

Analysis of the Effects of Financial Sharing on Enterprise Working Capital Management: Taking Sinochem Holdings' Financial Sharing Model as an Example

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Abstract: Recently, rapid economic and technological progress has forced innovation in financial strategies and organizational structures to match better the endogenous requirements of expanding companies and businesses. This study focuses on the financial sharing model that has gained much attention in recent years and examines the changes in the working capital management performance of Sinochem Holdings during its different development periods of financial sharing from 2012 to 2019. It finds that the implementation of Sinochem Holdings' financial sharing model positively impacts its working capital management performance at different degrees and company development stages. The financial sharing model significantly improves the quality of financial information and process efficiency and enhances the efficiency of corporate financial processes and process standardization. In this case, companies strengthen the integration of corporate resources and hasten the dissemination of capital and information flows, thus improving working capital management performance. Finally, this study provides relevant comments for enterprises, government and industry, and accounting personnel.

1. Introduction

Several national financial policies, including the *Code of Practice for Enterprise Accounting Information* and the *Guidance on Comprehensively Promoting the Construction of Management Accounting System* issued in 2013, further implement the goal of robust accounting. These policies encourage and require large enterprises and groups that can make full use of their professional advantages and enterprise structure system to undertake centralized accounting and apply financial sharing thinking to establish a financial sharing center. The state guides enterprises and groups to centralize financial services from a policy level. This endeavor promotes information integration, accelerates the extension of enterprise accounting functions from "accounting supervision" to "management decision-making," and stimulates the efficient development of financial accounting and management. With the continuous expansion of relevant functions, the overall quality of China's accounting work has dramatically improved, thus laying a solid foundation for the

sustainable development of national economy.

Financial sharing denotes the unified execution of financial functions of subordinate and member companies by an enterprise or group's independently constructed and uniformly established financial institution. Since the said concept emerged in the 1980s, various enterprises have established financial sharing centers within their groups. Recently, with the progressive internationalization of production, trade liberalization, and global economic integration in China, various domestic enterprises have paid attention to the financial sharing model and layout to build their respective financial sharing service centers. Meanwhile, it is undeniable in both domestic and international academic circles that the implementation of the financial sharing model is significant: "Establishing an enterprise financial sharing center can effectively reduce the financial and business costs of an enterprise group, improve the quality and efficiency of financial information, promote scientific decision-making and management, and advance the standardization process of the enterprise." However, amid the presently rapid development of financial sharing, there are relatively few specific cases in China and abroad that discuss the impacts associated between the financial sharing model and corporate working capital management performance. Hence, this study poses the research question regarding how the financial sharing model influences the management performance of an enterprise's working capital before, during, and after its establishment and at different development stages.

2. Literature Review

2.1 Development Status and Trend of Financial Shared Services

As a distributed management model, financial shared services consider information technology as its critical link and business finance process processing as its basis. It renders specialized production services for enterprise personnel or external customers by solving fundamental node problems, including the optimization of internal organizational structures, standardization of business and financial processes, efficiency of processes, and reduction of enterprise operation costs. The development of sharing economy entails reshaping the boundaries among the market participants, leading to the development of innovative business models in which various participants collaborate to enhance the effects of sharing economy [1]. Since a large manufacturing group introduced the financial sharing concept in the United States in the 1980s, various companies have applied financial shared services to match their respective business activities on a global extent. Amid economic globalization, the financial sharing model has since expanded, becoming increasingly popular in various domestic industries.

In establishing financial shared services, enterprises realize the reconfiguration of financial processes and business systems [2], apply IT synergy to explore the conversion mechanism and operation of financial sharing, integrate auxiliary functions with duplicated ones, standardize lean operational processes, and ultimately achieve the optimal allocation of internal resources and economies of scale [3]. A generic financial service center only distinguishes financial accounting and management accounting in terms of operational activities; hence, the ways for promoting the overall transformation of an enterprise and its future development direction is a vital issue [4].

To continuously promote the reformation from the financial process to an entire business process, enterprises and fundraisers must collaborate to improve their self-optimization, self-renovation, and self-improvement mechanisms through their financial sharing service centers, including the constant improvement of financing operation and media processing. Such constant improvement cannot dissociate from everyday business needs, which imposes relatively stringent requirements on the comprehensive management and integration capabilities of an enterprise. It requires not only the capabilities and skills, but also determination, unwavering belief, and a sound knowledge base to

promote and implement the necessary innovations [5]. According to ZTE executive Hu Chen, the fundamental functions of financial shared service centers are to realize a centralized financial processing for enterprises, to contribute to the vertical integration of business management functions, and to enable a centralized standardization and point-to-point management of enterprises' financial and business data. Specifically, a financial shared service center provides data support for management and global branches to realize "business finance integration" management jointly. Weimei Zhong, Vice President of Dahua, believes that the prerequisites for realizing financial centralization, financial collaboration, and financial sharing include unifying the group data platform and breaking the information barriers between the upstream and downstream enterprises in the industry. These prerequisites realize the support for business decision making and development management in order to move forward to the financial cloud service stage and realize financial sharing in a real sense.

Presently, financial centers built by enterprises are more on the private side. In transforming from a financial "private cloud" service platform to a "public cloud" one, it is vital to explore the underlying value creation ability amid ensuring the absolute safety of enterprise financial information and funds, a challenge that requires resolution. Therefore, a financial shared management model should focus on ease of operation, safety and security, and regional infinity of the system, as well as process reengineering and performance management [6]. A financial shared service model gradually transforms basic accounting to business control and decision-making. Value creation liberates finance personnel from their low value-added and highly repetitive mechanical work for them to engage in higher value-added work, and determine new growth points for enterprise value through transformation and upgrade of finance functions [7].

Conclusively, based on existing literature, as a financial evolutionary process, the emergence and development of financial sharing have a certain inevitability. Through standardization of processing systems, financial sharing enhances financial efficiency. Regarding specialization, it frees more financial personnel to engage in strategic management and financial planning, promotes the comprehensive transformation and upgrade of the financial functions of an enterprise to fit its development better, and enables the enterprise value to determine new growth points with the aid of information technology and intelligence.

2.2 Research on the Performance of Working Capital Management

Working capital management is an essential component of enterprise financial management. Scholars in the industry pay great attention to applying working capital management to provide better protection for enterprise development. Since the end of the previous century, Lehr Consulting and CFO magazine have been monitoring and ranking the working capital management practices of 1,000 listed companies in the U.S., studying their respective key points and trends. Notably, the survey guides companies to change their working capital management models and evaluation indicators, prompting them to shift from pure mathematical calculations toward managing and optimizing their supply chains. It also suggests relying on enterprises' working capital management status when they formulate corporate strategies [8] as a meaningful approach to reduce supply chain costs effectively [9].

