revenue			
Juwei Food	1,851	2,085	12.6%
Jiangxi Huangshanghuang	758	1,033	36.3%
Zhou Hei Ya	1,618	1,597	-1.3%
Net income			
Juwei Food	237	311	31.4%
Jiangxi Huangshanghuang	83	120	44.6%
Zhou Hei Ya	401	332	-17.3%

Sources: Juwei Food, Jiangxi Huangshanghuang and Zhou Hei Ya

Zhou Hei Ya – the Dark Side of the Duck

Zhou Hei Ya attributed the revenue decline to "(i) intensified competition for online and offline sales and marketing resources; and (ii) a decrease in customer traffic in self-operated retail stores in certain regional markets where the Group has been facing increasing pressure from its aging retail stores"⁹.

The management of Zhou Hei Ya declared at the interim results briefing that its business would improve in the second half of 2018. However, the company issued a profit warning January 30, 2019 saying that net profit for 2018 would decline by approximately 30% YoY. Zhou Hei Ya attributed this to "(1) an increase in the raw material costs; (2) a decrease in the profit margin; and (3) an increase in the depreciation and energy consumption costs"¹⁰.

In our opinion, the setback is just because the financial information disclosed at the time of its IPO was exaggerated. The question is, after several years of adjustments, is the significantly weaker projected number for 2018 a true reflection of its profitability?

4.3 Real Revenue from Central China Stores 1/3 Below Reported

Based on the ADSV and ASPO data we have discussed earlier, we can estimate that Zhou Hei Ya's real revenue from Central China retail stores amounted to Rmb581m in 1H18, about 32.8% below that reported by the company. Our calculations are detailed in Exhibit 30 below.

6 months ended Jun 30, 2018	Zhou Hei Ya claim	Our estimate	Difference
ASPO (Rmb)	65.8	61.4	-6.8%
/(1 + VAT rate)	116.7%	116.7%	
x ADSV	174	125	-27.9%
x 365 / 2	365 / 2	365 / 2	
= ARPS (Rmb k)	1,787	1,201	-32.8%
x Average number of stores	484	484	
= Revenue (Rmb m)	865	581	-32.8%

Sources: Zhou Hei Ya, Emerson Analytics

⁹ <http://www3.hkexnews.hk/listedco/listconews/SEHK/2018/0829/LTN201808291134.pdf>, p.10

¹⁰ <http://www3.hkexnews.hk/listedco/listconews/SEHK/2019/0130/LTN20190130624.pdf>, p.1

Zhou Hei Ya – the Dark Side of the Duck

Central China accounted for 62.8% of retail stores revenue in 1H18. We believe it is reasonable to assume that other regions were in a similar situation. Further, we assume revenue from other distribution channels were accurate. This yields a total revenue of Rmb1,145m (= 581 / 62.8% + 150 + 69) in 1H18.

4.4 Real Profit 52.2% Below Projected

Zhou Hei Ya reported gross margin of 60% for 1H18. Assuming this figure to be accurate, and assuming that the disclosed selling and distribution expenses as well as administrative expenses were accurate, then the company's real profit in 1H18 should have been Rmb127m (on the same 25% effective tax rate).

Exhibit 31 – Real net profit 52.2% below projected	
6 months ended Jun 30, 2018 (Rmb m)	Our estimates
Revenue	1,145
x Gross margin	60%
= Gross profit	685
Other income and gains	65
Selling and distribution expenses	-495
Administrative expenses	-87
Profit before tax	169
Income tax rate	25%
Income tax expense	-41
Profit for the year	127
Attributable to:	
Owners of the parent	127
Our estimated net profit (annualized)	255
Our estimated EPS (annualized) (Rmb)	0.107
Zhou Hei Ya projected net profit	533
Zhou Hei Ya projected EPS (Rmb)	0.224
Our estimated versus Zhou Hei Ya projected	-52.2%

Sources: Zhou Hei Ya, Emerson Analytics

Our estimate of Rmb127m true profit for Zhou Hei Ya in 1H18 is on the high side because our calculations are based on surveys done in 3Q18, the peak season. If we still generously assume that full year 2018 true profit is double that of 1H18, then the real EPS last year would be Rmb0.107.

The projected net profit for 2018 would be Rmb533m (= 762 x (1 - 30%)), implying EPS of Rmb0.224. The real EPS last year would have been 52.2% below the EPS projected by Zhou Hei Ya.

Zhou Hei Ya – the Dark Side of the Duck

4.5 Valuation

The latest stock price of Zhou Hei Ya is HK\$3.6, representing 13.7x last year earnings according to the company's profit warning.

Zhou Hei Ya has reported gross cash of Rmb2,629m as at the end of 1H18, slightly higher than the IPO net proceeds of Rmb2,458m. We suspect the cash level is over-stated as the company has been exaggerating its profit for years. There was no interest-bearing debt on the balance sheet. Assuming, generously, that the cash really exists, the company's underlying business excluding net cash of Rmb1.10/share is being valued by the market at 8.8x last year projected EPS.

Assuming the same 8.8x valuation on our estimated EPS (annualized) and adding back the Rmb1.10/share net cash, we arrive at a total valuation of HK\$2.4 for the stock. This represents a downside of 33.5%.

	Based on company disclosures	Based on our estimates	Difference
Share price (HK\$)	3.6	2.4	-33.5%
x Exchange rate (Rmb/HK\$)	0.853	0.853	
= Share price (Rmb)	3.07	2.04	-33.5%
- Cash per share (Rmb)	1.10	1.10	
= Share price net of cash (Rmb)	1.97	0.94	-52.2%
/ EPS (Rmb)	0.224	0.107	-52.2%
= P/E (x)	8.8	8.8	

Sources: Zhou Hei Ya, Emerson Analytics

It is imperative that regulators safeguard the integrity of the Hong Kong financial markets by taking forceful actions on Zhou Hei Ya, which has been falsifying its accounts right from the IPO process!

