ISSN: 2688-9323

An Empirical Analysis of the Influencing Factors of Monetary Funds Volatility of 5000 Enterprises based on the Perspective of Financial Indicator

Hao Yang[1,a,*], Wenjie Zhang[2,b], Shilong Xu[2,c], Feng Hong[2,d]

[1]Anhui University of Finance and Economics, School of Finance, Internet Finance, China

[2]Anhui University of Finance and Economics, Bengbu, China

[a,*]1725737893@qq.com, [b]2529290646@qq.com, [c]1114606598@qq.com, [d]1032901726@qq.com

Abstract

In view of most corporate monetary fund management problems, from the perspective of financial indicators, based on the data of the China Financial Yearbook from 1999 to 2018, five explanatory variables of inventory, current assets, fixed assets, short-term loans, and long-term liabilities are selected to establish multiple linearity Regression model, using multicollinearity, heteroscedasticity, and autocorrelation to modify the model using econometric testing methods to obtain the quantitative relationship between the volatility of currency funds of 5000 enterprises and inventory, current assets, fixed assets, and short-term loans. Finally, according to the conclusions of regression analysis, suggestions are put forward to strengthen corporate inventory constraints, improve the effective operation of current assets, establish regular assessments of fixed assets, and effectively use short-term loans, in order to provide references for enterprises to make financial decisions.

Keywords

Monetary Funds; Financial Indicators; Eviews; Empirical Analysis.

1. Introduction

With the progress of macroeconomic policy control and the introduction of new investment and financing methods, various enterprises have a new foundation for growth. In addition to new opportunities, every business in an enterprise also faces new challenges. How to use capital gains to carry out fierce competition has become a problem that companies need to solve in the field of health and well-being. Due to the capitalist characteristics of certain companies, such as high interest rates, strong reliance on capital and high capital requirements, as well as decentralized capital management and insufficient management. Capital management errors often occur in actual work. How to investigate the factors that have become the focus of the industry that affect the financial status of enterprises, improve capital efficiency and minimize capital management risks.

2. Literature Review

Nowadays, local and foreign researchers have obtained many research results when conducting a comprehensive analysis of company performance, but few factors have caused changes in company finances.

The research results of the factors that affect the company's capital financing can be summarized in the following two aspects: One is to study the impact of the company's internal financial funds and financial control. Through regional surveys and other methods, Li Yulan and

ISSN: 2688-9323

others [1]understand the internal control problems existing in the internal control of small and medium-sized enterprises., and proposed a new internal control system for the IMF, focusing on the effective implementation of financial funds and other control systems within the control system. Countermeasures. Zhang Yang and others[2] believe that with the rapid development of the manufacturing industry, the competition among manufacturing companies is increasing. There are also many problems in capital management. From the capital management system, the choice of financing methods and the construction of capital fund management talents, measures to avoid corporate capital risks are proposed. Construction, hoping to provide possible strategies for the actual operation of the company. Wang Qianqian[3] and others first described the role of fund management and strengthening fund management, analyzed the current problems in actual fund management, and proposed organizational measures to strengthen currency fund management. Wang Minghu[4] and others believe that the use of mathematical models to examine the business risk of corporate capital work, the relationship between monetary policy and financial strategy, and the continuation of empirical testing. The study found that most Chinese companies have adopted more aggressive capital investment strategies under the influence of China's financial environment; increased operating risks have led companies to adopt appropriate capital investment strategies; free monetary policies have led companies to adopt more aggressive capital investment strategies. Financing. Under the conditions of a free monetary policy, the risk of reviewing working capital investment strategies is crucial and has little impact. Wang Yifan[5] and others used the 2006-2019 annual report data to analyze and study the three aspects of their current asset structure and the characteristics of listed companies. Companies in the advertising and communications industry: cash, accounts receivable and inventory. Its purpose is to discover the structural characteristics of existing assets in the publishing and media industry, and to outline the size and structure of existing assets in the publishing and media industry. Meng Ling and others[6] believe that many companies have many financial management problems at the actual operating level. However, due to the lack of internal control, it is difficult for SMEs to manage their financial quality problems. These problems usually affect the serious safety of the company's funds, the efficiency and the improvement of welfare levels, and should cause widespread concern.