The concept of working capital had not emerged in China until 1993 when accounting systems began to align with international standards; consequently, domestic research in this aspect began late. Most domestic scholars' research on working capital management has been independently conducted for specific projects at a superficial level, without directly facing a deep impact path research and lacking specific systematic and holistic research. Fugen Mao [10] discussed that enterprises can improve their efficiency of working capital management only when they undertake

production and operation activities based on reaching a specific level of net working capital. Thus, we should start by analyzing the proportional composition between current assets and long-term assets and between short-term assets and short-term liabilities, linking the weight distributions of current assets and current liabilities and the sources of their corresponding funds, and generating a practical working capital policy from a global perspective. Based on the current situation of Chinese enterprises, Xiongsheng Yang [11] determined that the existing evaluation indices are inadequate in theory and methodology to improve enterprises' cash flow management ability. In this case, to establish a standardized theory involving using working capital and cash flow information, dynamic analysis and control of cash flow are necessary from three aspects—structure, process, and ratio—to change the turnover rates of accounts receivable and accounts payable to the average aging of the index, and to incorporate auxiliary indicators like long-term pending accounts and inadequate debt provision. With this aim, the average occupancy period of inventory can be examined from an inventory perspective, and the operational efficiency of each segment of inventory goods can be determined according to content refinement. Zhuquan Wang and Guanglin Ma [12] innovatively proposed combining enterprise work priorities with channel management for the working capital management of enterprises operating across regions. Furthermore, they advocated that working capital management research should break through existing structures and integrate with supply chain management, channel management, and customer relationship management.

Across industries, the working capital management performance of Chinese companies is generally lower than that of developed countries like the United States. The average accounts receivable turnover rate is less than 70% of U.S. companies, while the inventory turnover rate is less than 40% of the average turnover rate of U.S. businesses. Indeed, the working capital management of Chinese enterprises is inadequate and requires enhancement; moreover, it necessitates in-depth empirical research and scientific theoretical guidance.

2.3 Research on the Correlation between Financial Sharing and Working Capital Management

Domestic scholars have made relatively little research on the impact and specific consequences of financial sharing on working capital management. Yajun Wang [13] argued that capital control plays a pivotal role in financial sharing services. The development and innovation of financial sharing can improve further by analyzing and resolving the challenges of enterprise capital control and the loopholes of capital supervision. With the aid of the Internet and big data, the external environment actively improves to reinforce corporate sharing culture and fund settlement [14]. Development enables assistance through mutual sharing and joint discussion among the enterprises [15]. Min Yu [16] indicated that enterprises' overall capital management efficiency can be enhanced by perfecting their construction of financial systems, improving their use of information technology, and training financial professionals such that financial sharing can play fundamental functions in a stable, efficient, and collaborative manner. Jiasheng Wan [17] put forward that improving working capital management through financial sharing services necessitates strict review, process development, and improvement plans to provide comprehensive support for an accurate, efficient, and cost-saving capital management approach. After analyzing Haier's financial shared service model, Cancan Jin, Zhuquan Wang, and Hailong Wang [18] determined that working capital management performance varies with different financial sharing development stages, exhibiting an overall upward trend.

The intellectual development of enterprise finance centralizes financial work and facilitates the overall situation based on reducing workload [19]. Indeed, improving financial efficiency and process management to optimize enterprises' organizational structure and management path

enhances their capacity to identify risks [20]. Financial shared services are appropriately matched within enterprise groups with various subsidiaries and national operations, and significantly enhance the speed of corporate capital operations, considerably reduce redundancy costs, and effectively stimulate corporate value growth [21]. Cancan Jin and Zhuquan Wang [18] discussed that financial shared services optimize resource allocation through process reengineering. This approach can effectively improve the speed of inventory turnover, develop the efficiency of enterprise capital utilization, and ultimately achieve overall improvement of enterprise operational efficiency.

Based on the above literature, scholars in China generally agree that the development trend of working capital in the country in the context of financial sharing is inevitable. In financial sharing centers, information undergoes aggregation and integration through process reengineering and the extensive use of advanced Internet technologies like computerized accounting, big data platforms, and direct bank-enterprise connection systems, thus improving working capital management performance and enterprise value.

3. Research Design

3.1 Research Methodology and Case Selection

This study focuses on how financial sharing influences enterprises' working capital management performance. As a listed company, Sinochem Holdings is also a pioneer in developing a financial sharing model; thus, it has a significant research value. It also meets the feasibility of data collection and research convenience. Since the establishment of its sharing center in 2016, the company's financial sharing innovation initiatives have undergone three main periods: the first period, involving the realization of information-based file management from March 2016, which resolved the company's file storage and auditing difficulties; the second period, involving the realization of intelligent process automation from October 2017, which improved the efficiency of shared services; and, the third period, involving the research and development of multi-time-zone functions, which realized a global reimbursement system.

This study combines the said three periods, fully considering and analyzing each period's business changes and management characteristics. It classifies the implementation and development history of Sinochem Holdings' financial sharing into three stages: the preparation period from 2012 to 2015; the initial period from 2016 to 2017; and, the development period from 2018 to 2019.

3.2 Data Sources and Collection

For comparative analysis, this study selected the average working capital management performance and relevant financial services data of Sinochem Holdings and its affiliated "chemical manufacturing industry" from 2012 to 2019. Meanwhile, it obtained and calculated data of listed companies in the industry from their disclosed annual reports in the Guotaian database. Research data and information related to Sinochem Holdings' financial shared services were obtained and collated through various channels and methods from literature and news materials pertaining to corporate financial shared services, company-based announcements, documents, rules and regulations, and related secondary information. This study supplemented and cross-validated these data to enhance the accuracy, completeness, and standardization of the results.

3.3 Data Analysis Methods

(1) Definition of indicators. This study adopts an evaluation system for working capital

management performance based on channel management, and integrates the value chain and supply chain management ideas. Firstly, enterprises' working capital has two dimensions: direct and indirect participation in production and operation activities. On this basis, the working capital directly involved in such activities are further classified into the working capital of supply channel, production channel, and marketing channel. This classification is in accordance with the link and function played by the supply, production, and marketing channels to reflect the working capital distribution and management for each channel.

Based on the conventional model, the new evaluation system primarily takes elements and channels as the starting points to examine enterprises' working capital management performance comprehensively and systematically. The first level is from the working capital main body, including evaluation indices like inventory turnover, accounts receivable (paid) turnover, and other sub-elements. Meanwhile, the second level involves the evaluation indices of working capital management performance by channel for the working capital turnovers of three major channels—procurement, production, and marketing.

(2) Data organization. Tables 1 and 2 present the average working capital management performance data of Sinochem Holdings and its “chemical manufacturing” industry by channel and factor.

