

Review and Prospect of China Management Accounting in the Information Age

Lanfang He^{1*}

¹International Business School of Shaanxi Normal University, Xi'an, Shaanxi, 710119, China

*Corresponding author's e-mail: helanfang0801@163.com

Abstract. With the advent of the information age, big data, "Internet +", "intelligence +", "cloud computing" and other technological methods emerge in endlessly, the basic financial accounting work will gradually be replaced by intelligent robots, and this is a great opportunity to promote the development and transformation of management accounting. Management accounting, as a product of the combination of management and accounting, requires a large amount of information and data in order to play a specific role. In the context of the information era, management accounting can rely on the assistance of scientific and technological means to integrate and analyze enterprise information, and further promote enterprise decision-making, control, investment, etc. To serve the overall development situation, management accounting is promising. This article reviews the development of management accounting since the founding of the People's Republic of China and summarizes the problems existing in the development process. On this basis, it provides guiding opinions and suggestions for further improving China's management accounting.

1. Introduction

In recent years, China's economic and social development has achieved world-renowned achievements. At the same time, China's accounting career has also achieved fruitful results and developed a set of accounting theories and methods suitable for Chinese practice. The two major branches of accounting are financial accounting and management accounting. Financial accounting has established a set of generally accepted accounting standards as the basis for accounting. It requires companies to form financial statements on a regular basis and report on the company's financial status and operating results for use by investors, debtors, and management. Management accounting is the interdisciplinary product of management knowledge and accounting knowledge. It mainly conducts in-depth processing and analysis of financial data to help enterprises make business management and investment decisions. In China, the development of financial accounting has been relatively sufficient, while management accounting is still progressing slowly. With the advent of the information age, the basic accounting work of financial accounting will gradually be replaced by artificial intelligence, and management accounting, as an enterprise management tool, management accounting, in the era of big data, can make full use of a large amount of information data to help enterprises make decisions, control, investment, etc., serve the overall situation of development, management accounting work is promising[1].

The report of the Nineteenth National Congress of the Communist Party of China pointed out that Chinese society has entered a "new era", and the main contradictions of society have been transformed into contradictions between the people's increasing needs for a better life and unbalanced and



inadequate development. To serve the people's growing needs for a better life and solve the major contradictions of the new era, we must make efforts in all aspects to promote management accounting to meet the needs of enterprise development under the new normal of economic development that emphasizes "structural stability and growth". It is imminent to seek a new path for the development of management accounting.

2020 is the 71st anniversary of the founding of the People's Republic of China and the 42nd year of China's reform and opening up. At this time point, this article will review and prospect the development of China's management accounting, describe its development in China, summarize the problems existing in the development process, and provide guiding opinions and suggestions for further improvement of China's management accounting.

2. Policy background of Chinese management accounting

One of the most important behavioral characteristics or the most valuable experience of management accounting in China is "the integration and innovation of the government's system orientation and enterprise spontaneity"[2]. In order to vigorously promote the construction and application of the management accounting system during the "13th Five-Year Plan" period, enhance the value creation capability, and promote the development and transformation of management accounting, the Ministry of Finance of China has issued a number of documents that guide and standardize management accounting to guide and support the development of management accounting.

In accordance with the steps taken by the Ministry of Finance to develop management accounting, its system construction will advance along the path of "basic guidelines-application guidelines-case guides-consulting services", gradually clarify the development direction of management accounting, and guide the combination of management accounting and information systems, promote accounting and management work to further advance the pace of modernization and informatization.

On October 27, 2014, the Ministry of Finance formulated and issued the "Guiding Opinions on Comprehensively Promoting the Construction of a Management Accounting System" (hereinafter referred to as "Guiding Opinions"). The "Guiding Opinions" clearly defined the guiding ideology as guided by Deng Xiaoping Theory, the important thinking of the "Three Represents" and the scientific development concept, and deeply implemented the spirit of the series of important speeches of General Secretary Xi Jinping. It puts forward the general goal of "strive to cultivate a group of management accounting talents in the country within 3-5 years, and strive to basically build a management accounting system with Chinese characteristics through the efforts of about 5-10 years". The 13th Five-Year Plan period is a critical period to advance the general goal of building a "management accounting system with Chinese characteristics" in China, and an important stage to promote the development of management accounting.

