

# Inventory and Capital Intensive Businesses and Cash Flow Management in Small Industries – An overview

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## Abstract

This paper examines the influence of strategic choice on working capital management and observe how the relationship between working capital ratio and operational performance differs depending on manufacturing companies. By clustering the strategic factors of the wholesale and retail industry, we find three categories of strategies: terminal market strategy, middle market strategy, and hybrid strategy. Using the panel data of the listed companies of the wholesale and retail industry as our sample, we analyze the differences in the ways companies configure working capital, the speed with which working capital adjusts to its target, and the effects of working capital on performance for companies that make different strategic choices. The empirical results suggest that working capital is configured and adjusted to its target in different ways under different competitive strategic choices. This effect is finally transferred to influence the relationship between working capital configuration and operational performance.

Working capital and strategic choices are two concepts that have been widely discussed because they impact many aspects of business and financial management. Since Smith <sup>1</sup>, working capital has been discussed in holistic terms. The current assets, current liabilities, cash flow, and working capital policy derived from working capital have been examined primarily for their impact on a firm's value. Studies on working capital management since Frecka fall into three competing views. Under one view, higher working capital levels allow firms to increase their sales and obtain greater discounts for early payments and, hence, may increase firms' value. Working capital management plays a significant role in the better performance of manufacturing firms. In this line, authors such as Kim et al. suggest that working capital decisions affect firm performance significantly and find that firms with higher values hold a significantly higher investment in working capital than firms with lower values. Unlike previous studies, other authors argue that the relationship between working capital management and corporate performance is nonlinear. Furthermore, Baños-Caballero et al. find that there is an inverted U-shaped relation between investment in working capital and firm performance, which implies the existence of an optimal level of investment in working capital that balances costs and benefits and maximizes a firm's value. Based on the diverse arguments of the above-mentioned studies and to explore the role of strategic choices in working capital and performance in a rapid development industry, we argue that working capital and its capacity to drive operational performance are not always consistent for companies employing different strategies.

*Key words: companies, strategies, manufacturing firms, firm's value, working capital management.*

## Introduction

The firms with higher working capital levels may face additional financing expenses which increase their probability of going bankrupt. Firms characterized by high working capital display high sensitivities of investment in working capital to cash flow and low sensitivities of investment in fixed capital to cash flow. From this view, authors such as Shin et al. argue that the firms with higher profits are not motivated to manage working capital and firm performance. Their findings suggest that there is a negative relationship between working capital and firm performance. First, do firms that make different strategic

choices have different working capital configurations, especially when making the adjustment from current working capital to target working capital? Second, if firms with different strategic choices make different working capital decisions, will this finally transfer to business performance in the Chinese wholesale and retail industry?. Specifically, this study seeks to answer the following two empirical questions.

At the same time, the literature on strategy management theory often suggests that a firm's overall performance may be contingent upon the nature of the strategic choices a firm makes, and the literature on resource-based theory suggests that a firm's strategic choices may be made based on superior resources and may represent the means by which resources are allocated. That is, a firm's strategic choice must consider its resource allocation, and different strategic choices and/or resource allocations may lead to different performances. Working capital configuration, an important aspect of company resources, may be affected by the strategic choices, as well. Using the Cobb-Douglas model, Hamlin and Heathfield deduced a relational model of working capital and strategy. They argued that a competitive strategy influences production flexibility and working capital management, and companies dedicated to maintaining competitive advantages should strengthen their working capital management accordingly. Nath et al. suggest that an enterprise's marketing capability, operations capability, and diversification strategy have an integral influence on firm performance. Therefore, the question is will the working capital configuration change with the transformation of strategic choices? If it does, will this relationship affect performance? The prior empirical evidence is largely limited to the relationships between strategic choices and performance or between working capital and performance. Thus the impact of strategic choices on working capital and performance has rarely been examined directly. Therefore, it is important to investigate the influence of strategy on working capital configuration and the working capital-performance relationship.

In the present study, the relationship among working capital configuration, performance, and strategic choices is analyzed. The study was conducted in the context of research on strategic choices and working capital configuration (how do strategic choices influence working capital allocation), which has attempted to explain the effects of strategic choices on working capital. Therefore, the research proceeds from the perspective that strategic choices play a deciding role in the influence of working capital on performance.

In the present study, we choose the Chinese wholesale and retail industry as the research objects for two reasons. First, statistics show that the average proportion of current assets to total assets in the wholesale and retail industry is approximately 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 to customers, pays more attention to working capital than any other industry. Second, the Chinese wholesale and retail industry had been integrating since the late 1980s and growing rapidly after undergoing expansion and adjustment in the early and mid-1990s. The competitive strategy and business pattern of Chinese wholesale and retail enterprises began to diversify with the emergence of a new retail business pattern and new wholesale agents. In addition, the Chinese economy is developing rapidly, with a Gross Domestic Product (GDP) growth rate of approximately 7% annually. The impact of strategic choices on working capital and performance in a rapid development industry in a rapid development country needs to be explored.