Table 1: Comparison of the working capital management performance of Sinochem Holdings and its “chemical manufacturing” industry by channel (unit in days)

| Project | Sourcing Channel Working Capital Turnover period | | Production channel working capital Turnover period | | Sales Channel Working Capital Turnover period | | Working capital from operating activities Turnover period (by channel) | |
|---------|--|------------------|--|------------------|---|------------------|--|------------------|
| | Sinochem Holdings | Industry average | Sinochem Holdings | Industry average | Sinochem Holdings | Industry average | Sinochem Holdings | Industry average |
| 2012 | -14.41 | 68.68 | -0.46 | 59.86 | 32.50 | 173.64 | 17.62 | 302.18 |
| 2013 | -17.62 | 58.29 | 0.36 | 58.29 | 41.75 | 173.24 | 24.50 | 289.81 |
| 2014 | -13.50 | 130.37 | 5.67 | 158.29 | 48.26 | 257.37 | 40.42 | 546.02 |
| 2015 | -30.87 | 56.98 | 0.69 | 112.03 | 55.17 | 196.38 | 24.99 | 365.39 |
| 2016 | -36.59 | 15.16 | 1.90 | 50.51 | 83.44 | 146.12 | 48.76 | 211.79 |
| 2017 | -34.35 | 30.35 | 0.81 | 51.92 | 43.13 | 161.43 | 9.58 | 243.70 |
| 2018 | -29.52 | 10.20 | -2.58 | 40.24 | 58.05 | 134.90 | 25.96 | 185.34 |
| 2019 | -28.72 | 12.23 | -2.63 | 51.46 | 48.37 | 130.27 | 17.02 | 193.96 |

Table 2: Comparison of the working capital management performance of Sinochem Holdings and its “chemical manufacturing” industry by element (unit in days)

| Project | Inventory turnover period | | Accounts receivable turnover period | | Accounts Payable Turnover | | Working capital working period (by element) | |
|---------|---------------------------|------------------|-------------------------------------|------------------|---------------------------|------------------|---|------------------|
| | Sinochem Holdings | Industry average | Sinochem Holdings | Industry average | Sinochem Holdings | Industry average | Sinochem Holdings | Industry average |
| 2012 | 22.44 | 110.69 | 21.13 | 84.19 | 22.62 | 66.44 | 20.94 | 128.45 |
| 2013 | 25.82 | 113.01 | 27.58 | 82.32 | 26.41 | 76.95 | 27.00 | 118.37 |
| 2014 | 32.00 | 201.38 | 30.19 | 89.52 | 30.29 | 85.75 | 31.90 | 205.15 |
| 2015 | 29.96 | 124.30 | 31.75 | 92.23 | 34.31 | 79.89 | 27.40 | 136.64 |
| 2016 | 39.30 | 78.99 | 48.82 | 93.07 | 50.34 | 76.44 | 37.78 | 95.63 |
| 2017 | 32.99 | 87.16 | 40.37 | 93.43 | 40.64 | 68.77 | 32.71 | 111.82 |

| | | | | | | | | |
|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 2018 | 37.94 | 63.74 | 43.98 | 87.07 | 43.51 | 63.88 | 38.41 | 86.93 |
| 2019 | 41.76 | 75.47 | 38.32 | 72.87 | 44.45 | 73.63 | 35.63 | 74.71 |

4. Case Analysis

4.1 Case Overview

Established in 1998, Sinochem Holdings is a large-scale integrated and state-owned enterprise that is primarily engaged in chemical raw materials, with apparent competitive advantages in intermediates and new materials, natural rubber, and other pertinent fields, and with a business scope covering the entire world. It is one of China's top 100 listed companies for several years in a row. With "science first" as its philosophy, it has enhanced its voice and influence in the global chemical industry.

Since its establishment, Sinochem Holdings Finance Sharing Center has encountered three periods of development and continuous innovation. It realized an informationized file management and resolved its file storage and audit difficulties during the first period. Last March 2016, Sinochem Holdings launched its file management system of electronic accounting vouchers. This system realized the electronic management of the entire process of accounting files, including collection, storage, utilization, and destruction. It also resolved the underlying difficulties in accounting voucher reimbursement, filing, and extraction, thus reducing the cost and workload of file management.

In the company's second stage, intelligent process automation enhanced the efficiency of its shared services. Last October 2017, as the first Chinese central enterprise to implement robotic process automation, Sinochem Holdings collaborated with PwC management consulting team to build and introduce a financial robot process automation project that could adapt to the nature of business and enterprise development. Essential finance and taxation tasks, including bank reconciliation and invoice audit, which are highly frequent and repetitive, low value-added, and have high labor costs, were made automated and intelligent through the intelligent financial robot.

The company's third stage involved studying the multi-time-zone function and realizing the linkage of the global reimbursement system. The business scope of Sinochem Holdings spans more than 100 countries and regions worldwide, resulting in long reimbursement cycles and inconvenient inquiries for overseas employees, as well as difficulties in approval, accounting, transfer, and budget control in the headquarters. The developed expense reimbursement system connects with the financial system. It flexibly configures the approval process, hence realizing a unified and standardized reimbursement process, promoting the integration of business and financial data, enabling a real-time dynamic supervision, and providing dynamic early warning mechanisms for the entire process refinement of expense control. In addition, the multi-time-zone function effectively avoids adverse opinions arising from the cross-day and cross-year accounting audits of member units in various time zones, and realizes an intelligent flow of reimbursement and global reimbursement system linkage. Through electronic file management and intelligent financial robots, the multi-time-zone expense reimbursement system ensures configuration to reduce costs and increase efficiency, helping Sinochem Holdings build its financial shared service center quickly.

4.2 Study on the Performance of Sinochem Holdings' Financial Sharing on Working Capital Management

4.2.1. Trend Analysis of Working Capital Changes

Based on the annual reports of Sinochem Holdings from 2012 to 2019 and the Guotaian database,

Table 3 presents the data related to current assets, current liabilities, and working capital.

Table 3: Analysis of changes in working capital (unit in million yuan)

| Company | Year | Current assets | Current liabilities | Working capital | Growth rate |
|-------------------|------|----------------|---------------------|-----------------|-------------|
| Sinochem Holdings | 2012 | 14,274 | 13,222 | 1,052 | -70.57% |
| | 2013 | 11,315 | 9,524 | 1,791 | 70.25% |
| | 2014 | 11,881 | 8,701 | 3,180 | 77.55% |
| | 2015 | 16,301 | 14,343 | 1,958 | -38.43% |
| | 2016 | 22,058 | 19,839 | 2,219 | 13.33% |
| | 2017 | 36,312 | 24,664 | 11,648 | 424.92% |
| | 2018 | 29,586 | 16,992 | 12,594 | 8.12% |
| | 2019 | 26,170 | 16,254 | 9,916 | -21.26% |
| Industry average | 2012 | 1,771 | 1,708 | 63 | -70.00% |
| | 2013 | 2,023 | 2,128 | -105 | -266.67% |
| | 2014 | 2,197 | 2,472 | -275 | -161.90% |
| | 2015 | 2,385 | 2,504 | -119 | -56.73% |
| | 2016 | 2,558 | 2,549 | 9 | -107.56% |
| | 2017 | 3,009 | 2,693 | 316 | 3411.11% |
| | 2018 | 3,188 | 2,794 | 394 | 24.68% |
| | 2019 | 3,086 | 2,746 | 340 | -13.71% |

The current assets of Sinochem Holdings were much higher than the industry average. They significantly increased since the gradual improvement of the company's financial sharing in 2016. Despite a slight downward trend in 2018–2019, they were still far higher than before the implementation of financial sharing. The current assets growth rate (842.53%) was much higher than the average (83.34%) and the current liabilities growth rate (22.93%).

