

Empirical Analysis on the impact of working capital management

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ABSTRACT: the article selects 2013 Annual Report data, and analyzes seven indicators of 24 listed companies about road transport industry by using SPSS19.0, and then the study get the newly acquired four comprehensive factors and make multivariate regression analysis. Through analysis for factors affecting business performance, the article provides recommendations for the road transport business managers and investors.

Introduction

Working capital generally refers to the total current assets of enterprises, while net working capital refers to the difference between current assets and current liabilities companies. Now it is habitually referred to as net working capital working capital. Working capital is an important part of enterprise funds. working capital management is an important part of corporate financial management, so the goal should be to manage corporate financial management objectives embodied in the working capital management. There are significant differences on working capital management among China's listed companies in different industries, and this difference is not caused by differences in the value of individual industries, but the prevalence of inter-industry.

Therefore, as the representative of all sectors related to research activities are unfolding, as the real estate industry, manufacturing and retail. Because of its particularity, corporate working capital management approach of road transportation industry is bound to have a lot of differences with other industries. Based on this, the road transport of listed companies are selected, the study is to investigate the relationship between working capital management and performance, hoping to get certain significance on the road transport enterprises to improve working capital management and business performance.

The study design

variable selection

Company Performance depends on several factors, it is necessary to build a relatively comprehensive index system to evaluate the performance of the company. Dependent variables: net interest equity (ROE) = sales margin *asset turnover * equity multiplier. Equity net profit margin is at the heart of the financial evaluation index system of DuPont, has a strong synthesis, can be used to measure corporate performance. Variables: first, current assets to income ratio, it refers to one yuan sales revenue occupied by liquid assets that can be used to measure the working capital investment policies. Second, the main business profit margins. Reflect the company's profitability. Third, the Current Ratio, reflects the company's short-term solvency. Fourth, the debt structure ratio, reflecting the corporate debt structure. Fifth, the Operating Assets Ratio, reflecting the ratio of operating assets to total assets. Sixth, the Accounts Receivable Turnover Ratio. Seventh, the Inventory Turnover Rate. Both turnover levels reflect the efficiency of enterprise management of working capital, in a certain extent, the higher is turnover rate, the better is operating efficiency.

Table 1 Variable table

	Formula	Remark	Score factor	Remark
Equity net profit margin	Net profit / net assets	The dependent variable	Solvency factor	X1
Current Assets Income Ratio	Current assets / income	Variable	Liquidity management efficiency factor	X2
OPE	Net profit / main business income	Variable	Working capital financing factor	X3
Current Ratio	Current assets / current liabilities	Variable	Liquid assets management efficiency factor	X4
Debt structure ratio	Short-term debt / long-term debt	Variable		
Trading assets ratio	Operating assets / total assets	Variable		
Accounts receivable turnover	The income/The average balance of accounts receivable	Variable		
Inventory turnover	The income / Average balance of inventories	Variable		

Samples selection

The paper selects listed companies of the road transport industry category in 2013 annual financial report as a research sample. In the case of the sample companies do not meet the criteria as follows : First, remove the company also issued A shares and B shares or H shares at the same time , retaining the company to issue A shares only , which is to better compare the company . Second, remove the company whose main business income is negative or zero company. In summary consideration, we finally select 24 categories of road transport in Shanghai and Shenzhen A -share listed companies as samples, and annual data from Reuters.

Research Methods

This paper uses SPSS software for 24 listed companies in 2013 to analysis variables as follows: income ratio of current assets, the main business profit margin, current ratio , debt structure ratio, the ratio of operating assets, accounts receivable turnover ratio and inventory turnover ,and takes seven variables for factor analysis and principal component analysis to extract a few main components which can represent seven variables. Then principal component factor was subjected to variable classification, given the economic implications of each variable, the final multiple regression analysis is to verify each variable correlation with equity net profit margin.

EMPIRICAL ANALYSIS

Adaptability factor analysis test

Use SPSS19.0, and Bartlett test of suitability test method based on adaptive data KMO test. The test results: KMO is 0.608, between 0.5 and 1, approximate chi-square value is 54.915. sig(corresponding significant probability) = 0.000 < 0.005, explained that indicators are relevant which are suitable for factor analysis.

Determine the number of common factors and named common factors

Using SPSS19.0 above seven financial indicators for factor analysis, solving the initial factor eigenvalues , variance contribution rate and the cumulative variance contribution rate. According to the results showed that the cumulative variance contribution rate before the four factors reached 87.365%, indicating that these four factors represent most of the information of the original seven indicators. It can be in these four factors as independent variables to analyze the impact on net profit margin of interests.

