



The Influence of Enterprise Financing Structure in China on Business Performance—Simulation Analysis Based on the System Dynamics

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Abstract. Enterprise financing structure has an impact on the profitability and solvency of the enterprise to some extent, which is also called the influence on business performance. Enterprise managers and scholars have always focused on the influence of enterprise financing structure on business performance. This paper selects the data of the listed companies from 2010 to 2018, uses the method of the system dynamics, constructs the system dynamics model of enterprise financing structure, and simulates and analyzes the influence of equity financing and debt financing on enterprise business performance. The simulation shows: (1) Equity financing has an active impact on the rate of total assets and scale, while a negative impact on asset liability ratio. (2) Debt financing has an active impact on the rate of total assets, liability assets and scale. (3) Between the two external financing, the influence of equity financing on the business performance is better than the debt financing's.

Keywords: Enterprise financing structure · Business performance · System dynamics · Simulation analysis

1 Introduction

Since 21st century, the financing market in China has been developed fast and the enterprise financing structure has changed. Enterprise business performance is not only the core problem of corporate financing decision-making, but also affects the business performance of enterprises. The influence of enterprise financing structure on its business performance is becoming more and more significant factor in the process of enterprise development. Therefore, the study on the impact of enterprise business performance on business performance is conducive to providing scientific financing decisions and promoting the fast development of the enterprises.

Different financing methods have different effects on the enterprise operation performance and enterprise value. Equity financing has the best operating performance, followed by debt financing (Hu and Li 2019) [1]. Equity financing has a positive impact

on enterprise value, while debt financing has a negative impact on enterprise value (Wang and Yang 2018) [2]. Scholars' research on the influence of enterprise business performance and business performance mainly focuses on two aspects: One is research on the optional styles of enterprise financing structure from Gu (2014) [3], Wang and Song (2017) [4]. The other is research on the influence of enterprise financing structure on the business performance, such as Zhao (2012) [5], Ding (2013) [6] and Huang et al. (2018) [7]. However, these studies fail to reflect the future trend of the influence of enterprise financing structure on the business performance.

The purpose of this paper is to study the influence of enterprise business performance on business performance. Based on the research method of system dynamics adopted by Lu et al. (2017) [8], Li et al. (2018) [9], Yao et al. (2018) [10], Gao and Wang et al. (2019) [11], this paper simulates the trend of the influence of different financing structures on business performance in the future.

The contribution of this paper is that based on the theory of system dynamics, this paper uses the system dynamics model to simulate the evolution trend of the influence of enterprise business performance on business performance in the future period.

The structure of this paper is organized as following: The second part is the literature review, which summarizes the research achievements of the existing scholars. The third part is the introduction, boundary determination, and variable declaration of system dynamics, draws the causality diagram and flow diagram, and constructs the system dynamic model. The fourth part tests the simulation model and simulates the future influence of equity financing and debt financing on the enterprise total assets, asset liability ratio and production scale. The last part is the conclusion of the simulation experiment and policy recommendation.

2 Literature Review

Research on the choice of enterprise financing, under the complete condition of market assumption, Li et al. (2013) [12] indicated that internal and external financing had an active relevant with company innovation investment, and the external financing has better promotion effect on innovation investment than internal financing. Wen (2013) [13] used Ordered-Logistic to range the financing preference of listed company in China. He thought that listed companies most preferred the short term lending, next is internal financing. Gu (2014) [3] analyzed the financing preference of listed company and optimization of capital structure. The result showed that listed companies should further optimize the capital structure in order to make enterprise financing more rationalized. Rao and Wu (2017) [14] discussed the influence of financing structure and R&D input on the industrial structure. The result showed that direct financing and indirect financing has an active influence on the upgrading of industrial structure. Wang and Song (2017) [4] used enterprise financing structure theory, combined with the special property of enterprise innovative financing, then proposed suggestions about enterprise financing in China. Zhao and Chen (2018) [15] discussed the influence of financing structure on the choice of financing mode. The research showed that financing structure has a significant influence on the choice of financing mode, and the enterprise prefer to equity financing. Pan and Hu (2019) [16] chose the data from A-share listed company between 2011 and

2016. They empirically analyzed the relationship between financing structure and innovation level. The results showed that there is interaction between enterprise financing structure and innovation level. What's more, there is a negative influence of enterprise innovation level on the financing structure.

