

The Impact of the Epidemic on Harbin Pharmaceutical Group Co., Ltd.

Siyu Song^{1,a,*}

¹The university of Southampton, UK

a. sophiasong623@gmail.com

*corresponding author

Abstract: The purpose of this paper is to study the impact of the epidemic and the psychological impact of the public on the pharmaceutical industry through financial analysis. By understanding the psychological pressure that the epidemic caused on the people and the fact that the public started to believe the rumors and blindly follow them, thus causing a mass rush of Shuanghuanglian Oral Liquid during the epidemic, people can observe its impact on Harbin Pharmaceutical Group Co., Ltd. The financial statements can more visually reflect the changes in various aspects of the company during the epidemic and study whether the impact of the Shuanghuanglian incident on the company was huge and whether there were other aspects of the impact.

Keywords: analysis and evaluation, behavioral finance, COVID-19

1. Introduction

In his theory of behavioral finance, American financier Richard Taylor suggests that when individuals are exposed to risk, various behavioral cognitive biases and false beliefs prevent investors from making appropriate trade-offs, leading to irrational investment behaviour. These cognitive biases and false beliefs can be categorized as: excessive expectations, cognitive biases and preconceptions [1].

This paper focuses on the cognitive bias created by the psychological pressure the risk of COVID-19 caused on the public, resulting in people's gullibility and blind following of rumors, which led to a mad rush for Shuanghuanglian and the rapid sale of the product; in turn, the impact on the company's financial indicators. The analysis of the company's financial indicators from 2016-2021 demonstrates the changes in the company's operating capacity, solvency and growth capacity, thus understanding the extent of the impact of the event on the company, promoting research related to the impact of citizen sentiment on companies, as well as drawing attention to public sentiment and rumours.

2. Background

2.1. Background

On 31 January 2020 at 22:46, Xinhua News Agency's legal person Weibo, Xinhua Viewpoint, published a Weibo post that "Shuanghuanglian oral liquid can inhibit novel coronavirus", which was

jointly discovered by Shanghai Institute of Pharmaceutical Sciences and Wuhan Institute of Virology. It was then reposted by mainstream media on Weibo at 22:54 on 31 January 2020 with the hashtag "Shuanghuanglian can inhibit COVID-19", further generating huge attention. Soon after the news was released, it was the number one trending topic on Weibo. In the early morning of the same day, the mainstream media released a microblog to dispel the rumour that there was no drug specifically designed to treat the COVID-19. Subsequently, the People's Daily issued a statement saying that "suppression" is not the same as "prevention and treatment" and urged not to rush to buy Shuanghuanglian Oral Liquid [2].

When the tension of the COVID-19 outbreak renders public sentiment, popular panic quickly reaches its peak. Shuang Huang Lian Oral Liquid quickly went off the market. The unrelated double-yolk lotus seed paste mooncakes were also snapped up [3].

2.2. Causes of the Incident

Ways of distortion: simplification, intensification and assimilation.

From the perspective of social psychology, Alpert categorizes the distortion process of rumors into three main ways: simplification, reinforcement and assimilation. "Simplification" means that rumors often omit a large number of details that are useful in understanding the truth; "Reinforcement" means that when some details are removed, those that remain are more prominent and important; "Assimilation" is the tendency of rumour spreaders to bring past experiences and present attitudes into some degree of congruence. Simplification, reinforcement and assimilation are three co-existing processes that interact and intertwine in the process of rumour distortion and dissemination [4].

2.2.1. Simplification of Key Information Elements

Compare the news released by "Xinhua Viewpoint" that "Shuanghuanglian Oral Liquid can inhibit the COVID-19" with the statement issued by the Shanghai Institute of Pharmaceutical Research. The release omits the important information element that "the discovery is still in clinical trials". The statement issued by the Shanghai Institute of Pharmaceutical Research concluded that the statement "Shuanghuanglian Oral Liquid can inhibit the COVID-19" is not fundamentally wrong, but the details of its inhibiting mechanism and dosage are still being studied. When the media released the news, it was not made clear to the public that the discovery was only at the preliminary stage of research, leading some members of the public to believe that Shuanghuanglian Oral Liquid had become an effective drug for the prevention, suppression and treatment of the COVID-19.

At the same time, Weibo, the main platform for this information, is characterized by its brief content, and fragmented reading has become a habit of use for the recipients of information on Weibo. As a result, the media often omits some news elements when publishing news on Weibo in order to adapt to the platform requirements and audience habits. This undermines the accuracy, authenticity and comprehensiveness of the news.