In June 2016, the Ministry of Finance issued the "Basic Guidelines for Management Accounting". The basic guidelines raise the general law of management accounting to the standard, which is divided into six parts: general principles, application environment, management accounting activities, tools and methods, information and reports, and supplementary provisions. It provides a basic framework and direction for enterprises to comprehensively and accurately understand and apply management accounting, which is conducive to the advancement of management accounting for all enterprises.

Subsequently, the Ministry of Finance successively issued a number of "Management Accounting Application Guidelines". The application guidelines are specific guidance for enterprise management accounting, including general guidelines and tool method guidelines. It is to clearly tell the enterprise what these tools and methods are, how to use them, and guide each enterprise to choose the appropriate tools and methods according to its own development status. At the same time, the application guidelines are open and will continue to develop and improve as practice develops.

The guidance of these policies reflects the government's emphasis on the development of management accounting in recent years. Seizing the opportunity of the times and advancing the transformation of management accounting combined with the needs of the times to adapt it to the requirements of the development of the times is crucial.

3. The development stage of management accounting in China

Management accounting has an early origin and rapid development in Western countries. With the rise of the industrial revolution, factories replaced manual workshops, companies began to focus on improving efficiency and reducing costs. After the First World War, in order to restore the economy and accelerate development, Taylor's scientific management was widely used, among which, "standard cost", "budget control" and "difference analysis" are actually the content of cost accounting, and management accounting is also taking shape on this basis[3]. In the 1840s, with the fierce market competition, in order to gain a dominant position in the competition, enterprises paid more attention to cost control and efficiency improvement, and then some new methods appeared, such as "responsible accounting" Quantitative analysis" and so on. At the annual meeting of the International Accounting Association in 1952, the term "management accounting" was formally adopted. Management accounting officially became an integral part of accounting. Thereafter, traditional accounting was called "financial accounting", Management accounting and financial accounting have become the two branches of accounting. Management accounting has gradually developed in developed capitalism such as Europe and America.

However, due to historical, cultural and other factors, China's management accounting has not developed in the two or three decades since the founding of the People's Republic of China. After the reform and opening up, management accounting has been gradually introduced. The development of management accounting in China has roughly experienced the following three stages.

Introduction Stage (1978-1992). Before the reform and opening up, China's planned economic system hindered exchanges at home and abroad. Since the reform and opening up, China has adhered to the "opening-out, going out" opening-up pattern, gradually reforming its economic system, and making continuous efforts to promote the construction of a socialist market economic system. At this stage, China gradually developed a market economy. On the basis of a market economy, it developed a prototype of a modern enterprise system with separate government and enterprise and clear powers and responsibilities. During this period, China began to contact Western management accounting techniques and methods, but at this time, China is still dominated by the government-led planned economy and has no obvious market characteristics. The management accounting methods and theories introduced in the West can only be combined with the government-led management system for preliminary exploration. To sum up, during this period, after experiencing the household contract responsibility system, corporate shareholding system reform, and the modern enterprise system pilot, etc., China began to contact and introduce Western management accounting theories and methods, but localization research is not enough.

Adaptation stage (1993-Early 21st century). Since the 1990s, China has established a socialist market economy and a modern enterprise system. With the gradual emphasis on enterprise production efficiency, Chinese scholars have begun to conduct management accounting research based on the actual national conditions of socialism with Chinese characteristics. In 1992, the scholar Yu Xuying proposed the concept of "broad management accounting". He believed that management accounting can be divided into three major research areas: micro management accounting, macro management accounting, and international management accounting[4]. In 2002, the Ministry of Finance of China issued the "Guiding Opinions on the Implementation of Budget Management by Enterprises", which regulated the policy of enterprise budget management. The development policy at this stage is "Foreign for China", that is, to absorb the excellent management accounting theories and methods that have been formed in the West, combined with the actual development of Chinese enterprises, to develop a management accounting model suitable for modern Chinese enterprises. During this period, China began to adapt and apply Western management accounting theories and methods, and developed its own theories.