Research on the influence of Enterprise business performance on business performance, Ling and Hu (2012) [17] discussed about the influence of strategic emerging industries on the business performance. The research showed that equity capital has improved the business performance of strategic emerging industrial. Zhao (2012) [5] made a research about financing structure of listed companies which is based on the different life-cycle theory. The results showed that there are different features of financing behavior during different stages of enterprise life cycle. Ding (2013) [6] chose data from 128 technological small and medium-sized enterprises (SEMs), analyzed the influence of financing structure in technological SMEs on the business performance. The result showed that there is a negative relationship between the asset liability ratio of technological SMEs and improving business performance. Pan (2015) [18] used factors analysis and analyzed the relationship between financing structure and business performance in 25 listed companies. The results showed that internal financing and equity financing has an active influence on business performance, while debt financing has a negative influence on business performance. Yu and Xu (2016) [19] analyzed the influence of equity financing of emerging industrial on the business performance in listed companies. The results showed that enlarge financing scale and increase the equity financing ratio can improve the company's profitability. Huang et al. (2018) [7] made a research on the relationship between the equity structure and business performance. The results showed that at the micro macro level, there is different influence of equity concentration on different business performance. Wang and Zhang (2018) [20] studied the impact of financing cost on enterprise productivity and found that the financing cost had a negative and significant impact on productivity. The lower the financing cost, the higher the enterprise performance. Gu and Nian (2018) [21] selected the data of listed companies from 2000 to 2016, conducted an empirical study on the influence of liquidity generality on corporate financing, and found that the liquidity of individual stocks had a negative effect on the external equity financing and debt financing of enterprises. Wang and Yang (2018) [2] selected the data of A-share enterprises from 2009 to 2016, and studied the influence of financing methods on enterprise value relationship. The research results showed that different financing methods had different effects on enterprise value. Debt financing had a negative and significant impact on enterprise value, while equity financing had a positive and significant impact on enterprise value. Ma (2019) [22] used the panel data of 45 A-share listed sports companies and empirically researched the influence of financing structure on the business performance and risk. The results showed that the financing efficiency of these sports company was a low. What's more, it had an inverse relationship between business performance and risk. Wu and Luo (2019) [23] selected data of Chinese listed enterprises from 2011 to 2017, and researched the impact of One Belt And One Road on TFP of Chinese listed enterprises. The research results showed that One Belt And One Road initiative promoted the TFP of listed enterprises in the provinces along the routes of China. Qian et al. (2019) [24] selected the data of listed companies in 2015 and 2017 to study the impact of endogenous financing, debt financing

and equity financing on innovation efficiency of enterprises. The research results showed that endogenous financing and debt financing had a positive and significant impact on innovation efficiency of enterprises, while equity financing had a negative and significant impact on innovation efficiency. Hu and Li (2019) [1] empirically analyzed the influence of different financing methods on the enterprises operating performance. The analysis results showed that the optimal method is the equity financing. Li and Gao (2019) [25] simulation analyzed the economic mechanism of structural monetary policy. The research showed that under the direct financing mode, the economic effect of structural monetary policy had a more significant impact on SMEs. Lin and Zhang (2019) [26] selected relevant data from 2012 and 2016 to analyze the impact of corporate income tax exemption on enterprise business performance. The results showed that the corporate income tax exemption increased endogenous financing and extruded current debt financing, and improved total factor productivity.

As for the research on the system dynamics method for simulation analysis, Lu et al. (2017) [8] adopted the system dynamics method to simulate the tourism development model and analyzed the growth trend of tourism on economic development. The research results showed that industrial economy, social culture and resource environment had a positive and significant impact on the tourism development. Li et al. (2018) [9] constructed a system dynamics model to conduct a simulation analysis of the development of trust industry by monetary policy and trust industry policies. The results showed that monetary policy has a positive and significant impact on the scale of trust issuance. The change of net capital ratio had a significant impact on the development of trust industry. Yao (2018) [10] constructed a system dynamics model, and simulation analyzed the impact of traditional policies and carbon tax policies on rural logistics. The results showed that traditional policies could promote the transformation of rural logistics to low-carbon economy, while carbon tax policies had high sensitivity. Gao (2019) [11] selected the panel data of Guizhou province from 2007 to 2016, constructed the system dynamics model, and conducted a simulation analysis on the GDP policy of the region with the industrial structure policy, and the logistics self-growth coefficient. The research results showed that there was a positive correlation between the GDP, logistics demand, logistics supply capacity and the logistics self-growth coefficient.

Although we have achieved rich conclusions, the existing research remains some deficiency, which gives this paper the space to expand: (1) A part of literature research only considered about the choose mode of enterprise financing structure, such as adopting econometric model to study the ranking of financing preference of listed enterprises (Wen 2013) [13], but don't study the influence of enterprise financing structure on the business performance. (2) A part of literature study the relationship between the enterprises financing structure of single industry type and business performance. For example, they studied the relationship between the business performance and the enterprise structure in technology-based SMEs and agricultural listed companies (Ding 2013 [6] and Pan 2015 [18]). These research object is too single and the results is not universal. (3) A part of research only reached the conclusion that there is an influence of the equity financing and debt financing on business performance in a single industry. For example, there is an inverse relationship between the financing structures of sports companies and business performance (Ma 2019) [22]. However, it is not possible to carry out simulation

analysis on the influence of enterprise financing structure on business performance in the future period. Therefore, this paper try to innovate in the following aspects aiming at the above questions: (1) Selecting the sample data of listed enterprises from 2010 to 2018, we study the choice of financing methods for enterprises in the whole industry and analyzes the influence of enterprise equity financing and debt financing on their business performance. (2) This paper adopts the system dynamics methods to construct the simulation model of enterprise financing structure and predicts the influence of enterprise financing structure on its business performance during the time in the future.

3 Introduction of System Dynamics Method and Model Construction

3.1 Introduction of System Dynamics Method

The system dynamics method is a subject which mixes with system science and management science. It was founded by Forrester of the Massachusetts Institute of Technology in 1956. This subject combines the system theory with computer simulation technique tightly and studies the complex system feedback structure and behavior (Zhong 2009) [27]. The system dynamics model is the complex laboratory of society, economic and ecology. When solving questions, it usually combines qualitative and quantitative together. It is a common tools for learning and policy analysis. Generally, key steps such as system boundary determination, system structure analysis, model construction, model test, simulation and evaluation are required.

