

Application and Effect Analyses of RPA in Financial Scenarios of Sinochem International Corporation

Ziyue Bai *

Accounting School, Tianjin University of Finance and Economics, 300222 Tianjin, China

* Corresponding author: baiziyue@stu.tjufe.edu.cn

Abstract. In the context of big data, intelligent finance is rapidly developing in the financial field, and Robotic Process Automation (RPA) is an intelligent product in the era of big data. Compared with traditional software, RPA has a shorter development cycle and simpler design. This paper introduces the concept of RPA technology, the advantages of its application in the financial field and the development status. This paper uses the way of case study, Sinochem International, the first state-owned enterprise to introduce financial robots, is taken as the research object. This paper expounds the motivation of introducing RPA in Sinochem International, introduces the application projects, evaluates the application effects of RPA and analyzes the major advantages of RPA in the financial field. It also provides reference and lesson for the financial management process automation of the enterprise financial sharing center that has or will use RPA mode, to promote the financial intelligent transformation.

Keywords: RPA, Sinochem international corporation, intelligent, financial field.

1. Introduction

With the rapid development of digital technology, the current demand for digital transformation of Chinese enterprises is increasingly urgent, and the application prospect of RPA technology is very broad. As one of the largest economies in the world, China has a huge market scale and potential. Research on the development of RPA in the Chinese market is helpful to understand the application of RPA technology in different industries and scenarios, as well as market acceptance and development trend. In addition, the Chinese government has been committed to promoting the development of the digital economy, encouraging enterprises to adopt new technologies and models for innovation and upgradation. RPA technology as an important part of the digital economy, its development in the Chinese market has also received policy attention and support. In the 14th Five-Year Plan for the Development of Digital Economy, it is proposed to "take data as the key element, take the deep integration of digital technology and the real economy as the main line, strengthen the construction of digital infrastructure, improve the digital economy governance system, and jointly promote digital industrialization and industrial digitization" [1]. Finally, the research on the development of RPA in the Chinese market can also provide decision-making reference and market insight for relevant enterprises. Through the research of RPA market, enterprises can understand the layout and strategy of competitors and then grasp the market opportunities and challenges, so that formulate more effective market strategies and business planning.

In this paper, Sinochem International (Holding) Co., LTD. (hereinafter referred to as 'Sinochem International'), the first central enterprise to introduce intelligent process automation, is selected as the object of research. Sinochem International is a large state-owned listed company with core competitiveness in the fields of intermediates and new materials, polymer additives, natural rubber, etc., with customers in more than 100 countries and regions around the world. The company has been ranked as one of the top 100 listed companies in China by Fortune magazine for many years. Sinochem International Financial Sharing Center mainly serves the member enterprises within the company. By providing efficient basic financial services and high-quality financial and tax information, Sinochem provides support for business decision-making and promotes the efficient implementation of group strategy.

2. The Basic Concept of RPA Technology, Its Application Advantages and Development Status in the Financial Field

2.1. The Basic Concept of RPA Technology

RPA (Robotic Process Automation) is a new type of IT technology based on software robotics. This technology automates business processes by using software robots to simulate and perform repetitive and regular tasks in business processes. RPA robots can run on a computer and use existing application program interfaces (API) to complete tasks. The core concept of RPA technology is to use software robots to simulate tasks performed by humans on computers, such as data entry, file processing, data verification, etc., to improve work efficiency, reduce errors, and improve overall quality [2]. RPA technology can be applied to many fields, such as finance, human resources, supply chain, customer service center, etc. [3].

2.2. Application Advantages of RPA Technology in the Financial Field

RPA technology is favored by enterprises for its high efficiency, low consumption, accuracy and maneuverability. Its application can give wings to the reform of financial automation, break the dilemma of financial work, and greatly improve the management efficiency of enterprises [4]. RPA technology can automatically deal with many repetitive and regular financial tasks, such as data entry, invoice processing, report generation, etc., which can greatly reduce human errors and improve the accuracy of data processing while improving work efficiency. In addition, RPA reduces errors and rework, further reducing operating costs. With RPA technology, companies can free financial personnel from tedious and repetitive tasks and let them focus on more valuable work, which can not only improve employee job satisfaction, but also enhance the overall competitiveness of the company.

