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Does Economic Freedom Moderate the Relationship between Profitability and Capital Structure?

ABSTRACT

Objective: To analyze the effect of Economic Freedom on the relationship between Profitability and Capital Structure of companies in the Americas.

Method: Descriptive, documentary research was conducted quantitatively through Hierarchical Linear Modeling. Secondary company data was taken from Refinitiv Eikon, while Economic Freedom information was collected from The Heritage Foundation. The relationships were verified considering the Pecking Order Theory and Trade-Off, and the countries were also analyzed according to the institutional variable of Economic Freedom. The research population consisted of countries in the Americas, which resulted in a final sample of 4,068 companies from 2014 to 2021.

Originality/Relevance: The study shows that the Economic Freedom of countries can change companies' financing decisions.

Results: Without considering Economic Freedom, there is a positive and significant relationship between Profitability and Capital Structure, as expected by the Trade-Off, indicating that the company is moving towards a defined target of a debt/value ratio. However, when recognizing the moderating effect of Economic Freedom, this relationship becomes negative, as the Pecking Order Theory presumes, since there are lower debt levels for the most profitable companies.

Theoretical/Methodological contributions: Indicates the importance of the government guaranteeing the Economic Freedom of individuals/entrepreneurs to reduce barriers to trade, corruption, and financing, promoting political stability through governance and institutional indicators.

Keywords: Capital Structure, Profitability, Economic Freedom, Pecking Order, Trade-Off.

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1 INTRODUCTION

Capital Structure (CS) has been constantly researched in finance, where many studies attempt to identify its determinants. However, in recent years, the literature has devoted special attention to the influence of the legal and institutional structure on corporate finance (Bernardo et al., 2018; Ferreira, 2022; Kayo & Kimura, 2011). After all, financing choices are determined by adjusting factors related to the characteristics of the company and its institutional environment (Mendonça et al., 2019).

The relationship between company performance and CS is one of the finance topics that has absorbed the most research efforts. Furthermore, it is highlighted that, in addition to the determining power of performance over CS, the literature recognizes that a stronger institutional quality facilitates companies' access to debt (Çam & Özer, 2021), and that the degree of Economic Freedom of institutions is capable of influencing the financing decisions of their organizations (Rihab, 2012; Ferreira & Malanski, 2023).

Monetary stability, privatizations, de-bureaucratization, expansion of credit and the consumer market are among the various transformations in different countries (Blau, 2017). In this sense, Economic Freedom indicates how relaxed a country's policies are in the eyes of participants in a specific economy (Harkati et al., 2019). This freedom is a fundamental right of every human being to control their work and property, as governments must allow economic activity, capital, and goods to move freely (The Heritage Foundation, 2021).

Studies show that stock markets in countries with higher levels of Economic Freedom show greater long-term economic growth (Attilio, 2020) and greater corporate profitability (Diniz et al., 2020). Furthermore, Rihab (2012) assumes that the freedom and flexibility of a country's economic structure explain the financing structure of companies. Therefore, not considering the particularities between each country, such as the characteristics of Economic

Freedom, can cause the loss of important information regarding differences in tax policies, legal environment, importance and regulation of financial institutions, and legal efficiency.

For Pereira and Louvet (2011), the impacts of the relationship between performance and CS depend on the degree of environmental dynamism of the sector or country in which the company operates. After all, a country characterized by economic rigidity is burdened by restrictions that impede the well-being of companies, and economic instability leads companies to establish a hierarchical order of financing (Rihab, 2012).

The literature in this field is polarized by Myers and Majluf (1984) into two currents: the Pecking Order Theory (POT), which presupposes a negative relationship between performance and CS; and Trade-Off, which establishes the existence of an optimal capital structure that maximizes the value of the firm. As finance theories focus on market imperfections, analyzing variations in the determinants of CS according to Economic Freedom constitutes a research gap, as the market changes according to institutional aspects.

Under the POT theoretical platform, companies turn to internal sources when the economy is prospering, while in recession, companies are forced to use external sources of capital (Bastos et al., 2009). In this context, the use of different sources of financing is directly sensitive to the level of development of the financing system and the degree of Economic Freedom (Rihab, 2012). Thus, the study focuses on the following research question: How does Economic Freedom affect the relationship between Profitability and CS of listed companies in the Americas?

As there is a gap regarding the possible moderating influence of Economic Freedom, this study analyzes the effect of Economic Freedom on the relationship between Profitability and CS of companies listed on stock exchanges in the Americas. Therefore, this research is justified by adopting an institutional variable, representing how political stability can involve

several measures of political restrictions, indicators of governance, corruption, and the different aspects of management on financing decisions.