Based on a side-by-side comparison between Sinochem Holdings and the average figures of the chemical manufacturing industry, the scale of assets and working capital of Sinochem Holdings were much larger than the industry average. Compared to the industry's average current assets growth rate (74.25%), average current liabilities growth rate (60.77%), and average working capital growth rate (439.68%) from 2012 to 2019, Sinochem Holdings exhibited abundant cash flow, asset growth rate, and slow liability growth rate in the industry. The advantage of working capital development, which was much better than the industry average, also laid the foundation for the company's rapid development.

(1) Analysis of the internal structure of current assets

Table 4 presents the shares of significant indicators of the current assets of Sinochem Holdings and the industry average to analyze and study the current assets' internal structure and trend.

Table 4: Share of significant indicators of current assets

| Company | Year | Monetary Funds | Notes receivable | Accounts Receivable | Prepayments | Other Receivables | Inventory |
|-------------------|------|----------------|------------------|---------------------|-------------|-------------------|-----------|
| Sinochem Holdings | 2012 | 39.29% | 4.34% | 21.29% | 4.67% | 4.31% | 22.33% |
| | 2013 | 18.75% | 7.92% | 23.14% | 2.27% | 5.48% | 31.18% |
| | 2014 | 26.82% | 4.00% | 20.92% | 4.43% | 9.11% | 28.07% |
| | 2015 | 29.22% | 10.54% | 18.64% | 3.43% | 6.84% | 24.20% |
| | 2016 | 33.18% | 8.07% | 20.36% | 2.56% | 3.78% | 22.36% |
| | 2017 | 25.99% | 7.35% | 13.96% | 2.25% | 2.89% | 17.94% |
| | 2018 | 29.49% | 8.86% | 14.50% | 2.93% | 4.36% | 20.69% |

| | | | | | | | |
|------------------|------|--------|--------|--------|-------|-------|--------|
| | 2019 | 30.53% | | 16.58% | 4.15% | 3.48% | 23.46% |
| Industry average | 2012 | 34.53% | 9.44% | 15.63% | 9.21% | 2.61% | 26.64% |
| | 2013 | 29.66% | 11.91% | 17.21% | 8.22% | 2.37% | 26.63% |
| | 2014 | 28.73% | 10.33% | 19.47% | 5.57% | 2.86% | 27.34% |
| | 2015 | 31.38% | 10.07% | 19.65% | 4.39% | 3.39% | 23.44% |
| | 2016 | 31.63% | 10.65% | 18.63% | 4.47% | 2.88% | 21.07% |
| | 2017 | 31.77% | 11.05% | 18.73% | 3.95% | 1.94% | 19.98% |
| | 2018 | 31.41% | 9.33% | 19.66% | 3.78% | 2.29% | 20.91% |
| | 2019 | 31.18% | 2.74% | 19.44% | 3.56% | 3.02% | 21.03% |

Based on Table 4, the missing value is the reclassification of loan and receivable-type financial assets in notes receivable category to the financial assets measured at fair value from other comprehensive income in the receivables financing line from 2019. Moreover, the change of notes receivable initially measured at amortized cost to fair value had no significant impact on the carrying value of the receivables financing items.

Since Sinochem Holdings established its financial sharing model in 2016, the main items of current assets had depicted healthy development; receivables, prepayments, other receivables, and inventories had an overall decreasing trend, while monetary funds and inventories remained stable. Relying on advanced digital technologies like big data and cloud platforms, Sinochem Holdings integrated risk control, organization management, and business services through process reengineering, specifically by informationization and digital system construction, thus enhancing process efficiency, promoting continuous transformation, and upgrading its financial management system.

In the digital era, the financial sharing model promotes the large-scale application of new technologies and provides a powerful driving force for the overall transformation of enterprises. It drives data to feed the business, promoting Sinochem Holdings' continuous exploration in system development. Following two years of optimization and iteration, Sinochem Holdings generated its "integrated management model" in 2018, entailing that business processing, customer management, business planning, price management, and financial management interpenetrated and absorbed complex transactions. This model integrates the company's organizational structure, innovates its working methods, and enhances system updates, thus effectively integrating the complex logic of traditional ERP products and the inherent requisites of enterprise management, and establishing a unified and integrated system. These initiatives have undeniably accelerated the turnover of current assets, enriched the internal structure, and promoted the sound development of Sinochem Holdings' management and operational performance.

(2) Analysis of the internal structure of current liabilities

Table 5 compares and analyzes the internal structure of current liabilities of Sinochem Holdings and the industry average from 2012 to 2019.

Table 5: Internal structure of current liabilities.

| Company | Year | Short-term borrowings | Notes Payable | Accounts Payable | Receipts in advance | Payable Employee compensation | Taxes Payable | Other Accounts payable |
|-------------------|------|-----------------------|---------------|------------------|---------------------|-------------------------------|---------------|------------------------|
| Sinochem Holdings | 2012 | 57.61% | 4.71% | 22.11% | 5.20% | 0.99% | 0.93% | 4.48% |
| | 2013 | 22.28% | 5.13% | 29.75% | 4.61% | 1.32% | 1.17% | 5.21% |
| | 2014 | 42.06% | 9.38% | 27.10% | 4.28% | 1.93% | 2.49% | 6.42% |
| | 2015 | 28.23% | 14.90% | 21.10% | 2.39% | 1.49% | 1.59% | 7.13% |
| | 2016 | 45.22% | 8.32% | 22.96% | 3.23% | 1.27% | 2.08% | 3.92% |

| | | | | | | | | |
|------------------|------|--------|--------|--------|--------|-------|--------|--------|
| | 2017 | 18.36% | 8.13% | 23.89% | 18.06% | 1.39% | 1.86% | 3.79% |
| | 2018 | 29.70% | 13.79% | 25.02% | 4.86% | 2.43% | 5.60% | 10.04% |
| | 2019 | 37.99% | 13.78% | 25.93% | 4.30% | 2.67% | 3.70% | 8.74% |
| Industry average | 2012 | 34.10% | 9.77% | 30.84% | 7.61% | 3.09% | -1.49% | 9.20% |
| | 2013 | 34.93% | 10.34% | 28.37% | 6.90% | 3.22% | 1.19% | 8.49% |
| | 2014 | 34.21% | 11.80% | 27.12% | 6.32% | 3.04% | 2.56% | 8.19% |
| | 2015 | 31.86% | 10.36% | 28.36% | 6.30% | 3.56% | 2.98% | 9.21% |
| | 2016 | 27.03% | 9.73% | 30.26% | 7.46% | 4.72% | 4.40% | 9.55% |
| | 2017 | 29.08% | 9.74% | 29.35% | 6.73% | 4.91% | 4.58% | 10.22% |
| | 2018 | 29.60% | 32.31% | 7.29% | 5.69% | 4.96% | 4.51% | 10.04% |
| | 2019 | 28.01% | 11.19% | 29.15% | 6.01% | 5.27% | 3.78% | 9.72% |

