The Influence of Strategic Investment on Profitability of Manufacturing Enterprises

Pei Zhou

College of Business, Yangzhou University, Yangzhou, Jiangsu, 225009, China

Abstract

Manufacturing enterprises are different from service enterprises, and fixed assets, inventory and large equipment are the main enterprise wealth, and there are many factors affecting their profitability. This paper analyzes the total income, total investment and short-term investment of the modeling enterprises, and explores the influence of strategic investment on the profitability of manufacturing enterprises.

Keywords

Manufacturing Enterprises; Strategic Investment; Profitability.

1. Introduction

Manufacturing industry refers to the industry that uses certain resources (materials, energy, equipment, tools, capital, technology, information and manpower, etc.) in the era of machinery industry to transform into large-scale tools, industrial products and consumer goods that can be used and utilized by people through manufacturing process according to market requirements. Due to the nature of the enterprise, material capital is the main capital, which needs strategic investment and maintenance to ensure stable profitability.

The strategic investment here can be divided into two parts: internal investment and external investment. The internal investment of an enterprise includes the investment in raw materials, manufacturing equipment, internal management and sales; External investment includes equity investment in some potential start-ups, stock options in financial market, short-term investment in enterprises, etc. These factors more or less determine the profitability of enterprises, which is also the main point of this paper.

2. Research Design

2.1. Model Design

This paper mainly selects the internal investment and external short-term investment of some enterprises, and designs the following multiple linear regression model according to the reality:

$$Y_t = \ddot{u}_0 + \ddot{u}_1 F_t + \ddot{u}_2 X_t + \ddot{u}_t$$

Y_t represents the total sales revenue of the enterprise in one year; F_t refers to the internal investment of an enterprise, which refers to medium-term investment, manufacturing equipment investment, management investment and sales investment, $\ddot{u}_1$ is its coefficient; X_t refers to the external investment of the enterprise, here refers to the short-term investment of the enterprise, $\ddot{u}_2$ is its coefficient; $\ddot{u}_0$ is a constant term, which is the initial value of the total sales revenue of the enterprise; $\ddot{u}_t$ is the error term.

2.2. Variable Selection

1. Explained variable

In the analysis of financial statements, there are a variety of measurement indicators of corporate profitability, such as profit rate of sales, profit rate of shareholders' equity and return on total assets. Due to data reasons, this paper selects the total sales profit Y_t as the explained variable to measure the profitability of enterprises.

2. Explanatory variables

There are two main factors influencing the profitability of enterprises: internal investment and external investment. The internal investment here is: medium term investment, manufacturing equipment investment, management investment and sales investment; External investment: short term investment.

3. Internal investment F_t

It is mainly divided into four aspects: medium-term investment, manufacturing equipment investment, management investment and sales investment.

① Medium term investment: mainly for the production of raw materials, technology and equipment, human capital investment, refers to the capital that must be invested in order to produce products more efficiently.

② Manufacturing equipment investment is used for the purchase of equipment, tools and appliances in manufacturing enterprises. It is an important part of the enterprise's investment, and its proportion in the total basic investment is generally large. With the improvement of production technology and equipment level of various departments, the proportion of equipment investment will continue to rise.

③ Management investment mainly refers to the reasonable allocation of material resources and human resources within the enterprise, which is to improve the input-output efficiency of the enterprise.

④ Sales investment refers to the publicity investment, advertising investment and other investment needed in the process of selling finished products, which is to better sell the enterprise's products.

2.3. External Investment X_t

According to the characteristics of manufacturing enterprises, their external short-term investment is mainly for the investment of some start-ups and the purchase of some financial products. Their main purpose is to earn non-operating income, which has no strong correlation with the main business income of enterprises.

2.4. Constant Term $ü_0$ and Error Term $ü_t$

Since the main business products of manufacturing enterprises have certain profitability, their total sales revenue has a certain initial value, that is, a constant term $ü_0$; At the same time, due to the existence of other uncontrollable factors, the regression results of the model will always have a certain deviation, so the error term is set up $ü_t$.

3. Empirical Results

In order to better understand the data and analyze the data, we first make statistics on the sample data, and analyze the average value, maximum value and minimum value. See Table 1 for details.

According to the statistical results, the main result we need is the average value of the sample data. We know that most of the enterprises in the sample are small and medium-sized enterprises, and the operating income and investment amount are not very huge. This is of great

help for us to define the nature of enterprises, which means that most of these enterprises are small and medium-sized manufacturing enterprises.

