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FINANCIAL AND ASSET STABILITY IN RELATION TO CAPITAL STRUCTURE: EVIDENCE FROM INDUSTRY-BASED COMPARISONS

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Abstract: *This study aimed to analyse differences in capital structure, financial leverage, and current liquidity among Slovak companies operating in three distinct sectors: innovation-driven Information Technology, capital-intensive Food Processing, and service-intensive Advertising and Marketing. Descriptive statistics and non-parametric Mann-Whitney U tests revealed statistically significant differences. Firms in the Information Technology sector exhibited lower financial leverage, indicating less reliance on external financing, and higher current liquidity, consistent with a more flexible asset structure dominated by current assets and a higher proportion of equity financing. Conversely, the Food Processing sector showed higher indebtedness and lower liquidity, likely due to greater investments in long-term tangible assets and a higher share of short-term liabilities. The findings confirm that differences in capital and asset structures create varying conditions for financial stability and liquidity across sectors.*

Keywords: *Capital structure, Financial leverage, Current liquidity, Financial stability*

JEL Classification: G30, G32, D22

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1 Introduction

The outcome of a company's effective functioning is the generation of profit from its operational activities. A profitable company ensures its own continuity and growth, rewards its investors, can allocate resources to innovation and modernization, and by increasing its value and competitiveness, becomes more attractive to potential investors or creditors.

One of the fundamental prerequisites for successful and long-term sustainable business performance is an appropriately chosen ratio between equity and debt, as well as an efficient allocation of assets between current and non-current components. An optimal capital structure is essential for the stable operation of companies, their ability to withstand market fluctuations, and for maintaining or increasing their competitiveness. At the same time, every business needs a certain volume of assets—whether machinery, buildings, inventories, receivables, or cash—as tools for profit generation. Capital structure, therefore, has a crucial impact on a company's long-term sustainability. An inappropriate ratio between equity and debt can result in low liquidity, excessive indebtedness, or loss of trust from creditors. On the other hand, a well-structured capital mix can help optimize costs, reduce risk, and increase company value.

Despite the extensive research, decisions regarding the capital structure of firms remain highly context-specific. Differences in capital intensity, asset tangibility, as well as conditions of the financial markets in which a company operates, mean that the applicability of individual capital structure theories varies depending on the country and industry.

This article contributes to the current state of knowledge through an integrated analytical approach, combining industry affiliation with firm-level financial characteristics. The study compares empirical results of companies across three industries with markedly different characteristics: the capital-intensive Food Processing Industry requiring stable financing to cover production and distribution costs; the highly flexible and dynamic service-intensive Advertising and Marketing Sector, characterised by significant investment in intangible assets; and the innovation-driven Information Technology Sector, necessitating investments in research and development. By examining these diverse sectors within the emerging and post-transition Slovak economy, the

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study provides insights into how industry-specific features influence leverage patterns and strategic financial decisions in a high-quality empirical context of a small, open, post-socialist economy in the European Union.

These contributions are particularly relevant for financial decision-makers in emerging economies, as they provide actionable insights into how industry-specific factors and firm-level characteristics jointly influence optimal capital structure, addressing a gap in the existing literature and guiding more informed strategic financial decisions.

2 Literature Review

Financial leverage generally refers to the use of debt within a company's capital structure. Changes in capital structure, typically an increase or decrease in the debt-to-equity ratio, can significantly affect both profitability and risk (Adenugba et al., 2016). The primary objective of financial leverage is to generate higher returns on fixed-cost financial resources than their associated costs. As debt increases, so does financial leverage, acting as a multiplier that can amplify both gains and losses. While higher leverage can boost potential shareholder returns, it simultaneously raises the risk of financial distress and even business failure (Ross, 2004). Competing theories, such as agency theory and the pecking order theory, explain how growth opportunities interact with leverage, but empirical results remain context-dependent (Stulz, 1990; Jensen, 1986).

In this context, the appropriate composition of a company's capital structure becomes a critical factor in ensuring financial and asset stability. While key determinants studied in classical research traditionally include asset structure, cost of capital, a company´s risk profile, size, solvency, dividend policy and tax policy (Modigliani & Miller, 1963; Brealey & Myers, 2000; Desai et al., 2008; Kadárová, 2010), it is important to note that beyond these readily quantifiable, mostly financial indicators, corporate stability and capital structure decisions are also influenced by less frequently studied factors such as industry affiliation, financial market characteristics, and non-financial metrics.

Wang (2024) reports that the leverage ratio of companies within the same industry tends to fall within a reasonable range, indicating that industry characteristics strongly influence capital structure. Zhang (2024) summarizes

that in capital-intensive industries, debt financing can provide a stable source of funds to cover infrastructure costs, whereas in the labour-intensive service industry, equity financing is more appropriate to maintain flexibility and reduce financial risk. In the technology industry, firms tend to rely more on long-term equity financing. These findings align with empirical research in various labour-intensive industries, where the debt ratio was negatively correlated with corporate performance of companies in the creative and cultural industry (Zhou et al., 2018), the health service industry (Riyandi, Riyanto, 2022), and the knowledge-intensive service industry (Hou, 2012).