2.3. Development status of RPA Technology

Initially, RPA was mainly used to perform efficient operations and automation such as data entry, document processing, etc. As technology has evolved, RPA has been able to handle more complex tasks such as data analysis, decision support, and more. At the same time, the application scope of RPA extends from the traditional financial management field to finance, insurance, e-commerce, manufacturing and other industries [5]. With the development of technologies such as artificial intelligence (AI) and machine learning (ML), many RPA systems have integrated AI and ML technologies. Through natural language processing, image recognition and other technologies, RPA robots can perform tasks more intelligently, improving work efficiency and accuracy. With the continuous development of technology and the expansion of application scenarios, the market demand for RPA will continue to grow.

3. The Application and Effect of RPA Technology in Sinochem International Financial Scenario

3.1. Motivation for Sinochem International to Introduce RPA

3.1.1. Improve work efficiency and accuracy

With the expansion of enterprise scale and the complexity of business process, many repetitive and regular tasks become the bottleneck of enterprise operation. These tasks not only consume a lot of human resources, but are also prone to errors. By introducing RPA technology, Sinochem International can automate these tasks, thereby improving work efficiency and accuracy.

3.1.2. Reduce costs

As labor costs rise, companies are looking for solutions that can reduce costs. The introduction of RPA technology can help Sinochem International reduce its dependence on manpower and labor costs.

In addition, by optimizing processes and increasing efficiency, the company can reduce operating costs.

3.1.3. Optimize the financial process

With the increasing trend of digital transformation, Sinochem International needs to move traditional financial processes to digital platforms. As an important digital tool, RPA technology can help enterprises realize the automation and digitization of processes, to promote the process of digital transformation.

3.1.4. Enhance enterprise competitiveness

By introducing RPA technology, Sinochem International can optimize financial processes, improve work efficiency and accuracy and reduce costs, thus enhancing the competitiveness of the enterprise. In addition, the application of RPA technology can also help the enterprise better respond to market changes and customer needs, thereby improve service quality and customer satisfaction.

3.2. Application Project of RPA Technology in Sinochem International Financial Scenario

3.2.1. Bank reconciliation process

As shown in Figure 1, the robot automatically completes the bank reconciliation and reconciliation statement printing for multiple bank accounts of multiple banks at regular times.

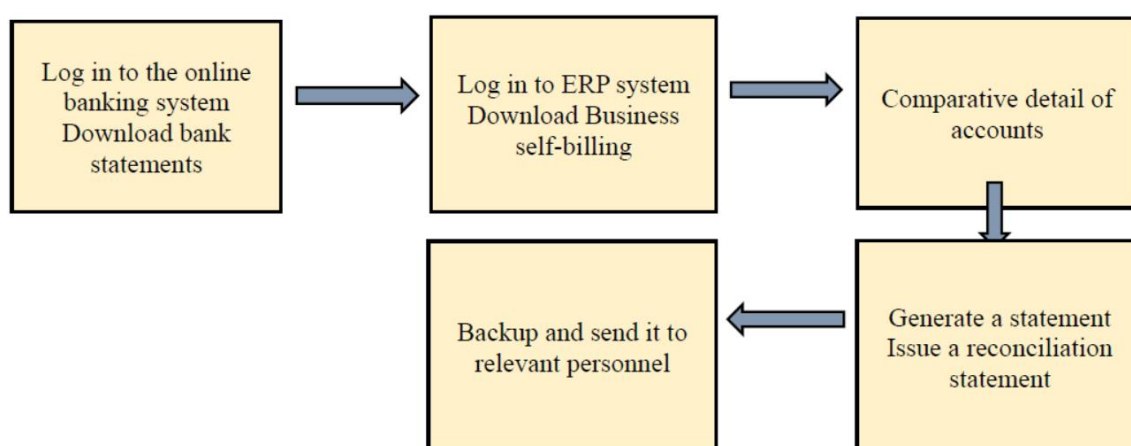


Figure 1. Bank reconciliation flow chart

3.2.2. Incoming reminder process

The robot automatically collects the payment flow record of bank at fixed frequency, and timely informs the formulation clerk to check the money.

3.2.3. VAT account verification process

The robot regularly collects tax receipt performance and accounting from SAP accounting system, gold tax billing system, input tax receipt management system and tax return forms and other data sources, and sends emails to remind financial personnel to correct the differences in time.

3.2.4. Authenticity inspection of VAT tickets

As shown in Figure 2, the robot can submit the VAT invoice that needs to be verified in real time to the national VAT invoice inspection platform of the State Administration of Taxation to verify the authenticity, and record and prompt the inspection results.

