Analysis of the reasons for the bankruptcy of Luoyang construction three-wheeled motorcycle industrial park

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Abstract. Luoyang Construction Three-Wheeled Motorcycle Industrial Park in Yuetan Town, Luoyang City, was once a major industry driving local economic development. However, most firms in the park faced bankruptcy within a few years. This paper conducts a qualitative experiential analysis case study from a supply chain perspective. Financial statements and court-issued lists were analyzed to establish the chronological developmental history of motorcycle factories and parts manufacturers in the area. The reasons for bankruptcy were identified and prioritized, with management decision-making, excessive expansion, and high-risk investments being the main causes of motorcycle factory bankruptcy. Unfair competition and financial issues were also contributing factors. For parts manufacturers, bankruptcy primarily resulted from unfair competition's credit selling practices, followed by funding shortages. Analyzing these reasons serves as a warning and provides potential solutions for similar enterprises facing challenges.

1 Introduction

In the nearly 40 years of Reform and Opening-up, China's economy has experienced rapid development. Meanwhile, more and more people have transformed their small workshops into small and medium-sized enterprises, gradually strengthening them. Consequently, the private economy has become a very important part of China’s economy. Luoyang Construction Three-Wheeled Motorcycle Industrial Park, located in Yuetan Town, Yanshi District, Luoyang City, started developing the three-wheeled motorcycle industry in the 1990s. Then, the industrial park was established and made significant progress for further expansion. However, today, the enterprises that were supposed to continue developing are either on the verge of bankruptcy or have already faced bankruptcy, from suppliers to various motorcycle factories. What could be the reasons behind their bankruptcy or near-bankruptcy?

Zhang et al. attribute most private enterprise bankruptcies to blind diversification [1]. Cai et al. analyze debt disposal in a bankruptcy reorganization case study, providing risk avoidance measures [2]. They emphasize safeguarding creditor interests. Sun et al. link increasing bankruptcy cases to economic downturns and poor management [3]. Liu et al. identify Greensill's bankruptcy as supply chain financing deviations, excessive lending, and inadequate risk management [4]. Ge et al. discuss mild bankruptcy reorganization for ST HNA, stressing strengthened financial risk supervision and audits [5]. Hao cites credit and liquidity risks for L Financial Company's bankruptcy reorganization [6]. Studies mainly analyze risks and management, lacking supply chain perspectives and ordinary private enterprise bankruptcy analysis. Lohmann et al. introduce a bankruptcy risk matrix for distressed firms and interpret bankruptcy prediction models [7]. Satyanarayana et al. assess bankrupt companies using the Altman Z-score model [8]. Liu et al. employ mathematical models and big data for visualizing business relationships and market monitoring [9]. Hyun proposes a genetic algorithm-based counterfactual generation to improve bankruptcy prediction model accuracy [10]. Supply chain finance articles optimize prediction models, but fewer analyze bankruptcy reasons. This article qualitatively analyzes upstream and downstream data from a supply chain perspective, highlighting bankruptcy reasons. It warns similar enterprises to avoid the same path, considering their significant presence among small and medium-sized businesses.

2 Case analysis

2.1Basic overview

Most Luoyang Construction Three-Wheeled Motorcycle, Industrial Park enterprises have been in the motorcycle industry since the 1990s. The enterprises have also contributed to developing motorcycle-related industries in the surrounding areas. The supply chain of the park is shown in Figure 1. All motorcycle factories' suppliers for various parts (except engines) are produced by locals within the industrial park. Even material manufacturers, such as those selling steel and galvanizing materials, are

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nearby. Despite this seemingly continuous development, the enterprises went bankrupt, leading to the collective bankruptcy of the entire park. Therefore, this article analyzes the reasons for the bankruptcy of motorcycle parts manufacturers and motorcycle manufacturers.