Gostkowska-Drzewicka and Koralun-Bereźnicka (2025) show that knowledge-based firms exhibit distinct capital structure characteristics, notably demonstrating a higher reliance on intangible assets and lower ratios of long-term debt compared to traditional firms. Shi (2024) states that companies across various sectors exhibit distinct preferences regarding capital structure. It is difficult to generalise a specific optimal ratio that suits every corporation. Krištofík et al. (2022) further compare the capital structure of firms with a strong CSR profile. The results of their research suggest that CSR-oriented firms are statistically significantly more indebted, with differences varying according to asset tangibility.

The large body of empirical studies has researched several firm-specific and market-related factors influencing capital structure. Table 9 provides an overview of empirical findings examining the relationship between capital structure and variables such as company size, profitability, growth opportunities, liquidity, industry affiliation, and taxation. These factors often exhibit inconsistent effects across studies, highlighting the complexity of capital structure decisions.

Table 1: Overview of the Effects of Selected Determinants on the Capital Structure of a Company

Determinant	Type of Relationship	Authors
Effective Tax Rate	Positive	DeAngelo & Masulis (1980), Graham (1996), Zimmerman (1983)
	Negative	Antoniou et al. (2008), Karadeniz et al. (2009)

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Company Size	Positive	Titman & Wessels (1988), Marsh (1982), Rahman et al. (2023)
	Negative	Deloof & Overfelt (2008)
Asset Structure	Positive	Deloof & Overfelt (2008), Antoniou et al. (2008)
	Negative	Amidu (2007), Abor & Biekpe (2009), Booth et al. (2001)
Liquidity	Negative	Myers & Rajan (1998), Deesomsak et al. (2004), Rahman et al (2023)
Profitability	Positive	Leland & Pyle (1997)
	Negative	Rajan & Zingales (1995), Graham (1996), Rahman et al (2023)
	Not significant	Ghosh & Sinha (2025) find that while a linear model suggests a positive effect of the debt-equity ratio on ROA, the quadratic regression shows no statistically significant effect
Stock Value	Positive	Baker & Wurgler (2002)
	Negative	Deesomsak et al. (2004), Antoniou et al. (2008)
Growth Opportunity	Positive	Amidu (2007), Rahman et al (2023)
	Negative	Rajan & Zingales (1995)
Industry Affiliation	Significant	Harris & Raviv (1991) – companies in different sectors have different debt ratios, Wang (2024), Gostkowska-Drzewicka and Koralun-Bereźnicka, (2025) Zhou at al, (2018), Riyandi, Riyanto (2022), Hou (2012), Zhang (2024)
CSR profile	Significant	Krištofík at al. (2022)

Source: own processing according to the authors listed in the table.

This article aims to explore the interplay between financial and asset stability and the capital structure of companies, focusing on industry-based comparisons. By analysing firm-level data across different sectors, we seek to understand how structural choices impact overall financial resilience and operational efficiency.

3 Research Methods and Data

The main objective of this article is to confirm or refute the existence of differences in capital structure and its impact on the asset and financial stability of firms by examining companies across various sectors in Slovakia. These differences are assumed to arise due to the affiliation of companies with different industries. To achieve this, three sectors were analysed: the capital-intensive Food Processing Industry, the flexible and intangible asset-driven Advertising and Marketing Sector, and the innovation-focused Information Technology Sector. The sample size of 150 companies per sector was randomly selected to ensure sufficient representativeness for statistical analyses while maintaining comparability across industries. While the analysis focuses on a single year (2023), it is acknowledged that extending the study to a multi-year period could reduce potential distortions in ratio-based indicators.

To examine whether there are significant differences between sectors, we formulated five hypotheses:

H1: Companies in industries with a higher share of tangible fixed assets (e.g., Food Processing Industry) exhibit higher indebtedness compared to companies in service-intensive industries (e.g., Advertising and Marketing Sector) and innovation-driven industries (e.g., Information Technology Sector).

This assumption is based on the need for companies to secure a larger volume of financial resources to finance and renew their long-term tangible assets, as significant investments in equipment and production infrastructure are often required.

H2: Companies in industries with a higher share of tangible fixed assets (e.g., Food Processing Industry) exhibit lower interest coverage compared to firms in service-intensive industries (e.g., Advertising and Marketing Sector) and innovation-driven industries (e.g., Information Technology Sector).

This assumption is closely linked to the formulation of hypothesis H1. Companies using external financing typically pay for these financial resources in the form of interest. Given the expectation of higher indebtedness in this sector, we also assume a greater portion of profits is used to cover interest expenses.