3. Current Status of Corporate Monetary Funds

With the continuous development of the market economy, establishing and improving the company's financial management methods has become an important issue for the company's sustainable development. Monetary funds are an integral part of company assets and play an important role in accounting, manufacturing and organizational activities. In our country, there are some problems in managing bank accounts. These problems have become an important issue and have restricted the growth of most Chinese companies. Relying on the actual situation of data analysis, studying the factors affecting the volatility of currency funds of 5000 enterprises is also of great significance to improving the specific theoretical value of the financial status of financial funds.

ISSN: 2688-9323

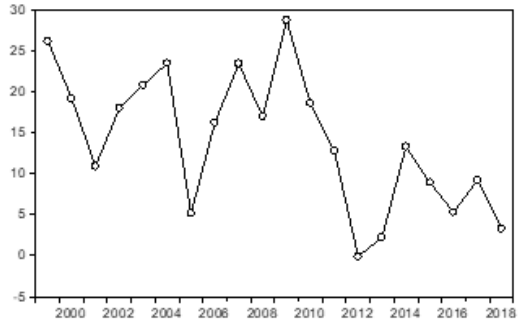


Figure 1. The trend of corporate monetary funds from 1999 to 2018

4. Empirical Analysis

4.1. Variable Selection and Data Sources

There are many factors that affect corporate monetary funds, and some influencing factors cannot be quantitatively studied. Therefore, this article selects common influencing factors based on the research results of previous scholars by consulting a large amount of literature. Inventory of 5000 enterprises (x_1), total current assets of 5000 enterprises (x_2), total fixed assets of 5000 households (x_3), short-term loans of 5000 households (x_4), and total long-term liabilities of 5000 households (x_5) are used as explanatory variables. The monetary capital of the household (y) is used as the explained variable. The data in this article comes from the China Financial Yearbook from 2000 to 2019, and the collected data are shown in Table 1.

Table 1. Data on monetary funds and influencing factors of 5000 enterprises from 2009 to 2018

Year	monetary funds (Previous year=100)	Inventory (Previous year=100)	Total current assets (Previous year=100)	Total fixed assets (Previous year=100)	Short-term loans (Previous year=100)	Total long-term liabilities (Previous year=100)
1999	26.2	0.7	7.8	14.6	4.5	2.5
2000	19.2	3.7	5.2	-1.3	-6.4	-0.6
2001	10.9	6	4.4	6.8	2.8	-3.6
2002	18	3.1	5.6	5	4	-0.6
2003	20.8	13.9	14.4	4.9	7.8	-1
2004	23.49	22.62	15.26	9.33	11.63	5.06
2005	5.15	12.79	9.67	10.67	6.02	6.51
2006	16.22	14.29	11.81	13.04	9.85	8.62
2007	23.44	20.52	22.23	13.76	22.17	14.76
2008	17	15.9	13.7	14.1	19.2	17.4
2009	28.7	7.1	15.4	13.2	5.7	31.9
2010	18.6	24.6	22.4	8.8	11.3	18.7
2011	12.8	14.8	15.4	15.9	23.7	12.4
2012	-0.1	5.1	6.8	6.4	14.8	10.2
2013	2.2	8.2	7.7	8.7	9.4	10.3
2014	13.3	2.5	7.3	6	-1	7
2015	8.9	-3.6	4.1	1.5	3.8	4.9
2016	5.3	3.8	6.9	2.5	5.5	3.9
2017	9.2	7.24	9.2	1.2	2.7	5.8
2018	3.3	3.8	5.3	3.2	-1.6	4.1

ISSN: 2688-9323

4.2. Model Establishment and Solution

In general, when studying the relationship between multiple factors and an economic variable, the commonly used multiple linear regression model is shown in Figure 2.