3.2 Model Construction

3.2.1 Introduction' of System Dynamics Method

By drawing from the research on economics structure and economic development relationship by Lin (2006) [28], the exploration of optimal financial structure theory during economics development by Lin (2009) [29], research on the dynamics model of financial efficiency system from the perspective of capital operation by Liu (2011) [30], research on financing structure by Dong (2016) [31], research on enterprise scale and different bank financing characteristics by Zhang (2019) [32], this paper takes the enterprise financing structure as the research object, constructs the system dynamics model and researches the influence of enterprise financing on the business performance by exploring the relationship between enterprise financing and economic growth, stock market development and social savings. This paper adopts with the software called Vensim to draw the causal diagram of the enterprise financing structure in China, shown in Fig. 1. From Fig. 1, we can see that the model includes GDP, economic growth, social saving, bank deposit and loan rates, securities market development and other key variables. There are 18 feedback loops in total. The symbols “+” or “-” in front of the variables represent the tendency to change in the same direction or in the opposite direction which is caused by change of the former variable. The specific loop is shown as below:

Feedback loop 1: Enterprise financing structure → + enterprise production scale → + enterprise foreign exchange earning → + enterprise internal financing → + enterprise financing structure.

Feedback loop 2: Enterprise financing structure → + GDP → + economic growth → + social saving → + enterprise equity financing → + enterprise financing structure.

Feedback loop 3: Enterprise financing structure → + enterprise production scale → + enterprise foreign exchange earning → + enterprise internal financing → - financing cost → + enterprise financing structure.

Feedback loop 4: Enterprise financing structure → + enterprise production scale → + enterprise foreign exchange earning → + social saving → + enterprise equity financing → + enterprise financing structure.

Feedback loop 5: Enterprise financing structure → + GDP → + economic growth → + financial needs → + enterprise equity financing → + enterprise financing structure.

Feedback loop 6: Enterprise financing structure → + GDP → + economic growth → + social saving → + enterprise equity financing → + financing cost → + enterprise financing structure.

Feedback loop 7: Enterprise financing structure → + GDP → + economic growth → + financial needs → + enterprise equity financing → + financing cost → + enterprise financing structure.

Feedback loop 8: Enterprise financing structure → + GDP → + economic growth → + financial needs → + securities market development → + enterprise equity financing → + enterprise financing structure.

Feedback loop 9: Enterprise financing structure → + enterprise production scale → + enterprise foreign exchange earning → + social saving → + enterprise equity financing → + financing cost → + enterprise financing structure.

Feedback loop 10: Enterprise financing structure → + GDP → + economic growth → + financial needs → + securities market development → + enterprise equity financing → + financing cost → + enterprise financing structure.

Feedback loop 11: Enterprise financing structure → + GDP → + national income → + disposable income → + household savings → + bank capital → + enterprise debt financing → + enterprise financing structure.

Feedback loop 12: Enterprise financing structure → + GDP → + national income → + disposable income → + household savings → + securities market development → + enterprise equity financing → + enterprise financing structure.

Feedback loop 13: Enterprise financing structure → + GDP → + national income → + disposable income → + household savings → + bank capital → + enterprise debt financing → + financing cost → + enterprise financing structure.

Feedback loop 14: Enterprise financing structure → + GDP → + national income → + disposable income → + household savings → + securities market development → + enterprise debt financing → + financing cost → + enterprise financing structure.

Feedback loop 15: Enterprise financing structure → + GDP → + national income → + disposable income → + consumption → + enterprise production scale → + enterprise foreign exchange earning → + enterprise internal financing → + enterprise financing structure.

Feedback loop 16: Enterprise financing structure → + GDP → + national income → + disposable income → + consumption → + enterprise production scale → + enterprise foreign exchange earning → + enterprise internal financing → + financing cost → + enterprise financing structure.

Feedback loop 17: Enterprise financing structure → + GDP → + national income → + disposable income → + consumption → + enterprise production scale → + enterprise foreign exchange earning → + social saving → + enterprise equity financing → + enterprise financing structure.

Feedback loop 18: Enterprise financing structure → + GDP → + national income → + disposable income → + consumption → + enterprise production scale → + enterprise foreign exchange earning → + social saving → + enterprise equity financing → + financing cost → + enterprise financing structure.

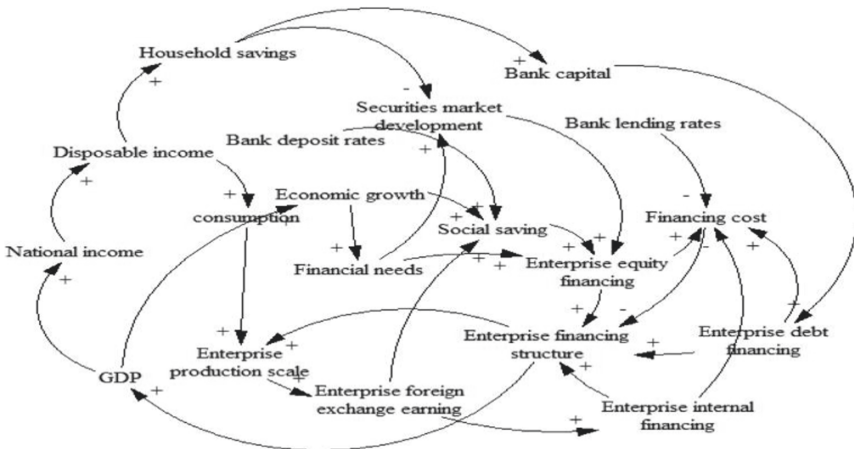


Fig. 1. Systematic framework of stock market development.