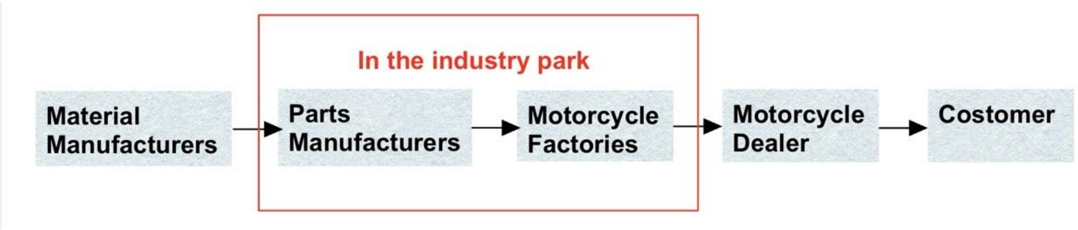

Figure 1. The supply chain of motorcycles.(Photo/Picture credit: Original).

Based on the information, financial statements, and documents provided by decision-makers in motorcycle factories, industry insiders and employees in the motorcycle parts industry, this article organizes and objectively presents the entire process from the start to bankruptcy of motorcycle factories and parts manufacturers in the industrial park as follows.

For motorcycle manufacturers, the industry in this area experienced a period of rapid development from 2000 to 2010. Due to low entry barriers and the need for more core technological support, many financially capable individuals in the vicinity were attracted to join this industry. During the period of rapid development, when enterprises had ample funds, and the industrial park was being established, the motorcycle factories started expanding their operations by purchasing land through excessive loans without considering practicality. However, due to unfair competition within the industry leading to meager motorcycle profits, many motorcycle companies began diversifying into unrelated industries. However, their limited understanding of other industries resulted in financial strain, and the motorcycle factories started loaning from banks. Starting from 2010, with the rapid development of technology and economy, motorcycles being low-end products, the industry became oversaturated. So the demand decreased. From 2015 onwards, the financial situation of the enterprises became more strained, and the enterprises started using acceptance bills to settle payments with motorcycle parts suppliers. Then this situation worsened over time, evolving from delayed acceptance bills for one month to three months and even up to six months. During this period, their loans increased. Until 2019, when banks began cutting off lending. This directly led to the complete collapse of the financial chain, bankruptcy in the industry, and the court listed business owners as dishonest judgment debtors.

As for motorcycle parts manufacturers, unfair competition within the industry led to continuous profit compression. In 2015, when motorcycle factories faced financial constraints and declining sales, the parts manufacturers adopted a sell-on-credit sales model to expand their market. The parts manufacturers relied on delayed acceptance bills from motorcycle factories to receive payments. But when the motorcycle factories were cut off from lending by banks. The parts manufacturers needed more cash from the acceptance bills. This resulted in a shortfall of funds for the parts manufacturers, leading to bankruptcy.

2.2 Reasons analysis

According to this basic overview, this paper can analyze the reasons for this industry park's bankruptcy. Reasons analysis for the motorcycle factories in the industrial park:

2.2.1 Decision-making Issues

According to the financial statements provided by the personnel of the motorcycle factories, during the period of rapid development from 2000 to 2010, the annual sales of three-wheeled motorcycles reached 2 million with an annual net profit of approximately 50 to 100 million RMB. However, most motorcycle factory management needed to plan and allocate the accumulated funds during this period properly. The motorcycle factories should have invested in deep-level technological research, upgraded to newer and more efficient equipment, or introduced innovative talents that could enhance their products. Instead, there needed to be more funds.

During the construction of the industrial park, the local government encouraged nearby motorcycle factories and parts manufacturers to purchase land in the park. Aiming to establish an efficient production "assembly line" within the park. However, most decision-makers in the motorcycle factories needed to accurately assess the prospects of the three-wheeled motorcycle market after the rapid development period. It held high expectations for an already saturated industry. As a result, the motorcycle factories made the wrong decision to purchase a large amount of land in the park and build new factories using their existing cash flow and loan funds from banks, driven by concerns of future land scarcity. According to industry professionals, the companies only needed around 300 acres of land (approximately 666.6 square meters per acre) to meet their production and operational needs for many years. However, the factories invested in purchasing over 1,000 acres of land and building standardized factories. Furthermore, there was no market demand for leasing land to neighbouring businesses, which led to at least two-thirds of the factory buildings and land within the park being left unused. The owners of the motorcycle factories converted all their cash flow into illiquid and non-leasable real estate and heavily borrowed funds, laying the groundwork for insufficient funds in the future.