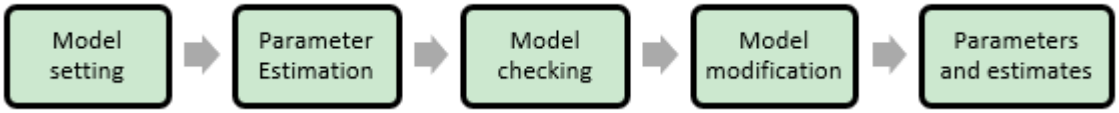


Figure 2. Econometric modeling process

Socio-economic phenomena are often affected by many factors, so you can use Multiple Linear Regression to analyze socio-economic phenomena. Multiple linear regression is a mathematical statistical method, which has a wide range of applications in many fields such as agriculture, industry, and service industry. Based on the above analysis, a multiple linear regression model was initially established (1):

$$Y_t=\beta_0+\beta_1X_{1t}+\beta_2X_{2t}+\beta_3X_{3t}+\beta_4X_{4t}+\mu \quad (1)$$

Among them, x_1 is the company's inventory, x_2 is the total current assets of the company, x_3 is the total fixed assets, x_4 is the total short-term loans, x_5 is the total long-term liabilities, while y is the firm's monetary capital βi (i =1,2,3,4,5) is the fitting parameter of the first influencing factor ,β0 is a constant term, and is a random perturbation term (representing the influence of other influencing factors on the firm's monetary fund), and other factors such as money supply and policy factors are set as random disturbance terms u , Time is t.

Substitute the data of monetary funds, inventories, incorporating total current assets, total fixed assets, short-term loans and long-term liabilities of 5000 companies from 1999 to 2017 into the established multivariate linear regression model , and use Eviews 9.0 software to run to obtain regression coefficients, etc., and output the results See Table 2 for details.

Table 2. OLS parameter regression results table

Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	-1.558927	3.54134	-0.440208	0.6665
X_1	-0.783164	414891	-1.88764	0.08
X_2	2.354288	0.666325	3.533241	0.0033
X_3	0.942575	0.399697	2.358222	0.0334
X_4	-0.740423	0.281546	-2.629844	0.0198
X_5	-0.43769	0.244903	-1.78721	0.0956
R-squared	0.642798	Mean dependent var		14.13
Adjusted R-squared	0.515226	S.D. dependent var		8.383181
S.E. of regression	5.836848	Akaike info criterion		6.609584
Sum squared resid	476.9632	Schwarz criterion		6.908304
Log likelihood	-60.09584	Hannan-Quinn criter		6.667897
F-statistic	5.038707	Durbin-Watson stat		1.944213
Prob(F-statistic)	0.007539			14.13

ISSN: 2688-9323

From Table 2, the linear regression equations between 5000 enterprises and various influencing factors can be initially obtained:

$$y = -1.558927 - 0.783164x_1 + 2.354288x_2 + 0.942575x_3 - 0.740423x_4 - 0.43769x_5$$
$$t = (-0.440208)\ (-1.88764)\ (3.533241)\ (2.358222)\ (-2.629844)\ (-1.78721)$$
$$R^2 = 0.993501 \quad \overline{R^2} = 0.985378$$
$$DW = 1.944213 \quad F = 122.3086$$

4.3. Model Verification and Modification

(1) Economic significance test

According to the estimation results of the regression equation, the monetary funds of China's 5000 enterprises from 1999 to 2018 are positively correlated with the total current assets and the total fixed assets. The increase in the total current assets and fixed assets will promote the total tax revenue. Growth is consistent with theoretical analysis; corporate monetary funds are negatively correlated with three influencing factors: corporate inventories, short-term loans, and long-term liabilities, indicating that the increase in corporate inventory, short-term loans, and long-term liabilities will lead to a decrease in corporate monetary funds, among which short-term loans Contrary to the theoretical analysis of the impact of long-term liabilities, it is speculated that the model may have econometric problems, which requires model modification.

(2) Statistical inspection

1)Goodness of fit test

In the regression model, the coefficient of determination ("$\overline{R^2}$")can be used to measure the degree of fit between the observer and the established model. Here $\overline{R^2}$=0.642798" is close to 1, indicating that the model is The degree of explanation of the total tax revenue reached 64.28%, indicating that the model fits the sample well.

