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Trade-Off Theory In The Management Of Economic And Financial Sustainability In Peruvian SMES

Pedro Pablo Chambi-Condori[1], Moisés Ismael Escobedo-Dueñas[2], Miriam Chambi-Vásquez[3]
[1]Universidad Nacional Jorge Basadre Grohmann, Tacna, Peru.
[2]Universidad Nacional Jorge Basadre Grohmann, Tacna, Peru.
[3]Universidad Nacional Mayor de San Marcos, Lima, Peru.
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Abstract *The main objective of this research was to analyze the impact of capital structure and cost of capital on the profitability and economic sustainability of small and medium-sized enterprises (SMEs) in Peru, using Trade-Off Theory as a theoretical framework. This theory posits that companies seek an optimal balance between the use of debt and equity to maximize their value and minimize associated financial costs. To this end, we analyzed financial data extracted from the financial statements published in the repository of the Peruvian Securities Market Superintendency, which provided reliable and representative information for the Peruvian business sector. To measure the profitability and economic sustainability of SMEs, we used Economic Value Added (EVA), an indicator that reflects a company's ability to generate value above the cost of capital, thus integrating profitability with the efficient use of financial resources. The study's results showed that approximately 80% of the companies analyzed recorded negative EVA, indicating that these companies failed to cover their cost of capital, putting their long-term sustainability at risk. Only 20% of the companies managed to generate positive EVA, demonstrating adequate financial management and a balanced capital structure. In conclusion, the research highlights the urgent need for Peruvian SMEs to implement financial strategies that optimize their capital structure, effectively managing financing costs and balancing the use of debt and equity. Only then will they be able to improve their profitability and ensure their economic sustainability in a competitive environment. These findings offer valuable input for entrepreneurs, managers, and policymakers seeking to strengthen the SME sector in the country.*
Keywords: *Capital structure, cost of capital, economic profitability, economic sustainability, Trade-Off.*

1. INTRODUCTION

In Peru, micro and small enterprises (MYPES) and small and medium-sized enterprises (SMEs) represent an important stratum in the country's productive structure, both due to the number of units and the generation of employment, which according to the Comex Peru report (2023) represents 99.50% and 0.20% respectively of the total Peruvian companies that employ 48.30% of the EAP and according to the type of activity, 49% operate in the services sector, 33% in commerce, 16% in production activity and 3% in production and commerce at the same time.

SMEs, which is the sector that this study addresses, are companies that operate in the formal sphere and, having reasonably organized accounting information, have access to financing sources from the formal banking system, at least for working capital financing, but that still have difficulties in financing scaling decisions or diversification of investment portfolios that have a medium and long-term maturity, which if they had the capacity to reach capital markets, would have better opportunities to finance their expansion and growth plans with medium and long-term perspectives.

In this context, the balanced management of the structure and cost of capital of this group of Peruvian companies is very important, considering their economic and financial sustainability. Restrictions on access to financing can limit their ability to optimize their capital structure. On the other hand, market conditions such as economic factors such as interest rates, inflation, and fiscal policies also influence the cost of capital, profitability, and economic sustainability of Peruvian SMEs.

The cost of capital is derived from the total cost of the financial resources used by the company, namely debt and equity. Economic profitability measures the efficient use of the assets deployed by the company to generate profits and economic sustainability. It is the ability of SMEs to generate profitability on a permanent basis, exceeding the cost of capital with a long-term perspective. The Trade-Off theory approach is based on balancing the tax benefits of debt with the costs of debt. In this regard, the model best suited for the analysis of the financial optimum for Peruvian SMEs is

the Trade-Off equilibrium theory, due to the considerations of adequately combining the two components of capital: debt on the one hand, and shareholders' equity on the other, with the clear objective of minimizing the risk of bankruptcy and maximizing the effect of the debt tax shield.
For Tariq (2024), SMEs are key economic actors that contribute significantly to employment and GDP growth, and they often require financial resources to address the challenges they face. For Peruvian SMEs, the cost of capital includes the cost of equity, which is the expected return and can be estimated using the Capital Asset Pricing Model (CAPM), and the other component is the cost of debt, which has tax deductions. In this regard, Baril et al. (2024) examined the factors affecting the capital structure of SMEs in Mogadishu, Somalia, finding evidence that larger companies are more resistant to bankruptcy risks. At the other extreme, the study of Italian SMEs in the aquaculture sector conducted by Iotti and Bonazzi (2015) concluded, through its findings, that medium-sized enterprises (SMEs) have greater difficulties than large companies in accessing capital markets.

