

金融市场 与风险管理

Financial markets and
risk management

陈收 马超群

Financial risk

本论文集集中反映了金融市场与风险管理领域的新的科学研究成果，包括产业金融与投融资决策，金融复杂系统与风险管理，金融市场管理与宏观审慎监管，金融企业与金融创新，信用管理与评估技术等金融领域的学术论文。

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内 容 简 介

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序 言

金融市场是资金融通的市场,它是由许多不同的市场组成的一个庞大复杂的体系,对经济活动各个方面都有直接的深刻影响。如个人财富、企业经营、经济运行效率,都直接取决于金融市场的活动。随着信息技术的迅猛发展、经济全球化与中国改革开放进程的全面推进,我们需要用发展的眼光来审视中国金融市场的发展,从整个金融经济体系的角度把握金融市场发展的脉络,进一步增强我国金融业的国际竞争能力,推动金融业的可持续发展。

改革开放三十年来,我国的金融市场迅速发展,交易机制和处理效率不断改进。但与此同时,金融市场的表现时有不佳,诸如价格有效性差、市场价格未能反映资产价值等。因此,研究金融市场及金融市场的风险管理具有极其重要的现实意义。金融危机的不断爆发说明,金融风险是我国金融体系面临的严峻问题。因此,如何有效进行金融风险管理,成为重要的焦点问题。以往,对金融市场的研究基本是在经典资本市场理论的线性分析范式下展开的,具有内在局限性。在此背景下,金融市场的研究出现了从线性转向非线性分析、从均衡走向非均衡的新趋势。近些年来,我国积极推进银行业改革,实施上市公司股权分置改革等措施,取得了阶段性成果。但应注意到金融市场尤其是证券市场还存在结构不合理等问题,要注重风险管理与控制。由于金融风险对经济、金融乃至国家安全存在很大的消极影响,许多国家都在积极寻求金融风险管理的技术和方法,以对金融风险进行有效识别、精确度量和严格控制。虽然我国在金融市场风险管理中取得了显著的效果,但是相较于国际先进的管理系统,仍有较大差距。随着金融市场不断规范,开展金融创新产品交易是必然的发展趋势,在此过程中如何加强金融创新的风险管理也是不容忽视的问题。我国金融创新经过 20 年的发展,在组织制度、管理制度、金融市场、金融业务与工具、金融技术等创新方面取得了巨大成绩。现代意义上的金融创新是金融风险管理和提高金融效率的现实需求,但是任何金融创新在其化解既定风险的同时,也存在突破现有可控范围而产生更大风险的现实可能性。因此,如何加强在金融创新同时做好风险管理需要我们进行理性的思考和判断。

随着金融学科自身的快速发展及与其他学科的交叉融合,需要加强金融领域各个研究方向以及相关学科间的联系。为推进金融市场与风险管理研究的发展,湖南大学产业金融与投融资决策、金融复杂系统与风险管理、金融市场管理与宏观审慎监管、金融企业与金融创新、信用管理与评估技术五个方面的专家学者召开了金融市场与风险管理的研讨会,就其在金融市场与风险管理领域取得的新成果进行了交流。在国家自然科学基金委和湖南大学出版社的大力支持下,与会各位专家学者的研究成果得以结集出版。本专辑收录的 26 篇论文按研究方向大致集中于产业金融与投融资决策、金融复杂系统与风险管理、金融市场管理与宏观审慎监管、金融企业与金融创新、信用管理与评估技术 5 个领域。

产业金融与投融资决策方向选用 5 篇论文。这些论文分别对企业战略资源配置、战略资源投资与战略绩效度量及其关系、企业战略资源配置的环境约束要素描述等方面进行研究。金融复杂系统与风险管理方向选用 5 篇论文,分别对不同资本市场特征、不同交易制度下股利支付率对股价影响等方面进行分析。金融市场管理与宏观审慎监管方向选用 7 篇论文,分别对中小企业信用、货币政策、资本市场等相关管理问题进行了研究。金融企业与金融创新方向选用 4 篇论文,分别对金融危机预测、汇率与股票市场等相关问题进行了研究。信用管理与评估技术方向选用 5 篇论文,分别对信用风险评级和信用评估等问题进行了研究。