Zhou Hei Ya – the Dark Side of the Duck

Appendix I Revenue Breakdown and Operating Data by Region

Exhibit 33 below shows Zhou Hei Ya's revenue breakdown during 2013-1H18. The company has always relied on its self-operated retail stores to distribute its products. In 1H18, this division accounted for 86.3% of the company's total revenue.

Revenue achieved at retail stores includes those from delivery services. From 2016 through 1H18, delivery services contributed to 2.9%, 10.3% and 9.9% of retail stores revenue.

Year end Dec 31 (Rmb m)	2013	2014	2015	2016	2017	1H18
Self-operated retail stores	1,088	1,589	2,131	2,421	2,755	1,377
Online channels	59	110	172	264	345	150
Distributors and others*	71	109	128	132	150	69
Total	1,218	1,809	2,432	2,816	3,249	1,597
Retail stores revenue as % of total revenue	89.3%	87.8%	87.6%	86.0%	84.8%	86.3%
Delivery services revenue as % of retail stores revenue				2.9%	10.3%	9.9%

Source: Zhou Hei Ya

* Include revenue from distributors, vending machines and other direct sales through subsidiaries

Exhibit 34 shows the operating statistics of retail stores by region. Central China covers Hubei, where the company's headquarters are located, Hunan, Henan, Jiangxi and Anhui provinces. In 1H18, Central China accounted for 43.5% of all retail stores but contributed 62.8% of revenue.

The ARPS in the following table is calculated by dividing the revenue for the period by the simple average of the number of stores at the beginning and end of the period. In 2017, Central China achieved ARPS of Rmb4,167k ($= 1,704 * 1,000 / ((370 + 448) / 2)$).

In 1H18, Central China's ARPS was about Rmb1,787k, 44.2% higher than the company's overall average. Northern China's ARPS was about Rmb949k, second highest of all regions. Central China's achievement was 88.4% better than that of Northern China.

Zhou Hei Ya – the Dark Side of the Duck

Exhibit 34 – Operating data (2013-1H18) by region

Year end Dec 31	2013	2014	2015	2016	2017	1H18	Central China as % of total
Revenue (Rmb m)	1,088	1,589	2,131	2,421	2,755	1,377	
Central China	902	1,238	1,494	1,613	1,704	865	62.8%
Southern China	120	190	326	353	373	175	
Eastern China	29	73	143	224	359	167	
Northern China	36	88	155	202	268	147	
Southwestern China			14	29	50	23	
Number of stores	389	468	641	778	1,027	1,196	
Central China	283	314	341	370	448	520	43.5%
Southern China	69	81	140	164	185	207	
Eastern China	18	32	63	110	199	228	
Northern China	19	41	80	100	132	178	
Southwestern China			17	34	63	63	
ARPS (Rmb k)		3,709*	3,844*	3,412	3,052	1,239	
Central China		4,146	4,561	4,537	4,167	1,787	
Southern China		2,537	2,948	2,321	2,137	891	
Eastern China		2,916	3,017	2,594	2,325	784	
Northern China		2,949	2,558	2,247	2,313	949	
Southwestern China			1,629	1,122	1,034	371	

Source: Zhou Hei Ya

* According to the IPO prospectus, the 2014 ARPS was Rmb3.7m and that for 2015 was Rmb3.8m

Zhou Hei Ya – the Dark Side of the Duck

To prove this theory, one can place three consecutive orders at a retail store, first physically (Order #1), then electronically via an online delivery platform (Order #2) and physically again (Order #3), within a short time span, in Hubei province and other Central China provinces, respectively.

In Hubei province, the Order #3 sales slip has an order number that follows immediately that of Order #1. In the other provinces, the order numbers of the Order #1, Order #2 and Order #3 sales slips are consecutive.

In 1H18, delivery services accounted for 9.9% of total retail stores revenue across the country. Assuming the same proportion of delivery sales volume in Hubei province, the real sales volume is about $1 / (1 - 9.9\%)$ of the in-store sales slip volume.

II.2 Infrequently Used and Never Used POS Machines

In retail stores with two POS machines, some shopkeepers tend to use one and hardly use the other. In shops with more than two POS machines, a similar trend can be observed as well. In Exhibit 36 below, we present a usage comparison between the frequently-used and the infrequently-used POS machines. Sales volume of the frequently-used POS machines at these 15 retail stores was 13 times that of the infrequently-used machines.

Exhibit 36 – Usage comparison between frequently-used and infrequently-used POS machines

Store No.	District	Frequently-used machines		Infrequently-used machines		Frequently-used /Infrequently-used ratio (times)
		Sales slip time [#]	Sales volume	Sales slip time [#]	Sales volume	
333	Wuhan, Hubei province	21:30	132	17:15	1	132
122	Wuhan, Hubei province	21:15	59	18:30	2	30
55	Wuhan, Hubei province	19:45	99	16:45	4	25
294	Changsha, Hunan province	22:30	159	17:30	6	27
237	Changsha, Hunan province	19:30	209	18:00	6	35
87	Wuhan, Hubei province	21:30	128	21:45	7	18
15	Wuhan, Hubei province	19:30	182	17:00	7	26
471	Suizhou, Hubei province	20:45	99	20:30	8	12
75	Wuhan, Hubei province	21:00	110	21:00	9	12
49	Wuhan, Hubei province	22:30	79	18:30	10	8
214	Changsha, Hunan province	18:30	34	18:30	13	3
1	Wuhan, Hubei province	21:00	70	21:00	14	5
378	Wuhan, Hubei province	18:00	283 [*]	16:30	15	19
217	Wuhan, Hubei province	21:30	138	20:45	19	7
264	Wuhan, Hubei province	21:15	54	21:00	20	3
Total			1,835		141	13

Source: Emerson Analytics

* There are three POS machines at this retail store. This number is the average for the other two machines

Rounded off to the nearest 15 minutes

Zhou Hei Ya – the Dark Side of the Duck

The infrequently-used POS machines were often put in inconvenient locations. Some POS machines were never used at all for the same reason. Take store No.327 for example. It is an airport store in Wuhan and has four POS machines. Two of them registered volume of 293 and 61, respectively, on the day of our survey, while the remaining two were never used.