3.2.2 Variable Declaration of the Model

This paper selects 46 indicator variables to analyze the causal feedback relationship of enterprise financing structure system, and simulate the influence of the enterprise financing structure on the business performance. Considering the scientific and rationality of variables and the data availability, this paper selects 7 flow potential variables (L), 8 rate variables (R), 8 auxiliary variables (A) and 2 constant variables (C), as shown in Table 1.

Table 1. Main variables of system dynamics model of enterprise financing structure

Flow potential variables (L)	Rate variables (R)	Auxiliary variables (A)	Constant variables (C)
Bank capital	Added value of bank capital	The loan interest rate	Growth rate of capital demand
Household savings	Added value of household savings	Interest rates on deposits	The extent to which Banks satisfy listed companies
GDP	The decline in household savings	Contribution to total capital formation	
Enterprise deposits	The added value of GDP	Final consumption contribution	
Listed enterprises own capital	The increase in enterprise deposits	Amount of stock raised	
SME own capital	Satisfaction of capital needs	Enterprise bond issuance	
Market value of shares	Capital needs	The GDP growth rate	
	Stock market value added	Enterprise financing cost	

3.2.3 Construct Enterprise Financing Structure Flow Figure

According to the causal diagram of enterprise financing structure as shown in Fig. 1 and the own characteristic of enterprise financing structure, this paper draws the flow diagram of enterprise financing structure as shown in Fig. 2. In Fig. 2, the mathematical formulas for the variables of the system are the basis of assuring the correlations. Mathematical formulas can be established by regression fitting form. A part of variables are stated as

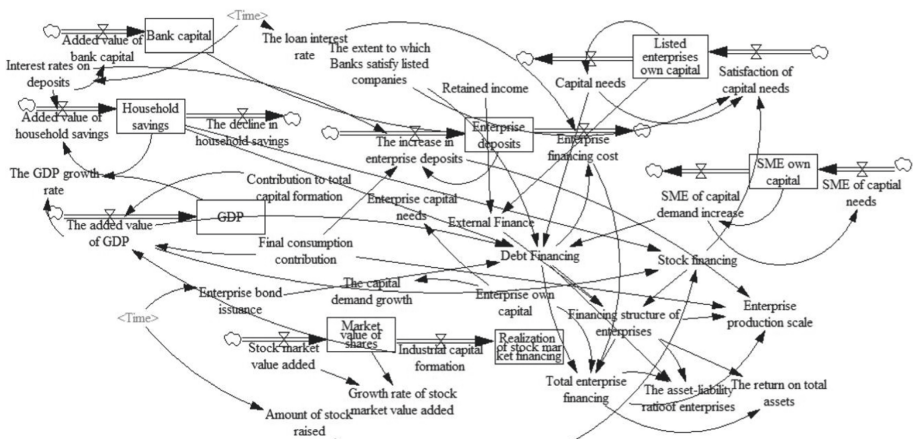


Fig. 2. Flow diagram of financing structure system of Chinese enterprises

a constant value by experience and historic data. Meanwhile, this paper adopts the table function in the system dynamics to simulate the future development of each variables by stating the table function.

4 Model Verification and Simulation

4.1 Data Source

This paper simulates the influence of the different proportions of equity financing and debt financing on the return of total assets, asset-liability ratio and enterprises production scale through the trend analysis of various variables in enterprise financing structure. Through the summary of literature, expert experience and other methods, this paper sets the bank loan satisfaction to the enterprises at 0.8, the capital demand growth at 5%. The initial value of bank loan interest rate, deposit interest rate, enterprise stock financing amount and enterprise debt financing amount is set from 2010. The simulation interval is between 2010 and 2015. All data are from Chinese National Bureau of Statistics, website of the People's Bank of China, China Securities Regulatory Commission, China Association of Listed Companies, Shanghai Stock Exchange, and Shenzhen Stock Exchange.

4.2 Model Verification

There are mainly two sides about system dynamics: one is system verification and operation verification, the other is fitness comparison between simulation results and historic data, which is called historic verification.

(1) System verification and operation verification

System verification is mainly system visual test. In other words, it tests the rationality of system structure, system boundary, relationship of variables within the system and system equation parameters. Its purpose is to make the model structure consistent with the descriptive relationship of variables in the system. Operation verification is to use Venism to simulation based on the system verification. The software will verify the consistency of the units of model variables and the rationality of parametric equations.

(2) Historic verification

Historic verification is to compare the data obtained from model simulation with the existing historical data and verify the actual effect of the model within a reasonable error range. To the historic verification, this paper adopts the following formula to calculate the relative error:

$$e_i = (\hat{y}_i - y_i)/y_{i(1)}. \quad (1)$$

In the Formula (1), y_i represents the true value of the indicators in i -th period. \hat{y}_i represents the simulation value of the indicators in i -th period. The historic verification results are shown in Table 2. From Table 2, we can see that the average estimated errors of the return of total asset and asset-liability ratio of listed companies are -0.66% and -2.85% , respectively. There is some error between the simulation value and the actual value. However, this model is a reduction model of China's enterprise financing structure. Therefore, we believe that the simulation ability of this model is good. It can be used for subsequent simulation.