随着经济社会的发展,金融体系中不确定因素也在逐渐增多,金融体系的复杂程度大幅提高,国际金融危机的频发也暴露了当前我国金融体系的金融创新、金融监管、风险管理及国际合作等方面的弊端。我国的金融体系面临着严峻的挑战。《中庸》有语云:万物并育而不相害,道并行而不相悖,小德川流,大德敦化。如何在维持金融市场可持续发展的同时做好风险管理,需要我们理性地审视金融体系的市场创新与风险管理。科研创新群体的优势不仅体现在“举众人之力”共克一题,也体现于不同学科和研究背景的科研人员所带来的学科交叉优势。在金融体系的完善过程中,产业金融与投融资决策、金融复杂系统与风险管理、金融市场管理与宏观审慎监管、金融企业与金融创新、信用管理与评估技术是若干关键领域,进一步加强各领域之间及其与其他学科的交流合作至关重要。本论文集是湖南大学在金融创新与风险管理方面构建创新群体的重要成果展现。

编 者

目次

一、产业金融与投融资决策

Will Strategic Choices Affect Working Capital-Performance Relationship in Chinese Wholesale and Retail Industry	Chen Shou(2)
Study on Contingency Relationship Between Competitive Strategy and Performance Indexes	Lei Hui , Li Ai , Shao Huawei(28)
Competitive Effects of Firms' Working Capital in Product Market
... Liu Duan, Chen Shou, Mao Chao, Wu Shiyuan, Zhou Youde, Song Zhen(43)	
The Newsvendor Problem with Endogenous Risk Aversion
..... Yang Kuan, Chen Shou(70)	
企业环境、资源配置与绩效关系研究	张玲,刘艳彬(79)

二、金融复杂系统与风险管理

基于财富与信息角度的人工股票市场建模及非线性特征形成机理研究
..... 邹琳,马超群,刘钰(98)	
不同交易制度下股利支付率对股价影响:基于 Agent 系统的仿真研究
..... 邹琳,马超群,杨晓光(109)	
Continuous-Time Evolutionary Stock and Bond Markets with Time-Dependent Strategies	Yang Zhaojun, Shi Feng(118)
Bayesian Analysis of Quantile Markov-switching Autoregressive Time Series Models	Zhu Huiming, Zeng Huifang(137)
人民币汇率变动对就业影响的动态 CGE 研究	刘亦文,胡宗义(153)

三、金融市场管理与宏观审慎监管

Methods of Improving Credit Worthiness of Small and Medium Enterprises Jointly Issued Notes in China	Zhang Qiang, Wu Min, Liu Yiwen(164)
我国资本市场对 SRI 反应的实证研究	乔海曙,龙靓(178)
中国货币政策影响银行风险承担吗?	张强,张宝(190)
经济周期同步性与东亚金融合作的可行性研究	喻旭兰(204)
货币政策债券市场传导机制研究的国外新进展	张强,李远航(221)
负利率对房地产市场扩张效应研究	乔海曙,陈志强(229)
我国商业银行债权在上市公司治理中的效应	胡宗义,刘亦文(242)

四、金融企业与金融创新

Financial Distress Prediction Based on SVM and MDA Methods: the Case of Chinese
Listed Companies Xie Chi, Luo Changqing, Yu Xiang(256)

基于结构突变模型的人民币汇率形成基准研究 韩峰,谢赤(274)

信息环境视角下上市公司股价信息含量的实证研究 谢赤,陈君兰(289)

Regional Finance and Regional Disparities in China
..... Peng Jiangang, He Jing, Li Zhangfei, Yi Yu, Nicolaas Groenewold(300)