As the first step of our investigation, we must understand the category of strategy that a company adopts. Describing a strategy with the data at our disposal is the first problem we face. To capture strategic characteristics and measure a strategy with financial statement level data, we explored the index to distinguish strategies based on two important strategic value

propositions, “efficiency”, and “cost”. By excavating 10 indicators reflecting capital investment efficiency and cost control ability and clustering the sample according to the characteristics of these 10 indicators, we classify the strategies of listed companies in the wholesale and retail industry into three categories. Based on the strategy recognition and the two-stage working capital adjustment model, the adjustment speed of working capital and its influential factors on 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 also examined by panel data analysis. To clarify the essential role that strategy plays in working capital and the working capital-performance relationship, we compare the statistic parameters for samples belonging to different strategies. The empirical results suggest that working capital is configured and adjusted to its target in different ways depending on different competitive strategic choices. This effect is finally transferred to influence the relationship between working capital configuration and operational performance. The marginal influence of the working capital ratio on performance is different with different strategies.

### **Objective:**

This paper intends to explore Manufacturing industries with inventory and capital intensive businesses, where cash flow management is especially important. Also, the industry practice usually allows customers to have a long payment cycle, especially recurring customers.

### **GMM endogeneity problems**

First, we let us see a model of working capital adjustment based on the target adjustment model of the capital-structure or target debt ratio (leverage) and conduct an empirical study on the adjustment path of working capital under different strategies. Second, the paper investigates the relationship between investment in working capital and firm performance according to different strategies of firms and the marginal influence of working capital ratio on performance with different strategies. Third, we estimate the models by using a panel data methodology to eliminate unobservable heterogeneity and use the generalized method of moments (GMM) to address possible endogeneity problems.

### **Regarding Working Capital Adjustment**

There is a specific working capital level which objectively creates enterprise value maximization. Previous work has verified that there is a target working capital level. For example, Baños-Caballero et al. proved that a target cash flow cycle exists in enterprises [34](#). If there is a shortage of working capital, enterprises will probably borrow money at a high interest rate at the wrong time to maintain regular operations and credit, thus affecting the ability to pay interests and dividends. However, a high working capital level means there is a substantial amount of liquidity that does not create more economic benefits, which implies that enterprises may lack investment opportunities and potential development will be influenced. Enterprises should maintain a proper working capital level.

Therefore, enterprises need to adjust the holdings and composition of working capital to adapt to market needs. Due to the differences in adjustment costs (such as interest, rent, and conversion cost) and different maintenance costs (if they did not plan to do anything), enterprises' working capital adjustments are different in different strategic types. The clients of enterprises with a terminal market strategy are a single person whose purchasing behavior is at will. Enterprises cannot

actually forecast the person, place, time, and product categories of purchase behavior. They may pursue differences, spend more money on temporary marketing outlays to meet customers' needs, and keep more short-term loans to maintain differentiation. Therefore, they may not be concerned much with the adjustment of working capital. However, enterprises with a middle market strategy tend to have fewer monetary funds to reduce opportunity costs and reduce external financing costs to avoid interest. The clients of companies with a hybrid strategy are diverse, meaning that they may be a person or a company. The business of these companies is complex, and therefore they may pay more attention to liquidity and working capital policy and adjust it as soon as possible.

*H1.* Companies with a hybrid strategy make the adjustment from a current working capital ratio to a target working capital ratio the fastest, while companies with a terminal market strategy are slowest and companies with a middle market strategy are in the middle.

### **Input-output efficiency, capital investment efficiency Kaiser-Meyer-Olkin test**

As the value we obtain from the Kaiser-Meyer-Olkin test (KMO) is 0.6886, the value of the Bartlett test is 0.000, and the overall contribution is 96.54%; the sample is suitable for factor analysis and consistent with our expectations. The results indicate that there are two factors. The first factor (eigen value is 2.44) comprises three indicators, namely, the ratio of fixed assets to profit, the ratio of management expenses to profit, and the ratio of financial expenses to profit. Because all of these indicators reflecting this factor are related to the input-output relationship, we designate the factor input-output efficiency. The higher (lower) the value is, the lower (higher) the input-output efficiency is. The second factor (eigen value is 2.38) is comprised of four indicators, that is, the ratio of sales expenses to sales, the relative gross margin, the ratio of costs to income, and the fixed assets turnover ratio and the current assets turnover ratio. All of these indicators reflect capital investment and efficiency, and thus we name it capital investment efficiency. The higher (lower) the value, the higher (lower) the companies' cost consumption and assets turnover ratio. In conclusion, the higher (lower) the factor scores, the more likely the firms' expenditures on capital are large (small). In this case, all of the expenses of enterprises are high, which can reflect that companies seek different and expanded markets based on their own ability. Conversely, the lower the factor scores are, the more likely the enterprises spend less on capital and control costs strictly.