Research Objective:

This study aims to analyze the impact of capital structure and cost of capital on the profitability and sustainability of Peruvian SMEs, using the Trade-Off theory approach. It seeks to identify how financing decisions influence the economic efficiency of these companies and their ability to maintain long-term viability, considering the balance between the tax benefits derived from the use of debt and the risks associated with excessive debt.
The content of this article is distributed as follows: below, after this introduction, the theoretical framework is presented, followed by the methodology, where the process followed in the research is described, and then the section of results obtained with the statistical processing of the data is presented, and then the discussion section and finally the conclusions of the research are shown.

2. Theoretical Framework

2.1. Profitability and Economic Sustainability of Companies

This study defines profitability as the result of decisions made regarding capital structure and the cost of capital that can influence the profitability of SMEs. Sustainability is defined in terms of SMEs' ability to remain operational and competitive over time, without compromising their financial stability.
The study used the concept of economic value added (EVA) to express the profitability and economic sustainability of companies. In this regard, Damodaran (2012) defines economic value added as the difference between the net operating profit (NOPAT) after taxes. It is a way of measuring a company's efficiency in generating profit after covering all costs associated with the resources used, including capital and risk. The EVA model is presented below, the accuracy of which depends on how the weighted average cost of capital (WACC) is calculated.

$$EVA = \left(\frac{NOPAT}{I} - WACC\right) * I \qquad (1)$$. (Damodarán, 2012. p.870)

Where:

$$WACC = \left(\frac{D}{V}\right) * K_d * \left(1 - T\right) + \left(\frac{E}{V}\right) * K_e \qquad (2)$$

$$NOPAT = RO - (T) * RO \qquad (3)$$

$$K_e = CAPM = R_f + (R_m - R_f) * \beta + RP \qquad (4)$$

$$ROIC = \frac{NOPAT}{I} \qquad (5)$$

EVA:	Economic profitability
$NOPAT$:	Net operating profitability after taxes, operating performance.
$WACC$:	Weighted average cost of capital
D :	Debt component of the capital structure
E :	Equity component of the financial structure
V :	Investment in total assets
K_d :	Cost of debt
K_e :	Cost of equity capital
$ROIC$:	Operating profitability
T :	Tax
I :	Invested capital

$\frac{D}{V}$: Financial structure
RP: Country risk
EF: Financial structure.

For Puente De La Vega (2024), solid financial health improves value creation for investors. For Alvear et al. (2020), a company's EVA is impacted by the WACC and NOPAT. De Almeida et al. (2016) and Bassan & Martins (2015) consider EVA as a metric of a value-based financial management and control system. Boonvorachote (2010) points out that companies with high EVA pay dividends with high yields, a factor that is taken into account by investors who prefer dividend payments.

Masi et al. (2024) argue that financially stable firms have the economic potential to invest in a more sustainable future. Sun et al. (2025) argue that a firm's access to domestic credit is crucial for businesses, particularly small and medium-sized enterprises, to invest and grow in inclusive finance. Sustainable and inclusive economic growth requires a healthy private sector with access to financial resources.

The relationship between the cost of capital and profitability is a fundamental concept in financial theory, as it determines whether a company is creating or destroying value from its investments and operations. In simple terms, profitability refers to the return generated by an investment, while the cost of capital is the cost that must be covered to finance that investment. If profitability is lower than the cost of capital, the company is not generating enough return to cover the cost of the resources it has used. This means it is destroying value. Shareholders are not receiving the returns they expected, and investors may begin to perceive that the company is making inefficient investment decisions or experiencing operational problems. In this case, the company should review its investment strategies, optimize its operations, or reconsider its capital structure to improve its profitability and avoid value destruction.

Hypothesis 1:

The cost of capital derived from a given level of capital structure has a significant impact on the profitability and economic sustainability of Peruvian SMEs.

2.2. Capital Structure

Capital structure is the specific combination of debt and equity that a company uses to finance its operations. From the literature review, we learn about the capital structure model, which has its roots in the studies conducted by Modigliani and Miller (1958) and Modigliani and Miller (1963), who established their theory of capital structure based on the impact of the level of leverage on the value of debt.

According to Emery et al. (2000) from the perspective of capital market imperfections of capital structure, leverage is valuable, that the selection of an optimal capital structure for a company becomes a dynamic process in a complex environment, which depends on considering asymmetric taxes, asymmetric information and transaction costs. For Myers (1984) and Myers (2001) the capital structure attempts to explain how companies finance real investment, with special emphasis on the proportions of debt financing versus equity financing.