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H3: Companies in service-intensive industries with a higher proportion of intangible and short-term assets (e.g., Advertising and Marketing Sector) exhibit higher return on assets compared to firms in capital-intensive and innovation-driven industries (e.g., Food Processing and Information Technology Sectors).

This hypothesis is based on the capital and asset structure typical of service-intensive industries. The predominance of short-term and intangible assets allows for faster asset turnover and greater overall efficiency, which contributes to higher return on assets regardless of the financing method.

H4: Financial leverage is lower in innovation-driven industries (e.g., the Information Technology Sector) compared to firms in capital-intensive and service-intensive industries (e.g., the Food Processing Industry and the Advertising and Marketing Sector).

For the examined sector within the Information Technology Sector, the lowest financial leverage is assumed due to its capital structure. This indicator expresses the share of assets financed by equity. The higher the equity of a company, the lower the effect of financial leverage we expect.

H5: Current liquidity is higher in the innovation-driven industries (e.g., Information Technology Sector) compared to the firms in capital-intensive and service-intensive industries (e.g., Food Processing Industry and the Advertising and Marketing Sector).

Once again, the assumption is based on the asset and capital structure within companies in this sector. Due to a higher share of equity in total liabilities, the share of short-term liabilities in the capital structure is lower. On the other hand, within the asset structure, the share of current assets in the total structure is higher.

Prior to testing the specified hypotheses, the data were examined using structured tables and descriptive statistics. The collected data were subsequently utilised for the computation of financial indicators. Outliers in the financial indicators were addressed using the interquartile range (IQR) method.

To evaluate the asset and capital structure across industries, five ratio indicators were employed: debt ratio, return on assets (ROA), interest coverage, financial

leverage, and current ratio. The selection of these indicators was intended to provide a comprehensive assessment of both capital structure and its impact on firms' asset and financial stability. Despite the similarity between the debt ratio and financial leverage, we decided to include both indicators in the study, because while the debt ratio captures the overall capital structure, the leverage ratio provides a complementary perspective by reflecting the impact of debt on equity, capturing financial risk and the potential amplifying effect on returns. This is particularly relevant for assessing the impact of capital structure on asset and financial stability.

To verify the hypotheses, methods of mathematical and statistical principles were applied. The acquired data sample was analysed using the statistical software SPSS, which enables the execution of relevant statistical tests. Each hypothesis was examined in a consistent manner:

- A fundamental overview of the analysed sample was compiled using descriptive statistics. This overview provided an initial insight into the analysed data for the selected indicators. Within the analysis, attention was given to median values across sectors as well as the maximum and minimum values recorded.

- Testing for the normal distribution of data is essential for determining the appropriate statistical testing procedures. Two tests were employed to assess the normality of the data distribution: the Kolmogorov-Smirnov test and the Shapiro-Wilk test. The null hypothesis being tested posits that the random variable follows the expected distribution. Based on the outcomes of both tests, it was subsequently determined whether a parametric or non-parametric test would be appropriate.

- In instances where the dataset did not follow a normal distribution, the Kruskal-Wallis test was applied to compare three or more independent groups. The aim was to determine whether at least two of the groups differ from one another. The null hypothesis in this context assumes that the medians of the underlying populations are equal.

- Indicators that demonstrated statistically significant differences between groups were further analysed using the Mann-Whitney test. This test determines whether a statistically significant difference exists between two analysed groups. This is a non-parametric alternative to the t-test for

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two independent samples. Although a one-sided test could be considered given the directional hypotheses, a two-sided test was chosen to provide a more conservative assessment of differences between groups, ensuring that any significant difference, whether higher or lower than expected, is detected. The null hypothesis asserts that no difference exists between the two groups.

4 Results

Total Debt

The first tested hypothesis assumes that the overall indebtedness in the food processing industry is higher compared with enterprises operating in the advertising and marketing sector and the information technology sector. This hypothesis is based on the assumption of structural differences characterising the examined industry within the food processing industry. It pertains to a manufacturing sector, which is typically associated with higher demands for long-term tangible assets, such as technologies, machinery, production lines, or infrastructure. These requirements may influence the level of overall indebtedness among companies operating in this sector.

The variable representing overall indebtedness can be defined as the ratio of total liabilities, including accruals, to the company's total liabilities and equity. This expresses the extent of the company's financial structure in terms of its dependence on external sources of financing. An overview of the descriptive statistics results is presented in Table 2.

Table 2: Descriptive Statistics for the Indicator of Total Debt of Enterprises

Total Debt	Food Processing Sector	Advertising and Marketing Sector	Information Technology Sector
Firms: Valid	143	141	146
Firms: Excluded	7	9	4
Total	150	150	150
Median	0.6342	0.6441	0.5379
Minimum	0.12	0.04	0.03
Maximum	1.11	1.31	1.26

Source: Author's own processing based on results from SPSS software.

Initially, outliers were identified and removed using the quartile method to eliminate extreme values that could potentially distort the outcomes of the analysis. This procedure was applied consistently across all statistical tests.