In 2015, unfair competition within the industry led to low profits that needed to be increased to repay bank loans. The owners of motorcycle companies chose to transform. However, their transformation was characterized by a need for more professional assessment, risk analysis, professional guidance, and management in the new industry. The motorcycle factories decided to research new energy vehicles without considering the high level of core technologies involved and the substantial funds required to support research and development costs, design costs, and production costs. Reliance solely on policy subsidies and bank loans proved inadequate for motorcycle factories primarily involved in assembly work. Transitioning to the new energy vehicle industry presented significant challenges. The enterprises needed more research and development personnel, matching scientific and technological capabilities, production equipment and sufficient funds to allow for potential failures. The motorcycle factories in the park had a low tolerance for mistakes and faced immense difficulties. This lack of understanding and preparation for the new energy vehicle industry made their transformation failure predictable. Subsequently, their financial situation became even more strained, relying heavily on bank loans. When local banks ceased their support, the motorcycle factories' financial chain was completely severed.

2.2.2 Severe Unfair Competition in the Motorcycle Industry within the Park

The motorcycle industry in this park is different from other three-wheeled motorcycle industries in China, such as the three-wheeled motorcycle industry in Chongqing, where the factories produce their engines and have better product quality. In contrast, all the motorcycle factories in the park in Luoyang belong to the low-end segment, with no involvement in any core technology. The motorcycle factories in this industry park purchase engines from the motorcycle factories in Chongqing and assemble all the other components purchased from suppliers within or near the park. The industry has a very low barrier to entry and primarily involves assembly work.

During heavy industrial development in the 1950s, Luoyang, as one key city for heavy industry, had many individuals with start up capital in the 1980s and 1990s. Therefore, during the high-growth period of the industry, many people were attracted to join the motorcycle industry in this region. However, the demand for products in the industry needed more growth. While the number of motorcycle factories increased, intensifying competition among them. To make their products more attractive. The motorcycle factories in the area avoided improving product quality or taking other measures. Instead, the factories faced unfair competition and price undercutting for their products. This price pressure between the companies resulted in minimal profit margins for each motorcycle produced. As the industry entered a declining phase, the demand reduction intensified the unfair competition among motorcycle factories, creating a vicious cycle. Consequently, motorcycle enterprises needed more ability to withstand risks.

2.3 Financial issues

Since the motorcycle factories in the park expanded their production scale unthinkingly. Investing in non-liquid assets and needing more cash flow, the motorcycle factories started facing financial problems. The industry's unfair competition resulted in excessively low profits from their production. Leading to a cash flow shortage that needed to be improved to repay the bank loans taken for land purchases. Furthermore, the failed transition to the high-end sector of electric vehicles, with excessive reliance on loans. Further exacerbated the financial issues. Eventually, the banks cut off the funding, causing a complete breakdown of the financial chain. According to the court's disclosure of dishonest debtor information, the estimated outstanding debts amounted to 300 to 400 million RMB, including approximately 250 million RMB owed to banks and 70 to 130 million RMB to suppliers. Reasons analysis for the motorcycle parts manufacturers in the industrial park:

2.3.1 Excessive Unfair Competition among Parts Manufacturers

The parts manufacturers in the park mainly engage in low-tech work such as stamping, drilling, and welding by purchasing molds and steel materials. The initial investment in the industry is relatively low. Most of the supporting businesses occupy around 1 to 2 acres of land. And there is an abundant supply of workers in the surrounding villages, making entry into the industry simple and easy. This has attracted many owners with limited funds or skilled artisans who set up small-scale workshops for parts production, resulting in industry overcapacity. To increase their competitive advantage and reduce profits. Parts manufacturers adopted a credit sales model. The parts manufacturers would deliver the goods first and then issue invoices to the motorcycle factories, settling the payment with the invoices at the end of the month. This approach lowered their ability to withstand risks.

2.3.2 Financial Issues

The parts manufacturers in the park have been using cash to purchase raw materials from suppliers while adopting a credit sales model with the motorcycle factories. From 2000 to 2015, the parts manufacturers settled monthly payments in cash. However, starting in 2015, the parts manufacturers began issuing acceptance bills for monthly settlements. The use of acceptance bills further exacerbated the financial issues in the industry.

