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Radical Into the Impact of Investment and Debt Default on Enterprises and Reflections

——To ofo bike as an example

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ABSTRACT

This paper analyzes the specific case of ofo bicycle to study the relationship between enterprise overinvestment and debt default, and draws out the impact of both on the enterprise. This paper first analyzes the main situation of the enterprise, including the operation situation and financing situation, etc.; then study the enterprise's non-fixed asset investment and fixed asset investment respectively, and through the comparison of the growth rate of fixed assets and the growth rate of sales revenue, conclude that there is overinvestment in the enterprise; thereafter, this paper analyzes the development history of the enterprise and the default situation, and draws the conduction process of the enterprise's overinvestment and debt default. Through the case study, this paper concludes that the senior management problem and the market situation of the enterprise lead to overinvestment, and overinvestment and senior management's insensitivity to liabilities will cause the enterprise's debt default.

KEYWORDS

Overinvestment; Debt default; Management overconfidence

1. INTRODUCTION

With the rise and rapid growth of emerging industries and intensified competition, some companies may engage in aggressive investment behaviours, which ultimately lead to the risk of debt default. ofo, as a typical case of this phenomenon, provides important material for the study of this phenomenon. ofo is a former leader in the bike-sharing industry, and used to hold a large market share and high brand awareness in the industry, as well as having a huge user scale. However, its over-investment and high-impact debt defaults have led to Ofo's broken financial chain and damaged credibility in recent years, ultimately forcing it to shut down most of its operations and enter a state of stagnation.

After the failure of Mobay, ofo and other bike-sharing enterprises, the public gradually lost confidence in the sharing economy. However, after the acquisition of Mobay by Meituan and other events, bike sharing seems to have a "second spring". A specific analysis of Ofo's aggressive investment behaviour and its debt default will help the company to make a more comprehensive estimate of its own situation before making investment decisions, and help it to make more rational investment behaviour.

This paper provides a specific case study of ofo bicycle over-investment and debt default, analyses the performance and reasons of its over-investment, and discusses the impact of debt default on the development of enterprises in many aspects, and puts forward corresponding reflections and suggestions.

2. LITERATURE REVIEW

2.1. Causes of Overinvestment

A part of the research links the management of the company and overinvestment and argues that the decisions and behaviour of managers are important causes of corporate overinvestment. Jensen (1986) focuses the problem of overinvestment on the conflict of interest between the management of the company and the shareholders, whereby the management chooses to invest in projects that are unfavourable to the company but favourable to them in order to make their own profit, thus leading to overinvestment. Biddle (2009) points out that the lack of financial information and the lack of informal institutions have the potential to lead to inefficient investment behaviour in companies. Zhou Rui (2022) combines the information asymmetry theory with overinvestment and concludes that the information published by some firms has more limitations in terms of quality and quantity, which can make firms overinvest. In addition to management's, firms can also cause overinvestment under the influence of many external factors; Jiang, Feitao and Cao, Jianhai (2009) suggest that government policy subsidies may cause firms to overinvest.

2.2. Factors Contributing to Debt Default

Based on the study of the literature, the factors affecting debt default are generally categorised as external and internal factors. The external factors can be categorised as market and macroeconomic factors, while the internal factors involve financial, firm attributes and managerial decisions.

Regarding external factors, academics have more in-depth research on the financial, equity structure, and financing aspects of enterprises. Among them, Guo Jing and Zhang Xinmin (2023), for the financial aspects of enterprises, focus on individual financial crisis, financial distress and financial failure as the main factors affecting debt default. Pan Zeqing (2018) showed in his study that attention should be paid to the situation of the firm's gearing ratio, profitability and debt structure, which are factors that have a huge and easily overlooked degree of influence on debt default. In addition to this, there are many scholars' studies pointing to the social attribute factors of enterprises, Chen Deqiu (2013) pointed out that the society has different bankruptcy costs, and the probability of debt default of enterprises with different bankruptcy costs is also different. It was found that in order to achieve social objectives such as social stability and employment protection, the government will bring more implicit protection to enterprises with higher bankruptcy costs, which enables some enterprises to obtain large-scale loans, and the lower quality of these enterprises will be more likely to trigger debt default.