The significant increase in Sinochem Holdings' short-term borrowings in 2016 was caused by the addition of Halcyon Agri Corporation to the scope of consolidation and the company's increase in short-term bank borrowings. In 2017, under the regulation of the Financial Sharing Center, the enterprise's short-term borrowing ratio dropped rapidly then remained stable by optimizing its capital structure, issuing long-term bonds, and repaying a portion of its short-term borrowings. By the following year, Sinochem Holdings acquired European producer Elix Polymer globally for EUR 144 million. The said acquisition of the company, which had the leading ABS plastic production technology, laid the foundation for Sinochem Holdings to develop its business arm on polymers and new lightweight materials with a significant market potential. During this period, Sinochem Holdings' current liability structure remained stable. Since establishing the enterprise's financial sharing system, liquidity of assets within the group exhibited enhancement and the utilization rate of funds improved, thus controlling the cost of fund utilization to some extent.

Sinochem Holdings' unified business management platform produced an "integrated management" pattern in 2018, gradually realizing an integrated management of online and offline, internal and external, and clustered and branch businesses, and attaining the management requirements of various businesses through system interconnection and data sharing. Through internal business management and system development, the company established a customer- and supplier-centered promotion service model. It developed One Chemical Network, an online sales platform that provides solutions for customers and promotes them through supply chain management. In this case, relying on an advanced online business model and powerful system functions promotes traditional business from offline to online means, attracts high-quality external resources to partake in online transactions, and integrates business-associated functions to meet customers' "one-stop" needs. The design and security of the company-endorsed One Chemical Network is supported by AliCloud, guaranteeing the security of large cash transactions. Such a unified business management platform upgraded the intelligence of marketing channels, enhanced precision marketing capability, optimized the sales process, and enriched customer experience, all of which undoubtedly benefited the enterprise's capital operations. Through digitization of financial shared service centers, all of Sinochem Holdings' business processes are online. Internal and external information undergo integration and management. Data, including capital flow, information flow, business flow, and storage logistics, are dynamically visualized. The "self-operated + third-party" one-stop chemical trade integrated service platform has an intelligent business full-cycle automatic risk management and early warning functions to realize lean management needs efficiently.

4.2.2. Working Capital Management Performance Analysis

The analysis of an enterprise's working capital management performance primarily relies on two key factors—channels and elements. Figures 1 to 8 compare the working capital management performance of Sinochem Holdings and the industry average at different development stages.

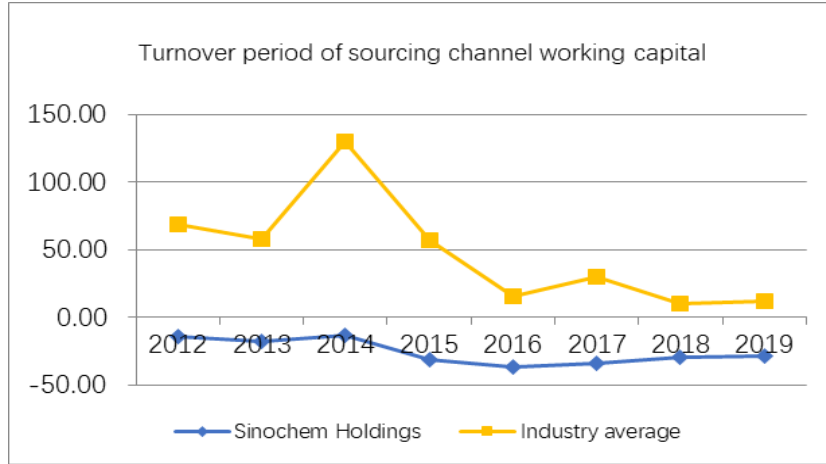


Figure 1: The trend of the turnover period of sourcing channel working capital.

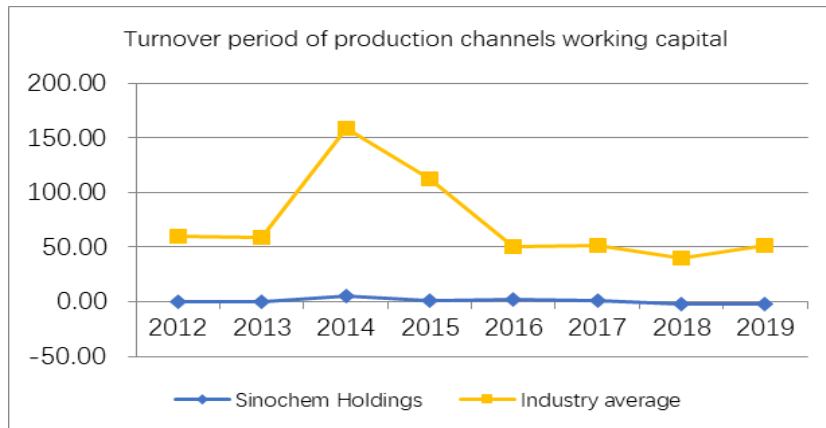


Figure 2: The trend of the turnover period of production channels working capital.

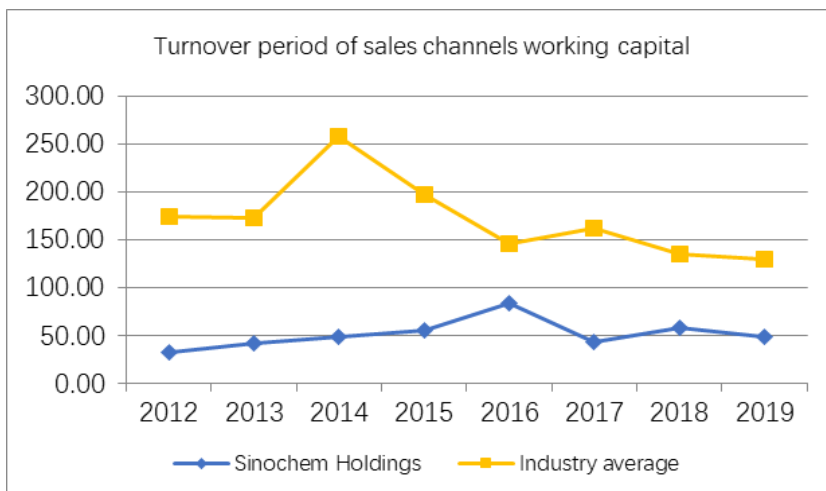


Figure 3: The trend of the turnover period of sales channels working capital.