Regarding the level of leverage, Wu and Hu (2024) refer to Knight's (1921) uncertainty, pointing out that it induces the entrepreneur to assume greater leverage by issuing more debt, which results in a higher credit spread and a higher risk of default. In this regard, when Knight's (1921) uncertainty exists, an entrepreneurial firm with a more volatile cash flow may opt for higher leverage, which contrasts with the standard capital structure model.

Cam and Ozer (2022) and Booth et al. (2001), external factors of the company such as institutionality, corruption, political stability, and regulatory efficiency have an impact on the capital structure of companies. For their part, Ramirez-Herrera & Palacín-Sánchez (2018), when referring to the issue of capital structure, conclude by stating that it involves choosing an adequate combination of financial funds between debt and equity, aimed at maximizing the company's market value and minimizing bankruptcy risks. Increasing the amount of debt within the capital structure offers tax advantages due to the deduction of financial costs and a higher return on equity.

For Ali and Mohamed (2024), company size, which serves as an indicator of bankruptcy costs, positively influences the capital structure. Larger companies face lower bankruptcy risks due to their financial strength and the implementation of the business diversification strategy (Natividad, 2022),

the opposite happens with SMEs. In the absence of profits or insufficient profitability, companies may have difficulties managing their sustainability, as investors seek returns that guarantee capital growth over time. Therefore, profitability plays a fundamental role in the long-term sustainability of a company.

2.3. Cost of Capital

According to Brealy and Myers (2003), a company's cost of capital (WACC) is the minimum rate a firm must earn to satisfy its investors. At the other extreme, the cost of capital is considered the opportunity cost of investors, given that by investing their capital in the company, they expect to obtain a better return than that offered by the various investment options on the market. The cost of capital depends on the risk implicit in the investment; therefore, the cost of capital largely depends on the use of funds, not the source. Furthermore, it should be noted that economic profitability measures the ability of a firm's assets to generate profits, regardless of how the company's capital has been financed.

Gonzales-Ruiz et al. (2021) showed that one of the main reasons behind the change in value added is not only the weighted average cost of capital or invested capital but also the operating profit. Net operating profit after taxes depends on operating profit. Therefore, to generate positive value added, the net operating margin must be greater than the financing cost margin. On the other hand, Gamarra et al. (2023) analyzed the cost of capital and the value of a mining company located in Cajamarca, Peru, using the Trade-Off model, finding that the cost of debt has a negative impact on the company's value.

For Bodie et al. (2002) the CAPM (Capital Asset Pricing Model) is a financial model used to determine the expected rate of return of an asset, based on its systematic risk in relation to the market in general. In this regard, Brusov et al. (2024) argue that the CAPM only takes into account the business risk associated with investments in a specific company; the financial risk associated with the use of debt financing must be taken into account along with the business risk.

The weighted average cost of capital (WACC) is a financial measure that represents the average cost of funds a company uses to finance its operations, weighted by the proportion of each source of capital in the company's financial structure. The WACC takes into account both the cost of equity capital expressed in common stock or shareholders' equity and the cost of third-party capital (debt), and reflects the cost of each of these components, adjusted for their relative weight in the company. The WACC is a fundamental tool for financial decision-making, as it allows companies to evaluate the profitability of their investments and determine whether they are generating value for their shareholders by covering the cost of the funds invested in them.

Furthermore, when assessing risk, the WACC considers business risk on the one hand and financial risk on the other, since the company's capital structure and risk profile impact both the cost of debt and the cost of equity capital. However, more directly, business risk is primarily reflected in the cost of equity capital, while financial risk impacts the debt-to-equity ratio, as well as the associated costs. According to Acheampong & Ibeji (2024), a strong risk culture reduces information asymmetry and increases investor confidence, leading to lower costs of capital. For Girardone et al. (2024), the cost of capital increases due to greater economic uncertainty. Dar et al. (2024) state that several input variables, including total capital, total debt, tax rates, cost of debt, and cost of equity capital, impact the WACC.

Hypothesis 2:

The cost of debt, the cost of equity, and the financial structure influence the weighted average cost of capital for Peruvian SMEs.

2.4. Trade-Off Theory

The Trade-Off theory proposes a balanced management of a company's capital structure, seeking to balance the benefits and risks of using debt in its capital structure. That is, as the level of debt increases, profitability may improve due to the tax advantages associated with the debt effect, but this may also increase the risk of insolvency, which could affect the company's sustainability.