2.3. Overinvestment and Debt Default

By sorting out the relevant studies, it can be concluded that the relationship between overinvestment and debt default of enterprises mainly focuses on two aspects. One is that overinvestment will make enterprises rely more on debt financing, thus increasing the debt burden of enterprises at the same time; the other is that overinvestment will reduce the operating performance of enterprises and affect the profits of enterprises, thus reducing the debt repayment ability of enterprises and leading to debt default. Jiang Fuxiu (2009) argues that the more aggressive a company's management strategy is and the faster the company expands, the higher the probability that the company will fall into financial distress.Hackbarth (2008) focuses on the problem of overconfidence of the management of a company, which argues that the management of a company is overconfident or overestimates its own anti-risk ability, and therefore, the company will issue debt more frequently, which will ultimately allow the company to exceed its optimal debt level. Merton, on the other hand, points out that firms with aggressive investment strategies are at risk of over-utilising their resources, which can lead to debt default.

3. CASE STUDIES

3.1. Ofo's Foundations

Beijing Rockbike Technology Co., Ltd. and Dongxia Datong (Beijing) Consulting Co., Ltd. are both related parties of ofo shared bike water, both have close relationship, both are wholly owned by OFO (HK) Limited, and share the responsibility of ofo's operation and management. Among them, Rock Byker is mainly responsible for the specific operation of ofo shared bike, while Dongxia Datong is mainly responsible for capital operation and wealth management. Beijing Rockbike Technology Co Ltd (ofo) was founded in 2015. The core concept of the company is "to solve the last-mile travel problem by sharing economy + intelligent hardware", Ofo first proposed and used the "de-piling" mode, using QR code technology to optimise the experience of sharing bicycles. The model allows users to decide on their own where and when to borrow and return bikes within the operation area. The model has been well received by consumers since its launch, allowing Ofo to quickly dominate its emerging market and become a leading company in China's domestic bike-sharing industry.

3.2. Over-investment By Ofo

3.2.1. Advertising and marketing

Since 2016 to 2017, Ofo has invested a lot in marketing to expand its market share and increase its brand awareness. As shown in Figure 1 below, Ofo's high-frequency advertising campaign was mainly concentrated in 2017, and its main marketing method is cross-border cooperation in addition to advertising. It is undeniable that Ofo's marketing activities such as cross-border cooperation is a relatively new concept in 2017; the strategy of using the form of cooperation with ip to gain users' recognition to expand its influence has a certain effect. These advertisements and marketing successfully achieve the purpose of attracting users, expanding influence, and satisfying the freshness of users.

However, ofo has also spent a lot of money on offline marketing. For example, ofo has placed advertising signs in subways, bus stops, commercial centres and other areas in many cities, such as North, Shanghai, Guangzhou and Shenzhen, and has carried out offline marketing activities on several occasions.

Table 1. ofo marketing co-operation diagram

Time	3Marketing activities
2016/11/11	Durex cooperation on Double 11
End of 2016	Advertising MV shooting
2017/1/1	New Year's greetings advertisement on the big screen in Times Square, New York
2017/4/20	McDonald's cooperation
2017/5/1	Endorsement by popular star Lu Han
2017/6/30	Despicable Me movie series Minions cooperation
2017/8/31	"One Yuan Monthly Subscription" Limited Time Event
2017/10/9	Snickers Cooperation
2017/11/15	Pikachu Cooperation
2018/1/16	Kumamon Cooperation, Customized Shared Bicycles
2018/5/14	June 1st Event, Free Monthly Subscription Card

Source: ofo social platform collation

3.2.2. Intellectual Property Rights

Bike sharing is a highly technology-dependent industry, and Ofo's investment in intangible assets is mainly focused on intellectual property, including smart bike locks, app operation optimisation and other derivative products. As of 2019, Ofo has applied for a total of 785 trademarks, with the highest number of applications filed in 2016, in which there exist payment methods such as "OFO Big Yellow Card" and "OFO One Kilometre Plan", which are paid on a monthly basis, and whose main purpose is to increase The main purpose is to improve user stickiness and user experience.