Table 2 a component of the matrix

	component			
	1	2	3	4
Current Assets Income Ratio	.785	.290	.099	-.075
OPE	.787	-.431	.012	.280
Current Ratio	.846	.111	.082	-.203
Debt structure ratio	-.206	-.003	.972	.106
Trading assets ratio	.718	.551	.051	-.227
Accounts receivable turnover	.101	.466	-.087	.867
Inventory turnover	.635	-.671	.026	.169

Extraction Method : Principal Component

a. has withdrawn four ingredients

The above table shows that the first principal component associated with the current ratio of the largest and second principal components associated with the maximum degree of inventory turnover, and it is a negative correlation. The third main associated with component of the debt ratio of the maximum correlation structure. The fourth principal component associated with the accounts receivable turnover ratio maximum degree. so i follow the appropriate sub- factor of economic significance named X1 (solvency factor), X2 (liquidity management efficiency factor), X3 (working capital financing factor), X4 (liquid assets management efficiency factor) .

Regression analysis

the research hypothesis

According to the results of the factor analysis and the literature and research purposes, this article makes the following assumptions and regression models equation:

Assumption 1: corporate performance associated with short-term solvency .

Assumption 2: firm performance associated with liquidity management performance.

Assumption 3: Performance and working capital financing company owned policy-related.

Assumption 4: Corporate Performance and liquid assets management efficiency related.References

Regression model : $Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + C$

Where Y is the dependent variable , represents the interests of net profit margin; X_1 corporate solvency; X_2 mobile asset turnover ; X_3 is the ratio of working capital financing; X_4 is for snap turnover ; a is a constant term , c is the random error.

Table 3 Correlation

	Equity net profit margin	Solvency factor	Liquidity management efficiency factor	Working capital financing factor	Liquid assets management efficiency factor
Pearson correlation					
Equity net profit margin	1.000	-.039	-.204	.088	.517
Solvency factor	-.039	1.000	.000	.000	.000
Liquidity management efficiency factor	-.204	.000	1.000	.000	.000
Working capital financing factor	.088	.000	.000	1.000	.000
Liquid assets management efficiency factor	.517	.000	.000	.000	1.000
Sig. (Unilateral)					
Equity net profit margin	.	.427	.169	.341	.005
Solvency factor	.427	.	.500	.500	.500
Liquidity management efficiency factor	.169	.500	.	.500	.500
Working capital financing factor	.341	.500	.500	.	.500
Liquid assets management efficiency factor	.005	.500	.500	.500	.

Results of regression

From Table 3, there were different degrees of correlation between the variables. Among them, the net profit margin of solvency and the interests had very weak correlation. Liquidity management efficiency and equity net profit margin inversely correlated. Working capital financing and equity net profit margin was weaker correlation. The liquid assets management efficiency and equity net profit margin have greater relevance. Because this argument was extracted after four factor analysis and principal component analysis, among the variables related to each other, so there would be no multiple collinear problems.

Table4 coefficient

Model	Non-standardized coefficients		Normalization factor	t	Sig.	95.0% confidence interval of B	
	B	The standard error	Trial version			Lower limit	Limit
(Constant)	.080	.005		16.099	.000	.070	.091
Solvency factor	-.001	.005	-.039	-.209	.837	-.012	.010
Liquidity management efficiency factor	-.006	.005	-.204	-1.078	.294	-.016	.005
Working capital financing factor	.002	.005	.088	.464	.648	-.008	.013
Liquid assets management efficiency factor	.014	.005	.517	2.731	.013	.003	.025

a dependent variable : equity net profit margin

In this regression analysis, $R^2 = 0.318$, illustrate that the extent of the equation fit better. Anova table F value = 2.22, less than the critical value, the regression equation did not pass the test of significance. But in the four independent variables factor in liquid, assets management efficiency factor is highest standard coefficient, and its Sig = 0.013 < 0.05, explained by the regression parameters significant level test, assuming 4 was verified that corporate performance and accounts receivable showed a positive correlation between the efficiency of management, the higher was snap turnover, the better was business performance. Sig remaining value of the three independent variables are greater than 0.05, the impact of the independent variables on equity net profit margin is not significant.

THE CONCLUSIONS AND RECOMMENDATIONS

From the above empirical results, there is a certain degree of positive correlation addition between accounts receivable as the representative of liquid assets management efficiency and business performance, except for this, There is no correlation between the stability of the interactive business performance and working capital financing and working capital management efficiency in China's road transport performance of listed companies. This is in contradiction with some assumptions herein.

I think the reasons include the following aspects: the paper selects the road transport industry which is an obvious particularity industry, The industry in general is a long-term asset-based investment and management of highways, which has a smaller proportion of working capital in enterprises accounted for the weaker influence of corporate performance. But it also just confirmed the conclusion that working capital management on corporate performance is greatly influenced by industry.

Looking at the current China's listed companies' management of working capital, working capital management is more and more important in enterprises. Working capital management of listed companies mainly in working capital investment activity-based, and they generally take a relatively conservative working capital financing policy. In the current macroeconomic environment, enterprises should be based on their own circumstances, On basis of raising management efficiency constant of cash, fixed assets, enterprises should be reasonable adjustments for working capital investment and financing management policies to promote the improvement of enterprise management efficiency and business performance.

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