
**Development of Accounting System for Chinese Agricultural
Enterprise**

- Financial Accounting Software and Business Analysis Software-

中国農企業を対象とした会計システムの開発研究
—財務管理システムと経営分析システム—

Jiawei Wen

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Chapter I Introduction

1.1 Research Background

Since the first accounting software was introduced to the market in 1978, accounting software has evolved very rapidly and accounting software available to businesses has changed substantially. Along with China economic reform and opening-up, Chinese economy has made remarkable progress, accounting software applications have become an integral part of most business operations as it can strengthen the business management and relieve the accountant from tedious accounting information processing. Yet as previous studies the degree of adoption of accounting software applications varies depending on the scale of operation and industry. For instance, the rate of adoption by medium-sized and small business is lower than 30%, while in case of large businesses it is more than 90%. The rate of adoption is considerably low in agro based businesses compared to businesses in other sectors (Wang and Peng, 2004). Therefore, compared to other enterprises, agriculture has been slow to adopt accounting software applications.

In order to strengthen the management of agriculture and enhance the competitiveness and market participation of agriculture, it is important to give due recognition to management of farm accounting information. Thus, in recent years, the Chinese government has undertaken many reforms in accounting rules. Especially, in the year 2000, the Chinese government published a New Enterprise Accounting Rule, on April 2004, the Ministry of Finance issued a New Accounting Calculation Mean for

Agricultural Enterprise, the Ministry of Finance in 2006 issued the Enterprise Accounting Standards and Application Guide for Enterprise Accounting Standards, which provided a reference for both agricultural enterprise and other industries to keep accounts and perform the business analysis. Moreover, the Chinese government has promulgated rules for popularizing accounting software adaption. Despite the progress made in popularizing accounting software and accounting software applied to many industries the adoption rate is still lower compared to the developed country. It is possible that there are many factors influencing the adoption rate of accounting software, thus, at first it is necessary to grasp the profiles of accounting software available in the Chinese market.

At present, there are many accounting software available on the market, but most of the software are still financial and management accounting software integrated with the Enterprise Resource Planning (ERP) and Customer relationship management (CRM), and anyone of them is not specially designed applicable for agricultural enterprise. In addition, the software are expensive, complex operation, demand for expensive computer configuration, some after-sales service is not free. On the other hand, there is no special software for business analysis available on the market, most software is not embedded with the business analysis while some financial accounting software contains simple business analyses, for instance, the k/3 series products provided by Kingdee a leading provider of enterprise management software in China is limited to break even analysis, activity ratio analysis and liquidity ratio analysis.

On the other hand, it is necessary to grasp the current situation of accounting software

applied to agro based enterprises, and then investigate and analyze the factors influencing accounting software adaption. Most studies have paid attention on the adoption of information system/technology, computer, and Internet by farmers, and the analysis was carried out in terms of farm and farmer's characteristics, yet only a few studies related to accounting software adoption by agro based enterprises are available. Jean and Patti (2001) studied the key characteristics of the farm operators and farm businesses that influence computer use. The results revealed some determinants of computer technology adoption such as farm scale, age and gender of operator, farming status and the type of products. Various other studies too suggest that socioeconomic characteristics of farm operators have impacts on the demand for information. The characteristics include farm size, type of farm, age and education of farm operators, and the kind of products grown by the farm operators (Mavin et al 1990; Putler and David 1988). Medium-sized and small agricultural businesses having gross annual sales lower than 20 million Yuan, state-owned farms having large acreage and newly structured agricultural cooperatives are integral parts of the Chinese agrarian economy. These medium-sized and small businesses differ from large corporations in terms of organization structures, financial sources, and organizational culture, thus, the challenges and constraints of adopting accounting software faced by these businesses differ from larger business organizations (Yang and Fu 2008). Gu (2010) studied the high cost of software and incompatibility of software features with business requirements led to low rate of adoption by medium-sized and small enterprises of Fujian in China. Moreover, few previous studies have used statistical modeling to

analyze the factors influencing adaptation in China. Therefore, it is absolutely necessary to investigate the factors influencing accounting software adoption in terms of the key characteristics of the businesses' manager, accountant and accounting software.

1.2 Objectives of the Study

The main objective of this study is to develop an accounting system according to characteristics of agricultural enterprises accounting to strengthen the enterprise management, which includes financial accounting software and business analysis software, and demonstrate the application effect of accounting system in medium-sized and small scale privately owned enterprises. In order to develop the financial accounting software and business analysis software more applied to agro based enterprise, it is necessary to understand the characteristics of business, accountant and accounting software influencing the application of accounting software. This study is to identify the characteristics of business manager, accountant and accounting software influencing accounting software adoption among the surveyed businesses. The agro based enterprise is composed of medium-sized and small scale privately owned agricultural enterprise, state-owned farm and agricultural cooperative in this study. Additionally, recommendations are made for accounting software developers or service providers.

The specific objectives of this study are as follows:

1. To present condition of accounting software adoption in surveyed businesses.
2. To investigate the characteristics of business and accountant influencing adopting accounting software to handle accounting in surveyed businesses.

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3. To identify the factors of the current accounting software impacting on the accounting software used by the surveyed businesses.
 4. To develop the financial accounting software and business analysis software.
 5. To demonstrate the application effect of financial accounting software and business analysis software.

1.3 Methodology

1.3.1 Study Area and Data Collection

Heilongjiang is located in the temperate climate zone. This district receives average annual rainfall of about 400-650 mm. The main rainy season is from May to September. The district has a population of about 38.31 million people (2010). About 51.7% of the population in the district is involved in agriculture. Major crops grown in the district are soybean and corn. 2/3 of the population has education of high school or more than high school.

Heilongjiang selected for the field survey is the largest province in China, which is an important food production base. The main agro based enterprises include state-owned farms, medium-sized and small scale privately owned agricultural enterprises and agricultural cooperatives. In terms of management, privately owned agricultural enterprises and state-owned farms are better than agricultural cooperatives due to agricultural cooperatives being relatively a new form of business. Furthermore, there are considerable differences in operation and management among agricultural cooperatives. Due to this reason, the state-owned farms and privately owned agricultural enterprises were randomly selected, while the agricultural cooperatives were purposively selected to ensure that better performing agricultural cooperatives were selected.



Figure 1.1 Location of study area

Source: <http://www.6fedu.com> (2012)

In this study, due to the different usage of data, there are two sets of data, one sector contains accounting information called as test data, and the other sector covers information related to the business, accountant and accounting software. The second set of data was collected from 46 agro based enterprises in Heilongjiang province. The sample consisted of 16 state-owned farms, 19 privately owned agricultural enterprises and 11 agricultural cooperatives. Data was collected by personal interviews using a structured survey schedule during September and October of 2011. The interview addressed a variety of issues about business information including business revenue, manager's age, manager's education and attitude toward adopting accounting software to manage accounting data, number of accountants, accountant's age, accountant's education, attitude toward adopting accounting software to manage accounting data and

work experience as well as accountant's level of satisfaction about accounting software and software characteristics influencing adoption.

1.3.2 Components of Software Development Tools and System Requirements for Accounting Software

The popularization rate for computer and accounting software are low in Chinese enterprises, computer equipment restoration and renewal program is slow, and 80 percent of accountants need training in how to use the accounting software (Li 1998), which will increase the economic burden of enterprises. Nevertheless, these situations of agricultural enterprises are worse than any other industries. Thus, based on the actual situation of agricultural enterprises and the accountants' level of using the accounting software, in order to facilitate the widespread use of software, we have developed financial accounting software utilizing the software development languages Microsoft Visual Basic 6.0 and the database Microsoft Access 2007, with the operating system of Microsoft Windows Vista because the two development tools demand for cheap computer configuration. Whereupon, the business analysis software was developed by using them taking account of linking data between the business analysis software and financial accounting software, which are embedded in the accounting system. In China, recently many enterprises are capable of increasing investment in information management, as well as the various industries adopt the same methods of financial statement analysis in China. Thereby, we also tried to develop the business analysis system by using C++ Builder 2009 and Microsoft Access 2010 to improve the system's application. They demand for expansive computer configuration, but they are stronger than previous development tools in development function. For instance, the C++

Builder 2009 provides more various charts to demonstrate analysis results than Visual Basic 6.0.

The system requirements for accounting software are as follows:

- Chinese version of Windows XP (32-bit)/ Windows Vista (32-bit); □
- At least 1.0 GHZ Pentium IV processor; At least 512 MB RAM; 100MB of disk space (additional space required for data files);
- 4x CD-ROM drive for software installation ;
- Display optimized for 1024 x 768 screen resolution or higher; supports 800 x 600;
- Disk space requirements for additional software: Microsoft Access 2003 recommended.

1.3.3 Test Data

Through the unremitting efforts, got data from three agricultural enterprises (including a soybean processing agricultural enterprise and corn processing agricultural enterprises), but they didn't permit to announce their names, hence with the professional accountant's support, organized the experimental data as data for one fiscal year to test running the financial accounting system. And the Company X used the test data to operationalize the system. The business analysis system was carried out in agricultural enterprises above.

Before using the accounting system to keep accounts and perform the business analysis, they kept accounts by using accounting software and manual accounting as the software couldn't generate specific financial reports, and they carried out the business analysis by manual. There were some problems when the bookkeeping was carried out

and the business analysis was performed, for instance, consuming much time to process the accounting information and generate the financial statements, impossible to generate the special financial reports essential to the agricultural enterprise and doing accounting calculation, as well as calculation mistakes.

1.3.4 Analytical Tools

Taking into accounts such factors as characteristics of business, accountant and accounting software influencing the patterns of accounting software adoption is examined by a binomial logistic regression analysis. The businesses were classified as either non-adopters (coded 0) or adopters (coded 1) of accounting software. These observations were used as the qualitative dependent variables (dummy) in estimating factors influencing accounting software adoption. There are two sets of variables shown in table 1.1, the first set relates to characteristics manager and accountant working for business that influence the business's demand for accounting software. The second set is characteristics of accounting software that may be related to accounting software adoption.

1) Logit model

The dependent variable in the logistic model of business factors contributing to accounting software adoption is the 'accounting software adoption'. We consider two categories of variables that may be related to accounting software adoption (Equation 1): variables related to manager's factors and accountant's characteristics. The first and the second categories have two variables each, making for a total of 4 variables. We consider one category of variables that may be related to accounting software adoption (Equation 2): software characteristics, consisting of a total of 7 variables.

Table 1.1 Variables used in model

	Variables	Description
	Adoption	Businesses adopt accounting software to manage accounting
	Manager characteristics	
Personal Characteristics	AGE(in years)	Businesses managers' age
	EDUCATION ₁ (in years)	Businesses managers' education
	Accountant characteristics	
	NUMBER	The number of accountants working for a business
	EDUCATION ₂ (in years)	The average education of all accountants in a business
	Software characteristics	
Software Characteristics	ADEQUACY	The software meet the business's needs
	SUPPORT	There is help from the vendor in case of software error
	FUNCTION	The software have various function models
	PRICE	The software's price
	SECURITY	The software gurantee the accounting data's safety
	TIMELINESS	The software's fuction is updated in time

Source: self-projection

The logistic models for accounting software adoption based on business's characteristics (Equation 1) and accounting software characteristics (Equation 2) are specified as follows:

$$\text{Log}[p/(1-p)] = \alpha_0 + \alpha_1 \text{AGE} + \alpha_2 \text{EDUCATION}_1 + \alpha_3 \text{NUMBER} + \alpha_4 \text{EDUCATION}_2 \quad (1)$$

where $\log P$ is the logarithmic probability of not adopting an accounting software at the agro based enterprise level, $\log 1-P$ is the logarithmic probability of adopting an accounting software, AGE is the age of the manager of business in years, $EDUCATION_1$ is the manager's level of education attained in years, $NUMBER$ is the number of accountants work for the business, $EDUCATION_2$ is the average level of education that all accountants in the business attained in years.

$$\text{Log}[p/(1-p)] = \beta_0 + \beta_1 \text{ADEQUACY} + \beta_2 \text{SUPPORT} + \beta_3 \text{FUNCTION} + \beta_4 \text{PRICE} + \beta_5 \text{SECURITY} + \beta_6 \text{TIMELINESS} \quad (2)$$

where $\log P$ is the logarithmic probability of not adopting an accounting software (or not finding accounting software usefulness) at the agro based enterprise level, $\log 1-P$ is the logarithmic probability of adopting an accounting software (or finding it useful),

ADEQUACY is the ability of the software to meet the requirements of the business, *SUPPORT* is the availability of software support from vendors in case of software errors, *FUNCTION* is the complexity of functional models in accounting software, *PRICE* is the accounting software price, *SECURITY* is the availability of features to guarantee safety of accounting data, *TIMELINESS* refers to whether accounting software is updated on time.

2) Manager's characteristics

Manager characteristics have a particularly significant influence on small businesses compared to larger companies, as the manager has a dominant role in the functioning and the very existence of the business. Though the manager is not the primary user of accounting software and familiar with it, the manager makes decisions about accounting software. Two manager-related factors have been examined.

Rogers (1983) maintains that age would influence information technology adoption, and the past researches maintain that the age negatively influences computer adoption. Therefore, in this paper the variable AGE is hypothesized to be negatively related to computer technology adoption. Older people are more likely to resist new technology as well as they have less exposure to computer technology even during their school education. By contrast, younger generations were often introduced to computer technology in their high school years, or even earlier (Stang and William 2003).

The previous researches reveal that the education is positively associated with computer and information system adoption. Higher level of education is expected to increase understanding of the complexities of management and, therefore, lead to an increase in the demand for information. Furthermore, better education is likely to be associated with better awareness of the capabilities of computers and accounting software (William 1995; Prashant and Shailendra 1999). It is expected that the variable

EDUCATION₁ positively influences on adoption of accounting software.

3) Accountant's characteristics

The accountant plays an important role in handling and managing accounting data, and is the primary operator of accounting software to manage accounting information therefore, the characteristics of the accountant are critical. Two variables related to accountant's characteristics are considered for the analysis.

Due to differences in scale of business and economic strength, each business recruits one or more accountants with varying experiences and skills. Generally, larger businesses recruit more than one accountant with better qualifications and experiences. Since only few past studies have examined the variable NUMBER and 48% of our sample had businesses with more than one accountant, we hypothesized that more number of accountants could increase the likelihood of the business adopting accounting software.

The accountant's education as an explanatory variable has been examined in past studies, the obvious hypothesis is that accountant with more formal education will tend to have more knowledge about accounting software and computer usage thus, likely to influence the business to use accounting software.

4) Software's characteristics

During the survey it was found that the businesses handling accounts without accounting software had no confidence on existing software in the market while, the businesses adopting accounting software shows different levels of satisfaction on the existing accounting software. Therefore, it is hypothesized that the accounting software characteristics have significant effect on accounting software adoption. Six variables related to accounting software characteristics are considered for the analysis (Table 1.2).

Table 1.2 Characteristics of accounting software

Variable	Description	Relation	Values
Adequacy	The ability of the software to meet needs of the business	It is expected to be positively related to adaptation of accounting software	Adequate=2, indifference=1, inadequate =0
Support	Software vendors provide follow-up services to customers	It is expected to influence accounting software adoption significantly	Adequate=2, indifference=1, inadequate =0
Function	Software has functional models	It is expected to be negatively related to adaptation of accounting software	Too many=2, just right=1, inadequate =0
Price	Software's price	It is expected to be negatively related to adaptation of accounting software	Cheap=0, right price =1, expensive=2
Security	Guarantee of the safety of accounting data	It is expected to have significant influence on accounting software adoption	Safe=2, neither safe nor unsafe=1, unsafe=0
Timeliness	Software is updated on time	It is likely to positively influence on adoption	On time=1, not on time=0

Source: self-projection

1.4 Organization of the Thesis

The thesis was organized into 6 chapters. The structure of the paper is as follows. The second chapter gives an introduction on the financial accounting of agricultural enterprise and business analysis for agricultural enterprise, and explains the status of financial accounting software and business analysis software for agricultural enterprise. The present situation of accounting software adoption in surveyed business is introduced in third chapter, and the factors influencing the adoption of accounting software is investigated. The fourth chapter describes the functions of financial accounting software and its using method, as well as the field application of the accounting system and discussion on field application are introduced. The fifth chapter presents the functions of business analysis software and its using method, moreover, the field application of the business analysis system and discussion on field application are introduced. The conclusions, proposals and future work for developing financial accounting software and business analysis software are in sixth chapter.

Chapter II Accounting Rules and Business Analysis for Agricultural Enterprise

Accounting is an information system that provides financial information about an economic entity. Financial information includes many types of reports and documents with financial data. Business managers use these reports to evaluate the success or failure of their businesses and to help decide future activities. The parties outside the businesses who can make better decisions based on these reports.

There are big differences in production process, forms of organization and management system between agriculture and other industries, so agriculture accounting also has its own features. The main objectives of this chapter are to summarize the characteristics of agriculture accounting rules and business analysis. Therefore, firstly the characteristics of farming and agriculture accounting will be discussed, secondly the financial accounting and business analysis for agricultural enterprise will be presented in this chapter and finally the status of accounting system will be given an overview.

2.1 Classifications of Farming and Accounting Rule

2.1.1 Classifications of Farming

Agriculture is one of the most important sectors of economy, and it is the foundation of national economy and economic development in China. Agricultural operations include, but are not limited to, activities such as the raising and harvesting of crops from farmland, the raising of fowl or animals, logging and forestry operations.

China's agricultural business organization includes farmer, family farm, state-owned

farm and agricultural enterprise. Since 1995, especially in recent years, with the development of industrialized operation of agriculture, the great changes of agricultural business organization has taken place, some new organization forms emerged, such as large-scale professional farmer, agricultural cooperative and leading agricultural enterprises.

Farmer is a unit size suited to single farm management.

State-owned farm is composed of family farms. Family farm is the most basic production unit of agricultural enterprise, own and control a certain amount of money to engage in business activities.

Agricultural enterprise is engaged in production and management of agriculture, forestry, animal husbandry, side occupation, and fishery and so on. It is the profit economic organization with the legal entity. Its business entity contains publicly owned enterprise and privately owned enterprise, and the privately owned enterprise is with business entity, such as, limited liability company, joint-stock limited company, partnership enterprise and sole proprietorship enterprise.

Large-scale professional farmer is bigger than the general farmer in farm land size and has high-power agricultural machinery.

Agricultural cooperatives are cooperatives where farmers pool their resources in certain areas of activity. They supply their members with inputs for agricultural production, including seeds, fertilizers, fuel, and machinery services. And they are also established to undertake transformation, packaging, distribution, and marketing of farm

products, as well as they provide technology and information related to agricultural production and management and other services.

In agricultural industry, the leading agricultural enterprises are models, and have appeal and a deep impact on other enterprises of agricultural industry. And they have made outstanding contributions to the region, the industry or the state.

2.1.2 Classifications of Accounting Rule

Table 2.1 Main organization forms for agricultural operations and accounting rule

	Farmer	Large-scale professional farmer	Family farm	State-owned farm	Agricultural enterprise	Agricultural cooperative	Leading agricultural enterprise
Accounting rule	No	No	Accounting calculation for family farm	Agricultural accounting standard, new enterprise accounting rule and new accounting calculation mean for agricultural enterprise	Agricultural accounting standard ^{*1} , new enterprise accounting rule and new accounting calculation mean for agricultural enterprise	Financial accounting system for farmer cooperatives	New enterprise accounting rule and agricultural accounting standard ^{*2}
Accounting method	-	-		Double-entry bookkeeping			

Source: self-projection

Note: *1-The large and medium-sized agricultural enterprises refers to the new enterprise accounting rule and new accounting calculation mean for agricultural enterprise, while the agricultural accounting standard is applied to the medium and small-size agricultural enterprises. Small agricultural enterprise can handle accounting either agricultural accounting standard or accounting for small enterprise.

*2-Leading agricultural enterprises are across the processing industry, agricultural industry and transportation industry, so the agriculture accounting standard is not only reference of bookkeeping.

The table 2.1 shows main organization forms for agricultural operations and their accounting rules. It is very clear that the bookkeeping is not been performed in neither the farmer nor the large-scale professional farmer, and there is no accounting rule for them in China. The other business forms keep accounts adopting the double-entry

bookkeeping, but there are various accounting rules for them. In fact, although there is an accounting rule applicable to family farm in China, due to difference in its development level and most members of family farm without knowledge of accounting the bookkeeping is not performed in family farm yet, the best members of family farm fill out the note to grasp the gross profit and expenditure unconformable with accounting rule. Thus, now the agricultural enterprises, state-owned farms and agricultural cooperatives carry out the bookkeeping using the software in China, however, the adoption rate of accounting software applied to them is different.

2.2 Characteristics of Financial Accounting of Agricultural Enterprise

2.2.1 Characteristics of Agricultural Financial Accounting

(1) Diversity of calculation content. Agricultural businesses, often involves agriculture, forestry, animal husbandry, fisheries, industry, commerce, transport, construction, services and other types of business, and some state-owned farms also are equipped with school, hospital and other institutions. Thus, accounting calculation not only meets the needs of enterprise management, but provides and summarizes various accounting information; and it should adapt to the characteristics of production and operation of various businesses, the cost and financial results of each branch are calculated respectively, and evaluates various non-productive expenditure.

(2) Complexity of management system. Diversified management and two-tier management system are implemented in some forms of agricultural enterprises. For instance, the state-owned farm is composed of branches and production teams, and it

also establishes professional services organizations and family farms; the rural economic cooperation carries out the household-responsibility system, but also establishes organizations of production and service under unified management; township enterprise system is more complex and diverse. As a result, the accounting calculation and management system become complicated.

(3) Flexibility of accounting method. Although there are some accounting rules promulgated for agricultural enterprise, without disobedience to accounting rules meeting their demands accounting is performed. Moreover, there is a big gap between the management level and calculation level of agricultural accounting. Hence, accounting method should also have greater flexibility.

2.2.2 Status of Financial Accounting System for Agricultural Enterprise

Financial accounting software has made progresses in China, however, compared to the developed countries, the accounting software started late in China. In the United States, the penetration of accounting software is very high, more than 90%, while in China the penetration of accounting software applied to large and medium-sized businesses reaches to 60% to 80%, the penetration of accounting software applied to small businesses is less than 30%. And there are many problems in accounting software industry, for example, distribution of accounting software in each region is extremely uneven, the accounting software just reduces labor intensity and improves the speed and accuracy of accounting, that is to say, the computer merely replaces the manual accounting(Zhang, 2009). However, the progresses are made in accounting software to some extent, and there are many accounting software available in Chinese market at

present, such as Ufida, Kingdee etc. Most accounting software are suitable for many kinds of industry, and process attention have been given to the common characteristics among those kinds of industry while ignoring the unique characteristics of each industry to some extent. For example, in respect of generating financial reports, they only can generate balance sheet, income statement and cash flow statement that all enterprises need, while specific financial reports for some industries are not possible to generate.

A comparison of the system with some current accounting software was drawn that documents the various features and differences (Table 2.2). From table 2.2, we can see the difference of the system with current Chinese software centers on application object, system components, financial reports, training and economic burden. The current software are suitable for many kinds of industry, so the cost of development is very high that results in high price of the accounting software, which influences the widespread use of software. Thus, developing the software aiming at one kind of industry will reduce the software price and facilitate the widespread use of software. Moreover, the current software generates financial reports shared with each industry, which caused that the enterprise must make the necessary financial reports by manual. Thereby, for the purpose of reducing accounting calculation tasks and perfecting function of accounting software, the financial reports suitable for each industry are expected to generate automatically by the accounting software. On the other side, the difference of the Chinese and Japanese software in application object and tax return is very obvious. The agricultural software of Sorimachi has considered the characteristics of agricultural enterprise and the field of agriculture, for instance, in generating blue-form tax return,

the software provided three methods for agricultural filed, general field and real estate filed, however the most Chinese software don't contain the tax management. Hence, the performance of software was improved and the application range was expanded in one industry, which is very valuable for software development.

Table 2.2 Comparison with some current financial accounting software

		Ufida	Kingdee	Agricultural bookkeeping	Pocket system	The system
Application object	Type	Small to middle size	Small size	Agricultural corporation and personal farm	Personal farm	Small to middle size
	Industry	Many	Many			Agricultural enterprise
Economic burden	Computer hardware configuration	Expensive	Expensive	Expensive	Cheap	Cheap
	Software price	High	High	High	No	No
	After-sales service	Not all free	Not all free	Not all free	-	Yes
System components		Management of human resource, manufacturing , customer relationship, cost, financial accounting and financial analysis	Management of human resource, manufacturing , customer relationship, cost, financial accounting and financial analysis	Financial accounting and financial analysis	Financial accounting and financial analysis	Financial accounting
Structure		Stand alone	Stand alone	Stand alone and web based*1	Stand alone	Stand alone
Database		Yes	Yes	Yes	No	Yes
Agricultural accounting		Old	Old	Yes*2	-	New
Traning in how to use the software		Yes and complicated	Yes and complicated	-	Yes but simple	Yes but simple
System fuction	Self-defining term(initial set)	Yes and too many	Yes and too many	Yes	No	Yes and few
	Accounting subject set	Random	Random	Limited	Random	Limited
	Inputting method	Accounting evidence	Accounting evidence	Slip	Spread sheet	Accounting evidence
	Fianancial reports	Incomplete	Incomplete	-	-	Complete
Tax return		No	No	Yes	No	No

Source: self-projection

Note: Ufida and Kingdee are the most popular accounting software now in Chinese market, and in table 1 the version of them are ERP-U8 and KIS. Pocket system was developed by Ms. Sakuramoto in 2005. Agricultural bookkeeping is a product of Sorimachi Co., Ltd, and the version is 7.*1=only the final income tax return and consumption tax return based on Internet. *2=the lasted depreciation rule was used. - = uncertainty.

2.3 Characteristics of Business Analysis of Agricultural Enterprise

2.3.1 Characteristics of Business Analysis of Agricultural Enterprise

Before publishing the New Enterprise Accounting Standards and New Accounting Calculation Mean for Agricultural Enterprise, the business analysis for agricultural enterprise was performed referring to the Agricultural Accounting Standards, which included merely the ratio analysis and trend analysis. At present, in China there is no specific business analysis standard available for agricultural enterprises. The only guideline available is the Enterprise Accounting Standards and Application Guide for Enterprise Accounting Standards issued by the Ministry of Finance in 2006. These standards emphasis on structure analysis and hence applied to the agricultural enterprises as well. The focus of this study is on the financial statements analysis and break even analysis, thus, the financial statements analysis and break even analysis will be presented as follows.

The financial statement analysis is performed to analyze the balance sheet, income statement and cash flow statement, which mainly covers ratio analysis, trend analysis and structure analysis. The trend analysis is facilitated by displaying changes of accounting items between years in real number and percentage form, identifying key factors that have effected changes and how the changes will influence on future's development. Trend analysis includes vertical analysis, trend percentage and horizontal analysis. Vertical analysis displays changes between years in real number as well as in percentage via calculating each accounting item as a percentage of a reference item in the same financial statement. Trend percentage shows changes between years in real

number as well as in percentage via calculating each accounting item in financial statements of other consecutive years as a percentage of the same item in financial statements of a reference year. Horizontal analysis provides periodic fluctuations in the form of real numbers and percentages between years via dividing each accounting item of a particular year by the same item in the following year. While in structure analysis each item is stated as a percentage of some total of which that item is a part, key financial changes, trends and relationships among each item of financial statement are highlighted, which enables to have a clear understanding about the financial status of the business. Structure analysis covers different analysis classifications based on the financial statements.

Break even analysis is performed to understand the interrelationships among cost, volume and profit, and provide important management information for decision making in areas such as production, marketing and product development. It is performed to analyze the product based on the principle of cost-volume-profit analysis. The cost-volume-profit analysis includes two kinds of analysis method, single product analysis and multiple products analysis.

The multiple products analysis is to calculate and analyze the break even point, which contains average weighted mean method, apportioned fixed cost method and method of reference to historical data. In this analysis, the average weighted mean method is to calculate the weighted mean of contribution margin rate, and then the break-even point of sales is calculated based on the total fixed cost and the weighted mean of contribution margin rate. The apportioned fixed cost method refers to calculate the break even point

for each product sales in the total fixed costs being allocated to each product properly, and then the break even point of all products sales is calculated. Method of reference to historical data is to calculate the average contribution margin rate based on historical data covering the average gross sales and total contribution margin, by which the break even point of sales is forecasted.

This study focuses on the developing single product analysis. There are three types of cost-volume-profit (CVP) graph provided in single product analysis. All the three types of CVP graph are capable of showing break even point. The relationships among sales price, total costs, fixed costs, profit and volume can be expressed graphically by preparing a standard mode CVP graph, while the unit contribution margin chart and profit-volume chart demonstrate interrelationships among sales price, total costs, unit contribution margin, variable costs, profit and volume, and interrelationships among units, revenue and profit respectively. In addition, the unit contribution margin chart highlights the profit which is computed as contribution margin minus fixed asset, while the profit-volume chart puts emphasis on illustrating the number of units and the revenue simultaneously when the break even point is reached.

2.3.2 Status of Business Analysis System of Agricultural Enterprise

Business analysis can enhance the corporate managers' understanding of business situation in order to facilitate improved decision (Du and Cheng, 2007). In Japan, some studies have been undertaken to develop business analysis system for small-scale farming conditions. In one of the recent studies undertaken by Sakuramoto (2005) an attempt has been made to develop a business analysis system for small-scale farmers to

maximize management tasks and maintain double entry bookkeeping. In China, as it is not mandatory for the enterprises to use software to perform business operations, there is few business software available on the market. Moreover, the current software packages lack comprehensive business analysis features except simple business analysis features. A comparison of the newly developed software with other available software is summarized and presented in table 2.3. As shown in table 2.3, the important differences between the newly developed software and other software are that there are more analytical methods, such as trend analysis and structure analysis incorporated into the newly developed software. Moreover, the newly developed software has more features for ratio analysis than Kingdee k/3.

Table 2.3 Comparisons with some current software in performing the business analysis

		Kingdee k/3	Pocket system	The system
Application object	Type Industry	Small size Many	Personal farm	Small to medium-size Agricultural enterprise
Economic burden	Software price	High	Free	Free
	Computer hardware configuration	Expensive	Cheap	Cheap
	After-sales service	Not all free	-	Free
Data sources	Financial management	Accounting evidence	Spread sheet	Accounting evidence
	Business analysis	Balance sheet, income statement and cash flow statement	Balance sheet, income statement	Balance sheet, income statement, cash flow statement and product-related information
System components	Financial management	Financial accounting as well as management of human resource, manufacturing, customer relationship and cost	Financial accounting	Financial accounting
	Business analysis	Activity ratio analysis, liquidity ratio analysis and break even analysis	Profitability analysis, safety analysis and break even analysis	Ratio analysis(activity ratio analysis, liquidity ratio analysis, profitability analysis), trend analysis (horizontal analysis, vertical analysis and trend percentage), structure analysis and break even analysis

Source: self-projection

Note: Kingdee K/3 delivers solutions to the applications ranging from financial accounting, human

resource, supply chain management, and production and costing management, which was provided by Kingdee a leading provider of enterprise management software in China in 2006. Pocket system was developed by Ms. Sakuramoto in 2005.

2.4 Application Object of Accounting System

Although there are different business organizations of farming and various accounting rules, now the agricultural enterprises cover main part of all business organizations of farming who carry out the bookkeeping using the software in China. Moreover the current software available on market is imperfect in generating the special financial reports for agricultural enterprise and lacking comprehensive accounting subjects peculiar to the agricultural enterprise and there are too many setting parameters for running the accounting system. Thus the application object of the financial accounting system in this study is put emphasis on the agricultural enterprise that contains limited liability company, joint-stock limited company, partnership enterprise, sole proprietorship enterprise and state-owned farm who carry out the business related with the production and management of agriculture, forestry, animal husbandry, side occupation, and fishery and so on.

At present, there is no difference between agricultural enterprise and other industries in principles, so the business analysis software can perform analysis for other industries. However, because the business analysis module is not separate from the financial accounting module whose application object is limited to the agricultural enterprise, the business analysis module can't be applied to other industries.

On the whole, the application object is limited to the limited liability company, joint-stock limited company, partnership enterprise, sole proprietorship enterprise and

state-owned farm.

2.5 Summary

Although the agriculture is a big industry in China, there is no special accounting software for it. There are various organization forms but some enterprises keep accounts using the accounting software, while most enterprises carry out the business analysis by manual. As for principles, it is more comprehensive in accounting rules than business analysis because of the different principles between bookkeeping and business analysis. The current accounting software is imperfect in generating the special financial reports for agricultural enterprise automatically, lacking comprehensive accounting subjects peculiar to the agricultural enterprise and there are too many setting parameters for running the accounting system. From perspective of the business analysis, there is few business analysis software available in Chinese market, and the current accounting software packages lack comprehensive business analysis software. Therefore, the accounting software developed for agricultural enterprise embedded with perfect module of business analysis is acceptable to the agricultural enterprise.

Chapter III Present Situation of Accounting Software Application in Surveyed Businesses

Today, accounting software applications have become an integral part of most business operations as it can strengthen the business management and relieve the accountant from tedious accounting information processing. However, the degree of adoption of accounting software applications varies depending on the scale of operation and industry. For instance, the rate of adoption by medium-sized and small business is lower than 30%, while in case of large businesses it is more than 90%. The rate of adoption is considerably low in agro based businesses compared to businesses in other sectors (Wang and Peng 2004).

The question is addressed as follows: why the adoption rate of accounting software in agriculture is lower than other sectors? Thus, in order to solve this problem it is necessary to find the factors influencing accounting software adaption, and then analyze what factors contribute to accounting software adaption? There are most studies paying attention on the adoption of information system/technology, computer, and Internet by farmers, and the analysis was carried out in terms of farm and farmer's characteristics, yet only a few studies related to accounting software adoption by agro based enterprises are available. Jean and Patti (2001) studied the key characteristics of the farm operators and farm businesses that influence computer use. The results revealed some determinants of computer technology adoption such as farm scale, age and gender of operator, farming status and the type of products. The characteristics include farm size,

type of farm, age and education of farm operators, and the kind of products grown by the farm operators (Mavin et al 1990; Putler and David 1988). Additionally, Gu (2010) studied the high cost of software and incompatibility of software features with business requirements led to low rate of adoption by medium-sized and small enterprises of Fujian in China.

Therefore, this chapter aims to examine the conditions necessary for adoption of accounting software by agro based enterprises in China, investigate the determinant factors influencing accounting software adoption in medium-sized and small agro based enterprises consisting of privately owned enterprises, state-owned farms and agricultural cooperatives. In addition, recommendations are made to improve the adoption rate of accounting software.

3.1 Profiles of Surveyed Businesses

3.1.1 Characteristics of Surveyed Business in Business Entity

Table 3.1 Characteristics of surveyed businesses entity

Comparison factors	Medium and small scale privately owned enterprise	State-owned farm	Agricultural cooperative
Raising capital	Owners contribute capital	Government contributes capital	Farmers contribute capital
Forms of investment	Monetary and intellectual property rights	Monetary	Monetary, physical property and intellectual property rights
Number of investors	2-50	-	Unlimited, but no less than 80% members are farmers
Member composition	Unlimited	Unlimited	Farmers, agro based enterprise and group
Legal basis	Company Law	Ordinance of State-owned Farm	Law of Agricultural Cooperative
Liability	Corporation has limited liability	Corporation has limited liability	Members are liable for obligations of cooperative compared to their contribution

Source: Company Law, Ordinance of State-owned Farm and Law of Agricultural Cooperative

It was concluded (Table 3.1) that the big difference among three types of agro based businesses in business entity centers on raising capital. This is a result that the

medium-sized and small privately owned enterprise and agricultural cooperative are private, while the state-owned farm is public. As for investment forms, agricultural cooperative is more free than others, except monetary and intellect, agricultural appliances can be invested into agricultural cooperative. Agricultural cooperative is mainly composed of farmers conforming to the law, and the members are liable for obligations compared to their contributions.

3.1.2 Comparisons with Accounting Software Used by the Surveyed Businesses

There is plethora of accounting software available on the market, yet not many of them are suitable for medium-sized and small privately owned enterprises. Moreover, the software suitable for state-owned farms and agricultural cooperatives are very rare. It was found during the survey that the privately owned agricultural enterprises and state-owned farms adopted accounting software for managing accounting data since 1990s, yet as the accountant was unable to use the accounting software and the expenditure on software and hardware was too high therefore, use of accounting software did not expand until 2000. Moreover, because the agricultural cooperative is a new agricultural operation and the accounting software suitable for its use became available only after 2009, the low adoption rate is very obvious. Furthermore, our survey revealed that privately owned agricultural enterprises primarily adopt products of two companies UFIDA and Kingdee, and Nongken Accounting System developed by General Bureau of State Farms of Heilongjiang is used by stated-owned farms, and agricultural cooperatives adopt Cooperative Accounting System developed by Agriculture Commission. The price of Nongken Accounting System and Cooperative

Accounting System is lower than products of two companies UFIDA and Kingdee. The price of products of UFIDA and Kingdee largely depends on the number of user, more users working under one software license the software is more expensive.

Table 3.2 Comparisons with accounting software used by surveyed business

		Ufida/Kingdee (used by medium and small scale privately owned enterprise)	Nongken accounting system (used by state-owned farm)	Cooperative accounting system (used by agricultural cooperatives)
System components		Management of human resource, manufacturing, customer relationship, cost and financial accounting	Management of human resource, manufacturing, customer relationship, cost and financial accounting	Management of membership, investment and financial accounting
System function	Initial setting	Many and complicated	Many and complicated	Many and complicated
	Functional modules	Many, yet some modules are unnecessary, it is uneasy to add new modules meeting demand of enterprise	Many, yet some modules are unnecessary, it is uneasy to add new modules meeting demand of enterprise	Many, yet some modules are unnecessary, it is uneasy to add new modules meeting demand of enterprise
	Management of financial statements	Incomplete	Incomplete	Complete
Economic burden	Computer hardware configuration	Expensive	Expensive	Expensive
	Software price	High	Adequate	Adequate
	After-sale service	Not all free and deficient	Free and deficient	Free and deficient
Accounting rule	Denomination	2005-01-01,2007-01-01	2005-01-01,2007-01-01	2008/01/01
	Enforcement	New Accounting Calculation Mean for Agricultural Enterprise, Accounting Rule of Agriculture	New Accounting Calculation Mean for Agricultural Enterprise, Accounting Rule for Agriculture	Accounting Rule for Agricultural cooperative
	Account item	Complicated, add new account randomly	Complicated, add new account randomly	Simple, add new account randomly
	Financial statements	Balance Sheet, Income Statement, Cash Flow Statement and Schedules	Balance Sheet, Income Statement, Cash Flow Statement and Schedules	Balance Sheet, Statement of Profit and Profit Distribution and Statement of Changes in Members' Equity

Source: Surveyed data (2012)

The comparisons among three software are carried out referring to table 3.2. In terms of function, the software adopted by privately owned agricultural enterprises and state-owned farms is more complex than Cooperative Accounting System, it has not only the management model of bookkeeping and reporting, but the management model of salary, manufacturing, customer relationship etc. Moreover, initial setting of all three software is complicated, it requires high computer skills of operator. In terms of

hardware inputs, all three software is embedded with too many functional models, it increases expenditure not only for software price but hardware configuration. From table, it was found that the after-sales service provided by three developers or vendors should be perfected. In addition, there are different accounting rules promulgated for them, thus different reports are required for different enterprises. As the reports required for agricultural cooperative are comparatively simple, the Cooperative Accounting System available on the market is capable of providing sufficient reports for agricultural cooperative. Other two software provides some reports, yet it can't meet demands for privately owned agricultural enterprise and state-owned farm.

3.2 Adoption of Accounting Software by Surveyed Businesses

The characteristics of surveyed businesses are shown in table 3.3. Overall, the adoption rate for accounting software by businesses was 42%, which is slightly higher than 30% reported by Wang in 2004. The survey results reveal that 42% of businesses used accounting software for managing accounting data, all of them have annual sales revenue over one million Yuan. Moreover, 58% of them have annual sales revenue more than 10 million Yuan as shown in figure 3.1. Among them 14 (30%) businesses having annual sales revenue less than one million Yuan don't adopt accounting software to manage accounting data, and 13 (28%) of businesses with annual sales revenue more than one million Yuan manage accounting data manually. Furthermore, 17 (37%) of businesses are employing more than one accountant, 15 of which use accounting software to manage accounting data.

Table 3.3 Characteristics of surveyed businesses

Item	Not adopting	Adopting	Total
Sample (<i>N</i>)	27	19	46
Percent of businesses	58	42	100
Business type (<i>N</i>)			
Privately owned enterprise	11	8	19
State-owned farm	7	9	16
Agricultural cooperative	9	2	11
Number of accountant			
Only one	25	4	29
More than one	2	15	17
Sample by sales (<i>N</i>)			
Less than 1,000,000 Yuan	14	0	14
1,000,000-9,999,999 Yuan	9	8	17
10,000,000 Yuan or more	4	11	15

Source: surveyed data (2012)

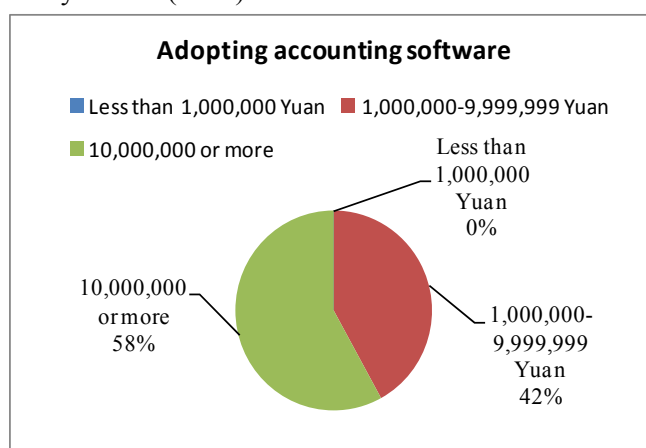


Figure 3.1 Adoption by annual sales

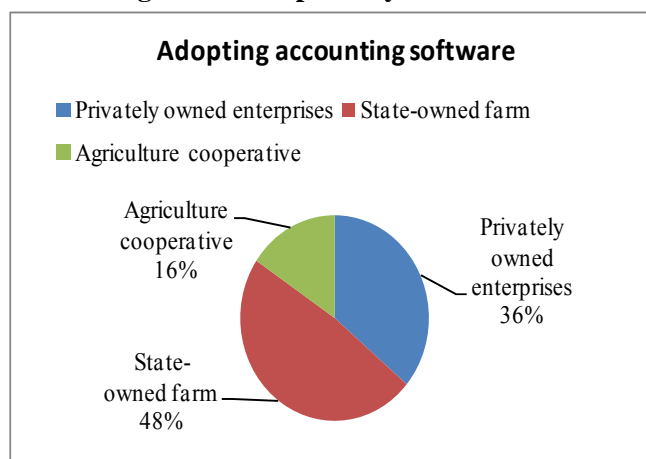


Figure 3.2 Adoption by business type

In addition, as shown in figure 3.2, the adaptation pattern differs according to type of enterprise; the lowest rate of adoption is reported by agricultural cooperatives, which is 18% of all agricultural cooperatives. The adaptation rate is higher for privately owned agricultural enterprises and state-owned farms, which is 42% and 56%, respectively.

The state-owned farms adopting accounting software to manage accounting data early and equipped with more than one accountant led the high adoption rate, moreover the support encouraging adaptation from General Bureau of State Farms of Heilongjiang in China was necessary.

3.2.1 Medium-sized and Small Privately Agricultural Owned Enterprise

Based on the survey, only 8 privately owned agricultural enterprises handle accounting adopting accounting software, 7 of them are founded after 2000 and their annual sales are over 2 million Yuan in 2010. Furthermore, managers and accountants of these 8 enterprises have positive attitude toward using accounting software to keep accounts. Accountants recruited by 8 enterprises are young with age between 30 and 40, and their education level is more than college, which tend to have more knowledge about accounting software and computer.