Gallizo et al. (2014) conducted an empirical application of the Trade-Off theory to companies listed on the Dow Jones Industrial Average, developing a dynamic model that calculates the cost of debt and the cost of capital for each additional unit of debt. On the other hand, Diaz (2024) studied, using the Trade-Off model, how, in addition to the company's own factors, these factors also influence the capital structure of companies in Latin America. Furthermore, Lindset et al. (2024)

state that, under the Trade-Off theory approach, private debt has a tax advantage by providing a positive cash flow, which encourages its use. This cash flow leads to a lower net cost of debt, which in turn reduces the risk of default, as well as the cost of debt. In turn, Francis et al. (2022) add that the cost of borrowing with bonds mitigates the increase in the cost of debt due to the tax shield effect. Hackbarth et al. (2007), in relation to the optimal debt structure, establish the position of having the negotiating power in private restructurings. On the other hand, Bagh et al. (2024) stated that private credit positively impacts the capital structure.

3. METHODOLOGY

3.1 Type of study

The research design developed for this study was quantitative and explanatory. In this type of research, one or more independent variables seek to explain the behavior of one or more dependent variables.

3.2 Procedure

According to the INEI (National Institute of Statistics and Census) report (2024), 2,700 SMEs were registered in Peru, of which 62% were operating informally and 38% formally, facing problems with liquidity, productivity, taxation, management capacity, and high financing costs. For the purpose of this study, a sample of 30 formal SMEs was selected for convenience. Their financial statements were published in the repositories of the Peruvian Securities Market Superintendency (SMV). The SME classification was determined based on the level of investment in total assets declared in the financial statements established by the European Commission (2020).

Based on the financial statements of the selected SMEs as of December 31, 2022, a dataset was prepared with data on investment in assets, total liabilities, operating profit, and financial expenses. Equations (1), (2), and (3) were used to obtain the economic profitability (EVA), the weighted average cost of capital (WACC) of the sampled companies, and the net operating performance (ROIC).

Then, once the indicators were determined, through statistical data processing and taking into account the research objective, the explanatory model of the cost of capital influenced by financial structure factors, the cost of borrowing, and the opportunity cost of equity capital can be expressed. The economic profitability (EVA) model, which includes the effects of net operating profitability and the cost of net invested capital (WACC), can also be developed.

$$WACC_i = \beta_0 + \beta_i EF_i + \beta_i K_d + \beta_i K_e + e \quad (6)$$

$$EVA_i = \beta_I + \beta_i ROIC_I + \beta_I WACC_I + e \quad (7)$$

4. RESULTS

For the analysis of profitability and economic sustainability, EVA is considered an appropriate financial indicator for measuring company value. From the results obtained with the sample data, as shown in Figure 1, 80% of the sample companies in 2022 had negative economic profitability—that is, they were not generating value because the operating income generated by investments in total assets was not higher than the cost of capital—they were destroying value. Only 20% of SMEs achieved positive economic profitability. This percentage of SMEs have been creating value because their net operating income was higher than the cost of capital. Of the sample, three companies have highly negative EVA values. One of them is an agroindustrial company with a financial structure of 46% and a 13% WACC. Although the company has a positive NOPAT, its ability to generate value is affected by financial costs. On the other hand, the companies that obtain the highest EVA values are those related to the agricultural export sector with a financial structure of 43% and a WACC of 6%.