2.2.2. Reinforcement of Some Details

In the case of this rumour, the media focused on reinforcing the effect of suppression when publishing the information. The discovery that "Shuanghuanglian Oral Liquid can suppress the COVID-19" was still in clinical trials and there were no adequate and effective tests to prove how it suppressed the COVID-19 and to what extent. But amidst the fear and anxiety, the word "suppression" brought great comfort and hope to the public, and when this information was secondarily disseminated, the word "suppression" was again reinforced and even misrepresented as "prevention" and "treatment". "and "cure".

2.2.3. Assimilation in Line with Psychological Expectations

Alpert suggests that people use existing knowledge with the intention of forming a more coherent and compact mental construct, and that they demonstrate not only the process of reinforcement but also the process of assimilation. When an actual perceptual fact conflicts with an expectation, the expectation may provide a more powerful determinant of perception and memory than the fact itself [4]. Therefore, people often use past experience to judge the accuracy and reliability of information, and when receiving and communicating information, they assimilate some of the information elements based on past experience and mental expectations. Shuanghuanglian Oral Liquid is well known to the public as a commonly used Chinese medicine in daily life and is widely recognised for its effectiveness in clearing heat and fighting viruses. As the COVID-19 was rampant, people had great expectations and trust in Shuanghuanglian Oral Liquid, and the news released by the media that "Shuanghuanglian Oral Liquid can inhibit the COVID-19" created psychological consistency between people's past experiences and the content of the information, which was trusted and re-disseminated by the public [5].

2.3. Basic Situation of Harbin Pharmaceutical Group Co., Ltd.

Check the State Drug Administration found that there are currently 12 domestic companies approved for the production of Shuanghuanglian Oral Liquid, five of which are listed companies, including A-share listed Harbin Pharmaceutical Group Co.,Ltd., Tai Long Pharmaceutical, Renmin Tongtai, Zhenbao Island, and Hong Kong stock Fusen Pharmaceutical.

Harbin Pharm. Group Sanjing Pharmaceuti is a holding subsidiary of Harbin Harbin Pharmaceutical Group Co., Ltd. Focusing on the pharmaceutical and health industry, Harbin Pharmaceutical Group Co., Ltd. is a large domestic high-tech pharmaceutical enterprise mainly engaged in pharmaceutical R&D and manufacturing, wholesale and retail business. In 2015, the company integrated its assets and business segments through asset swap and created its pharmaceutical commercial listing platform (Renmin Tongtai, 600829.SH), realizing the business layout of independent operation and synergistic development of pharmaceutical industry and pharmaceutical commercial (Extracted from the company's annual report).

Table 1: Components of an enterprise group.

Name of subsidiary	Main business location	Place of Registration	Type of business	shareholding ratio (%) (direct)	Acquisition method
Harbin Pharm.Group Sanjing Pharmaceutical Co.,Ltd.	Harbin	Harbin	Pharmaceutical industry	100	merger
Harbin Pharmaceutical Health Technology (Hainan) Co., Ltd	Beijing	Hainan	Pharmaceutical industry	100	establishment
Harbin Pharmaceutical Group Traditional Chinese Medicine Co., Ltd	Harbin	Harbin	Pharmaceutical investment	100	establishment

Table 1: (continued).

Harbin Harbin Pharmaceutical Health Industry Co., Ltd	Harbin	Harbin	Pharmaceutical business	100	establishment
Harbin Pharmaceutical Group Sales Co., Ltd	Harbin	Harbin	Pharmaceutical business	99	establishment
Harbin Pharmaceutical Group Marketing Co., Ltd	Harbin	Harbin	Pharmaceutical business	99	establishment
Harbin Pharmaceutical Group Bioengineering Co., Ltd	Harbin	Harbin	Pharmaceutical industry	100	merger
Harbin Pharmaceutical Group People's Tongtai Pharmaceutical Co., Ltd	Harbin	Harbin	Pharmaceutical business	74.82	merger
Harbin Harbin Pharmaceutical Art and Culture Development Co., Ltd	Harbin	Harbin	culture	100	establishment
Beijing Haizhi Qinao Technology Co., Ltd	Beijing	Beijing	technology	51	establishment
Harbin Xiangchi Passenger Transport Service Co., Ltd. of Harbin Pharmaceutical Group	Harbin	Harbin	passenger transport	100	establishment
Harbin Pharmaceutical Group Harbin Shihakka Catering Management Co., Ltd	Harbin	Harbin	catering	100	establishment
Harbin Shenglin Property Management Co., Ltd. of Harbin Pharmaceutical Group	Harbin	Harbin	property	100	establishment
Harbin Pharmaceutical Group Harbin Boyuan Security Service Co., Ltd	Harbin	Harbin	safety and security	100	establishment
Harbin Pharmaceutical Intellectual Property Trading Center Co., Ltd	Harbin	Harbin	technology	100	establishment
Harbin Pharmaceutical Hong Kong II Limited	Hong Kong	Hong Kong	investment	100	establishment
Harbin Pharmaceutical (Shanghai) Pharmaceutical Technology Co., Ltd	Shanghai	Shanghai	biology, medicine, health care, technology	100	establishment
Harbin Pharmaceutical (Beijing) Biotechnology Co., Ltd	Beijing	Beijing	technology	100	establishment
Jian An Xi (Shanghai) Food Technology Co., Ltd	Shanghai	Shanghai	technology	65	merger