Raw material productions require cash. But if the acceptance bills are redeemed at the bank after maturity. A portion of the cash will be deducted. This means that the already limited profits of parts manufacturers would decrease even further. In 2017, settlements were made every quarter. And in 2018, settlements were made semi-annually through acceptance bills. By 2019, the parts manufacturers were unable to retrieve the acceptance bills. And the parts manufacturers and motorcycle factories in the park were forced to go bankrupt.

3 Conclusion

The author of this article believes that attributing the bankruptcy of the motorcycle factories in the park solely to financial problems is overly simplistic. Based on the analysis, the underlying cause of the industry's bankruptcy in the park can be traced back to management decisions. For example, the expansion of production and blind transformation. During the expansion of production, the purchase of land and the construction of new factories, there needed to be more analysis using models or data. This led to wasteful spending of funds based on subjective judgments by the management.

Additionally, there needed to be more sensitivity to industry prospects, insufficient scientific anticipation of crises, and a need for a more thorough understanding and professional assessment when transforming an oversaturated industry. The management heavily relied on their limited understanding when faced with unfair competition. They could have responded more effectively. They chose to lower profits instead of innovating or reforming their products to increase competitiveness. Exacerbating the industry's decline and increasing their business risks. Therefore, based on the available information, it can be inferred that the management in this industry and park is chaotic, possibly operating under an autocratic leadership style. The lack of extensive professional knowledge and expertise in management and risk assessment on the part of the bosses resulted in poor decision-making.

Furthermore, another significant reason is the financial problem, both the most apparent and the most lethal factor. As early as around 2015, severe and evident financial issues emerged. While bank loans addressed the problem, they exacerbated the financial situation. If the industry were experiencing growth, bank loans would be the ideal solution. However, rapid technological advancements increased substitutes for three-wheeled motorcycles, resulting in a lack of competitiveness and extreme industry saturation. Therefore, the industry was destined for decline. And bank loans only prolonged its chronic demise. In 2019, when the banks cut off funding, it dealt a fatal blow to the industry, directly leading to bankruptcy.

This article considers unfair competition within the industry to be the least significant cause of bankruptcy. Unfair competition exists in even the smallest industries. And it is a common phenomenon with various methods of addressing it. Therefore, unfair competition is not inevitable and can be mitigated. Overall, the main issue lies in the decision-makers needing to explore alternative solutions and instead opting to join the competition, exacerbating the unfair practices.

For the accessory manufacturers within the industrial park, the main reason leading to their bankruptcy, as stated in this article, is the unfair competition within the industry resulting in the use of the credit sales model. The work carried out by these accessory manufacturers needs more innovation. And their approaches to addressing the issue of unfair competition are relatively limited. However, this problem may not be evident during rapid industry growth.

The article argues that the financial problems faced by the accessory manufacturers within the industrial park are primarily caused by the credit sales model rather than being the fundamental reason for their bankruptcy. Most of these manufacturers did not owe money to material and equipment suppliers. But they adopted the credit sales model with the motorcycle factories. Under this model, they would deliver goods to the motorcycle factories, issuing promissory notes to be settled at the end of the month or at an agreed-upon time. This model severely depleted their funds, making it difficult to withstand future risks. Additionally, the acceptance of promissory notes hurt the financial stability of the accessory manufacturers.

References

1. C. Yang, J. Zhang, New Financ. **01**, 37 (2023)
2. W. Cai, Z. Chen, Mod. Market. **06**, 124 (2022)
3. L. Sun, Y. Cui, Zhe Shang **21**, 34 (2020)
4. Q. Liu, Y. Zhang, J. Dai. Chin. Bank. Ind. **06**, 33 (2021)
5. X. Ge, Y. X, Mod. Market. **12**, 110 (2022)
6. Y. Hao, Financ. Regul. **5**, 40 (2022)
7. L. Christian, M. Steffen, Fin. Res. Lett, 55 (2023)
8. S. Puchakayala, V. Ramanujam, SN Bus. Econ. **3**,4 (2023)
9. S. Liu, X. Ying, Y. Xie, J. Bai, Acad. J. Bus. Manag. **5**, 12 (2023)
10. C. Hyun, S. Kyung-shik, Expert Syst. Appl, 216 (2023)