Some shopkeepers also told us that certain POS machines were dedicated to delivery orders and never used for in-store transactions.

We identified 45 POS machines that were never used at all on the day of our survey. Among them, 42 POS machines were located in Hubei province while three were in other Central China provinces.

II.3 Returning Hourly for Sales Slips

For the 44 POS machines without last-hour sales slips, we began to obtain sales slips during the peak time and then returned every hour to obtain further sales slips. The last sales slip of the relevant POS machine was within one hour of the cease of operation, though not within one hour of store closing time.

We can illustrate this point with our experience at store No.399, located at a railway station in Wuhan. There were a total of four POS machines in use on the day of our visit. Its closing time was 22:00. At 16:15, we obtained a sales slip from each of the four POS machines and then repeated the process every hour. Two machines, POS#3 and POS#4, were still in use at 17:15 but terminated operation by 18:15. POS#2 was no longer in use at 21:15 but POS#1 was still operational. The last sales slip generated by POS#1 was within one hour of closing time.

In Exhibit 37 below, we show the usage of the four POS machines at this retail store, with the smiling face denoting that a particular machine was still in use and a sad face denoting otherwise.

Exhibit 37 – Hourly sales slips from store No.399

Time *	POS#1	POS#2	POS#3	POS#4
16:15	😊	😊	😊	😊
17:15	😊	😊	😊	😊
18:15	😊	😊	😞	😞
19:15	😊	😊	😞	😞
20:15	😊	😊	😞	😞
21:15	😊	😞	😞	😞

Source: Emerson Analytics

* Rounded off to the nearest 15 minutes

Zhou Hei Ya – the Dark Side of the Duck

Appendix III Real Sales Volume in Central China

Store No.	District	Closing time	Day of the week	Real sales volume
1	Wuhan, Hubei province	21:30	Tue	93
2	Nanchang, Jiangxi province	22:00	Tue	55
3	Luoyang, Henan province	24:00	Wed	54
4	Hefei, Anhui province	22:00	Tue	113
5	Wuhan, Hubei province	21:00	Thu	58
6	Zhengzhou, Henan province	24:00	Wed	60
7	Changsha, Hunan province	22:30	Mon	85
8	Yichang, Hubei province	21:30	Tue	69
9	Wuhan, Hubei province	22:00	Wed	104
10	Wuhan, Hubei province	22:30	Wed	366
11	Wuhan, Hubei province	21:30	Wed	52
12	Xiangtan, Hunan province	21:50	Mon	16
13	Xinxiang, Henan province	24:00	Wed	26
14	Shiyan, Hubei province	21:30	Fri	209
15	Wuhan, Hubei province	20:30	Mon	210
16	Wuhan, Hubei province	21:00	Thu	48
17	Wuhan, Hubei province	21:00	Fri	85
18	Wuhan, Hubei province	20:30	Mon	473
19	Wuhan, Hubei province	21:30	Mon	84
20	Wuhan, Hubei province	21:30	Tue	98
21	Changsha, Hunan province	21:30	Wed	97
22	Wuhan, Hubei province	23:00	Sun	128
23	Wuhan, Hubei province	21:00	Tue	53
24	Wuhan, Hubei province	21:15	Wed	78
25	Wuhan, Hubei province	21:00	Tue	14
26	Shiyan, Hubei province	21:00	Sat	125
27	Nanchang, Jiangxi province	21:45	Tue	42
28	Shiyan, Hubei province	21:30	Fri	119
29	Nanchang, Jiangxi province	21:00	Thu	39
30	Wuhan, Hubei province	21:00	Mon	41
31	Zhumadian, Henan province	21:30	Tue	72
32	Changsha, Hunan province	23:00	Wed	51
33	Xiaogan, Hubei province	21:30	Fri	119
34	Changsha, Hunan province	22:00	Mon	31
35	Nanchang, Jiangxi province	21:30	Wed	49
36	Wuhan, Hubei province	21:40	Wed	52
37	Wuhan, Hubei province	21:00	Thu	169
38	Zhengzhou, Henan province	21:30	Thu	54
39	Nanchang, Jiangxi province	21:30	Sat	59
40	Wuhan, Hubei province	20:00	Mon	59
41	Zhengzhou, Henan province	21:30	Thu	50
42	Wuhan, Hubei province	21:30	Mon	131
43	Wuhan, Hubei province	20:30	Sat	93

Zhou Hei Ya – the Dark Side of the Duck

Store No.	District	Closing time	Day of the week	Real sales volume
44	Changsha, Hunan province	19:30	Wed	70
45	Zhumadian, Henan province	21:30	Tue	11
46	Wuhan, Hubei province	22:00	Tue	280
47	Wuhan, Hubei province	21:30	Thu	48
48	Xianning, Hubei province	21:00	Wed	122
49	Wuhan, Hubei province	23:30	Wed	99
50	Qianjiang, Hubei province	21:00	Sat	97
51	Wuhan, Hubei province	21:00	Thu	90
52	Wuhan, Hubei province	20:30	Sun	111
53	Hefei, Anhui province	21:30	Sun	69
54	Wuhan, Hubei province	21:30	Tue	49
55	Wuhan, Hubei province	20:30	Tue	114
56	Changsha, Hunan province	21:00	Sun	244
57	Xiangyang, Hubei province	21:30	Wed	77
58	Xiaogan, Hubei province	22:00	Sat	124
59	Wuhan, Hubei province	21:00	Mon	184
60	Wuhan, Hubei province	21:30	Thu	65
61	Nanchang, Jiangxi province	23:00	Wed	91
62	Wuhan, Hubei province	22:30	Wed	128
63	Shiyan, Hubei province	21:00	Fri	101
64	Zhengzhou, Henan province	22:00	Wed	66
65	Yiyang, Hunan province	21:30	Mon	52
66	Nanchang, Jiangxi province	21:00	Fri	42
67	Wuhan, Hubei province	23:30	Sun	221
68	Zhengzhou, Henan province	21:30	Thu	34
69	Zhengzhou, Henan province	22:00	Tue	59
70	Hefei, Anhui province	24:00	Mon	138
71	Xiaogan, Hubei province	21:30	Mon	107
72	Nanchang, Jiangxi province	21:00	Tue	29
73	Xiangyang, Hubei province	21:30	Wed	79
74	Wuhan, Hubei province	21:30	Tue	58
75	Wuhan, Hubei province	21:30	Mon	132
76	Changsha, Hunan province	21:00	Sun	384
77	Nanchang, Jiangxi province	21:00	Thu	67
78	Zhuzhou, Hunan province	22:00	Tue	42
79	Yichang, Hubei province	21:30	Wed	304
80	Jingzhou, Hubei province	20:00	Sun	385
81	Xiaogan, Hubei province	21:30	Fri	87
82	Hefei, Anhui province	22:00	Tue	49
83	Wuhan, Hubei province	19:00	Wed	13
84	Hefei, Anhui province	21:30	Mon	118
85	Wuhan, Hubei province	21:30	Wed	60
86	Wuhan, Hubei province	21:00	Tue	95
87	Wuhan, Hubei province	22:00	Mon	150
88	Xiangyang, Hubei province	22:00	Wed	102