Table 1. Statistical data of samples

Variable	Obs	Mean	Std. Dev.	Min	Max
firmid	8,969	121563.9	62540.55	30	263720
total_sales	8,969	267880.8	1770447	0	7.16e+07
intermedia~t	8,969	183445.3	1314651	0	6.66e+07
manu_service	8,969	11615.43	65483.14	0	3291545
manage_ser~e	8,969	6665.156	130738.2	-42085	1.16e+07
sale_service	8,969	6349.041	52015.3	-1629	2320131
short_invest	8,969	1581.734	28282.4	0	1183629
fname	0				
ind_code4d	8,969	3134.355	1180.838	1411	4090
ind_code2d	8,969	30.85494	11.80656	14	40

Secondly, in order to ensure the nature of the enterprise, we eliminate all the data with the opening inventory less than 1000, and then we can explain the variable "total"_ Sales, don't explain the variable "intermediate_ input", "manu_ service", "manage_ service", "sale_ service", "short_ The results of regression analysis are shown in Table 2.

According to the results, it is not difficult to see that the total income of the enterprise is positively correlated with the medium-term investment, manufacturing equipment investment, management investment and sales investment.

Among them, the total sales income of enterprises increased by 86.1% every 1% increase of sales investment, which is the most relevant factor; The total sales income of the enterprise increased 43.8% every 1% higher than that of the sales investment; The total sales revenue of the enterprise increased 38.5% for every 1% increase in the investment in manufacturing equipment, ranking third; However, the total sales revenue of medium-term investment increases by only 6.2% every 1% and is the least influential factor.

In contrast, the impact of short-term investment is negatively related to the total sales income of the enterprise. The data show that the total sales revenue of enterprises will drop 15.8% for every 1% increase in short-term investment. This means that the larger the short-term investment of an enterprise, the less the total sales income of the enterprise, the less profitable the enterprise is.

Table 2. Regression analysis results of samples

total_sales	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
intermediate_input	.061986	.0071721	148.07	0.000	1.047927	1.076045
manu_service	.384554	.1296484	18.39	0.000	2.130413	2.638694
manage_service	.437532	.0533385	26.95	0.000	1.332976	1.542088
sale_service	.860946	.1592238	24.25	0.000	3.548831	4.173061
short_invest	-.1579358	.2470253	-0.64	0.523	-.6421619	.3262903
_cons	11522.01	6931.565	1.66	0.096	-2065.441	25109.46

Back to the multivariate linear regression model "Y_t"= $ü_0 + ü_1 F_t + ü_2 X_t + üt$ ", the total sales income of an enterprise depends on the internal investment and external investment of the enterprise when the initial value constant and error items are unchanged, among which, it is positively

related to the investment in manufacturing equipment, management investment and sales investment, and is negatively related to the medium-term investment, and negative correlation with the short-term investment of the enterprise.

4. Summary and Practical Significance

From the perspective of manufacturing enterprises, the regression result has certain practical significance.

4.1. Model Summary

In the process of analysis, we only analyze the internal and external factors of the enterprise, so we set the error item. But in reality, there are many factors that affect the profitability of enterprises: policy environment, international environment, market changes, stakeholder influence and so on. If we analyze objectively, we must cut into more elements.

At the same time, this paper selects the total sales revenue of the enterprise as the index of profitability. In fact, there are many ways to express the index of profitability, and the results are different in different ways. For example, in this regression analysis, short-term investment is the reason for the negative correlation of enterprise profitability. It may be that the external investment of the enterprise will occupy the resources of the enterprise's internal investment, and the final product sales will be affected. The product sales are the index of enterprise profitability in this paper. If the index is replaced, the result may be different.

4.2. The Necessity of Production Investment

Regression results show that there is a weak correlation between the total sales revenue and medium-term investment. Medium term investment refers to the material and human capital investment that manufacturing industry must invest in order to produce finished products in the production process. Such a process is the accumulation process from quantitative change to qualitative change, not the leap process of qualitative change. If the enterprise continues to increase its investment, the final total sales revenue of the enterprise will not increase proportionally. This is because there is a maximum output in the resources that the enterprise can mobilize. Such output will not increase with the increase of production input. In addition, production input is a necessary input in the production process, not an additional investment required to improve sales revenue, Therefore, there is a weak correlation.

4.3. Efficiency of Internal Investment

Internal investment - production equipment investment, management investment, to a certain extent, are enterprises to make the existing resources more efficient allocation of investment. After updating the production equipment and upgrading the human and material capital, the efficiency of each department can be greatly improved, which also makes the corresponding improvement of production efficiency and has a strong positive impact on output.

The investment in sales refers to the investment in the sale of a product after its output, which is not a productive investment. But the core of manufacturing enterprises is to produce products and sell them, which also makes the process of sales occupy an extremely important position. Investment in the sales process, such as advertising, product packaging, can greatly make the product cash, thus directly increasing sales revenue, which is also the reason why sales investment has become the most relevant influencing factor.

References

[1] Sun Zhendong. Research on the impact of the introduction of foreign investors on the efficiency of commercial banks. Diss. Sun Yat-sen University, 2009.

[2] Dong Xu. The impact of corporate strategic investment on inter-industry tolerance. Diss. Dalian University of Technology, 2015.

[3] Tan Peiyin. On the way of entry and the impact of entry on the performance of China's super investment. Diss. Guangdong University of Foreign Studies.