Based on the data, the highest median value of overall indebtedness was observed in the Advertising and Marketing Sector (0.6441), indicating that the typical firm within this sector holds a slightly higher proportion of liabilities relative to total assets compared to enterprises in the other sectors. Conversely, the lowest median was recorded in the Information Technology Sector (0.5379).

The minimum values reflect the lowest observed debt ratios, with the Information Technology Sector showing the lowest minimum (3%), while the Food Processing Industry exhibited the highest minimum value (12%). Maximum values represent the highest levels of observed indebtedness, with the Advertising and Marketing Sector reaching the highest maximum (131%), and the Food Processing Industry the lowest (111%).

Subsequently, the normality of data distribution was assessed. The Kolmogorov–Smirnov test and the Shapiro–Wilk test were employed to examine the distribution of the variables. The significance level was set at $p = 0.05$; a p-value below this threshold indicates a violation of the normality assumption. The results of the tests are in Appendix 1.

Based on the results, the Kolmogorov–Smirnov and Shapiro–Wilk tests indicate that the distribution in the Information Technology Sector can be considered normal at the 0.05 significance level. However, in the Food Processing Industry and the Advertising and Marketing Sector, the assumption of normality is rejected. In light of these findings, non-parametric testing methods were selected for further analysis.

Table 3 presents the results of the Kruskal–Wallis test and the Mann–Whitney U test. These tests were employed to examine the presence or absence of statistically significant differences among the observed groups with respect to the ratio of external financing used.

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Table 3: Non-Parametric Testing of the Total Debt Ratio Indicator of Enterprises

Total Debt Ratio	Food Processing Sector	Advertising and Marketing Sector	Information Technology Sector
Kruskal–Wallis Test	**0.001**		
Asymp. Sig.			
Pairwise Comparisons (Mann–Whitney U Test)			
Comparison	Food Processing vs. Advert. and Marketing	Food Processing vs. Information Technology	Advertising and Marketing vs. Information Technology
Mann–Whitney U	10071.000	8885.000	8352.000
Asymp. Sig. (2-tailed)	0.271	**0.004**	**0.000**

Source: Author's own processing based on results from SPSS software.

Based on the results of the Kruskal–Wallis test, it can be observed that the differences in total debt ratios among the examined sectors are statistically significant ($p < 0.05$), indicating that at least one of the sectors differs from the others in terms of the level of total indebtedness. Therefore, a statistically significant difference exists between the groups.

The Mann–Whitney U test confirmed a statistically significant difference in the total debt ratio of enterprises between the Information Technology Sector and both the Food Processing Industry and the Advertising and Marketing Sector. Considering the results of the descriptive statistics, it can be concluded that enterprises in both the Food Processing Industry and the Advertising and Marketing Sector exhibit higher total indebtedness compared to those in the Information Technology Sector. Hypothesis 1 is not fully rejected.

Interest Coverage Ratio

In the second tested hypothesis, it is assumed that interest coverage is lower in the food processing industry compared to the Advertising and Marketing Sector and the Information Technology Sector. The tested hypothesis H2 is based on the assumption that companies in the food processing industry exhibit a higher level of overall indebtedness compared to those in the

Advertising and Marketing and Information Technology Sectors. Given the higher indebtedness of these entities, it is plausible to expect that they will incur higher interest expenses, which should be reflected in a lower interest coverage ratio. This aligns with the general assumption that the higher the indebtedness, the greater the proportion of profit required to cover interest costs, thus reducing the ability to service these interest payments.

Table 4: Descriptive Statistics for the Interest Coverage Ratio

Interest Coverage Ratio	Food Processing Sector	Advertising and Marketing Sector	Information Technology Sector
Firms: Valid	143	141	146
Firms: Excluded	7	9	4
Total	150	150	150
Median	4.2244	3.7649	2.649
Minimum	-20.15	-7.44	-69.99
Maximum	16,694.89	26,868.33	24,876.75

Source: Author's own processing based on results from SPSS software.

Based on the analysed data from Table 4, it can be stated that the highest median interest coverage ratio was recorded in the Food Processing Industry (4.2244), despite this sector originally being hypothesised to have the lowest interest coverage ratio. The achieved level can be considered stable and acceptable. Conversely, the lowest median was observed in the Information Technology Sector (2.649), although this value is still regarded as acceptable. A typical company in this sector has sufficiently high EBIT to cover its interest expenses.

Regarding extreme values, it was found that the lowest minimum interest coverage ratio was recorded in the Information Technology Sector (-69.99), while the highest minimum value was observed in the Advertising and Marketing Sector (-7.44). Negative values of this indicator result from reported losses at the EBIT level, meaning that these companies did not generate enough operating profit to cover their interest expenses. On the other hand, the highest maximum value was recorded in the Advertising and Marketing Sector (26,868.33), whereas the lowest maximum value was found in the Food Processing Industry (16,694.89). Despite the removal of the most significant outliers, extremely high and low values of the ratio were still present, likely

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related to very low interest expenses in some cases during the observed period. Based on the results of the normality tests of the data distribution (see Appendix 1), it is evident that none of the tested datasets meet the assumption of normality. Given these results and the sample size, non-parametric tests were employed for further analysis.