The stage of innovation (from the beginning of the 21st century to the present). With the rapid development of artificial intelligence, Internet+, big data, etc., enterprises have begun to combine these technologies with enterprise practice for refined management to improve enterprise production efficiency, reduce enterprise production costs, promote enterprise investment decisions, and optimize

enterprise resource allocation[5]. The development of the times puts forward many new requirements for management accounting. Combining management accounting theory, corporate accounting information with Internet+, big data, artificial intelligence and other new tools of the era to realize the transformation and development of management accounting, and exploring the formation of a management accounting system with Chinese characteristics is the development direction of contemporary management accounting . The specific stages are shown in Table 1.

Table 1. The development stage of management accounting in China

Year	Progression stage
1978-1992	Introduction
1993-2002	Adaptation
2003-Present	Innovation

In order to visually show the research achievements of Chinese management accounting, this article conducts keyword frequency search and keyword co-occurrence network analysis according to management accounting on China Knowledge Network. It is found that scholars' research on management accounting mainly combines the following three aspects. First, the combination of management accounting and financial accounting and financial management is an ancient topic of management accounting research; second, the combination of management accounting and the background of the times, the arrival of the era of big data and informationization provides an opportunity for the development of management accounting; Third, the role of management accounting in the integration of business and finance, transformation, application, internal control and other aspects of the enterprise has demonstrated the wide impact of management accounting on the operation of the enterprise. At the same time, the analysis of the overall trend of management accounting research in academia is shown in Figure 1. Until the beginning of the 21st century, China's research on management accounting was quite small. Since 2013, with the expansion of information technology, the status of management accounting has been continuously improved. The number of scholars' research on management accounting has shown a rapid growth trend, and management accounting has entered the public eye and is receiving continuous attention.