Due to the institutional influence on the Profitability of firms, there has been a more significant number of theoretical and empirical studies that consider not only companies from a single country but also companies from a block of countries (Arévalo & Meurer, 2021; Bastos et al., 2009; Kayo & Kimura, 2011). Therefore, according to this trend, it becomes relevant to investigate whether Economic Freedom influences the relationship between Profitability and CS. Furthermore, this study makes it possible to present new ways of adapting financing decision-making processes and the relevance of understanding the effects of this process in economically distinct countries.

As a social contribution, regulation and inspection can encourage the introducing public policies to promote Economic Freedom integrated into business activities, improving the macroeconomic dynamics of countries. For companies and countries, the research contributes by analyzing the macro context of commercial and economic relations in countries that represent developed and emerging markets.

2 THEORETICAL REVIEW AND DEVELOPMENT OF HYPOTHESES

Firstly, there are considerations about the relationship between Profitability and CS. Subsequently, the concepts and importance of Economic Freedom are presented.

2.1 Profitability and Capital Structure

POT offers theoretical support that companies do not seek an ideal cash level; instead, it fluctuates due to companies' financial inflows (Artica et al., 2019). However, according to Trade-Off, companies' CS is marked by the presence of two distinct elements, bankruptcy costs, and tax benefits, which guide the decision-making process to obtain an optimal level of financing (Myers & Majluf, 1984).

In the context of POT, Titman and Wessels (1988) suggest that profitability is a determinant of CS, as it reflects the earnings the company may retain. Although Fama and French (2002) adopt Trade-Off, they find that companies with growth opportunities are less indebted because they need less of the disciplinary role of debt. Therefore, these studies indicate that debt will increase as investment needs are more significant than retained profits.

As Trade-Off perceives that the company is moving toward a defined goal of a debt-to-value ratio (Myers & Majluf, 1984), Forte and Botelho (2020) report that debt is positive for performance through benefits taxes exceed debt costs and, after a certain point, the effect will be the opposite, constituting an inverted U-shaped curve relationship. On the other hand, following the theoretical perspective of POT, companies can also exhaust internal sources of financing before taking on debt, triggering a negative impact of Profitability on CS (Artica et al., 2019).

The determinants of CS portray internal aspects of the firm that can influence financing decisions (Bittencourt & Albuquerque, 2018). The literature points out that understanding the drivers of these decisions remains a challenge for academia and market agents (Bastos et al., 2009; Bernardo et al., 2018). Furthermore, in a globalized context, the relationship between Profitability and CS depends on the relative influences of factors such as foreign direct investment, net equity, and external debt (Saccone & Deaglio, 2019).

2.2 Economic Freedom

For Kayo and Kimura (2011), although company-level variables are more important in determining the CS of firms from developed and emerging countries, there is evidence of the influences of country-level variables on the CS. They emphasize that managers should pay attention to the relevance of the external environment, which has the power to influence the internal characteristics of companies.

Economic Freedom, as an image of a country, has implications for attracting investments and the CS to be defined, as this index is linked to government intervention in the market and the government's good judicial action regarding corruption (Saccone & Deaglio, 2019). Economic Freedom involves economic growth and progress (Attílio, 2020) and greater corporate profitability (Diniz et al., 2020). In the business context, Mendonça et al. (2019) suggest that companies with higher inflation (less monetary Freedom) are more willing to use debt than those with lower inflation rates.

Although most of the aspects assessed by Economic Freedom are focused on a country's policies, there are elements related to a country's interactions with the rest of the world, such as the extent to which an economy is open to investment or global trade (The Heritage Foundation, 2021). Thus, Arévalo and Meurer (2021) find a relationship between countries with a higher indicator of Freedom being compensated with higher regional growth rates.

For Graafland (2019), Economic Freedom indicators are a relevant tool in scientific research to quantify the institutional structure of a country. In this context, “Economic Freedom can be understood as the limitation imposed by the government, through laws, on individual conduct” (Attílio, 2020, p. 24), and the level of this Freedom depends on the existence of an institutional framework (Rihab, 2012).

2.3 Development of Hypotheses

Bastos et al. (2009) analyze the determinants of the CS of publicly held companies in Latin America, considering firm-specific factors and macroeconomic and institutional factors in each country. For these authors, POT is the theoretical current that explains CS more pronouncedly. Furthermore, they show a strong negative influence of current liquidity variables and Return on Assets.

A negative relationship between growth opportunities and CS may reflect the uniqueness of companies (Kayo & Kimura, 2011). Thus, Brown et al. (2019) ask investors which companies are most susceptible to investor influence about CS decisions, with the answers suggesting that smaller, younger, and financially constrained companies are likely to experience an investor impact.

Large companies tend to have more debt in their CS, as they are generally more diversified, have a better reputation in the debt markets, and have lower information costs when borrowing (Frank & Goyal, 2003). Regarding profitability, a negative relationship between profits and CS is expected, consistent with POT, because when a company makes profits, the debt is paid, and leverage automatically falls (Fama & French, 2002).