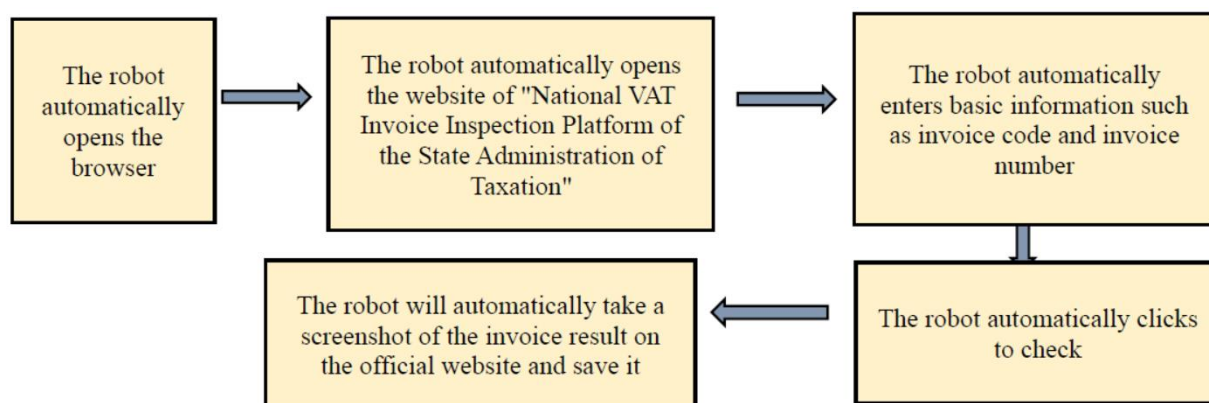


Figure 2. Flow chart of VAT ticket authenticity inspection

3.3. Application Effect of RPA Technology in Sinochem International Financial Scenario

3.3.1. Improve work efficiency

RPA technology can automate repetitive and tedious tasks and reduce human intervention, thereby increasing work efficiency and productivity. At Sinochem international, RPA is used in some routine office and business processes to help employees save time and effort and focus on high-value work, such as data entry, report generation, approval processes, etc., After the introduction of RPA technology in the financial sharing center, 75% of the time can be saved. Taking tax declaration as an example, the financial robot can automatically complete the work of more than 60 accountants in 4 companies which in the form of SAP system viewing, exporting and sorting and sending the result to the tax personnel [2].

3.3.2. Reduce error rate

RPA can accurately copy and execute preset rules and actions, it reduces the occurrence of human error. Through the automated process of RPA, Sinochem International Financial Sharing Center can reduce errors in data entry and processing and improve the accuracy and reliability of information processing. The automatic execution of workflow through RPA can improve work efficiency and avoid rework caused by human error, and the accuracy rate is close to 100%.

3.3.3. Reduce cost and resource input

RPA can replace labour executing some simple and repetitive tasks, reducing the demand for human resources and the corresponding cost expenditure. In the application of RPA, Sinochem International has achieved certain cost savings by reducing manpower input and improving efficiency. Since putting RPA into operation in 2017, the number of finance staff at Sinochem International has shown a significant downtrend and the accuracy and efficiency of the financial workflow has increased significantly. Figure 3 shows a significant downtrend in management expenses after 2017.