Zhou Hei Ya – the Dark Side of the Duck

Store No.	District	Closing time	Day of the week	Real sales volume
89	Xinxiang, Henan province	21:00	Wed	65
90	Changsha, Hunan province	22:00	Wed	23
91	Wuhan, Hubei province	23:30	Thu	304
92	Xiangyang, Hubei province	22:00	Wed	115
93	Xiangtan, Hunan province	22:00	Mon	20
94	Enshi, Hubei province	20:30	Thu	184
95	Changsha, Hunan province	21:30	Mon	8
96	Zhengzhou, Henan province	21:30	Fri	54
97	Tianmen, Hubei province	21:00	Sat	71
98	Zhengzhou, Henan province	22:00	Sat	52
99	Wuhan, Hubei province	21:30	Mon	52
100	Jiujiang, Jiangxi province	22:00	Sat	57
101	Hefei, Anhui province	22:00	Sun	124
102	Wuhan, Hubei province	21:30	Wed	544
103	Hefei, Anhui province	22:30	Sun	92
104	Jingzhou, Hubei province	21:30	Sun	62
105	Huangshi, Hubei province	22:30	Wed	85
106	Wuhan, Hubei province	20:00	Tue	72
107	Hefei, Anhui province	22:30	Sun	218
108	Xinxiang, Henan province	21:30	Wed	17
109	Wuhan, Hubei province	22:00	Fri	261
110	Wuhan, Hubei province	23:00	Sat	214
111	Wuhan, Hubei province	20:30	Sun	79
112	Wuhan, Hubei province	22:00	Fri	97
113	Wuhan, Hubei province	22:00	Mon	121
114	Wuhan, Hubei province	21:30	Mon	117
115	Zhengzhou, Henan province	22:00	Wed	59
116	Hefei, Anhui province	22:00	Sun	173
117	Wuhan, Hubei province	21:30	Sun	168
118	Wuhan, Hubei province	21:00	Wed	105
119	Wuhan, Hubei province	22:00	Sat	583
120	Nanchang, Jiangxi province	22:00	Wed	21
121	Zhuzhou, Hunan province	22:00	Tue	45
122	Wuhan, Hubei province	22:00	Mon	68
123	Luoyang, Henan province	21:30	Wed	22
124	Nanchang, Jiangxi province	21:30	Wed	46
125	Changsha, Hunan province	22:00	Sun	465
126	Changsha, Hunan province	22:00	Mon	77
127	Changsha, Hunan province	24:00	Mon	38
128	Zhengzhou, Henan province	21:30	Tue	26
129	Zhengzhou, Henan province	21:00	Tue	14
130	Nanchang, Jiangxi province	22:30	Fri	71
131	Jingmen, Hubei province	21:00	Fri	319
132	Wuhan, Hubei province	20:30	Wed	48
133	Huanggang, Hubei province	21:30	Thu	44

Zhou Hei Ya – the Dark Side of the Duck

Store No.	District	Closing time	Day of the week	Real sales volume
134	Kaifeng, Henan province	21:00	Tue	62
135	Changsha, Hunan province	22:00	Wed	77
136	Wuhan, Hubei province	22:00	Thu	69
137	Wuhan, Hubei province	21:00	Sat	97
138	Changsha, Hunan province	23:00	Mon	45
139	Nanchang, Jiangxi province	21:30	Fri	38
140	Jingzhou, Hubei province	21:00	Sun	57
141	Liuyang, Hunan province	22:00	Mon	11
142	Wuhan, Hubei province	21:00	Wed	40
143	Wuhan, Hubei province	21:30	Wed	104
144	Xinyu, Jiangxi province	22:00	Sat	91
145	Wuhan, Hubei province	21:00	Mon	75
146	Wuhan, Hubei province	20:30	Mon	47
147	Nanchang, Jiangxi province	21:30	Tue	150
148	Wuhan, Hubei province	21:00	Tue	82
149	Wuhan, Hubei province	21:00	Sat	254
150	Wuhan, Hubei province	20:30	Mon	32
151	Xianning, Hubei province	21:30	Wed	148
152	Wuhan, Hubei province	21:00	Thu	77
153	Zhuzhou, Hunan province	22:00	Tue	72
154	Changsha, Hunan province	21:00	Mon	13
155	Changsha, Hunan province	23:30	Fri	640
156	Wuhan, Hubei province	21:00	Thu	87
157	Hefei, Anhui province	22:00	Sun	129
158	Jingmen, Hubei province	22:00	Fri	68
159	Wuhan, Hubei province	21:00	Fri	34
160	Wuhan, Hubei province	21:00	Mon	90
161	Nanchang, Jiangxi province	22:30	Wed	88
162	Changsha, Hunan province	23:30	Wed	16
163	Wuhan, Hubei province	21:30	Sat	148
164	Wuhan, Hubei province	20:00	Fri	148
165	Wuhan, Hubei province	21:30	Mon	102
166	Wuhan, Hubei province	20:00	Wed	13
167	Wuhan, Hubei province	21:00	Wed	65
168	Wuhan, Hubei province	21:30	Sat	140
169	Xiangyang, Hubei province	21:00	Wed	53
170	Xiaogan, Hubei province	21:30	Sun	205
171	Yichang, Hubei province	21:30	Wed	49
172	Huangshi, Hubei province	21:30	Wed	103
173	Zhengzhou, Henan province	24:00	Fri	144
174	Nanchang, Jiangxi province	20:45	Thu	48
175	Hengyang, Hunan province	22:00	Mon	51
176	Hengyang, Hunan province	22:00	Mon	66
177	Wuhan, Hubei province	21:30	Sat	67
178	Changsha, Hunan province	22:50	Mon	48