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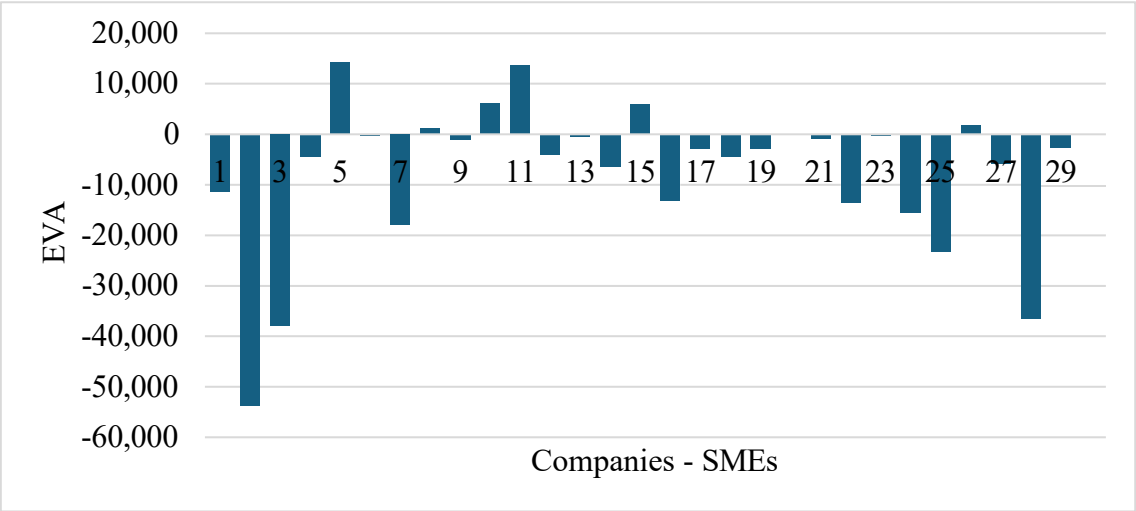

Figure 1 Economic Profitability (EVA) of Peruvian SMEs
Note: Prepared by the authors using sample data.

On the other hand, through figure 2 presented below it is clearly observed, the companies with the highest cost of invested capital, who are those that have negative economic profitability (EVA), this is due to assuming a financial structure that did not allow them to generate greater net operating benefits and on the other hand they had assumed higher costs for invested capital, therefore, for managerial decision making, the concept of EVA is modelable that includes implicit variables and also considering exogenous variables such as environmental variables: GDP, inflation, interest rate, social political climate and also sector sustainability variables.

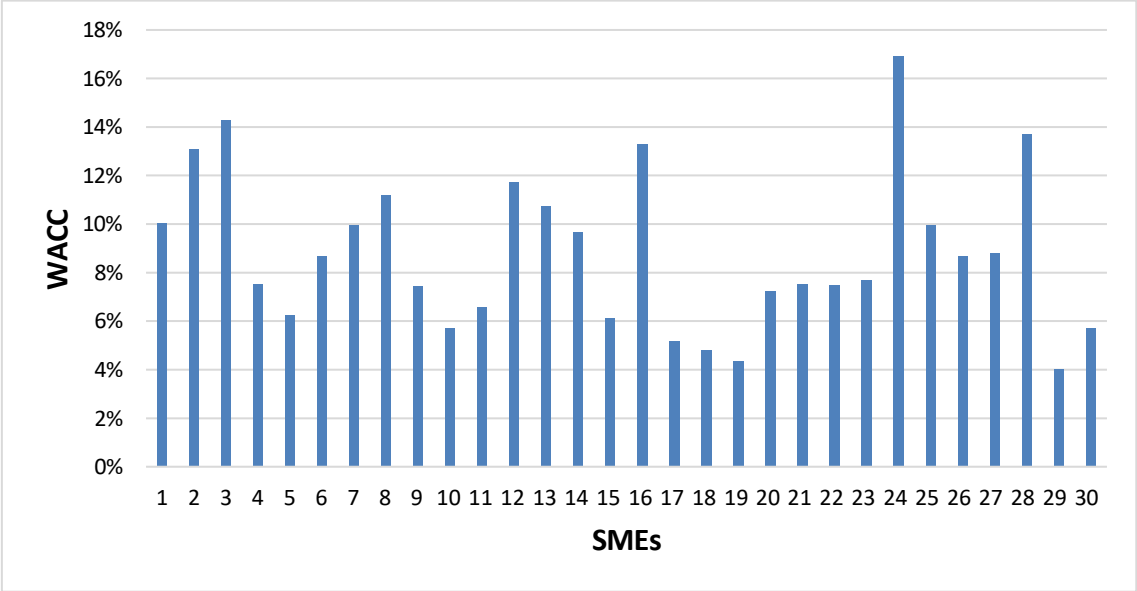

Figure 2 Cost of Capital – WACC
Note: Prepared by the authors using sample data.

Table 1 shows the mean values of the main factors that explain the weighted average cost of capital for the SMEs in the sample. The mean WACC value can be observed at 8.49%, the mean financial structure at 38.37%, the cost of debt at 5.03%, and the opportunity cost of equity at 11.93%. The figure for the average capital structure indicates that companies are assuming more risks than their creditors and that they have the capacity to absorb a greater amount of debt, which would allow them to obtain greater investment capacity, with the consequent effect of generating greater operating income and thus enhancing the ability to increase economic profitability and enabling companies to improve their profitability and economic sustainability indicators.