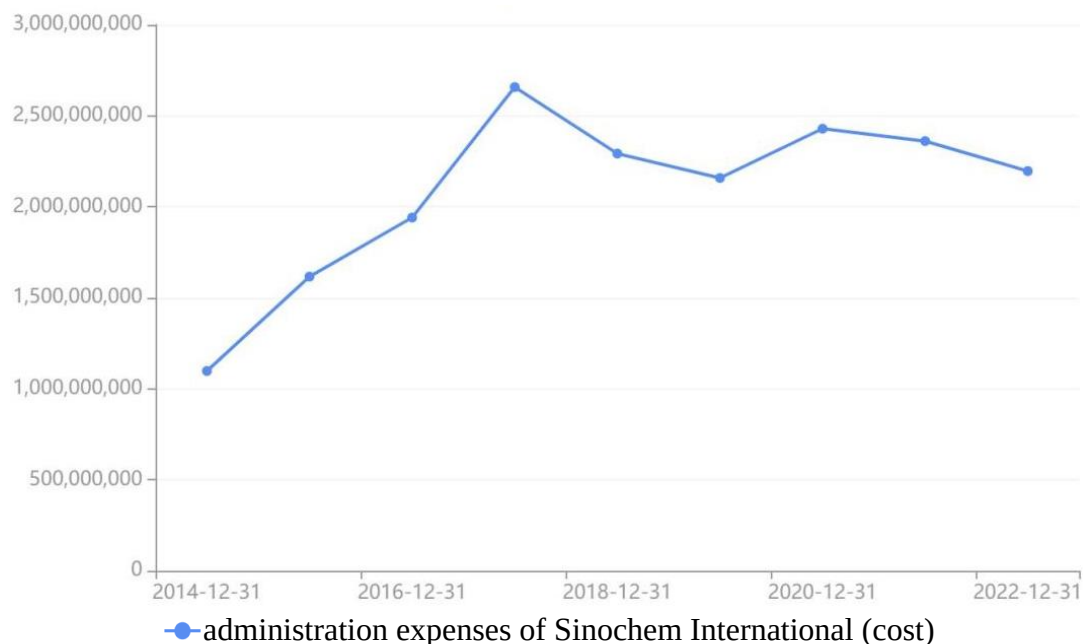


Figure 3. Change of administration expenses of Sinochem International from 2014 to 2022
(Data source: Guotai 'an Database)

3.3.4. Reduce the financial risks and operational risks of enterprises

RPA can monitor financial data in real time to identify potential financial risks and abnormal conditions. Through the automated early warning system, problems can be detected in time and corresponding measures can be taken to help Sinochem International control financial risks in a timely manner. As shown in Figure 4, before 2017, the financial leverage coefficient of Sinochem International showed an upward trend and exceeded the average level of the industry, after that began to decline and remained lower than the average level of the industry. The financial risk of the enterprise was reduced.

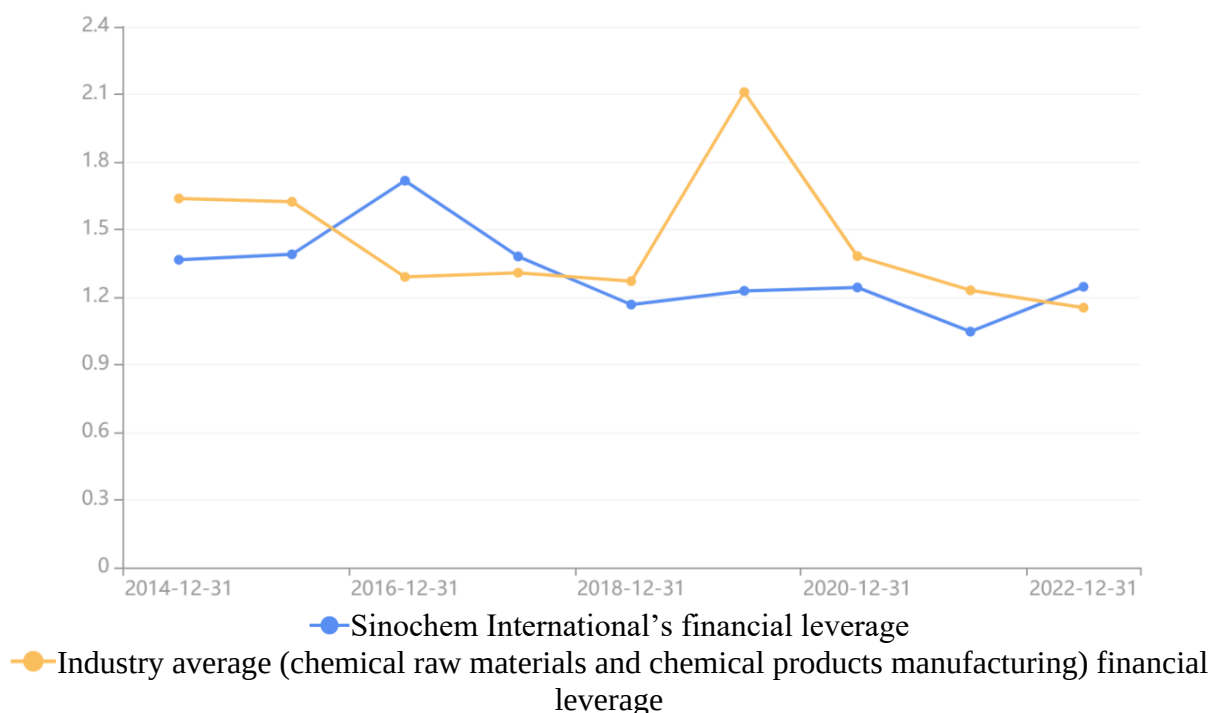


Figure 4. Comparison between Sinochem International's financial leverage and the industry average financial leverage during 2014-2022 (Data source: Guotai 'an Database)

As shown in Figure 5 and 6, operating leverage and compound leverage have declined after 17 years and remain stable at a good level slightly below the industry average coefficient.