3. Analysis of the Company's Financial Position

3.1. Indicators Per Share of Harbin Pharmaceutical Group Co.,Ltd.

Table 2: Harbin Pharmaceutical Group Co., Ltd. indicators per share.

Reporting Period	June 2016	June 2017	June 2018	June 2019	June 2020	June 2021	June 2022
Basic earnings per share (\$)	0.15	0.14	0.15	-0.02	-0.13	0.14	0.05
Net assets per share (RMB)	3.15	2.89	2.57	2.13	1.96	1.71	1.82
Return on net assets (%)	5.35	4.88	5.69	0.14	5.76	8.82	3.26

Earnings per share of Harbin Pharmaceutical Group Co., Ltd. is in a stable state from 2016-2018, declining severely in 2019-2020 due to the epidemic, and starting to pick up after 2021.

Net assets per share have continued to decrease from 2016-2022 and the return on net assets is in a fluctuating state except for 2019, which is presumed to be lower due to the epidemic.

Return on net assets falls severely in 2019 and picks up rapidly in 2020. The presumed impact of the epidemic let the earnings of Harbin Pharmaceutical Group Co., Ltd. decline in 2019, while an adjusted 2020 curbs the continued decline in earnings.

3.2. Analysis of Financial Ratio Indicators

Table 3: Summary of the income statement of Harbin Pharmaceutical Group Co., Ltd. 2016-2021 (in million yuan).

Reporting Period	2016	2017	2018	2019	2020	2021
Total operating revenue (RMB million)	1,412,688.60	1,201,753.13	1,081,361.36	1,182,456.17	1,078,845.65	1,280,201.56
Operating profit	96,634.04	65,590.37	52,737.07	27,774.22	-94,210.83	64,241.30
Net profit	84,379.56	46,436.38	40,363.50	12,186.83	-104,525.02	40,984.56
Return on Net Assets/ROE (%)	10.04	5.77	5.90	1.02	-30.97	9.65
Return on Assets/ROA (%)	5.86	3.23	3.15	1.00	8.59	3.32

In terms of operating revenue, the operating revenue of Harbin Pharmaceutical Group Co., Ltd. has gradually decreased from RMB1,412,688.60 million in 2016 to RMB1,081,361.36 million in 2018, while the overall operating revenue has fluctuated from 2019 onwards, with a slight rebound in 2021.

In terms of operating profit and net profit, from 2016-2019, operating profit and net profit decreased year by year, while by 2020, operating profit and net profit dropped sharply by 439.20%,957.69% respectively; while 2021 rebounded rapidly.

ROE declines year-on-year from 2016 to 2019, falling severely by 3,136.27% in 2020, before rebounding rapidly in 2021.

ROA declined year on year from 2016-2019, recovered rapidly in 2020 by 759.00% and declined by 61.35% in 2021.

In summary, the graph above shows that the company's indicators declined year on year prior to the epidemic, and that the epidemic hit hard, and that in 2021 the company made adjustments to successfully rebound its indicators.

3.3. Operational Capacity

Table 4: Cash flows of Harbin Pharmaceutical Group Co.,Ltd. 2014-2018 (in RMB million).

Reporting Period Year	2016	2017	2018	2019	2020	2021
Net cash flow from operations	277,801.16	14,922.15	69,272.49	-28,493.85	-72,815.43	-16,243.74
Net cash flow from investments	-7,636.59	-6,798.23	-80,411.08	-137,494.92	-10,116.60	9,161.54
Net financing cash flows	11,400.04	-120,659.33	-136,165.81	28,753.27	106,141.43	39,326.50

The Company's cash flow from operations went from \$277,801.16 million in 2016 to

\$692,724.9 million in 2018, which shows that the Company's profit is mainly generated by operating activities prior to the 2019 outbreak.

For 2019-2020, net cash flows from operating activities are negative, net cash flows from investing activities are negative and net cash flows from financing activities are positive. This is evidence that its sources of funding are mainly financing, relying on loans while returning to productivity during the epidemic.