Table 1 Descriptive indicators of the factors that influence the WACC

Factor	Mean	Standard Deviation	N
WACC	8.8667	323,487	30
EF	38.3333	2,218,470	30
Kd	9.3333	2,567,211	30
Ke	11.9333	334,183	30

Note: Prepared by the authors using sample data

The financial indicators shown in Table 2 exhibit the average value of EVA which in this case is negative due to the fact that 80% of the SMEs in the sample in 2022 did not have sufficient capacity to generate positive economic profitability, mainly due to factors that have to do with operational performance: units sold, prices, variable and fixed costs that have not allowed them to obtain positive indicators of economic profitability, evidence that is reflected in the ROIC at 3.07% while the average WACC is 8.49%, as can be seen in this last indicator which is much higher than the ROIC.

Table 2 Descriptive indicators of the factors related to the EVA

Factor	Mean	Standard Deviation	N
EVA	-6,335.58	16,624,98	30
ROIC	,0307	,07478	30
WACC	,0849	,03835	30

Note: Prepared by the authors using sample data

The results presented in Table 3 clearly show the influence of ROIC and WACC on EVA. The positive impact of ROIC on net operating profitability resulting from dividing the NOPAT by the investment in total assets is statistically significant at 95% confidence level, while the weighted average cost of capital (WACC) has a negative impact on EVA. Therefore, to achieve positive EVA results, in accordance with the Trade-off Theory approach, it is necessary to balance the financial structure of companies, seeking to ensure that net operating profitability exceeds the cost of invested capital.

The positive impact of operating performance on ROIC at 95% statistical significance, with a p value less than 0.05, is an indicator of economic management that depends on factors such as sales volume, prices, variable costs, and fixed costs. As operating performance increases, the companies in the sample would be able to reverse their negative EVA values, because ROIC values would be higher than WACC values, factors that depend on a resource management strategy with the clear objective of rewarding company value. The arguments written above are expressed in the following econometric model:

$$EVA = 1.324.678{,}04 + 76.604{,}03(ROIC) - 262.765{,}09(WACC) + e \qquad (8)$$

In this section, considering the results obtained, we begin to contrast the research.

Hypothesis 1:

The cost of capital derived from a given level of capital structure has a significant impact on the profitability and economic sustainability of Peruvian SMEs. Testing of.

Testing hypothesis 1:

With the arguments presented in the previous lines and taking into account the indicators shown in table 3 and in equation (8), the specific hypothesis 1 is demonstrated, at 95% statistical confidence with p_value less than 0.05 of statistical significance parameter, where the impact that the cost of capital has on the EVA is observed with crystal clarity, which being the result of

maintaining a certain level of capital structure to minimize the cost of capital so that the results of economic management are not overwhelmed by the cost of capital, it is appropriate to manage the capital structure in accordance with the Trade-Off theory, which translates into the management of a balanced capital structure, maximizing the tax benefits generated by debt and minimizing the risk of insolvency due to excessive indebtedness.

Table 3 Factors that explain the economic profitability (EVA) of Peruvian SMEs

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Standard error	Beta		
(Constant)	1,324,678.04	535,049.47		2.476	.020
ROIC	76,604.03	24,366.65	.400	3.144	.004
WACC	-262,765.09	55,596.90	-.602	-4.726	.000

a. Dependent variable: EVA
Note: Prepared by the authors using sample data.

Table 4 shows the coefficients of the factors that influence the WACC. Ke, the opportunity cost of equity capital (CAPM), in order of importance, is the factor that doubles the impact that the cost of debt (Kd) has on the WACC, which is also explained by the degree of leverage displayed by companies. The cost of debt positively influences the WACC, but not with the same force as the cost of equity, due to low leverage and the use of the tax shield on the cost of debt. Up to this point it can be stated that the WACC depends on how balanced the company's financial structure is and how the tax shield on the cost of debt is being taken advantage of, a fact that contributes to the objective of minimizing the impact of WACC on the company's EVA, in this regard in Table 1 it was observed that the average capital structure of the sample is 38.33% which means that 61.67% on average is being financed with equity capital, this source of capital being more expensive than capital from the debt source and on the other hand it means that the highest percentage of risk in businesses is being assumed by the owners of the companies. In addition, debt is not being adequately used to obtain discounts on debt costs due to the effect of the tax shield.