Zhou Hei Ya – the Dark Side of the Duck

Store No.	District	Closing time	Day of the week	Real sales volume
179	Wuhan, Hubei province	20:30	Tue	27
180	Wuhan, Hubei province	21:00	Fri	1893
181	Wuhan, Hubei province	21:00	Fri	127
182	Wuhan, Hubei province	21:00	Tue	53
183	Yichang, Hubei province	21:00	Tue	123
184	Wuhan, Hubei province	21:00	Mon	62
185	Wuhan, Hubei province	21:00	Wed	59
186	Wuhan, Hubei province	21:30	Tue	185
187	Wuhan, Hubei province	20:30	Fri	65
188	Zhengzhou, Henan province	23:00	Tue	59
189	Wuhan, Hubei province	21:00	Wed	71
190	Nanchang, Jiangxi province	21:00	Wed	21
191	Changsha, Hunan province	23:00	Wed	91
192	Xiantao, Hubei province	21:00	Thu	65
193	Zhengzhou, Henan province	21:30	Wed	45
194	Zhuzhou, Hunan province	24:00	Wed	255
195	Jingmen, Hubei province	21:00	Sat	137
196	Wuhan, Hubei province	21:00	Wed	73
197	Hefei, Anhui province	24:00	Sun	214
198	Xiantao, Hubei province	21:30	Thu	163
199	Nanchang, Jiangxi province	22:00	Wed	16
200	Zhengzhou, Henan province	22:00	Thu	30
201	Changsha, Hunan province	24:00	Mon	66
202	Nanchang, Jiangxi province	21:00	Thu	59
203	Wuhan, Hubei province	23:00	Thu	134
204	Zhengzhou, Henan province	21:00	Fri	62
205	Changsha, Hunan province	23:40	Mon	70
206	Wuhan, Hubei province	20:30	Sat	58
207	Zhengzhou, Henan province	21:30	Wed	18
208	Nanchang, Jiangxi province	23:00	Wed	53
209	Yichang, Hubei province	21:30	Tue	113
210	Wuhan, Hubei province	21:00	Mon	101
211	Yichang, Hubei province	21:30	Wed	40
212	Wuhan, Hubei province	21:15	Sat	102
213	Wuhan, Hubei province	21:00	Sun	102
214	Changsha, Hunan province	19:30	Wed	37
215	Zhengzhou, Henan province	24:00	Tue	110
216	Wuhan, Hubei province	21:00	Wed	109
217	Wuhan, Hubei province	22:00	Thu	174
218	Huanggang, Hubei province	21:30	Fri	134
219	Wuhan, Hubei province	22:00	Wed	77
220	Changsha, Hunan province	21:00	Wed	33
221	Zhengzhou, Henan province	22:30	Sat	182
222	Huanggang, Hubei province	21:30	Fri	57
223	Hengyang, Hunan province	21:00	Mon	46

Zhou Hei Ya – the Dark Side of the Duck

Store No.	District	Closing time	Day of the week	Real sales volume
224	Xinxiang, Henan province	21:00	Wed	102
225	Wuhan, Hubei province	19:30	Thu	30
226	Changsha, Hunan province	22:30	Mon	45
227	Wuhan, Hubei province	23:30	Fri	67
228	Enshi, Hubei province	21:30	Thu	27
229	Nanchang, Jiangxi province	23:00	Tue	106
230	Nanchang, Jiangxi province	21:00	Wed	57
231	Wuhan, Hubei province	20:30	Mon	44
232	Yichang, Hubei province	20:00	Thu	120
233	Wuhan, Hubei province	20:00	Sun	119
234	Yichang, Hubei province	19:30	Tue	251
235	Wuhan, Hubei province	20:30	Thu	42
236	Qianjiang, Hubei province	21:00	Sat	127
237	Changsha, Hunan province	20:30	Tue	210
238	Shangrao, Jiangxi province	22:30	Fri	45
239	Xianning, Hubei province	21:30	Wed	80
240	Nanchang, Jiangxi province	21:30	Fri	148
241	Zhengzhou, Henan province	23:00	Fri	259
242	Wuhan, Hubei province	21:30	Tue	43
243	Changsha, Hunan province	22:00	Wed	51
244	Zhengzhou, Henan province	24:00	Tue	117
245	Wuhan, Hubei province	21:20	Wed	57
246	Qianjiang, Hubei province	19:30	Sat	172
247	Xianning, Hubei province	21:30	Wed	100
248	Wuhan, Hubei province	21:00	Tue	44
249	Shiyan, Hubei province	21:30	Fri	173
250	Changsha, Hunan province	24:00	Mon	27
251	Wuhan, Hubei province	22:00	Fri	84
252	Suizhou, Hubei province	21:30	Tue	261
253	Jingzhou, Hubei province	21:00	Mon	54
254	Hefei, Anhui province	21:30	Sun	109
255	Hefei, Anhui province	22:00	Sun	80
256	Wuhan, Hubei province	21:30	Wed	57
257	Wuhan, Hubei province	22:30	Wed	82
258	Wuhan, Hubei province	22:00	Thu	199
259	Hefei, Anhui province	21:30	Mon	159
260	Zhengzhou, Henan province	21:30	Thu	39
261	Wuhan, Hubei province	21:00	Thu	104
262	Wuhan, Hubei province	21:30	Sun	134
263	Ezhou, Hubei province	21:00	Thu	47
264	Wuhan, Hubei province	22:00	Tue	82
265	Wuhan, Hubei province	20:30	Thu	91
266	Yichang, Hubei province	22:30	Wed	108
267	Wuhan, Hubei province	19:30	Fri	123
268	Zhengzhou, Henan province	21:30	Thu	30