On the other hand, 11 enterprises handling accounting by manual are small in operation and their annual sales are less than 500,000 Yuan in 2010. Furthermore, the attitude of accountants and managers working for 11 enterprises toward accounting software is negative. Accountants with low level of education, high school and junior school, carry out accounting by manual for a long time, and most of them are unwilling to adopt accounting software to handle accounting. Moreover, 2 of 11 enterprises are small in operation and don't recruit accountants to manage accounting, in order to cut down expenditure accounting is handled by the accounting firm providing perfect service, accounting handled by either manual or accounting software.

3.2.2 State-owned Farm

Accounting software has been applied to state-owned farm since 1980s. However, there was no accounting software applicable to state-owned farm available in Chinese market before 2000, thereby Nongken Accounting System was developed by General Bureau of State Farms of Heilongjiang. Yet the adoption rate of Nongken Accounting System was comparatively low, which resulted from complicated operation of system and deficient computer knowledge level of accountant.

According to surveyed result, 56% of state-owned farms handle accounting by using accounting software. Each of these state-owned farms is large in management with farmland exceeding 200 thousand Mu (6.667a / Mu), and recruits one or more accountants to manage accounting. Most of these accountants are young and with high level of education, college or university, which lead to adopt accounting software easily. On the other hand, 7 state-owned farms not using financial accounting software are small in management with farmland less than 200 thousand Mu, moreover there is few accountant with school education more than college, while most accountants carry out accounting by manual for a long period of time, whose attitude toward to accounting software is negative. Accountants recruited by 5 of state-owned farms handling accounting by manual, who don't receive formal and professional accounting education, their accounting knowledge is introduced by self or their relatives. Furthermore, accountants working for state-owned farms are not only in charge of managing accounting, but are responsible for managing operation of state-owned farms.

3.2.3 Agricultural Cooperative

As a new form of agricultural operation, most of agricultural cooperatives are organized by excellent farmers or village mayors. Up to now, agricultural cooperatives are small in management scale and weak in organization, therefore most agricultural cooperatives don't recruit accountant to manage accounting, their accounting is entrusted to the accountants of villages, while a few agricultural cooperatives recruit accountant to handle accounting by manual or using accounting software.

The accounting software applicable to agricultural cooperative is available on the market, which is developed through making alternation to the current accounting software applicable to other businesses in account items and financial statements. Therefore, this accounting software requires accountant with high level education and knowledge of computer, which leads to low adoption rate of accounting software.

Based on surveyed results, only two agricultural cooperatives handle accounting by using accounting software, which are transformed from agricultural enterprises producing and processing agricultural products. Before transmission two agricultural enterprises handled accounting by using accounting software and accountants are able to operate accounting software well, so two agricultural cooperatives continue to use accounting software to manage accounting. It was said that the current accounting software is complex in operation and weak in guaranteeing the safety and accuracy between each module while data transmission.

On the other hand, as the management scale is small, it is difficult to recruit excellent accountant. Three agricultural cooperatives are equipped without accountant, whose

accounting is handled by the villages' accountants by manual. In addition, one of agricultural cooperatives without accountant, whose accounting is entrusted to accounting firm. Overall, it was said that all agricultural cooperatives not using accounting software are unwilling to use accounting software due to lack of accountant and no confidence to the current software.

3.3 Factors Impacting on Adoption of Accounting Software

3.3.1 Determinants of Business Characteristics

The first logistic regression model estimates the impact of selected variables on the probability of accounting software adoption, the results are shown in table 3.4. The manager's age, the number of accountants and accountant's education were found to have significant effect on the probability of accounting software adoption.

Table 3.4 Logit regression results for manager's and accountant's characteristics^a

Variable	B	Std. error	Sig.	Exp(B)
MANAGER CHARACTERISTICS				
AGE (in years)	-0.329	0.153	0.032*	0.719
EDUCATION ₁ (in years)	-0.011	0.415	0.979	0.989
ACCOUNTANT CHARACTERISTICS				
NUMBER	1.421	0.567	0.012*	4.141
EDUCATION ₂ (in years)	1.146	0.406	0.005**	3.144
-2LogLL	19.89			
Cox & Snell R Square	0.60			
Chi-square	42.48			
Overall prediction rate (percentage)	93.50			

Source: self-projection

Note: ^a The dependent variable is 0=non-adoption, and 1=adoption.

* and **denote significance at the 5%, and 1% level.

The results reveal that the age of the manager was negatively related to level of adaptation, the finding is in accord with previous studies (Prashant and Shailendra 1999; Stang and William 2003; William 1995). The manager of the business is responsible for

managing the business operation, and the younger manager is more likely to accept new technology to manage the business, therefore young manager were more likely adopt accounting software. In this study, education was not statistically significant implying that manager's education has no influence on adoption. This finding contradicts our hypothesis and previous findings (Stang and William 2003; William 1995), this could be once again due to the fact that the manager is not the primary user of the accounting software.

However, our results show that accountant's education has a positive influence on adoption of accounting software, which is a unique finding. As it is known, the accounting software is different from other software, which requires the user not only to have good knowledge of accounting but also computer skills, in general, the manager is in charge of managing business operation, while the accountant is responsible for managing accounting data, hence the user of accounting software is not manager but accountant, whose knowledge of accounting and computer skills play important role on adopting accounting software. William (1995) found that increased education led to an increase in knowledge and likelihood of adopting software. Thereby, better education level of the accountant implies that he has more competence on computer and accounting software, which increases the likelihood of adoption.

Furthermore, results also indicate that the number of accountants employed was positively related to accounting software adoption. As more accountants work for the business, the probability of the business employing accountants with higher education level is high, resulting in higher level of adoption. Therefore, increasing number of

accountant also led to a greater likelihood of adopting accounting software for managing accounting data.

3.3.2 Determinants of Accounting Software Characteristics

The second logistic regression model estimates the impact of selected variables on the probability of businesses' accounting software adoption, and the analysis results are shown in table 3.5. The software adequacy, software security and software timeliness were found to have significant effects on the probability of accounting software adoption. Other variables support, function, and price were not statistically significant. Given the competitive environment in the software market, the prices have drastically reduced, the functional models of accounting software have been perfected and the level of support has been enhanced largely, hence there is no significant difference in price, functional models and support among currently available software. Therefore, price and software support are no more significant factors.

Table 3.5 Logit regression results for accounting software characteristics^a

Variable	B	Std. error	Sig.	Exp(B)
ADEQUACY	2.686	1.152	0.020*	14.671
SUPPORT	1.435	0.907	0.114	4.198
FUNCTION	0.636	0.751	0.397	1.889
PRICE	0.602	0.839	0.473	1.826
SECURITY	-2.673	1.332	0.045*	0.069
TIMELINESS	2.918	1.106	0.008**	18.507
-2LogLL	28.34			
Cox & Snell R Square	0.52			
Chi-square	34.03			
Overall prediction rate (percentage)	89.10			

Source: self-projection

Note: ^a The dependent variable is 0=non-adoption, and 1=adoption.

* and **denote significance at the 5%, and 1% level.

As expected, the empirical data indicate that the software timeliness has a positive influence on adoption of accounting software. Software updating to confirm to

accounting standards is an important factor influencing adoption. In addition, the software adequacy is significant and positively influences adaptation. Provided that software meets the needs of the business it's likely to be adopted. The results revealed the variable security is significant and negatively influences adaptation implying that lower the software security higher the probability of the business adopting accounting software. This outcome is due to the fact that currently available software has only a password based security feature and requires a cheap hardware configuration. Higher the safety features of the software, the investment on hardware and the software will be high discouraging adoption. Therefore, in developing accounting software it is crucial to incorporate comprehensive security features to ensure the safety of accounting data without increasing expenditure on hardware and raising the accounting software's price.

3.4 Summary

The surveyed data confirmed low adoption rate for accounting software, thus, to find the reasons, considering two sets of variables, the adoption of accounting software by agro based enterprises in China were examined. The results revealed that manager's age was negatively related to accounting software adoption, and the number of accountants positively influenced level of adaptation. Furthermore, the accountant's education level was found to be an important determinant of accounting software adoption. The age of manager, the number of accountant and educational attainment of the accountant are important characteristics likely to influence the level adoption of accounting software by agro based enterprises in Heilongjiang province of China.

Among the accounting software related characteristics, software adequacy and software timeliness were positively related to accounting software adoption, while software security negatively influenced adoption of accounting software. This implies that it is crucial to ensure that the software is able to meet the needs of the enterprises, developed with adequate security features without increasing the price of the software and hardware requirements. Moreover, the software should be updated periodically to ensure it conforms to the accounting standards. Therefore, the findings of this study have important implications for software developers and vendors, as it has been demonstrated in previous researches (Wen et al 2010; Wen et al 2011) on developing financial accounting software and business analysis software for medium-sized and small agricultural enterprise and state-owned farm in China.

Chapter IV Development of Financial Accounting Software for Chinese Agricultural Enterprise

The bookkeeping contains a large of management information in respect of data, and it plays an important role in making objective judgment on business management (Sakuramoto 1998). Thus, to strengthen the management of enterprises, and enhance the competitiveness, it is important to give due recognition to management of accounting information. Accounting software is effective management tool of accounting, which has been demonstrated in previous researches. And moreover, there is lot of accounting software available in Chinese market at present. Most accounting software is suitable for many kinds of industry, and process attention have been given to the common characteristics among those kinds of industry while ignoring the unique characteristics of each industry to some extent. For example, in respect of generating financial reports, they only can generate balance sheet, income statement and cash flow statement that all enterprises need, while specific financial reports for some industries are not possible to generate.

Therefore, to assist agricultural enterprise in strengthening management of accounting it is vital to provide special accounting software for agricultural enterprise. Accounting software has been developed by us, which contains financial accounting system and business analysis system (referring to figure 4.1). The financial accounting system is a main component of accounting software, it not only deals with financial accounting, but provides accounting data for business analysis system to perform

analysis. Therefore, the objective of this chapter is to introduce the financial accounting system according to characteristics of agricultural enterprises accounting. And the functional modules will be listed one by one, moreover, the field effect of financial accounting software will be discussed based on Company X assisting.

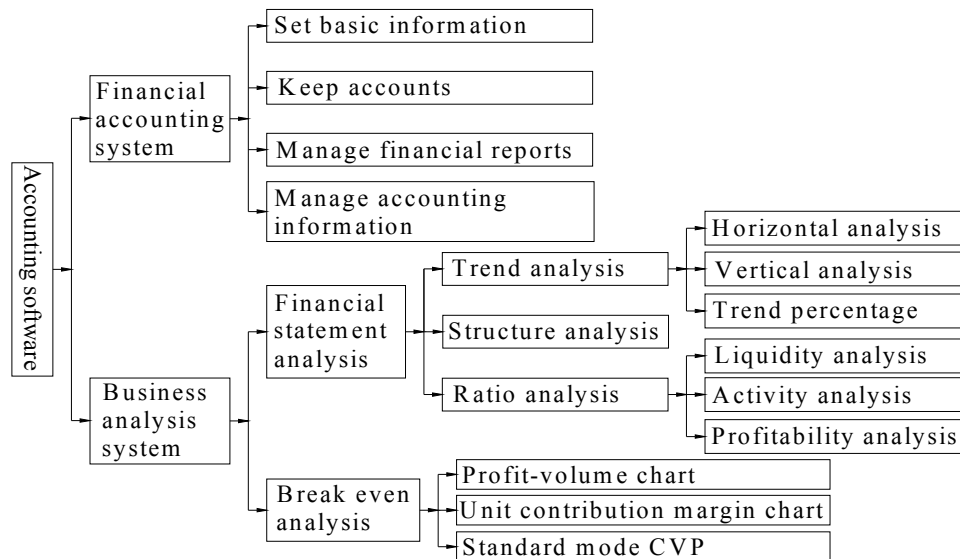


Figure 4.1 Main modules of accounting system

4.1 Introduction of Financial Accounting System

4.1.1 Modules and Use Procedure for the System

4.1.1.1 Use Procedure

At first, to explain the use procedure of financial accounting system an accounting period is taken as a case. A flow chart shown in figure 4.2 demonstrates process of using the system in detailed.

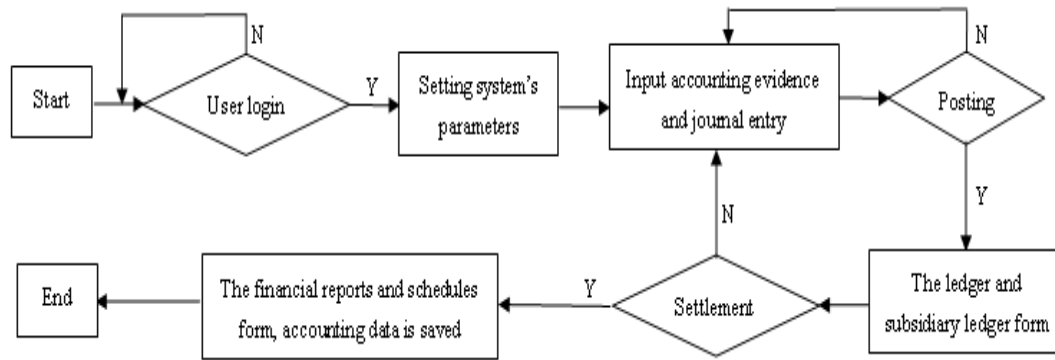


Figure 4.2 Flow chart of financial accounting system for agricultural enterprise

- 1) The system starts.
- 2) The user enters the window for login. If the user inputs the right user name and password, the user can log on the system and use the main functions, or else the system will give the information of the wrong user name or the false password. If the times of login exceed three, the system will exit automatically.
- 3) The user should set the system's parameters that are used by the system when the system performs accounting calculation and generates the financial reports and schedules.
- 4) After the user setting the system's parameters, the user can input the items of accounting evidence and journal entry into the system. The system posts the accounting evidences and then the ledger and subsidiary ledger are generated automatically. If the debit and credit of the accounts are in balance, the system auto generates the ledger and subsidiary ledger, or else the user must check the accounting evidences and journal entry of this accounting period. Until find the mistakes and revising them, the posting can be conducted.
- 5) At the end of accounting period, the system settles account and generates the

financial reports and schedules automatically. If the system settles the account successfully, the financial reports and schedules generate automatically, the accounting data of this accounting period is saved into the historical database, and the system sets the parameters for the next accounting period, or else the user must check and modify the accounting evidence and journal entry again to find the fault, and do posting and settlement once again.

6) The accounting period finishes.

4.1.1.2 Functional Modules

In this system, there are four main functional modules, such as, set basic information, keep accounts, manage financial reports and manage accounting information as shown in figure 4.3.

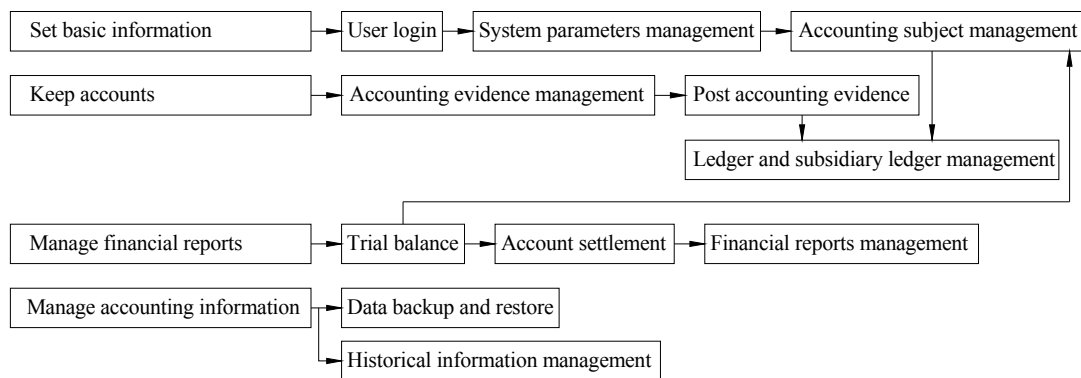


Figure 4.3 Main modules of financial accounting system for agricultural enterprise

Set basic information

At first, the user must set the basic information in the first module. The first module is composed of user login, system parameters management and accounting subject management. The user login is developed to manage the login name and password. The original login name and password are provided by the system, after login into the

system, the user can reset them. The system parameters management is developed to set the accounting period, fiscal year, beginning date and name of the user, which are used by the system performing accounting calculation and generating the financial reports and subsidiary schedules. There are 12 accounting periods for each fiscal year in default, that is to say, the system creates one accounting period per month for a total of 12 accounting periods in default. The system requires that 12 months constitutes one fiscal year, but does not require that the fiscal year should begin in January and end in December, thus not using the actual calendar year gives many enterprises an advantage, allowing them to close their books at a time which is most convenient for them. And the accounting subject management is to set the accounting subjects and balance for each accounting subject in accounting beginning period, which are necessary to accounting calculation. Accounting subjects' setting contains setting the accounting subject code, capital of accounting subject, mnemonic code of accounting subject, accounting subject category and balance direction for accounting subject. And according to the accounting rule the system supplied the most essential accounting subjects that the user can neither delete nor revise. However the user can add some accounting subjects to meet its calculation need. For setting the balance for each accounting subject in accounting beginning period, there are two situations: if it is not zero, the user just need to create it under the first accounting period, it is completed by the system automatically, if it is equal to zero, the user does not need to set it as it will by default set to zero automatically. And then the system calls the Trial Balance automatically to test that the debit and credit balances of each account.

Keep accounts

The second module managed the accounting evidence, accounting entry, ledger and subsidiary ledger. Because the accounting evidence is a source of keeping accounts and main accounting information, this module is the system's core. Accounting evidence management is developed to operate accounting evidence and accounting entry such as, input, modify, delete, as well as be responsible for generating the data of cash flow statement. In one accounting period, there are two ways to input the accounting evidence, input accounting evidences at one time, and input them when the transaction happens. Because each item of accounting evidence must correspond with one or more accounting entries, while inputting the accounting evidence the user has to input accounting entry related to it. Simultaneously, in order to generate the cash flow statement, the system requires that the user points out that each accounting entry whether it is related to the cash flow statement or not. Post accounting evidence is to carry forward the accounting evidences, backup them and transfer them into the ledger and subsidiary ledger. Ledger and subsidiary ledger management supplied the query function. Because each item of ledger must correspond to accounting evidence, at the same time, accounting evidence must coincide with one or more items of ledger, the system supplied that when clicking an item in the window for ledger, the window for accounting evidence queried would appear. Hence, this function retained the audit trails.

Manage financial reports

This module is composed of the Trial Balance, account settlement and financial reports management. Trial Balance is to test the balance of debit and credit. Account settlement is this module's core, which is responsible for that at the end of each

accounting period, under the balance of debit and credit, close the current accounting period, and transfer related information into the next accounting period, at the same time to generate financial reports and some subsidiary schedules automatically, and save the data as historical information. Financial reports management is to browse through the financial reports and subsidiary schedules. In this system the financial reports are composed of the balance sheet, income statement and cash flow statement, and the subsidiary schedules are the supplement of the financial reports, which contains assets diminution, depreciation of biological assets and farm produce, owner equity, value added tax payable, book value of biological assets, allocation of profit and social charge and discharge and so on. However, it should be noted that due to the complexity of some subsidiary schedules, in this system, these schedules were generated semi-automatically and semi-manually, such as asset diminution, depreciation of biological assets and farm produce.

Manage accounting information

The last module was developed to manage data backup and restore and historical information. To guarantee the data safety, the system supplied database backup and restore. When the accounting data is changed, the user can use this function to save it. In case of system failure trouble, the system can use the database restore to rebuild the new data source, therefore, it can keep the accounting data from becoming corrupt or lost. In addition, this system ensures compliance with accounting rules to ensure that data should be stored for at least 15 years and in 15 years the user only have access authority.

4.1.2 System Setting in the Beginning Time

4.1.2.1 User Login

The privacy and security of accounting information is of the utmost importance, so the system supplies a login window shown as figure 4.4 in order to guarantee the safety of accounting information. That is to say, the user is able to start the system with the right user name and login-password. The original user name and the password are provided, however, the user can reset them after the user log on the system.

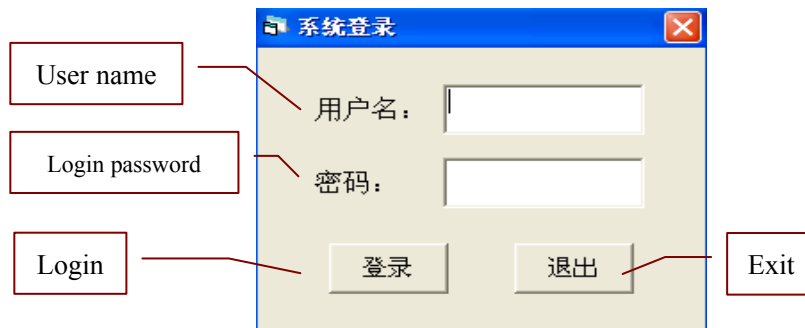
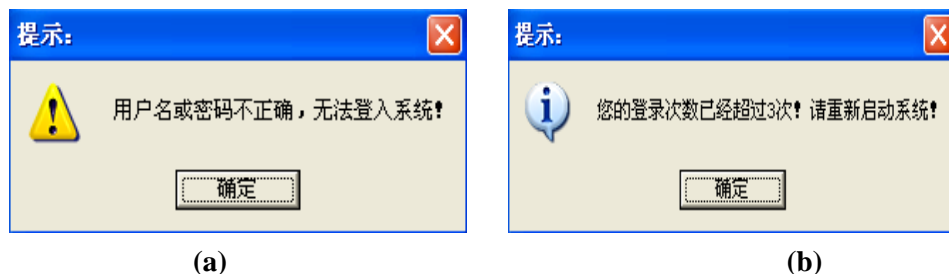


Figure 4.4 Login window



(a) (b)
Figure 4.5 Information of the wrong user name or the false password

If the user inputs the right user name and password, the system starts. Or else the system gives the information of the wrong user name or the false password shown as figure 4.5(a). If the times of login exceed three times, the system also gives the information shown as figure 4.5(b) and exits automatically.

4.1.2.2 System Setting in the Beginning Time

The figure 4.6 shows how to carry out the system setting in the beginning time. Firstly,

the system parameters' setting should be performed, such as the enterprise name, beginning date of the accounting period and so on. Secondly, system setting covers setting accounting subjects and balance for each accounting subject in accounting beginning period.

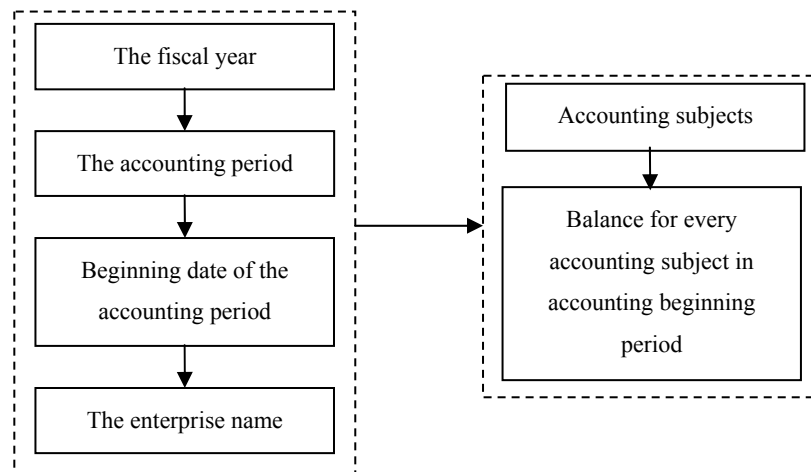


Figure 4.6 Flow chart of the system setting in the beginning time

System parameters' setting

The user must set the enterprise name, beginning date of the accounting period, the accounting period and the fiscal year for the first time. There are 12 accounting periods in one year in default in the system, in other words, one month is one accounting period. The window managing those settings is developed shown in figure 4.7.

After setting those parameters, the relating information is saved into the Access 2007 automatically. In new accounting period, it is unnecessary to set the information again as long as that information is not changed by the user.

As a result of the variety of date format, as well as it is advantageous for the user to input the date, the system supplies a calendar button in figure 4.7. Press this button, the window shown as figure 4.8 will appear. In this window, the user completes inputting

date by selecting the year, month and date instead of keyboard. At the same time, it can avoid mistakes of entry.

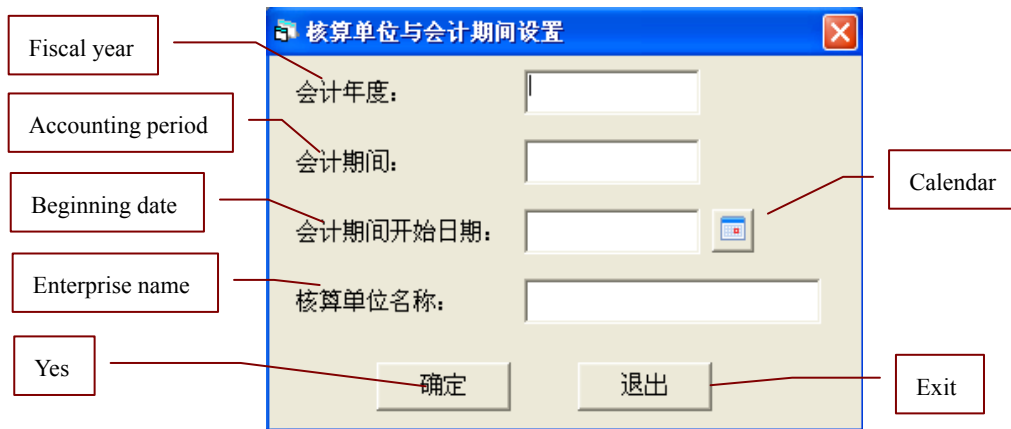


Figure 4.7 System parameters' setting



Figure 4.8 Date inputting window

Accounting subjects' setting

The accounting subjects' setting contains setting the accounting subject code, the capital of accounting subject, the mnemonic code of accounting subject, the accounting subject category and the balance direction for accounting subject. The accounting subject code is composed of figures and period, and the period is to distinguish the different level of the accounting subjects. The capital of accounting subject is the simple and abbreviated name for describing accounting subject by Chinese word, and the mnemonic code of accounting subject is abbreviation for the capital of accounting subject by Roma word, which is developed to help the accountant remember the

accounting subject. The accounting subject category is divided into five types according to the accounting rules. The balance direction for accounting subject represents the balance for accounting subject in debit or in credit.

The accounting subjects supplied by the system are divided into five types: the cost, the liabilities, the profit and loss, the profit and loss of the owner (referring to B section in figure 4.9). The accounting subject code of each type is fixed, such as the accounting subject code of the assets is from 1001 to 1999, and the first figure for accounting subject code reflects its type. Likewise, the first figure for accounting subject code is 2, 3, 4 and 5 reflecting the liabilities, profit and deficit of the owner, cost as well as profit and deficit respectively. So it reduced the tasks of inputting accounting subjects, furthermore saved a lot of trouble with remembering the accounting subject code. For each accounting subject, it can have its own subsidiary account, at this time the accounting subject is called as the first-level account, and the subsidiary account is called as the second-level account. By the same token, the second-level account can have its subsidiary account called as the third-level account. In this system, using the four digits stands for the first-level of accounting subject. Based on the first-level accounting subject, adding a period and three digits represents the second-level accounting subject, and based on the second-level accounting subject, adding a period and three digits represents the third-level accounting subject.

For example, to explain the source of the production cost of the agriculture exactly (its accounting subject code is 4102), four subsidiary accounts were introduced, such as the crop production cost (4102.001), the forestry production cost (4102.002), the

stockbreeding production cost (4102.003) and fishery production cost (4102.004). Likewise, in order to reflect the composition of the crop production cost, it is random to set its subsidiary account, such as corn production cost (4102.001.001). Now this system only deals with the three levels of the accounting subjects, in the next stage of development attempts will be made to handle the multi-level account.

The essential accounting subjects supplied by the system are not permitted to be modified or deleted, but in order to refine and explain of the functions of accounts the user can add the new account as their subsidiary account. Besides these accounting subjects, the user can add any account according to calculation needs.

The figure 4.9 is developed to manage setting of accounting evidence. To develop a friendly user surface unified layout is adopted in most windows of this system. Thus, the figure 4.9 is taken as a case to introduce the function. The A section in figure 4.9 shows buttons, which are the "First", "Before", "Next", "End", "New", "Modify", "Delete", "Save", "Cancel", "Print" and "Exit" in turn from left to right. The first four buttons control the arrow of grid movement, the next five buttons help the user increase, modify, and delete the item of accounting subject, and the last two buttons are in charge of the grid's printing and exiting the window.

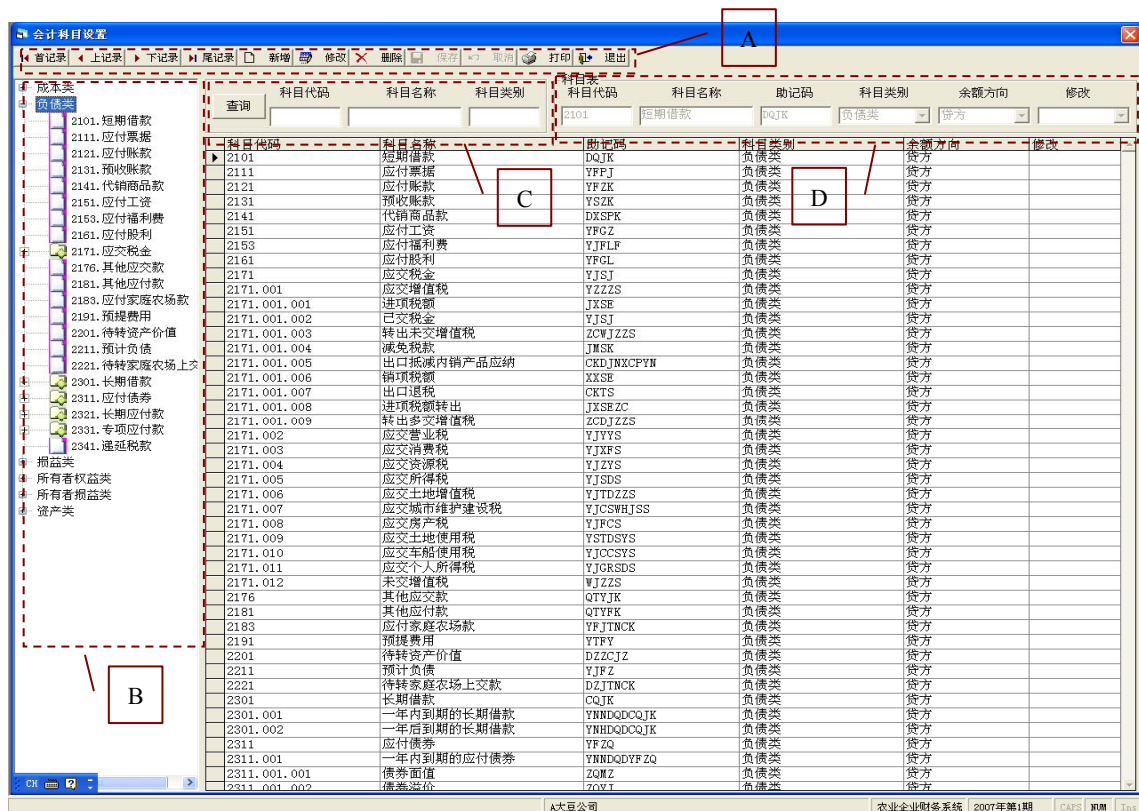


Figure 4.9 Accounting subject

The system provides three types of queries for accounting subject (referring to C section in figure 4.9), the first query covers results based on the accounting subject code, the second query covers results based on the capital of accounting subject (also called the accounting subject name), and the last query covers the accounting subject category (also called the type of accounting subject).

The management of accounting subject, such as add new accounting subject, modify the current subject, is capable of being completed in D section of figure 4.9. Press the "Add" button, the D section is activated, then the user inputs the new information of accounting subject into the D section and saves it with the "Save" button. Likewise, if the user wants to make alternation to the item of accounting subject, the user must use the "Modify" button to activate the D section, accomplish modification of the accounting subject and save it.

4.1.3 Setting Balance for Each Accounting Subject in Accounting Beginning Period

The system requires that the balance for each accounting subject in accounting beginning period should be set at the first accounting period. And in other accounting periods, it is unnecessary for the user to set the balance for each accounting subject, because the system accomplishes setting them automatically. Hence, this function can save the user's time and is more convenient than the manual accounting.

In the window shown in figure 4.11(a), the user inputs the balance for each accounting subject in accounting beginning period, and then checks the balance for debit and credit. If the sum of debit and credit is equal, the account can enter the new accounting period and keep booking. Or else the user must adjust the balance until it is in balance. The flow chart shown in figure 4.10 explains how to use this window to set the balance for each accounting subject in the accounting beginning period. We will introduce the window in detailed as follows.

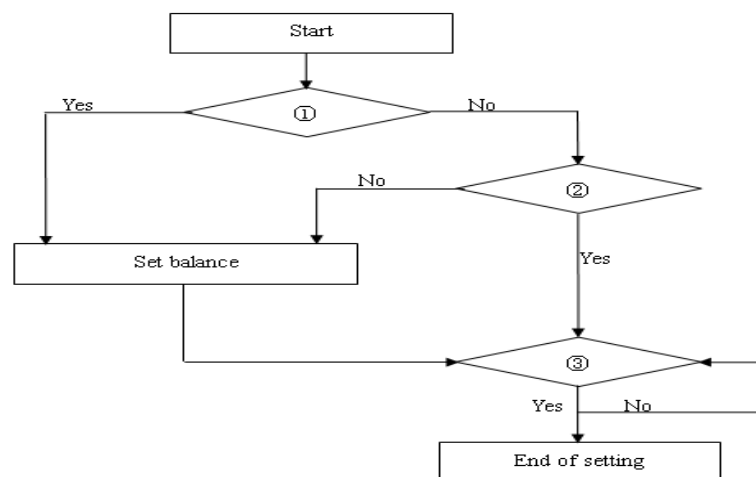


Figure 4.10 Flow chart of setting balance for each accounting subject in accounting beginning period

Note:①---Is the account in the first accounting period?

②---Is the accounting subject changed?

③---Are the debit and credit in balance?

It is necessary that the initial value of each accounting subject should be set when the system first starts. After the balance for the credit and debit tested and in balance, the setting finishes. If they are unbalance, the user is capable of checking the initial value of accounting subjects with the function of trial balance until the user finds the faults, and then set the balance again. Except the system starting first, if there is no change in accounting subjects, the setting finishes after doing the trial balance. If the accounting subjects are changed, the initial value will be set again, the balance for credit and debit will be tested, and then the works of setting will be finished.

科目代码	科目名称	累计借方	累计贷方	期初数量	期初余额	余额方向
1001	现金	0.00	0.00	0.00	0.00	0.00借方
1002	银行存款	0.00	0.00	0.00	0.00	0.00借方
1002.001	中国银行	0.00	0.00	0.00	0.00	0.00借方
1002.002	工商银行	0.00	0.00	0.00	0.00	0.00借方
1002.003	欧元账户	0.00	0.00	0.00	0.00	0.00借方
1002.004	美元账户	0.00	0.00	0.00	0.00	0.00借方
1002.005	日元账户	0.00	0.00	0.00	0.00	0.00借方
1009	其他货币资金	0.00	0.00	0.00	0.00	0.00借方
1009.001	外埠存款	0.00	0.00	0.00	0.00	0.00借方
1009.002	银行本票	0.00	0.00	0.00	0.00	0.00借方
1009.003	银行汇票	0.00	0.00	0.00	0.00	0.00借方
1009.004	信用卡	0.00	0.00	0.00	0.00	0.00借方
1009.005	信用证保证金	0.00	0.00	0.00	0.00	0.00借方
1009.006	存出投资款	0.00	0.00	0.00	0.00	0.00借方
1101	短期投资	0.00	0.00	0.00	0.00	0.00借方
1101.001	股票	0.00	0.00	0.00	0.00	0.00借方
1101.002	债券	0.00	0.00	0.00	0.00	0.00借方
1101.003	基金	0.00	0.00	0.00	0.00	0.00借方
1101.004	其他短期投资	0.00	0.00	0.00	0.00	0.00借方
1102	短期投资跌价准备	0.00	0.00	0.00	0.00	0.00借方
1102.001	股票投资跌价准备	0.00	0.00	0.00	0.00	0.00借方
1102.002	债券投资跌价准备	0.00	0.00	0.00	0.00	0.00借方
1111	应收票据	0.00	0.00	0.00	0.00	0.00借方
1121	应收股利	0.00	0.00	0.00	0.00	0.00借方
1122	应收利息	0.00	0.00	0.00	0.00	0.00借方
1131	应收账款	0.00	0.00	0.00	0.00	0.00贷方
1133	其他应收款	0.00	0.00	0.00	0.00	0.00借方
1135	应收款项减值准备	0.00	0.00	0.00	0.00	0.00借方
1141	坏账准备	0.00	0.00	0.00	0.00	0.00贷方
1141.001	应收账款坏账准备	0.00	0.00	0.00	0.00	0.00借方
1141.002	其他应收款坏账准备	0.00	0.00	0.00	0.00	0.00借方
1151	预付账款	0.00	0.00	0.00	0.00	0.00借方
1161	应收补贴款	0.00	0.00	0.00	0.00	0.00借方
1201	物资采购	0.00	0.00	0.00	0.00	0.00借方
1211	原材料	0.00	0.00	0.00	0.00	0.00借方
1221	包装物	0.00	0.00	0.00	0.00	0.00借方
1231	低值易耗品	0.00	0.00	0.00	0.00	0.00借方
1232	材料成本差异	0.00	0.00	0.00	0.00	0.00借方
1232.001	原材料	0.00	0.00	0.00	0.00	0.00借方
1232.002	低值易耗品	0.00	0.00	0.00	0.00	0.00贷方
1241	自制半成品	0.00	0.00	0.00	0.00	0.00借方
1243	库存商品	0.00	0.00	0.00	0.00	0.00借方
1244	商品进销差价	0.00	0.00	0.00	0.00	0.00借方
1246	农产品	0.00	0.00	0.00	0.00	0.00借方
1247	牲畜及育肥畜	0.00	0.00	0.00	0.00	0.00借方
1251	委托加工物资	0.00	0.00	0.00	0.00	0.00借方
1261	委托代销商品	0.00	0.00	0.00	0.00	0.00借方

Figure 4.11-a Setting balance for each accounting subject in accounting beginning period

Note: The A section shows the buttons, which are "Add", "Save", "Trial balance", "Initialize the book", "print" and "Exit" in turn from left to right.

- "Add"---add new item of accounting subject
- "Save"---save the information of the grid after setting the initial value
- "Trial balance"---check the balance for credit and debit
- "Initialize the book"---activate the below grid and it is capable of the user setting the initial vale
- "Print"---print the below grid

After setting balance for each accounting subject in accounting beginning period, we can see the results shown in figure 4.11(b), as long as pressing the forth button in figure 4.11(b) the system saves all information into the below grid. At the same time, the system also saves the information into the ledger and the subsidiary ledger. Before the accounting evidence input into the system, the balance for each accounting subject in accounting beginning period can be revised. If the user wants to modify them after inputting the accounting evidence, the accounting evidence will be deleted. Therefore, the user must set them and do the trial balance before inputting the accounting evidence.

The system supplies the Trial Balance to check the balance for debit and credit. Pressing the third button in figure 4.11(b), the window of the Trial Balance will appear in figure 4.12. There are two grids in the window of the Trial Balance, the grid A shows the information of the accounting subjects with initial balance, the grid B displays whether the debit and credit are in equal or not and the total sum of the debit and credit. Therefore, if the debit and credit are unbalance, the direct results are reflected in the grid B. Verifying the information of the accounting subjects set with balance in grid A, the user is able to confirm the cause of unbalance simply, and then return to the window for the management of accounting evidence to find the mistakes and make alternation.

The contents above mentioned have explained the constructions of the system setting and how to use the system to accomplish the system setting. After the system setting finished, the information of accounting evidence is capable of being input into the system. The management of accounting evidence and journal entry in this system will be demonstrated in following statements.

帐户录入-科目余额录入

增加科目 保存 試算平衡 帐簿初始化 打印 退出

期初余额设置

科目代码	科目名称	累计借方	累计贷方	期初数量	期初余额	余额方向
1001	现金	0.00	0.00	0.00	500,000.00	借方
1002	银行存款	0.00	0.00	0.00	500,000.00	借方
1002.001	中国银行	0.00	0.00	0.00	0.00	借方
1002.002	工商银行	0.00	0.00	0.00	500,000.00	借方
1002.003	欧元账户	0.00	0.00	0.00	0.00	借方
1002.004	美元账户	0.00	0.00	0.00	0.00	借方
1002.005	日元账户	0.00	0.00	0.00	0.00	借方
1009	其他货币资金	0.00	0.00	0.00	0.00	借方
1009.001	外埠存款	0.00	0.00	0.00	0.00	借方
1009.002	银行本票	0.00	0.00	0.00	0.00	借方
1009.003	银行汇票	0.00	0.00	0.00	0.00	借方
1009.004	信用卡	0.00	0.00	0.00	0.00	借方
1009.005	信用证保证金	0.00	0.00	0.00	0.00	借方
1009.006	存出投资款	0.00	0.00	0.00	0.00	借方
1101	短期投资	0.00	0.00	0.00	0.00	借方
1101.001	股票	0.00	0.00	0.00	0.00	借方
1101.002	债券	0.00	0.00	0.00	0.00	借方
1101.003	基金	0.00	0.00	0.00	0.00	借方
1101.004	其他短期投资	0.00	0.00	0.00	0.00	借方
1102	短期投资跌价准备	0.00	0.00	0.00	0.00	借方
1102.001	股票投资跌价准备	0.00	0.00	0.00	0.00	借方
1102.002	债券投资跌价准备	0.00	0.00	0.00	0.00	借方
1111	应收票据	0.00	0.00	0.00	150,000.00	借方
1121	应收账款	0.00	0.00	0.00	0.00	借方
1122	应收利息	0.00	0.00	0.00	0.00	借方
1131	应收账款	0.00	0.00	0.00	44,000.00	贷方
1133	其他应收款	0.00	0.00	0.00	1,500.00	借方
1135	应收家庭农场款	0.00	0.00	0.00	0.00	借方
1141	坏账准备	0.00	0.00	0.00	0.00	贷方
1141.001	应收账款坏账准备	0.00	0.00	0.00	0.00	借方
1141.002	其他应收款坏账准备	0.00	0.00	0.00	0.00	借方
1151	预付账款	0.00	0.00	0.00	0.00	借方
1161	应收补贴款	0.00	0.00	0.00	0.00	借方
1201	物资采购	0.00	0.00	0.00	0.00	借方
1211	原材料	0.00	0.00	0.00	1,180,000.00	借方
1221	包装物	0.00	0.00	0.00	19,360.00	借方
1231	低值易耗品	0.00	0.00	0.00	100,000.00	借方
1232	材料成本差异	0.00	0.00	0.00	28,477.70	借方
1232.001	原材料	0.00	0.00	0.00	30,477.70	借方
1232.002	低值易耗品	0.00	0.00	0.00	2,000.00	贷方
1241	自制半成品	0.00	0.00	0.00	0.00	借方
1243	库存商品	0.00	0.00	0.00	977,555.00	借方
1244	商品进销差价	0.00	0.00	0.00	0.00	借方
1246	农产品	0.00	0.00	0.00	0.00	借方
1247	幼畜及育肥畜	0.00	0.00	0.00	0.00	借方
1251	委托加工物资	0.00	0.00	0.00	0.00	借方
1281	委托代销商品	0.00	0.00	0.00	0.00	借方

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Figure 4.11-b Setting balance for each accounting subject in accounting beginning period

試算平衡表

科目代码	科目名称	期初借方	期初贷方	本期发生借方	本期发生贷方	期末借方	期末贷方
1001	现金	500,000.00	0.00	0.00	0.00	500,000.00	0.00
1002	银行存款	500,000.00	0.00	0.00	0.00	500,000.00	0.00
1111	应收票据	150,000.00	0.00	0.00	0.00	150,000.00	0.00
1131	应收账款	0.00	44,000.00	0.00	0.00	0.00	44,000.00
1133	其他应收款	1,500.00	0.00	0.00	0.00	1,500.00	0.00
1211	原材料	1,180,000.00	0.00	0.00	0.00	1,180,000.00	0.00
1221	包装物	19,360.00	0.00	0.00	0.00	19,360.00	0.00
1231	低值易耗品	100,000.00	0.00	0.00	0.00	100,000.00	0.00
1232	材料成本差异	28,477.70	0.00	0.00	0.00	28,477.70	0.00
1243	库存商品	977,555.00	0.00	0.00	0.00	977,555.00	0.00
1301	待摊费用	600.00	0.00	0.00	0.00	600.00	0.00
1401	长期股权投资	130,000.00	0.00	0.00	0.00	130,000.00	0.00
1501	固定资产	8,375,323.21	0.00	0.00	0.00	8,375,323.21	0.00
1502	累计折旧	0.00	2,962,170.00	0.00	0.00	0.00	2,962,170.00
1603	在建工程	14,660.00	0.00	0.00	0.00	14,660.00	0.00
1901	长期待摊费用	2,000.00	0.00	0.00	0.00	2,000.00	0.00
2101	短期借款	0.00	200,000.00	0.00	0.00	0.00	200,000.00
2121	应付账款	0.00	112,380.00	0.00	0.00	0.00	112,380.00
2153	应付福利费	0.00	15,000.00	0.00	0.00	0.00	15,000.00
2171	应交税金	0.00	157,000.00	0.00	0.00	0.00	157,000.00
2176	其他应付款	0.00	4,000.00	0.00	0.00	0.00	4,000.00
2191	预提费用	0.00	1,700.00	0.00	0.00	0.00	1,700.00
2301	长期借款	0.00	266,750.00	0.00	0.00	0.00	266,750.00
3101	实收资本	0.00	6,800,000.00	0.00	0.00	0.00	6,800,000.00
3111	资本公积	0.00	500,000.00	0.00	0.00	0.00	500,000.00
3121	盈余公积	0.00	300,000.00	0.00	0.00	0.00	300,000.00
3141	利润分配	0.00	1,379,200.00	0.00	0.00	0.00	1,379,200.00
4101	生产成本	1,262,224.09	0.00	0.00	0.00	1,262,224.09	0.00
是否平衡		平衡					
期初借方合计		12,742,200.00	12,742,200.00	本期借方合计	0.00	本期贷方合计	0.00
期末借方合计				期末借方合计	12,742,200.00	期末贷方合计	12,742,200.00

Figure 4.12 Trial balance

4.1.4 Management of Accounting Evidence

Accounting evidence is main information of accounting management. It is a source of the ledger, the subsidiary ledger, the balance sheet, the income statement and the cash flow statement and so on. And it contains the sum for debit and credit, date, description, variety of accounting evidence, number of accounting evidence and the name of a person in charge and so on. The number of accounting evidence is unique, which is relevant to the accounting rule.

