

Return on Invested Capital, Return on Investment, a Measure of the Profitability of Invested Capital, Research Evidence at Song Hong Garment Joint Stock Company



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ABSTRACT: The objective of the article is to clarify investment activities, return on investment, return on invested capital, and Return on Investment's effectiveness in measuring the profitability of invested capital. To accomplish the stated research objectives, the authors have used the method of document research to build a research theoretical basis for the article. Next, the methodology and meta-analysis method was used to analyze the secondary data collected from the financial statements of Song Hong garment joint stock company. The results of analysis and data calculation at selected enterprises for empirical research have shown that Return on Investment can be calculated through Return on invested capital. From the results and comparative analysis of Return on invested capital, the Return on Investment indicator will also have a positive sign. This has confirmed the investment performance of Song Hong garment joint stock company and shows the effectiveness of Return on Investment in measuring the profitability of the invested capital. However, the authors also think that Return on Investment or Return on invested capital are also relative and they are not the only decisive indicators. Therefore, to make investment decisions, it is necessary to use many indicators to evaluate.

KEYWORDS: Investment; Measurement; Return on invested capital; Return on Investment; Performance

1. INTRODUCTION

The purpose of Investment activities is to bring benefits and the Return on Investment criterion will evaluate whether this investment activity is effective or not. Investment activities play an important role in production and business activities and in socio-economic development. For businesses, investment helps maintain and develop production and business scale to increase products and earn greater profits. For the economy, investment not only helps investors and businesses gain benefits, but through their investment will indirectly promote the development of the economy. Thus, we see that investment activities have a great role and meaning. However, not all investment activities will bring benefits or make the economy grow. In determining which investment activities will be effective in the future, people often rely on Return on Investment (ROI) to determine. The higher the ROI and positive sign, the more investment is worth paying attention to and making. On the contrary, if the ROI is smaller or negative, it represents that the investment is inefficient and can cause loss for the investor. However, calculating ROI in enterprises' production and business investment activities is difficult, so we can use Return on invested capital (ROIC) to calculate ROI. ROIC is a useful metric used as a tool to measure how efficiently a business is using and allocating capital. At the same time, it reflects the efficiency in the coordination activities of the business management team. The research objective of this article is to elucidate the role of investment. Relationship between ROIC and ROI. Return on invested capital and the effectiveness of ROI in measuring return on investment.

2. LITERATURE REVIEW

2.1. Invest

In the document Measuring Investment Performance, author Feibel (2003) argues that Investing is giving up something that we value at the beginning in exchange for more benefits from those things spent. The difference between what is spent and what is desired is called profit. Therefore, investment aims to bring profit (p.4). Author Mieilă (2009) said that if a company wants to ensure its long-term continuous development, it is indispensable for investment activities. Investments are made over a long period of time. An investment is a resource that can be money or other valuable assets that are used to obtain a future benefit

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(p.9). According to Luenberger (1998), the traditional definition of Investment is "the commitment of resources to achieve future benefits". If the investment is geared towards money-related items, the goal of the investment is to promise to receive more money for the money spent in the future. In a broader sense, investment is "the adjustment of spending patterns and receiving resources to optimize the desired patterns of these flows". The determination of income and expenditure in money, a net amount received after a period of time is called "amount" and continues for a long time called "cash flow". The application of scientific tools to investment calculations is called "Investment Science" (pp.1-2). Kevin's Investment document (2008, 2nd ed.) has specified investment as a function of economics. This function is called a function of income and interest is defined by the formula $I = f(Y, r)$. The author also said that when interest rates are high, investment activities can be reduced due to large borrowing costs, and vice versa, when interest rates are low, income can be increased by borrowing money to invest. This also applies to existing funds in corporate funds because the interest rate is the opportunity cost of investing this money. If not, the business will use that money to earn interest. Thus, investments in economics and finance are different. In finance, investment is the use of resources in money or valuable assets to put into a certain business, production, or financial activity over a long period of time in order to obtain greater benefits. The investment may be analyzed specifically, or it is not possible to accurately analyze the potential for benefits because investing in finance always involves risks. The types of financial risks can be mentioned such as risk due to inflation, risk of decrease in value of investment assets (real estate, stocks, shares ...). In economics, investment represents saving and limiting consumption. Investment in economics also involves many areas such as business investment, household investment, or government spending.

2.2. The role of investment in financial activities

According to Adam (2023), investing in finance usually does not include depositing money at banks or similar institutions. The purpose of financial investment is to generate income from investment property. Income includes profit or loss on the sale of real estate or investments, appreciation (or depreciation) of unrealized capital, capital gains such as dividends, interest, rental income, or a combination of capital gains and earnings. Income may also include gains or losses due to exchange rate fluctuations. As we discussed in the section on investment theory. Investment is a way to help businesses grow in the medium and long term. Thus, investment has a very important position and role for investors and the economy.