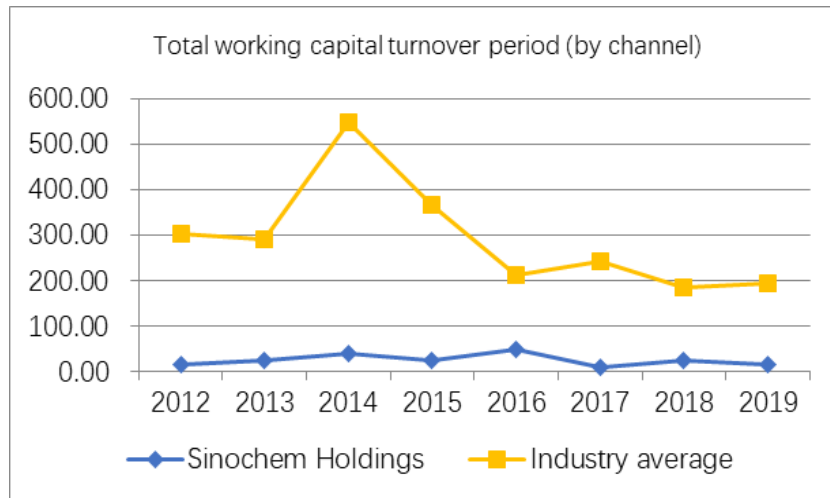


Figure 4: The trend of the total working capital turnover period (by channel).

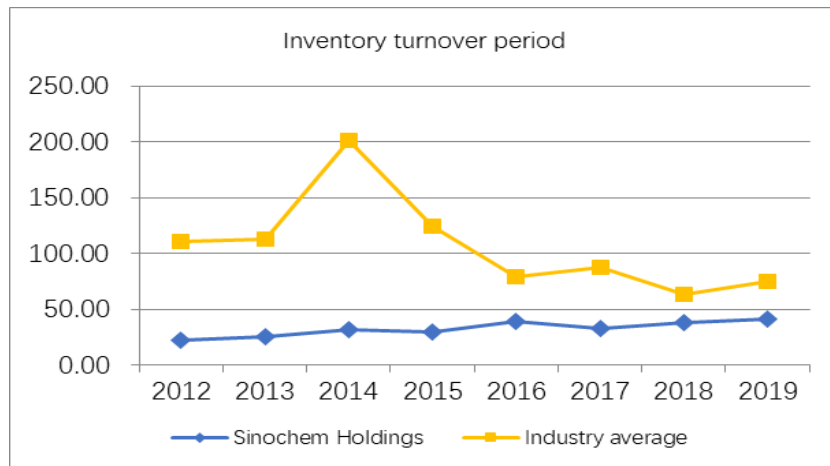


Figure 5: The trend of the inventory turnover period.

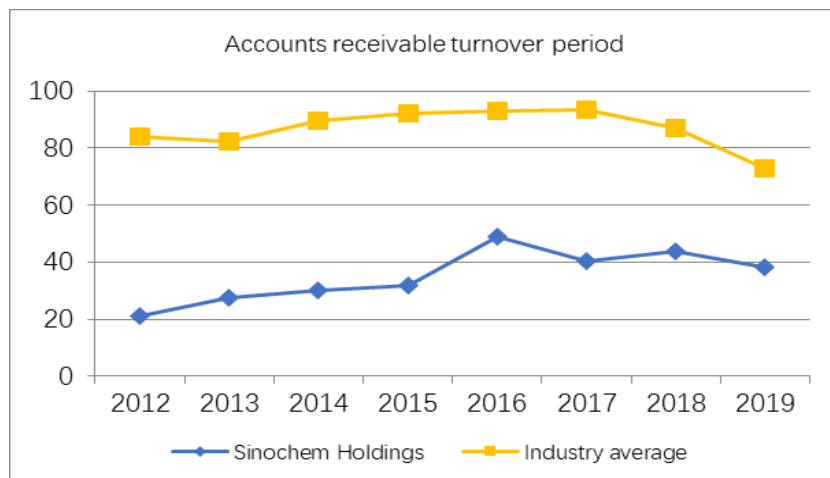


Figure 6: The trend of the accounts receivable turnover period.

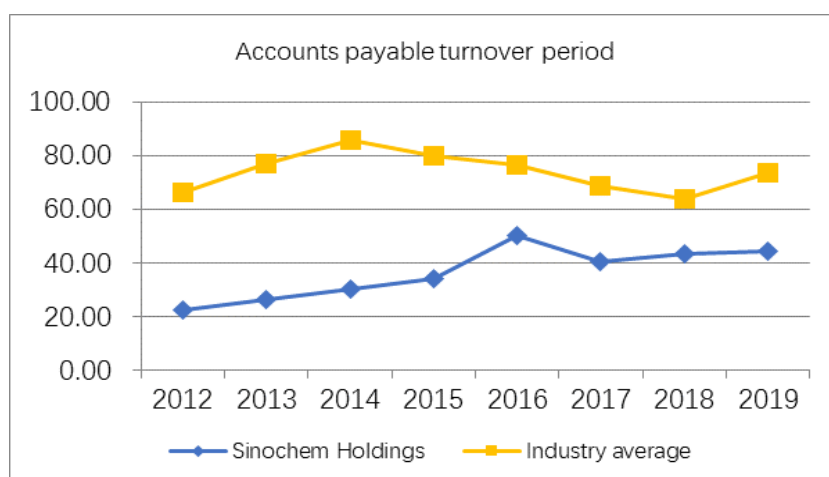


Figure 7: The trend of the accounts payable turnover period.