Based on the two factors obtained from the factor analysis, we create a strategic classification through hierarchical clustering and -mean value clustering and classify strategies into three classes according to the characteristics of the two factors, as shown. Furthermore, an analysis of variance (ANOVA) is adopted to examine the difference in these two factors for companies operating different strategies.

Firms in cluster 3 are high in input-output efficiency, capital investment efficiency, and firm size, with values of 0.29, 0.38, and 21.67, respectively. With these characteristics, we hold that enterprises in this class may pay more attention to brand promotion, 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 coincide with wholesale companies. In addition, the ratio of wholesale companies is 73.20%, so we designate it the middle market strategy. They try to carry out market segmentation to increase product sales, extend market share, develop new

markets, spread market risk, and expand advantages. These characteristics are similar to retail companies. Furthermore, the ratio of retail companies is 75.23%, so we name this the terminal market strategy.

The values of input-output efficiency, capital investment efficiency, and firm size of enterprises in cluster 3 are in the middle of the three classes. We claim that enterprises in this class pay attention to cost control, brand promotion, and new production development at the same time. However, they primarily achieve 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 businesses, and the ratio of these companies is 82.72%. Therefore, we name the third strategic type the hybrid strategy.

### **Premise Regarding the Working Capital Influence on Performance**

We define working capital ratio as  $(\text{current assets} - \text{current liabilities}) / \text{current assets}$ . This index reflects not only short-term debt paying ability but also the financial strategy of a company. When working capital ratio falls within a reasonable range, the larger the working capital ratio is, the more long-term the capital is invested in current assets. That is, the more conservative the financial policy that the company employs, the less the financing risk is undertaken by the company. Thus the company has more stable capital as to guarantee the continuity of business operations and, in turn, to safeguard the stable profit of the company. Therefore, we propose hypothesis 2A.

*H2A.* The link between working capital ratio and performance is positive.

Because the strategic objectives of different strategies are different, the internal resource allocation scheme, cost control techniques, and differentiation extent are different for companies that make different strategic choices, including the working capital configuration. Given that many scholars have demonstrated that either working capital or strategy will influence performance and we have discussed above how strategic choices will affect working capital management, we hold that performance will differ based on different working capital management plans and strategic choices. In this case, the marginal influence of working capital ratio on performance will be different with different strategies.

*H2B.* The marginal influence of working capital ratio on performance will be different with different strategies.

### **Measures of Working Capital Influencing Factors**

*Management Efficiency of Working Capital.* Enterprises with a large-scale inventory and high efficiency in accounts receivable management apparently invest less in current assets to achieve the same growth rate of sales. Conversely, enterprises with a small-scale inventory and low efficiency in accounts receivable management have more working capital to achieve an objective growth rate of sales. Therefore, we select the inventory turnover ratio and accounts receivable turnover ratio to measure working capital efficiency.

*Growth Opportunities.* In general, if operations' management efficiency remains the same, working capital size will increase 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 accounts receivable and inventory. On the other hand, enterprises with better

performance will easily attract outside investment and therefore do not need much more cash and short-term loans that can be invested in other plans to gain more profit. Growth rate of sales proceed is used to measure growth opportunities.

*Operational Cash Flow.* Enterprises would be willing to increase their current working capital in the short term if they expected that they would have more development opportunities and future cash. The more operating cash flow the enterprises have, the higher their working capital management level is. Therefore, enterprises' working capital and debt will remain at a low level. Operating cash flow to total assets is used to measure cash flow to eliminate the influence of firm size.

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

## Conclusion

Industry development will influence companies' business performance, so we use the steady of industry demand to control the change of the whole industry. Industry demand uncertainty captures the volatility of industrial demands and is measured by the standard deviation of the industrial average net sales from 2008 to 2012.

Many studies have demonstrated that initial performance will affect current performance, and thus we add the steadiness of industry demand and initial performance of the model to control the influences of industry and firm and improve the accuracy of the model to study the marginal influence of working capital on performance for different strategies. Although enterprises have different types of advantages and disadvantages in relation to their competitors, the two most basic competitive advantages that form the fundamentals of competitive strategy are low cost and differentiation [35](#). Researchers commonly measure enterprises' strategies by considering their abilities to keep costs low and products differentiate. In the wholesale and retail industry, low cost or cost control is even more appreciated given the nature of the industry. With two independent factors obtained from the factor analysis, a hierarchical cluster analysis was conducted with the goal of verifying whether there were differences between groups of firms and then determining the optimal cluster number and types of strategy.

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