Table 2. Return of total asset and asset-liability ratio

Indicators	Return on total assets (%)			Asset-liability ratio (%)		
	Simulation value	True value	Relative error	Simulation value	True value	Relative error
2010	1.85	1.91	-3.14%	81.13	85.74	-5.37%
2011	1.76	1.86	-5.37%	83.79	85.72	-2.25%
2012	1.61	1.65	-2.42%	84.52	85.77	-1.45%
2013	1.79	1.78	0.56%	83.96	85.75	-2.08%
2014	1.64	1.71	-4.02%	83.08	85.25	-2.54%
2015	1.63	1.53	6.53%	82.80	84.65	-2.18%
2016	1.46	1.45	0.69%	79.09	84.59	-6.50%
2017	1.61	1.57	2.55%	76.64	80.23	-4.47%
2018	1.58	1.60	-1.25%	78.97	78.04	1.19%
Average estimated error	-0.66%			-2.85%		

4.3 Simulation

According to the historic test, the system dynamics model of enterprise financing structure can better reflect the impact of enterprise profitability and solvency. Dong (2016) simulated the impact of different financing structures on the economic subject in China. He found that when the society direct financing scale arrives to 30% – 50% , a crucial period for economic and social development is coming. Therefore, this paper assumes that equity financing and debt financing in the enterprise financing structure increase by 30% , 40% and 50% respectively, and simulates the impact of these changes on the enterprise's return of total assets (ROA), asset liability ratio (LEA), and scale of production (SCALE), as well as the changing trend of various variables in a certain period in the future. In this paper, Vensim software is used for simulation analysis.

- (1) The influence of changes in enterprise financing structure on the enterprise return of total assets.

The simulation results of the impact of changes in equity financing and debt financing on the return of total assets are shown in Fig. 3(a)–(e). As can be seen from Fig. 3(a) and (b), with the increase of the ratio of equity financing and debt financing, the return of total assets also increases gradually. This shows that the increase of the ratio of equity financing and debt financing has a positive impact on the profitability of enterprises.

It can be seen from Fig. 3(c), (d) and (e) that, with the same proportion of financing increased, the impact of equity financing on the return on total assets of enterprises is greater than that of debt financing.

- (2) The influence of changes in enterprise financing structure on corporate asset-liability ratio.

The asset-liability ratio determines the solvency of an enterprise. The higher the asset-liability ratio, the weaker the solvency of the enterprise and the greater the financial risk. For enterprises, the asset-liability ratio should be controlled within a certain range. In China, the ideal debt ratio of enterprises is about 40%. According to the financial reports of listed companies, the asset-liability ratio of enterprises remains high. It reaches 75–85% from 2010 to 2018. This paper simulates the influence of equity financing and debt financing on the asset-liability ratio under different proportions. This paper analyzes which financing method has more significant influence on the asset-liability ratio. The simulation results are shown in Fig. 4(a)–(e).

As can be seen from Fig. 4(a), with the increase of equity financing, the asset-liability ratio of enterprises decreases. Without changing the amount of debt financing, the increase of the equity financing will increase the total financing amount and lead to the reduction of the asset-liability ratio. As can be seen from Fig. 4(b), with the increase of the debt financing, the asset-liability ratio of enterprises increases. The increase of debt financing further increases the financial risk of enterprises. It can be seen from Fig. 4(c), (d) and (e) that, under the same proportion of financing, the increase of enterprise debt financing will make the asset-liability ratio of enterprises higher than that of equity financing. The financial risk caused by the increase of debt financing is greater than that caused by the increase of equity financing. Enterprises should reasonably control the amount of debt financing.

- (3) The influence of changes in the financing structure of enterprises on the production scale.

The production scale is affected by labor, technology and capital. By increasing the equity financing and debt financing, capital is increased to influence the production scale of the enterprise. The simulation results of the impact of changes in enterprise financing structure on production scale are shown in Fig. 5(a)–(e).