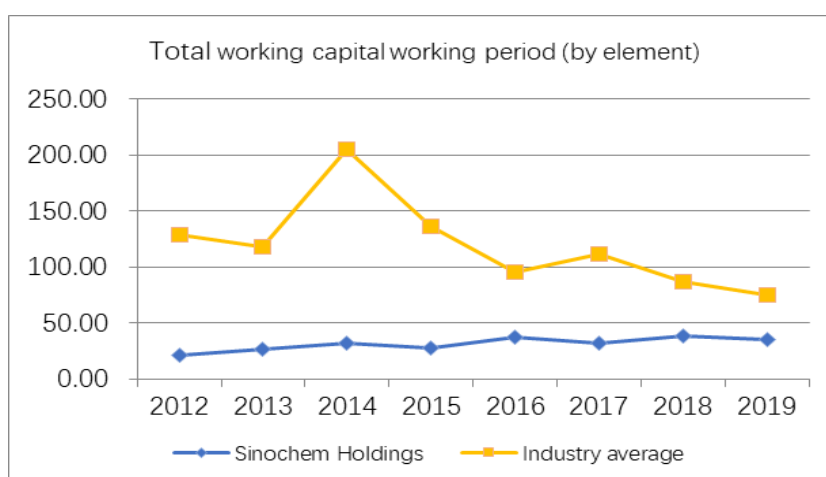


Figure 8: The trend of the total working capital turnover period (by element).

Phase I: Preparation Period (2012–2015)

After examining the development of Sinochem Holdings’ financial sharing from 2012 to 2019, the key reason for identifying 2012–2015 as the preparation period for the company’s development of corporate financial sharing is that, during this period, it employed measures to improve the potential of enterprise risk management, formulated a “value-creating” financial strategy based on the enhancement of internal management and risk management data systems, and accomplished the transformation of the financial management system from “operational control” to “value creation.” This period effectively prevented possible financial management risks in budget management, investment and financing management, performance evaluation, and reward and punishment system. It also improved the financial management level, capital utilization efficiency and resource allocation efficiency, while providing solid financial support for maximizing economic benefits and generating a solid conceptual and target foundation for establishing a financial sharing center.

Based on Figures 1 to 8, before the company introduced financial sharing in 2016, working capital management performance by channel and element almost generally and consistently decreased in 2014. Compared to the industry average, working capital management performance of both sub-channels and sub-elements in the chemical manufacturing industry significantly decreased in 2014, as the working capital turnover period nearly doubled. It was primarily due to the

avalanche of decline in petroleum, a significant raw material for basic chemicals, and due to the worldwide economic weakening and overcapacity of chemicals in the global supply chain system that year. Regions like the Middle East, Russia, and North America, with their advantages in resources and raw materials and government guidance, invested in building several chemical plants and took advantage their price advantages to export many products. This phenomenon further worsened overcapacity and price competition in the domestic chemical market and put enormous downward pressure on the economy.

Before implementing its financial sharing system, Sinochem Group's working capital performance was more sensitive to changes in global economy and industry environment. Hence, during this period, Sinochem Group integrated its strategic objectives and customer value concept, standardized its process management based on its system structure, and introduced a KPI assessment system incorporating financial and business information indicators and internal control execution. These actions aimed to enhance management effectiveness and attain the requirements of various users. By 2015, the company's working capital management performance rapidly recovered.

With enterprise value management as its core, Sinochem Holdings plays decision-making support and service functions of financial management in several aspects like internal control, risk management, and performance assessment, thus promoting its strategy advancement and business development. It enables finance as the best partner for business development, a necessary driving force for value creation and enhancement of core competitiveness.

Phase II: Start-up Period (2016–2017)

In 2016–2017, Sinochem Holdings initially set up a financial sharing center and realized electronic file management and intelligent process automation. Hence, this period signified the company's financial sharing start-up period. Based on Figures 1 to 8, working capital management performance by channel and by element during this period almost generally decreased in 2016 before rebounding the following year. Meanwhile, Sinochem Holdings formally implemented its financial sharing project in 2016. The negative impacts tended to outweigh the positive ones at the initial implementation stage due to the imperfection of the system, the integration with the original system, and the acceptance of employees; thus, working capital management performance decreased. On the positive side, Sinochem Holdings' financial shared service center contributed to financial process reengineering and management standardization, hence accelerating the company's flow of capital and information based on improving accounting efficiency, and eventually improving working capital management performance.

The electronic file management system launched last April 2016 realized paperless accounting vouchers, resolved information management challenges, and significantly promoted the online transmission and application of electronic vouchers. Meanwhile, the electronic management of archives realizes online retrieval and audit procedures, reducing the difficulty of archives extraction. It can also provide timely and accurate feedback on archives borrowing and returning information, thus reducing the risk of loss and leakage, guaranteeing archives security, and realizing real-time archives monitoring. In both internal and external audit processes, one can access the file management system for electronic accounting vouchers by issuing permission to audit-related personnel. In this case, time and place constrain the audit no longer, and the flexibility of the audit procedure improves. Furthermore, electronic file management can effectively obtain and efficiently integrate data according to system settings and realize data exchange and interconnection with subordinate units and branches. In this sense, it provides conditions for the financial shared service center to make decisions and create value.

By the fourth quarter of 2017, Sinochem Holdings officially applied its RPA intelligent financial robot to replace some of its long-term, high-frequency, repetitive, and low-value-added manual operations, including transaction processing, data transfer, analysis, and comparison efficiency of

shared services. Through interaction with computer software, the robot can undertake transmission, do transaction processing, compare and analyze, and make decisions, which significantly improves the efficiency of taxation, finance, and auditing by reducing labor costs. It portrays as a critical node of information in the financial shared service center, in which data from multiple sources are obtained and disseminated. Thus, it effectively assists Sinochem Holdings to enable multi-system platform support, multi-company subject interaction, and multi-administrative geographical linkage.

As indicated in the annual report, the average inventory of Sinochem Holdings significantly increased to RMB 6.140 billion in 2016, up 68.68% from RMB 3.640 billion in 2015, while inventory turnover ratio increased by only 31.19%. These figures reflected the company's excellent inventory management capability under its financial sharing model. Compared to the industry average, the company's trend was stable. During this period, global economy gradually recovered. The petrochemical market generally rebounded in 2017, which was also a year of intensive reform, transformation, and upgrade of China's petroleum and chemical industry. However, the said year also exposed high import pressure, insufficient investment momentum, and accelerated rise in inventories in the Chinese petroleum industry, resulting in fluctuations on the working capital management performance of the entire industry. However, Sinochem Holdings' working capital management performance increased rather than decreased amid industry shocks. This situation implies that the stability and reliability of the company's working capital had improved, and the construction of its financial shared service center had begun to bear fruit and exhibit immense potential.

Phase III: Development Period (2018–2019)

During the development of its financial shared service center in 2018–2019, Sinochem Holdings established a multi-time-zone expense reimbursement system, generated an integrated management model, and directly connected as many as 18 banks with banking enterprises. Based on Figures 1 to 8, the company's working capital management performance by channel and by element during this period was better than the industry average, manifesting further improvement.