Table 5: Non-Parametric Testing of the Interest Coverage Ratio Indicator of Enterprises

Interest Coverage Ratio	Food Processing Sector	Advertising and Marketing Sector	Information Technology Sector
Kruskal–Wallis Test	**0.738**		
Asymp. Sig.			

Source: Author's own processing based on results from SPSS software.

The results of the Kruskal-Wallis test presented in Table 5 indicate that the differences in interest coverage ratios among the examined sectors are not statistically significant ($p > 0.05$). This finding implies that there is no statistically significant difference in the level of interest coverage between the Food Processing Sector, the Advertising and Marketing Sector, and the Information Technology Sector. Therefore, it cannot be confirmed that any of the sectors has a lower or higher ability to cover interest expenses compared to the others.

This outcome may have been influenced by the fact that several companies during the observed period reported no interest expenses, resulting in an interest coverage ratio of zero. Such occurrences can substantially affect the results and may cause statistical tests to fail in detecting potential real differences between sectors. Based on the performed statistical testing, hypothesis H2 is rejected. The results suggest that there is no statistically significant difference in the interest coverage ratios in the examined sample of companies among the sectors studied, which may be attributed to the presence of a significant number of entities without interest expenses as well as the existence of extreme values.

Return on Assets

The third analysed hypothesis assumes that companies operating in the

advertising and marketing sector achieve higher return on assets (ROA) than companies from the food processing sector and IT Sector. This assumption is based on several considerations arising from the expected asset and capital structures within entities across the respective industries.

In the case of the advertising and marketing sector, a predominance of current assets in total assets is anticipated, which may indicate higher asset turnover and the associated generation of revenues. At the same time, a higher level of indebtedness can be expected, which may positively influence the effect of financial leverage. Financial leverage, provided that the return on investments exceeds the cost of debt, can enhance the overall performance of the company.

The return on assets (ROA) indicator assesses a company's ability to generate profit from the total volume of its assets, regardless of how these assets were financed. It thus represents the efficiency of utilising total assets, with higher values of this indicator suggesting better economic performance.

Table 6: Descriptive Statistics for the Return on Assets Indicator

ROA	Food Processing Sector	Advertising and Marketing Sector	Information Technology Sector
Firms: Valid	143	141	146
Firms: Excluded	7	9	4
Total	150	150	150
Median	0.0427	0.0715	0.1024
Minimum	-0.32	-0.47	-0.50
Maximum	0.50	0.74	0.60

Source: Author's own processing based on results from SPSS software.

In analysing the data from Table 6 concerning return on assets (ROA), we first focused on the median values. The lowest median ROA was observed in the food processing sector (0.0427), indicating lower efficiency in the use of assets in this sector. The highest median value was recorded in the Information Technology Sector (0.1024), followed by the Advertising and Marketing Sector (0.0715). These two sectors exhibited a similar asset structure. However, differences were identified in their capital structure, with the Information Technology Sector relying more heavily on equity financing.

When analysing the minimum values of the ROA indicator, negative values

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were recorded across all sectors, reflecting losses incurred by some of the analysed companies. The lowest minimum value was found in the Information Technology Sector (-0.50), which may indicate significant losses. On the other hand, the highest maximum ROA value was reported in the Advertising and Marketing Sector (0.74), suggesting the presence of companies with exceptionally high asset profitability. Based on the results of the normality tests of the data distribution (see Appendix 1), it is evident that none of the tested datasets meet the assumption of normality. Given these results and the sample size, non-parametric tests were employed for further analysis.

Table 7: Non-Parametric Testing of the Return on Assets Indicator of Enterprises

ROA	Food Processing Sector	Advertising and Marketing Sector	Information Technology Sector
Kruskal–Wallis Test	**0.000**		
Asymp. Sig.			
Pairwise Comparisons (Mann–Whitney U Test)			
Comparison	Food Processing vs. Advert. and Marketing	Food Processing vs. Information Technology	Advertising and Marketing vs. Information Technology
Mann–Whitney U	9418.000	7842.000	9765.000
Asymp. Sig. (2-tailed)	0.019	**0.000**	**0.073**

Source: Author's own processing based on results from SPSS software.

The results of the test, as presented in Table 7, confirmed the existence of statistically significant differences ($p < 0.05$) between at least one pair of sectors. This indicates an uneven distribution of return on assets across the analysed sectors. To determine which specific sector pairs differ, the Mann-Whitney U test was applied. The test confirmed statistically significant differences between the Food Processing Sector and the Advertising and Marketing Sector, as well as between the Food Processing Sector and the Information Technology Sector. In contrast, no statistically significant difference was found between the Advertising and Marketing Sector and the Information Technology Sector, suggesting that their results can be considered comparable from a certain perspective.