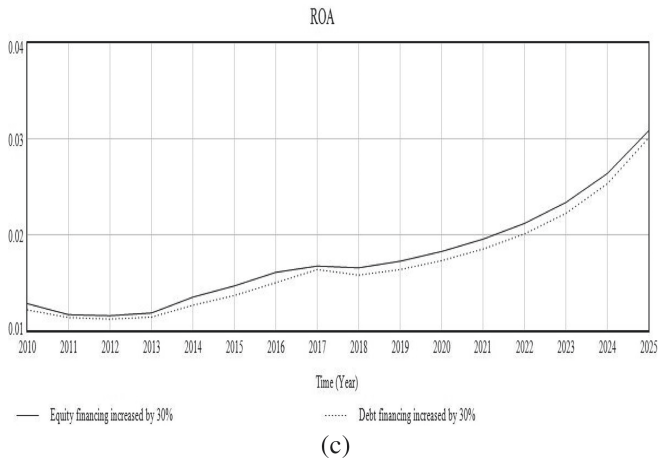
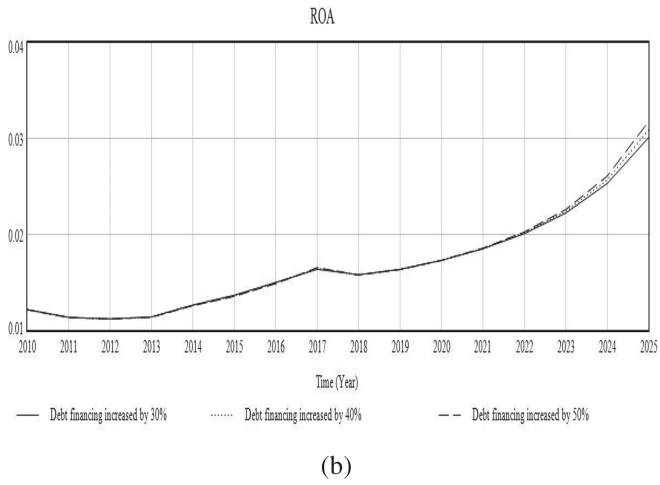
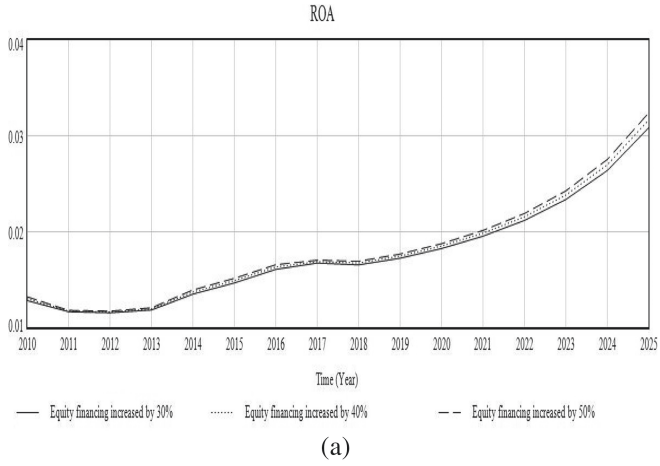
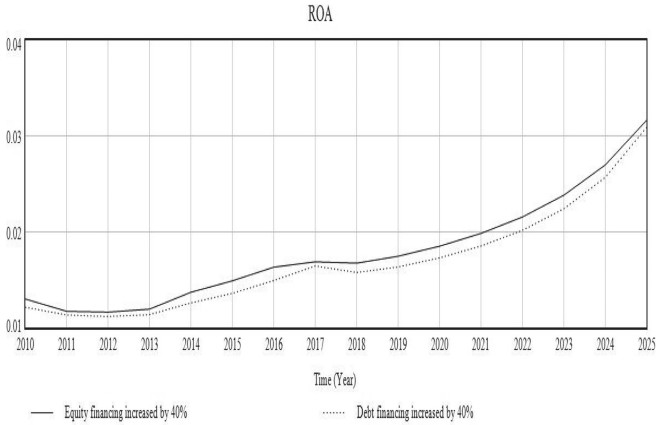
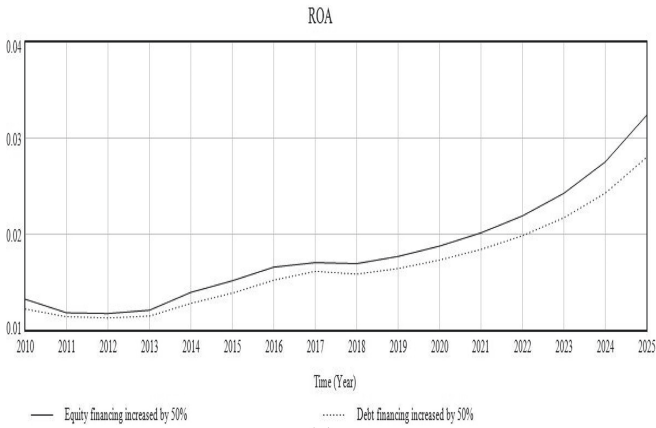


Fig. 3. The influence of equity financing and debt financing on the return of total assets



(d)



(e)

Fig. 3. (continued)

As can be seen from Fig. 5(a) and (b), although the increase of equity financing and debt financing has little influence on the production scale, the production scale increases with the increase of equity financing and debt financing. It can be seen from Fig. 5(c), (d) and (e) that the increase of equity financing ratio has a greater positive impact on the production scale of enterprises than the increase of debt financing ratio. Within a certain range of operation stage, with the increase of production scale, the operating efficiency of enterprises can be improved. Reasonable expansion of production scale can improve the operating performance of enterprises. However, the impact of the two