In this study, external environment analysis indicates that the supply-side structural reform of the petrochemical industry had further improved the industry's overall environment. Meanwhile, Sinochem Holdings further deepened the construction of its financial sharing center by employing a multi-time-zone expense reimbursement system. This system adequately resolved overseas employees' reimbursement problems and the adverse impacts arising from cross-day and cross-year accounting audits of the member units in different time zones. It realized the linkage of the company's global reimbursement system, making expense category accounting more accurate and timelier. With financial accounting and unit business as the core, the enterprise group unified project management, customer management, and value management toward an integrated information management and enabled online transactions of all business processes. Through digitization, business flow opened up to enhance the service experience of the financial shared service center. While realizing an efficient automated management, it provided timely feedback to enterprises on multi-dimensional visualization data like funds, information, and documents, strengthened customer relationship management, quantified financial collaboration management, fine-tuned management teams, and maximized revenue from three dimensions—"open source, cost reduction, and efficiency enhancement." Sinochem Holdings integrated its management and internal control systems with internal and external data to aid enterprises in making strategic decisions and achieving efficiency from management.

Sinochem Finance Company fully integrated its external banking channels. It turned its own banking-enterprise direct link platform into a "super network bank," enabling member units to realize functional requirements like local and foreign currency payment and settlement, self-service of deposited funds, and centralized inquiry of domestic and foreign accounts. Since the

establishment of these channels, Sinochem Group’s direct linkage platform has covered as many as 18 banks, which fundamentally meet its comprehensive fund management requirements, including fund flow, transfer and payment, and account inquiry. Additionally, Sinochem Finance has made full use of its synergistic advantage to link the core business systems of enterprises with the ERP systems of member units and banking channels seamlessly through the direct linkage platform, integrating them into a complete system capital and information chain. This move meets enterprises’ needs for settlement, financing, risk control, and comprehensive financial services in local and foreign currencies at various levels and scenarios. It provides support for enterprise capital budgeting and deployment, aids enterprises in improving their risk control systems and organizing their capital management processes, and renders more customized and market-oriented financial services that match the enterprises’ strategic development, hence meeting the increasingly prominent, globalized, and personalized needs of enterprise groups.

4.2.3. Ratio of Finance Staff to the Number of Professionals in the Group

In Table 6, the number of finance personnel and the ratio of finance personnel to the number of the professionals of Sinochem Group from 2012 to 2019 generally maintained an increasing-to-decreasing trend. The finance department’s number and ratio had kept increasing from 2012 to 2015 due to the increase and expansion of company businesses. By 2016, they manifested both increase and decrease after the formal establishment of the financial shared service center.

Table 6: Number of finance staff and ratio of finance staff to the number of professionals, 2012–2019.

| Year | Number of finance staff | Total number of professional composition | Percentage of finance staff |
|------|-------------------------|--|-----------------------------|
| 2012 | 231 | 11,592 | 1.99% |
| 2013 | 239 | 12,537 | 1.91% |
| 2014 | 341 | 9,545 | 3.57% |
| 2015 | 344 | 9,069 | 3.79% |
| 2016 | 402 | 16,941 | 2.37% |
| 2017 | 575 | 18,955 | 3.03% |
| 2018 | 482 | 26,160 | 1.84% |
| 2019 | 250 | 26,299 | 0.95% |

As the financial sharing model was not quite perfect and was within continuous exploration during the early stage, an appropriate increase in finance personnel helped the finance department to become better and faster in familiarizing and mastering the financial sharing system. 2018 and 2019 saw a significant decrease in number and ratio, much lower than the percentage of finance personnel in 2012. In October 2017, Sinochem Holdings’ intelligent process automation system officially operated. The resulting change of trend in both number and ratio indicated that the said system had significantly reduced the number and composition of finance personnel, liberated these personnel from low value-added repetitive work by enhancing the efficiency and quality of finance, and promoted the transformation of the finance department with noteworthy effectiveness.

Following two years of development, the RPA intelligent financial robot of Sinochem Holdings Finance Sharing Center is currently in its third phase. It connects the breakpoints of the information chain and enables the automation and intelligence of processes that require real-time monitoring, including current payments, tax reporting, and bank flow. With its application in existing digital programs, it reduces human manipulation against interfering and misleading corporate decisions,

thus opening up a new era of financial sharing development for Sinochem Holdings.

5. Research Conclusions and Implications

The development of financial sharing and management systems contribute to and complement each other. By establishing a “value-creating” financial management system, Sinochem Holdings lays the foundation for establishing financial sharing services, integrates all aspects of risk control, business management, and services, and realizes process reengineering, information construction, and digital transformation. With the support of digital technologies like big data and artificial intelligence, it has upgraded its financial system, thus improving corporate efficiency continuously.

Through a longitudinal case study, this study summarizes the impact of Sinochem Holdings’ establishment and improvement of its financial shared service center on working capital management performance. It finds that the impact of financial sharing on working capital management performance is not constant. Meanwhile, as the financial sharing stage continues to progress, its amplification effect on working capital management performance becomes increasingly apparent, with a generally upward trend.

Before establishing the financial sharing center, external environment and industry changes influenced working capital management performance more, as the number and proportion of finance staff rapidly increased with the expansion of enterprise scale and business volume. With the development of financial sharing, the impact of the external environment on the enterprises’ working capital management performance reduced; the flow of funds and information accelerated, the proportion of financial personnel began to decrease, and economic transformation exhibited results. In this case, the financial sharing concept and model improve financial management efficiency, enhance channel and process management, and open up and rationalize the transmission channels of funds and information, eventually developing enterprises’ working capital management performance.

Based on its research and analysis, this study proposes the following insights to develop financial sharing in Chinese enterprises.

First, the development of financial sharing should adapt to the enterprise’s specific situations. Sinochem Holdings has realized integrated management, multi-time-zone reimbursement, intelligent process automation, and other modes of financial intelligence based on its nature and business, thus dramatically improving its financial operation efficiency and information transmission quality. In this case, enterprises should align their financial sharing plans with their development according to industry characteristics and their development and business situations. They should reshape financial management workflow, promote the change of the finance department, and realize the automation, intelligence, and digitization of financial development.

Second, the government and the industry should actively guide enterprises’ financial sharing development. They should encourage and support the financial intelligence transformation of enterprises from a policy level to create a favorable external environment toward the development of corporate financial sharing. State-owned enterprises and large-scale ones should actively practice and provide new development paths for the intelligent transformation of corporate finance, accelerate the progress of financial sharing in China, and provide managers and other stakeholders with information as close as possible to actual economic activities. In this way, they can optimize their decision-making effectiveness and reduce related uncertainties.

Finally, accounting personnel should change their mindset and promote their transformation. The “financial sharing era” has imposed higher requirements on a professional level. Thus, the skills of accounting personnel and enterprises need to cultivate management, service, and global consciousness, make full use of the opportunities of economic transformation, and focus on

harnessing informationization and cloud computing capabilities based on mastering fundamental theoretical knowledge. In this manner, finance personnel can become composite talents who aid in the development of enterprises.

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