五、信用管理与评估技术

Are China's Sovereign Credit Ratings Underestimated?
..... Chen Ke, Cheng Cheng, Yang Shenggang(326)

或有权益法视角下的中国主权信用风险评级:1991—2010 杨胜刚,成程(335)

政府信用评级与市政债券发债规模相关性研究 杨胜刚,张润泽(345)

基于 boosting 的决策树集成个人信用评估模型 杨胜刚,向晖(355)

信用评分模型应用比较研究:基于个体工商户数据的检验..... 晏艳阳,蒋恒波(362)

一、产业金融 与投融资决策

Will Strategic Choices Affect Working Capital-Performance Relationship in Chinese Wholesale and Retail Industry

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Abstract: In this study, we examine the influence of strategic choices on working capital configuration and how the relationship between the level of working capital ratio and the operational performance differs under different strategies. By clustering the strategic factors of the wholesale and retail industry, we conclude three categories of strategy, the terminal market strategy, the middle market strategy and the hybrid strategy. With the panel data of the listed companies of wholesale and retail industry as sample, we analyze the difference of the way to configure working capital, the speed to adjust working capital to its target, and the effect of working capital on performance for companies in different strategic choices. The empirical results suggest that the working capital is configured and adjusted to its target in a different way under different competitive strategic choices. This effect will be finally transferred to influence the relationship between working capital configuration and operational performance.

Key words: working capital; strategic choice; adjustment; marginal influence

JEL classification: G30, G31, G32

1. Introduction

Working capital and performance are two concepts that have long been widely and deeply discussed, since they impact many aspects of business and financial management. Working capital has been a central topic in financial management studies since the work of Smith (1973), who pioneered the study of working capital in an overall way. The current assets, current liabilities, cash flow and working capital policy derived from working capital have been examined mainly for their impact on a firm's value (Frecka, 1983; Hamlin & Heathfield, 1991; Bronwyn, 2002; Deloof, 2003). Studies on the relationship between working capital and performance became interesting because of their associated strategic implications regarding corporate governance. Indeed, starting with the study of Frecka (1983), working capital configuration has been evaluated because of the close effect on performance and management choices. Since then, more and more researchers motivated by the fact that effective working capital management will lead to amplification effect and influence performance (Groth, 1992; Shin & Soene, 1998).

However, strategy management theory literature often suggests that a firm's overall performance may be contingent upon the nature of the strategic choices (Forte, Hoffman, Lamont & Brockmann, 2000; Luo & Park, 2001; Valos & Bednall, 2007; Hofmann, 2010), and resource-based theory literature suggests that a firm's strategic choice may be decided by resource allocation (Penrose, 1959; Wenerfelt, 1984; Barney, 1991; Grant, 1991; Peteraf, 1993; Collis & Montgomery, 1995; Christine, 1997; Patricia, 1997). Likewise, some management studies have taken these views. That is, a firm's strategic choice must consider its resource allocation, and different strategic choices and (or) resource allocations may lead to different performance. As an important part of company resources, working capital configuration may be affected by the strategic choices as well. With Cobb-Douglas model, Hamlin and Heathfield (1991) deduced a relational model of working capital and strategy, they believed that competition strategy have influence on production flexibility and working capital management and those companies dedicated keeping competitive advantages may strength their working capital management correspondingly. Then the question comes, will the working capital configuration change with the transformation of strategic choices? If there is, will this relationship affect performance? However, prior empirical evidence is largely limited to the relationships between strategic choices and performance (Conant, Mokwa & Varadarajan, 1990; Hill Hitt & Hoskisson, 1992; Woodside, Sullivan & Trappey, 1999), or between working capital and performance (Groth, 1992; Shin & Soene, 1998). Thus, the role of strategic choices on working capital and performance has rarely been examined directly. Therefore, it is worth to investigate the influence of strategy on working capital configuration and working capital-performance relationship.