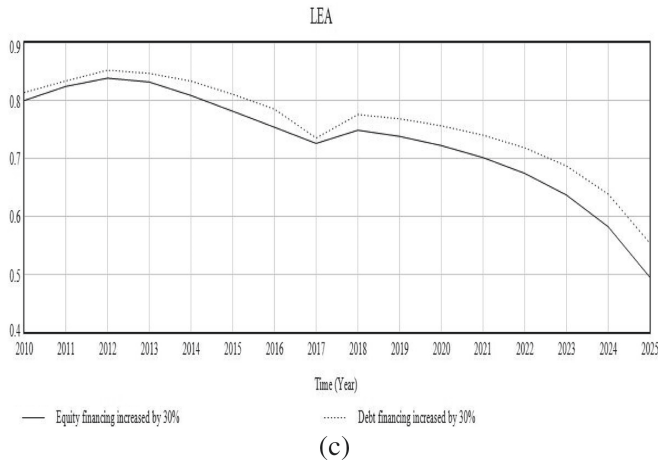
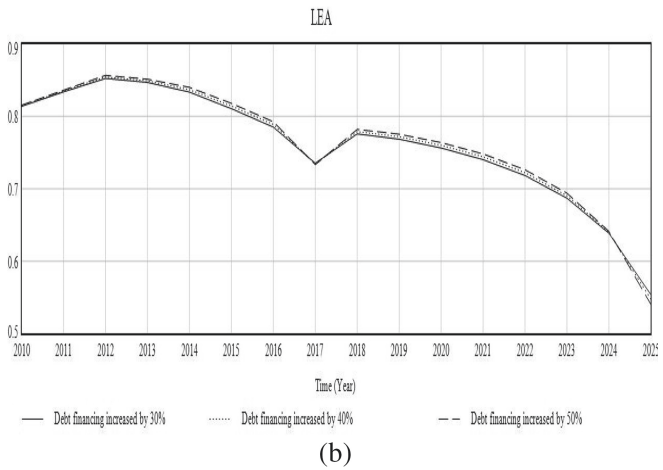
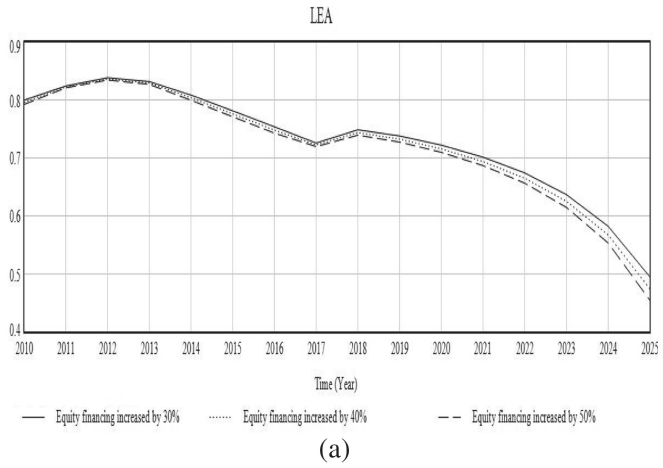
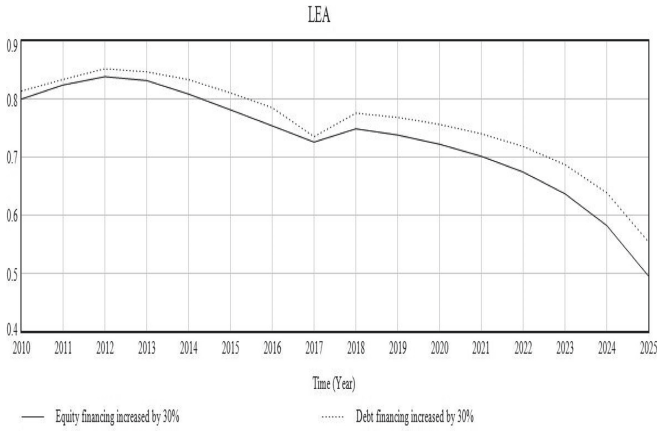
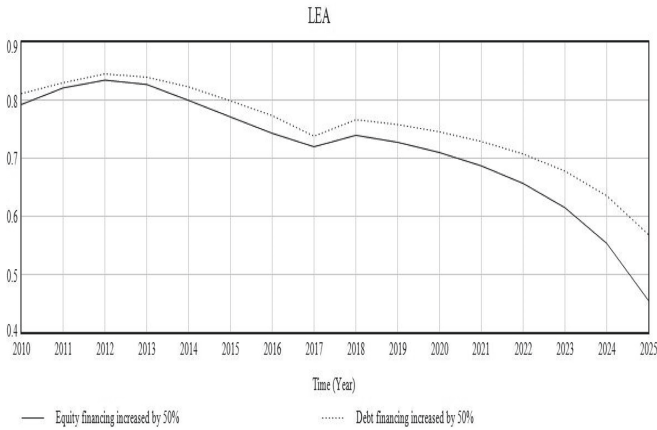


Fig. 4. The influence of equity financing and debt financing on the asset-liability ratio



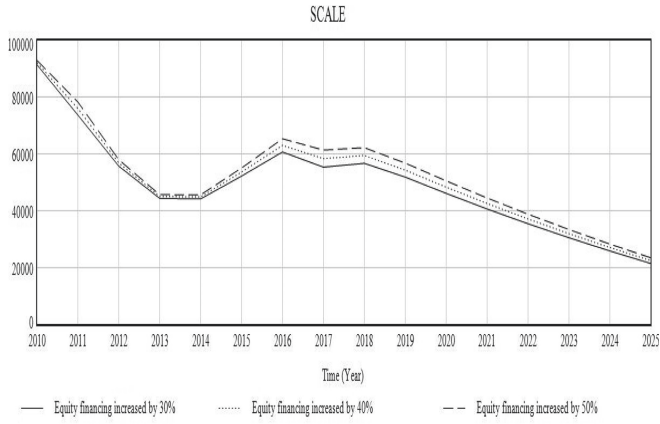
(d)



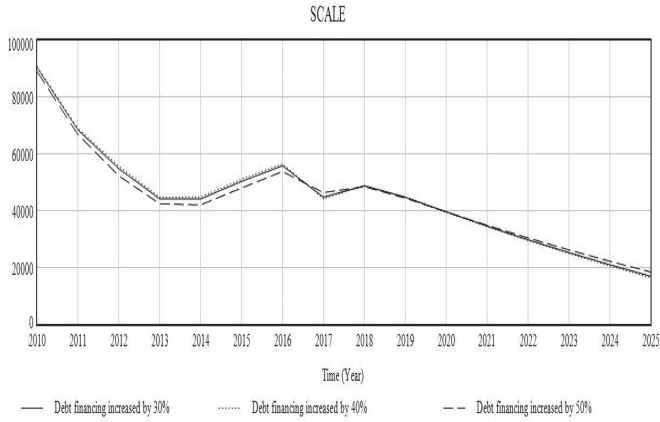
(e)

