

Optimizing Working Capital Management for Small and Medium-Sized Enterprises from a Supply Chain Perspective

Shuyang Wang

*Sun Yueqi Honors College, University of Mining and Technology, Xuzhou, China
13810686791@139.com*

Abstract. This paper studies working capital management for small and medium-sized enterprises (SMEs) based on a supply chain perspective and takes Company A, a manufacturer of automotive exhaust aftertreatment substrates, as a practical example. By means of reading and analyzing related literature, the relationship between supply chain collaboration and the operation of working capital will be examined. Concerning procurement, production, and sales, it studies how the supplier's payment terms, the discipline of customers' credit, and the practice of lean inventory, reshape the accounts receivable, inventory, and accounts payable. The company improves capital turnover through order production and an integrated information system but due to limited bargaining power and reliance on a single market they transitioned from profit to continuous loss over three years. This shows that the actual benefit of a coordinated supply chain greatly relies on a company's negotiation standing and stability of the market. The study contributes by expanding on working capital management in the context of supply chain synergy, it has distilled the three paths of "longer payables periods, tighter credit, faster rotation of inventory", and provides some micro-evidence supporting payment-term transparency, sharing of credit data and innovation of supply chain finance. Core competitiveness needs strengthening as well as strategic diversification, and improving supply chain collaboration in order to keep a good capital flow.

Keywords: Supply chain collaboration, working capital management, small and medium-sized enterprises, bargaining power, case study

1. Introduction

According to previous research, the main problems with working capital management in small and medium sized enterprises (SMEs) are: limited financing channels, unbalanced capital structure, poor management over assets, out-dated structure and digitalization [1-4]; In terms of the solutions proposed by the former studies, more attention has been paid to solving problems through methods such as increasing financing diversification, improving the financing structure of working capital, and improving the precise management of accounts receivable and inventory. And form an integrated digital platform to improve the ability to manage liquidity and control risks.

SMEs are the capillaries of the national economy. SMEs' ability to control working capital directly relates to whether they can survive and develop. This study focuses on reviewing literature

and studying some examples to see how working capital is used and circulated during the purchase, producing and sale parts of small and middle sized companies. In this study, it also studied the influence of the supply chain links on the coordination to receive and pay for the purchase of products from suppliers, manage their customers' credit discipline, and lean inventory management. Reshapes working capital, including receivables and payables. Existing studies focus mainly on large companies, there has still been insufficient systematic study on coordinating working capitals within the supply chain nodes of SMEs [5]. The theoretical contribution of this study lies in shifting the discussion of working capital from a stand-alone financial accounting perspective into the realm of supply chain collaboration, filling the gap in SME-based empirical research. Practically, it refines a three-step approach to work capital optimization: lengthening payables, tightening credit, and quickening stock turns. At the policy level, it provides micro-level reference cases for improving payment-term disclosure, credit information sharing, and inventory-based financing pilots to reduce the general cash flow strain of SMEs.

2. The value of supply chain collaboration in working capital management

Supply chain cooperation and integration have become the fundamental idea that Company A applies to controlling working capital, and this notion can be very clearly seen in how the corporation has been involved in producing and manufacturing car exhaust after-treatment substrates for quite a while. The level of alignment within this chain directly influences inventory levels, turnover efficiency, and overall liquidity risk.

Company A's make-to-order operational model is the practical manifestation of supply chain cooperation in procurement and production. Responding to customers' various order requirements, the company has established a cooperative procurement relationship with upstream suppliers; a stable supply partnership was built with its major material supplier, aligning their own procurement time with that of the supplier. This coordination reduced the capital tied up in raw-material inventory.

But still, the advantages of supply chain cooperation can be ruined easily by abrupt changes in external demand conditions. In 2022, China's heavy-truck sector saw a massive decline. According to data from the China Association of Automobile Manufacturers, the annual sales of heavy trucks were 671,900 units, a year-on-year decline of 51.84%. The resulting lag in market demand caused the company's 2022 revenue to drop 48.54%, to 203.7718 million yuan. Net profit attributable to shareholders changed from being positive in 2021 to suffering a 7.8604 million yuan loss in 2022, demonstrating that despite improved efficiency of working capital through supply chain coordination, the shock from abrupt contraction of downstream demand cannot be absorbed by supply chain coordination [6].

Viewing it from a supply chain management theory perspective, the real benefit of Company A's cooperative model is breaking the usual limitation of a company and making a flow of information, material, and capital that can be shared and synchronized between the companies. The company has formed a unified information chain connecting customer needs, production scheduling, and procurement execution. Such coordination reduces the disturbance caused by order changes or cancellations and sidesteps the costs generated by the cessation of work in process and markdowns on stocks.