2)F test

For H_0: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$, given the significance level $\alpha = 0.05$, F = 5.0387, Prob (F-statistic) = 0.0075, because the probability value of the F test is close to 0, the null hypothesis H0 is rejected, Explain that the regression equation is significant, that is, inventory (X_{1t}), total current assets (X_{2t}), total fixed assets (X_{3t}), short-term borrowings (X_{4t}), and long-term liabilities (X5t)—the five explanatory variables are combined with "monetary funds" (Y_t) Significantly, the model passes the F test.

3)t test

For H_0: $\beta_j=0$ ($j=1,2,3,4,5$), observe the corresponding probability of each variable coefficient in Table 1. Under the condition of the significance level of $\alpha=0.05$, if the probability of the t test coefficient is less than 0.05 , Then reject the null hypothesis of H0: $\beta_j = 0$ ($j = 1,2,3,4,5$). According to the test results, under the condition that other explanatory variables remain unchanged, inventory (X_{1t}), total current assets (X_{2t}), total fixed assets (X_{3t}), and short-term borrowings (X_{4t}) affect the explained variable "monetary funds" (Y_t) Has a significant impact. The t-test of the variable X_{5t} has a concomitant probability greater than 0.05, accepting the null hypothesis, indicating that the long-term debt has an insignificant effect on corporate monetary funds.

According to the economic significance and statistical test results, the coefficient of determination R_2 is very large, and the F test value is 5.0387, which is obviously significant. However, some parameters fail the significance test, and it is speculated that the model is likely to have serious multicollinearity. Next, the model needs to be tested by econometrics to test and solve the problems in the model.

ISSN: 2688-9323

4.4. Econometric Test

(1) Inspection and correction of multicollinearity

1)Test of multicollinearity

Multicollinearity refers to the linear correlation that may exist between explanatory variables. Severe multicollinearity can interfere with the accuracy of statistical test results. First, the correlation coefficient between the explanatory variables can be used to preliminarily judge whether there is multicollinearity in the model. The calculation results of the correlation coefficient are shown in Table 3.

Table 3. Correlation coefficient table

Correlation coefficient	X_1	X_2	X_3	X_4	X_5
X_1	1	0.8764784	0.5087083	0.6522858	0.381163
X_2	0.8764784	1	0.5908872	0.6787318	0.6261014
X_3	0.5087083	0.5908872	1	0.7106182	0.557378
X_4	0.6522858	0.6787318	0.7106182	1	0.4774186
X_5	0.381163	0.6261014	0.557378	0.4774186	1

It can be seen from Table 3 that the correlation coefficients of x_1 and x_2 are both higher than 0.8, indicating that there is a strong correlation between the explanatory variables and the possibility of multicollinearity is very high. In order to more accurately judge whether there is multicollinearity and its nature, the variance expansion factor method is used to further test the model. Experience shows that if there is a variance expansion factor $VIF_j \geq 10$ between an explanatory variable and other variables, it indicates that the model has multicollinearity. The test results of the variance inflation factor are shown in Table 4.

Table 4. Test results of variance expansion factor method

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	12.54109	7.362212	NA
X1	0.172134	14.52458	5.68477
X2	0.44399	36.56462	7.672536
X3	0.159758	8.189857	2.314452
X4	0.079268	5.489571	2.663145
X5	0.059978	4.495737	2.291343

2)Correction of multicollinearity

The stepwise regression method is used to eliminate the multicollinearity of the model. According to theoretical analysis, current assets should be the most important factor influencing monetary funds, so first establish a basic linear regression model of y and x_2, and introduce x_1, x_3, x_4, x_5 in turn. The comparison shows that the newly added equation of x_4, the adjusted coefficient of determination $\overline{R^2}$ =0.408991 is the largest, and the t-test of each parameter is significant, so the estimated result of $y = f(x_2, x_4)$ is the best Excellent binary regression model. On this basis, x_1, x_3, and x_5 are sequentially introduced, and the adjusted coefficient of determination is significantly increased, and the t-test of each parameter is significant. In comparison, $\overline{R^2}$ of the regression model $y = f(x_2, x_3, x_4)$ after adding x_3 is larger, so $y = f(x_2\ x_3\ x_4)$ is the optimal ternary regression model. Then, after introducing x_1 and x_5 on the basis of x_2, x_3, and x_4 in turn, the regression coefficient t test passed and the economic

ISSN: 2688-9323

significance is reasonable, but the regression model $y = f(x_1\ x2\ x3\ x4)$ $\overline{R^2}$ is greater. Test results See Table 5.