In 2021, the company's main sources of funding are investments prior to sale and financing activities, with net operating cash flow remaining negative, but recovering 77.69% from 2020.

3.4. Debt Servicing Capacity

Table 5: Summary of the balance sheet of Harbin Pharmaceutical Group Co., Ltd. 2014-2018 (in million).

Reporting Period Year	2016	2017	2018	2019	2020	2021
Total assets	1,505,274.49	1,369,933.33	1,190,090.16	1,250,253.08	1,184,753.45	1,284,243.88
Total liabilities	675,464.08	621,774.49	561,997.99	655,970.95	785,896.43	842,195.40
Shareholders' equity	829,810.41	748,158.84	628,092.17	594,282.13	398,857.02	442,048.47

The company's assets declined year on year from 2016-2018 and are in a fluctuating state from 2019-2021; the company's liabilities declined year on year from 2016-2018 and started to increase year on year in 2019, presumably due to the increase in liabilities caused by the epidemic; shareholders' equity declined year on year from 2016-2020 and recovered slightly in 2021.

Table 6: Harbin Pharmaceutical Group Co., Ltd.'s debt 2016-2021.

Reporting Period	2016	2017	2018	2019	2020	2021
Gearing ratio (%)	44.87	45.39	47.22	52.47	66.33	65.58
Current assets (\$ million)	1,005,942.78	907,290.40	720,358.98	730,706.90	780,787.22	873,300.60
Total assets (million)	1,505,274.49	1,369,933.33	1,190,090.16	1,250,253.08	1,184,753.45	1,284,243.88
Current assets/total assets (%)	66.83	66.23	60.53	58.44	65.90	68.00
Current liabilities (\$ million)	606,964.17	564,268.76	509,328.13	606,859.09	730,678.98	785,477.25
Total liabilities (\$ million)	675,464.08	621,774.49	561,997.99	655,970.95	785,896.43	842,195.40
Total current liabilities (%)	89.86	90.75	90.63	92.51	92.97	93.27

As can be seen from the table above, the company's gearing ratio has increased year on year, with total assets decreasing year on year from 2016-2018 and fluctuating from 2019-2021; while total liabilities decreased year on year from 2016-2018 and began to increase year on year in 2019; therefore the increase in gearing is a joint result of decreasing assets and increasing liabilities.

Current assets/total assets decreased year on year from 2016-2019 and increased year on year after 2020, following the same trend as current assets, therefore changes in current assets/total assets are mainly influenced by current assets.

Current liabilities/total liabilities have increased broadly year on year, while current liabilities and total liabilities have followed the same trend, and it is worth noting that both current liabilities and total liabilities have increased year on year since 2019, presumably due to the impact of the epidemic and the need for companies to raise significant debt.

3.5. Ability to Grow

Table 7: Assets of Harbin Pharmaceutical Group Co.,Ltd. JSC 2016-2021.

Report Date	2016	2017	2018	2019	2020	2021
Total assets (million)	1,505,274.49	1,369,933.33	1,190,090.16	1,250,253.08	1,184,753.45	1,284,243.88
Working capital (\$ million)	398978.61	343021.64	211030.85	123847.81	50108.24	87823.35
Working capital/total assets (%)	26.50537	25.03929	17.73234	9.905819	4.229423	6.838526
Retained earnings asset ratio(%)	31.9722	28.8266	25.4221	25.0516	17.3408	18.8869

The company's working capital/total assets declined significantly in 2019 and trended broadly upwards in the other years; the overall downward trend in the retained earnings asset ratio from 2016-2020 takes into account the downward trend in total assets to infer a significant decline in retained earnings over the years.

4. Conclusion

In summary, the Shuanghuanglian incident will have an impact on the performance of Harbin Pharmaceutical Group Co., Ltd. in 2019-2020, but the impact will be short-lived and not significant enough because of the low proportion of revenue from the main business of Chinese medicine preparations of Harbin Pharmaceutical Group Co., Ltd. Company, thus making the change insignificant; secondly, the Shuanghuanglian incident will be short-lived, so the impact caused in the long run will be small.

Table 8: Main business composition of Harbin Pharmaceutical Group Co.,Ltd. (unit: RMB billion, %).