3. Enhancing capital flow efficiency through supply chain integration and its challenges

Company A has sought to unify procurement, manufacturing, and sales along the whole supply chain, and information flow, material flow, and capital flow became more closely connected. This integration supports a more precise make-to-order model that theoretically improves the efficiency of capital circulation. Still, it also reveals a number of structural and operational issues for the company.

Company A's relatively small procurement scale as a medium-sized enterprise weakens its bargaining position in negotiating the price of raw materials that fluctuate a lot. In production and inventory management, the make-to-order model reduces the amount of capital tied up in inventory, but Company A encountered new pressure in 2023. With the investment projects completed, the production capacity has risen to the planned target. Yet due to changes in the macroeconomic environment and supply and demand, there was a low rate of capacity utilization. Low utilization means that each unit of the product will have to take on a larger share of the depreciation and amortization expense, which will increase the unit cost. By the end of 2023, total assets had increased by 2.98% over the beginning of the year to 1,483.7303 million yuan, whereas owners' equity attributable to shareholders fell by 0.44% to 916.5883 million yuan.

The company also ran into some profitability problems. In 2023, changes in the sales mix, annual price reductions that have continued for years, and increased competition collectively impacted gross margins. The automobile parts industry often has the phenomenon of "Yearly Price-Down." Company A found it hard to counter the cuts from the high waves of raw-material prices and more fixed-cost burdens.

Though these obstacles are still there, Company A still reached a considerable increase in operating revenue in 2023, mainly caused by the recovery of the heavy-duty truck market. However, the net profit attributable to the owners of the company for the period was still a negative 7.6991 million yuan, only slightly better than the 7.8604 million yuan loss in 2022. Subtracting non-recurring items from the total, the 2023 net loss attributable to shareholders was 16.3115 million yuan, a 12.96% improvement over the 18.7019 million yuan loss recorded in 2022. The outcomes reveal that while revenue became noticeably better, the company still faced restrictions in utilizing its maximum capacity, with loads of fixed expenses, lowered product pricing, and inventory spoilage. These factors contributed to ongoing losses [7].

4. Structural constraints in supply chain bargaining power and resulting liquidity risks

Although supply chain collaboration has given Company A some operational benefits for its working capital management, its bargaining power within the supply chain remains a structural weakness, and thus there is a potential liquidity risk. In 2024, these weaknesses became even more evident.

On the upstream side, Company A has a lack of resilience to fluctuations in raw-material prices. Ceramic substrates and precious-metal catalysts needed in production are greatly affected by market supply and demand. Company A lacks the large purchase scale to secure good long-term bulk buy deals. On the downstream side, the company is highly dependent on the heavy-duty commercial vehicle market, so its performance is very sensitive to the market cycle. When the market weakened once more in 2024, losses increased significantly.

In 2024, it got worse. The demand for the National VI diesel heavy truck market has decreased and there will be less sales of the company's products during the reporting period. Also, along with the companies restructuring their inventory and upgrading some models of products, it raised the

costs. The operating revenue is 282.4335 million yuan, which is 15% lower than that of 2023. More importantly, the decline in the net profit attributable to the equity holders was quite substantial. Net profit fell -417.43% from 2021 to 2022 and saw a negative value of -40.9886 million yuan in 2022 against -7.6991 million yuan of the previous year. After subtracting non-recurring gains and losses, the company's net profits attributable to its shareholders were -50.6059 million yuan, a decrease of 206.07% compared to last year. Basic earnings per share dropped to -0.54yuan, down from -0.10yuan in 2023, a 440.00% decrease.

As for its finances, at the end of 2024 its assets were around 1,192.0021 million yuan, down by 19.45% compared to the beginning of the year, pointing towards a substantial reduction in assets. The net asset value per share dropped from 11.86 yuan at the beginning of the year to 11.25 yuan, a decrease of 5.14%. Weighted average return on equity was at -4.63%, down from -0.86%, a decrease of 3.77%.