Based on the available data and the results of hypothesis testing, Hypothesis H3 is not rejected. In terms of the achieved median values, the Advertising and Marketing Sector reached a higher return on assets than the Food Processing Sector. However, the highest median value was recorded in the Information Technology Sector. Although companies in the Advertising and Marketing Sector did not achieve the highest median return on assets among all sectors, they still outperformed the Food Processing Sector and showed significant differences, which confirm the potential of this sector in terms of efficient asset utilisation.

Financial Leverage

Within the framework of the fourth research assumption, the hypothesis was formulated that companies operating in the Information Technology Sector achieve a lower level of financial leverage compared to those in the Food Processing Sector and the Advertising and Marketing Sector. This assumption is based on the presumed differences in the capital structures of companies across the analysed industries. It is expected that financial leverage will be lower in the Information Technology Sector, as it shows the lowest level of indebtedness. The financial leverage indicator is defined as the ratio of total assets to equity. A higher value of this indicator signals greater use of external sources in financing business assets, which in turn increases financial risk.

Table 8: Descriptive Statistics for the Indicator Financial Leverage

Financial Leverage	Food Processing Sector	Advertising and Marketing Sector	Information Technology Sector
Firms: Valid	143	141	146
Firms: Excluded	7	9	4
Total	150	150	150
Median	2.6925	2.7481	2.047
Minimum	-9.5	-3.19	-7.06
Maximum	53.93	40.75	17.83

Source: Author's own processing based on results from SPSS software.

The analysis of descriptive statistics presented in Table 8 confirmed that the lowest median value of financial leverage was recorded in the Information

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Technology Sector (2.047). Lower values indicate a greater independence from external financing. In contrast, the highest median value of this indicator was observed in the Advertising and Marketing Sector (2.7481). This finding supports the initial assumption regarding the lower indebtedness of companies operating in the Information Technology Sector.

It should also be noted that the minimum values of financial leverage in all sectors are negative. This occurred due to the presence of companies with negative equity. This situation may indicate financial distress or long-term unprofitable operations. The highest maximum value of financial leverage was recorded in the Food Processing Sector (53.93), indicating an extremely high reliance on external financing. The lowest maximum value was observed in the Information Technology Sector (17.83).

Based on the results of the normality tests of the data distribution (see Appendix 1), it is evident that none of the tested datasets meet the assumption of normality. Given these results and the sample size, non-parametric tests were employed for further analysis.

Table 9: Non-Parametric Testing of the Financial Leverage Indicator of Enterprises

Financial Leverage	**Food Processing Sector**	**Advertising and Marketing Sector**	**Information Technology Sector**
Kruskal–Wallis Test	**0.000**		
Asymp. Sig.			
Pairwise Comparisons (Mann–Whitney U Test)			
Comparison	Food Processing vs. Advert. and Marketing	Food Processing vs. Information Technology	Advertising and Marketing vs. Information Technology
Mann–Whitney U	10220.000	9034.000	8502.000
Asymp. Sig. (2-tailed)	0.424	**0.004**	**0.001**

Source: Author's own processing based on results from SPSS software.

The results of the test, based on Table 9, confirmed the existence of statistically significant differences ($p < 0.05$) between at least one pair of sectors, thereby

providing evidence of the uneven distribution of financial leverage across industries.

To identify the specific sectoral pairs in which these significant differences exist, pairwise comparisons were conducted using the Mann-Whitney U test. The analysis revealed that there is no statistically significant difference in the level of financial leverage between the Food Processing Sector and the Logistics and Transport Sector.

In contrast, comparisons between the Food Processing Sector and the Information Technology Sector, as well as between the Logistics and Transport Sector and the Information Technology Sector, yielded statistically significant differences. This indicates that firms operating in the Information Technology Sector differ from the other two sectors in terms of indebtedness and, consequently, in the level of financial leverage.

The results of the analysis demonstrated that differences in capital structures exist among the sectors. Firms operating in the Information Technology Sector exhibit lower levels of financial leverage compared to those in the Food Processing and Logistics and Transport Sectors. The median value of this indicator was the lowest in the Information Technology Sector. These findings are consistent with the theoretical assumption regarding the lower use of external financing in this sector. Based on the results of the statistical tests, we do not reject hypothesis H4.

Current Ratio

For the fifth and final assumption, we formulated the hypothesis that firms operating in the IT Sector exhibit a higher current ratio than those in the Food Processing and Advertising and Marketing sectors. The aim is to verify whether the asset and capital structure within the IT sector creates more favourable conditions for maintaining higher liquidity compared to other examined sectors. This hypothesis was based on two key assumptions:

1. Asset structure in the IT sector – we assumed that firms classified within this sector would hold a higher proportion of current assets. This assumption stems from the nature of industries such as knowledge-based sectors and research. Unlike the Food Processing Sector, where production typically requires substantial investment in fixed assets (such as machinery,

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equipment, or infrastructure), the IT sector operates with a more flexible asset structure. In this case, current assets—such as receivables or cash equivalents—are expected to dominate.