Table 5. Stepwise regression analysis results

function	factor	Coefficient	t-Statistic	Prob.	Adjusted R-squared
Unification	x_2	0.807137	2.693320	0.0149	0.247643
Duality	x_2	1.292798	3.381104	0.0035	0.339461
	x_4	-0.513181	-1.871384	0.0786	
Ternary	x_2	1.143214	3.160559	0.0061	0.434971
	x_3	0.811565	1.968146	0.0666	
	x_4	-0.819074	-2.753565	0.0141	
Four yuan	x_1	-0.445513	-1.12653	0.2776	0.444316
	x_2	1.64958	2.868443	0.0117	
	x_3	0.751668	1.822807	0.0883	
	x_4	-0.749494	-2.486819	0.0252	
Five yuan	x_1	-0.783164	-1.88764	0.08	0.515226
	x_2	2.354288	3.533241	0.0033	
	x_3	0.942575	2.358222	0.0334	
	x_4	-0.740423	-2.629844	0.0198	
	x_5	-0.437694	-1.787214	0.0956	

Therefore, after repeated introduction-inspection-elimination, the ideal model is finally determined as:

$$y = 0.821005 - 0.445513x_1 + 1.649580x_2 + 0.7516684x_3 - 0.749494x_4$$

$$R^2 = 0.561302\ \overline{R^2} = 0.444316\ DW = 1.287828\ prob(F) = 0.010791$$

(2) Test of heteroscedasticity

If there is heteroscedasticity, the variance of the parameter estimation formula is no longer valid. Here, the White test method is used to test the possible heteroscedasticity problems in the model. This test can not only test the existence of heteroscedasticity, but also in the case of multiple explanatory variables, it can also determine which variable is causing the heteroscedasticity. Null hypothesis H_0: There is no heteroscedasticity in the model. The results obtained through software operation are shown in Table 6. At the 95% confidence level, nR^2 = 13.3860 is less than the critical value, and the corresponding probability is 0.4964>0.05, so accept the null hypothesis and there is no heteroscedasticity in the model.

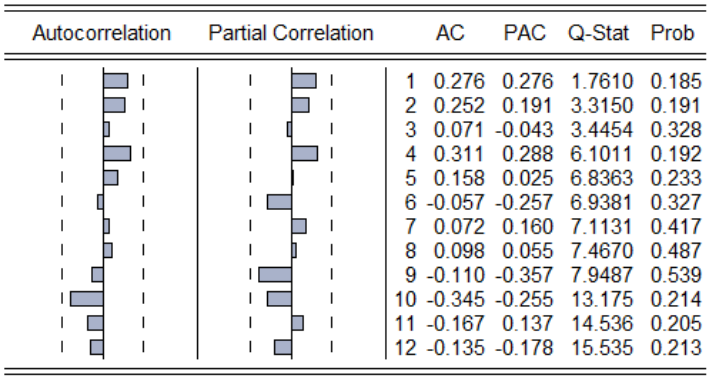
Table 6. White test results

Heteroskedasticity Test: White			
F-statistic	0.722831	Prob. F(14,5)	0.711
Obs*R-squared	13.38609	Prob.Chi-Square(14)	0.4964
Scaled explained SS	3.896696	Prob. Chi-Square(14)	0.9961

ISSN: 2688-9323

(3) Autocorrelation test

Set the lag period to 12, use Eviews9.0 software to obtain the correlation coefficients and partial correlation coefficients of the residuals e_t and e_{t-1},e_{t-2},...,e_{t-p}, and perform the partial autocorrelation coefficient test. The output results are shown in the figure 2 shows. It can be seen from Figure 2 that all the histograms of the partial autocorrelation coefficient PAC of the lag period do not exceed the dotted line, and the *p* value of the Q statistic is large, which indicates that the regression model does not have autocorrelation.