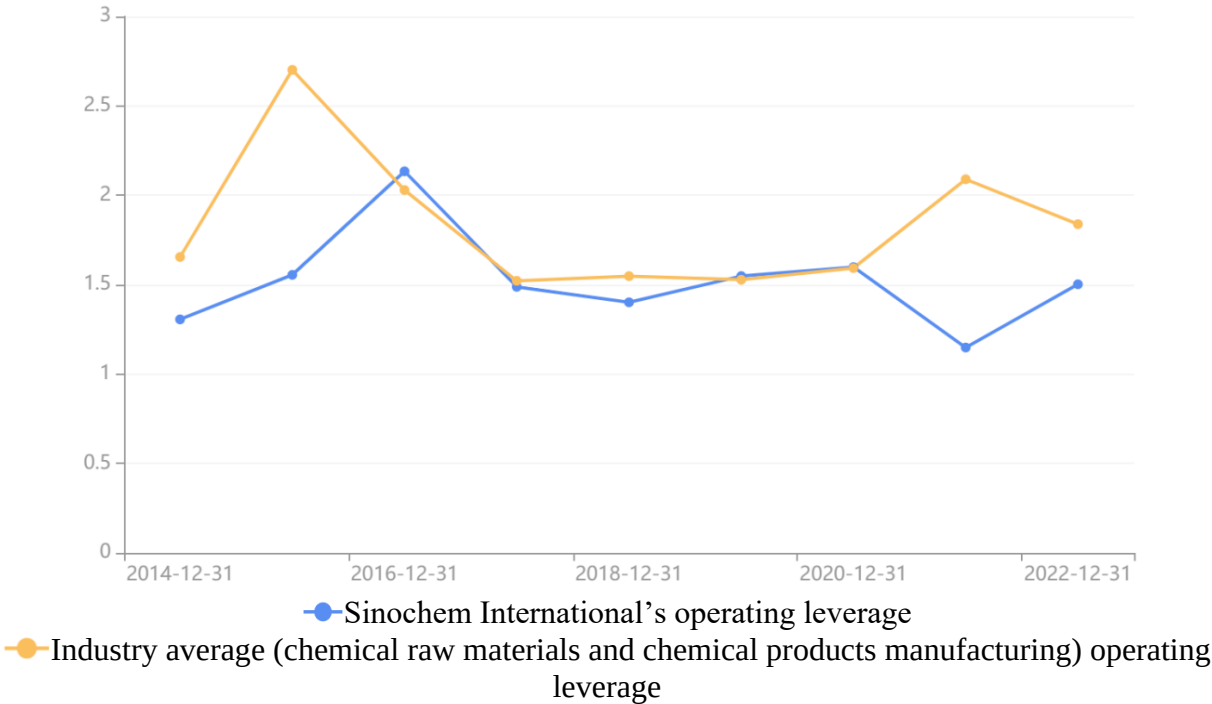


Figure 5. Comparison between Sinochem International's operating leverage and the industry average operating leverage during 2014-2022 (Data source: Guotai 'an Database)