There are many varieties of accounting evidence in each type of the business, but its main elements are similar, such as the description, accounting subject name of debit, accounting subject name of credit and sum. The figure 4.13 shows the sample of accounting evidence, which is non-electronic.

<u>Accounting evidence</u>				
	Y	M	D	No.:
Abstract	Accounting subject name of debit		Accounting subject name of credit	Sum
Total sum:				

Name: _____ No. of a supporting document: _____

Figure 4.13 Sample of accounting evidence

Source: self-projection

Because the accounting evidence is very vital for the account, the system and the accountant must answer for the accuracy of the accounting evidence. As long as the accounting evidence is accurate, the related accounting evidence saved into the system is also correct. Thus, except the accounting evidence, the user also keeps the supporting document for each item of accounting evidence. A supporting document for each

transaction - like a receipt, invoice or signed authorization form, which is the evidence that the details recorded in accounting evidence are correct. The information is saved in the system for accounting evidence based on the supporting documents, and at the end of the accounting period the accountant verifies the accounting evidence of the system (called as E-accounting evidence) according to the supporting documents. However, exceptionally, there is no supporting document holding up the accounting evidence, for example, at the end of accounting period, the accountant must carry forward the balance of some accounting subjects to the credit or debit of the corresponding accounting subjects.

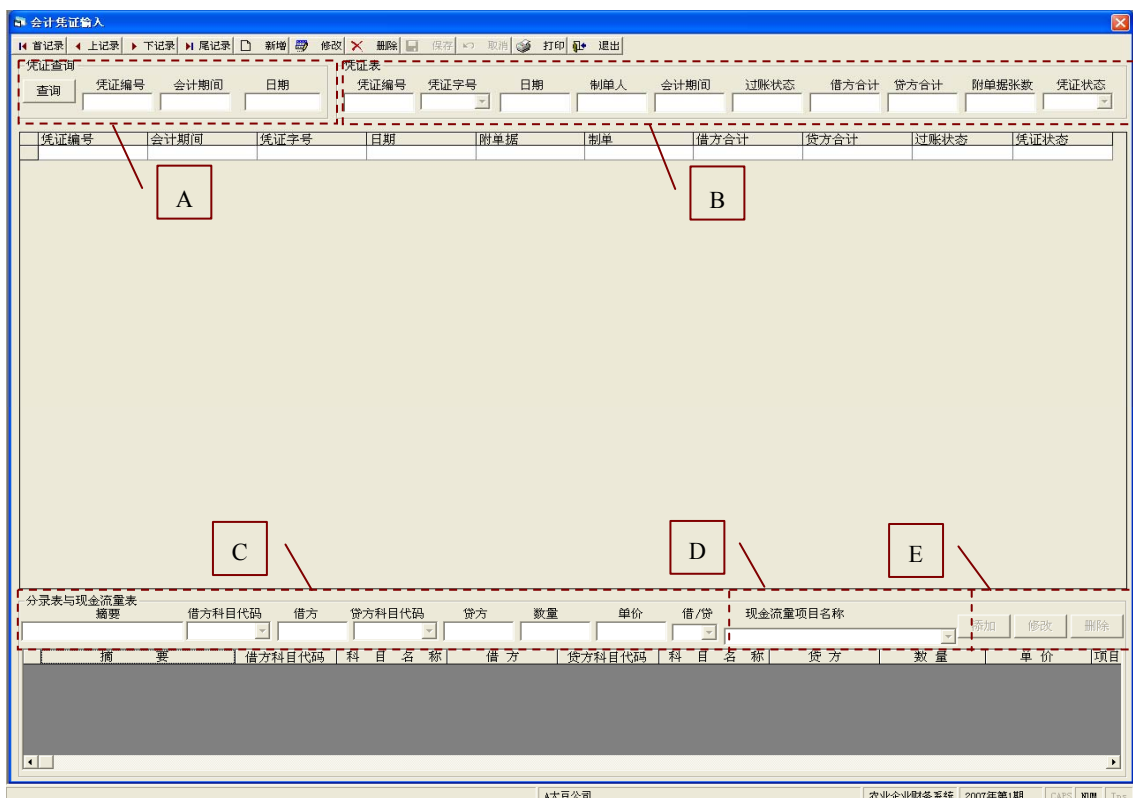


Figure 4.14-a Management of accounting evidence

The figure 4.14(a) shows the system is how to deal with the accounting evidence. In the system, the E-accounting evidence forms automatically after the user inputting the information of the accounting evidence into the system. While inputting the item of

accounting evidence into the system, the user must input the related journal entry/entries. At the same time, in order to generate the cash flow statement automatically at the end of each accounting period, the user should point out which item of journal entry is related to the item/items of cash flow statement, thus, all items of the cash flow statement generate automatically along with the accounting evidences and the journal entries input.

How to use the management of accounting evidence to deal with the accounting evidence and the related journal entry will be explained in detail as follows. On the top of the figure 4.14(a), there are buttons that is the same with the buttons in figure 4.9, so it is unnecessary to be mentioned again. The system provides query for accounting evidence based on accounting evidence ID, accounting period and date. The query for accounting evidence is capable of being operated in A section of figure 4.14 (a).

As for operation of the accounting evidence such as add new item of accounting evidence and make alteration to current items of accounting evidence, the system provides the function in B section of figure 4.14(a). After activating the B section it is capable of inputting or modifying the item of accounting evidence. To explain the operation method of managing the accounting evidence, adding new item of accounting evidence is taken as a case. After the B section activated by the left fifth button, the user can input the number of accounting evidence, kind of the accounting evidence, date, and the name of a person in charge and so on by keyboard. In addition, the accounting period and the sum for debit and credit are input by the system automatically. After inputting each item of the accounting evidence, all information is saved into the system

through pressing the left eighth button. As regards modifying the accounting evidence, the detailed operation is similar with add new item of the accounting evidence, so it is unnecessary to be mentioned again. As to the deletion of the accounting evidence, the related item of accounting evidence should be selected firstly, then press the left sixth button to delete it.

In addition, there are two grids in figure 4.14(a). The upper grid shows the items of accounting evidences and the lower grid displays items of the journal entry, respectively. Due to each item of accounting evidence correlating with an item or more items of the journal entry, the contents in lower grid vary with the movement of the upper grid.

The system provides the management of journal entry in C section of figure 4.14 (a). When the B section is activated, the E section is also activated. In E section there are buttons in turn from left to right that control adding, modifying and deleting the item of journal entry. The information for journal entry contains such as the description, accounting subject of the debit, sum of the debit, accounting subject of the credit, sum of the credit, the amount and the unit price. Press the left first button in E section, it is capable of inputting an item of journal entry. When deleting or modifying the item of journal entry, the system requires that the item of journal entry should be selected first, then press the corresponding button in E section to perform operation of deletion or modification.

In order to simplify the management of cash flow statement, the system provides the functions in D section. The information for the cash flow is composed of the debit or

credit and the item name of the cash flow. As long as the user points out that the current item of journal entry belongs to the debit or credit, and indicates that it belongs to which item of the cash flow in D section, thus, the data source of the cash flow forms and the cash flow statement generates automatically at the end of accounting period.

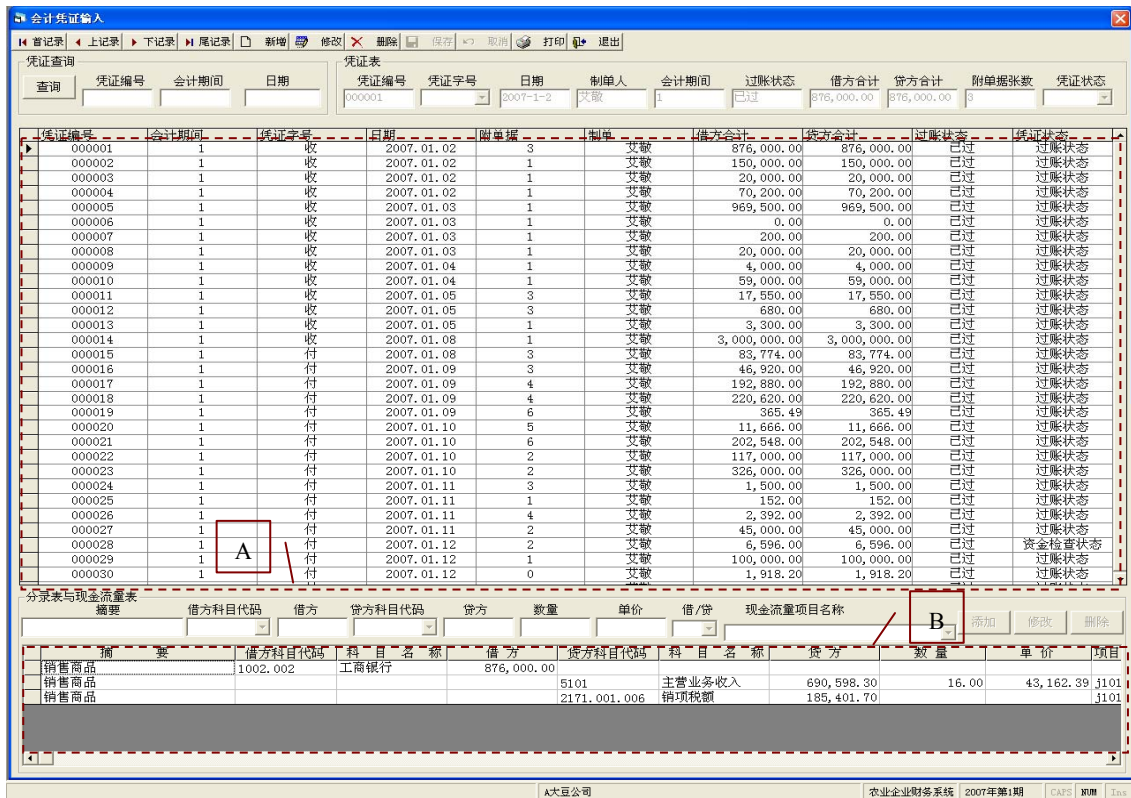


Figure 4.14-b Management of accounting evidence

After all information of the accounting evidence input into the system, the system can form the E-accounting evidence shown in grid A of figure 4.14(b). The related journal entries are presented in grid B of figure 4.14(b). Moreover, the grid B is changed complying with the grid A. For example, when the current record of grid A is the first one, the grid B shows items of journal entry corresponding with the first record of grid A.

In order to simplify the operation for inputting the information of the accounting evidence and journal entry, the system provided function of automatic input and

automatic calculation as follows.

✧ Auto input

The "auto input" is only operated by the system, that is to say, it is not necessary for the user to operate it and the user can't operate it. For example, the number, accounting period, data, date format and the accounting subject name are input automatically, sum for credit and debt is calculated automatically after an accounting entry input.

✧ Semi-auto input

The "semi-auto input" means that the user can entry information by the selections provided by the system, or the user can input it instead of the selections. For example, in the system, there are two methods to input date of accounting evidence, one is automatic input when the day of accounting evidence input and the transaction happening are same, while the other is manual entry when the day of transaction happening is different from the day of accounting evidence input. Either automatic input or manual input, the date format is yyyy/mm/dd, which is helpful to prevent the inaccurate date form input. The sum for credit and debt is calculated automatically, which not only ensures balance of debit and credit between accounting evidence and the corresponding accounting entries, but saves time in calculation and avoids the accounting calculation error. When inputting the accounting entry, the amount in opposite is input automatically after one side between amount in debit and in credit is input. The function has ensured the balance of debt and credit, save time and avoided entry mistakes.

After the all accounting evidences of one accounting period are input into the system,

the user is capable of verifying E-accounting evidence with supporting documents and doing the Trial Balance, and then the user can post the accounting evidence with the menu supplied by the system. In the following, we will introduce the system how to post the accounting evidence simply.

Posting the accounting evidence is that the system brings the accounting evidences to the ledger and subsidiary ledger, deletes all the accounting evidences of this accounting period, saves the information into the historical database as source of the new accounting period. After posting the accounting evidences, the user can't modify the accounting evidence. So when push the menu of the posting accounting evidence, the system will give the information shown as figure 4.15 (a) to avoid wrong operation. After pressing "Yes" button in figure 4.15 (a), the system will give the information shown as figure 4.15 (b).

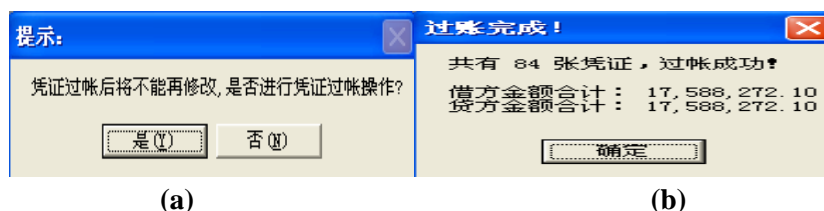


Figure 4.15 Information of posting the accounting evidence

The above statements have demonstrated the system is developed to manage accounting evidence and journal entry. After all items of accounting evidences and journal entry are input into the system, the ledger and subsidiary ledger will generate automatically. Thus, how to manage the ledger and subsidiary ledger in the system will be explained as follows.

4.1.5 Management of Ledger and Subsidiary Ledger

4.1.5.1 Manage Ledger

The ledger serves as a complete record of all business transactions. All the daily transactions of a business are classified, all similar transactions are brought together and transferred to the debits and credits of each account in ledger. Thus, the ledger is a classification and summarization of financial transactions and the basis for the preparation of the balance sheet and income statement. The ledger also allows checking the balance in a given account at a particular time. For example, the cash balance at the end of the accounting period can be seen to determine whether the business has a cash problem. Also the cash receipts and cash disbursements for the period are revealed in looking at the cash account.

The system supplies a function for ledger query shown in figure 4.16 (a). The top section of figure 4.16 (a) is the buttons whose functions are similar with buttons in figure 4.9. The system provides query based on the accounting subject or the mnemonic code in A section of figure 4.16 (a), and the query results are shown in the grid of D section. If there is no condition of query, the grid displays the all entries of ledger shown in figure 4.16 (a). The grid shows the change of debit and credit for each account in an accounting period, so the window for management of ledger give an overview of an accounting period.

In addition, in some accounting periods there is no change in sum of the debit and credit for some accounts, so the system can hide some items of the ledger whose sum of debit and credit is equal to zero shown in figure 4.16 (b). The B section is developed to

grasp the variation of the ledger usefully. The C section shows the item count of the query results. If there is no query condition, the item count is the count of the first-level account except the second-level account and third-level of account. In this window it also supplies the query function for accounting evidence, ledger and subsidiary ledger. Because each item of the ledger must correspond to accounting evidence, at the same time, accounting evidence must coincide with one or more items of the ledger, the system fulfils that the window displaying relating accounting evidence will appear when clicking an item in the window for management of the ledger. For instance, if the user clicks the column of 1131 account in figure 4.16 (a)/(b), the result of query appears in the window shown in figure 4.17. Hence, this function leads to easily find the result in current window instead of entering the window of management of accounting evidence, and saves time in query.

科目代码	会计期间	期初余额	本期借方合计	本期贷方合计	上年借方累计	本年借方累计	余额	余额方向
1001	1	500.00	98,554.00	1,496.94	98,554.00	1,496.94	97,557.06	借方
1002	1	500,000.00	0.00	0.00	0.00	0.00	500,000.00	借方
1009	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1101	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1102	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1111	1	150,000.00	1,143,675.00	150,000.00	1,143,675.00	150,000.00	1,143,675.00	借方
1121	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1122	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1131	1	44,000.00	1,155,500.00	1,048,500.00	1,155,500.00	1,048,500.00	63,000.00	借方
1133	1	1,500.00	944.05	0.00	944.05	0.00	2,444.05	借方
1135	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1141	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1151	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1161	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1201	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1211	1	1,180,000.00	459,265.60	484,920.00	459,265.60	484,920.00	1,154,345.60	借方
1221	1	19,360.00	96,479.00	0.00	96,479.00	0.00	115,839.00	借方
1231	1	100,000.00	0.00	10,979.00	0.00	10,979.00	89,022.00	借方
1232	1	28,477.70	0.00	0.00	0.00	0.00	28,477.70	借方
1241	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1243	1	977,555.00	616,282.96	1,351,966.37	616,282.96	1,351,966.37	241,871.59	借方
1244	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1246	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1247	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1251	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1261	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1271	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1281	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1291	1	0.00	32,055.00	12,020.63	32,055.00	12,020.63	20,034.37	借方
1301	1	600.00	0.00	0.00	0.00	0.00	600.00	借方
1401	1	130,000.00	0.00	0.00	0.00	0.00	130,000.00	借方
1402	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1421	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1431	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1501	1	8,375,323.21	0.00	0.00	0.00	0.00	8,375,323.21	借方
1502	1	2,962,170.00	0.00	0.00	0.00	0.00	2,962,170.00	借方
1504	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1505	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1506	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1508	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1601	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1603	1	14,660.00	117,500.00	132,160.00	117,500.00	132,160.00	0.00	平
1605	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1607	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1608	1	0.00	0.00	0.00	0.00	0.00	0.00	平

Figure 4.16-a Management of the ledger

总分帐查询

历史记录 | 上记录 | 下记录 | 尾记录 | 打印 | 退出

搜索 | 科目代码 | 助记码 | 无发生金额的不予显示 | 记录数: 32

科目代码	会计期间	期初余额	本期借方合计	本期贷方合计	本年借方累计	本年贷方累计	余额	余额方向
1001	1	500.00	98,554.00	1,496.94	98,554.00	1,496.94	97,557.06	借方
1111	1	150,000.00	1,143,675.00	150,000.00	1,143,675.00	150,000.00	1,143,675.00	借方
1131	1	44,000.00	1,155,500.00	1,048,500.00	1,155,500.00	1,048,500.00	63,000.00	借方
1133	1	1,500.00	944.05	0.00	944.05	0.00	2,444.05	借方
1211	1	1,180,000.00	459,265.60	484,920.00	459,265.60	484,920.00	1,154,345.60	借方
1221	1	19,360.00	96,479.00	0.00	96,479.00	0.00	115,839.00	借方
1231	1	100,000.00	0.00	10,978.00	0.00	10,978.00	89,022.00	借方
1243	1	977,555.00	616,282.96	1,351,966.37	616,282.96	1,351,966.37	241,871.59	借方
1291	1	0.00	32,055.00	12,020.63	32,055.00	12,020.63	20,034.37	借方
1603	1	14,660.00	117,500.00	132,160.00	117,500.00	132,160.00	0.00	平
1701	1	0.00	20,252.00	20,052.00	20,252.00	20,052.00	200.00	借方
2101	1	200,000.00	200,000.00	0.00	200,000.00	0.00	0.00	平
2111	1	0.00	0.00	112,854.00	0.00	112,854.00	112,854.00	贷方
2121	1	112,380.00	18,924.05	10,000.00	18,924.05	10,000.00	103,455.95	借方
2131	1	0.00	426,816.00	0.00	426,816.00	0.00	426,816.00	借方
2151	1	0.00	83,774.00	91,114.00	83,774.00	91,114.00	7,340.00	贷方
2153	1	15,000.00	1,753.00	0.00	1,753.00	0.00	13,247.00	贷方
2176	1	4,000.00	0.00	9,430.66	0.00	9,430.66	13,430.66	贷方
2181	1	0.00	1,918.20	1,918.20	1,918.20	1,918.20	0.00	平
2191	1	1,700.00	1,700.00	0.00	1,700.00	0.00	0.00	平
3131	1	0.00	1,394,788.35	3,091,879.50	1,394,788.35	3,091,879.50	1,697,091.15	贷方
4101	1	1,262,224.09	616,282.96	616,282.96	616,282.96	616,282.96	1,262,224.09	借方
4105	1	0.00	47,250.36	47,250.36	47,250.36	47,250.36	0.00	平
5101	1	0.00	3,087,098.30	3,087,098.30	3,087,098.30	3,087,098.30	0.00	平
5102	1	0.00	4,781.20	4,781.20	4,781.20	4,781.20	0.00	平
5401	1	0.00	1,331,932.00	1,331,932.00	1,331,932.00	1,331,932.00	0.00	平
5402	1	0.00	25,911.22	25,911.22	25,911.22	25,911.22	0.00	平
5405	1	0.00	3,313.90	3,313.90	3,313.90	3,313.90	0.00	平
5501	1	0.00	6,648.00	6,648.00	6,648.00	6,648.00	0.00	平
5502	1	0.00	22,483.23	22,483.23	22,483.23	22,483.23	0.00	平
5503	1	0.00	0.00	4,148.00	0.00	4,148.00	4,148.00	贷方
5601	1	0.00	352.00	352.00	352.00	352.00	0.00	平

A B C

大亚公司 农业企业财务系统 2007年第1期 CAPS 3/11 100%

Figure 4.16-b Management of the ledger

相关凭证记录

保存 | 打印 | 退出

与1131会计科目相关的凭证记录

凭证编码	摘要	借方科目代码	借方	贷方科目代码	贷方	数量	单价
000076	生资公司退款	1131	-2,340.00				
000003	预收杭州新光公司货款	1002.002	20,000.00	1131	20,000.00		
000005	长城机电公司承付货款	1002.002	969,500.00	1131	969,500.00		
000010	预收杭州欣光公司B产品货款	1002.002	59,000.00	1131	59,000.00		
000027	合成贸易公司购货	1131	45,000.00				
000036	长城机电公司购货办委托收	1131	969,500.00				
000038	杭州	1131	141,000.00				
000026	以支票支付生资公司退货款	1131	2,340.00	1002.002	2,340.00		

大亚公司 农业企业财务系统 2007年第1期 CAPS 3/11 100%

Figure 4.17 Management of accounting evidence related to entries of the ledger

4.1.5.2 Manage Subsidiary Ledger

A subsidiary ledger is a book of accounts that provides supporting details on each transaction, the total of which appears in a general ledger controlling account. A subsidiary ledger is not a part of the general ledger. Subsidiary ledgers are maintained so that we may know the detailed information about each transaction.

The system provides management of subsidiary ledger shown in figure 4.18, moreover the system also supplies query for subsidiary ledger, and the results are shown in figure 4.19. The top section of figure 4.18 and 4.19 is the buttons whose functions are same with the buttons in management of accounting evidence. The query function is accomplished in A section of figure 4.18, at which the user can do the query according to the accounting subject or mnemonic code. For example, the user inputs the query condition, the account subject is 2171.002, the query results are shown as figure 4.19. The B section displays the related item count of the query results. If there is no query condition, the item count is same with the count of all transactions. In addition, the A and B section in figure 4.19 are same with them of figure 4.18. The C section in figure 4.19 shows the accounting subject and capital of accounting subject related to the query conditions after performing the query.

Therefore, in management of the subsidiary ledger the user can perform the query of the subsidiary ledger to find the variations of single accounting subject and examine the debit and credit related to each transaction.

The above statements are about how to manage the ledger and subsidiary ledger, and in the following statement we will introduce the system how to generate the financial

reports: balance sheet, income statement, cash flow statement and schedules.

凭证编号	会计期间	科目代码	摘要	借方	贷方	余额	余额方向
000000	1	1001	上年结转	500.00	0.00	500.00	借方
000012	1	1001	借出包装物	680.00	0.00	1,180.00	借方
000013	1	1001	提备用金	3,300.00	0.00	4,480.00	借方
000019	1	1001	行政科报销办公用品	0.00	365.49	4,114.51	借方
000026	1	1001	以支票支付生资公司退货款	0.00	52.00	4,062.51	借方
000034	1	1001	预支差旅费	0.00	400.00	3,662.51	借方
000035	1	1001	提备用金	800.00	0.00	4,462.51	借方
000037	1	1001	提现备发工资	93,774.00	0.00	93,236.51	借方
000039	1	1001	现金解交银行	0.00	99.45	93,137.06	借方
000041	1	1001	报办公室用品费, 林光	0.00	580.00	97,557.06	借方
000000	1	1002	上年结转	500,000.00	0.00	500,000.00	借方
000014	1	1002.001	收到投资款	3,000,000.00	0.00	3,000,000.00	借方
000000	1	1002.002	上年结转	500,000.00	0.00	500,000.00	借方
000001	1	1002.002	销售商品	876,000.00	0.00	1,376,000.00	借方
000002	1	1002.002	提前20天贴现汇票	147,825.00	0.00	1,523,825.00	借方
000003	1	1002.002	预收杭州新光公司货款	20,000.00	0.00	1,543,825.00	借方
000004	1	1002.002	生资公司以支票购B产品	70,200.00	0.00	1,614,025.00	借方
000005	1	1002.002	长城机电公司承付货款	969,500.00	0.00	2,583,525.00	借方
000006	1	1002.002	利息收入	125.00	0.00	2,583,650.00	借方
000007	1	1002.002	收到租出设备租金	200.00	0.00	2,583,850.00	借方
000008	1	1002.002	收到出售设备价款	20,000.00	0.00	2,603,850.00	借方
000009	1	1002.002	转让C产品4-6部非专利技术	4,000.00	0.00	2,607,850.00	借方
000010	1	1002.002	预收杭州欣光公司B产品货款	59,000.00	0.00	2,666,850.00	借方
000011	1	1002.002	收到合成贸易公司货款	17,550.00	0.00	2,684,400.00	借方
000013	1	1002.002	提备用金	0.00	3,300.00	2,681,100.00	借方
000015	1	1002.002	发放工资	0.00	83,774.00	2,597,326.00	借方
000016	1	1002.002	购材料	0.00	5,920.00	2,591,406.00	借方
000017	1	1002.002	承付上海光明厂货款及运费	0.00	192,880.00	2,398,526.00	借方
000018	1	1002.002	承付701厂圆钢板	0.00	220,620.00	2,177,906.00	借方
000020	1	1002.002	承付701厂材料款	0.00	11,666.00	2,166,240.00	借方
000021	1	1002.002	支付短期借款利息同时还清	0.00	2,548.00	2,163,692.00	借方
000021	1	1002.002	支付短期借款利息同时还清	0.00	200,000.00	1,963,692.00	借方
000022	1	1002.002	购入X51机床支付安装	0.00	117,000.00	1,846,692.00	借方
000023	1	1002.002	购入半年交付使用	0.00	325,000.00	1,520,692.00	借方
000024	1	1002.002	购入旧的关平	0.00	1,500.00	1,519,192.00	借方
000025	1	1002.002	支付拆除酒精清理费用	0.00	152.00	1,519,040.00	借方
000026	1	1002.002	以支票支付生资公司退货款	0.00	2,340.00	1,516,700.00	借方
000027	1	1002.002	合成贸易公司购货	0.00	3,816.00	1,512,884.00	借方
000028	1	1002.002	以支票支付包装运输费	0.00	6,596.00	1,506,288.00	借方
000029	1	1002.002	购入国库券面值10万元	0.00	100,000.00	1,406,288.00	借方
000030	1	1002.002	拨付工会经费	0.00	1,918.20	1,404,369.80	借方
000031	1	1002.002	付职工医疗费	0.00	1,000.00	1,403,369.80	借方
000032	1	1002.002	付电费	0.00	9,804.60	1,393,565.20	借方
000033	1	1002.002	订购电机	0.00	10,000.00	1,383,565.20	借方

Figure 4.18 Management of the subsidiary ledger

凭证编号	会计期间	科目代码	摘要	借方	贷方	余额	余额方向
000015	1	2121.001.001	采购材料	6,800.00	0.00	6,800.00	借方
000016	1	2121.001.001	购材料	8.40	0.00	6,808.40	借方
000017	1	2121.001.001	承付上海光明厂货款及运费	27,880.00	0.00	34,688.40	借方
000017	1	2121.001.001	承付上海光明厂货款及运费	70.00	0.00	34,758.40	借方
000018	1	2121.001.001	承付701厂圆钢板	210.00	0.00	34,968.40	借方
000018	1	2121.001.001	承付701厂圆钢板	31,620.00	0.00	66,588.40	借方
000020	1	2121.001.001	承付701厂材料款	1,666.00	0.00	68,254.40	借方
000020	1	2121.001.001	承付701厂材料款	14.00	0.00	68,268.40	借方
000032	1	2121.001.001	付电费	1,424.60	0.00	69,693.00	借方
000043	1	2121.001.001	采购材料	6,187.27	0.00	75,880.27	借方
000075	1	2121.001.001	以商业汇票购入铝圆	16,375.00	0.00	92,255.27	借方
000080	1	2121.001.001	购入材料	2,040.00	0.00	94,295.27	借方
000080	1	2121.001.001	购入材料	35.00	0.00	94,330.27	借方

Figure 4.19 Query results about the subsidiary ledger

Before introducing how to manage the financial reports, it is necessary to explain the account settlement. The account settlement is charge of closing each account, transforming the final balance to the new accounting period as the beginning balance and generating the financial reports and schedules. In addition, it also sets the parameters for the new accounting period automatically. The system provides this function through the menu, so the user only clicks the menu and then the system will carry out the account settlement.

4.1.6 Financial Reports

Financial reports (or financial statements) are formal records of a business's financial activities which help investors understand a firm's financial history and financial activities. These statements provide an overview of a business' profitability and financial condition in both short and long term. Financial statements provide information of value to company officials as well as to various outsiders, such as investors and lenders of funds. Financial statements include an income statement and a balance sheet, and often also include a cash flow statement. And based on different business financial statements also include some schedules.

Therefore, the system supplies the three basic financial reports composed of the balance sheet, income statement and cash flow statement according to the accounting rule, and it also provides some schedules meeting the demands of agricultural enterprise, such as asset diminution, depreciation of biological assets and farm produce, owner equity, added value tax payable, book value of biological assets, allocation of profit and social charge and discharge and so on. The system gets the data from the ledger and

subsidiary ledger to generate the financial reports, and generates the financial reports automatically. However, due to the complex of some schedules, the user must fulfill some schedules by keyboard inputting according to accounting rule.

4.1.6.1 Balance Sheet

The balance sheet, also known as the statement of financial position or condition, presents the assets, liabilities, and owners' equity of the company at a specific point in time. The first part of a balance sheet shows all the productive assets a company owns, and the second part shows all the financing methods (such as liabilities and shareholders' equity). The total assets equal (balance) the sources of funding for those resources: liabilities (external borrowings) and equity (owners' contributions and earnings from firm operations). The balance sheet is used by investors, creditors, and other decision makers to assess the overall composition of resources, the constriction of external obligations, and the firm's flexibility and ability to change to meet new requirements.

From the definition of the balance sheet, we can see that the balance sheet is very essential for an enterprise. Therefore, the system supplies the balance sheet for each accounting period to the user, and the information of the balance sheet generates automatically, which releases the user from calculating it by manual. Additionally, the system saves information of balance sheet into the historical database automatically. The table 4.1 displays the balance sheet generated by this system.

Table 4.1 Balance sheet

资产负债表

会计报表01

编制单位: A大豆公司

2007年1月

单位: 元

资产	资产行次	资产年初数	资产年末数	负债和所有者权益 (或股东权益)	负债行次	负债年初数	负债年末数
流动资产:				流动负债:			
货币资金	1	¥500,300.00	¥3,778,787.00	短期借款	81	¥200,000.00	¥0.00
短期投资	2	¥0.00	¥500,000.00	应付票据	82	¥0.00	¥112,854.00
应收票据	3	¥150,000.00	¥1,143,675.00	应付账款	83	¥112,380.00	¥103,456.00
应收股利	4	¥0.00	¥0.00	预收账款	84	¥44,000.00	¥0.00
应收利息	5	¥0.00	¥0.00	应付工资	85	¥0.00	¥7,340.00
应收账款	6	¥0.00	¥489,816.00	应收福利费	86	¥15,000.00	¥13,247.00
其他应收款	7	¥1,500.00	¥2,444.00	应付股利	87	¥0.00	¥0.00
预付账款	8	¥0.00	¥0.00	应交税金	88	¥157,000.00	¥672,289.00
应收补贴款	9	¥0.00	¥0.00	其他应付款	89	¥4,000.00	¥13,431.00
存货	10	¥3,567,617.00	¥2,906,987.00	其他应付款	90	¥0.00	¥0.00
待摊费用	11	¥600.00	¥0.00	预提费用	91	¥1,700.00	¥0.00
一年内到期的长期债权投资	21	¥0.00	¥0.00	预计负债	92	¥0.00	¥0.00
其他流动资产	24	¥0.00	¥0.00	一年内到期的长期负债	95	¥0.00	¥0.00
流动资产合计	31	¥4,220,217.00	¥8,821,690.00	其他流动负债	100	¥0.00	¥0.00
长期投资:				流动负债合计	110	¥534,080.00	¥922,616.00
长期股权投资	32	¥130,000.00	¥176,800.00	长期负债:			
长期债权投资	33	¥0.00	¥100,000.00	长期借款	111	¥266,750.00	¥268,000.00
长期投资合计	38	¥130,000.00	¥276,800.00	应付债券	112	¥0.00	¥0.00
固定资产:				长期应付款	113	¥0.00	¥0.00
固定资产原价	39	¥8,375,323.00	¥8,894,283.00	专项应付款	116	¥0.00	¥0.00
其中: 生产性生物资产原价	40	¥0.00	¥0.00	其他长期负债	118	¥0.00	¥0.00
社会性固定资产原价	41	¥0.00	¥0.00	长期负债合计	120	¥266,750.00	¥268,000.00
减: 累计折旧	48	¥2,962,170.00	¥2,998,477.00				
其中: 生产性生物资产累计折旧	49	¥0.00	¥0.00	递延税项:			
社会性固定资产累计折旧	50	¥0.00	¥0.00	递延税款贷项	121	¥0.00	¥0.00
固定资产净值	55	¥5,413,153.00	¥5,895,806.00	负债合计	124	¥800,830.00	¥1,190,616.00
减: 固定资产减值准备	56	¥0.00	¥0.00	所有者权益 (股东权益):			
其中: 生产性生物资产减值准备	57	¥0.00	¥0.00	实收资本 (或股本)	125	¥6,800,000.00	¥8,920,000.00
固定资产净额	60	¥5,413,153.00	¥5,895,806.00	减: 已归还投资	126	¥0.00	¥0.00
工程物资	61	¥0.00	¥0.00	实收资本 (或股本) 净额	127	¥0.00	¥0.00
在建工程	62	¥14,660.00	¥0.00	资本公积	128	¥500,000.00	¥1,506,800.00
其中: 生物性在建工程	63	¥0.00	¥0.00	其中: 公益林基金	129	¥0.00	¥0.00
固定资产清理	65	¥0.00	¥200.00	盈余公积	130	¥300,000.00	¥300,000.00
固定资产合计	66	¥5,427,813.00	¥5,896,006.00	其中: 法定公益金	131	¥0.00	¥0.00
无形资产及其他资产:				未分配利润	132	¥0.00	¥0.00
无形资产	67	¥0.00	¥0.00	所有者权益 (股东权益) 合计	133	¥8,979,200.00	¥13,803,091.00
长期待摊费用	68	¥2,000.00	¥500.00				
其他长期资产	69	¥0.00	¥-1,288.00				
其中: 公益林	70	¥0.00	¥0.00				
消耗性林木资产	71	¥0.00	¥0.00				
无形资产及其他资产合计	75	¥2,000.00	¥-788.00				
递延税项:							
递延税款借项	77	¥0.00	¥0.00				
资产总计	80	¥9,780,030.00	¥14,993,708.00	负债和所有者权益 (或股东权益) 总计	134	¥9,780,030.00	¥14,993,708.00

4.1.6.2 Income Statement

Table 4.2 Income statement

利润表

会计报表02

编制单位：某大豆加工公司

2007年1月

单位：元

项目	本月数	本年累计数
一、主营业务收入	¥3,087,098.00	¥3,087,098.00
减：主营业务成本	¥1,331,932.00	¥1,331,932.00
主营业务税金及附加	¥25,911.00	¥25,911.00
二、主营业务利润	¥1,729,255.00	¥1,729,255.00
加：其他业务利润	¥1,467.00	¥1,467.00
家庭农场实际上交利润	¥0.00	¥0.00
减：营业费用	¥6,648.00	¥6,648.00
管理费用	¥22,483.00	¥22,483.00
财务费用	¥4,148.00	¥4,148.00
三、营业利润	¥1,697,443.00	¥1,697,443.00
加：投资收益	¥0.00	¥0.00
补贴收入	¥0.00	¥0.00
营业外收入	¥0.00	¥0.00
减：营业外支出	¥352.00	¥352.00
加：以前年度损益调整	¥0.00	¥0.00
四、税前利润	¥1,697,091.00	¥1,697,091.00
减：所得税	¥0.00	¥0.00
五、净利润	¥1,697,091.00	¥1,697,091.00
六、社会性收支差额	¥0.00	¥0.00
补充资料	¥0.00	¥0.00
1. 出售、处置部门或被投资单位所得收益	¥0.00	¥0.00
2. 自然灾害发生的损失	¥0.00	¥0.00
3. 会计政策变更增加（或减少）净利润	¥0.00	¥0.00
4. 会计估计变更增加（或减少）净利润	¥0.00	¥0.00
5. 债务重组损失	¥0.00	¥0.00
6. 其他	¥0.00	¥0.00

The income statement, also known as the statement of profit and loss, the earnings statement, or the operations statement, presents the details of the earnings achieved for the period. The income statement separately itemizes revenues and expenses, which result from the company's ongoing major or central operations, and the gains and losses arising from incidental or peripheral transactions. When revenues and gains exceed expenses and losses, net income is realized. Net income for the period increases equity. The results of the firm's operating activities for the period as presented in the income statement provide information that can be used to predict the amount, timing, and uncertainty of future cash flows. This statement is useful to investors, creditors, and other users in determining the profit ability of operations.

The system supplies the income statement for each accounting period to the user, and the information of the income statement is generated by the system, which saves the user's time in making out it by manual. Moreover, the system saves information of income statement for each accounting period into the historical database automatically. There are two models of the income statement: multiple-step income statement and single-step income statement now. In China the enterprise often uses the multiple-step income statement, hence, in this system, the model of the income statement is the multiple-step income statement shown in the table 4.2.

4.1.6.3 Cash Flow Statement

Cash flow statement is a summary of a company's cash flow over a given period of time. The statement of cash flows presents cash receipts and payments classified by whether they stem from operating, investing, or financing activities and provides definitions of each category. Information about key investing and financing activities not resulting in cash receipts or payments in the period must be provided separately. The cash from operating activities reported on the statement of cash flows must be reconciled to net income for the period. The cash flow statement is used by creditors and investors to determine whether cash will be available to meet debt and dividend payments.

Therefore, the system provides the cash flow statement for each accounting period to the user, and the information of the cash flow statement is gathered by the system, which releases the user from calculating it too. Furthermore, the system saves information of cash flow statement for each accounting period into the historical

database automatically. The table 4.3 displays the window of cash flow statement generated in this system.

Table 4.3 Cash flow statement

现金流量表

会计报表03

编制单位：某大豆加工公司

2007年1月

单位：元

项目	行次	金额
一、经营活动产生的现金流量		¥0.00
销售商品、提供劳务收到的现金	1	¥1,657,294.00
收到的税费返还	3	¥0.00
收到的其他与经营活动有关的现金	8	¥0.00
现金流入小计	9	¥1,657,294.00
购买商品、接受劳务支付的现金	10	¥545,466.00
支付给职工以及为职工支付的现金	12	¥84,774.00
支付的各项税费	13	¥0.00
支付的其他与经营活动有关的现金	18	¥19,116.00
现金流出小计	20	¥649,357.00
经营活动产生的现金流量净额	21	¥1,007,937.00
二、投资活动产生的现金流量		¥0.00
收回投资所收到的现金	22	¥0.00
取得投资收益所收到的现金	23	¥0.00
处置固定资产、无形资产和其他长期资产所收回的现金净额	25	¥19,848.00
收到的其他与投资活动有关的现金	28	¥0.00
现金流入小计	29	¥19,848.00
购建固定资产、无形资产和其他长期资产所支付的现金	30	¥444,500.00
投资所支付的现金	31	¥100,000.00
支付的其他与投资活动有关的现金	35	¥0.00
现金流出小计	36	¥544,500.00
投资活动产生的现金流量净额	37	¥-524,652.00
三、筹资活动产生的现金流量		¥0.00
吸收投资所收到的现金	38	¥3,000,000.00
借款所收到的现金	40	¥0.00
收到的其他与筹资活动有关的现金	43	¥0.00
现金流入小计	44	¥3,000,000.00
偿还债务所支付的现金	45	¥200,000.00
分配股利、利润和偿付利息所支付的现金	46	¥4,598.00
支付的其他与筹资活动有关的现金	52	¥0.00
现金流出小计	53	¥204,598.00
筹资活动产生的现金流量净额	54	¥2,795,402.00
四、汇率变动对现金的影响	55	¥0.00
五、社会性收支的现金流量	56	¥0.00
六、现金及现金等价物净增加额	57	¥3,278,687.00
补充资料		¥0.00
1. 将净利润调节为经营活动现金流量	58	¥0.00
净利润	59	¥0.00
加：计提的资产损失准备	60	¥0.00
固定资产折旧	61	¥0.00
无形资产摊销	62	¥0.00
长期待摊费用摊销	63	¥0.00
待摊费用减少（减：增加）	64	¥0.00
预提费用增加（减：减少）	65	¥0.00
处置固定资产、无形资产和其他长期资产的损失（减：收益）	66	¥0.00
固定资产报废损失	67	¥0.00
财务费用	68	¥0.00
投资损失（减：收益）	69	¥0.00
递延税款贷项（减：借项）	70	¥0.00
存货的减少（减：增加）	71	¥0.00
经营性应收项目的减少（减：增加）	72	¥0.00
经营性应付项目的增加（减：减少）	73	¥0.00
其他	74	¥0.00
经营活动产生的现金流量净额	75	¥0.00
2. 不涉及现金收支的投资和筹资活动：		¥0.00
债务转为资本	76	¥0.00
一年内到期的可转换公司债券	77	¥0.00
融资租入固定资产	78	¥0.00
3. 现金及现金等价物净增加情况：		¥0.00
现金的期末余额	79	¥0.00
减：现金的期初余额	80	¥0.00
加：现金等价物的期末余额	81	¥0.00
减：现金等价物的期初余额	82	¥0.00
现金及现金等价物净增加额	83	¥0.00

4.1.6.4 Schedules

Based on the definitions of the balance sheet, income statement and cash flow statement, they reflect the situation of the enterprise in different degree and level, each of them is very essential for the enterprise. However, except them, there are important schedules that are the supplement and explanation for the financial reports, such as asset diminution, depreciation of biological assets and farm produce, owner equity, added value tax payable, book value of biological assets, profit allocation and social charge and discharge and so on. The allocation of profit schedule and social charge and discharge schedule are the supplement for the income statement, and the other schedules are the supplement for the balance sheet.