For investors

In the group of production and business industries, investment is the main activity, deciding the development and growth ability of enterprises. Investment activities help investors and businesses increase resources, expand production and business, technical infrastructure, and production scale, change production technology and create a foundation for production and business. The result of investment activities is an increase in assets and interests in production and business, thereby expanding the scale of production and business, and expanding the market. The implementation of investment activities in research, improving product quality as well as helping investors create new products, meet the needs and tastes of consumers, improve competitiveness in the world market. In investment activities, enterprises invest long-term capital in order to form and supplement necessary assets to realize business goals. This activity is carried out centrally through the implementation of investment projects. According to Farris et al. (2010), more and more senior business managers find ROI to be useful to them. According to Phillips et al. (2020), in order for the ROI data to meet the requirements of reliability, when calculating the ROI, it is necessary to remove the influencing factors, that potentially cause errors for the ROI (p.178). Thus, it can be said that investment activities are one of the decisions of strategic significance for enterprises. This is a long-term financing decision that has a great impact on the business performance of the enterprise. Risks due to mistakes in investment capital estimation can lead to large capital waste, even serious consequences for businesses. Therefore, investment activities play a very important role in the formation and development of enterprises. It requires investment decisions to be calculated and carefully considered.

For economy

For an economy, investment is especially important. Investment not only plays a role in the process of social reproduction but also creates the foundation for the development of the economy. An economy that attracts investment from domestic and foreign entities will make the economy grow more and more. Any investment activity is carried out by individuals or organizations that are private entities or by the State, the benefits that investment activities bring do not stop at the benefits for the investors themselves, but also for the economy as a whole. Investment is an activity aimed at creating new assets for the economy, increasing production and business potential and other social activities. Investment is also an activity that creates jobs for workers, improves the lives of people in society, and develops production. It can be said that investment is the core and driving force for the growth and development of the economy. In addition, investment also contributes to improving the country's science and technology level. Investment activities from abroad, especially from countries with developed economies, will help countries

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accessing investment have the opportunity to access modern technologies, advanced production lines, and promote scientific research activities. Therefore, underdeveloped or developing countries often have policies to attract foreign investment activities from developed countries to take advantage of scientific and technological advantages. Scientific and technological achievements from developed countries will help the economies of these countries grow. The process of industrialization and modernization of these countries depends heavily on investment in science and technology. Thus, investment plays an important role in economic development. Especially with an economy in the middle group like Vietnam, investment activities and investment attraction will determine the ability to bring the economy into integration with the world economy.

2.3. Profit rate

In the study of Gordon & Iyengar (1996) on return on investment and expenditure of corporate capital. The two authors argue that ROI in any form of investment carries the concept of "performance". For investors and business management, their ultimate goal is to drive the highest ROI. ROI shows the company's ability to effectively use capital by generating profits from the use of invested capital. The success of investment activities is reflected in the "loss" or "gain" figures in each financial period. Therefore, we can rely on the results of the ROI over the years to evaluate whether any investment activity has a positive effect (p.306). In addition, investors or businesses can use the ROI data from the results of investment, production and business activities, and certain financial activities to decide whether the ROI of the projects. whether the investment is worth the investment and whether the return on that investment will offset the opportunity cost (Gordon & Iyengar, 1996, p.305). According to Pearce (2016), use ROI for the purpose of measuring the rate of return on investment and deciding whether to invest or not at the calculated ROI. In addition, ROI is also used to evaluate and compare different investments. Investments with a low ROI are discarded and those with higher ROI are taken into account after accounting for possible risks such as inflation due to the long time of the investment (pp.192–195). Thus, ROI is the ratio between net income (usually calculated in a financial period) with investment costs incurred at the time of investment by the Investor. High ROI means that the project is highly efficient, reaps many benefits, and the investment costs are recouped. This index as an investment performance measure, ROI is used to compare and evaluate the performance of different investments. Comparing and contrasting ROI before making an investment will help investors eliminate some of the risks to their investment.

2.4. How to measure Return on Investment

According to Zamfir et al. (2016), ROI is the ultimate metric to help the responsible person answer the question: "Is there a financial return to investing in a performance-improving program, process, initiative, or solution?" ROI is an economic indicator, so to calculate ROI we will rely on mathematical methods. The authors suggest that the income-to-investment comparison has been used to measure the success of an investment opportunity in business many years ago (pp.305-325). As such, ROI is calculated through the ratio between the operating profit earned after the investment action and the total amount of the investment (or the total cost of the investment). However, in Phillips' (1994) study, understanding and calculating ROI is still a challenge even though he considers that much attention has been paid to this indicator (p.3). But we also know that ROI is the answer to ROIC based on all the activities a company does to generate revenue. And ROI is usually focused on a single activity of this company. In this study, we will calculate ROI through ROIC. According to Fernandes (2014), ROIC, also known as Return on Capital, is a measure of profitability and the ability to create value for a business. This indicator shows the efficiency in the use of capital by corporate management (p.36). The formula for determining ROIC is as follows:

$$\text{ROIC} = \text{NOPAT} / [\text{Equity} + (\text{Debt} - \text{Cash and cash equivalents})]$$