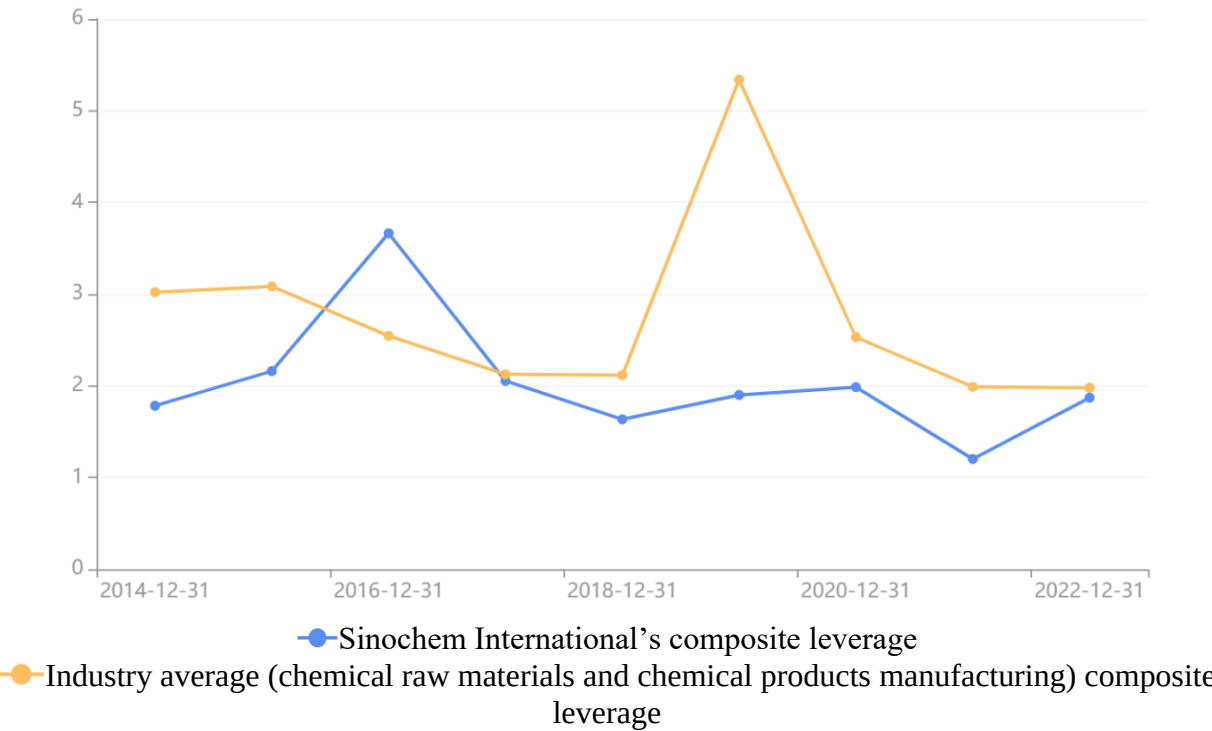


Figure 6. Comparison between Sinochem International's composite leverage and industry average composite leverage from 2014 to 2022
(Data source: Guotai 'an Database)

After 2017, the degree of financial risk and operational risk of enterprises has generally decreased, and the application of RPA technology has significantly enhanced the risk control ability of

enterprises. In the first two years of implementation, there have been initial results, and in the long run, the risk taking and stable development of enterprises have achieved remarkable results.

4. Conclusion

By analyzing the application cases of RPA in Sinochem International, we can understand the application advantages of RPA in the field of enterprise finance more specifically. However, RPA is not suitable for all business processes and tasks. So Sinochemical International needs to choose reasonable planning and evaluation and select the process suitable for automation, which ensuring the maximum effect of practical application when applying RPA technology. At the same time, Sinochem International also needs to timely update and upgrade the system so that continuously improve the application effect of RPA. At present, more and more enterprises are aware of the convenience brought by digitization and RPA is known and applied more. In the future, enterprises can choose financial processes appropriate for the application of RPA according to their own needs and specific scenarios to improve the efficiency and accuracy of financial operations. Additionally, with the continuous development and innovation of RPA technology, there will be more application scenarios and opportunities.

References

- [1] Cheng Ping, Li Wanlin. Application and Prospect of RPA Financial Robot in Enterprises [J]. Finance and Accounting, 2022, (6): 74 - 78.
- [2] Chen Shang. RPA Technology: The Transformation Road of Sinochem International Financial Sharing Center [J]. Financial Management Research, 2020, (10): 53 - 57.
- [3] Chen Hu, Sun Yancong, GUO Yi, et al. Financial Robot: Financial Application of RPA [J]. Finance and Accounting, 2019, (16): 57 - 62.
- [4] Ke Xiting. Analysis on the impact of RPA Technology on CPA Industry [J]. Chinese Certified Public Accountants, 2020, (3): 109 - 111.
- [5] Peng Ideliang. Application Analysis of RPA in financial field -- Taking Sinochem International as an example [J]. Investment and Entrepreneurship, 2019, 34 (12): 148 - 150.