Zhou Hei Ya – the Dark Side of the Duck

Store No.	District	Closing time	Day of the week	Real sales volume
269	Luoyang, Henan province	21:30	Wed	32
270	Nanchang, Jiangxi province	23:00	Tue	211
271	Wuhan, Hubei province	20:30	Sat	34
272	Wuhan, Hubei province	21:00	Fri	47
273	Wuhan, Hubei province	21:30	Wed	54
274	Wuhan, Hubei province	20:30	Mon	79
275	Wuhan, Hubei province	23:30	Tue	1499
276	Wuhan, Hubei province	21:30	Mon	166
277	Nanchang, Jiangxi province	23:00	Tue	109
278	Nanchang, Jiangxi province	21:00	Tue	69
279	Wuhan, Hubei province	22:00	Sun	186
280	Wuhan, Hubei province	23:30	Fri	192
281	Nanchang, Jiangxi province	21:00	Wed	14
282	Changsha, Hunan province	21:00	Mon	37
283	Changsha, Hunan province	22:00	Sat	87
284	Wuhan, Hubei province	22:00	Sat	47
285	Wuhan, Hubei province	23:30	Fri	221
286	Xiantao, Hubei province	21:30	Thu	55
287	Wuhan, Hubei province	21:30	Fri	127
288	Huanggang, Hubei province	21:00	Thu	164
289	Wuhan, Hubei province	21:30	Mon	97
290	Wuhan, Hubei province	21:30	Mon	110
291	Nanchang, Jiangxi province	22:00	Tue	31
292	Jiujiang, Jiangxi province	23:00	Sat	73
293	Wuhan, Hubei province	19:00	Mon	95
294	Changsha, Hunan province	23:30	Thu	153
295	Wuhan, Hubei province	24:00	Tue	437
296	Jingzhou, Hubei province	21:30	Sun	69
297	Xiangtan, Hunan province	22:00	Mon	23
298	Wuhan, Hubei province	21:00	Tue	292
299	Wuhan, Hubei province	24:00	Mon	2605
300	Hengyang, Hunan province	22:00	Mon	16
301	Jingmen, Hubei province	21:30	Fri	108
302	Huanggang, Hubei province	21:00	Thu	73
303	Wuhan, Hubei province	21:30	Wed	94
304	Zhengzhou, Henan province	21:30	Thu	30
305	Yichang, Hubei province	21:30	Thu	67
306	Zhengzhou, Henan province	24:00	Thu	59
307	Nanchang, Jiangxi province	21:00	Fri	47
308	Pingxiang, Jiangxi province	23:00	Thu	38
309	Wuhan, Hubei province	20:30	Thu	84
310	Nanchang, Jiangxi province	21:00	Thu	36
311	Hefei, Anhui province	21:30	Mon	56
312	Zhengzhou, Henan province	21:00	Thu	38
313	Luoyang, Henan province	21:30	Wed	23

Zhou Hei Ya – the Dark Side of the Duck

Store No.	District	Closing time	Day of the week	Real sales volume
314	Wuhan, Hubei province	21:00	Wed	120
315	Enshi, Hubei province	21:30	Thu	75
316	Zhengzhou, Henan province	22:00	Fri	95
317	Xiaogan, Hubei province	21:00	Fri	81
318	Wuhan, Hubei province	21:00	Mon	40
319	Wuhan, Hubei province	22:30	Sun	870
320	Hefei, Anhui province	21:30	Mon	62
321	Wuhan, Hubei province	22:00	Sun	87
322	Wuhan, Hubei province	19:00	Thu	59
323	Wuhan, Hubei province	21:30	Fri	48
324	Zhengzhou, Henan province	23:00	Sat	375
325	Wuhan, Hubei province	21:00	Tue	194
326	Yiyang, Hunan province	24:00	Mon	54
327	Wuhan, Hubei province	22:00	Tue	354
328	Wuhan, Hubei province	22:30	Mon	87
329	Changsha, Hunan province	21:00	Mon	28
330	Nanchang, Jiangxi province	21:30	Sat	290
331	Wuhan, Hubei province	21:30	Tue	101
332	Shangrao, Jiangxi province	22:00	Fri	66
333	Wuhan, Hubei province	22:30	Tue	148
334	Hefei, Anhui province	21:30	Mon	65
335	Wuhan, Hubei province	21:30	Wed	78
336	Liuyang, Hunan province	22:00	Mon	19
337	Nanchang, Jiangxi province	22:00	Mon	86
338	Wuhan, Hubei province	22:00	Tue	178
339	Wuhan, Hubei province	23:00	Tue	141
340	Wuhan, Hubei province	21:00	Fri	94
341	Nanchang, Jiangxi province	22:30	Thu	119
342	Wuhan, Hubei province	21:30	Tue	111
343	Wuhan, Hubei province	22:00	Mon	151
344	Wuhan, Hubei province	21:30	Wed	152
345	Nanchang, Jiangxi province	23:00	Wed	67
346	Wuhan, Hubei province	20:00	Mon	39
347	Wuhan, Hubei province	21:00	Thu	64
348	Hefei, Anhui province	21:30	Mon	203
349	Xuchang, Henan province	21:00	Wed	88
350	Wuhan, Hubei province	21:30	Sat	226
351	Wuhan, Hubei province	19:30	Thu	69
352	Wuhan, Hubei province	21:00	Tue	32
353	Zhengzhou, Henan province	24:00	Tue	70
354	Yiyang, Hunan province	22:00	Mon	64
355	Zhengzhou, Henan province	22:00	Fri	71
356	Yichun, Jiangxi province	22:00	Fri	57
357	Zhengzhou, Henan province	20:30	Fri	191
358	Hefei, Anhui province	21:30	Sun	296