Fig. 4. (continued)

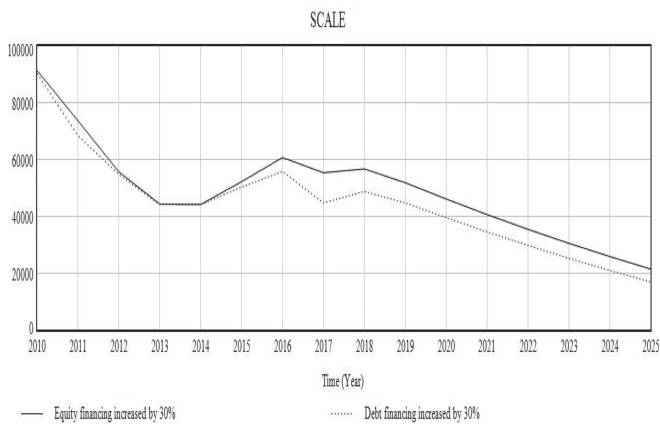
kinds of exogenous financing on the return of total assets and the asset-liability ratio is more significant than their impact on the production scale. The simulation results show that the production scale of enterprises increases with the increase of equity financing and debt financing. The influence of the change of equity financing ratio on the production scale of enterprises is greater than that of debt financing ratio.



(a)

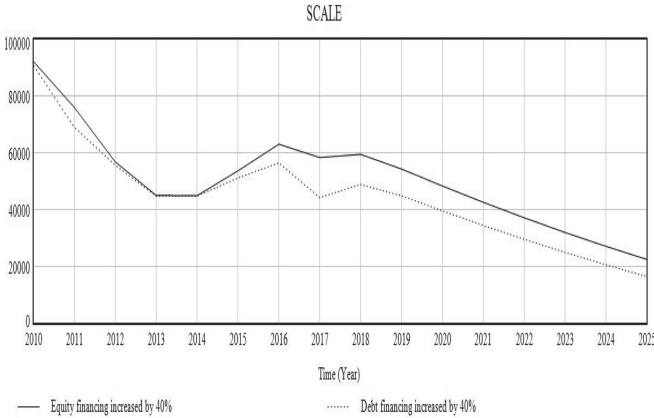


(b)

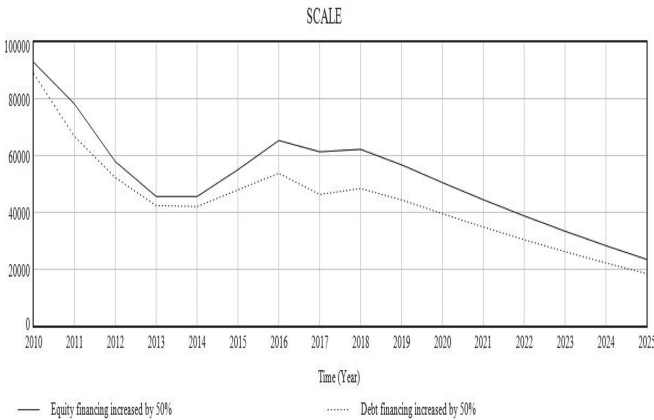


(c)

Fig. 5. The influence of equity financing and debt financing on the production scale of enterprises



(d)



(e)

Fig. 5. (continued)

5 Conclusions and Policy Recommendations

This paper analyzes the composition of the financing structure of enterprises in China, and constructs a system dynamics simulation model of the enterprises financing structure. Then this paper simulates and analyzes the influence of the changes in equity financing and debt financing on the return of total assets, asset-liability ratio and production scale of enterprises in the future period. The simulation results show that: (1) two kinds of exogenous financing - equity fusion and debt financing have significant influence on the business performance of enterprises; (2) the positive effect of increasing equity financing of the same proportion on the return of total assets and production scale is greater than that of debt financing; (3) the positive effect of increasing equity financing of the same proportion on the asset-liability ratio is less than that of debt financing. Therefore, to increase a certain proportion of exogenous financing, enterprises should give priority to equity financing, followed by debt financing.

Based on the results of the simulation analysis, the following policy recommendations are proposed: (1) Enterprises should prefer to choose the equity financing. There are many methods for the enterprises to raise capital. Equity financing is conducive to expanding capital channels, increasing the scale of capital and promoting the development of enterprises. (2) Enterprises should strictly control debt financing. Corporate debt financing increases the asset-liability ratio. Enterprises need to control the debt ratio to a certain extent, otherwise it will increase the financial risk of enterprises. So from the perspective of avoiding financial risks, enterprises should use the equity financing, and then use the debt financing when choosing two external financing methods. (3) Enterprises should increase the proportion of equity financing to expand production scale. Production scale is a crucial factor to measure the operation capacity of enterprises. Especially for enterprises in the growth period, equity financing should be preferred when expanding production scale.

Of course, the actual environment which the enterprises confront is very complex. The system dynamics model constructed in this paper may fail to consider some aspects, such as the individual investment preference and the operation decision of SMEs. This will be further refined in future studies.

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