In the present paper, the role of working capital configuration, performance and strategic choices are analyzed. The study was carried out in the context of research on strategic choices and working capital configuration (how does strategic choices influence working capital allocation), which has attempted to explain the effects of strategic choices on working capital. Then, the research goes on the deciding role of strategic choices in the influences of working capital on performance.

In the present research, we choose Chinese wholesale and retail industry as the research objects based on two reasons. First, Statistics show that the average proportion of current assets to total assets in wholesale and retail industry is about 50%, and that of current liabilities to total debt ratio is more than 90% (The data are derived from the Chinese national statistics bureau). The wholesale and retail industry, a bridge connecting producers with customers, pays more attention to working capital than any other industries. Second, Chinese wholesale and retail industry had been integrating since late 1980s, and growing rapidly after going through expansion and adjustment in the early and mid 1990s. The competitive strategy and business pattern among Chinese

wholesale and retail enterprises began to be diversified with the emergence of new retail business pattern and new wholesale agents. Besides, the economic of China is going through a rapid development with the growth rate of Gross Domestic Product (GDP) which is around 7% yearly. The role of strategic choices in working capital decision and performance of a rapid development industry in a rapid development country need to be explored.

To the divergent arguments of the above literature, and to explore the role of strategic choices in working capital decision and performance in a fast development industry, we believe the working capital decision and its driving capacity to operational performance are not always consistent for the companies employing different strategy. Specifically, this study seeks to answer the following two empirical questions. First, do firms with different strategic choices have different working capital configuration, especially the adjustment from current working capital to target working capital? The second question examined by this study is: If the question that firms with different strategic choices have different working capital decisions, do this will finally transfer to business performance in Chinese wholesale and retail industry?

As the first step of our investigation, we have to understand the category of strategy that a company adapts. How to describe strategy by disposed data is the first problem we are facing. To capture strategic characteristics and measure strategy by financial statement level data, we explored the index to distinguish strategy based on two important strategic value propositions “efficiency” and “cost”. By excavating 10 indicators reflecting capital investment efficiency and cost control ability, clustering the sample according the characteristics of these 10 indicators, we classify strategy of listed companies in wholesale and retail industry into three categories. Based on the strategy recognition and by two-stage working capital adjustment model, the adjustment speed of working capital and its influential factors in different strategic choices are analyzed and compared by panel data. Furthermore, the relationship between working capital ratio and operational performance and the marginal influence of working capital on performance are examined also by panel data analysis. To make clear the essential role that strategy plays on working capital decision and the working capital-performance relationship, we compare the statistic parameters for samples belonging to different strategy.

2. Data

In this paper, we are attempting to investigate the influence of strategic choice on working capital configuration and how the relationship between the level of working capital ratio and the operational performance differs under different strategy. To achieve this purpose, we examined four issues. Firstly, we classified strategies in wholesale and

retail industry by clustering the sample of strategic factors. Then working capital management efficiency, composition of working capital, and the adjustment speed of working capital ratio to the target value in different strategic types are compared, while the determinants of working capital are explored. Finally, we discussed the marginal influence of working capital ratio on performance in different strategies.

Data Sources

What we are going to achieve in this paper is the influence of strategic choices on the working capital management and the way that working capital affects performance by empirical analysis. We need three types of data, indicators in depiction of strategy, index describing working capital configuration and performance, and data of control variables. For this reason, our sample covers financial data of 113 Chinese listed companies in wholesale and retail industry from 2005 to 2009. All of the data in this paper are collected from China Stock Market & Accounting Research Database (CSMAR) and TinySoft in China. The selection criteria of our sample are as follows. First, firms which are B-shares enterprises and oversea listed companies are excluded. Second, we choose data from the year 2005 to 2009 of the listed companies in wholesale and retail industry as the research object, because the data we need in this time period is most complete and the development is relatively fast. Third, we eliminate the sample with missing data for more than one year to ensure the data integrity. Finally, there are 475 observations remained.