2. Capital structure in the IT Sector – another underlying assumption was that companies in the IT Sector are less dependent on external financing. We expected a higher share of equity capital, which should positively influence current ratio values. A greater reliance on equity would likely mean a lower level of short-term liabilities, resulting in a lower degree of indebtedness. Consequently, the resulting liquidity ratio should be higher.

The current ratio is a fundamental indicator used to assess a firm's financial stability, reflecting the extent to which a company is able to cover its short-term liabilities using its current assets. The higher this ratio, the larger the liquidity buffer the firm possesses, and the better it is equipped to face unexpected expenditures.

Table 10: Descriptive Statistics for the Current Ratio

Current Ratio	Food Processing Sector	Advertising and Marketing Sector	Information Technology Sector
Firms: Valid	143	141	146
Firms: Excluded	7	9	4
Total	150	150	150
Median	1.1406	1.3741	1.7709
Minimum	0.18	0.12	0.08
Maximum	6.69	23.46	23.15

Source: Author's own processing based on results from SPSS software.

Based on the results presented in Table 10, the highest median value of the current ratio was observed in the IT Sector, with a value of 1.7709, which aligns with our initial assumptions. Conversely, the lowest median value among the analysed sectors was found in the Food Processing Sector. This result was also expected, as the second sector is production-oriented, which typically requires substantial investments in tangible fixed assets, and is commonly associated with a higher level of indebtedness, including short-term debt. This situation is essentially the opposite of what we observe in the IT Sector, where we assumed the asset structure would consist predominantly of current assets, and

financing would rely more on equity capital rather than external debt.

Regarding minimum values, the lowest minimum current ratio was identified in the IT Sector (0.08), indicating that even within this sector, there are firms with a critically low ability to cover their short-term liabilities. The highest minimum value was found in the Food Processing Sector (0.18). The highest maximum value of the current ratio was recorded in the Advertising and Marketing Sector (23.46), closely followed by the IT Sector (23.15). These values are remarkably high and point to the presence of entities holding excessive levels of current assets, suggesting that a significant portion of long-term capital is being allocated to current assets. Since long-term capital is typically more expensive than short-term funding, such a maturity mismatch in the structure of assets and liabilities may lead to inefficient resource allocation.

Based on the results of the normality tests of the data distribution (see Appendix 1), it is evident that none of the tested datasets meet the assumption of normality. Given these results and the sample size, non-parametric tests were employed for further analysis.

Table 11: Non-Parametric Testing of the Current Ratio of Enterprises

Current Ratio	Food Processing Sector	Advertising and Marketing Sector	Information Technology Sector
Kruskal–Wallis Test	**0.000**		
Asymp. Sig.			
Pairwise Comparisons (Mann–Whitney U Test)			
Comparison	Food Processing vs. Advert. and Marketing	Food Processing vs. Information Technology	Advertising and Marketing vs. Information Technology
Mann–Whitney U	93000.000	7210.000	8818.000
Asymp. Sig. (2-tailed)	**0.012**	**0.000**	**0.002**

Source: Author's own processing based on results from SPSS software.

In this case, the statistical tests confirmed that statistically significant differences exist across sectors ($p < 0.05$). This indicates that at least one sector differs from the others in terms of the current ratio. To identify which sectors exhibit

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significantly different values, we conducted pairwise comparisons using the Mann–Whitney U test, which compared the sectors individually. The results, presented in Table 39, showed that the differences in the current ratio between all compared sectors were statistically significant, as the p-values for all comparisons were below 0.05.

Our assumptions regarding the asset and capital structure of enterprises in the innovation-driven IT Sector proved to be well-founded. Firms in this sector are typically characterized by a higher proportion of current assets and a greater degree of self-financing. These characteristics provide more favourable conditions for maintaining a high level of liquidity. Based on the above results, we do not reject hypothesis H5. The differences in asset and capital structures across the sectors create varying preconditions for the financial stability of enterprises.

5 Discussion and conclusion

One of the key areas in financial management of any enterprise is the issue of optimal capital structure. The choice of an appropriate ratio between debt and equity capital can influence not only the company's ability to finance its operating needs but also its profitability, likelihood of failure, and overall financial stability. Decisions regarding capital structure are not universal, as various factors affect different companies, such as company size, lifecycle stage, capital availability, industry sector, and others.