Zhou Hei Ya – the Dark Side of the Duck

Store No.	District	Closing time	Day of the week	Real sales volume
359	Wuhan, Hubei province	21:00	Wed	60
360	Xianning, Hubei province	21:00	Wed	121
361	Yichang, Hubei province	21:30	Wed	43
362	Wuhan, Hubei province	21:00	Thu	79
363	Zhengzhou, Henan province	21:00	Thu	20
364	Xiaogan, Hubei province	21:30	Sun	38
365	Luoyang, Henan province	20:00	Thu	81
366	Wuhan, Hubei province	22:30	Thu	321
367	Changsha, Hunan province	21:00	Mon	13
368	Huanggang, Hubei province	21:30	Thu	41
369	Wuhan, Hubei province	21:00	Wed	69
370	Zhengzhou, Henan province	21:30	Thu	61
371	Nanchang, Jiangxi province	23:00	Tue	60
372	Xianning, Hubei province	21:30	Thu	54
373	Xiaogan, Hubei province	21:30	Fri	124
374	Ezhou, Hubei province	21:00	Thu	59
375	Pingxiang, Jiangxi province	21:30	Thu	22
376	Suizhou, Hubei province	21:30	Tue	120
377	Wuhan, Hubei province	20:30	Mon	50
378	Wuhan, Hubei province	22:00	Wed	644
379	Wuhan, Hubei province	21:30	Mon	105
380	Zhengzhou, Henan province	22:30	Thu	34
381	Jingzhou, Hubei province	21:30	Fri	87
382	Nanchang, Jiangxi province	21:30	Tue	58
383	Yichang, Hubei province	23:00	Wed	33
384	Wuhan, Hubei province	22:00	Wed	34
385	Wuhan, Hubei province	21:00	Fri	1161
386	Nanchang, Jiangxi province	23:00	Fri	112
387	Xiangyang, Hubei province	21:00	Wed	93
388	Xiangtan, Hunan province	24:00	Mon	55
389	Xiaogan, Hubei province	21:30	Sat	149
390	Jingzhou, Hubei province	21:30	Fri	74
391	Huangshi, Hubei province	21:00	Wed	85
392	Wuhan, Hubei province	20:30	Thu	69
393	Changsha, Hunan province	23:00	Mon	58
394	Nanchang, Jiangxi province	23:00	Tue	55
395	Wuhan, Hubei province	21:30	Fri	34
396	Wuhan, Hubei province	21:00	Fri	95
397	Xiaogan, Hubei province	23:00	Sun	110
398	Wuhan, Hubei province	21:00	Sat	218
399	Wuhan, Hubei province	22:00	Sat	1239
400	Wuhan, Hubei province	23:00	Sat	122
401	Wuhan, Hubei province	20:50	Tue	84
402	Zhengzhou, Henan province	22:30	Sat	125
403	Changsha, Hunan province	23:00	Mon	53

Zhou Hei Ya – the Dark Side of the Duck

Store No.	District	Closing time	Day of the week	Real sales volume
404	Wuhan, Hubei province	21:00	Mon	357
405	Hefei, Anhui province	22:00	Tue	76
406	Nanchang, Jiangxi province	22:00	Thu	20
407	Xiaogan, Hubei province	22:00	Sat	160
408	Wuhan, Hubei province	22:00	Tue	79
409	Wuhan, Hubei province	21:30	Tue	42
410	Wuhan, Hubei province	21:00	Sat	129
411	Hengyang, Hunan province	22:00	Mon	41
412	Xiangyang, Hubei province	21:30	Tue	151
413	Wuhan, Hubei province	21:30	Fri	145
414	Wuhan, Hubei province	20:30	Sat	53
415	Tianmen, Hubei province	19:30	Sat	222
416	Wuhan, Hubei province	22:00	Sat	716
417	Jiujiang, Jiangxi province	21:30	Sat	89
418	Wuhan, Hubei province	20:30	Fri	90
419	Nanchang, Jiangxi province	22:00	Thu	19
420	Zhengzhou, Henan province	22:00	Thu	30
421	Yichang, Hubei province	21:30	Wed	97
422	Zhengzhou, Henan province	21:30	Thu	60
423	Wuhan, Hubei province	21:00	Tue	115
424	Wuhan, Hubei province	20:30	Sat	92
425	Jiujiang, Jiangxi province	22:00	Sat	108
426	Wuhan, Hubei province	21:30	Thu	81
427	Zhengzhou, Henan province	22:00	Thu	26
428	Wuhan, Hubei province	21:00	Thu	91
429	Wuhan, Hubei province	22:30	Fri	259
430	Wuhan, Hubei province	21:30	Mon	70
431	Wuhan, Hubei province	21:00	Mon	52
432	Wuhan, Hubei province	21:30	Wed	23
433	Zhuzhou, Hunan province	24:00	Tue	117
434	Wuhan, Hubei province	21:00	Sun	101
435	Zhengzhou, Henan province	22:00	Fri	113
436	Wuhan, Hubei province	21:30	Sat	154
437	Wuhan, Hubei province	20:30	Mon	78
438	Wuhan, Hubei province	20:00	Fri	85
439	Xiantao, Hubei province	23:00	Fri	140
440	Wuhan, Hubei province	19:30	Sun	20
441	Wuhan, Hubei province	20:00	Thu	31
442	Changsha, Hunan province	21:30	Tue	470
443	Wuhan, Hubei province	21:00	Sun	64
444	Zhengzhou, Henan province	22:00	Tue	11
445	Changsha, Hunan province	22:00	Mon	55
446	Pingxiang, Jiangxi province	22:00	Thu	107
447	Wuhan, Hubei province	21:30	Fri	64
448	Wuhan, Hubei province	21:00	Wed	101