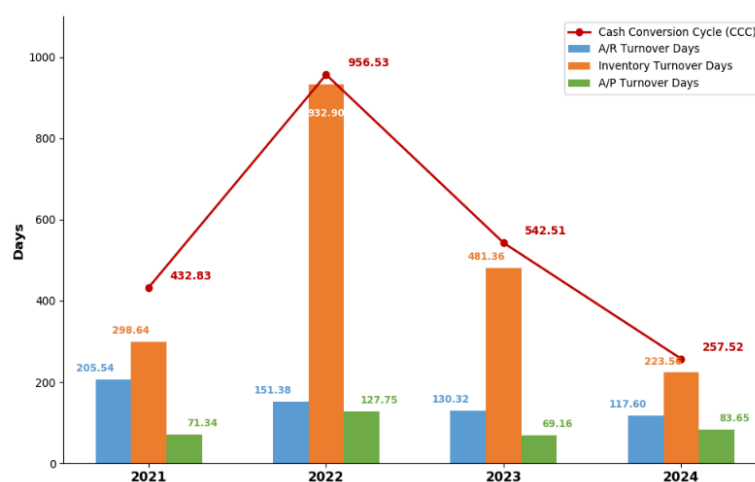


Figure 1. 2021 –2024 financial status

Figure 1 displays the company's CCC from 2021 - 2024, which had a huge peak of CCC at 956.53 in 2022, mainly because of Inventory Turnover Day at 832.90. Then, the CCC improved greatly. In 2024, it decreased to 257.52 days, which is 73.1% less. This decrease shows better coordination in supply chains and improved efficiency with working capital for all 3 parts.

And because of abiding by accounting standards, company conducted an inventory impairment for the year 2024. Inventory write-downs because product price drop, fixed costs per unit increased, product design changed. The factors put more pressure on net profit.

Company A's great ups and downs show that depending too much on one market is very dangerous. This type of "living off the mercy of the market" business model places it in a position of great operational and liquidity risk. From the perspective of working capital management in a business context, the company's financial weakness is mainly due to the lack of cash flow generated from operations resulting from repeated loss situations, substantial depreciation and amortization costs associated with extensive fixed asset investments, abundant capital tied up in inventory and accounts receivable, and persistent margin pressure brought about by intensified competition leading to clients cutting prices [8,9]. Together they make the firm seem less liquid [10].

5. Strategic responses and future outlook

To address its structural weakness in bargaining within the supply chain and the increasing operating stress, Company A must take prompt, all-rounded, and comprehensive measures. With regard to managing suppliers, the company must improve its supplier group and decrease the volume supplied by one supplier for vital ingredients. Precious-metal catalysts have prices that fluctuate a lot, so the company might consider tools like futures hedging and price-linkage mechanisms to reduce the impact of raw-material price swings on its business.

On the demand side, the company needs to actively find new markets, such as new energy vehicles, off-highway machinery, marine applications, and industrial machinery, to expand the diversity of customers and products. Technological innovation is crucial for shifting from cost-driven competition to value-driven growth. Company A should strengthen its R&D investment, produce more high-value-added products, and create technological barriers to improve its bargaining power. Differentiated competitiveness achieved by technological innovation can be a way to resist price pressure and improve gross margins. The company has to take a multi-pronged approach to cost control [11]. Increasing capacity utilization is the best way to reduce fixed costs per unit. Finally, tighter controls over period expenses and stronger cost consciousness are needed. To optimize capacity, the company has to conduct an overall evaluation of its existing capacity layout. Production lines that have always been idle and whose profitability is uncertain need to be closed down or sold in time to avoid wasting resources.

Looking ahead, Company A will have to rely on continued technological developments and a broader structural selection in order to stabilize its position in the supply chain, guarantee the liquidity of the supply chain, and achieve the transition from perpetual losses to stable gains. Especially after three consecutive years of losses and severe deterioration in 2024, the company must further optimize the supply chain, connect it with market restructuring and cost discipline, and strive for an early recovery of profitability and long-term, sustainable working capital improvement.

6. Conclusion

This paper explores working capital management in SMEs from a supply chain perspective, using Company A's performance during 2022-2024 as a representative case. The findings indicate that supply chain coordination tools can improve the efficiency of the capital circulation process but are not able to change SMEs' relatively weaker bargaining power in the overall industry value chain. It can be seen from the study that Company A has carried out coordination of procurement, production, and sales through a make-to-order mode and information management method. However, in the face of sharp changes in market demand, insufficient bargaining power, and low capacity utilization, these efforts were not enough. Over three years, the company went from being profitable to sustaining a loss, and by 2024, the gap had grown to 40.9886 million yuan, revealing that sticking to just process-level enhancements at the expense of deeper changes carries risks.

The theoretical contribution of this study is to extend the analysis of working capital beyond the firm's internal financial view to the supply chain ecosystem, making up for the lack of SME-based research samples. From a policy perspective, this result can give the government at the micro-level evidence for the creation of payment term standards, integration of credit data and innovation of supply chain financing.

The study was conducted through the use of 1 case; conducting a case study focused solely on the automotive part industry does not know whether It's valid outside. Theoretical research can also do this, and we can continue to expand the scope of empirical samples and carry out inter-industry and

inter-scale comparisons, studying the impact that supply chain coordination has on working capital management, in different situations. In order to form a richer theoretical framework that is more widely applicable.

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