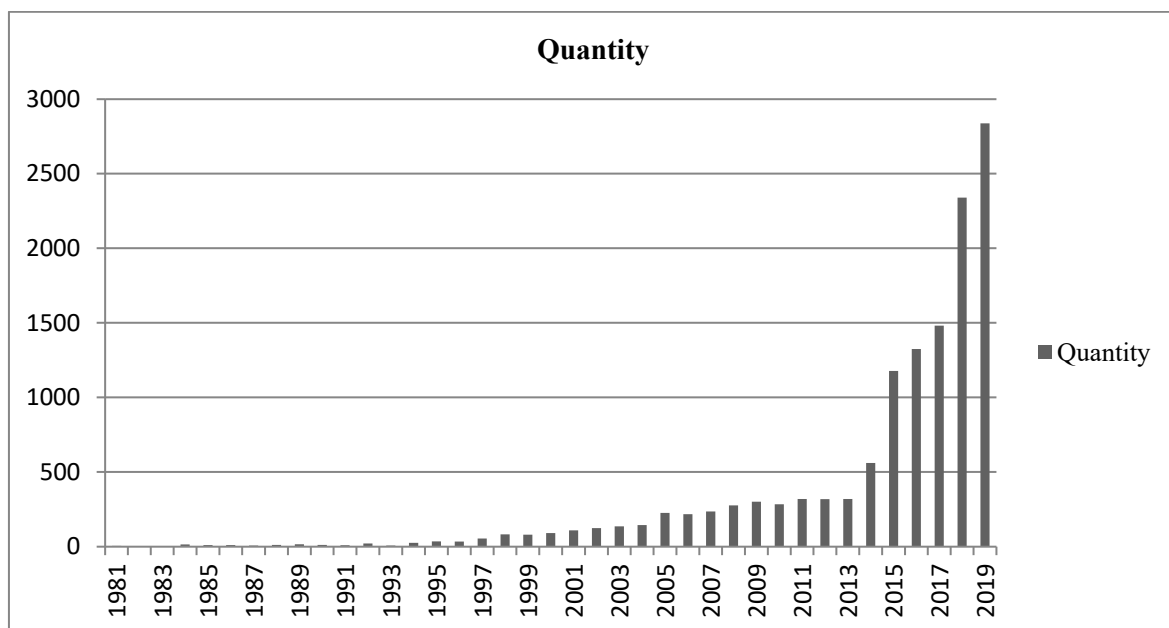


Figure1. Overall trend analysis

4. Problems in the development of management accounting

4.1. *The management accounting system and theoretical system are imperfectly developed*

Since the reform and opening up, China has continuously learned the theory and methods of management accounting from the West, and has gone through the introduction phase, the adaptation phase, and the innovation phase. However, compared with developed capitalist countries, the development of China's management accounting is quite slow, the development of the theoretical system lags behind practical applications, and the management accounting system is not yet complete, resulting in the lack of theoretical guidance in China's management accounting practice[6]. In China, financial accounting has a set of complete and operable norms and standards, and it has been continuously improved with the development of practice. However, due to its marginalization and interdisciplinary characteristics, management accounting has not received enough attention. Compared with financial accounting, the research and exploration of management accounting by the government and universities are far from enough, resulting in the failure of management accounting to form a set of instructive theoretical systems.

4.2. *Enterprises do not pay enough attention to management accounting*

Due to the late introduction of management accounting in China and the lack of localization, the current application and promotion of management accounting is still very limited. Many business leaders have insufficient understanding of management accounting, and have not even been exposed to management accounting tools and methods. At the same time, because financial accounting is much more well-known in China than management accounting, many managers believe that traditional financial accounting is more important. So many companies hardly set up special management accounting positions, which makes the management accounting practice level not greatly improved, the guidance for senior management decision-making is not strong, and it has not brought tangible to enterprises economic benefit.

4.3. *Lack of high-level talents in management accounting*

In recent years, with the development of modern network technology, emerging technologies such as big data, cloud computing, and intelligent robots have emerged in an endless stream. The four international accounting firms have taken the lead in introducing financial intelligent robots to replace the basic manual operations in traditional financial processes. Financial personnel with basic skills will face market elimination, and companies are increasingly demanding the quality and competence of financial officer. However, China currently has a serious shortage of excellent financial talents with comprehensive qualities. In the accounting talent market, the supply of basic talents exceeds the demand, while the supply of excellent talents is in short supply. The training mode of financial majors in colleges and universities has not changed much, which makes China's highly complex financial talents very scarce.

4.4. *Insufficient innovation in management accounting tools in recent years.*

Management accounting is divided into five major development areas, which can be divided into budget management, cost management, operation management, performance management and risk management. The management accounting tools involved in different fields are different. Among the traditional management accounting tools and methods, cost management uses the target cost method, standard cost method, and operation cost method; the basic methods of operation management include cost-volume-profit analysis and benchmarking Management; In terms of performance management, key performance indicators (KPI), economic value added (EVA), and balanced scorecard (BSC) are the most commonly used. In terms of risk management, the traditional concept believes that reducing risk is the main goal of enterprise risk management. With the rise and development of venture capital, making full use of risk for the benefit of enterprises, establishing a risk matrix model, adding risk to performance models, etc. has become the main method of enterprise risk management. These are

traditional management accounting tools, and the state does not enforce the use of such tools, but it is only for reference by enterprises. It is not sufficient in the specific application of enterprises, and it has not been popularized in enterprises. At present, the development level of computerized management accounting in China is relatively lagging behind, and the informatization cannot be fully applied to management accounting. The combination of these traditional management accounting tools and theories with the new era technology tools is not enough. Enterprises have not really realized the importance of management accounting.