During the development, in order to ensure the system's application, the appearance of each schedule is developed similarly, thus, we only take the widow of the allocation of profit schedule as a case to explain the schedules' function and how to use it.

The profit allocation schedule reflects that the net profit of this accounting period and undistributed profit of last accounting period are how to allocated in business, it is the supplement for the income statement and explains the allocation of the income statement. The profit allocation schedule provided by this system is shown in figure 4.20 (a). The buttons in section A of figure 4.20 (a) and (b) are the "Derive data", "Calculate", "Save", "Print", and "Exit" from left to right in order. The section B in figure 4.20 (a) and (b) shows the content of the profit allocation schedule.

The last two buttons is designed to print the schedule and exit the current window respectively. Because the data of this schedule is composed of the direct data and

indirect data, so the first button developed in the system to get the direct data, the other data must be filled by the user. Therefore, press the first button, the change will appear in the section B of figure 4.20 (b).

Besides, the data of the forth row is from summarizing the first row, second row and the third row in the profit allocation schedule according to accounting rule, so the system provides the second button in section A to the user for calculation. If the user presses the second button, the change will appear in section B of figure 4.20 (c). In addition, the function of the second button varies with the different schedule, which is based on the accounting rule. But its primary function is to perform calculation.

Figure 4.20-a Window of the profit allocation schedule

利润表附表

取数 计算 保存 打印 退出

编制单位: A大豆公司

利润分配表

2007年1月

会企02附表1

单位: 元

项 目	行次	本期实际	上期实际
一、净利润	1	1,697,091.00	
加: 年初未分配利润	2	1,379,200.00	
其他转入	4		
二、可供分配的利润	8		
减: 提取法定盈余公积	9		
提取法定公益金	10		
提取职工奖励及福利基金	11		
提取储备基金	12		
提取农业企业发展基金	13		
利润归还投资	14		
三、可供投资者分配的利润	16		
减: 应付优先股股利	17		
提取任意盈余公积	18		
应付普通股股利	19		
转作资本(或股利)的普通股股利	20		
四、未分配利润	25		

Figure 4.20-b Window of the profit allocation schedule

利润表附表

取数 计算 保存 打印 退出

编制单位: A大豆公司

利润分配表

2007年1月

会企02附表1

单位: 元

项 目	行次	本期实际	上期实际
一、净利润	1	1,697,091.00	
加: 年初未分配利润	2	1,379,200.00	
其他转入	4		
二、可供分配的利润	8	3,076,291.00	0.00
减: 提取法定盈余公积	9		
提取法定公益金	10		
提取职工奖励及福利基金	11		
提取储备基金	12		
提取农业企业发展基金	13		
利润归还投资	14		
三、可供投资者分配的利润	16	3,076,291.00	0.00
减: 应付优先股股利	17		
提取任意盈余公积	18		
应付普通股股利	19		
转作资本(或股利)的普通股股利	20		
四、未分配利润	25	3,076,291.00	0.00

Figure 4.20-c Window of the profit allocation schedule

Because the system is capable of transforming this schedules into text file, the

function of third button is a little different from the ever "Save" button in the system. If the user presses it, the system gives a window shown in figure 4.21(a), where the user inputs the file name and saves it. After the system saves the file according to the user's order, the system gives a window of the information for saving file successfully, as shown in figure 4.21(b).



(a) (b)
Figure 4.21 Information of saving the schedule

On the whole, the management of financial reports and some schedules in this system has been explained. In the following, we will introduce the system is how to manage the historical information.

4.1.7 Backup and Restore of Accounting Information

4.1.7.1 Database Backup

According to the accounting rule, the accounting information must be kept for 15 years, thus the system provides function of the database backup and database restore. In addition, the database backup and database restore can guarantee the accounting data safety. When the accounting data is changed, the user can use this function to save the data. If once the system falls into the trouble, the system can use the database restore to rebuild the new data source, therefore, it can keep the accounting data from being broken.

If the user presses the menu of database backup, the window of the database backup

will appear shown in figure 4.22(a). After the user selecting the disk device and the path, we can see that the section circled by the red line in figure 4.22(b) displays save path.

If there is a file in the place where the user wants to do the database backup, the system will give the information shown in figure 4.23 (a) to ask whether use the new file instead of the former file. After the system performing the database backup according to the user's order, the system presents a window of the information for saving file successfully, as shown in figure 4.23 (b).



Figure 4.22 Window of database backup

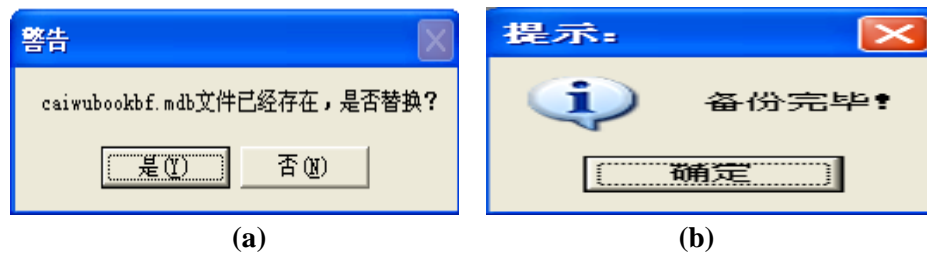


Figure 4.23 Information of database backup

4.1.7.2 Database Restore

If the user presses the menu of database restore, the window of the database restore will appear shown in figure 4.24 (a). After the disk device, the path and the file selected, the results are shown as the section circled by the red line in figure 4.24 (b).

In order to avoid the fault when restoring the database, the system will give the

information shown in figure 4.25 (a) to warn the user. After the system carrying out the database restore according to the user's order, the window of the information for restoring file successfully will appear, as shown in figure 4.25 (b).

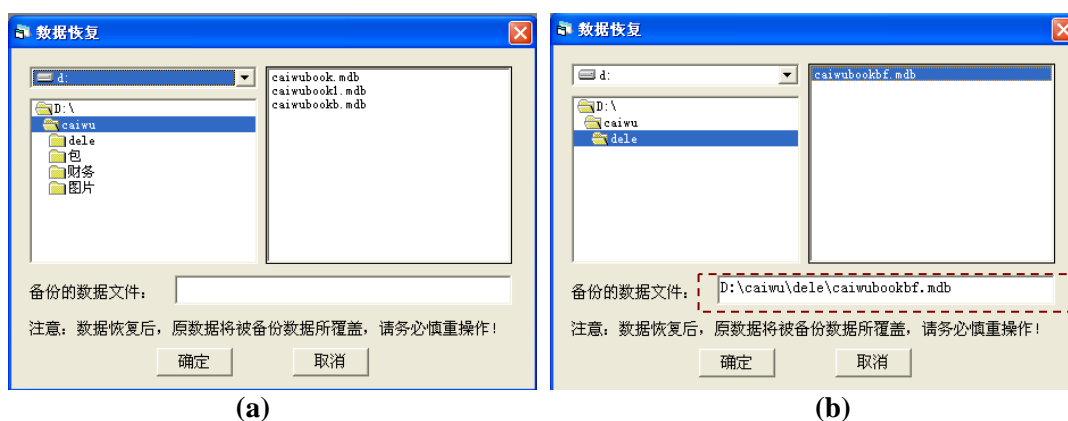


Figure 4.24 Window of database restore

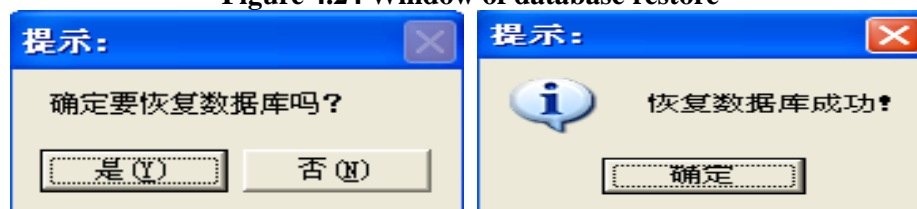


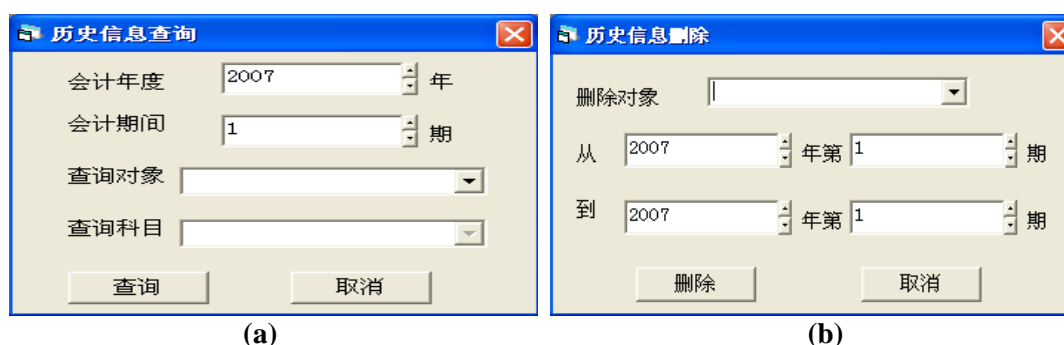
Figure 4.25 Information of database restore

4.1.7.3 Management of Historical Information

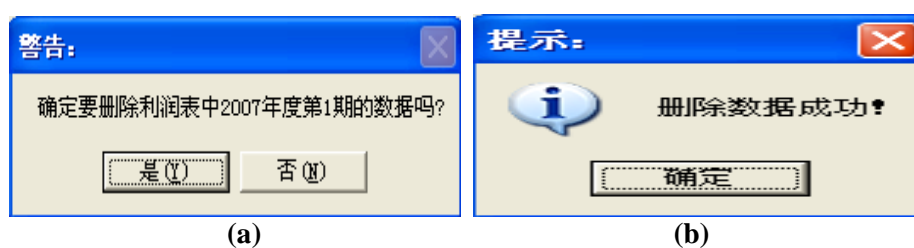
The management of historical information is composed of the two modules: the information query and information delete. The user can do the query based on the fiscal year, accounting period, and the object name in the window shown in figure 4.26 (a). When the query object is the ledger or subsidiary ledger, the user can do the detailed query, that is to say, the user can perform the query related to the accounting subject of ledger or subsidiary ledger. Besides, the user can delete the information in the window shown in figure 4.26 (b).

In order to avoid the fault when deleting the accounting information, the system will give the information shown in figure 4.27 (a) to warn the user. After the information

deleted, the window of the information for deleting successfully will be shown as figure 4.27 (b).



(a) (b)
Figure 4.26 Management for historical information



(a) (b)
Figure 4.27 Warning information of management of historical information

On the whole, the above statements have indicated the main functions of this system: after the user inputting the information for accounting evidence into the system, the system can generate the ledger and subsidiary ledger. Moreover, the system can auto generate the balance sheet, income statement, cash flow statement and some schedules. In order to guarantee system safety, the system provides the database backup and database restore. Similarly, the system supplies management for historical data based on the agriculture enterprise accounting rule. In the next part the application effect will be demonstrated.

4.2 Application Effect of Financial Accounting System

4.2.1 Description of Application Object

Company X is a soybean processing agricultural enterprise that was converted into

private enterprise in the middle of 1990s, and then used the computer to manage the accounting information. Now Company X is using the Ufida to keep accounts. As the Ufida can not generate its specific financial reports, the manual bookkeeping is still reserved. First of all, set the system parameters. That is, Company X used 12 accounting periods per year, the account started from January 1st, 2007. The figure 4.28–4.37 showed the results of the first accounting period.

4.2.2 Set Accounting Subjects

For Company X, the accounting subjects provided by the system are sufficient, and the accounting subjects of current fiscal year are same as the previous fiscal year's, so these accounting subjects were used directly without any changes as shown in figure 4.28. It saved the user time in accounting subjects input. Using the treeview to display five types of accounting subjects in left side is very distinct, and it is convenient to operate them in right side.

4.2.3 Set Balance for Each Accounting Subject in Accounting Beginning Period

As to Company X, the accounting period started from January 1st, 2007, so the opening balance for all accounting subjects of the first accounting period of 2007 is the value end-of-period value of 2006. In this way, the end-of-period value of 2006 as the opening balance for accounting subjects of the first accounting period of 2007 was input into the system, and the results is shown in figure 4.29. From the second accounting period the opening balance for all accounting subjects was set automatically by the system, so it saved a lot of time in set balance and avoided input error.

4.2.4 Input Accounting Evidence

For Company X the accounting evidences were input when the transactions happened

as shown in figure 4.30. The accounting evidences contains the items, such as, the number of accounting evidence, sum for debit and credit, description, date, kind of accounting evidence, and the name of a person in charge etc. And these items are capable of describing the transaction of Company X exactly. There are only three items need to be filled by manual, and the other items are entered by choice or input automatically. For instance, after inputting the accounting entries, the corresponding sum for debit and credit was input by the system. Hence, the system simplified the enter work so that shorten the time of keeping accounts, and owing to automatic input and choice, it avoided mistake resulted from data input to some degree. As to generating the cash flow statement, Company X usually uses its current software to calculate each item of the cash flow statement at the end of accounting period. In this system, while inputting the accounting evidence whether the each item of accounting entry record is related to the cash flow statement or not has already been recorded, so it is unnecessary that search for the accounting entries corresponding with the cash flow statement, which reduced the calculation task of end-period. All these entries are depicted in figure 4.30.



Figure 4.28 Setting accounting subject

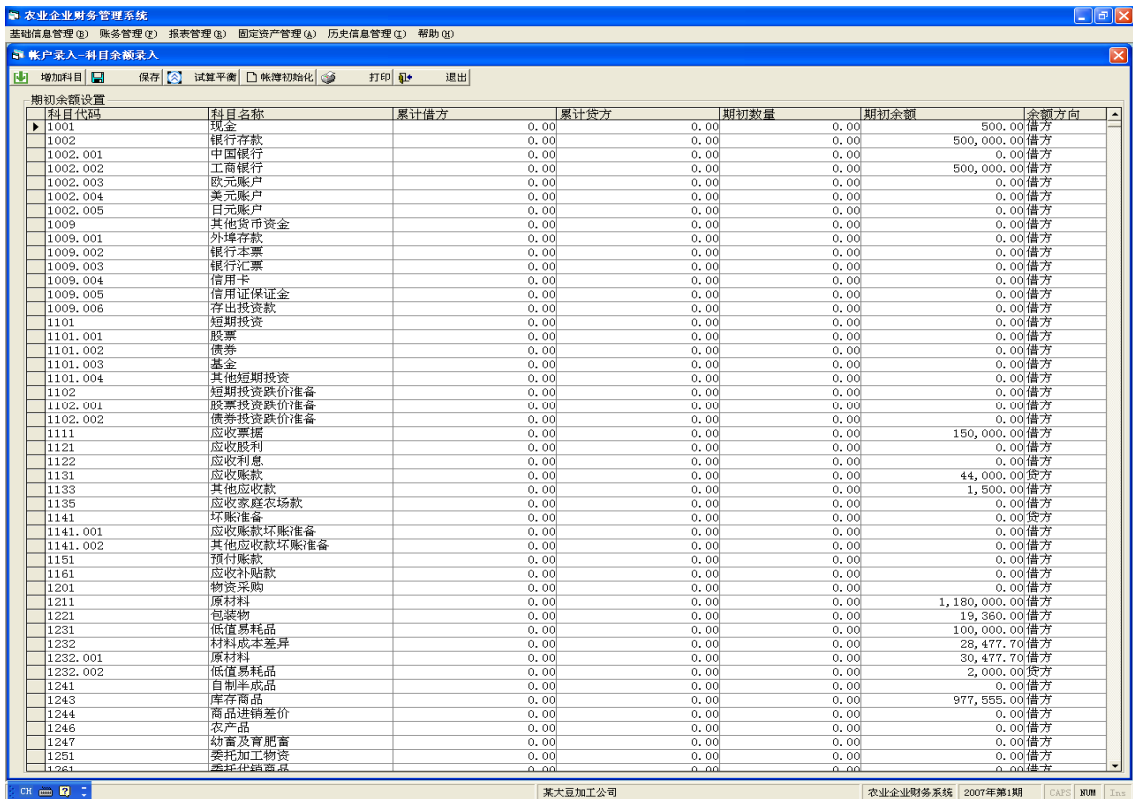


Figure 4.29 Setting balance for every accounting subject in accounting beginning period

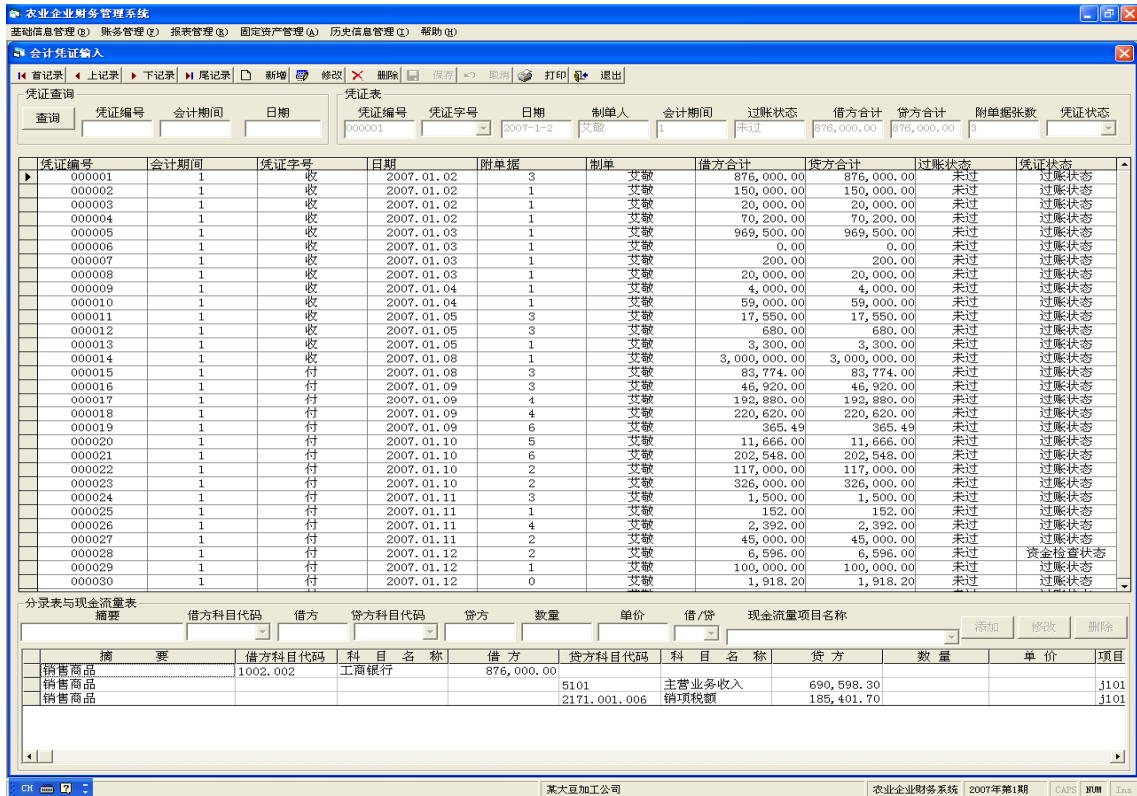


Figure 4.30 Accounting evidence management

4.2.5 End of Accounting Period Calculations

As to Company X, the ledger, subsidiary ledger, the three basic financial reports and subsidiary schedules are essential for it that were generated automatically at the end of accounting period as shown in figure 4.31–4.37. These automatic generations made complicated work simplify, avoided a posting mistake and a calculation mistake, and had much effect on labor-saving. It is more important that some schedules generated automatically simplified their works.

农业企业财务管理系统

基础信息管理 (B) 账务管理 (F) 报表管理 (B) 固定资产管理 (A) 历史信息管理 (I) 帮助 (H)

总分类帐查询

历史记录 上记录 下记录 尾记录 打印 退出

搜索 科目代码 助记码 无发生金额的显示 记录数:102

科目代码	会计期间	期初余额	本期借方合计	本期贷方合计	本年借方累计	本年贷方累计	余额	余额方向
1001	1	500.00	98,554.00	1,496.94	98,554.00	1,496.94	97,557.06	借方
1002	1	500,000.00	5,184,499.45	1,962,269.07	5,184,499.45	1,962,269.07	3,722,230.38	借方
1009	1	0.00	0.00	41,000.00	0.00	41,000.00	41,000.00	贷方
1101	1	0.00	500,000.00	0.00	500,000.00	0.00	500,000.00	借方
1102	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1111	1	150,000.00	1,143,675.00	150,000.00	1,143,675.00	150,000.00	1,143,675.00	借方
1121	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1122	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1131	1	44,000.00	1,155,500.00	1,048,500.00	1,155,500.00	1,048,500.00	63,000.00	借方
1133	1	1,500.00	944.05	0.00	944.05	0.00	2,444.05	借方
1135	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1141	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1151	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1161	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1201	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1211	1	1,180,000.00	459,265.60	484,920.00	459,265.60	484,920.00	1,154,345.60	借方
1221	1	19,360.00	96,479.00	0.00	96,479.00	0.00	115,839.00	借方
1231	1	100,000.00	0.00	10,978.00	0.00	10,978.00	89,022.00	借方
1232	1	28,477.70	0.00	4,847.20	0.00	4,847.20	23,630.50	借方
1241	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1243	1	977,555.00	616,282.96	1,351,966.37	616,282.96	1,351,966.37	241,871.59	借方
1244	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1246	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1247	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1251	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1261	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1271	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1281	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1291	1	0.00	32,055.00	12,020.63	32,055.00	12,020.63	20,034.37	借方
1301	1	600.00	0.00	600.00	0.00	600.00	0.00	平
1401	1	130,000.00	46,800.00	0.00	46,800.00	0.00	176,800.00	借方
1402	1	0.00	100,000.00	0.00	100,000.00	0.00	100,000.00	借方
1421	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1431	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1501	1	8,375,323.21	609,160.00	90,200.00	609,160.00	90,200.00	8,894,283.21	借方
1502	1	2,962,170.00	29,800.00	66,107.10	29,800.00	66,107.10	2,998,477.10	贷方
1504	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1505	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1506	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1508	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1601	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1603	1	14,660.00	117,500.00	132,160.00	117,500.00	132,160.00	0.00	平
1605	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1607	1	0.00	0.00	0.00	0.00	0.00	0.00	平
1608	1	0.00	0.00	0.00	0.00	0.00	0.00	平

某大豆加工公司 农业企业财务系统 2007年第1期

Figure 4.31 Ledger management

农业企业财务管理系统

基础信息管理 (B) 账务管理 (F) 报表管理 (B) 固定资产管理 (A) 历史信息管理 (I) 帮助 (H)

明细帐查询

历史记录 上记录 下记录 尾记录 打印 退出

搜索 科目代码 助记码 记录数:310

凭证编号	会计期间	科目代码	摘要	借方	贷方	余额	余额方向
000000	1	1001	上年结转	500.00	0.00	500.00	借方
000012	1	1001	售出包装物	680.00	0.00	1,180.00	借方
000013	1	1001	计提租金	3,300.00	0.00	4,480.00	借方
000019	1	1001	行政科报销办公用品	0.00	365.49	4,114.51	借方
000026	1	1001	以支票支付生产资料公司退	0.00	52.00	4,062.51	借方
000034	1	1001	预支差旅费	0.00	400.00	3,662.51	借方
000035	1	1001	提备用金	800.00	0.00	4,462.51	借方
000037	1	1001	提现备发工资	93,774.00	0.00	98,236.51	借方
000039	1	1001	现金解交银行	0.00	99.45	98,137.06	借方
000041	1	1001	报办公室用品费, 田颖	0.00	580.00	97,557.06	借方
000000	1	1002	上年结转	500,000.00	0.00	500,000.00	借方
000014	1	1002.001	收到找货款	3,000,000.00	0.00	3,000,000.00	借方
000000	1	1002.002	上年结转	500,000.00	0.00	500,000.00	借方
000001	1	1002.002	销售商品	876,000.00	0.00	1,376,000.00	借方
000002	1	1002.002	提前10天贴现汇票	147,825.00	0.00	1,523,825.00	借方
000003	1	1002.002	预收大安大田公司货款	20,000.00	0.00	1,543,825.00	借方
000004	1	1002.002	生产资料公司以支票购进产品	70,200.00	0.00	1,614,025.00	借方
000005	1	1002.002	恒意机电公司承付货款	969,900.00	0.00	2,583,925.00	借方
000006	1	1002.002	利息收入	0.00	125.00	2,583,800.00	借方
000007	1	1002.002	收到租出设备租金	200.00	0.00	2,583,850.00	借方
000008	1	1002.002	收到出售车床价款	20,000.00	0.00	2,603,850.00	借方
000009	1	1002.002	转让D产品某部非专利技术	4,000.00	0.00	2,607,850.00	借方
000010	1	1002.002	预收大安美光公司B产品货款	59,000.00	0.00	2,666,850.00	借方
000011	1	1002.002	收到生资合成贸易公司货款	17,550.00	0.00	2,684,400.00	借方
000013	1	1002.002	提备用金	0.00	3,300.00	2,681,100.00	借方
000015	1	1002.002	发放工资	0.00	83,774.00	2,597,326.00	借方
000016	1	1002.002	购材料	0.00	5,920.00	2,591,406.00	借方
000017	1	1002.002	承付泰安光电厂货款及运杂	0.00	192,880.00	2,398,526.00	借方
000018	1	1002.002	承付机械厂圆钢款	0.00	220,620.00	2,177,906.00	借方
000020	1	1002.002	承付机械厂材料款	0.00	11,666.00	2,166,240.00	借方
000021	1	1002.002	支付短期借款利息同时还清	0.00	200,000.00	1,966,240.00	借方
000021	1	1002.002	支付短期借款利息同时还清	0.00	2,548.00	1,963,692.00	借方
000022	1	1002.002	购入H1010烘干设备交付安装	0.00	117,000.00	1,846,692.00	借方
000023	1	1002.002	购入卡车交付使用	0.00	326,000.00	1,520,692.00	借方
000024	1	1002.002	购入旧药天平	0.00	1,500.00	1,519,192.00	借方
000025	1	1002.002	支付折旧摊销清理费用	0.00	152.00	1,519,040.00	借方
000026	1	1002.002	以支票支付生产资料公司退	0.00	2,340.00	1,516,700.00	借方
000027	1	1002.002	生资合成贸易公司购货	0.00	3,816.00	1,512,884.00	借方
000028	1	1002.002	以支票支付包装运输费	0.00	6,596.00	1,506,288.00	借方
000029	1	1002.002	购入国债面值10万元	0.00	100,000.00	1,406,288.00	借方
000030	1	1002.002	拨付工会经费	0.00	1,918.20	1,404,369.80	借方
000031	1	1002.002	付职工医疗费	0.00	1,000.00	1,403,369.80	借方
000032	1	1002.002	付电费	0.00	9,804.60	1,393,565.20	借方
000033	1	1002.002	订购A电机设备	0.00	10,000.00	1,383,565.20	借方

某大豆加工公司 农业企业财务系统 2007年第1期

Figure 4.32 Subsidiary ledger management

资产负债表

会计报表01

编制单位: 某大豆加工公司		2007年1月		单位: 元			
资产	资产行次	资产年初数	资产年末数	负债和所有者权益 (或股东权益)	负债行次	负债年初数	负债年末数
流动资产:				流动负债:			
货币资金	1	¥500,500.00	¥3,778,787.00	短期借款	81	¥200,000.00	¥0.00
短期投资	2	¥0.00	¥500,000.00	应付票据	82	¥0.00	¥112,854.00
应收票据	3	¥150,000.00	¥1,143,675.00	应付账款	83	¥112,380.00	¥103,456.00
应收股利	4	¥0.00	¥0.00	预收账款	84	¥44,000.00	¥0.00
应收利息	5	¥0.00	¥0.00	应付工资	85	¥0.00	¥7,340.00
应收账款	6	¥0.00	¥489,816.00	应付福利费	86	¥15,000.00	¥13,247.00
其他应收款	7	¥1,500.00	¥2,444.00	应付股利	87	¥0.00	¥0.00
预付账款	8	¥0.00	¥0.00	应交税金	88	¥157,000.00	¥672,289.00
应收补贴款	9	¥0.00	¥0.00	其他应付款	89	¥4,000.00	¥13,431.00
存货	10	¥3,567,617.00	¥2,906,967.00	其他应付款	90	¥0.00	¥0.00
待摊费用	11	¥600.00	¥0.00	预提费用	91	¥1,700.00	¥0.00
一年内到期的长期股权投资	21	¥0.00	¥0.00	预计负债	92	¥0.00	¥0.00
其他流动资产	24	¥0.00	¥0.00	一年内到期的长期负债	95	¥0.00	¥0.00
流动资产合计	31	¥4,220,217.00	¥8,821,690.00	其他流动负债	100	¥0.00	¥0.00
长期投资:				流动负债合计	110	¥534,080.00	¥922,616.00
长期股权投资	32	¥130,000.00	¥176,800.00	长期负债:			
长期股权投资	33	¥0.00	¥100,000.00	长期借款	111	¥266,750.00	¥268,000.00
长期投资合计	38	¥130,000.00	¥276,800.00	应付债券	112	¥0.00	¥0.00
固定资产:				长期应付款	113	¥0.00	¥0.00
固定资产原价	39	¥8,375,323.00	¥8,894,283.00	专项应付款	116	¥0.00	¥0.00
其中: 生产性生物资产原价	40	¥0.00	¥0.00	其他长期负债	118	¥0.00	¥0.00
社会性固定资产原价	41	¥0.00	¥0.00	长期负债合计	120	¥266,750.00	¥268,000.00
减: 累计折旧	48	¥2,962,170.00	¥2,998,477.00				
其中: 生产性生物资产累计折旧	49	¥0.00	¥0.00	递延税项:			
社会性固定资产累计折旧	50	¥0.00	¥0.00	递延税款贷项	121	¥0.00	¥0.00
固定资产净值	55	¥5,413,153.00	¥5,895,806.00	负债合计	124	¥800,830.00	¥1,190,616.00
减: 固定资产减值准备	56	¥0.00	¥0.00	所有者权益 (股东权益):			
其中: 生产性生物资产减值准备	57	¥0.00	¥0.00	实收资本 (或股本)	125	¥6,800,000.00	¥8,920,000.00
固定资产净额	60	¥5,413,153.00	¥5,895,806.00	减: 已归还投资	126	¥0.00	¥0.00
工程物资	61	¥0.00	¥0.00	实收资本 (或股本) 净额	127	¥0.00	¥0.00
在建工程	62	¥14,660.00	¥0.00	资本公积	128	¥500,000.00	¥1,506,800.00
其中: 生物性在建工程	63	¥0.00	¥0.00	其中: 公益林基金	129	¥0.00	¥0.00
固定资产清理	65	¥0.00	¥200.00	盈余公积	130	¥300,000.00	¥300,000.00
固定资产合计	66	¥5,427,813.00	¥5,896,006.00	其中: 法定公益金	131	¥0.00	¥0.00
无形资产及其他资产:				未分配利润	132	¥0.00	¥0.00
无形资产	67	¥0.00	¥0.00	所有者权益 (股东权益) 合计	133	¥8,979,200.00	¥13,803,091.00
长期待摊费用	68	¥2,000.00	¥500.00				
其他长期资产	69	¥0.00	¥-1,288.00				
其中: 公益林	70	¥0.00	¥0.00				
消耗性林木资产	71	¥0.00	¥0.00				
无形资产及其他资产合计	75	¥2,000.00	¥-788.00				
递延税项:							
递延税款借项	77	¥0.00	¥0.00				
资产总计	80	¥9,780,030.00	¥14,993,708.00	负债和所有者权益 (或股东权益) 总计	134	¥9,780,030.00	¥14,993,708.00

Figure 4.33 Balance sheet

利润表

会计报表02

编制单位: 某大豆加工公司		2007年1月		单位: 元	
项目	本月数	本年累计数			
一、主营业务收入	¥3,087,098.00	¥3,087,098.00			
减: 主营业务成本	¥1,331,932.00	¥1,331,932.00			
主营业务税金及附加	¥25,911.00	¥25,911.00			
二、主营业务利润	¥1,729,255.00	¥1,729,255.00			
加: 其他业务利润	¥1,467.00	¥1,467.00			
家庭农场实际上交利润	¥0.00	¥0.00			
减: 营业费用	¥6,648.00	¥6,648.00			
管理费用	¥22,483.00	¥22,483.00			
财务费用	¥4,148.00	¥4,148.00			
三、营业利润	¥1,697,443.00	¥1,697,443.00			
加: 投资收益	¥0.00	¥0.00			
补贴收入	¥0.00	¥0.00			
营业外收入	¥0.00	¥0.00			
减: 营业外支出	¥352.00	¥352.00			
加: 以前年度损益调整	¥0.00	¥0.00			
四、税前利润	¥1,697,091.00	¥1,697,091.00			
减: 所得税	¥0.00	¥0.00			
五、净利润	¥1,697,091.00	¥1,697,091.00			
六、社会性收支差额	¥0.00	¥0.00			
补充资料	¥0.00	¥0.00			
1. 出售、处置部门或被投资单位所得收益	¥0.00	¥0.00			
2. 自然灾害发生的损失	¥0.00	¥0.00			
3. 会计政策变更增加 (或减少) 净利润	¥0.00	¥0.00			
4. 会计估计变更增加 (或减少) 净利润	¥0.00	¥0.00			
5. 债务重组损失	¥0.00	¥0.00			
6. 其他	¥0.00	¥0.00			

Figure 4.34 Income statement

现金流量表

会计报表03

编制单位：某大豆加工公司

2007年1月

单位：元

项目	行次	金额
一、经营活动产生的现金流量		¥0.00
销售商品，提供劳务收到的现金	1	¥1,657,294.00
收到的税费返还	3	¥0.00
收到的其他与经营活动有关的现金	8	¥0.00
现金流入小计	9	¥1,657,294.00
购买商品、接受劳务支付的现金	10	¥545,466.00
支付给职工以及为职工支付的现金	12	¥84,774.00
支付的各项税费	13	¥0.00
支付的其他与经营活动有关的现金	18	¥19,116.00
现金流出小计	20	¥649,357.00
经营活动产生的现金流量净额	21	¥1,007,937.00
二、投资活动产生的现金流量		¥0.00
收回投资所收到的现金	22	¥0.00
取得投资收益所收到的现金	23	¥0.00
处置固定资产、无形资产和其他长期资产所收回的现金净额	25	¥19,848.00
收到的其他与投资活动有关的现金	28	¥0.00
现金流入小计	29	¥19,848.00
购建固定资产、无形资产和其他长期资产所付的现金	30	¥444,500.00
投资所支付的现金	31	¥100,000.00
支付的其他与投资活动有关的现金	35	¥0.00
现金流出小计	36	¥544,500.00
投资活动产生的现金流量净额	37	¥-524,652.00
三、筹资活动产生的现金流量		¥0.00
吸收投资所收到的现金	38	¥3,000,000.00
借款所收到的现金	40	¥0.00
收到的其他与筹资活动有关的现金	43	¥0.00
现金流入小计	44	¥3,000,000.00
偿还债务所支付的现金	45	¥200,000.00
分配股利、利润和偿付利息所支付的现金	46	¥4,598.00
支付的其他与筹资活动有关的现金	52	¥0.00
现金流出小计	53	¥204,598.00
筹资活动产生的现金流量净额	54	¥2,795,402.00
四、汇率变动对现金的影响	55	¥0.00
五、社会性收支的现金流量	56	¥0.00
六、现金及现金等价物净增加额	57	¥3,278,687.00
补充资料		¥0.00
1. 将净利润调节为经营活动现金流量		¥0.00
净利润	58	¥0.00
加：计提的资产损失准备	60	¥0.00
固定资产折旧	61	¥0.00
无形资产摊销	62	¥0.00
长期待摊费用摊销	63	¥0.00
待摊费用减少（减：增加）	64	¥0.00
预提费用增加（减：减少）	65	¥0.00
处置固定资产、无形资产和其他长期资产的损失（减：收益）	66	¥0.00
固定资产报废损失	67	¥0.00
财务费用	68	¥0.00
投资损失（减：收益）	69	¥0.00
递延税款贷项（减：借项）	70	¥0.00
存货的减少（减：增加）	71	¥0.00
经营性应收项目的减少（减：增加）	72	¥0.00
经营性应付项目的增加（减：减少）	73	¥0.00
其他	74	¥0.00
经营活动产生的现金流量净额	75	¥0.00
2. 不涉及现金收支的投资和筹资活动：		¥0.00
债务转为资本	76	¥0.00
一年内到期的可转换公司债券	77	¥0.00
融资租入固定资产	78	¥0.00
3. 现金及现金等价物净增加情况：		¥0.00
现金的期末余额	79	¥0.00
减：现金的期初余额	80	¥0.00
加：现金等价物的期末余额	81	¥0.00
减：现金等价物的期初余额	82	¥0.00
现金及现金等价物净增加额	83	¥0.00

Figure 4.35 Cash flow statement

应交增值税明细表			
编制单位： 某大豆加工公司		2007年 1月	
		会企01表附表3 单位：元	
项 目	行 次	本月数	本年累计数
一、应交增值税			
1. 年初未抵扣数 (以“-”号填列)	1		
2. 销项税额	2	592,905.50	592,905.50
出口税额	3		
进项税额转出	4		
转出多交增值税	5		
	6		
	7		
3. 进项税额	8	-94,330.27	-94,330.27
已交税金	9		
减免税款	10		
出口抵减内销产品应纳税额	11		
转出未交增值税	12	592,905.50	592,905.50
	13		
	14		
4. 期末未交扣数 (以“-”号填列)	15		
二、未交增值税			
1. 年初未交数 (多交数以“-”号填列)	16		
2. 本期转入数 (多交数以“-”号填列)	17		
3. 本期已交数	18		
4. 期末未交数 (多交数以“-”号填列)	19		

Figure 4.36 Value added tax payable schedule

资产减值准备明细表				
编制单位： 某大豆加工公司		2007年 1月		单位：元
项 目	年初余额	本期增加数	本期回转数	年末余额
一、坏账准备合计				
其中：应收账款				
其他应收账款				
二、短期投资跌价准备合计				
其中：股票投资				
债券投资				
三、存货跌价准备合计				
其中：库存商品				
原材料				
四、长期投资减值准备合计				
其中：长期股权投资	130,000.00	146,800.00		276,800.00
长期债权投资		100,000.00		100,000.00
五、固定资产减值准备合计				
其中：房屋、建筑物				
机械设备				
六、无形资产减值准备合计				
其中：专利权				
商标权				
七、在建工程减值准备				
八、委托贷款减值准备				

Figure 4.37 Assets diminution schedule

4.2.6 Discussion

Based on the effect of application, it was concluded that the software was capable of managing accounting subject, the accounting evidence and accounting entry simply and conveniently, data processing was faster and more accurate than manual accounting, the financial reports were complete and reduced the tasks of accounting calculation. And after the software applied to the enterprise, there are some influences on the financial accounting management as following:

Run the system without high requirement of operating environment it reduced the economic burden of the enterprise.

Enter into the system directly and deal with the transactions without too many settings in beginning period such as set customer relationships, set purchase and sale, etc. Hence, for keeping accounts it was capable of simplifying the user's work greatly, and as to the software training, it was unnecessary to spend too much time to remember how to set in the beginning period.

Generate the financial reports and some schedules automatically.

This software was tested with the survey accounting data cooperating with Company X. It was said that the software was capable of managing accounting subject, the accounting evidence and accounting entry simply and conveniently, data processing was faster and more accurate than manual accounting, the financial reports were complete and reduced the tasks of accounting calculation. It was more reasonably and effectively while complying with the latest accounting rules. This system being simple to operate,

free after-service and less expensive is expected to be acceptable by the Chinese agricultural enterprises.

4.3 Summary

The financial accounting system was developed by utilizing the software development languages Microsoft Visual Basic 6.0 and the database Microsoft Access 2003/2007, with the operating system of Microsoft Windows XP/Vista. The two development tools demand for cheap computer configuration, which is helpful for facilitating the widespread use of software. Company X assisted us to apply the system, the effect of the system has been demonstrated, and alternation was made to the deficient sections of the system.

After application, it was concluded that the software was capable of managing accounting well, having simple data entry, data processing was faster and more accurate than manual accounting, the financial reports were complete and reduced the tasks of accounting calculation. And in next chapter the same contents of business analysis system will be provided.

Chapter V Development of Business Analysis Software for Chinese Agricultural Enterprise

Business analysis can enhance the corporate managers' understanding of business situation in order to facilitate improved decision (Du and Cheng, 2007). It covers a wide field, such as focuses on understanding the needs of the business as a whole, its strategic direction, and identifying initiatives that will allow a business to meet those strategic goals. Thus, the business analysis in this research is limited to financial statement analysis and break even analysis for product. The financial statement analysis is performed to analyze balance sheet, income statement and cash flow statement, give a summary of previous business management, and provide references for manager making strategic decisions. While the break even analysis is performed to understand the interrelationships among cost, volume and profit, and provide important management information for decision making in areas such as production, marketing and product development.

Although there are remarkable progresses in development of computer technology, promotion of its application and accounting software, there is few business software available on the Chinese market as it is not mandatory for the enterprises to use software to perform business operations. Moreover, the current software packages lack comprehensive business analysis features except simple business analysis features.

Therefore, the main objectives of this chapter are to introduce main modules of the business analysis system and how to use them, finally summarize and discuss its field

effect.

5.1 Introduction of Business Analysis System

5.1.1 Main Modules and Use Procedure for the System

5.1.1.1 Use Procedure

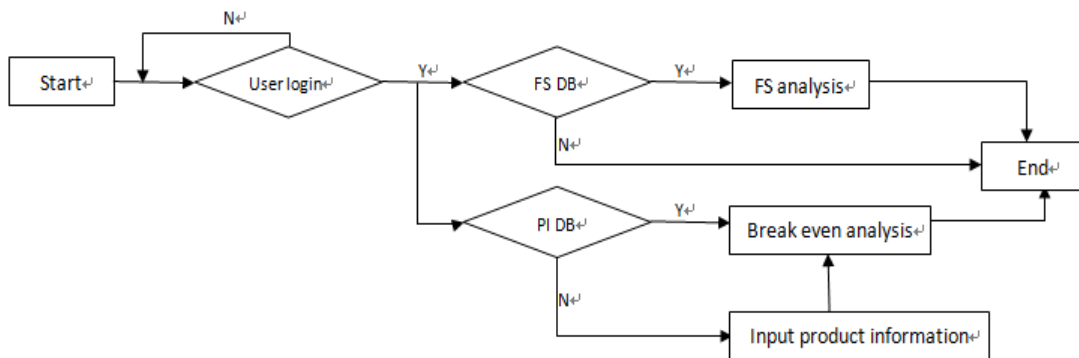


Figure 5.1 Flow chart of business analysis system

Source: self-projection

Note: FS---Financial statement, PI---Product information, DB---Database.

The flow chart shown in figure 5.1 demonstrates the process of using the business analysis system to perform business analysis in detailed.