Table 4 Factors influencing the WACC of Peruvian SMEs

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Standard error	Beta		
1	(Constante)	,002	0,19		,112	,912
	Kd	,333	,082	,430	4,045	,000
	Ke	,779	,123	,679	6,326	,000
	EF	-,071	,018	-,408	-3,969	,001
a. Variable dependiente: WACC						

Note: Prepared by the authors using sample data.

From the results shown in Table 4 there is evidence of the factors that have an impact on the weighted average cost of capital (WACC), with statistical significance of 95%, and with p_value less than 0.05, these are, the capital structure, the opportunity cost of equity capital, the cost of debt, which demonstrates the research hypothesis, being the cost of equity K_e the capital component with a coefficient of 0.779, the one with the greatest impact on the cost of capital WACC with the consequent requirement for the company to generate higher values of economic profitability in order to create value in the company, on the other hand, the factor that has an impact on the decrease in the WACC is the conformation of the capital structure, EF with a coefficient of -0.071 showing that to the extent that the level of indebtedness of the company is higher, its impact on the WACC will be towards its decrease with the consequent positive effect on the increase in EVA

and higher amounts of dividends for shareholders, In this regard, it is worth noting that a company's capital structure should be balanced, taking into account that the trade-off approach emphasizes the importance of finding a balance between the cost of debt and profitability. While debt can be a useful tool for reducing the cost of capital, its excessive use can lead to over-indebtedness, especially in volatile markets such as Peru. SMEs must be prudent in debt management, ensuring that the tax benefits obtained from debt are not offset by increased financial risk. Furthermore, shareholders' equity is not deductible for tax purposes and therefore implies higher amounts reported in the cost of capital (WACC). The arguments explained above are represented in the following equation:

$$WACC_i = 0{,}020 - 0.071(EF) + 0.333(K_d) + 0.779(K_e) + e \qquad (9)$$

With all the arguments presented in this section and considering the results shown in Table 4 and in equation (9), we move on to testing hypothesis 2.

Hypothesis 2:

The cost of debt, the cost of equity, and the financial structure influence the weighted average cost of capital of Peruvian SMEs.

The results shown in Table 4 and equation (9) confirm research hypothesis 2 at a 95% statistical significance level and a p-value less than 0.05, demonstrating that both capital components and the financial structure do indeed have a significant impact on the weighted average cost of capital (WACC). It is clear that Peruvian SMEs manage their capital structure in a balanced manner between the tax benefits of debt and the risk of bankruptcy due to excessive debt use.

DISCUSSION OF RESULTS

In the current economic context of Peruvian SMEs, the analysis of the cost of capital, profitability, and economic sustainability are crucial indicators for understanding how these companies manage their resources and how they can address economic, financial, and operational challenges. Under the Trade-Off Theory approach, companies must balance the benefits and risks of financial decisions in shaping their financial structure, taking into account that the cost of equity capital has no deductible tax effects, while the cost of debt does. In this sense, the profitability and economic sustainability results of Peruvian SMEs are largely impacted by their limited ability to generate profits above the cost of invested capital, as emphasized by Brealy and Myers (2003). This fact is also related to the financial structure of companies, a factor that is related to company size, as stated by Baril et al. (2024), the size of the company being very important to reverse this situation of negative economic profitability, due to the fact that being larger in capital they can access less expensive financial markets to finance their capital requirements and also enter the spectrum of diversification in product lines as well as markets to gain capacities to generate increasingly greater benefits that guarantee economic sustainability for these economic units and with positive impacts on employment in the Peruvian economy.

The cost of capital represents one of the main challenges for SMEs in Peru, given the limited access to formal financing and the financial market conditions. This leads to high WACCs for Peruvian SMEs, as evidenced by Dar et al. (2024), who point out that tax rates, the cost of debt, and the cost of equity capital all impact the WACC. This is largely due to the capital structure based on informal financing sources or short-term loans, assuming higher interest rates than larger companies. This is due to their limited ability to generate collateral or their lack of credit history, increasing the risk perceived by financial institutions.

SMEs with greater resources can access lower rates, but the challenge persists for those that, due to their size or sector, depend on less formal financing sources, which increases their cost of debt. This is reflected in the inability of these companies to efficiently reduce their cost of capital, a key factor to improve their competitiveness in the market, and is also compounded by political uncertainty, as pointed out by Girardone et al. (2024).