Classification	Main Business Composition	Main revenue	Percentage of income	Main operating costs	Cost ratio	Main profit	Profit ratio	Gross margin
By Industry	Wholesale Medical customers	58.2	49.22	51.29	43.94	6.91	11.87	58.2
	Chemical preparations	22.38	18.93	10.34	8.86	12.04	53.80	22.38
	Wholesale commercial customers	12.69	10.73	11.98	10.26	0.71	5.59	12.69
	Retail	11.46	9.69	8.16	6.99	3.3	28.80	11.46
	Chinese medicine	5.75	4.86	4.05	3.47	1.7	29.57	5.75
	Other (additional)	7.77	6.57	30.91	26.48	-23.14	-297.81	7.77

Table 8: (continued).

By product	Balance Project	83.15	70.32	72.04	61.72	11.11	13.36	83.15
	Nutritional supplements	12.73	10.77	4.09	3.50	8.64	67.87	12.73
	Anti-infection	10.04	8.49	8.04	6.89	2	19.92	10.04
	Bone sensitizer	4.18	3.53	2.27	1.94	1.91	45.69	4.18
	Other (additional)	8.15	6.89	30.29	25.95	-22.14	-271.66	8.15
By Region	Domestic area	117.04	98.98	89.03	76.27	28.01	23.93	117.04
	Foreign regions	0.67	0.57	0.75	0.64	-0.08	-11.94	0.67
	Other (additional)	0.54	0.46	0.17	0.15	0.37	68.52	0.54

The company's 2020 EPS, net income and operating margin were negative, sales growth was positive except for 2020 after the epidemic, equity fell sharply and the value of the debt to equity ratio was high, suggesting that the rumors of Shuanghuanglian had no positive effect on the company's sales growth in 2020. The loss for the year was due to other reasons, presumably due to the acquisition of overseas pharmaceutical companies by Harbin Pharmaceutical Group Co., Ltd..

On 13 February 2018, Harbin Pharmaceutical Group Co., Ltd. entered into a purchase agreement with GNC Corporation, under which Harbin Pharmaceutical Group Co.,Ltd. intends to subscribe for 300,000 preferred shares issued by it for US\$300 million (approximately RMB2 billion) in cash.

In February 2019, Harbin Pharmaceutical Group Co., Ltd. completed the subscription of the preferred shares issued by GNC with an annual dividend rate of 6.5%. After the conversion of the preferred shares into common shares on the outside, Harbin Pharmaceutical Group Co.,Ltd. will hold 40.1% of GNO, thus becoming its single largest shareholder.

On June 22, 2020, Harbin Pharmaceutical Group Co., Ltd. announced that the cost of the investment in GNC totaled RMB2,063 million; as at March 31, 2020, the carrying value of GNC was RMB898 million, representing an accumulated loss of other comprehensive income of RMB1,165 million due to changes in fair value, which has been reflected in the regular reports.

In the same month as this announcement, GNC, the world's largest health food manufacturer, declared bankruptcy and will sell the company to close all its stores.

As a result of the relocation of Harbin Pharmaceutical Group Co., Ltd. General Factory and Harbin Pharmaceutical Group Co., Ltd. Sixth Factory, the integration of related companies in the Chinese medicine segment and the structural integration of the injectable product line during the reporting period, the production output was reduced, resulting in higher costs and expenses; at the same time, the Company made a provision for impairment of idle equipment in some of its plants that had outdated technical performance, high energy consumption and could no longer be renovated and utilized, which was expected to reduce the total profit by RMB69.28 million.

An accounting manipulation technique whereby a listed company intentionally depresses the results of a bad year and defers the profit to the next year to focus on the next year's results in order to achieve a large increase in the next year's results [6].

References

[1] Richard H. Thaler. *Anomalies: The Winner's Curse* [J]. *The Journal of Economic Perspectives*, 1988, 2(1).191-202.

- [2] *file:///C:/Users/Lenovo/Desktop/ On the Spreading Process of Internet Rumors. Pdf.*
- [3] Wang Qianlin, Wu Meiting, Lu Yu, et al. Study on the enhancement of public media literacy under the epidemic with the example of Shuanghuanglian incident [J]. Consumer Guide, 2021(8):140-147. doi:10.12229/j.issn.1672-5719.2021.08.098.
- [4] [US] Olbert. The Psychology of Rumor [M] Translated by Liu Ping, et al. Shenyang: Liaoning Education Press, 2003:17, 94-114, 68-69.
- [5] Zhu Jinjin. A study of rumor propagation from the perspective of social psychology: the case of "Shuanghuanglian" during the COVID-19 epidemic [J]. Journal of Journalism Research, 2021, 12(17):68-70. doi:10.3969/j.issn.1674-8883.2021.17.025.
- [6] Du Peng. Low threshold incentive for management in HaPharma [J]. Securities Market Journal, 2021(9):30-31. doi:10.3969/j.issn.1004-6291.2021.09.007.