- 1) The system starts.
- 2) The user enters the window for login. The user can log on the system and use the function modules with the right user name and password, or else the system will exit automatically when the times of login exceed three.
- 3) There are two function modules, financial statement analysis and break even analysis. When there are data in financial statement database, the module of financial statement analysis can be activated, likewise if the database of product information is vacant, the module of break even analysis can't work.

4) The system finishes.

5.1.1.2 Main Modules

The focus of the system is on carrying out analysis for financial statement and products, hence, there are two function modules for this system, financial statement analysis and break even analysis respectively referring to figure 5.2. The financial statements generated by financial accounting system are automatically used for the financial statement analysis in the process of business analysis. While the production related data necessary for break even analysis needs to be input into the system by the user (The system provides a window for managing the product-related information).

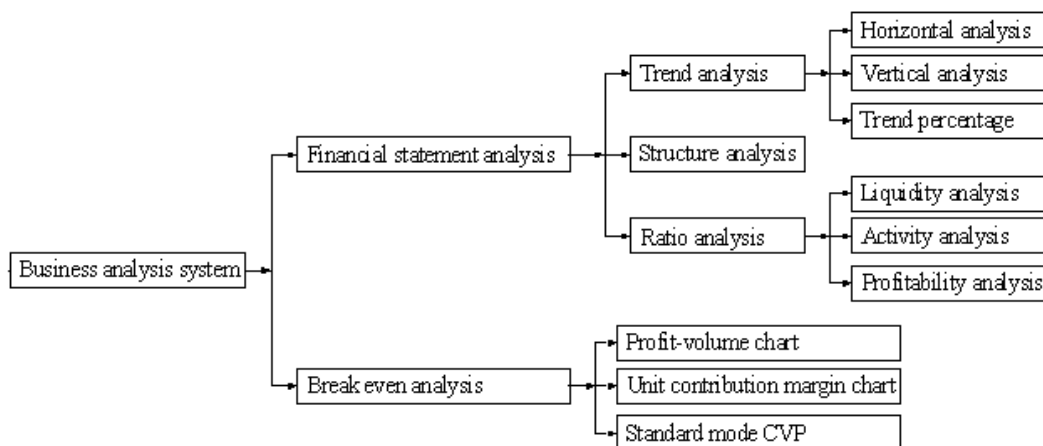


Figure 5.2 Main modules of business analysis system

Financial statement analysis

In this system, there are various methods used to reflect the viability, stability and profitability of a business, such as ratio analysis, trend analysis and structure analysis, and the last two methods are specific to the proposed system. The structure analysis and trend analysis cover different analysis classifications based on the financial statements. For example, in case of structure analysis, the structure analysis for income statement includes the analysis for operating profit, profit and net profit, the structure analysis for

balance sheet is composed of overall structure analysis and analysis of assets and liabilities, as well as the structure analysis for cash flow statement covers the analysis for cash inflows, cash outflows and net cash flows. While in trend analysis, the horizontal analysis, vertical analysis and trend percentage are performed for balance sheet, income statement and cash flow statement. Moreover, the ratio analysis covers liquidity analysis (short-term and long-term), activity analysis and profitability analysis in order to show the changes in the financial condition of the business and highlight the factors related to the business.

All analyses are carried out by comparing of one or more years' financial data and are showed appearing on chart and grid in percentage form as well as in monetary unit (Yuan). Each analysis provides two outputs. One output shows results of 12 accounting periods related to one fiscal year, other output illustrates results of the corresponding accounting periods of 3 years, 5 years, 10 years and 15 years. In addition, it is capable of presenting the explanations of analysis result, such as the standard value, assessing the effect of the ratio's change on corporate management.

Break even analysis

Break even analysis is an important tool in many business decisions as it is useful for corporate managers to calculate the break even point (BEP) and understand the interrelationships among cost, volume and profit. There are three types of cost-volume-profit (CVP) graph provided in this system as presented in figure 5.1. All the three types of CVP graph are capable of showing BEP. The relationships among sales price, total costs, fixed costs, profit and volume can be expressed graphically by

preparing a standard mode CVP graph, while the unit contribution margin chart and profit-volume chart demonstrate interrelationships among sales price, total costs, unit contribution margin, variable costs, profit and volume, and interrelationships among units, revenue and profit respectively. In addition, the unit contribution margin chart highlights the profit which is computed as contribution margin minus fixed asset, while the profit-volume chart puts emphasis on illustrating the number of units and the revenue simultaneously when the break even point is reached. The last two types of CVP chart are unique features of the system. The system can show the analysis for each product in three charts, and illustrate the profit, loss, BEP in every graph, and assess the effect of changing prices, sales volume and costs on profits.

5.1.2 Product Information Setting

In this system, it is necessary that there are two kinds of data while performing business analysis. As the financial accounting system provides the financial statements for this system, the production related data necessary for break even analysis needs to be input into the system by the user, thus the system provides a window for managing the product-related information shown as figure 5.3.

The product-related data necessary for break even analysis are composed of sale price, volume, profit, fixed cost and unavailable cost. When the product information is saved, the system assigns each product a unique product ID automatically. Sales revenue, contribution margin and contribution margin rate are calculated by the system based on product-related information.

产品编号	销售单价	销售数量	销售收入	销售收入比率	固定成本	变动成本	贡献毛益	贡献毛益率
001	10	10000	100000	.125	0	60000	40000	.4
002	20	20000	400000	.5	0	200000	200000	.5
003	50	6000	300000	.375	0	180000	120000	.4

Figure 5.3 Management for product-related information

In this window, the management for product-related information mainly includes following features, add new product-related information, modify, delete and print the existing product-related information. The system provides 4 buttons to perform those works, "add" button, "modify" button, "delete" button and "print" button shown in A section of figure 5.2 from left to right in turn. In addition, the system also provides a "save" button to save the product-related data into the database. While the system performs saving work, the sales revenue, contribution margin and contribution margin rate are also calculated and saved simultaneously by the system. The grid (referring to B section of figure 5.3) shows all products information after the user completing the inputting work. Likewise, the grid is also developed to deal with the information, such as, delete or modify the item of product-related information. Whether delete or modify the system requires that the operating object of the user is the item selected, that is to

say, before perform the work for deleting or modifying the item of product-related information it should select the relating item of product-related information, and then press the button to finish the operation.

5.2 Financial Statement Analysis and Field Effect

The financial statement analysis is performed to analyze the balance sheet, income statement and cash flow statement, which mainly covers ratio analysis, trend analysis and structure analysis. The trend analysis is facilitated by displaying changes of accounting items between years in real number and percentage form, identifying key factors that have effected changes and how the changes will influence on future's development. Trend analysis includes vertical analysis, trend percentage and horizontal analysis. Vertical analysis displays changes between years in real number as well as in percentage via calculating each accounting item as a percentage of a reference item in the same financial statement. Trend percentage shows changes between years in real number as well as in percentage via calculating each accounting item in financial statements of other consecutive years as a percentage of the same item in financial statements of a reference year. Horizontal analysis provides periodic fluctuations in the form of real numbers and percentages between years via dividing each accounting item of a particular year by the same item in the following year. While in structure analysis each item is stated as a percentage of some total of which that item is a part, key financial changes, trends and relationships among each item of financial statement are highlighted, which enables to have a clear understanding about the financial status of

the business. Structure analysis covers different analysis classifications based on the financial statements.

5.2.1 Using Method for Financial Statement Analysis

As mentioned above, all analyses are carried out by comparing of one or more years' financial data and are showed appearing on chart and grid in percentage form as well as in monetary unit (Yuan). Each analysis provides two outputs. One output shows results of 12 accounting periods related to one fiscal year, other output illustrates results of the corresponding accounting periods of 3 years, 5 years, 10 years and 15 years. Thereby, during development of financial statement analysis the same design is adopted in window layout to simplify the user's work and ensure operation easily.

Therefore, to demonstrate how to use the various analyses the window of the current ratio analysis shown in figure 5.4 is taken as a case. In this window, there are two outputs for the current ratio analysis. One output shows results of 12 accounting periods related to one fiscal year, other output illustrates results of the corresponding accounting periods of 5 years, 10 years and 15 years. This work can be operated in A section. The starting fiscal year and accounting period can be input or selected in B section. And in C section the system provides the liquidity ratio analysis by listbox, in which there are various analysis methods listed. In addition, it is capable of presenting the explanations of analysis result, such as the standard value, assessing the effect of the ratio's change on corporate management as shown in D section. The analysis results are presented as two forms, the grid and chart as shown in bottom side and right side of figure 5.4. Thus the user selects the item in A section, inputs beginning fiscal year and select the

accounting period in B section, and at last the analysis results will be shown in D section, grid and chart after the user selecting the method of the liquidity ratio analysis will display in C section.

5.2.2 Financial Statement Analysis and Application Effect

Assistance was obtained from a soybean processing enterprise in the process developing the financial accounting system and business analysis system. This enabled us to perform the business analysis without inputting data related to financial statements. Thereby, to demonstrate the field effect the soybean processing enterprise is still taken as a case.

5.2.2.1 Ratio Analysis

Ratio analysis of financial statements is to use the same number of important items of financial data over a period to make comparisons. It provides a profile of a business, its economic characteristics and competitive strategies, and its unique operating, financial and investing characteristics. Thus, the analysis methods vary with different purposes of financial analysis. In this system, the ratio analysis of financial statements are provided with a view to assisting corporate managers to make intelligent investment and credit decisions, it includes the liquidity analysis, activity analysis and profitability analysis respectively.

1. Liquidity analysis

Liquidity analysis is to measure the adequacy of a business's cash resources to meet its cash obligations. There are two methods to measure of the business's ability of companies to refinance maturing debt in this system, short term solvency and long term solvency. Short term solvency ratios attempt to measure the ability of a business to meet

its short-term financial obligations. In other words, these ratios seek to determine the ability of a business to avoid financial distress in the short-run. The short term solvency covers current ratio, quick ratio and cash ratio. While the long term solvency ratios assess the performance of funds invested in a business for a longer period of time, and they includes asset to liability ratio, debt to equity ratio, owner's equity ratio and interest coverage.

(1) Short term solvency

Current ratio

As one important ratio of short term solvency the current ratio reflects the company's ability to pay its due current liabilities using cash from liquid assets in short term. It is an indicator of the company's financial stability, technical solvency and the strength of working capital. The high current ratio is an indication that the company is liquid and has the ability to pay its current obligations in time and when they become due. The low current ratio represents that the liquidity position of the company is not good and the company is unable to pay its current liabilities in time without facing difficulties. The analysis shown in figure 5.4 reveals that the current ratios for five consecutive years are above the standard value of 2:1 despite the declining trend. This implies that the liquidity is high due to excessive capital investment in the current assets, however, it could have implications on company's profitability and long-term development.

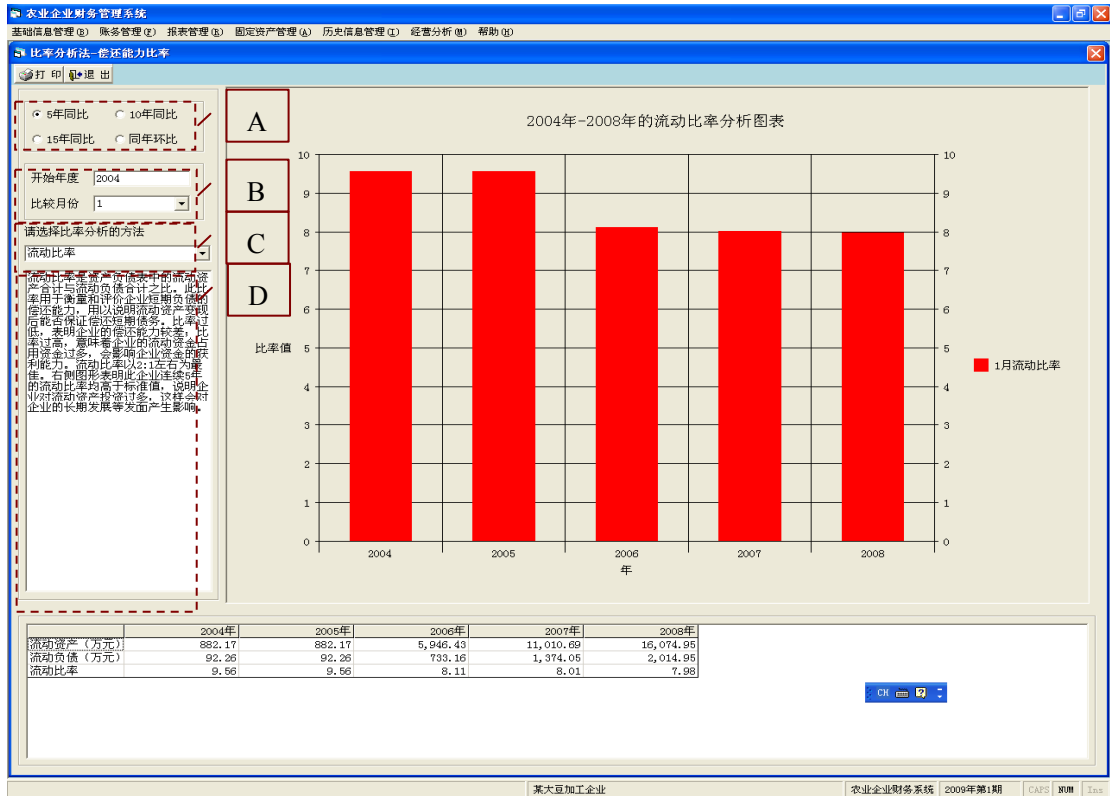


Figure 5.4 Current ratio analysis

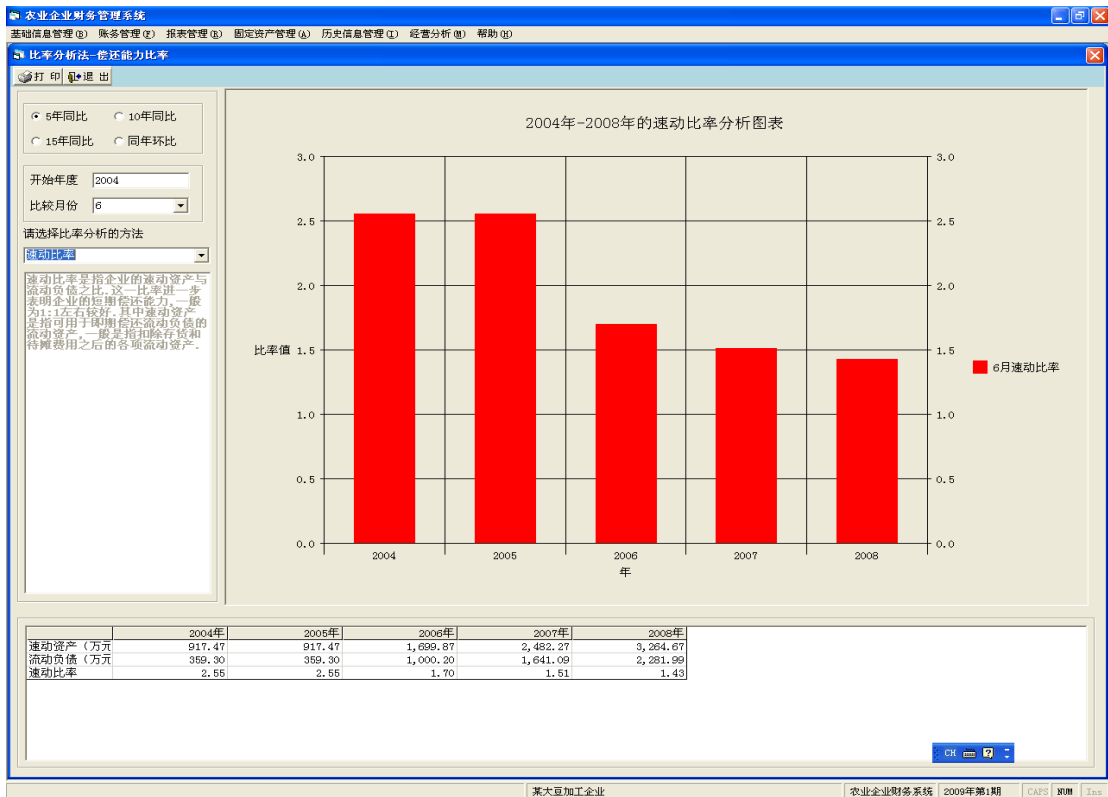


Figure 5.5 Quick ratio analysis

Quick ratio

Quick ratio attempts to measure the ability of the company to meet its obligations relying solely on its more liquid current asset accounts such as cash and accounts receivable. The analysis shown in figure 5.5 reveals that the quick ratios for five consecutive years are above the standard value of 1:1 despite the declining trend. The high quick ratio implies that the firm has too much of monetary assets, and it may lose some profitable investment and profit opportunities. However, this is obviously a good position for the firm to be in. It could meet its short-term debt obligations with no stress.

Cash ratio

Cash ratio is an indicator of a company's liquidity that further refines both the current ratio and the quick ratio by measuring the amount of cash, cash equivalents or invested funds there are in current assets to cover current liabilities. The cash ratio is the most stringent and conservative of the three short-term liquidity ratios (current, quick and cash). 20% -40% is considered the best value of cash ratio for a business. The cash ratio only looks at the most liquid short-term assets of the company, which are those that can be most easily used to pay off current obligations, and it also ignores inventory and receivables, as there are no assurances that these two accounts can be converted to cash in a timely matter to meet current liabilities. The analysis shown in figure 5.6 indicates that the cash ratios for five consecutive years with declining trend, especially the ratios of the last three years are very lower than 20%. Yet, very few companies will have enough cash and cash equivalents to fully cover current liabilities, which aren't necessarily a bad thing for the company, it just supplies the company with a reference in structure of cash and cash equivalents to current liabilities.

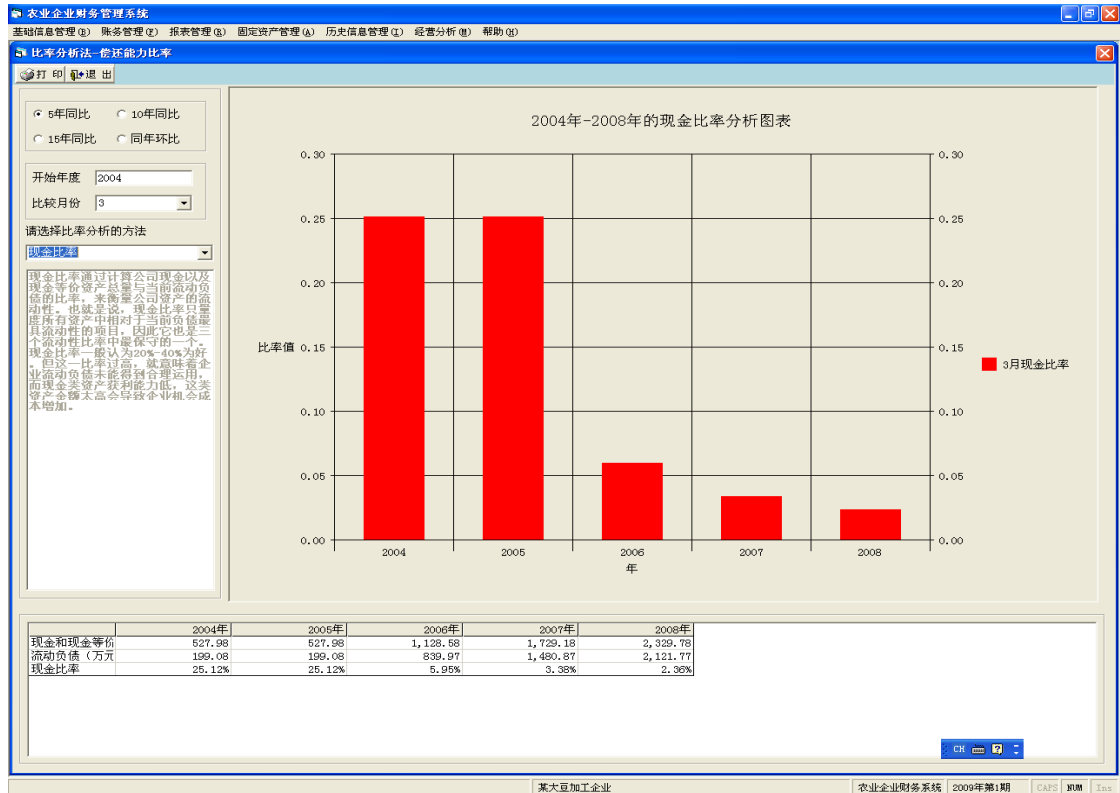


Figure 5.6 Cash ratio analysis

(2) Long term solvency

Fixed ratio

Fixed ratio is the ratio of fixed assets to equity, which reflects that how much of its own capital is used to purchase the fixed assets and detect whether the excessive expansion of fixed assets. The analysis shown in figure 5.7 reveals that the fixed ratios for five consecutive years are lower than 1 with the ascending trend. This implies that the problem doesn't exist in capital or excessive growth of fixed assets, and the long-term solvency, future solvency and fixed assets won't be affected by the lack of capital or excessive growth of fixed asset.

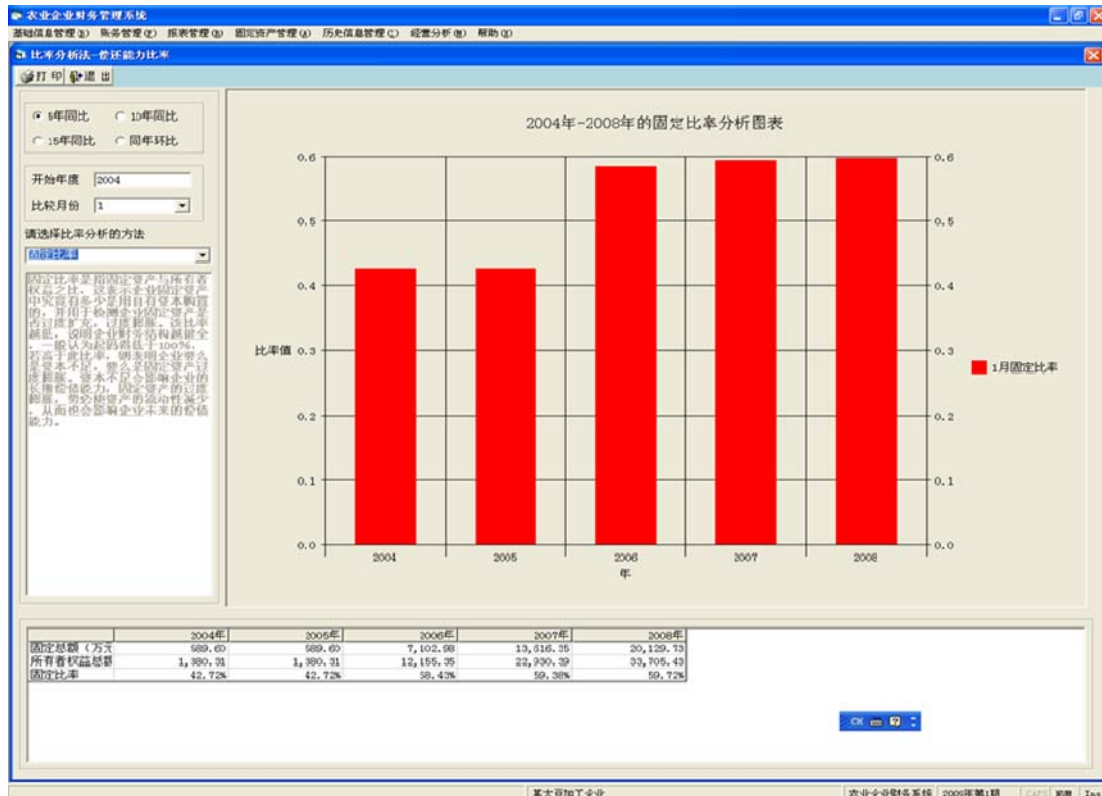


Figure 5.7 Fixed ratio analysis

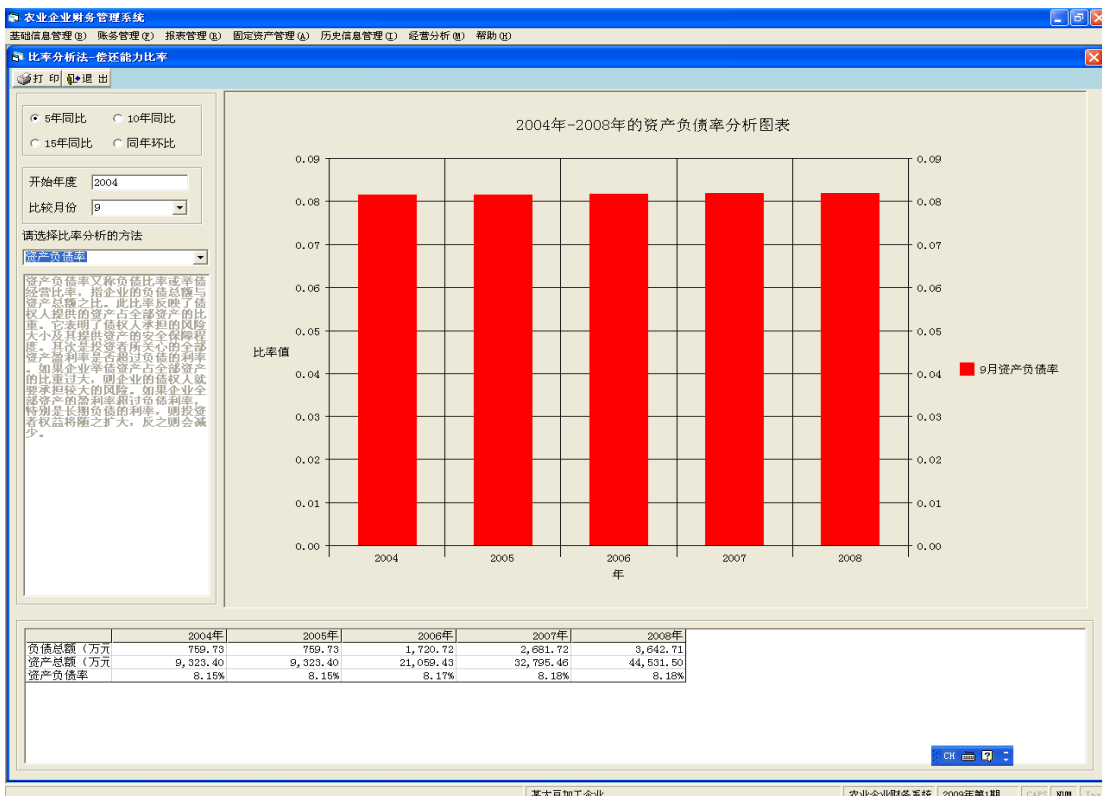


Figure 5.8 Debt to equity ratio analysis

Debit ratio

Debit ratio indicates the relative proportion of a company's total debt to its total assets.

It also reflects the stability of the business in financial situation. The low ratio also indicates that there is no greater risk associated with the company's operation. The analysis (shown in figure 5.8) reveals that the debt ratios for five consecutive years are lower than 1, which means that the company has more assets than debt and most of the company's assets are financed through equity.

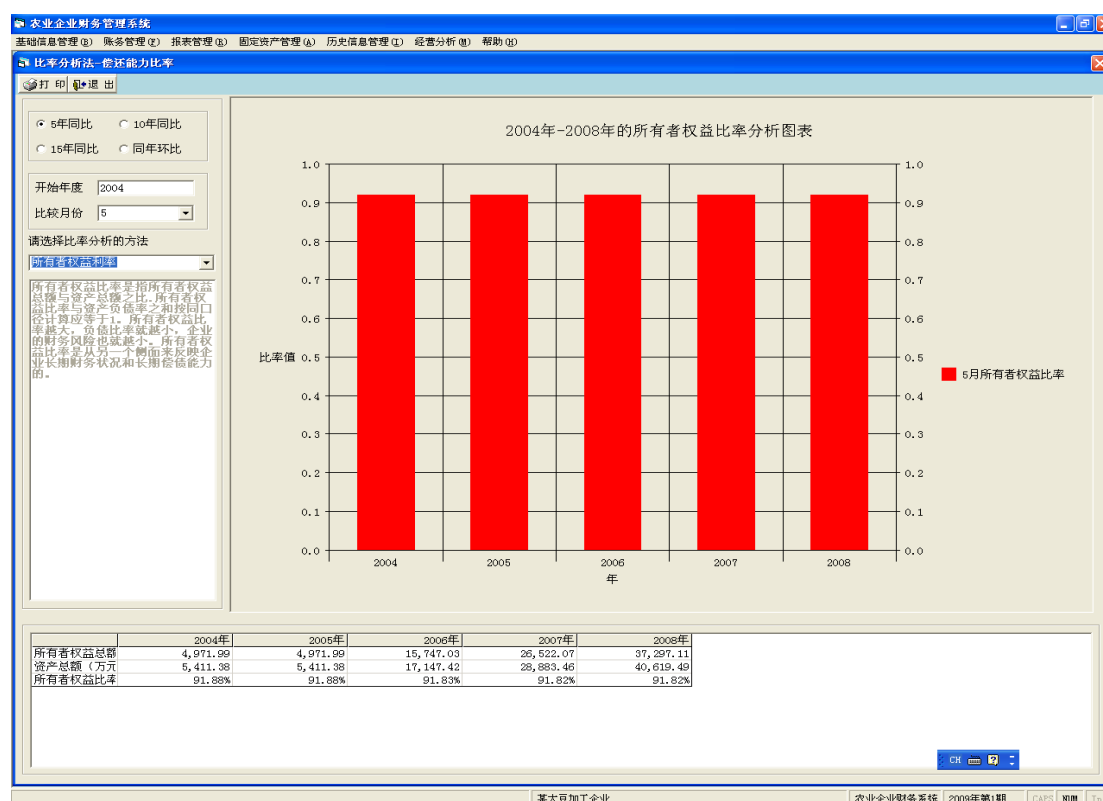


Figure 5.9 Owner's equity ratio analysis

Owner equity ratio

Owner equity ratio attempts to reflect the long-term financial situation and long-term business solvency with the relative proportion of equity used to finance a business's assets. It is a good indicator of the level of leverage used by a business. A low equity ratio is good for stockholders as long as the business earns a rate of return on assets that is greater than the interest rate paid to creditors. The analysis shown in figure 5.9 reveals that the owner equity ratios for five consecutive years are lower than 1, and the

great the equity ratio and small debt ratio which mean that the company has less financial risk.

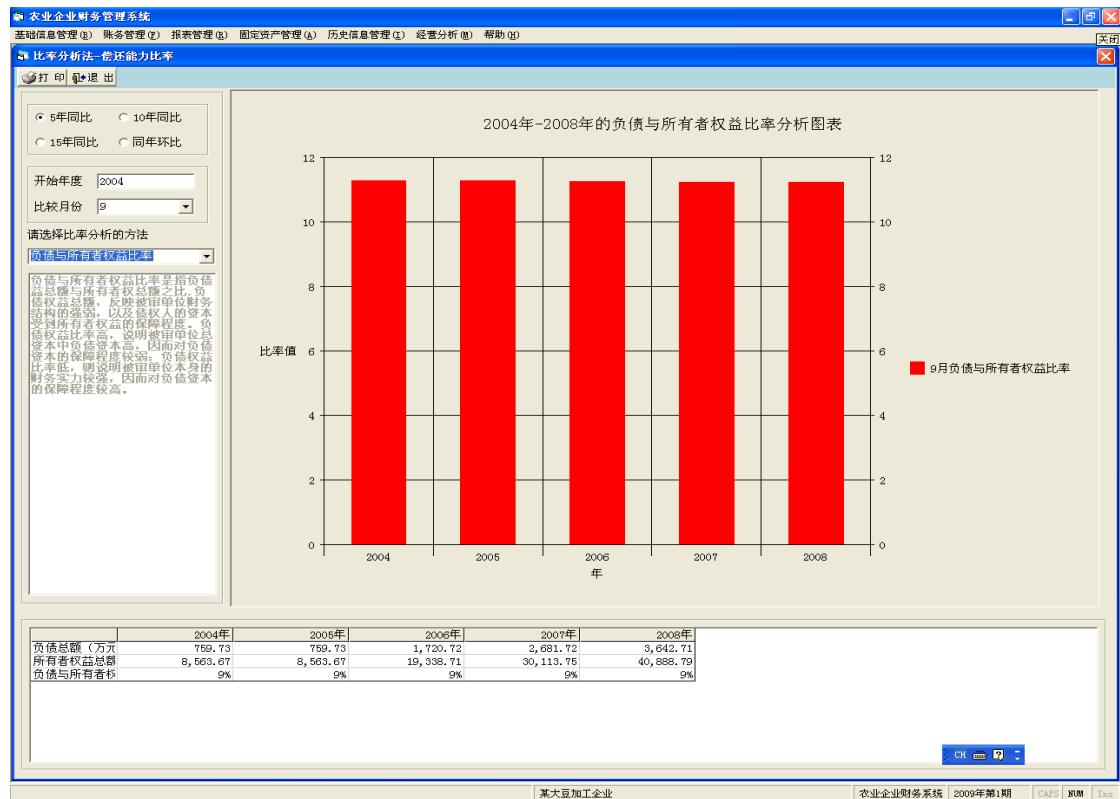


Figure 5.10 Debt to equity ratio analysis

Debt to equity ratio

Debt to equity ratio indicates what proportion of equity and debt the company is using to finance its assets, which is calculated by dividing its total liabilities by stockholders' equity. The ratio generally means whether the business has strong financial solvency or not. The high ratio indicates that the business has been aggressive in financing its growth with debt, it also means that the company has great ability to expand business, great chance for more profits, but the company bears greater risk. The analysis shown in figure 5.10 reveals that the equity to debt ratios for five consecutive years keeps stable with high ratio. This indicates that the company has strong capability of long-term solvency, and higher level of protection of creditors.

2. Activity analysis

Activity analysis evaluates revenue and output generated by the business's assets through indicators related to turnover speed of the cash from operating activity, which also indicates that the manager has ability of management and using of funds. Activity analysis also describes the relationship between the business's level of operation and the assets needed to sustain the operating activities. The higher ratio, the more efficiently the business is at producing a benefit from its investment in assets, as relatively fewer assets are required to maintain a given level of operations. It is composed of three kinds of assets turnover, current asset turnover and fixed assets turnover, inventory turnover and accounts receivable turnover, as well as total assets turnover respectively.

(1) Inventory turnover and accounts receivable turnover

Inventory turnover

Inventory turnover ratio measures the efficiency of the business's inventory management through calculating how many times inventory is created and sold during the period. This ratio gauges the liquidity of the company's inventory, and it also helps the company owner determine how they can increase their sales through inventory control. The higher ratio indicates that inventory does not return in warehouse or on the sales but rather turns over rapidly from the time of acquisition to sale. Figure 5.11 illuminates fluctuations of inventory turnover for 5 consecutive years. On April 2005, the inventory turnover rate is higher than the same period in 2004, which means that the company enhances its ability to efficiently manage and sell its inventory. And from 2005 to 2008 the inventory turnover ratios gradually slow, indicating that the company increased more substantial inventories. Therefore, the company should achieve

coordination and convergence in purchasing raw material, production process, inputs, sales, and cash recovery.

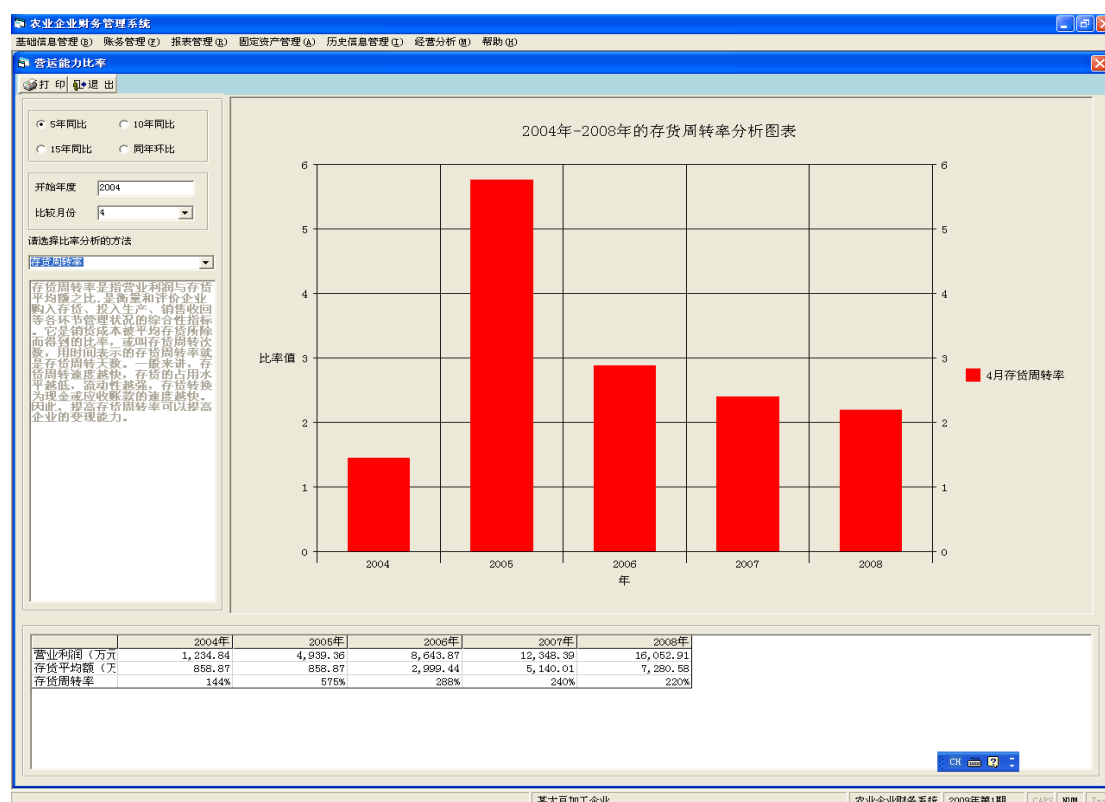


Figure 5.11 Inventory turnover analysis

Accounts receivable turnover

Accounts receivable turnover indicates how many times, on average, accounts receivables are collected during an accounting period. It measures the effectiveness of the business's credit policies and indicates the level of investment in receivables needed to maintain the business's sales level. Figure 5.12 shows the accounts receivable turnover ratios for five years keep stable growth. They mean that customers pay their bills on time. The company should pay much attention on them as the turnover ratios gradually increase, which means that the company is too restrictive in its credit and collection policies and doesn't extend credit to enough customers.

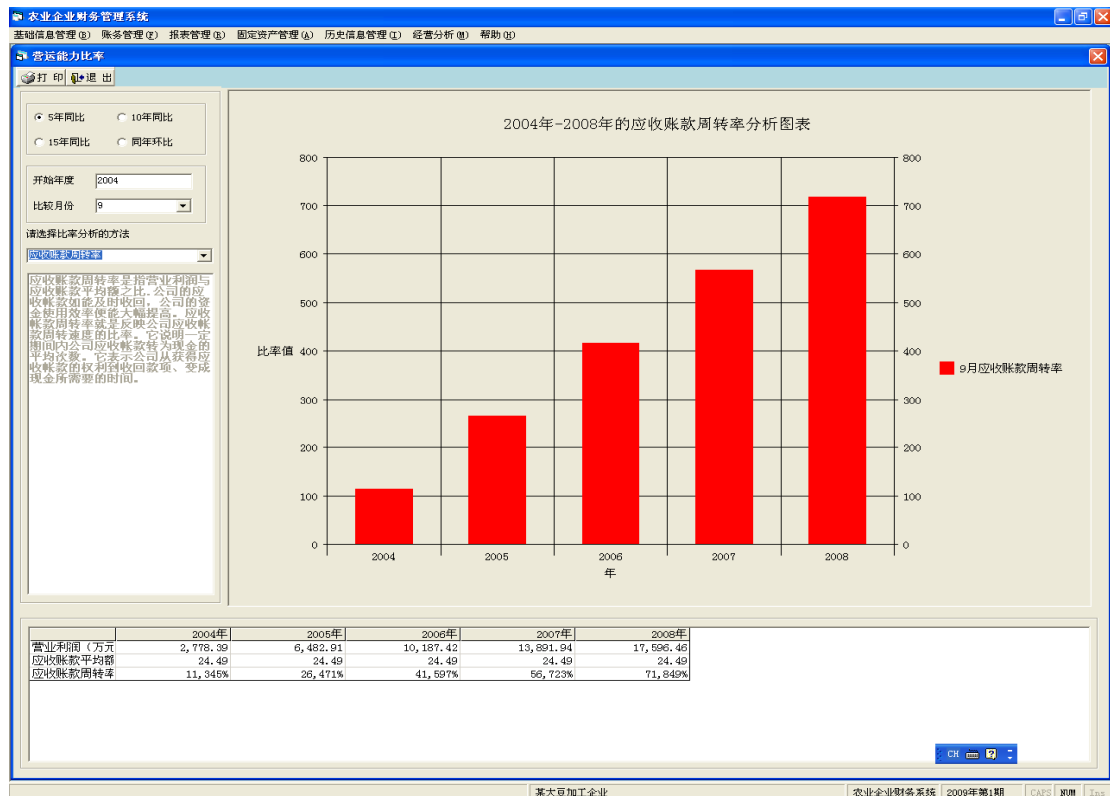


Figure 5.12 Accounts receivable turnover analysis

(2) Current assets turnover and fixed assets turnover

Current assets turnover

Current assets turnover (Working capital turnover) ratio indicates how efficiently a firm is using its current assets to generate revenue. The high ratio indicates efficient utilization of current assets and a low ratio indicates otherwise. But a very high ratio may also mean lack of sufficient current assets which is not a good situation. Figure 5.13 illuminates fluctuations of current assets turnover for 5 consecutive years. Except 2005 the current assets turnover ratios were low, which means that the company need to add liquidity to participate in turnover and its capacity of income-generating reduced. Thus the company should on the one hand contribute to the strengthening internal management, full and effective use of their current assets, such as decreasing costs, mobilizing temporary idle funds to create income and so on; on the other side the

company need to take measures to expand production or service areas, to improve the efficiency of the integrated use of current assets. In respect of 2005's current assets turnover, it was high that indicated the company used current assets efficiently. It saved the current assets relatively and was equivalent to expand investment in current assets, to some extent enhance the enterprise's income-generating capacity.

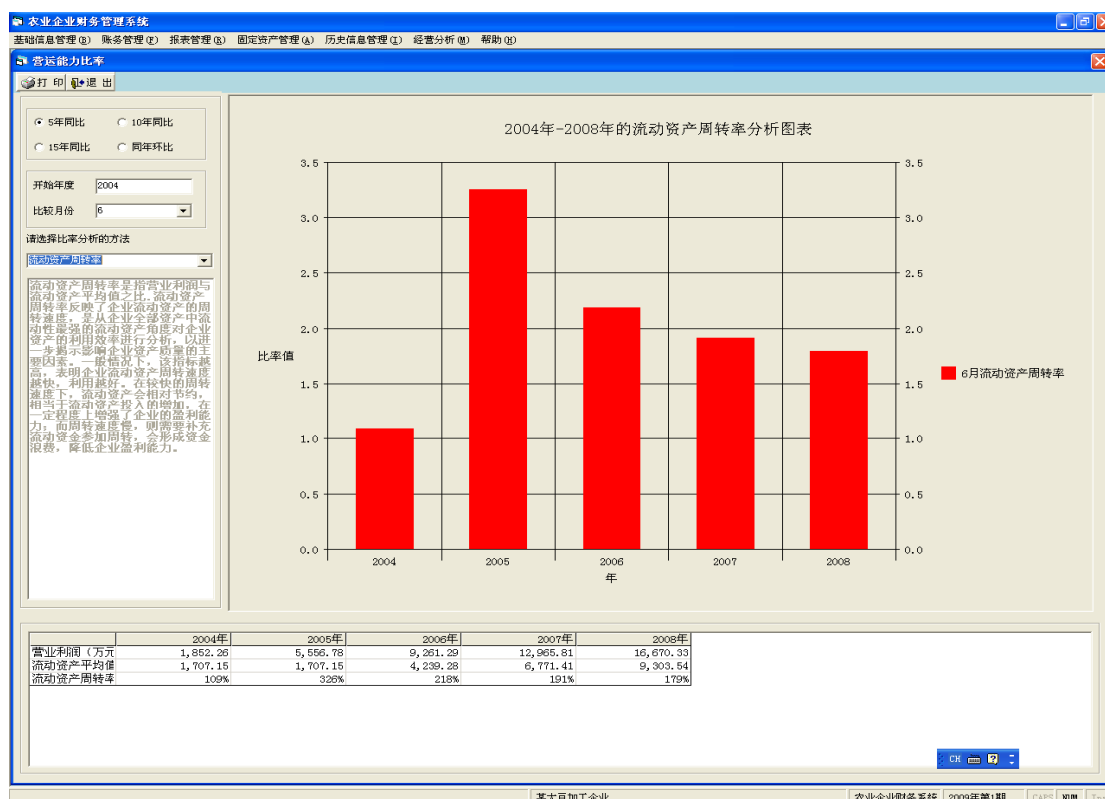


Figure 5.13 Current assets turnover analysis

Fixed assets turnover

Fixed asset turnover ratio indicates measures the efficiency of capital investment, and reflects the level of sales generated by investments in productive capacity. The high ratio reflects positively on the company's ability to utilize its fixed assets in business operations properly, which is positive sign for the company. Figure 5.14 shows the fixed asset turnover ratio of 2005 was higher than other years' ratios, which indicates positively on the company's ability to utilize its fixed assets in business operations

properly. The declining ratios reflect that the business is over-invested in fixed assets.