In our first hypothesis, we examined corporate indebtedness, assuming that the level of indebtedness would be higher in the Food Processing Sector (sector 2) due to the capital-intensive nature of fixed assets, compared to other sectors. Based on our results, significant differences were found between the Food Processing Sector and the innovation-driven Information Technology Sector (sector 4), as well as between the service-intensive Advertising and Marketing Sector (sector 3) and the Information Technology Sector. However, no significant difference was observed between the Food Processing Sector and the Advertising and Marketing Sector regarding overall indebtedness. The results of our analysis showed that capital structure decisions are shaped by the industry in which a company operates, which is consistent with prior empirical research (Wang, 2024; Shi, 2024). Furthermore, our results indicate

that the innovation- and knowledge-based IT industry tends to demonstrate lower debt ratios, which is in line with the findings of Gostkowska-Drzewicka, Koralun-Bereźnicka (2025).

On the other hand, the expected lower debt ratio in the service-intensive Advertising and Marketing Sector was not confirmed. These results are not consistent with the findings of Zhang (2024), as the medians indicated that companies in this sector recorded the highest median and maximum values. These outcomes may be partially explained by external factors in recent periods. Many firms may have reduced or completely cut budgets in this area due to uncertainty and revenue declines. Moreover, the sector underwent rapid transformation and innovation in response to the shift towards the online environment, requiring quick adjustment. However, these remain only hypotheses, as time-series analysis was beyond the scope of our study.

The second hypothesis tested the ability of companies to generate sufficient earnings before interest and taxes to cover interest expenses. The tested groups showed no statistically significant differences in interest coverage ratios. Therefore, it is not possible to confirm differences among any pairs of the groups. We assume the results were influenced by many companies reporting zero interest expenses, as external financing may originate from non-interest-bearing sources such as trade credit.

For the third hypothesis, we expected higher return on assets in the Advertising and Marketing Sector, based on the assumption of the trade-off theory of capital structure, which suggests that firms can use debt strategically to enhance returns on assets (Modigliani & Miller, 1963). In this sector, debt predominates over internal financing, and the predominance of short-term assets supports faster asset turnover. Significant differences in return on assets were found between the Food Processing Sector versus the Advertising and Marketing Sector and between the Food Processing Sector versus the Information Technology Sector, while the Advertising and Marketing Sector and Information Technology Sector were comparable. The median values showed the Advertising and Marketing Sector had higher returns than the Food Processing Sector, but the highest median was recorded in the Information Technology Sector. Although the Advertising and Marketing Sector did not have the highest median, it still exceeded that of the Food Processing Sector, indicating potential in terms of asset utilization efficiency. The findings are partially consistent with a broader

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analysis of return on assets (ROA) across 130 industries in 2025, which showed that innovation-driven technology sectors outperformed all other industries (Eqvista, 2025). This highlights the need to consider sectoral characteristics when interpreting profitability measures.

Regarding financial leverage in the fourth hypothesis, we anticipated a lower financial leverage value due to a higher proportion of equity financing, based on the sector's characteristics. Comparisons between the Food Processing Sector and the Information Technology Sector, as well as the Advertising and Marketing Sector and the Information Technology Sector, revealed statistically significant differences in leverage levels. The lowest median value was found in the Information Technology Sector.

The fifth hypothesis proposed that companies in the Information Technology Sector would exhibit higher current liquidity, reflecting greater financial stability compared to other sectors. We tested whether the capital and asset structure create more favourable conditions for maintaining higher liquidity. The results confirmed this assumption.

In conclusion, our findings indicate statistically significant differences in financing methods and their impact on financial stability among companies operating in different sectors. These differences may directly affect companies' ability to finance unforeseen expenses and respond to significant market changes. The results of this study may serve as a basis for further academic research in corporate financial management regarding industry affiliation. The analysis may also provide a foundation for banking sector evaluations of company stability in creditworthiness assessments within the context of sector-specific factors. Additionally, the findings could support decision-making by investors and entrepreneurs in selecting industries with favourable conditions for investment, business stability, and resource requirements. Future research could expand this study by including longitudinal data or cross-country comparisons to verify the persistence of these sectoral differences.

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Appendix

Appendix 1: Normality test of the distribution for the examined indicators of enterprises

Indicator	Sector	Kolmogorov-Smirnov Sig.	Shapiro-Wilk Sig.
Total Debt	Food Processing	0.011	0.007
	Advertising and Marketing	0.002	0.000
	Information Technology	0.200	0.113
Interest Coverage	Food Processing	0.000	0.000
	Advertising and Marketing	0.000	0.000
	Information Technology	0.000	0.000
Return on Assets	Food Processing	0.000	0.000
	Advertising and Marketing	0.000	0.000
	Information Technology	0.000	0.000
Financial Leverage	Food Processing	0.000	0.000
	Advertising and Marketing	0.000	0.000
	Information Technology	0.000	0.000
Current Liquidity	Food Processing	0.000	0.000
	Advertising and Marketing	0.000	0.000
	Information Technology	0.000	0.000

Source: Author's own processing based on results from SPSS software.