In there:

NOPAT: operating profit of the business less income taxes.

$$\text{NOPAT} = \text{EBIT} (1-t)$$

EBIT: profit before interest and taxes

t: Corporate income tax

3. RESEARCH METHODS

By collecting data, we search for theoretical documents such as reports, research articles, books on Investment content, the role of investment for investors and the economy, ROI, ROIC, and the calculation of this indicator. The documents on the company's financial statements are compiled by us from 2017 to 2022 on the enterprise's website. Summarizing the collected information, we have built a research theoretical basis for the article. In the empirical analysis, we have used two research methods: methodological, analytical and synthesis. By methodology, we have demonstrated the meaning and importance of investment to the economy, businesses and investors. Next, we use the method of analysis and synthesis to calculate the financial indicators

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based on the financial statements of the enterprise. These financial metrics are incorporated into the formula and the ROI and opportunity cost of the investment are calculated. After having these data, we conducted a comparison and analysis to come to the final conclusion for the research problem.

4. EXPERIMENTAL RESEARCH RESULTS

To examine the effectiveness of measuring the profitability of the investment capital through the ROIC index, the authors conduct an empirical study at Song Hong garment joint stock company. Song Hong garment joint stock company is one of the leading garment and bedding manufacturers in Vietnam. The enterprise has a production scale of 20 production workshops and has the advantage of geographical location near the airport, seaport, quality trained human resources with competitive cost, and the management apparatus is Vietnamese. Male. Combined with the recruitment of leading international experts, the company has become a reliable partner of many famous fashion brands around the world.

Unit: billion

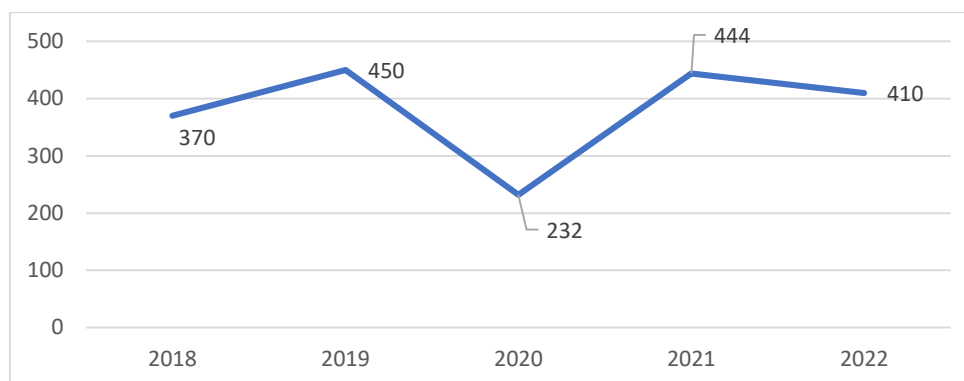


Figure 1. Business results of Song hong garment joint stock company
Source: Author's calculation based on the company's financial statements

Figure 1 shows the profit after tax of Song Hong garment joint stock company for the period 2018 to 2022. Before the impact of the covid-19 pandemic, Song Hong garment joint stock company was also strongly impacted and reduced profits. In 2020 from VND 405 billion in 2019 to VND 232 billion in 2020. Although there has been a recovery in 2021 and 2022, the business is stopping to expand investment and production. Assessing the reason for the decrease in investment, our team believes that it is due to the recessionary influence of the world economy after the pandemic. The economy of many countries recovered slowly, including Vietnam. Combined with that, interest rates from the second half of 2022 and the first five months of 2023 have always remained high. Therefore, businesses believe that investment at this time should be very cautious. In addition to having to spend opportunity costs to invest, businesses are also likely to face a sharp decrease in the number of orders from major partners in the world. Although the business has not expanded its investment, Song Hong garment joint stock Company is still one of the businesses that are assessed to have strong revenue loss with investors and shareholders. To accurately evaluate return on capital, we calculate empirically using ROIC instead of ROI. At the same time, in order to consider the effectiveness of this index in assessing the profit rate of the enterprise, our team also calculates the opportunity costs of the enterprise's expansion investment at the same time Song Hong garment joint stock Company from 2018 to 2022. After having the results of both the ROIC and the opportunity cost results, we will evaluate the effectiveness of measuring the return on investment in terms of ROI.