Zhou Hei Ya – the Dark Side of the Duck

Store No.	District	Closing time	Day of the week	Real sales volume
449	Changsha, Hunan province	21:45	Mon	63
450	Wuhan, Hubei province	21:30	Tue	64
451	Wuhan, Hubei province	21:00	Sat	40
452	Jingzhou, Hubei province	21:30	Sun	103
453	Xiaogan, Hubei province	21:30	Fri	151
454	Wuhan, Hubei province	21:00	Mon	193
455	Wuhan, Hubei province	21:30	Wed	70
456	Nanchang, Jiangxi province	21:30	Thu	31
457	Jingzhou, Hubei province	21:00	Sun	52
458	Luoyang, Henan province	23:30	Wed	71
459	Huanggang, Hubei province	21:00	Fri	49
460	Wuhan, Hubei province	21:00	Fri	39
461	Xuchang, Henan province	21:00	Wed	139
462	Xiaogan, Hubei province	21:30	Sun	62
463	Wuhan, Hubei province	22:30	Thu	134
464	Wuhan, Hubei province	21:30	Fri	132
465	Nanchang, Jiangxi province	21:00	Thu	31
466	Changsha, Hunan province	19:30	Thu	179
467	Zhengzhou, Henan province	21:30	Fri	58
468	Wuhan, Hubei province	23:00	Wed	131
469	Wuhan, Hubei province	23:00	Fri	95
470	Nanchang, Jiangxi province	21:30	Tue	18
471	Suizhou, Hubei province	21:30	Mon	119
472	Nanchang, Jiangxi province	21:00	Tue	50
473	Huangshi, Hubei province	21:30	Wed	44
474	Zhengzhou, Henan province	21:30	Fri	35
475	Wuhan, Hubei province	21:30	Mon	51
476	Zhengzhou, Henan province	21:30	Thu	70
477	Nanchang, Jiangxi province	21:30	Sun	515
478	Wuhan, Hubei province	21:00	Mon	39
479	Wuhan, Hubei province	22:00	Fri	75
480	Wuhan, Hubei province	21:00	Sat	123
481	Nanchang, Jiangxi province	22:00	Wed	80
482	Nanchang, Jiangxi province	21:00	Wed	45
483	Wuhan, Hubei province	21:00	Mon	46
484	Nanchang, Jiangxi province	21:30	Tue	98
485	Nanchang, Jiangxi province	22:00	Tue	44
486	Yichang, Hubei province	21:30	Fri	60
487	Wuhan, Hubei province	21:00	Sat	105
488	Wuhan, Hubei province	22:00	Sun	44
489	Wuhan, Hubei province	21:30	Sat	229
490	Changsha, Hunan province	22:00	Mon	46
491	Nanchang, Jiangxi province	21:00	Thu	54
492	Wuhan, Hubei province	21:00	Mon	78
493	Hefei, Anhui province	22:00	Mon	98

Zhou Hei Ya – the Dark Side of the Duck

Store No.	District	Closing time	Day of the week	Real sales volume
494	Shiyan, Hubei province	21:00	Fri	218
495	Luoyang, Henan province	22:00	Wed	49
496	Zhengzhou, Henan province	21:30	Fri	557
497	Wuhan, Hubei province	21:00	Fri	191
498	Wuhan, Hubei province	21:00	Sun	174
499	Wuhan, Hubei province	21:30	Fri	87
500	Nanchang, Jiangxi province	21:00	Thu	19
501	Xiaogan, Hubei province	21:30	Sat	125
502	Wuhan, Hubei province	20:00	Thu	77
503	Wuhan, Hubei province	22:00	Wed	93
504	Enshi, Hubei province	20:30	Thu	71
505	Xiangyang, Hubei province	21:30	Wed	135
506	Wuhan, Hubei province	22:30	Tue	492
507	Wuhan, Hubei province	24:00	Thu	926
508	Wuhan, Hubei province	21:00	Wed	57
509	Wuhan, Hubei province	18:00	Fri	1414
510	Wuhan, Hubei province	21:30	Sun	83
511	Xiangyang, Hubei province	21:30	Fri	123
512	Wuhan, Hubei province	20:30	Wed	52
513	Xiangyang, Hubei province	23:00	Thu	224
514	Zhengzhou, Henan province	22:30	Tue	42
515	Suizhou, Hubei province	21:30	Tue	117
516	Changsha, Hunan province	22:30	Fri	568
517	Nanchang, Jiangxi province	21:30	Tue	38
518	Nanchang, Jiangxi province	21:30	Thu	20
519	Xiangyang, Hubei province	23:00	Wed	302
520	Wuhan, Hubei province	21:00	Mon	54
521	Wuhan, Hubei province	22:00	Fri	42
522	Jingzhou, Hubei province	21:30	Sun	87
523	Nanchang, Jiangxi province	22:00	Tue	35
524	Wuhan, Hubei province	22:00	Thu	127
Total				65,574

Zhou Hei Ya – the Dark Side of the Duck

Appendix IV List of Companies Challenged by Emerson Analytics

Name	Ticker	No. of reports issued	First report issued		Current situation
			Date	Share price (HK\$)	
China Lumena New Materials Corp.	0067.HK	2	Apr 1, 2014	1.25	In the third delisting stage, pending a restructuring via a new listing application following liquidation of original operations
Shenguan Holdings (Group) Limited	0829.HK	2	Sep 2, 2014	2.80	Current share price HK\$0.45, down 84% and below our \$1.1 target price
Sound Global Ltd.	0967.HK	3	Feb 4, 2015	8.00	Last price HK\$2.98 before SFC halted trading April 13, 2016 under section 8(1) of the Securities and Futures (Stock Market Listing) Rules
China Fiber Optic Network System Group Limited	3777.HK	2	Aug 7, 2015	1.57	Hong Kong court ordered liquidation June 1, 2017, listing canceled February 14, 2019
Hua Han Health Industry Holdings Limited	0587.HK	3	Aug 10, 2016	0.68	Last traded HK\$0.53 before the company requested a trading halt September 27, 2016. SFC further halted trading under section 8(1) of the Securities and Futures (Stock Market Listing) Rules from November 20, 2018
China Hongqiao Group Limited	1378.HK	4	Feb 28, 2017	7.80	Current share price HK\$5.15, down 34% but above our \$3.1 target price
Tian Ge Interactive Holdings Limited	1980.HK	2	Aug 16, 2017	6.17	Current share price HK\$3.37, down 45%, compared with our delisting target