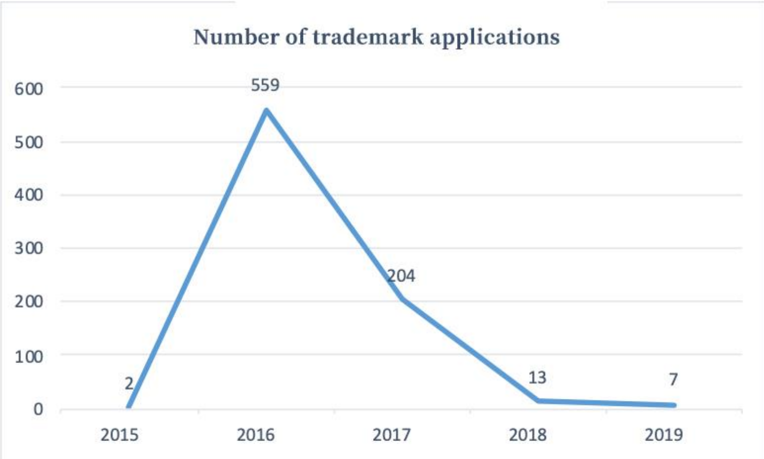

Figure 1. Number of trademark applications by ofo

Source of data: Skywatch

In addition, as of 2019, ofo has applied for a total of 15 patents, of which 3 are utility models, 10 are invention publications, and 2 are designs. According to the disclosed data, the patents applied by ofo basically revolve around the upgrading of the control of the smart lock, the improvement of the vehicle management method, and the GPS positioning method. Among them, there are six patents related to smart locks, accounting for two-fifths of the total.

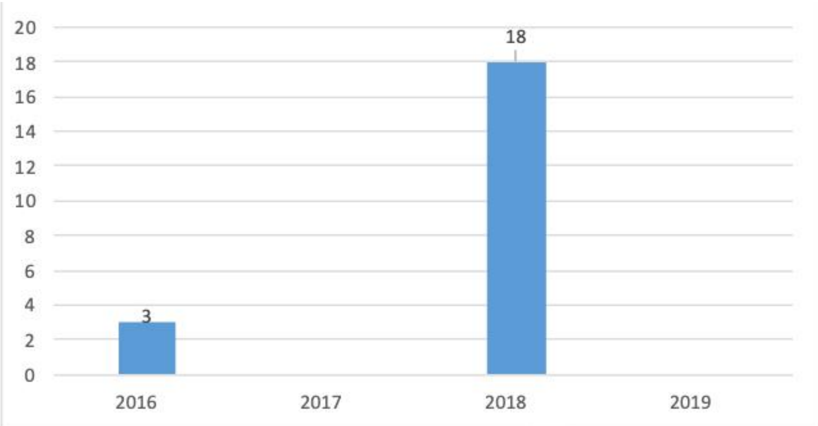

Figure 2. Number of patents applied by ofo

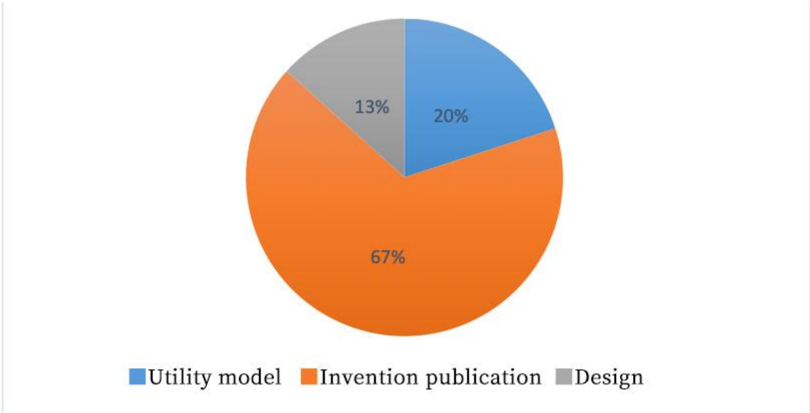

Figure 3. Types ofo's patent applications

Source of data: Skywatch

In terms of innovation capability, ofo has invested less in this area, and can even be called neglectful. In comparison, by the end of 2019, ofo's competitor Mobai Technology Co. had applied for a total of 442 patents, and the impact of such a gap on the bike-sharing industry, which is highly reliant on technological innovation, is huge.

Through the analysis of various data, ofo did not focus on improving its level of technological innovation in its development process, but rather invested a large amount of resources in expanding the number of bicycles, advertising and marketing, and software promotion. This has led to the lack of innovation ability of ofo, thus affecting the user experience.

3.2.3. Investment in fixed assets

Ofo's investment in fixed assets has centred on the acquisition of bicycles. Whether in domestic China or overseas markets, ofo has placed a large number of bikes in the years of its rise. According to disclosed data, it can be seen that in the first half of 2016, ofo placed thousands of bikes mainly in Beijing's colleges and universities. In the third quarter of that year, ofo began to expand its bike placement to downtown Beijing, where it placed 20,000 bikes. In the fourth quarter of the year, ofo further expanded its deployment to other cities, and by the end of the year, ofo had placed about 85,000 bikes in 20 cities across the country.