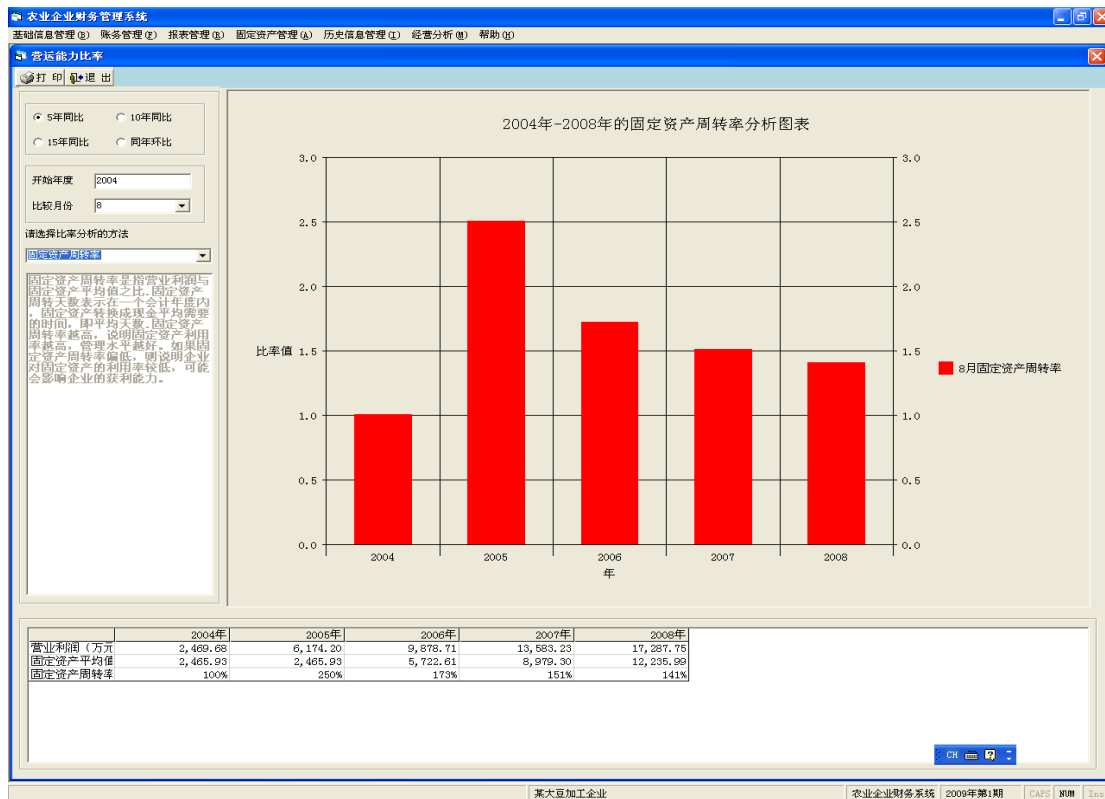


Figure 5.14 Fixed assets turnover analysis

(3) Total assets turnover

Total assets turnover (Assets turnover) ratio is used to measure operating performance, indicates how efficiently management is using the assets at its disposal to promote sales. The high ratio means that the company operates very well and efficiently uses the assets to generate revenue. The low ratios indicate a problem with one or more of the asset categories composing total assets - inventory, receivables, or fixed assets. Figure 5.15 shows the fluctuation of total assets turnover ratio of 5 consecutive years, and the ratio of 2005 was higher than other years' ratios. Since 2005 the ratio appears descending trend, so the company should take actions to increase the sales and raise the turnover ratio.

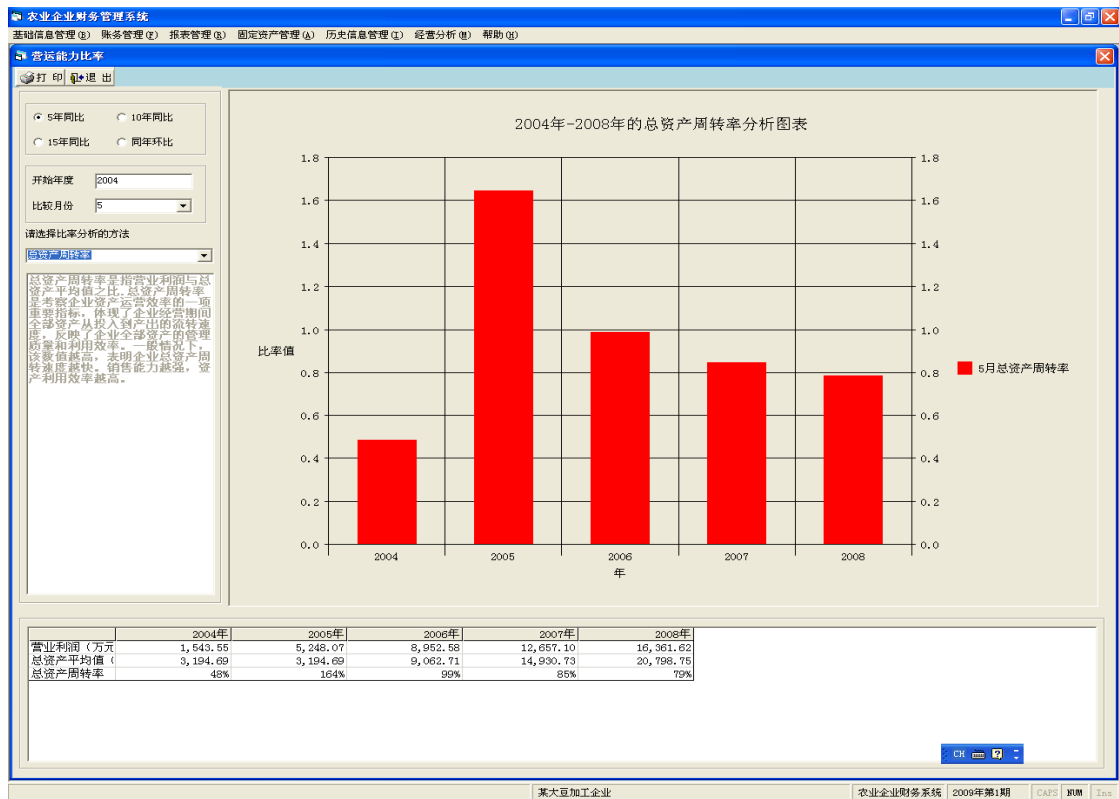


Figure 5.15 Total assets turnover analysis

3. Profitability analysis

Profitability analysis ratio reflects a business's overall efficiency and performance through measuring the income of the business relative to its revenues and invested capital. It is divided into two types: margins and returns. Margins reflect the business's ability to transfer sales dollars into profits at various stages of measurement. Ratios that show returns reflect the business's ability to measure the overall efficiency of the business in generating returns for its shareholders.

Net operating profit margin

Net operating profit margin is to measure the business's profitability after consideration of all expenses including taxes, interest, and depreciation. It indicates how well the business converts sales into profits after all expenses are subtracted out, and gives the business owner a lot of important information about the business's profitability, particularly with regard to cost control. A high operating profit margin means that the

business has good cost control and the sales are increasing faster than costs, which is the optimal situation for the company. The analysis shown in figure 5.16 reveals that the net operating profit margin ratios for five consecutive years keep stable, indicating the business had a low-cost operating model to control the cost very well in five years. To increase the ratio it is valuable to take actions to reduce expenses and increase sales revenue.

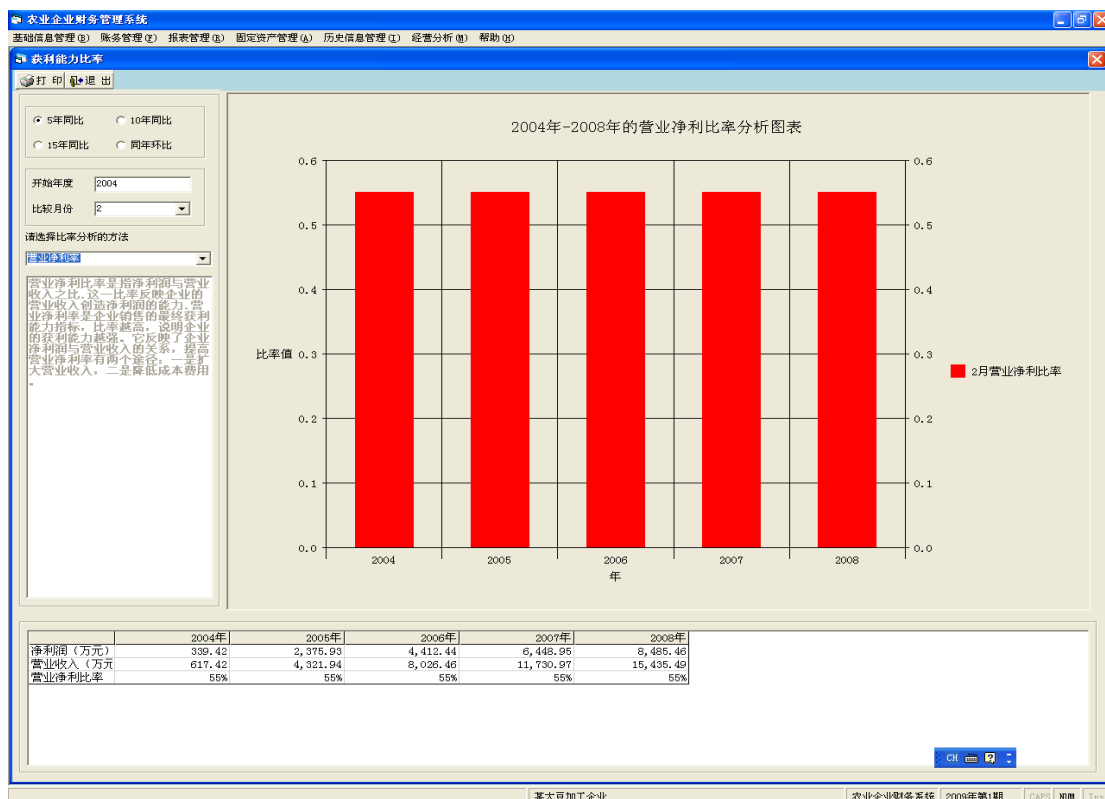


Figure 5.16 Net operating profit margin analysis

Gross profit margin

Gross profit margin is to measure how well a business controls the cost of its inventory, indicate a company's manufacturing and distribution efficiency during the production process. The larger the gross profit margin, the better for the company. The analysis shown in figure 5.17 reveals the gross profit margin ratios for five consecutive years, which remain stable over time. All ratios were not very high, so it is necessary

that the company increases the product's price, decreases manufacturing costs with regard to materials and the cost of making the product or the variable costs.

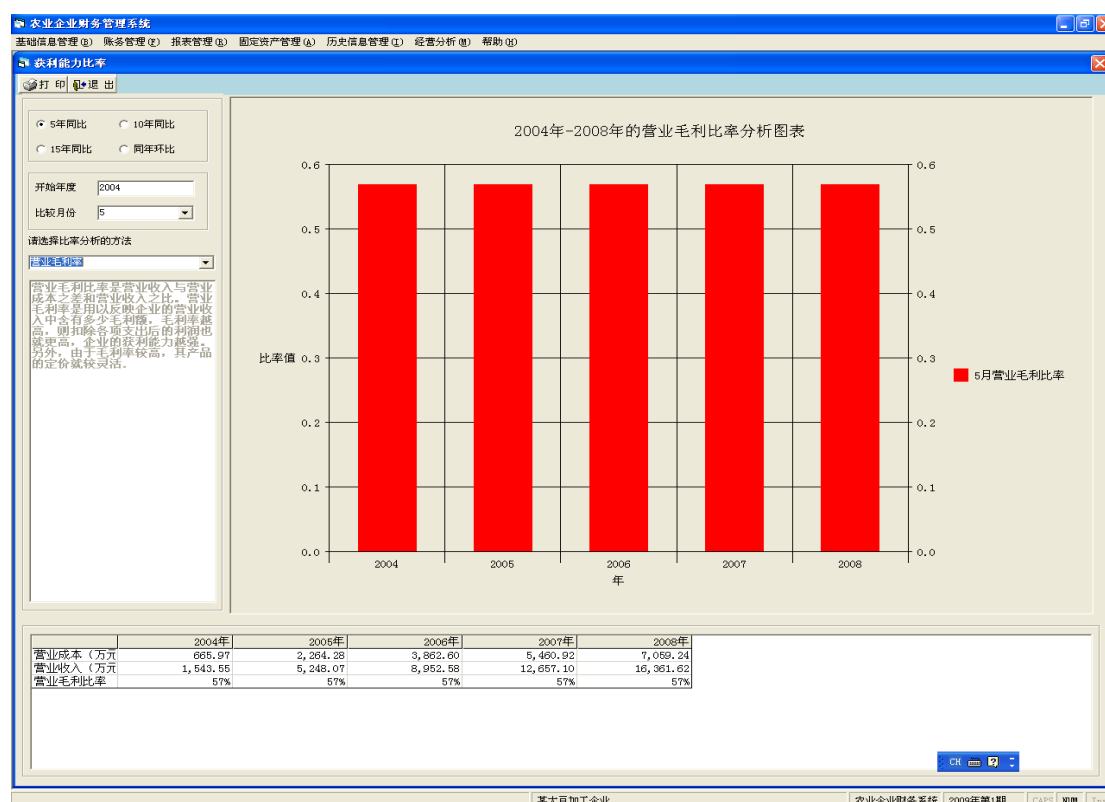


Figure 5.17 Gross profit margin analysis

Return on total assets

Return on total assets is to measure how much profit a business makes for each one Yuan invested in assets, which calculated by dividing a business's net earnings by its average total assets. A high ratio indicates that the business earns more money, invests less on assets and less asset-intensive. A low ratio shows that the business is more asset-intensive. The fluctuations in return on total assets ratio are shown in figure 5.18, which indicates that the company is asset-light. The ratio for 2005 indicates that company uses its assets effectively. Inefficient use of corporate assets in other years, which shows the company should improve profit margins, accelerate cash flow, and strengthen enterprise management level. It also means that lesser investments are

needed in assets to make profits.

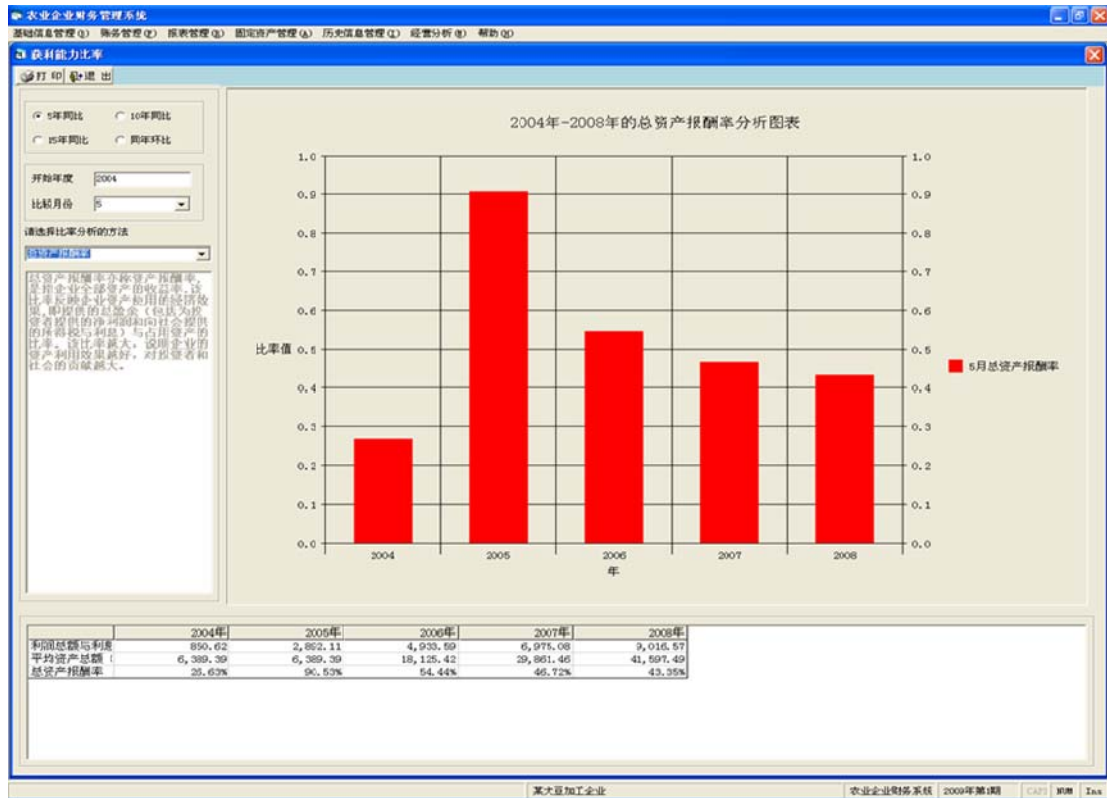


Figure 5.18 Return on total assets analysis

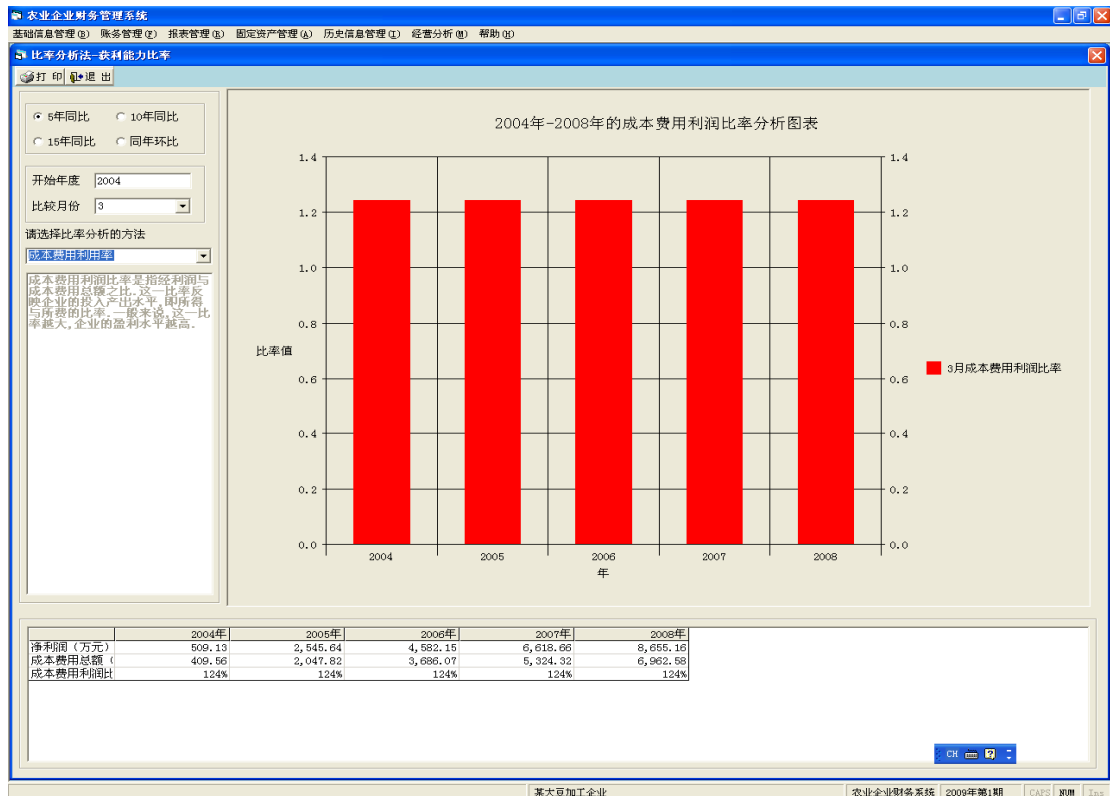


Figure 5.19 Return on cost analysis

Return on cost

Return on cost is to measure how much profit a business makes for each one Yuan invested in costs, which calculated by dividing a business's net profit by its total costs. It reflects the operating results arising from operating cost. The high ratio means that the net profit is great and the economic efficiency of enterprises is very well. The ratios in return on cost for five consecutive years are shown in figure 5.19, which indicates the company has strong ability to obtain the profit.

Return on capital

Return on capital is to measure a business's efficiency at allocating the capital under its control to profitable investments. The ratio is an important profitability ratio because it measures the efficiency with which the company manages its capital and using it to generate net profit. The higher the return on capital ratio, the more efficiently the company uses its capital base to generate net profit. The fluctuations in return on capital are shown in figure 5.20, which keep stable. The ratios of the five consecutive years are not high, which means the manager should strengthen management of capital investment for generating profits efficiently using the business's resources.

Return on sales

Return on sales reflects a business's profitability calculated by dividing a business's earnings before interest and taxes by its sales. This is a measure of how much profit the company generates from its sales. A high return on sales indicates that the company sells its products well and its profits are likely sustainable; a low return on sales indicates the opposite and it can be offset by increased sales. The fluctuations in return on sales are shown in figure 5.21, which maintain stable. The ratios of the five

consecutive years are not high, which means the manager should improve the product mix and promote to reduce the cost in order to generate profit efficiently.

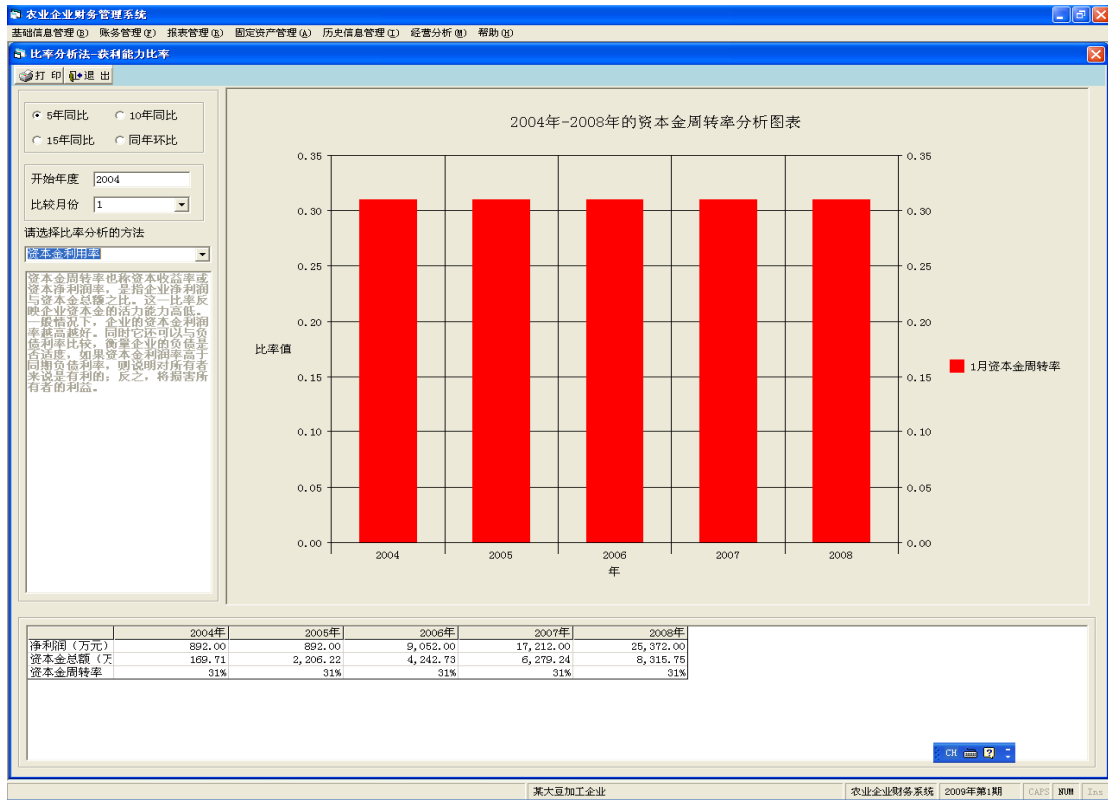


Figure 5.20 Return on capital analysis

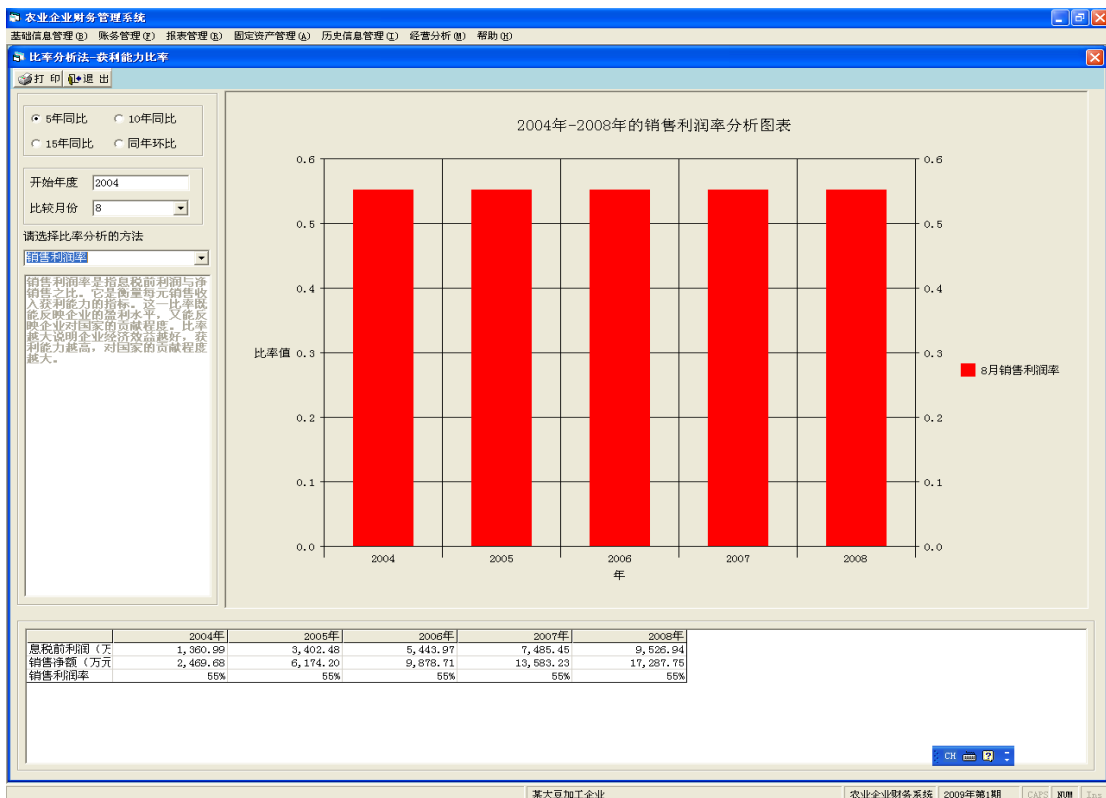


Figure 5.21 Return on sales analysis

5.2.2.2 Trend Analysis

The trend analysis helps the manager review operating data for a period and detects changes in business performance a business practice. It also indicates changes in the business's financial position as well as variations. The trend analysis is facilitated by displaying changes of accounting items between years in real number and percentage form, identifying key factors that have effected changes and how the changes will influence on future's development. It includes vertical analysis, trend percentage and horizontal analysis.

Horizontal analysis

Horizontal analysis is a type of trend analysis, which is carried out comparing current with historical operating data to evaluate periodic fluctuations. It provides periodic fluctuations in the form of real numbers and percentages between years via dividing each account item of a particular year by the same item in the following year. In this system, there are three types of horizontal analysis, horizontal analysis for balance sheet (referring to figure 5.22), horizontal analysis for income statement (referring to figure 5.23) and horizontal analysis for cash flow statement (referring to figure 5.24) respectively.

Figure 5.22 shows the results of horizontal analysis for balance sheet from 2004 to 2008 in chart and grid form. The chart presents that the main items of balance sheet have changed, and it is very clear that the growth rate of assets and equity exceeds the growth rate of liquidity. The below grid provides the changes of all items of balance sheet, which shows results as form of real number and percentage. Both chart and grid

indicates that the assets and equity maintain stable and good growth.

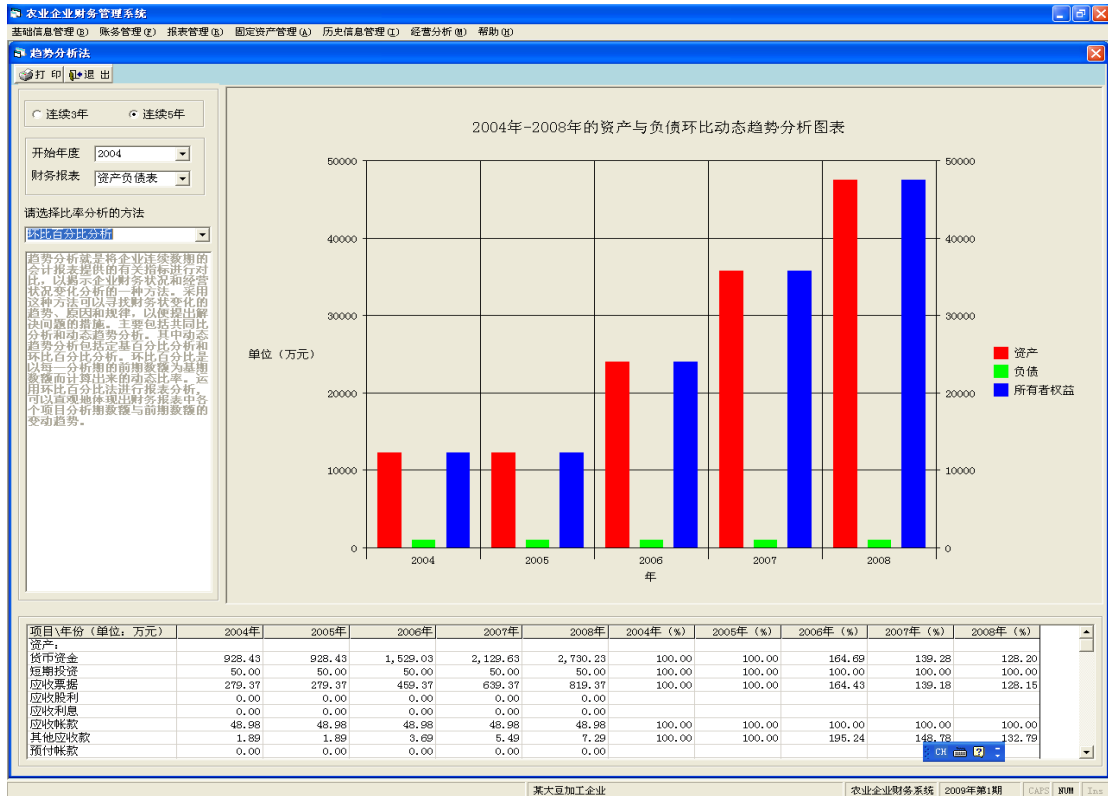


Figure 5.22 Horizontal analysis for balance sheet

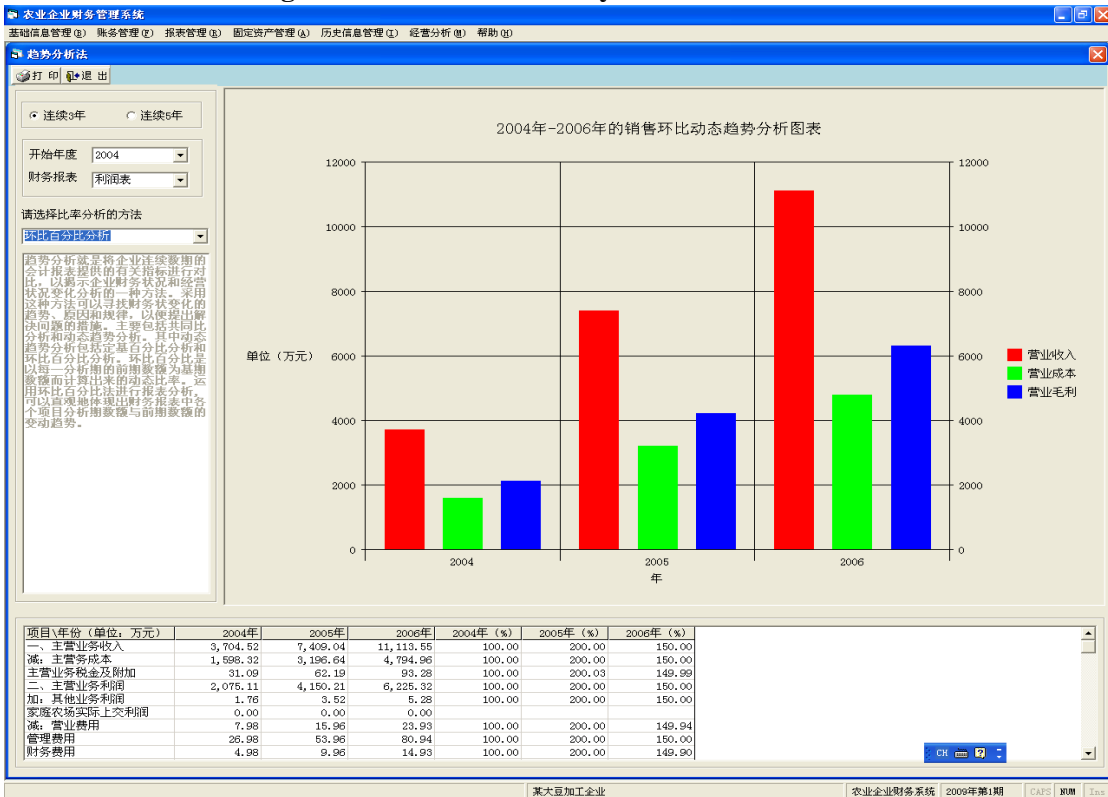


Figure 5.23 Horizontal analysis for income statement

The results of horizontal analysis for income statement from 2004 to 2006 are shown

in figure 5.23 in chart and grid form. The chart presents that the main items of income statement have changed, and it is very clear that the growth rate of operating income is most fast. The below grid provides the changes of all items of income statement, which shows results as form of real number and percentage. The operating cost keeps the almost same growth rate with operating income, so the manager should strengthen cost management in order to obtain more profit.

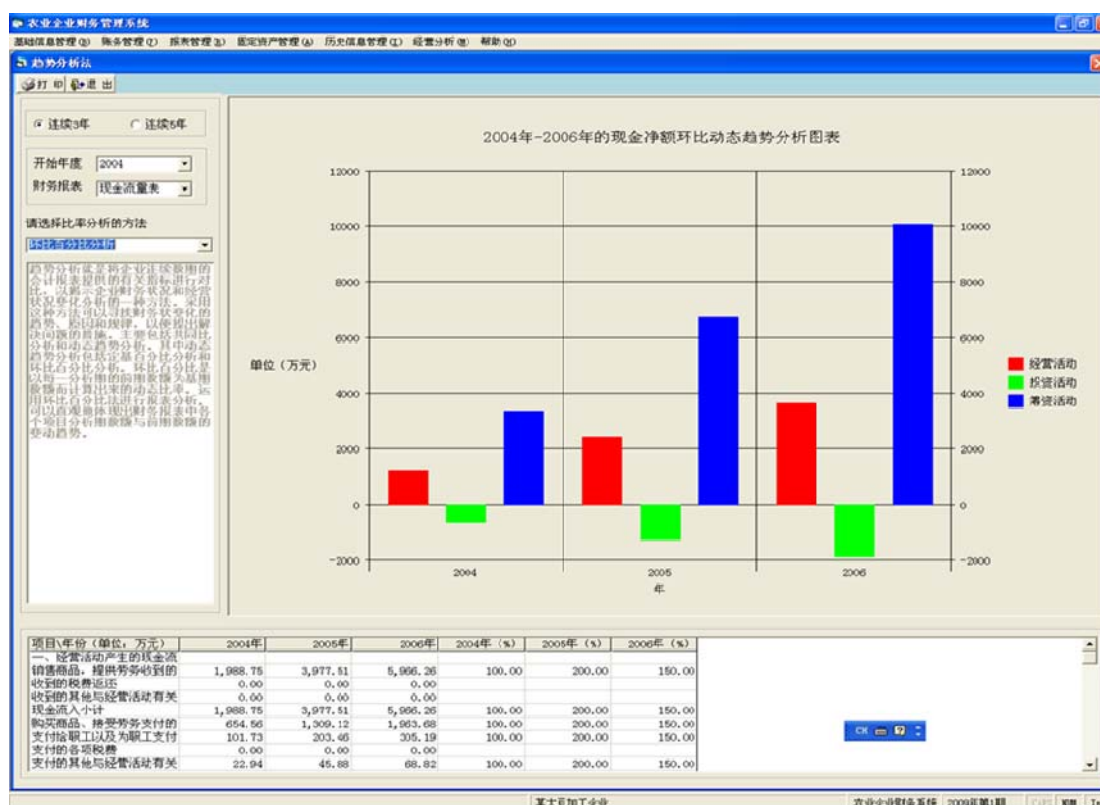


Figure 5.24 Horizontal analysis for cash flow statement

Figure 5.24 shows the results of horizontal analysis for cash flow statement from 2004 to 2006 in chart and grid form. The chart presents that the main items of cash flow statement have changed, and it is very obvious that the growth rate of cash flows from operating activities exceeds the growth rate of cash flows from investing activities and financing activities. The below grid provides the changes of all items of cash flow statement, which shows results as form of real number and percentage. Both the grid

and graph indicate that the proportion of the enterprise's net cash flows from financing activities to the total net cash flows was higher, implying that the enterprise had the ability to pay debts and dividends. While the net cash flows from investing activities was negative, reflecting that the company increased investment for long-term development. In addition, the net cash flows from operating activities was positive, indicating the company's business being normal.

Vertical analysis

Vertical analysis is a type of trend analysis, which displays changes between years in real numbers as well as in percentage via calculating each account item as a percentage of a reference item in the same financial statement. Likewise, the system provides three types of vertical analysis, vertical analysis for balance sheet (referring to figure 5.25), vertical analysis for income statement (referring to figure 5.26) and vertical analysis for cash flow statement (referring to figure 5.27) respectively.

Figure 5.25 shows the results of vertical analysis performed on balance sheet. As the total assets, total liquidities and total equities are as reference items while performing analysis, the changes of them for 5 consecutive years are shown in chart, and the real number and percentage are listed in below grid. From the chart and grid, we can find that the total assets and total equities increase with years, the growth rate of each item for assets and equities decreases gradually. Thus, the manager should take actions to manage the assets.

The results of vertical analysis carried out on income statement are shown in figure 5.26. The reference item is the operating income, which is an item of income statement.

The chart present changes of the operating income, operating cost and gross profit, which keep stable growth. And the below grid shows the same item of income statement increases with the same growth rate. Thereby, the manager should strengthen management of cost.

Figure 5.27 shows the results of vertical analysis performed on cash flow statement. As the net cash flows from operating activities, the net cash flows from investing activities and the net cash flows from financing activities are as reference items while performing analysis, the changes of them for 5 consecutive years are shown in chart, and the real number and percentage are listed in below grid. From the chart and grid, we can find that almost items of cash flow statement increase with years, and the growth rate of each item for each period is stable. Thus, the manager should take actions to manage the operating expenses to obtain more profit.