4.1. Return on invested capital

Based on the formula to determine ROIC presented in the theoretical basis and financial statements of Song hong garment joint stock company from 2018 to 2022, we calculate and include the necessary data in Table 1.

Table 1. Some financial indicators of Song hong garment joint stock company Unit: billion

Year	2018	2019	2020	2021	2022
EBIT	484	570	298	553	473
Profit before tax	450	547	283	543	439
Interest expenses	34	23	15	10	34
NOPAT	387	456	238	442	378
Equity	934	1,236	1,442	1,424	1,646

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In debt	1,587	1,330	1,369	1,479	1,172
Cash and cash equivalents	197	238	136	326	359
ROIC %	16.7	19.6	8.9	17.2	15.4

Source: Calculation based on the report of Song Hong garment joint stock Company

From the Table 1 data we can see that Song Hong garment joint stock Company is a sustainable development enterprise. Equity increased continuously from VND 934 billion in 2018 to nearly 200% in 2022 at VND 1,646 billion. Many financial indicators of the company have been adjusted by management to match the characteristics of the company's main product, which is garment products. These products require a high inventory turnover so that stock does not become stagnant. Therefore, the Account Payable Turnover Ratio also needs to be high to meet the production and payment processes of the business. The cash and cash equivalents figure of the enterprise show the ability to quickly pay the payables. This metric shows that the credit rating of the business is very good. From the ROIC data in Table 1 and the total capital data, we calculate the actual profitability of this business to be VND 2,089 billion in 5 years. The data are presented in Table 2.

Table 2. Return on invested capital Unit: billion

Year	2018	2019	2020	2021	2022
Capital	2,521	2,566	2,628	2,903	2,819
Growth	140	45	62	275	(84)
Capital growth rate (%)	5.9	1.8	2.4	10.5	(2.9)
Return on ROIC	420	503	234	498	434

Source: Calculation based on the report of Song Hong garment joint stock Company

4.2. Opportunity cost of investing

To calculate the opportunity cost of a business's investment we use the Time of Money formula for irregular cash flows. Accordingly, the investment amount is the total capital of the enterprise and the growth capital amount of each year, from 2018 to the future value of 2022. The formula and calculation data are as follows.

$$FV_m = PV(1+r)^m$$

In there:

FV_m is the future value

PV: is the present value

r: Current interest rate

m: is the number of years

Table 3: Opportunity Cost of Investments Unit: billion

Year	2018	2019	2020	2021	2022
Profit after tax	370	450	232	444	410
PV	2,381	45	62	275	2,819
m	4	3	2	1	1
r (%)	9	5.4	6	5.6	6.3
FV	3,361	55	74	397	183

Source: Calculation based on the report of Song hong garment joint stock company

The capital used to calculate opportunity cost can be understood specifically as follows: In 2018, the amount of capital to continue to invest in the capital determined at the end of 2017 and this amount is 2,381 billion VND. This amount is calculated to the future value until 2021. Then, in subsequent years, we will calculate only the difference of the capital increase to the future value in 2021. Finally, in the year In 2022, the investment amount is reduced by VND 84 billion, so the opportunity cost amount in 2022 based on the total capital of the business is 2,819. Applying the calculation formula, we see the amount of money collected in the future, if the enterprise does not make the investment is 1,549 billion dong. Or we can understand this amount as savings interest when not doing investment, production and business.

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4.3. Discuss

After two calculations on ROIC and opportunity cost, we see that investment activities have brought a difference of more than 540 billion VND (ROIC = 2,089 billion > 1,549 billion interest rates calculated on the time value of cash flows. irregular) for businesses. Next, we consider the profit after tax of the enterprise (presented in Table 3). The total profit after tax of the enterprise in 5 years reached 1906 billion VND, smaller than the calculated ROI. Thus, the ROIC index includes the inflation factor. From the results and comparative analysis of ROIC, the ROI Indicator will also have a positive sign. This has confirmed the investment performance of Song Hong garment joint stock Company. This criterion most clearly shows the profit achieved per 1 dollar of capital spent. However, the ROI index also has some limitations such as ROI only works well when evaluating short-term projects, is not suitable for evaluating long-term projects, ROI is also relative and ROI is not an index sole decision. Therefore, to make investment decisions, it is necessary to use many indicators to evaluate.

5. CONCLUSION

In this article, we have accomplished the research objective set out in the first part of the article. In addition to presenting the theory of investment and the rate of return on investment, we also provide a way to determine the ROI through the ROIC indicator. Through analysis, we can confirm that Investment is an activity aimed at bringing profits to the business. Investing is not only profitable, but it also keeps the business growing in the long run. The investment decision is an important one. To make investment decisions, businesses and investors always consider and calculate risk factors. The article also evaluates that ROI is an effective measure of profitability by assessing profitability on invested capital. This result is given by us after comparing with the opportunity cost of not making investment activities of enterprises.

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