In 2017, ofo's placement volume increased significantly. During the year, ofo not only accelerated its expansion within China, but also aggressively expanded to several cities abroad. In the first quarter of 2017, ofo continued to increase the number of bikes it placed in China, reaching 200,000 bikes. And in the second quarter, ofo's placement grew rapidly and began its international expansion. Until the end of the second quarter, ofo's cumulative global deployment reached 1,000,000 bikes. in the second half of 2017, ofo's deployment grew extremely rapidly. In the third quarter, ofo's expansion accelerated with cumulative bike placements exceeding 5,000,000. By the end of 2017, ofo had placed more than 10,000,000 bikes in more than 250 cities around the world.

With the gradual saturation of the bike-sharing market, in 2018, ofo gradually began to slow down or even gradually reduce its placement rate due to its own financial and operational pressures. In the first quarter, its placement volume accumulated about 15,000,000 units. Due to market pressure, ofo's placement speed gradually slowed down and eventually accumulated about 23,000,000 units.

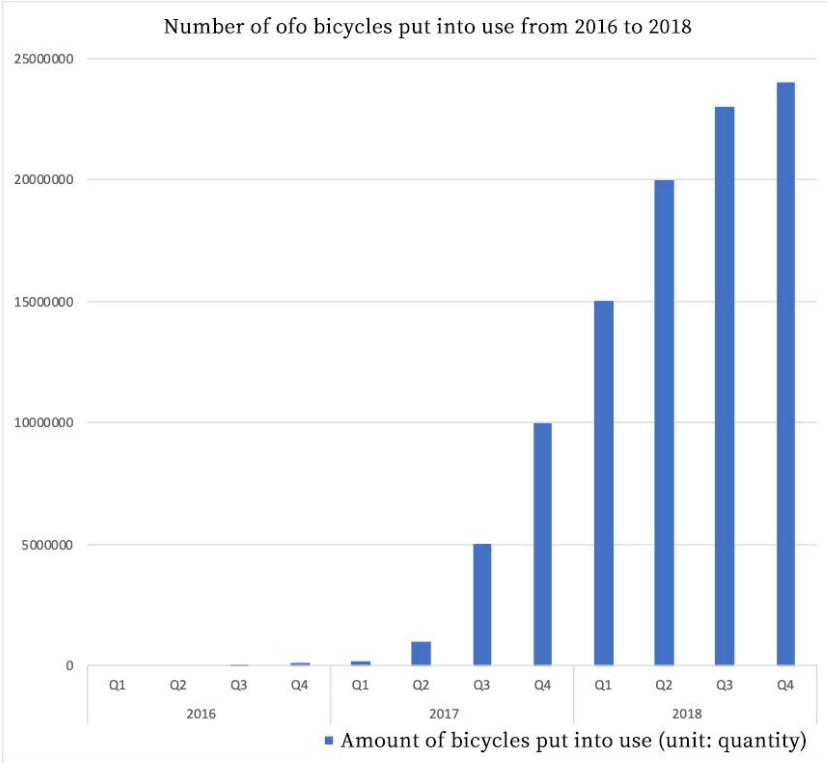

Figure 4. ofo 2016 - 2018 Bike Placements

The specific manifestations of the enterprise's overinvestment are that the investment exceeds the enterprise's needs, the economic and social benefits caused by the investment are low, and the growth rate of sales revenue is significantly lower than the growth rate of fixed assets. By comparing the growth rate of fixed assets and the growth rate of sales revenue of the enterprise from 2016 to 2018, it is judged whether the enterprise is overinvestment. Under normal circumstances, efficiency investment can bring benefits to the enterprise, which in the shared bike jersey industry is specifically manifested in the improvement of brand awareness, the improvement of user recognition and the growth of the number of active app users.

In this case, Ofo's main revenue comes from rent and deposit, and the use of shared bikes is highly dependent on the operation of its app, so the number of active users of the app is positively correlated with Ofo's revenue. Therefore, the growth rate of the number of active users of the app can be regarded as the growth rate of sales revenue. Since the main fixed asset investment of ofo is the purchase of bicycles, the growth rate of bicycle placement can be regarded as the growth rate of fixed asset investment.