Strategy Variables

Porter (1980) identifies two generic ways in which a firm can gain a sustainable competitive advantage: cost leadership and differentiation. There is no exception in wholesale and retail industry. To obtain competitive advantage, wholesale and retail enterprises which pursue low cost pay more attention to cost and expense control, assets turnover cycle, capital using efficiency, and others which pursue differentiations on products, sales and service. Therefore, we select indicators from capital investment efficiency, cost control and development ability.

Capital investment efficiency. Capital investment has been considered to be a key indicator of strategic evaluation. From the capital investment status, such as plant, equipment, and current assets etc, we can judge capital quality, operating efficiency, management level and cost control capacity(Kotha & Nair, 1995). Therefore, ratio of fixed asset to profit, fixed asset turnover ratio (sales to net fixed asset) and current asset turnover ratio are used to measure capital investment efficiency.

Cost control. Enterprises, with cost leadership competitive advantage, have a strong motivation to control cost and improve operating efficiency. And they try their best to lessen cost by control different kinds of expenses, financial cost of external financing, selling cost for marketing, and administrative cost for daily administration.

Conversely, enterprises pursuing differentiations always give priority to marketing capability cultivation. They emphasize the importance of advertisements, service, brand, etc, and probably finance through debt and stock when necessary (Kobrin, 1991; Kotha & Nair, 1995). In addition, enterprises may ignore financial expenses control and spend more on advertisements and distribution channels in pursuit of differentiations. Thus, ratio of management expenses to profit, ratio of financial expenses to profit, ratio of sales expenses to sales, and ratio of cost to income are selected to reflect how much resources enterprises spend on cost control or differentiation.

Development capability. Enterprises committing themselves to differentiation usually tend to invest capital on fixed assets to enlarge business scope and market share. They sell different products to different target customers by swapping and recombining lots of resources (Sanches, 1995). Thus, they can easily get brand loyalty, and can gain more profit compared with competitors. Conversely, enterprises devoted to lessen cost always invest less on fixed assets. Therefore, relative gross margin, growth rate of fixed assets and growth rate of sales proceed are used to reflect development capability.

Measures of Firm Size

Firm size plays an important role in strategy in wholesale and retail industry. For example, large firms tend to improve their bargaining ability using size as a chip, and enjoy various preferential supply policies to achieve economies of scale. Because firm size is not suitable to be used as an indicator to represent strategy, we describe strategic types with firm size and strategic indicators. Firm size is measured by the log of total assets.

Measures of Working Capital

Generally, working capital refers to the difference between current asset and current liability. But what implies in this concept is the financial strategy that a company observes. If the working capital is less than 0, the current liability is larger than current asset. In this case, the company advocates radical financial strategy. Otherwise, if the current asset is much larger than current liability, that is, a part of long-term capital is invested on short-term assets, and the company employs conservative financial strategy. From this point of view, the bigger the working capital, the more radical the financial strategy is observed, and the safer the short-term liability is. So we adopt this definition of working capital in this study as well. But to control the impact of size, we use the proportion of difference between current assets and current liability to current asset to represent working capital, namely the working capital ratio, symbolized by working capital.

Measures of Working Capital Influencing Factors

Management efficiency of working capital. Enterprises with big inventory scale and high efficiency in accounts receivable management apparently invest less on current as-

sets to achieve the same growth rate of sales. Conversely, enterprises with small inventory scale and low efficiency in accounts receivable management have more working capital to make objective growth rate of sales. Therefore, we select the inventory turnover ratio and account receivable turnover ratio to measure working capital efficiency.

Growth opportunities. In general, if the operating management efficiency keeps the same, working capital size will be larger with the sales growth. However, the relationship between growth opportunities and working capital is controversial. On the one hand, sales growth leads to the growth of account receivable and inventory, on the other hand, enterprises with better performance will easily attract outside investment, so they do not need much more cash and short-term loans which can be invested on other plans to gain more profit. Growth rate of sales proceed is used to measure growth opportunities.