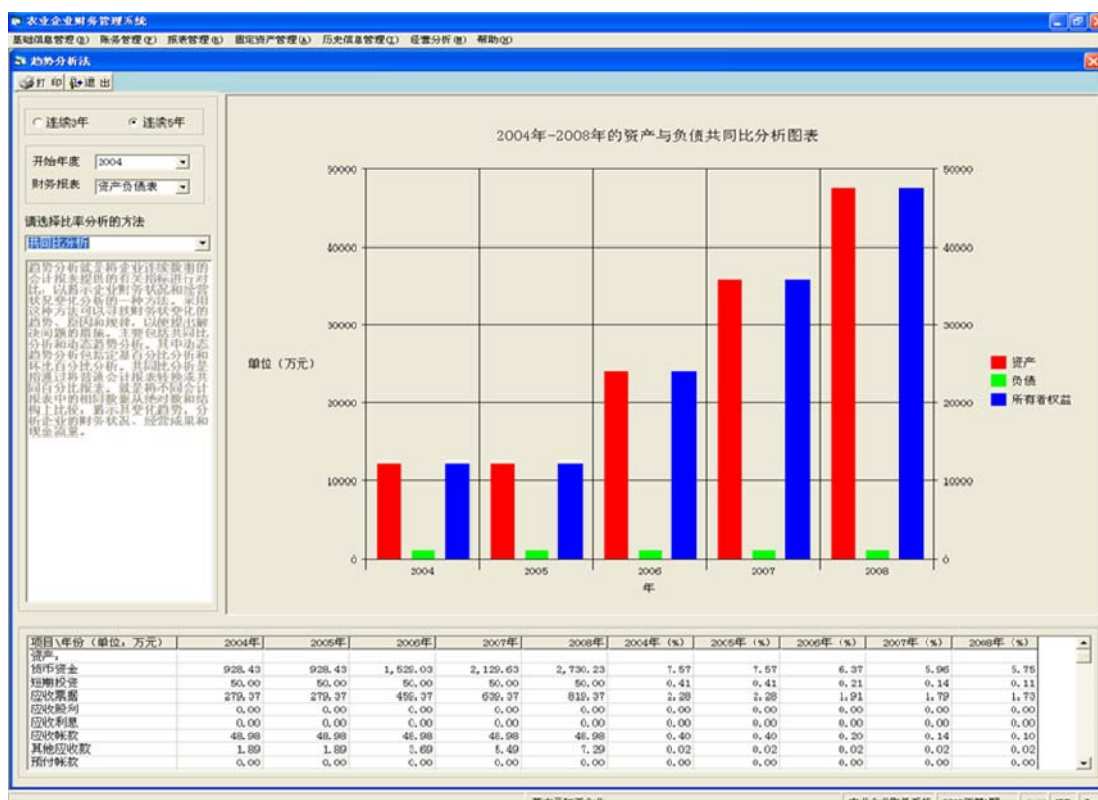


Figure 5.25 Vertical analysis for balance sheet

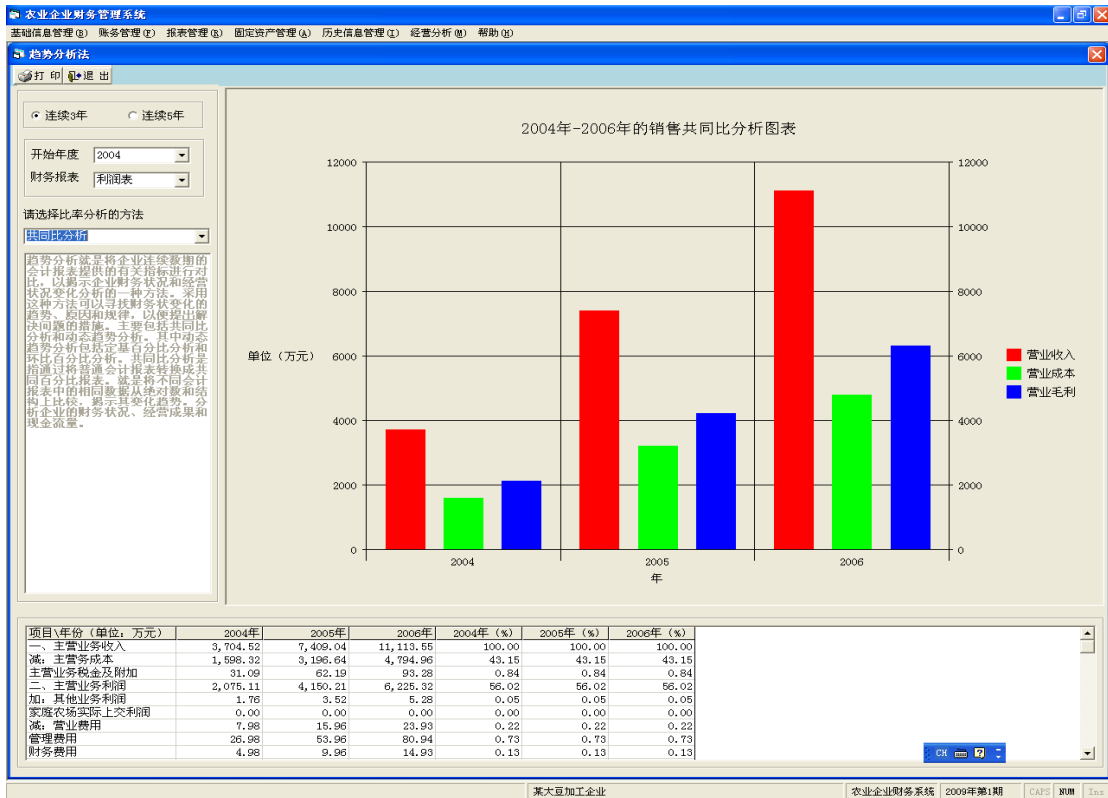


Figure 5.26 Vertical analysis for income statement

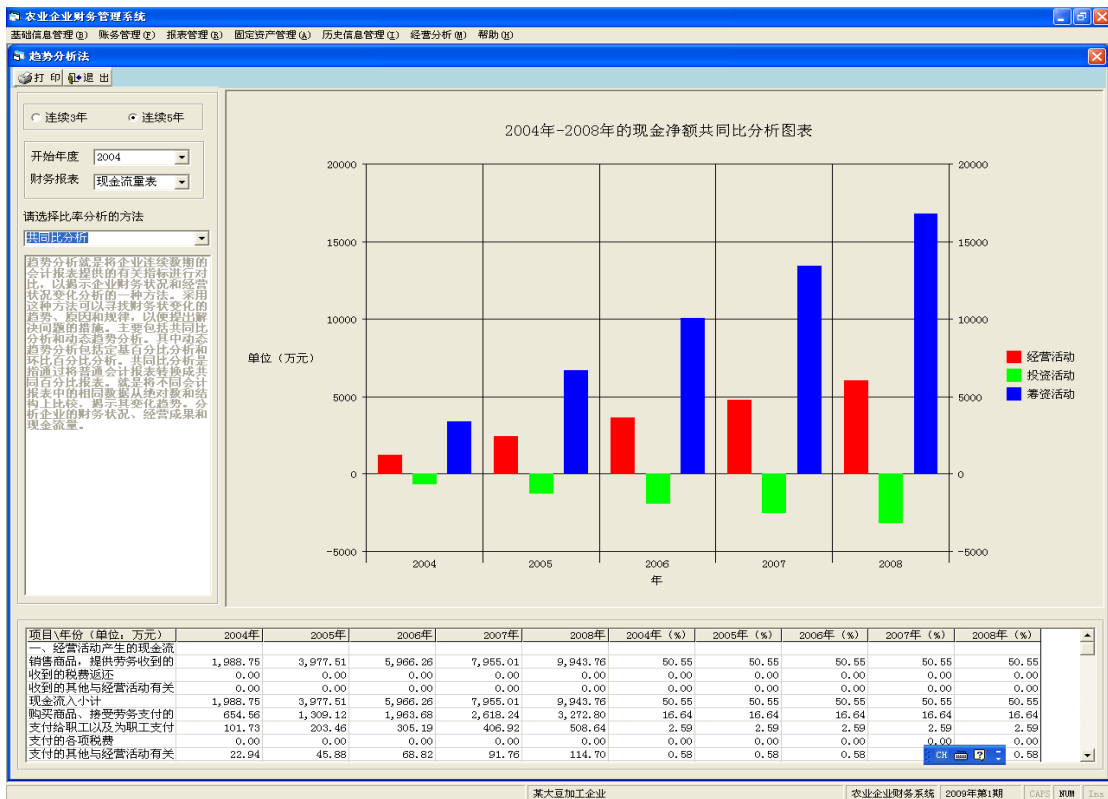


Figure 5.27 Vertical analysis for cash flow statement

Trend percentage

Trend percentage shows changes between years in real number as well as in percentage via calculating each account item in financial statements of other consecutive years as a percentage of the same item in financial statements of a reference year. The base year equals 100%, with all other years stated in some percentage of this base. Likewise, the system provides three types of trend percentage, trend percentage for balance sheet (referring to figure 5.28), trend percentage for income statement (referring to figure 5.29) and trend percentage for cash flow statement (referring to figure 5.30) respectively.

Figure 5.28 shows the results of trend percentage performed on balance sheet. The increases in assets and equities from 2004 to 2008 can be put into better perspective by stating them in chart and below grid. Both chart and grid present the main items of balance sheet increase with high growth rate, which indicates the company has made progresses in managing assets and the enterprise management is well.

Figure 5.29 illustrates the changes in sales for three consecutive years, indicating that the operating income, operating costs and gross profit increased every year. It is very clear to find how rapidly they have increased, and their increases could be put into better perspective by stating them in terms of trend percentages, with 2004 as the base year. From the figure it is obvious that each item of the income statement increased in same proportions indicating that the enterprise has made less progress in cost control and expenses control over the three year period which calls for the attention of the management to strengthen its cost control strategies.

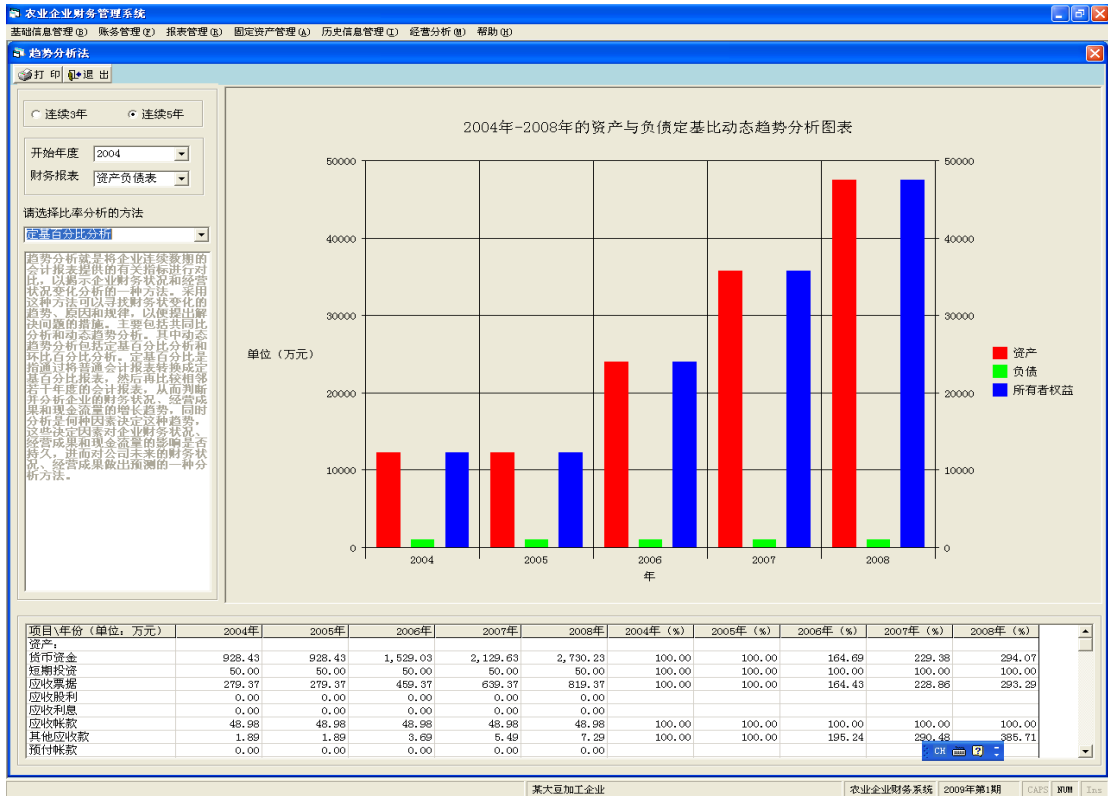


Figure 5.28 Trend percentage for balance sheet

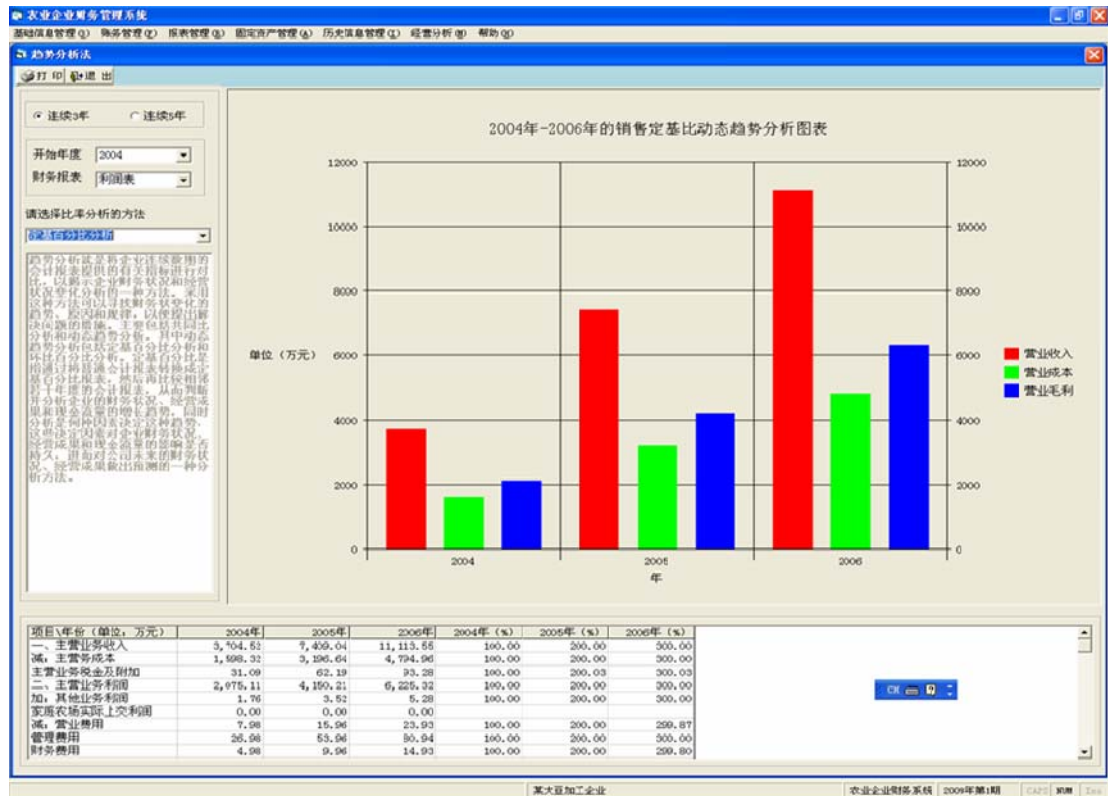


Figure 5.29 Trend percentage for income statement

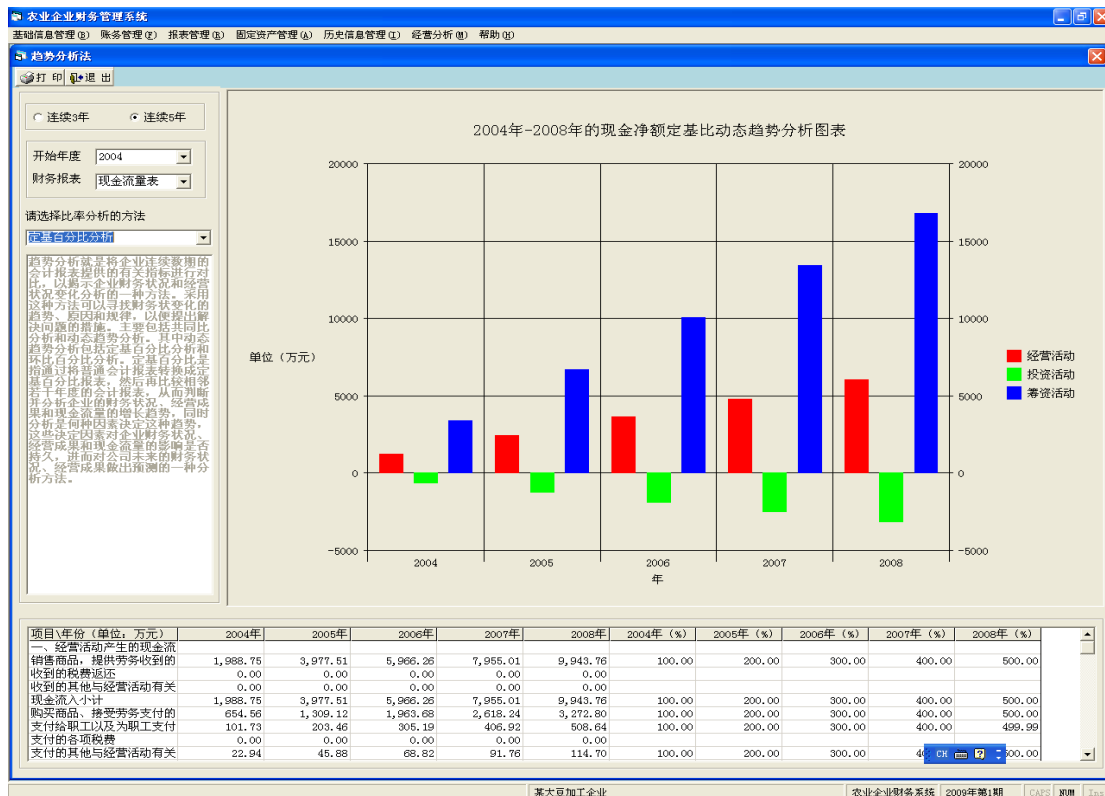


Figure 5.30 Trend percentage for cash flow statement

Figure 5.30 shows the results of trend percentage on cash flow statement. It also indicates that the net cash flows from operating activities, the net cash flows from investing activities and the net cash flows from financing activities increase with years. Both the grid and graph indicate that the proportion of the enterprise's cash flows from financing activities to the total net cash flows was higher, implying that the enterprise had the ability to pay debts and dividends. While the cash flows from investing activities was negative, reflecting that the company increased investment for long-term development. In addition, the cash flows from operating activities was positive, indicating the company's business being normal.

5.2.2.3 Structure analysis

While in structure analysis each item is stated as a percentage of some total of which that item is a part, key financial changes, trends and relationships among each item of

financial statement are highlighted, which is capable to have a clear understanding about the financial status of the business. Structure analysis covers different analysis classifications based on the financial statements.

Structure analysis for balance sheet

In this system, there are two types of structure analysis performed on balance sheet, general structure analysis and structure analysis for assets and liquidity.

General structure analysis is carried out to show the changes in main items for asset account, liquidity account and equity account with form of percentage and real number.

Figure 5.31 presents the results of general structure analysis from 2004 to 2008. It is very clear that the items for asset account and equity account of total assets and total equities keep stable.

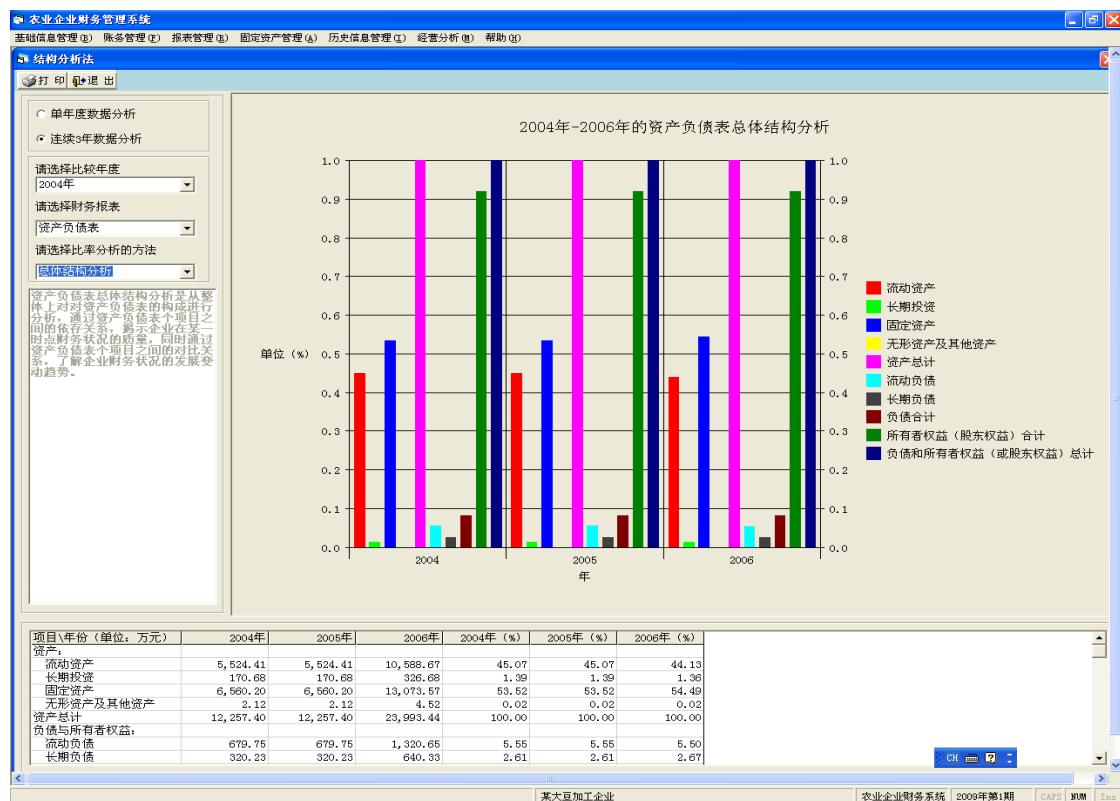


Figure 5.31 General structure analysis

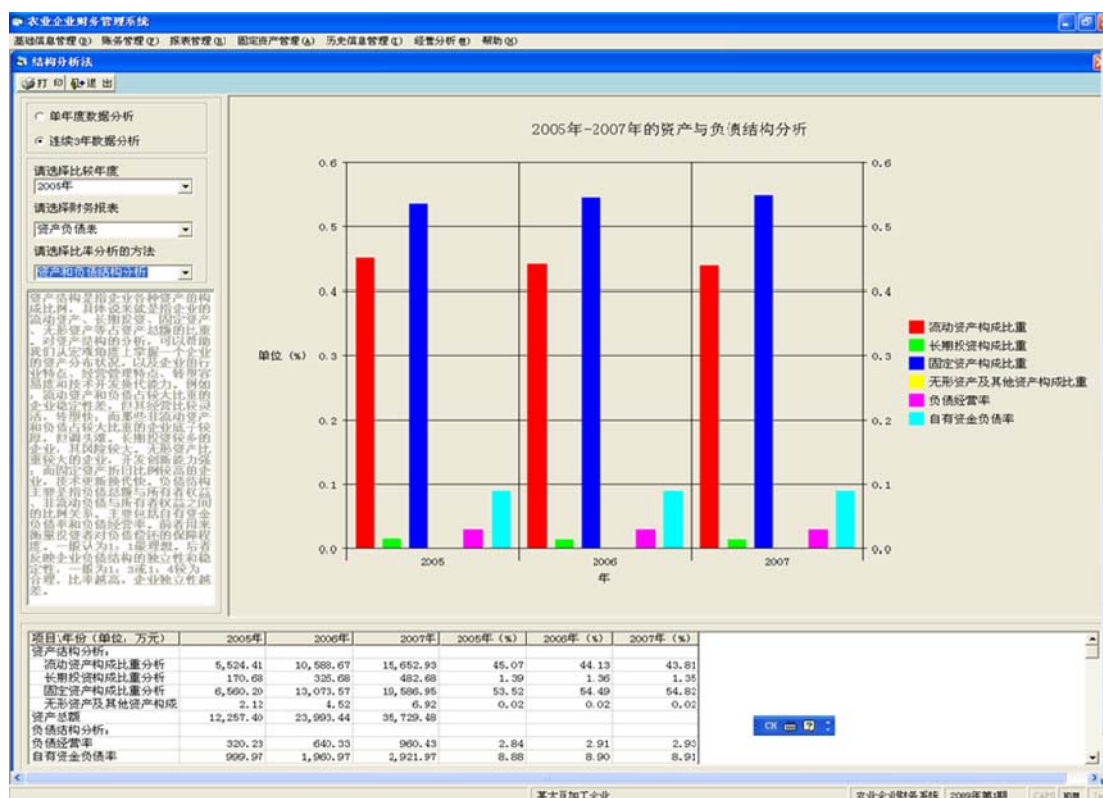


Figure 5.32 Structure analysis for assets and liquidity

Structure analysis for assets and liquidity is performed to present the changes in main items for asset account and liquidity account. Figure 5.32 presents the results of structure analysis for assets and liquidities from 2005 to 2007. It is very obvious that the items for asset account and liquidity account of total assets and total liquidities change slightly.

Structure analysis for income statement

The system provides two types of structure analysis for income statement, structure analysis for gross profit, structure analysis for total profit, respectively.

Structure analysis for gross profit is performed to present the changes in items for gross profit. Figure 5.33 shows that the changes in items for gross profit can be put into better perspective by stating them in terms of percentage from 2004 to 2006, the operating income of each year as base item. From the grid we can find that the operating

profit of operating income for each year keeps the same percentage though the operating profit increases, thereby the company should take actions to control the operating expense.

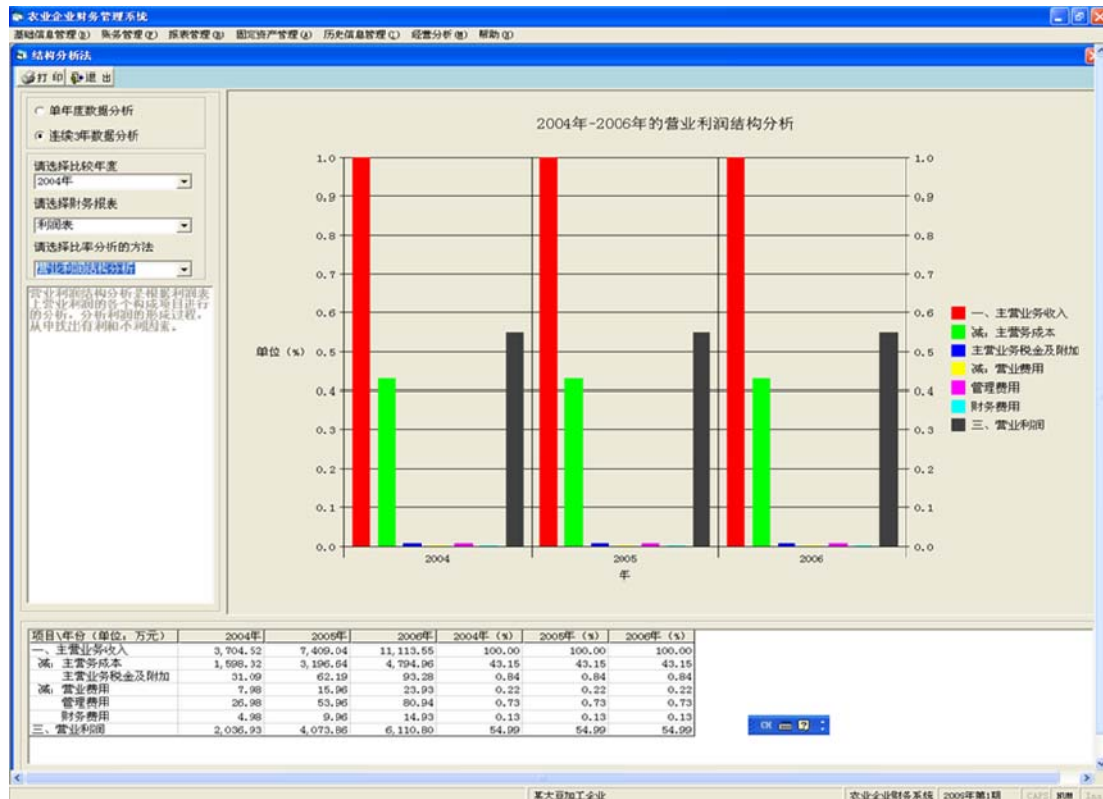


Figure 5.33 Structure analysis for gross profit

Structure analysis for total profit is to measure the changes in items for total profit. Figure 5.34 shows that the changes in items for total profit can be put into better perspective by stating them in terms of percentage from 2006 to 2008, the total profit of each year as base item. From the grid we can find that the non-operating expenditure increases with years, thereby the company should take actions to control the non-operating expenditure to obtain more profit.

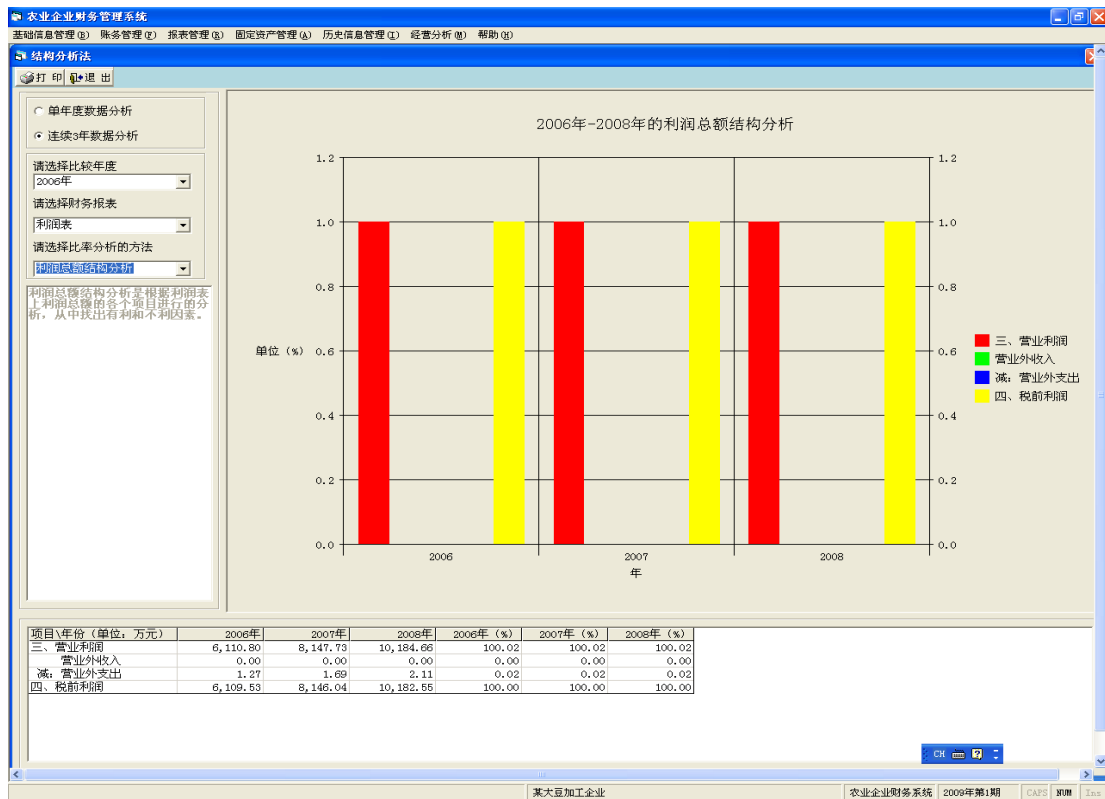


Figure 5.34 Structure analysis for total profit

Structure analysis for cash flow statement

In this system, there are three types of structure analysis performed on cash flow statement, structure analysis for cash inflow, structure analysis for cash outflow and structure analysis for net cash flow.

Structure analysis for cash inflow is to measure the changes in each item for cash inflow. Figure 5.35 shows the cash inflow from operating activities, investing activities and financing activities increase from 2005 to 2007, the total cash inflow of each year as base item. Both the chart and grid presents the each item for cash inflow of the total cash inflow keep stable though each item for cash inflow increases with years. From the figure we can find that the cash inflow from financing activities of the total cash inflow is least among cash inflow.

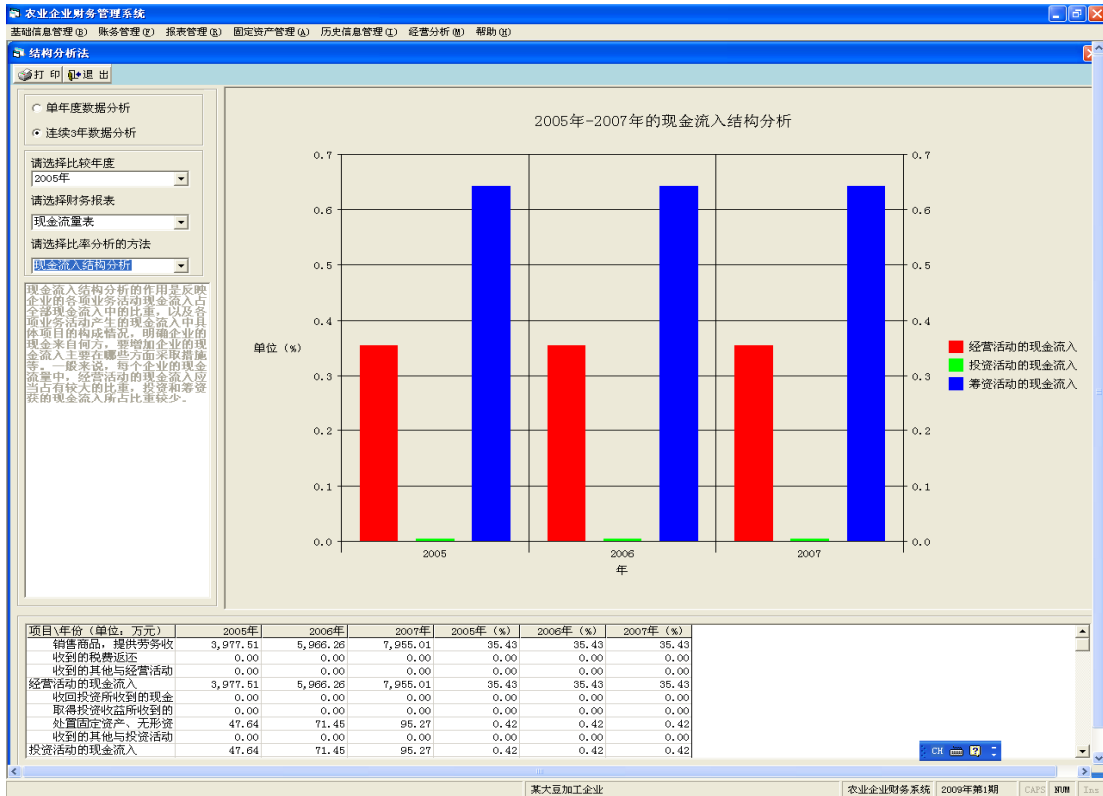


Figure 5.35 Structure analysis for cash inflow

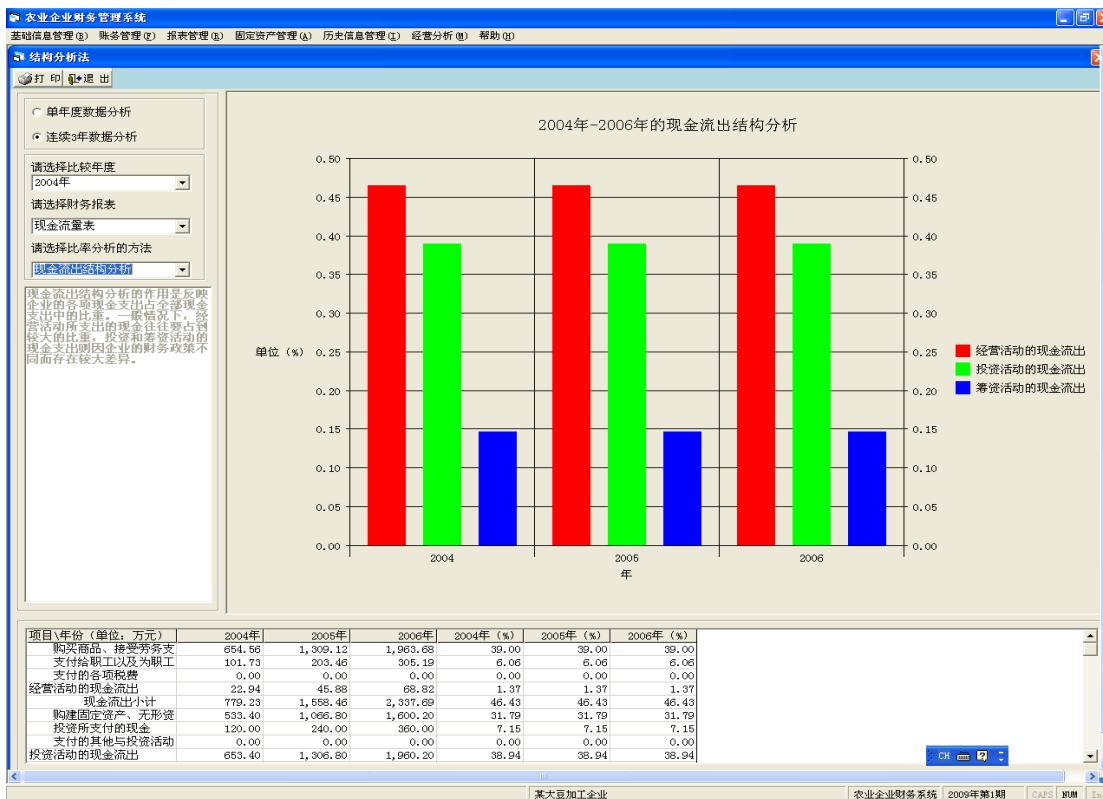


Figure 5.36 Structure analysis for cash outflow

Structure analysis for cash outflow is performed to show the variations of each item

for cash outflow. The changes in cash outflow from operating activities, investing activities and financing activities are shown in figure 5.36 from 2004 to 2006. The cash outflows from operating activities and investing activities are main source of cash outflow.

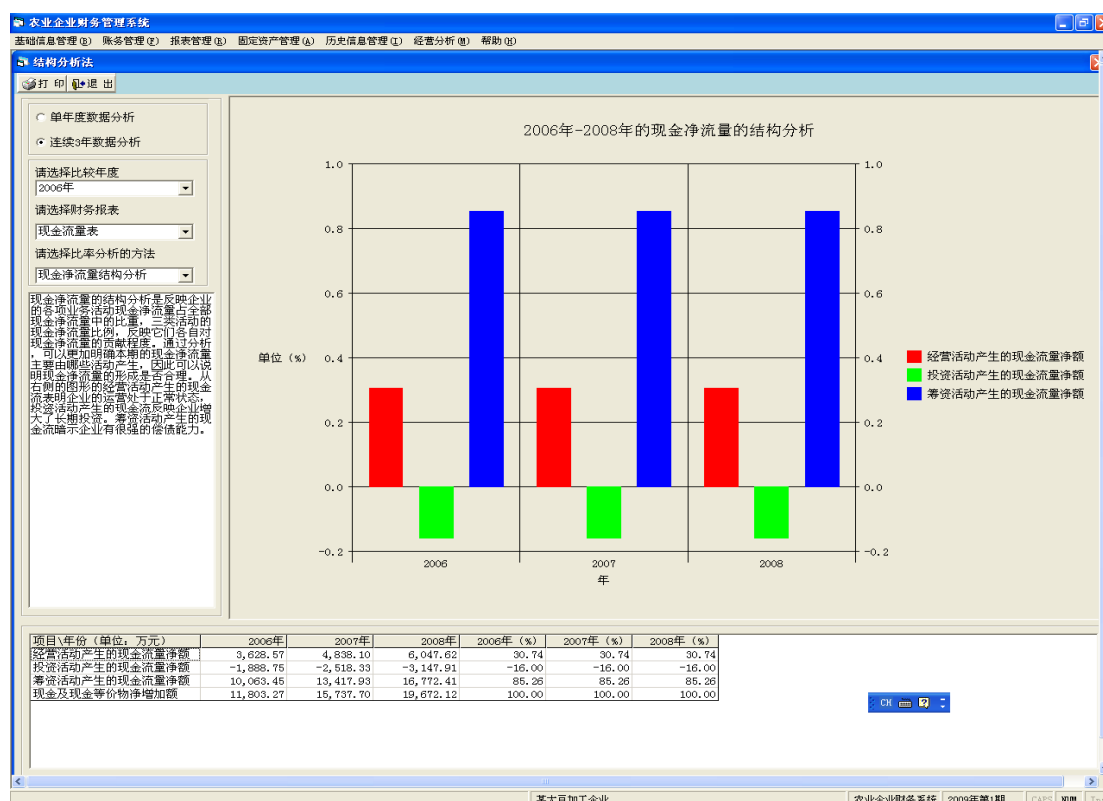


Figure 5.37 Structure analysis for net cash flow

Structure analysis for net cash flow is to measure variation of each item for net cash flow. Figure 5.37 presents the changes in net cash flow from operating activities, investing activities and financing activities, the total cash flow of each year as base item. Both the grid and graph indicate that the proportion of the enterprise's cash flows from financing activities to the total net cash flows was higher, implying that the enterprise had the ability to pay debts and dividends. While the cash flows from investing activities was negative, reflecting that the company increased investment for long-term

development. In addition, the cash flows from operating activities was positive, indicating the company's business being normal.

5.3 Break Even Analysis and Field Effect

Break even analysis is performed to understand the interrelationships among cost, volume and profit, and provide important management information for decision making in areas such as production, marketing and product development. It is performed to analyze the product based on the principle of cost-volume-profit analysis. It is composed of the profit volume analysis, unit contribution analysis and standard mode analysis.

5.3.1 Using Method for Break Even Analysis

The system provides the window as shown in figure 5.38 for the user to shows the output of break even analysis.

(1) The system starts

(2) Select the product performed analysis. Click the item of products information shown in A section of figure 5.38, and then click the "Show" button. The analysis results appear in three types of chart shown in C, D and E section, and the explanations for analysis are presented in B section.

(3) The system ends.

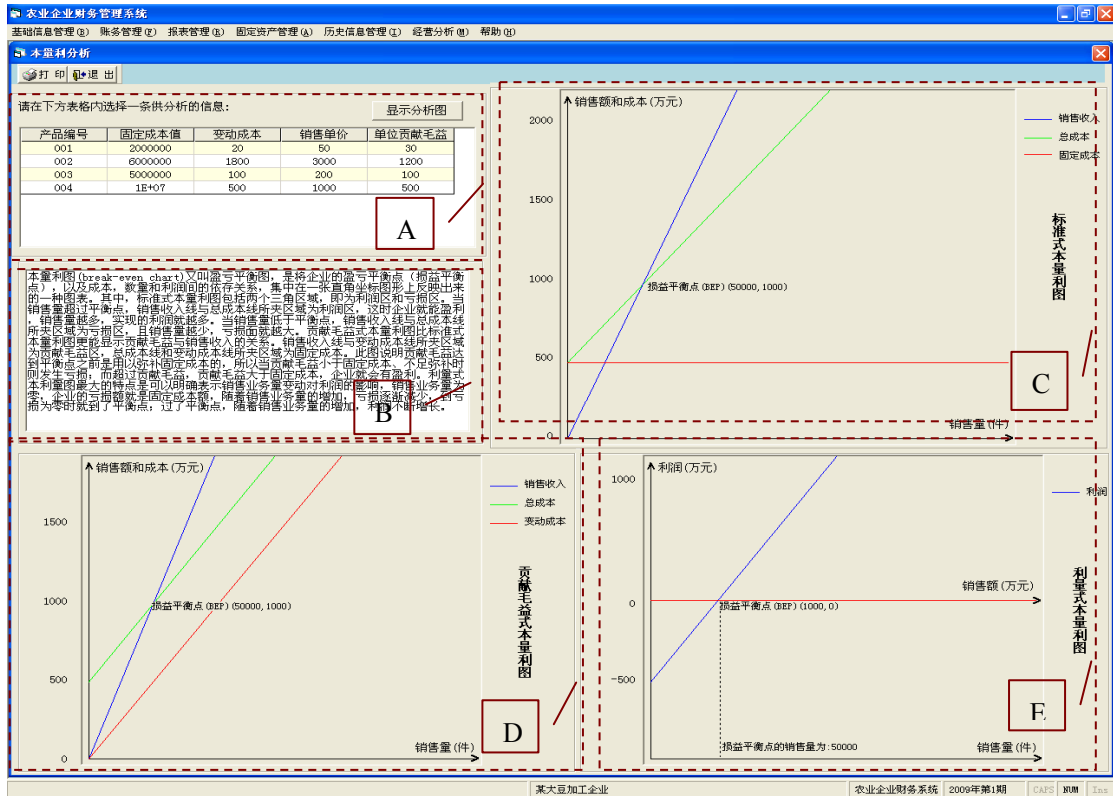


Figure 5.38 Break even analysis

5.3.2 Break Even Analysis and Field Effect

5.3.2.1 Break Even Analysis

The relationships among sales price, total costs, fixed costs, profit and volume can be expressed graphically by preparing a standard mode CVP graph, while the unit contribution margin chart and profit-volume chart demonstrate interrelationships among sales price, total costs, unit contribution margin, variable costs, profit and volume, and interrelationships among units, revenue and profit respectively. In addition, the unit contribution margin chart highlights the profit which is computed as contribution margin minus fixed asset, while the profit-volume chart puts emphasis on illustrating the number of units and the revenue simultaneously when the break even point is reached. The last two types of CVP chart are unique features of the system. The system can show the analysis for each product in three charts, and illustrate the profit, loss, BEP

in every graph, and assess the effect of changing prices, sales volume and costs on profits.

5.3.2.2 Field Effect

To demonstrate the effect of application the soybean processing enterprise and an available product are taken as a case. Figure 5.38 shows the break even analysis result of the product (Product ID 003) in three types of chart. Referring to the three charts, we could find when the company sold 50,000 units the profit was zero, indicated the lowest amount of the product prevented losses. When sales were above 50,000 units, the company earned a profit and the size of the profit increased as sales increased. Moreover, the profit-volume chart indicates that to reach the break even point sales of 10,000,000 Yuan had to be achieved.

5.3.3 Discussion

As a whole, with respect to the soybean processing agricultural enterprise, by analyzing the financial statements for five consecutive years, it could be concluded that the company's business was operating normally and it was financially sound to pay short-term debt, technological innovation was fast, and its operating income and gross profit have steadily increased. Compared to the manual calculation, the system made analysis work simply, avoided calculation mistakes and had much effect on time-saving. However, it was clear that the company made less progress in cost and expenses management, the fund utilization rate was low and the inventory management was inefficient. Therefore, the company should improve its management level and accelerate cash flow.

The system was developed to provide a tool for financial statement analysis and break even analysis, so that the corporate was capable of analyzing and grasping its own performance over the period of time through performing the financial statements analysis, as well as the company could analyze the potential profitability of an expenditure in a sales-based business and budget for a new product through carrying out the break even analysis. This system was tested at field level in collaboration with three enterprises (soybean processing agricultural enterprise and corn processing agricultural enterprises). It was revealed that the software was simple to operate, it was fast in presenting results of analysis, helpful to focus on the relationship indicated by the ratios rather than details of their calculation, ensured accuracy and saved time. Moreover, it was convenient to analyze the financial statement and carry out the break even analysis for the product, and provided managers the references to make intelligence investment and credit decisions.