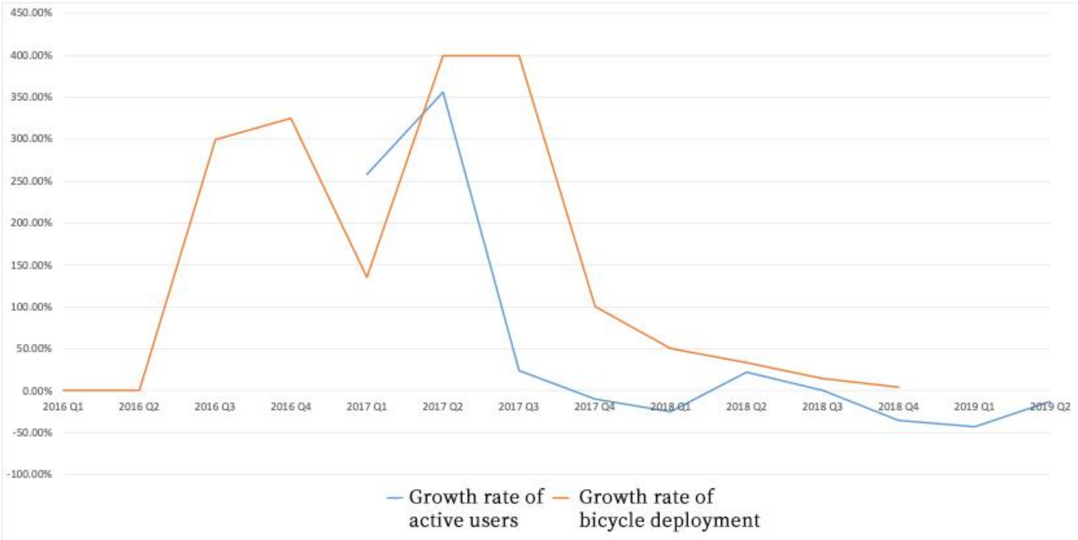

Figure 5. Fixed Assets Growth Rate vs. Sales Revenue Growth Rate

Through the data of easy disclosure, the fixed asset investment growth rate and sales revenue growth rate of ofo since 2016 to 2018 were calculated respectively, and Figure 5 was made to analyse. As can be seen from the figure, at the beginning of 2017, ofo was in a period of accelerated development, and its investment was quite effective, which effectively drove the increase in the number of users and achieved good economic benefits. However, since the second quarter of 2017, the growth rate of its fixed asset investment has been much higher than the growth rate of sales revenue, and overinvestment has occurred. Until the end of 2017, ofo's sales growth rate became negative, and ofo did not effectively reduce the investment in fixed asset investment, making its fixed asset growth rate much higher than the growth rate of sales revenue, in line with the characteristics of excessive investment.

3.3. Ofo Debt Defaults

3.3.1. Methods of revenue collection

The Ofo platform derives its main revenue from two sources. One is the rental fee for the use of the bike, and the other is the interest from the deposit. This operation model has the disadvantage of a single source of income.Ofo's rental pricing in the early stage of development was RMB 1/hour, with a student discount of RMB 0.5/hour. In order to increase user stickiness, ofo also introduced subscription-based services such as monthly cards to meet consumer demand. In addition, ofo has created a B2B division to expand its operations to generate advertising revenue. The business mainly focuses on methods such as sticking advertisements on the body, implanting pop-up windows on the app, and short video advertisements. The model has been quite successful, and as of the second quarter of 2018, it has generated more than $100 million in revenue for ofo.

Ofo's deposit was 99 yuan until June 2017, while after that it was 199 yuan, and users had to submit a deposit before they could use the car. However, at the end of the rental order, the deposit is not automatically refunded but is kept in the user's e-wallet, and the operation of refunding the deposit is so cumbersome that many users do not take the initiative to retrieve it. This then creates a huge amount of money for ofo. Calculated at ofo 's peak of active users, i.e., the end of August 2017, the number of active users at that point in time was 36,576,200 people. At a deposit of $199, these active users could have brought in $7,278,663,800,000 in capital accumulation to ofo. Calculated at a risk-free interest rate of 3.6 per cent, these funds could bring in $262,030,000 to Ofo.Ofo could choose to invest these funds in venture capital for higher profits.

3.3.2. Operating costs

Ofo's investment expenditure on fixed assets in 2016 and 2017 was huge, and the number of bicycles it acquired kept growing. The acquisition cost of each bicycle bike is 300 yuan, until the end of 2017, ofo has purchased more than 10 million bicycles, and its acquisition cost is more than 3 billion yuan Visible, excessive investment on ofo has caused a considerable burden. In addition, ofo's operation and maintenance costs have also put greater pressure on its expenses. As of 2018, ofo's operating costs (i.e., vehicle scheduling, vehicle maintenance and website operation, etc.) can exceed 200 million yuan in January; in terms of the salary of operation and maintenance personnel, according to the average salary of 3,000 yuan per month in that year, ofo needs to spend at least 27 million yuan per month.