Operational cash flow. Due to the fact that enterprises would be willing to increase current working capital and short-term if they expect they would have more development opportunities and future cash flow (Kim, Manue & Sherman, 1998; Opler, Pinkowitz & Stulz, 1999; Denis & Sibilkov, 2010; Brown & Peterson, 2011; Denis, 2011). The more operating cash flow the enterprises have, the higher their working capital management level are. So enterprises' working capital and debt will keep on a low level (Tong, 2011). Operating cash flow to total assets is used to measure cash flow to eliminate the influence of firm size.

Fixed assets ratio. The increase of structural asset investment, such as fixed assets, intangible assets and long-term investment, will lead to the reduction of working capital. Therefore, fixed assets ratio will affect working capital. A fixed asset to total assets is used.

Measure of Performance

There are many variables that can reflect performance, such as revenue, capital usage ration and Return on Assets (ROA). However, revenue and capital usage ration can only reflect a part of business performance while ROA can comprehensively reflect business performance (Bhagat & Bolton, 2008).

Control Variables

The industry development will influence companies' business performance, so we use the steady of industry demand to control the change of the whole industry. Besides, lots of researches pointed out the initial performance will affect current performance, thus, we add steady of industry demand and initial performance in the model to control the influences of industry and firm and improve the accurate of model to study the marginal influence of working capital on performance in different strategies.

Measures of Working Capital Structure and Efficiency

In the wholesale and retail industry, companies value working capital management a

lot to achieve high turnover rate of current asset. As a result, working capital forms a very important strategic resource influencing strategic choice and in turn is constrained by strategy. To investigate the difference of working capital structure and operational efficiency of working capital under different strategic choices, we decompose current asset into cash, inventory and receivables, and decompose current liabilities into short-term financial asset in terms of working capital structure. Besides, we use inventory turnover ratio and account payable turnover ratio to reflect working capital efficiency.

3. The Classification and Identification of Strategy

Although enterprises have different types of advantages and disadvantages against their competitors, there still have two most basic competitive advantages that form the fundamentals of competitive strategy, low cost and differentiation (Porter, 1980). Researchers commonly measure enterprises' strategies by considering their abilities of keeping low cost and differentiation. In the wholesale and retail industry, low cost or cost control is even more appreciated for the nature of the industry.

All the data used in this paper are financial level data for disposed financial data permits an explicit gauge on the "realized strategies" rather than the "intended strategies" (Mintzberg, 1978). In addition, by using the financial statement level data, these measures are not prone to the perceptual biases—a rising concern noted in the strategy literature (Reger & Huff, 1993).

A cluster analysis approach was applied to determine whether structural differences were present within the sample. Instead of using a deterministic approach (Singh, Davidson & Suchard, 2003), we chose an inductive approach to identify potential structural differences, arising with the sample. Therefore, a factor analysis was applied to reduce dimension and correlation, and an inductive approach was applied to identify structural differences between the firms in the sample. With two independent factors obtained from factor analysis, a hierarchical cluster analysis was carried out with the goal of verifying whether there were differences between groups of firms and then determine the optimal cluster number and types of strategy.

As the value we get from Kaiser-Meyer-Olkin (KMO) test is 0.6886, the P value of Bartlett test is 0.000 and the overall contribution is 96.54%, the sample is suitable for factor analysis and consistent with our expectation. The result indicates that there are two factors. The first factor (Eigen-value is 2.44) comprises three indicators: ratio of fixed asset to profit, ratio of management expenses to profit, and ratio of financial expenses to profit. Since all these indicators reflecting this factor are related to input-output relationship, we name it input-output efficiency. The higher (lower) the value, the lower (higher) input-output efficiency is. The second factor (Eigen-value is 2.38) is

comprised by five indicators: ratio of sales expenses to sales, relatively gross margin, ratio of cost to income, fixed asset turnover ratio and current assets turnover ratio. All these indicators reflect the capital investment and efficiency, thus we name it capital investment efficiency. The higher (lower) the value, the higher (lower) the companies' cost consumption and asset turnover ratio. In conclude, the higher (lower) the factor scores, the more likely firms' expenses on capital are large (small). In this case, all the expenses of enterprises are high, which can reflect that companies seek for different and expand market with their own ability. Conversely, the lower the factor scores are, the more likely enterprises spend less on capital and control cost strictly.