Another relevant aspect in the financial management of Peruvian SMEs is how profitability relates to the cost of capital. While the Trade-Off theory postulates that debt can be an efficient tool to reduce the cost of capital through the tax benefits associated with deductible interest, the results

show that the actual profitability of Peruvian SMEs in most cases does not adequately cover the cost of debt, for various internal and external reasons, as evidenced by Gallizo et al. (2014), Diaz (2024), and Cam and Ozer (2022).

The return on operating income (ROIC) (Gonzales-Ruiz et al. (2021)) and return on equity (ROE) in Peruvian SMEs are, in many cases, low or insufficient to exceed the cost of capital, implying that many of these companies are not generating added value for their shareholders. In this sense, SMEs with high levels of debt are particularly affected by economic fluctuations, such as changes in interest rates or inflation, which directly impact their profit margins.

The analysis of profitability in SMEs using the Trade-off theory approach reveals that, in many cases, the risk of insolvency associated with high debt levels outweighs the tax benefits generated. Financing strategies must, therefore, be aligned with efficient debt management, prioritizing not only profitability growth but also maintaining a solid and sustainable financial structure with the clear objective of maintaining a sufficiently positive EVA aimed at strengthening the financial health of companies, as stated by Puente de la Vega (2024).

Regarding the determining factors of economic sustainability presented in Table 2 and the evidence expressed through equation (8), the economic sustainability of Peruvian SMEs is directly related to their ability to generate long-term profitability without compromising their financial stability. Efficient management of the financial structure, cash flow, and adequate strategic planning are essential factors to ensure that companies can weather periods of crisis or market fluctuations without resorting to excessive debt. However, it should be noted that sustainability is also influenced by the growth capacity of SMEs, as evidenced by Baril et al. (2024) and Wu and Hu (2024), who often lack sufficient resources to finance expansion projects without incurring high levels of debt. This dilemma, typical of smaller companies, highlights the importance of diversifying financing sources and the need for a controlled expansion plan that does not jeopardize the company's financial viability.

On the other hand, a crucial factor in the economic sustainability of Peruvian SMEs is the macroeconomic environment. As Diaz (2024) points out, market volatility, changes in fiscal and trade policies, and the social risks facing the country significantly affect SMEs' ability to maintain stable profitability. In this regard, as Ali and Mohamed (2024) assert, SMEs with fewer resources are particularly vulnerable to sudden changes in market conditions.

For Peruvian SMEs, the challenge is not only to find the optimal level of debt, but also to maximize operating profitability through operational efficiency, which they can achieve through innovation, investments in technology that allow them to improve production processes, and strategic resource management to achieve improvements in profitability and economic sustainability.

A moderate level of debt can increase economic profitability by reducing the weighted average cost of capital (WACC). However, excessive debt can increase risk and, therefore, the cost of capital, negatively impacting profitability. SMEs must find an optimal debt level where the tax benefits of debt outweigh the costs of insolvency and financial risk.

CONCLUSIONS

The analysis of the cost of capital, profitability, and economic sustainability of Peruvian SMEs using the Trade-Off theory approach highlights the complex challenges these companies face in the current economic and financial context. While debt can offer tax advantages, its use must be carefully managed to avoid financial risks. SMEs must focus their efforts on improving operating profitability and maintaining a balanced capital structure to ensure their long-term economic sustainability. The path to greater competitiveness and profitability lies in the ability to optimize resources, diversify financing sources, and adequately manage financial and operational risks.

Based on the results obtained from the empirical experience, it was concluded that the previously formulated theoretical assumptions have been tested. Research hypothesis 1 was tested, revealing that the EVA economic profitability of Peruvian SMEs is influenced by operational performance and the cost of capital given a given capital structure, results demonstrated by Bluszcz and Kijewska (2016) and Gonzales et al. (2021).

Furthermore, research hypothesis 2 is tested with evidence of the weighted average cost of capital influenced by capital structure, shareholders' cost of capital, and the cost of debt. This result is consistent with the theory of Modigliani and Miller (1958) and Gamarra-Banda et al. (2023), who

indicated that under conditions of distorted economies, capital structure is a factor that influences the weighted average cost of capital.

Furthermore, as shown in Table 3 and Equation 8, it was found that operational performance is a tangentially important factor in achieving net operating profitability ratios in Peruvian MSMEs.

In light of the results obtained in this study, the key for SMEs in Peru is to optimize the cost of capital by seeking to reduce the cost of debt by improving credit risk ratings, diversifying their sources of leverage, and managing their capital structure balanced using the Trade-Off theory approach to maximize company value, profitability, and economic and financial sustainability.

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