5.4 Summary

The business analysis system was developed using Microsoft Visual Basic 6.0 and C++ Builder 2009 as user interface and Microsoft Access 2007 and 2010 to save the accounting data, with the operating system of Microsoft Windows XP and Vista in order to help them strengthen business management as well as make intelligent investment and credit decisions. Through the unremitting efforts, the system has been piloted in agricultural enterprises. It was concluded that the system was helpful to the agricultural enterprises to perform business analysis, it being simple to operate, fast in presenting

results of analysis, helpful to focus on the relationship indicated by the ratios rather than details of their calculation, ensured accuracy and saved time. Moreover, it was convenient to analyze the financial statement and carry out the break even analysis for the product, and provided managers the references to make intelligence investment and credit decisions. The enterprises were able to take a scientific approach towards enterprise management while work efficiency improved with the system as it replaced hitherto manual operations. Output from the system inspired managers to formulate and implement new business strategies. For example, managers implemented actions to reduce expenses to control costs, and strengthened the management of fund and inventory to enhance liquidity. In addition, for current products managers planed for promotional activities to expand sales and increase profits after reaching the break even point of sales.

Chapter VI Conclusions

Firstly, this chapter is concluded by, identifying the characteristics and factors impacting on adoption of accounting software in surveyed businesses. Secondly, discuss field effect of accounting system by comparing before and after using our software, and thirdly put forwards proposals for developing accounting software applicable for agro based enterprise in China, and finally future work for developing accounting software is listed.

6.1 Characteristics and Factors Influencing Accounting Software Application in Surveyed Businesses

6.1.1 Characteristics of Accounting Software Application in Surveyed Businesses

The surveyed businesses contain medium-sized and small privately owned agricultural enterprises, state-owned farms and agricultural cooperatives. Due to difference in management capacity, there are common and special characteristics of using accounting software to handle accounting. The surveyed data confirms low adoption rate for accounting software, the adaptation rate for privately owned agricultural enterprises, state-owned farms and agricultural cooperatives are 42%, 56% and 18%, respectively. Furthermore, the adoption rate for accounting software in enterprises with small management operation is lower than others. Additionally, most of agricultural cooperatives and all of state-owned farms are located at rural, which results in enterprises weak in recruiting accountant with high level of accounting and computer technology, thereby, accountant's characteristics are immediately related to adoption of

accounting software.

Medium-sized and small privately owned agricultural enterprises

Based on surveyed results, enterprises both with large scale of management and emerging since 2000 are likely to adopt accounting software to handle accounting. Furthermore, managers and accountants of enterprises using software have positive attitude toward using accounting software, and these accountants are young with age between 30 and 40, and their education level is more than college, which tend to have more knowledge about accounting software and computer.

On the other hand, accounting handled by manual exists in enterprises with small operation and low annual sales. Furthermore, the attitude of accountants and managers working for these enterprises toward accounting software is negative. Accountants with low level of education, high school and junior school, carry out accounting by manual for a long time, and most of them are unwilling to adopt of accounting software to handle accounting.

State-owned farms

According to surveyed result, state-owned farms handling accounting by using accounting software are large in management with farmland exceeding 200 thousand Mu (6.667a / Mu), and recruits one or more accountants to manage accounting. Most of these accountants are young and with high level of education, college or university, which lead to adopt accounting software easily.

On the other hand, state-owned farms not using financial accounting software is small in management with farmland less than 200 thousand Mu, moreover there is few

accountant equipping with school education more than college, while most accountants carry out accounting by manual for a long period of time, whose attitude toward to accounting software is negative. Some accountants recruited by state-owned farms handling accounting by manual, who don't receive formal and professional accounting education, their accounting knowledge is introduced by self or their relatives. Furthermore, accountants working for state-owned farms are not only in charge of managing accounting, but are responsible for managing operation of state-owned farms.

Agricultural cooperatives

Up to now, almost all agricultural cooperatives are small in management scale and weak in organization, therefore most agricultural cooperatives don't recruit accountant to manage accounting, their accounting is entrusted to the accountants of villages, while few agricultural cooperatives recruit accountant to handle accounting by manual or using accounting software.

Based on surveyed results, the managers of agricultural cooperatives handle accounting by using accounting software, which have rich experience in business, and the accountants working for agricultural cooperatives have experience in carrying out accounting by using accounting software and are able to operate accounting software well.

On the other hand, as the management scale is small, it is difficult to recruit accountant. Some agricultural cooperatives are equipped without accountant, whose accounting is handled by the villages' accountants by manual. In addition, some agricultural cooperatives without accountant, whose accounting is entrusted to

accounting firm. Overall, it was said that all agricultural cooperatives not using accounting software are unwilling to use accounting software due to lack of accountant and no confidence to the current software.

6.1.2 Factors Influencing Accounting Software Application in Surveyed Businesses

In order to find the factors impacting on accounting software adoption, the characteristics of managers and accountants working for businesses and current accounting software have been examined, and the analysis results revealed that manager's age was negatively related to accounting software adoption, and the number of accountants positively influenced level of adaptation. Furthermore, the accountant's education level was found to be an important determinant of accounting software adoption. The age of manager, the number of accountant and educational attainment of the accountant are important characteristics likely to influence the level adoption of accounting software by agro based enterprises in Heilongjiang province of China. Among the accounting software related characteristics, software adequacy and software timeliness were positively related to accounting software adoption, while software security negatively influenced adoption of accounting software.

6.2 Comparisons Before and After System Application

6.2.1 Before Application

Company X assisted us in examining the field effect of the system, and it is a medium privately owned agricultural enterprise processing agricultural products. After 2000 its accounting has been handled by accounting software, it was more convenient to manage accounting than by manual, such as set account items simply, ledger and some reports

generated automatically, therefore, it saved time in dealing with accountant item, generating ledger and reports, moreover it avoided some mistakes of accounting calculation. However, as the system couldn't provide special financial reports sufficiently for company X, the company kept accounts by both manual and software. Additionally, it was said that the system was not simple to understand, there were lot of setting and data entry before using the system, most errors of the system must be solved by the vendor or developer and it was necessary to accept training provided by the vendor or developer.

As for business analysis, the system being used by company X doesn't provide function for calculating business analysis, and company X carried out simple business analysis by manual before new fiscal year starting. It was said that it cost much time and was easy to make mistakes while carry out business analysis by manual.

6.2.2 After Application

After application, since our system is simple to understand, has simple setting and data entry, while it provides free after-service, special reports and schedules, thereby it was concluded that company X was able to take a scientific method to strengthen the business management as follows:

Saved time and labor, improve efficiency and accuracy than manual calculation.

Was able to generate their special financial statements by the system instead of manual operation.

Saved time in professional training and eased economic burden.

Could control their expenditure on computer configuration and after-sales service.

6.3 Proposals for Developing Accounting Software

Although the Chinese government has continuously implemented accounting reform and uniformed accounting standards for each industries, since each industry has its own characteristics, while developing software it should not only follow the national accounting principles, but follow practical situation of each industry. Additionally, there is a big difference among accountants recruited by each industry, such as professional knowledge of accounting, computer technology and etc. Based on the surveyed results of this study and suggestion from the test data supplied by the companies, the proposals for developing software are presented as follows:

The system should be developed to understand and operate simply, decrease setting before running the system.

The system should generate special reports automatically as possible, and provide module for designing reports needed for different industry.

The vendor or developer should simplify the functional modules, provide different modules meeting demand of enterprise.

The vendor or developer should provide more free after-service and sufficient training.

6.4 Future Work for Developing Accounting Software

As result of different accounting rule there are various financial reports for different agricultural enterprise, the system should pay more attention on developing the financial reports, perfect its functions and make the management of financial reports more free and effective. As for function of business analysis it will be developed to add additional functional modules such as cost and capital analysis, cost and capital prediction.

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Program Code

(1) The code for financial accounting software

```
Private Sub Form_Load()
    Dim db As New DataBases
    Adodc1.ConnectionString = db.sConn
    '设置子窗体的现实位置
    Me.Left = (frmMain.ScaleWidth - Me.Width) / 2
    Me.Top = (frmMain.ScaleHeight - Me.Height) / 2
    cbbKind.AddItem "资产类"; cbbKind.AddItem "负债类"; cbbKind.AddItem "所有者权益类"
    cbbKind.AddItem "成本类"; cbbKind.AddItem "损益类"; cbbDirection.AddItem "借方"
    cbbDirection.AddItem "贷方"; cbbModify.AddItem "是"; cbbModify.AddItem "否"
    LoadData
    SetTextBoxState (False); SetToolBarState (True)
    Dim j,l As Integer; Dim k,p As Double;
    Dim rs, ts As Recordset; Dim strsql, key, txt As String
    Dim nodx As Node
    strsql = "select distinct 科目类别 from 科目表 "
    Set rs = db.RunSelectSQL(strsql)
    TreeView1.LineStyle = tvwTreeLines
    TreeView1.Style = tvwTreelinesPlusMinusPictureText
    TreeView1.Sorted = True; Do While rs.EOF = False
        i = 1; key = Trim(rs("科目类别"))
        strsql = "select 科目名称,科目代码 from 科目表 where 科目类别='" + rs("科目类别") +
" order by 科目代码"
        Set ts = db.RunSelectSQL(strsql); Set nodx = TreeView1.Nodes.Add(, key, key, 1)
        Do While ts.EOF = False
            If Len(ts("科目代码")) = 4 Then
                j = TreeView1.Nodes.Count; txt = Trim(ts("科目代码")) + "." + Trim(ts("科目名称"))
                Set nodx = TreeView1.Nodes.Add(key, tvwChild, "child" & j, txt, 3)
            ElseIf Len(ts("科目代码")) = 8 Then
                k = TreeView1.Nodes.Count * 10 ^ (i - 1) + 1
                txt = Trim(ts("科目代码")) + "." + Trim(ts("科目名称"))
                Set nodx = TreeView1.Nodes.Add("child" & j, tvwChild, "child" & k, txt, 3)
                i = i + 1; q = 1
            ElseIf Len(ts("科目代码")) = 12 Then
                p = k * 10 ^ (q + 1) + 1
                txt = Trim(ts("科目代码")) + "." + Trim(ts("科目名称"))
                Set nodx = TreeView1.Nodes.Add("child" & k, tvwChild, "child" & p, txt, 3)
                q = q + 1
            End If
            ts.MoveNext
        Loop
    Loop
```

```

        rs.MoveNext
    Loop
    For i = 1 To TreeView1.Nodes.Count
        If Not TreeView1.Nodes.Item(i).Child Is Nothing And Not TreeView1.Nodes.Item(i).Parent
        Is Nothing Then
            TreeView1.Nodes.Item(i).Image = 4
        ElseIf Not TreeView1.Nodes.Item(i).Child Is Nothing And TreeView1.Nodes.Item(i).Parent
        Is Nothing Then
            TreeView1.Nodes.Item(i).Image = 1
        End If
    Next
    rs.MoveFirst; TreeView1.Refresh
End Sub

```

'实现数据的读取和显示

```

Private Sub LoadData()
    Dim strFilter As String
    If Len(Trim(txbOne.Text)) = 0 Then
        If Len(Trim(txbTwo.Text)) = 0 Then
            If Len(Trim(txbThree.Text)) = 0 Then
                strFilter = ""
            Else
                strFilter = "where 科目类别 = "
                strFilter = strFilter + Trim(txbThree.Text) + ""
            End If
        Else
            strFilter = "where 科目名称 = " + Trim(txbTwo.Text) + ""
            If Len(Trim(txbThree.Text)) <> 0 Then
                strFilter = strFilter + " and 科目类别 = "
                strFilter = strFilter + Trim(txbThree.Text) + ""
            End If
        End If
    Else
        strFilter = "where 科目代码 = " + Trim(txbOne.Text) + ""
        If Len(Trim(txbTwo.Text)) <> 0 Then
            strFilter = strFilter + " and 科目名称 = " + Trim(txbTwo.Text) + ""
            If Len(Trim(txbThree.Text)) <> 0 Then
                strFilter = strFilter + " and 科目类别 = "
                strFilter = strFilter + Trim(txbThree.Text) + ""
            End If
        Else
            If Len(Trim(txbThree.Text)) <> 0 Then
                strFilter = strFilter + " and 科目类别 = "
                strFilter = strFilter + Trim(txbThree.Text) + ""
            End If
        End If
    End If
End Sub

```

```

        End If
    End If
End If
Dim db As New DataBases
Dim rs As Recordset
Set rs = db.RunSelectSQLUpdatable("select * from 科目表 " + strFilter)
Set Adodc1.Recordset = rs
End Sub

```

'实现增加功能

```

Private Sub SaveForAdd()
    Dim db As New DataBases; Dim strsql As String
    strsql = "insert into 科目表(科目代码,科目名称,助记码,科目类别,余额方向,修改) values ("
    strsql = strsql + Trim(txbCode.Text) + ","; strsql = strsql + Trim(txbName.Text) + ","
    strsql = strsql + Trim(txbHelpCode.Text) + ","; strsql = strsql + Trim(cbbKind.Text) + ","
    strsql = strsql + Trim(cbbDirection.Text) + ","; strsql = strsql + Trim(cbbModify.Text) + """)
    db.RunSelectSQL (strsql)
End Sub

```

```

Private Sub Toolbar1_ButtonClick(ByVal Button As MSComctlLib.Button)
    Dim db As New DataBases; Dim strsql As String; Dim rs As Recordset
    If StrComp(Button.key, "btnFirst") = 0 Then
        Adodc1.Recordset.MoveFirst
    ElseIf StrComp(Button.key, "btnBefore") = 0 Then
        Adodc1.Recordset.MovePrevious
    ElseIf StrComp(Button.key, "btnNext") = 0 Then
        Adodc1.Recordset.MoveNext
    ElseIf StrComp(Button.key, "btnLast") = 0 Then
        Adodc1.Recordset.MoveLast
    ElseIf StrComp(Button.key, "btnNew") = 0 Then
        bAdd = True; Adodc1.Recordset.AddNew
        SetTextBoxState (True); SetToolBarState (False)
        Clear
    ElseIf StrComp(Button.key, "btnModify") = 0 Then
        bAdd = False
        SetTextBoxState (True); SetToolBarState (False)
    ElseIf StrComp(Button.key, "btnDelete") = 0 Then
        If MsgBox("确定要删除吗? ", vbYesNo) = vbYes Then
            DeleteData
        End If
    ElseIf StrComp(Button.key, "btnSave") = 0 Then
        SetTextBoxState (False); SetToolBarState (True)
        If bAdd = True Then
            '为新增数据保存

```

```

strsql = "select * from 科目表 where 科目代码=" + Trim(txbCode.Text) + ""
Set rs = db.RunSelectSQL(strsql)
If rs.RecordCount = 0 Then
    SaveForAdd
    Adodc1.Recordset.Requery; Adodc1.Refresh
Else
    MsgBox ("该科目代码已存在! ")
    Adodc1.Recordset.CancelUpdate; Adodc1.Recordset.Requery
    Adodc1.Refresh
End If
Else
'为更新数据保存
strsql = "select * from 科目表 where 科目代码=" + Trim(txbCode.Text) + ""
Set rs = db.RunSelectSQL(strsql)
If rs.RecordCount = 0 Then
    SaveForUpdate
Else
    MsgBox ("该科目代码已存在! ")
    Adodc1.Recordset.CancelUpdat; Adodc1.Recordset.Requery
    Adodc1.Refresh
End If
End If
ElseIf StrComp(Button.key, "btnCancel") = 0 Then
    Adodc1.Recordset.CancelUpdate; Adodc1.Recordset.Requery
    SetTextBoxState (False); SetToolBarState (True)
ElseIf StrComp(Button.key, "btnprint") = 0 Then
    dataprint
ElseIf StrComp(Button.key, "btnExit") = 0 Then
    Hide
End If
End Sub

Private Sub TreeView1_NodeClick(ByVal Node As MSCComctlLib.Node)
Dim db As New DataBases; Dim rs As Recordset
Dim strsql As String
If TreeView1.SelectedItem.Parent Is Nothing Then
    strsql = "select 科目代码,科目名称,助记码,科目类别,余额方向,修改 from 科目表 where 科目类别=" + Trim(TreeView1.SelectedItem.Text) + ""
    Set rs = db.RunSelectSQLUpdatable(strsql); Set Adodc1.Recordset = rs
    Adodc1.Refresh; grdDataGrid.Refresh
Else
If Mid(Trim(TreeView1.SelectedItem.Text), 13, 1) = "." Then
    strsql = "select 科目代码,科目名称,助记码,科目类别,余额方向,修改 from 科目表 where 科目代码=" + Mid(Trim(TreeView1.SelectedItem.Text), 1, 12) + ""

```

```

ElseIf Mid(Trim(TreeView1.SelectedItem.Text), 9, 1) = "." Then
    strsql = "select 科目代码,科目名称,助记码,科目类别,余额方向,修改 from 科目表 where 科目代码=" + Mid(Trim(TreeView1.SelectedItem.Text), 1, 8) + ""
Else
    strsql = "select 科目代码,科目名称,助记码,科目类别,余额方向,修改 from 科目表 where 科目名称=" + Mid(Trim(TreeView1.SelectedItem.Text), 6) + ""
End If
Set rs = db.RunSelectSQLUpdatable(strsql); Set Adodc1.Recordset = rs
Adodc1.Refresh; grdDataGrid.Refresh
End If
End Sub

Public Sub dataprint()
Dim db As New DataBases; Dim rs As Recordset
Dim str As String; str = "select * from 科目表"
Set rs = db.RunSelectSQL(str)
    frmcx.Visible = False; frmcx.MSFlexGrid1.Cols = 7
    frmcx.MSFlexGrid1.Rows = 1; frmcx.MSFlexGrid1.ColWidth(0) = 500
    frmcx.MSFlexGrid1.ColWidth(1) = 2000; frmcx.MSFlexGrid1.ColWidth(2) = 2500
    frmcx.MSFlexGrid1.ColWidth(3) = 1700; frmcx.MSFlexGrid1.ColWidth(4) = 1700
    frmcx.MSFlexGrid1.ColWidth(5) = 1700; frmcx.MSFlexGrid1.ColWidth(6) = 1000
    frmcx.MSFlexGrid1.ColAlignment(1) = 4; frmcx.MSFlexGrid1.TextMatrix(0, 0) = "行号"
    frmcx.MSFlexGrid1.TextMatrix(0, 1) = "科目代码";
    frmcx.MSFlexGrid1.TextMatrix(0, 2) = "    科目名称"
    frmcx.MSFlexGrid1.TextMatrix(0, 3) = "  助记码";
    frmcx.MSFlexGrid1.TextMatrix(0, 4) = "科目类别"
    frmcx.MSFlexGrid1.TextMatrix(0, 5) = "余额方向"
    frmcx.MSFlexGrid1.TextMatrix(0, 6) = "修  改"
For i = 1 To rs.RecordCount
    frmcx.MSFlexGrid1.Rows = frmcx.MSFlexGrid1.Rows + 1
    frmcx.MSFlexGrid1.TextMatrix(i, 0) = I; frmcx.MSFlexGrid1.TextMatrix(i, 1) = rs(0)
    frmcx.MSFlexGrid1.TextMatrix(i, 2) = rs(1); frmcx.MSFlexGrid1.TextMatrix(i, 3) = rs(2)
    frmcx.MSFlexGrid1.TextMatrix(i, 4) = rs(3); frmcx.MSFlexGrid1.TextMatrix(i, 5) = rs(4)
    If rs(5) <> 0 Then frmcx.MSFlexGrid1.TextMatrix(i, 6) = rs(5) End If
    rs.MoveNext
Next
frmcx.Label1(2).Caption = "科目表"; frmcx.msgridprint
End Sub

```

(2) The code for business analysis software

```
Private Sub Combo1_Click()
On Error GoTo inti2_error
Dim db As New DataBases; Dim rb, gb1, gb2, gb3, gb4, gb5, gb6, gb As Recordset
Dim s(10) As String; Dim schr(10) As String
Set rb = db.RunSelectSQL("delete from 比率表");Set MSChart1.DataSource = Nothing
If Option1(0).Value = True Then 'C_col 赋值
    C_col = 6 '5year
ElseIf Option1(1).Value = True Then
    C_col = 11 '10year
ElseIf Option1(2).Value = True Then
    C_col = 16 '15year
ElseIf Option1(3).Value = True Then
    C_col = 13 '1year
End If
Select Case Combo1.ListIndex
    Case 0 '成本费用利润率
        Text2.Text = "成本费用利润率是指经利润与成本费用总额之比.这一比率反映企业的投入产出水平,即所得与所费的比率.一般来说,这一比率越大,企业的盈利水平越高."
        If (Option1(0).Value = True Or Option1(1).Value = True Or Option1(2).Value = True) And Trim(Text1.Text) <> "" And Trim(Combo2.Text) <> 0 Then 'five years
            s(0) = "insert into 比率表(会计年度,会计期间,比率) select ma3.会计年度,ma3.会计期间,ma3.本年累计数 from ma3"
            s(0) = s(0) + " where ma3.项目编号='5401' and ma3.会计年度>=" + Trim(Text1.Text) + "" + "and ma3.会计年度<=" + Trim(Text1.Text) + "" + " and ma3.会计期间=" + Trim(CStr(CSng(Trim(Combo2.Text))))
            s(1) = "update 比率表 as a,ma3 as b set a.比率=a.比率+b.本年累计数 where b.项目编号='5501' and a.会计年度=b.会计年度 and a.会计期间=b.会计期间"
            s(2) = "update 比率表 as a,ma3 as b set a.比率=a.比率+b.本年累计数 where b.项目编号='5502' and a.会计年度=b.会计年度 and a.会计期间=b.会计期间"
            s(3) = "update 比率表 as a,ma3 as b set a.比率=a.比率+b.本年累计数 where b.项目编号='5503' and b.本年累计数<>0 and a.会计年度=b.会计年度 and a.会计期间=b.会计期间"
            s(4) = "update 比率表 as a,ma3 as b set a.比率=a.比率+b.本年累计数 where b.项目编号='5701' and b.本年累计数<>0 and a.会计年度=b.会计年度 and a.会计期间=b.会计期间"
            s(5) = "update 比率表 as a,ma3 as b set a.比率=b.本年累计数/a.比率 where b.项目编号='5004' and a.比率<>0 and a.会计年度=b.会计年度 and a.会计期间=b.会计期间"
            Call zzdebit(C_col - 1, "成本费用利润率", "净利润", "成本费用总额")
            '设置表格的数据
            schr(0) = "select 本年累计数,会计年度 from ma3 where ma3.项目编号='5004'" + " and ma3.会计期间=" + Trim(CStr(CSng(Trim(Combo2.Text)))) + "and ma3.会计年度>=" + Trim(Text1.Text) + "" + "and ma3.会计年度<=" + Trim(CStr(CSng(Trim(Text1.Text))) + C_col - 2) + "" + "order by 会计年度 "
```

```
schr(1) = "select 本年累计数,会计年度 from ma3 where ma3.项目编号='5701'" + "
and ma3.会计期间=" + Trim(CStr(CSng(Trim(Combo2.Text)))) + "and ma3.会计年度>=" +
Trim(Text1.Text) + "" + "and ma3.会计年度<=" + Trim(CStr(CSng(Trim(Text1.Text)) + C_col - 2))
+ "" + "order by 会计年度"
```

```
schr(2) = "select 本年累计数,会计年度 from ma3 where ma3.项目编号='5401'" + "
and ma3.会计期间=" + Trim(CStr(CSng(Trim(Combo2.Text)))) + "and ma3.会计年度>=" +
Trim(Text1.Text) + "" + "and ma3.会计年度<=" + Trim(CStr(CSng(Trim(Text1.Text)) + C_col - 2))
+ "" + "order by 会计年度 "
```

```
schr(3) = "select 本年累计数,会计年度 from ma3 where ma3.项目编号='5501'" + "
and ma3.会计期间=" + Trim(CStr(CSng(Trim(Combo2.Text)))) + "and ma3.会计年度>=" +
Trim(Text1.Text) + "" + "and ma3.会计年度<=" + Trim(CStr(CSng(Trim(Text1.Text)) + C_col - 2))
+ "" + "order by 会计年度 "
```

```
schr(4) = "select 本年累计数,会计年度 from ma3 where ma3.项目编号='5502'" + "
and ma3.会计期间=" + Trim(CStr(CSng(Trim(Combo2.Text)))) + "and ma3.会计年度>=" +
Trim(Text1.Text) + "" + "and ma3.会计年度<=" + Trim(CStr(CSng(Trim(Text1.Text)) + C_col - 2))
+ "" + "order by 会计年度 "
```

```
schr(5) = "select 本年累计数,会计年度 from ma3 where ma3.项目编号='5503'" + "
and ma3.会计期间=" + Trim(CStr(CSng(Trim(Combo2.Text)))) + "and ma3.会计年度>=" +
Trim(Text1.Text) + "" + "and ma3.会计年度<=" + Trim(CStr(CSng(Trim(Text1.Text)) + C_col - 2))
+ "" + "order by 会计年度 "
```

```
ElseIf Option1(3).Value = True And Trim(Text1.Text) <> "" Then 'one year
```

```
s(0) = "insert into 比率表(会计年度,会计期间,比率) select ma3.会计年度,ma3.会计
期间,ma3.本年累计数 from ma3"
```

```
s(0) = s(0) + " where ma3.项目编号='5401' and ma3.会计年度=" + Trim(Text1.Text) +
""
```

```
s(1) = "update 比率表 as a,ma3 as b set a.比率=a.比率+b.本年累计数 where b.项目
编号='5501' and a.会计年度=b.会计年度 and a.会计期间=b.会计期间"
```

```
s(2) = "update 比率表 as a,ma3 as b set a.比率=a.比率+b.本年累计数 where b.项目
编号='5502' and a.会计年度=b.会计年度 and a.会计期间=b.会计期间"
```

```
s(3) = "update 比率表 as a,ma3 as b set a.比率=a.比率+b.本年累计数 where b.项目
编号='5503' and a.会计年度=b.会计年度 and a.会计期间=b.会计期间"
```

```
s(4) = "update 比率表 as a,ma3 as b set a.比率=a.比率+b.本年累计数 where b.项目
编号='5701' and a.会计年度=b.会计年度 and a.会计期间=b.会计期间"
```

```
s(5) = "update 比率表 as a,ma3 as b set a.比率=b.本年累计数/a.比率 where b.项目
编号='5004' and a.比率<>0 and a.会计年度=b.会计年度 and a.会计期间=b.会计期间"
```

```
Call zzcash("成本费用利润比率", "净利润", "成本费用总额")
```

```
'设置表格的数据
```

```
schr(0) = "select 本年累计数,会计期间 from ma3 where ma3.项目编号='5004'" +
"and ma3.会计年度=" + Trim(Text1.Text) + ""
```

```
schr(1) = "select 本年累计数,会计期间 from ma3 where ma3.项目编号='5503'" +
"and ma3.会计年度=" + Trim(Text1.Text) + ""
```

```
schr(2) = "select 本年累计数,会计期间 from ma3 where ma3.项目编号='5701'" +
"and ma3.会计年度=" + Trim(Text1.Text) + ""
```

```
schr(3) = "select 本年累计数,会计期间 from ma3 where ma3.项目编号='5401'" +
```

```

"and ma3.会计年度=" + Trim(Text1.Text) + ""
    schr(4) = "select 本年累计数,会计期间 from ma3 where ma3.项目编号='5501'" +
"and ma3.会计年度=" + Trim(Text1.Text) + ""
    schr(5) = "select 本年累计数,会计期间 from ma3 where ma3.项目编号='5502'" +
"and ma3.会计年度=" + Trim(Text1.Text) + ""
Else
    MsgBox ("请确认是否选择比较类型，是否输入比较开始年度和选择比较月份！")
    Text1.Text = ""; Text2.Text = ""; Combo1.Text = ""; Combo2.Text = ""
    For i = 0 To 3
        Option1(i).Value = False
    Next
    Exit Sub
End If
For j = 0 To 5
    db.RunSelectSQL (s(j))
Next
If Option1(3).Value = True Then      '设置一年图表数据
    Set rb = db.RunSelectSQL("select 比率 from 比率表 order by 会计期间")
    MSChart1.RowCount = rb.RecordCount
    For k = 1 To rb.RecordCount
        MSChart1.row = k; MSChart1.RowLabel = k; MSChart1.Data = rb(0)
    rb.MoveNext
    Next
Else      '设置其他图表数据等
    Set rb = db.RunSelectSQL("select 比率,会计年度 from 比率表 order by 会计年度")
    MSChart1.RowCount = rb.RecordCount
    For k = 1 To rb.RecordCount
        MSChart1.row = k; MSChart1.RowLabel = rb(1); MSChart1.Data = rb(0)
    rb.MoveNext
    Next
End If
Set gb1 = db.RunSelectSQL(schr(0)); Set gb2 = db.RunSelectSQL(schr(1))
Set gb3 = db.RunSelectSQL(schr(2)); Set gb4 = db.RunSelectSQL(schr(3))
Set gb5 = db.RunSelectSQL(schr(4)); Set gb6 = db.RunSelectSQL(schr(5))
If Option1(3).Value = True Then
    Set gb = db.RunSelectSQL("select 比率,会计期间 from 比率表 order by 会计期间")
Else
    Set gb = db.RunSelectSQL("select 比率,会计年度 from 比率表 order by 会计年度")
End If
With MSFlexGrid1
    For k = 1 To gb.RecordCount
        For j = 2 To C_col
            If Trim(gb1(1)) = Left(Trim(.TextMatrix(0, j)), Len(Trim(.TextMatrix(0, j))) - 1)
then '设置息税前利润行

```

```

        .TextMatrix(1, j) = Format(gb1(0), "#,#0.00")
    End If
    If Trim(gb2(1)) = Left(Trim(.TextMatrix(0, j)), Len(Trim(.TextMatrix(0, j))) - 1)
Then '设置销售净额行
        .TextMatrix(2, j) = Format(gb2(0) + gb3(0) + gb4(0) + gb5(0) + gb6(0),
"#,#0.00")
    End If
    If Trim(gb(1)) = Left(Trim(.TextMatrix(0, j)), Len(Trim(.TextMatrix(0, j))) - 1)
Then '设置销售利润率行
        .TextMatrix(3, j) = Format(gb(0), "###,##%")
    End If
Next
gb1.MoveNext; gb2.MoveNext; gb3.MoveNext; gb4.MoveNext
gb5.MoveNext; gb6.MoveNext; gb.MoveNext
Next
End With

```

'The program code for Case 1 was taken a case to demonstrate the function

```
Exit Sub
```

```
inti2_error:
```

```
MsgBox "连接数据文件错误！"
```

```
Exit Sub
```

```
End Sub
```

```

Private Sub zzcash(s As String, t As String, r As String) '设置 1 年的表格和图表外观
    MSChart1.chartType = VtChChartType2dLine; MSChart1.ColumnCount = 1
    MSChart1.ColumnLabel = Trim(Text1.Text) + "年" + s;
    MSChart1.Plot.Axis(VtChAxisIdY).AxisTitle = "比率值"
    MSChart1.Plot.Axis(VtChAxisIdX).AxisTitle = "月"
    MSChart1.Plot.Axis(VtChAxisIdX).AxisTitle.TextLayout.Orientation = VtOrientationHorizontal
    MSChart1.TitleText = Trim(Text1.Text) + "年的" + s + "分析图表"
    MSChart1.Title.VtFont.Size = 14;
    MSChart1.Plot.Axis(VtChAxisIdY).AxisTitle.VtFont.Style = Bold
    MSChart1.Visible = True
    With MSFlexGrid1
        .Cols = 14; .Rows = 4; .ColWidth(0) = 0; .ColWidth(1) = 1500
        For i = 2 To 13
            .ColWidth(i) = 1500; .ColAlignment(i) = 7
        Next
        For i = 1 To 12
            .TextMatrix(0, i + 1) = Trim(CStr(i)) + "月"
        Next
        .TextMatrix(1, 1) = t + "（元）"; .TextMatrix(2, 1) = r + "（元）"; .TextMatrix(3, 1) = s
    End With
End Sub

```

Development of Accounting System for Chinese Agricultural Enterprise

- Financial Accounting Software and Business Analysis Software-

ABSTRACT

In China, since the first accounting software was introduced to the market in 1978, accounting software has evolved very rapidly and accounting software available to businesses has changed substantially. Additionally, along with China economic reform and opening-up, Chinese economy has made remarkable progress, accounting software applications have become an integral part of most business operations as it can strengthen the business management and relieve the accountant from tedious accounting information processing. Moreover, the Chinese government gives due recognition to management of farm accounting information, and has undertaken many reforms in agricultural accounting rules. Yet the rate of adoption is considerably low in agriculture compared to businesses in other sectors.

At present, there are many accounting software available in the Chinese market, but most of the software are still financial and management accounting software integrated with the Enterprise Resource Planning (ERP) and Customer relationship management (CRM), and anyone of them is not specially designed applicable for agricultural enterprise. In addition, the software are expensive, complex operation, demand for expensive computer configuration, some after-sales service is not free. On the other hand, there is no special software for business analysis available on the market, most software is not embedded with the business analysis while some financial accounting software contains simple business analyses, for instance, the k/3 series products provided by Kingdee a leading provider of enterprise management software in China is

limited to break even analysis, activity ratios analysis and liquidity ratio analysis.

Based on the profiles of current software available on the market, it is possible that the insufficiencies of current software influence adoption of accounting software in agriculture. Thus, in order to find why the adoption rate of accounting software applied to agriculture is very low, it is necessary to investigate the factors influencing accounting software adaption except characteristics of accounting software available on the market. Therefore, the main objective of this study is to develop an accounting system compatible with characteristics of agricultural enterprises accounting, which includes financial accounting system and business analysis system. In addition, this study aims to identify the characteristics of business manager, accountant and accounting software characteristics influencing accounting software adoption among the surveyed businesses.

The accounting system applied to Chinese agricultural enterprise were developed using Microsoft Visual Basic 6.0 and C++ Builder 2009 as user interface and Microsoft Access 2007 and 2010 to save the accounting data, with the operating system of Microsoft Windows XP and Vista. The system requirements for accounting system are as follows: ①At least Chinese version of Windows XP (32-bit), ②At least 1.0 GHZ Pentium IV processor, 512 MB RAM and 100MB of disk space, ③4x CD-ROM drive for software installation, ④Display optimized for 1024 x 768 screen resolution.

The accounting system covers two modules, financial accounting system and business analysis system. The main modules of financial accounting system are as follows: set basic information, keep accounts, manage financial reports and manage accounting information. The business analysis system is composed of financial statement analysis and break even analysis. It is expected that the accounting system is

capable of helping agricultural enterprises strengthen business management as well as make intelligent investment and credit decisions. The financial accounting system can reduce the user self-defining term before account starts, as far as possible supply automatic input or selection as input accounting evidence and accounting entry, inquire the corresponding accounting evidence while browse the ledger so as to retain the audit trials and generate ledger, subsidiary ledger, financial reports and some specific subsidiary schedules automatically. Additionally, the business analysis system is capable of taking less time for carrying out the business analysis compared to existing software, improving accuracy and presenting various analyses for corporate managers in terms of ratio and charts to help them make intelligent investment and credit decisions.

The study is based on primary data collected from Heilongjiang, in China. Using binomial logistic regression analysis determinants of accounting software adaption, such as characteristics of managers, accountants and accounting software, were examined. It confirmed low adoption rate for accounting software. The results revealed that manager's age was negatively related to accounting software adoption, and the number of accountants positively influenced level of adaptation. The accountant's education level was found to be an important determinant of accounting software adoption. Furthermore, among the accounting software related characteristics, such as software adequacy and software timeliness were positively related to accounting software adoption, while software security negatively influenced adoption of accounting software.

In addition, to demonstrate the effect of accounting system, it was piloted in a soybean processing agricultural enterprise and a corn processing agricultural enterprise

in China. It was concluded that the accounting system was helpful to the agricultural enterprises to keep accounts and perform business analysis. It was said that the financial accounting software was capable of managing accounting subject, the accounting evidence and accounting entry simply and conveniently, data processing was faster and more accurate than manual accounting, the financial reports were complete and reduced the tasks of accounting calculation. It was more reasonable and effective for use while complying with the latest accounting rules. In addition, it was revealed that the business analysis software was fast in presenting results of analysis, helpful to focus on the relationship indicated by the ratios rather than details of their calculation, ensured accuracy and saved time. Moreover, it was convenient to analyze the financial statement and carry out the break even analysis for the product, and provided managers the references to make intelligence investment and credit decisions.

Therefore, the accounting system being simple to operate, free after-service and less expensive is expected to be acceptable by the Chinese agricultural enterprises.

中国農企業を対象とした会計システムの開発研究

—財務管理システムと経営分析システム—

要旨

中国では、1978年に最初の財務会計ソフトウェアが誕生して、財務会計ソフトウェアは目覚ましい発展を遂げ、各業種に適用な財務会計ソフトウェアは相当に変化した。その上、中国の改革・開放に伴い中国経済は著しい進歩を遂げ、企業管理を強化して財務データの処理を簡略化するため、経営管理に財務会計ソフトウェアの利用が重要になった。中国政府は農企業における会計情報の管理を重視し、会計規則の改革に取り組んだ。しかし、他の産業分野に比べて、農業に財務会計ソフトウェアの普及率が相当に低くなった。

今日の中国において、利用可能な会計ソフトウェアがようやく一定数存在するようになったとはいうものの、財務会計簿記と管理会計システム（Enterprise Resource Planning (ERP) と Customer relationship management (CRM) の統合）は分離した状態ではなく、システム内で一体的に取り扱うものが大半である。それらの情報システムは、農企業向けの専用ソフトウェアではないことに加えて、高性能のコンピュータを前提にした高価格なシステムであり、操作性が複雑で有料のアフターサービスを要するものが多い。また、ビジネス分析に関しては、専用ソフトウェアが市場に提供されておらず、財務会計簿記用のソフトウェアに簡易なビジネス分析ツールが付加される程度にとどまっているのが実態である。

市場で既存のソフトウェアの状況に基づいて、既存のソフトウェアの不足が農業への会計ソフトウェアの応用に影響を及ぼすと判断できる。また、なぜ農業に適用する会計ソフトウェアの普及率が非常に低くなったことを調べるために、市場で既存の会計ソフトウ

ウェアにおける特性のほかに、財務会計ソフトウェアの応用に影響を与える要因を調査することが必要。そして、本研究では、農企業会計の会計原則に立脚して専用の会計情報システムを開発することを目的とした。開発するソフトウェアには、財務管理システムとビジネス分析システムの2つの機能を組み込むこととした。また、本研究では、ソフトウェアの利用への影響する企業の責任者、会計係および財務会計ソフトウェアに関する特性を指摘することを目的とした。

ソフトウェア開発に際しては、プログラム言語に Microsoft Visual Basic 6.0 と C++ Builder 2009 を利用し、データベース構築のために Microsoft Access 2007 と 2010 を適用した。パソコンの基本的な稼働環境は、①32bit タイプ以上の Microsoft Windows の OS が利用可能な機種、②1.0 GHZ Pentium IV プロセッサ以上、512MB RAM 以上、100MB 以上のディスクスペース、③4倍速 CD-ROM ドライブ、⑤画面解像度 1024×768(最適)等である。

本システムの主要な構成は、財務会計システムについては初期設定、簿記記帳、財務諸表作成・管理、ビジネス分析システムについては財務諸表分析、損益分岐点分析となっている。これらの機能を活用することにより農企業の経営管理を強化し、企業の投資行動のための効果的な意思決定に役立てることが可能となる。財務会計システムの部分では、簿記記帳を開始する前のユーザによる初期設定の作業を容易にするよう工夫した。また、勘定科目を用いて会計実績データを入力する際には、できるだけ作業を軽減化することができるよう自動入力機能を装備しており、蓄積したデータについては、元帳、仕訳帳、財務諸表、関連補助簿等を用いて簡便に自動出力させることができる。ビジネス分析システムの部分では、既存のソフトウェアと比較して分析作業を効率的かつ簡便に行なうことができ、計算結果をわかりやすく図表化して表わすことにより、企業の投資行動のための効果的な意思決定に向けて有益な資料やデータを導出することができる。

本研究は中国の黒竜江の農業関連産業分野への聞き取り調査からの一次データに依拠している。企業の責任者、会計係および財務会計ソフトウェアの要因を視座に入れ、2項式ロジスティック回帰分析 (binomial logistic analysis) を用いて、財務会計ソフトウェアの利用普及上の阻害要因を明らかにした。分析結果から見ると、農業への財務会計ソフトウェアの利用率が低いことが分かった。結果について見ると、企業の責任者の年齢が財務会計ソフトウェアの利用と否定的に関係があることを明らかにした。また、会計係の人数は、財務会計ソフトウェアの利用に肯定の影響を与えている。会計係が持つ学歴のレベルは、財務会計ソフトウェアの利用に重要な決定要素が分かった。更に、財務会計ソフトウェアに関連する特性、例えば、ソフトウェアの安全性が財務会計ソフトウェアの利用に否定的な影響を与えた。一方、ソフトウェアの機能の適切およびソフトウェアの機能更新の適時性は財務会計ソフトウェアの利用と肯定的な関係があることが分かった。

さらに、本システムの開発に際しては、現地実証試験のために中国黒竜江省のトウモロコシ加工農企業と大豆加工農企業から協力を得た。現地実証試験の実施を通じてソフトウェアの改良を重ねたことにより、本システムが農企業の簿記記帳とビジネス分析に対して有益なツールとして役割を發揮することを結論づけることができた。具体的には、財務会計簿記のソフトウェアとしては、勘定科目コードを用いて会計伝票等を簡単に入力することができ、また、計算処理が非常に早く正確で、完成度の高い財務諸表を出力できるところから、手記式による会計データ処理に比較して格段に有利であるとの評価を得た。ビジネス分析のソフトウェアとしては、分析のための計算処理を正確かつ迅速に実施し、分析結果を作表や作図によってわかりやすく出力することができることなどが高く評価された。さらに、ビジネス分析の手法として、財務諸表による製品の損益分岐点分析の機能を搭載したことにより、農産加工を行なう農企業にとって投資に関わる意思決定を行なう際

に有益な分析結果を入手できることについて評価が得られた。

以上のような実際の適用効果に基づいて考察すると、開発した本会計情報システムが備えた、操作が簡便で容易であること、有料のアフターサービスを必要としないこと、価格が低廉であることといった特長から、中国国内の農企業に対して普及の可能性が充分に見込めると判断できる。

List of Related Publications

1. Title: A Study on Development of Financial Accounting Software for Chinese Agricultural Enterprise
Authorship: Jiawei Wen, Hajime Kobayashi and Ichizen Matsumura
Full Name of Scientific Journal with Volume, Number and Pages: Agricultural Information Research
19 (2): 52-63
Covered in Chapter I, Chapter II and Chapter IV.
2. Title: A Study on Development of Business Analysis Software for Chinese Agricultural Enterprise-Applied to Financial Statement Analysis and Break Even Analysis-
Authorship: Jiawei Wen, Hajime Kobayashi and Ichizen Matsumura
Full Name of Scientific Journal with Volume, Number and Pages: Japanese Journal of Farm Management, 49(2): 117-122.
Covered in Chapter I, Chapter II and Chapter V.
3. Title: Adoption of Accounting Software by Agro Based Enterprises in China-The Case of Medium and Small Scale Privately Owned Enterprises, State-owned Farms and Agricultural Cooperatives-
Authorship: Jiawei Wen, Hajime Kobayashi, Ichizen Matsumura, Esham Mohamed and Jinbai Huang
Full Name of Scientific Journal with Volume, Number and Pages: International Journal of Research in Engineering, IT and Social Sciences, 2(2): 82-99.
Covered in Chapter I, Chapter II and Chapter VI.
4. Title: The Present Condition of Application of Accounting Software in Chinese Agriculture - The Case of Medium-sized and Small Agricultural Enterprises, State-owned Farms and Agricultural Cooperatives -
Authorship: Jiawei Wen, Hajime Kobayashi and Ichizen Matsumura
Full Name of Scientific Journal with Volume, Number and Pages: Japanese Society of Agricultural Technology Management, 19(2): - .
Covered in Chapter I, Chapter III and Chapter VI.