	AC	PAC	Q-Stat	Prob
1	0.276	0.276	1.7610	0.185
2	0.252	0.191	3.3150	0.191
3	0.071	-0.043	3.4454	0.328
4	0.311	0.288	6.1011	0.192
5	0.158	0.025	6.8363	0.233
6	-0.057	-0.257	6.9381	0.327
7	0.072	0.160	7.1131	0.417
8	0.098	0.055	7.4670	0.487
9	-0.110	-0.357	7.9487	0.539
10	-0.345	-0.255	13.175	0.214
11	-0.167	0.137	14.536	0.205
12	-0.135	-0.178	15.535	0.213

Figure 3. Partial correlation coefficient test

5. Conclusions and Recommendations

5.1. Improve the Importance of Managers and Even the Entire Enterprise to Inventory Management

Do a good job of small and medium-sized enterprises inventory management, first, company management decisions need to pay more attention to inventory management and establish a management organization that is suitable for each company's inventory management system. Second, a good purchase budget. In order to ensure the lowest available inventory, effectively promote the acquisition and sales of organizational inventory management, enhance the steady growth of production and sales, and promote the growth of organizational inventory management. Develop in a healthy, strong and high-quality direction, so that organizations can compete and earn a lot of income, and there is room for positive contributions to increase the interests of stakeholders.

5.2. Improve the Financial Accounting of Current Assets

Promote the development of management mechanisms, continuously improve the professional quality of monetary capital managers, clarify the responsibilities of monetary capital managers, and provide human mechanisms to clarify work procedures and some responsibilities. In terms of asset management, it is necessary to formulate clear management goals based on the company's growth goals, set clear directions for asset management, and promote the company's turnover, corporate inventory and capital efficiency. Accelerating the use of organizational assets can also maximize organizational benefits. The management should raise the awareness of the organization's current asset management. The growth of SMEs is not only the "rapid production and sales" of products, but also requires scientific management systems such as liquid asset management to further improve the entire organization for a healthier and more sustainable development

ISSN: 2688-9323

5.3. Strengthen the Application of Information Technology in Inventory Management

The introduction of information technology to manage the management of fixed assets and the continuous improvement of the quality control of asset management are critical to the effective development of the organization. Information is a way of managing property and a combination of information technology and management concepts. Asset management information not only uses information technology to imitate and replace manual methods, but also uses advanced information management ideas to simplify business processes. Therefore, information is not only a technical means, but also a mechanism to realize the integration of industry and finance. Before implementing the designated asset information, we should establish information, simplify the joint management system, reorganize the business process and formulate an effective implementation plan in line with it.

5.4. Reasonable and Effective Use of Short-term Liabilities

For investors in the capital market, the rate of return on debt investment is improved, and debt can be paid at maturity. Companies use borrowed funds to raise funds and usually take a lot of risk, but frankly speaking, the cost of paying the funds is relatively small. The company uses capital to raise funds, with almost no financial risks, but the cost of capital is relatively high. For investors, the risk of investing in lenders is lower than the risk of investing in capital, and investors require a lower rate of return. Therefore, for a company, the cost of capital to earn debt is lower than the cost of financing equity.

References

[1] Li Yulan. Research on the internal control of currency funds of small and medium-sized enterprises in Hebei Province[J]. Enterprise Economy, 2011, 30(07): 35-38.

[2] Zhang Yang. Capital management risks and countermeasures of construction enterprises[J]. Journal of Shanxi University of Finance and Economics, 2019, 41(S2): 63-64.

[3] Wang Qianqian. Thoughts on corporate monetary fund management [J]. Cooperative Economy and Technology, 2020(15): 142-143.

[4] Wang Minghu, Zhu Peipei. Business risk, monetary policy and working capital financing strategy[J]. Journal of Nanjing Audit University, 2019, 16(03): 55-63.

[5] Wang Yifan, Wang Xing. Analysis on the Periodic Characteristics of the Liquid Assets of Listed Publishing and Media Companies[J]. Publishing and Distribution Research, 2020(08): 25-32.

[6] Meng Ling, Jiang Chengyan. Problems and countermeasures of monetary fund management in small and medium-sized enterprises[J]. New Finance, 2020(07): 24-25.