Table 1 Factor Analysis Result

The describe of variables	Factor 1: Input-output ability	Factor 2: Capital investment efficiency
Ratio of fixed assets to profit	0.90	-0.03
Ratio of financial expenses to profit	0.87	0.03
Ratio of sales expenses to sales	0.01	-0.50
Ratio of management expenses to profit	0.92	-0.01
Fixed asset turnover ratio	0.01	0.28
Relative gross margin	0.01	-0.99
Ratio of cost to income	-0.01	0.99
Growth rate of fixed assets	0.01	0.06
Growth ratio of sales proceed	0.004	0.08
Current assets turnover ratio	0.02	0.23
The overall value		
Eigen value	2.44	2.38
Variance contribution	0.49	0.48
Overall contribution	96.54%	
Bartlett test	0.000	
KMO test	0.69	

Based on the two factors obtained from factor analysis, we make strategic classification by hierarchical clustering and K-mean value clustering, and classify strategies into three classes according to the characteristics of the two factors as what is shown in table 2. Furthermore, Analysis of Variance (ANOVA) analysis is adopted to examine the difference in these two factors for companies operating different strategy.

Table 2 Factors in Different Classes

Variables	Whole sample		The 1st Class Mean	The 2nd Class Mean	The 3rd Class Mean	ANOVA on differences between all three clusters (F-test and its p-value are reported)
	Mean	Standard deviation				
Input-output ability	2.44e-09	0.96	0.19	-0.32	0.29	10.87 (0.000)
Capital investment efficiency	-1.02e-08	0.99	-0.03	-1.29	0.38	626.37 (0.000)
Working capital	-0.23	0.90	-0.17	-0.86	0.38	52.51 (0.000)
Firm size	21.51	0.89	21.51	21.28	21.67	6.77 (0.0013)
Observations	475		198	115	162	

Firms in cluster 3 are high in input-output efficiency, capital investment efficiency and firm size, whose values are 0.29, 0.38, and 21.67 separately. With these characteristics, we think enterprises in this class may pay more attention to brand promoting, marketing, product design and characteristics improvement, and they may thus dedicate themselves to shortening the cycle of new product development, increasing product categories, and improving product packaging. These characteristics are just in coincidence with wholesale companies. Besides, the ratio of wholesale companies is 73.20%, so we name it middle market strategy.

Firms in cluster 2 have a low level of input-output efficiency, capital investment efficiency and firm size as shown in table 2, whose values are -0.32, -1.29, and 21.28 separately. Thus, we think enterprises in this class may advocate cost controlling, economies of scale, and using the advantage of value chain to realize trading internalization and to maximally reduce purchasing expenses. They try to carry out market segmentation in order to increase product sales, extent market share, develop new markets, spread market risk, and expand advantages. These characters are similar with retail companies. Besides, the ratio of retail companies is 75.23%, so we name it terminal market strategy.

The value of input-output efficiency, capital investment efficiency and firm size of enterprises in cluster 1 are in the middle of all the three classes. We think that enterprises in this class pay attention to cost control, brand promotion and new production development in the same time. But they mostly make a reasonable balance between cost control and differentiation, and do not excessively emphasize either side. Their capital investment efficiency is relatively moderate and reasonable. Companies in this class have both wholesale and retail business, and the ratio of these companies is 82.72%. Therefore, we name the third strategic type hybrid strategy.