5. Suggestions and prospects for the development of management accounting

5.1. Strengthen the training of management accounting personnel

In recent years, the government has gradually paid attention to the problem of lack of financial talents. In October 2016, the "Thirteenth Five-Year Plan for Accounting Reform and Development" issued by the Ministry of Finance clearly pointed out that the accounting profession "the industry urgently needs professional talents." And will actively support the reserve and training of accounting professionals. The rising status of management accounting and the strong support of the government is a good opportunity to train more management accounting talents with comprehensive capabilities. Therefore, to accelerate the development of management accounting, in terms of talent training, it should: First, connect with universities and establish a high-level talent training system. In today's intelligent information age, what the accounting industry lacks is highly complex talents, that is, talents with comprehensive analysis and decision-making skills are more needed, so colleges and universities must pay more attention to the cultivation of students' comprehensive abilities, focusing on the overall goal of high-complex talent training, each training stage has its own focus, plans and adjustments to the curriculum, and cultivates high-end talents suitable for the needs of the times. Second, reform the teaching content and teaching methods. The demand for talents has changed dramatically in the intelligent era, and the current management accounting teaching content in China is almost unchanged, therefore, the teaching content should be appropriately reformed to make it suitable for the needs of the actual enterprise talents in China and converge with the international management accounting training model.

5.2. Strengthen the enterprise's emphasis on management accounting

The inherent requirements of the existence of an enterprise are value creation and value addition. Management accounting, on the basis of traditional financial functions of the enterprise, can comprehensively use unique mathematical, statistical and financial analysis methods to help enterprises carry out budget management, cost management, operation management, performance management, risk management, etc. It can improve the usefulness of corporate decision-making, and can affect the company's profit creation in the overall situation.

With the advent of the information age, the basic financial work of enterprises will be replaced by intelligent robots. Deloitte first launched the "financial robot" in May 2017 and summarized its five advantages: replacing manual operations in financial processes; management and monitoring Automated financial processes; enter information, merge data, summarize statistics; make judgments based on established business logic; identify optimization points in financial processes. Subsequently, PricewaterhouseCoopers, Ernst & Young, and KPMG also launched one after another. The financial robot can complete the basic financial work that can be completed by labor in tens of minutes in a few minutes, which has unparalleled advantages, and the financial robot can work 24 hours a day, which can greatly save labor costs and improve work efficiency for the enterprise[7].

Only when the senior management of the enterprise has a complete and profound understanding of management accounting and realizes the importance of management accounting to the development of the enterprise, will it pay attention to the promotion and application of management accounting in the enterprise. Therefore, it is necessary to improve the theoretical recognition of managers at all levels of management accounting, and then convert it into a management concept and apply it to the enterprise.

The status of management accounting will continue to rise. Enterprises must pay attention to management accounting, fully tap and utilize management accounting, and improve the usefulness of management accounting information in decision-making. It will bring a role that cannot be ignored for enterprises.

5.3. *Improve the information and intelligence level of management accounting*

Management accounting depends on a large amount of information in order to play a real role[8]. With the advent of the information age, in the context of "Internet +" and "intelligence +", with information technology as an opportunity, we should combine the new era technology and fully develop and Innovate management accounting tools to improve the financial data processing and integration capabilities of the enterprise, and fully analyze the big data of the enterprise, which can more intuitively understand the status of the enterprise and help the enterprise to plan, make decisions, and control.

5.4. *Improve the internationalization of management accounting with Chinese characteristics*

Due to China's historical and cultural factors, the introduction and development of management accounting are relatively late, but China has continuously enriched and developed management accounting on the basis of practice in light of the national conditions of socialism with Chinese characteristics, and achieved certain results. In the context of globalization and the opportunity of the Belt and Road Initiative, China should adhere to the combination of "introducing" and "going out", conduct extensive exchanges and cooperation with foreign countries, and introduce foreign advanced management accounting experience and methods. At the same time, it is necessary to share outstanding Chinese management accounting results with the people of other countries to enhance the influence of China's accounting research results worldwide.

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