In addition, ofo has invested a lot in advertising and marketing. In addition to the cross-border cooperation and other projects mentioned above, ofo also spends more money on the promotion of metro bus advertising.

3.3.3. Corporate defaults

Over-investment is usually accompanied by over-indebtedness. As of early 2018, users gradually lost confidence in ofo's operations and gradually asked ofo to refund their deposits. The number of people waiting online for ofo to return their deposits has reached 16 million people, and the size of the pending deposit refund exceeds RMB 1.5 billion. According to the disclosed information, the historical debt of Beijing Rockbike Technology Co., Ltd. is 1,696,100 yuan, and the number of creditors is seven. Ltd.'s current total number of debt cases involving lawsuits is 8, the number of creditors is 7, and the current total amount of debt involving lawsuits is 23,976,200 RMB. Among them, the total amount of debt involved with kunshan huigu international trading company is the highest, amounting to 16,867,200 yuan, the main cause of this debt default is the contractual dispute of contracting. In addition, ofo's current debt default also involves service contract disputes, insurance premium disputes and administrative penalties.

Table 2. Current Debts Involved in Lawsuits of Beijing Rockbeck Technology Co.

Creditor	Case name	Total amount of debt involved in the lawsuit
Shenzhen Mengwang Technology Development Co., Ltd.	Shenzhen Mengwang Technology Development Co., Ltd. and Dongxia Datong (Beijing) Management Consulting Co., Ltd. Beijing Baikelock Technology Co., Ltd. shares platform to ask the conditional execution case	5.0527 million dollars
Kunshan Huirong International Trade Co., Ltd.	——	16.8672 million dollars
China Pacific Property and Casualty Insurance Co., Ltd. Beijing Branch	China Pacific Property and Casualty Insurance Co., Ltd. Beijing Branch Insurance premium dispute case involving Beijing Baikeluoke Technology Co., Ltd.	80.92 million dollars
Beijing Haidian District Market Supervision and Administration Bureau	Beijing Haidian District Market Supervision and Administration Bureau Administrative penalty case against Beijing Bikelock Technology Co., Ltd.	65.00 million dollars
Luo +	Case concerning the infringement liability dispute between Luo* and Beijing Bikelock Technology Co., Ltd. and Shenzhen Qianhai Hongxuan Technology Co., Ltd.	342.2 million dollars
Yu**	Yu* vs. Beijing Bikelock Technology Co., Ltd. on the right to life, health, and physical rights	217.7 thousand yuan
Tianjin Zhonglun Import and Export Trading Co., Ltd.	Tianjin Zhonglun Import and Export Trading Co., Ltd. and Beijing Bikelock Technology Co., Ltd. sales contract dispute case	37.2 million dolla

In addition, the total amount of debt involved in lawsuits of Dongxia Datong (Beijing) Management Consulting Co., Ltd. reached 1,250,605.47 million yuan. The total number of creditors was 232 and the number of cases reached 271. In 2019, the court imposed a "consumption restriction order" on Dongxia Datong, forbidding the company and its principals from engaging in any high consumption behaviour.

4. CONCLUSION

By analysing the specific case of ofo, the article concludes that ofo does have overinvestments. Internally, these overinvestments are closely related to the overconfidence of the senior management and the company's internal management chaos; and externally, in 2016 - 2018, which was an extremely competitive few years for the bike-sharing industry, adjustments in China's domestic policy on bike-sharing, the rise of competing companies and the expansion of the user base all influenced ofo to make aggressive investment and operational decisions. Overall, Ofo's overinvestment is the result of multiple influences. The consequence of Ofo's overinvestment is debt default. The negative impacts of over-investment are manifold: firstly, too many bikes were put on the market that exceeded the demand of the users, and at the same time led to an increase in the operation and maintenance costs, which affected the company's revenue; secondly, the excessive investment in advertisement and marketing not only failed to achieve the effect of increasing the activity of the users, but also led to the fact that Ofo neglected to develop the technological level of its own products, which lowered the user's experience; lastly, due to the negligence of the management and the company's management, the company's investment was not sufficient to meet the needs of the users. Lastly, the management's insensitivity to the high level of debt was due to the negligence of the management and the imperfections of the company's internal financial auditing system. These negative impacts were characterised by a decline in user satisfaction - lower revenues - and debt defaults.

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