Kayo and Kimura (2011), when testing whether the relationship between growth opportunities and leverage is positive or negative, shows that when the economy is prospering, companies resort to internal sources of capital; in the event of a recession, when profits are abnormally depressed, companies are forced to tap external sources of capital. This finding can be interpreted in defense of POT, according to Myers and Majluf (1984).

Regarding the relationship between the variables performance and leverage: while POT assumes a negative relationship between the two variables; Trade-Off expects a positive signal, as greater profitability reduces the expected costs of financial difficulties and allows the firm to increase tax benefits, increasing leverage (Myers & Majluf, 1984). As these theories assume different signs for the proposed relationship, this study chose not to announce a sign between the variables. Therefore, it is assumed that:

H₁: There is a relationship between Profitability and Capital Structure.

Pamplona et al. (2021) show that profitability, besides having the most significant influence, is the determinant that suffers the most fluctuation when comparing periods of economic prosperity and recession. For these authors, performance loses impact during the

recession, as the capacity to generate resources internally is reduced during this period, making debt a necessary alternative.

Artica et al. (2019) report the existence of an increasing trend in corporate cash liquidity in a sample of Latin American companies between 2000 and 2014, followed by a decreasing trend in leverage and debt. As for the impact of macroeconomic factors, they find that economic growth has positively affected cash demand, which may involve more significant investment opportunities.

The literature on corporate finance has found that market imperfections limit the investment potential of firms (Pamplona et al., 2021; Rajan & Zingales, 1995). The magnitude of these imperfections depends, in part, on the effectiveness of the countries' legal and financial systems, impacting how firms obtain financing for their investment projects (Bastos et al., 2009).

Çam and Özer (2021) indicate that a country's more robust institutional quality and lower fundamental risks facilitate companies' access to debt and equity financing. Thus, these authors conclude that improving a country's institutional environment will increase companies' access to long-term financing, promoting the countries' economic growth.

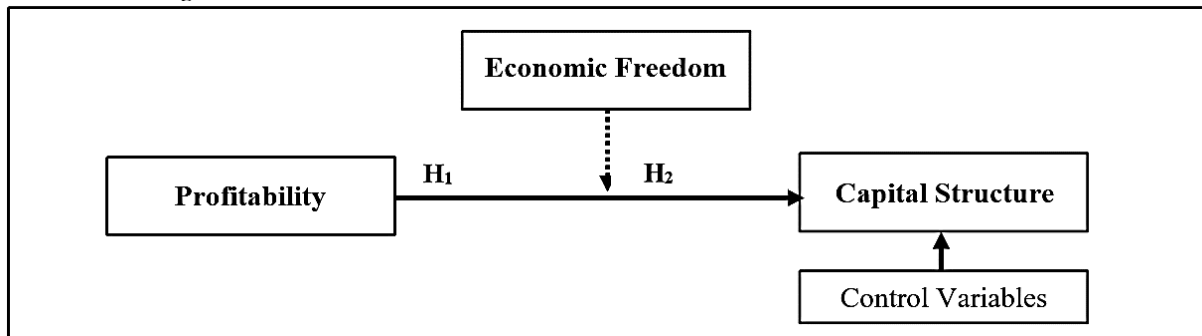
Ferreira and Malanski (2023) show that Economic Freedom enhances the relationship between Environmental, Social, and Governance practices and the profitability of financial institutions in the Americas. Thus, these authors suggest that the institutional quality of a country has an important influence on corporate decisions. Therefore, it is postulated that:

H₂: Economic Freedom moderates the relationship between Profitability and Capital Structure.

Figure 1 presents the research design, highlighting the proposed hypotheses. Notably, the solid arrow tests the direct effect of Profitability on CS, while the dashed arrow analyzes

the moderating effect of Economic Freedom on the indicated relationship. Furthermore, using control variables, such as company size, tangibility, sales growth, and business risk.

Figure 1
Research design



Bastos et al. (2009) highlight business profitability, size, and risk as variables consistent with what POT assumes, while business growth supports the Trade-Off constructs. Furthermore, Bittencourt and Albuquerque (2018) emphasize what can influence financing decisions, such as tangibility, size, profitability, risk, growth opportunity, and the macroeconomic dimension.

POT predicts high-growth companies will have high debt due to managers' reluctance to issue shares (Myers & Majluf, 1984). Similarly, the greater the volatility of results, the greater the risk of not honoring their commitments, making creditors more insecure about lending resources, as the financial cost is higher for riskier companies (Correa et al., 2007).

Rajan and Zingales (1995) report that large companies tend to have higher debt ratios. Furthermore, these authors highlight the tangibility of assets as a determinant of leverage since institutions with high tangible assets have greater leverage due to their lower probability of default.

3 METHODOLOGY

To investigate the proposed objective, a quantitative study was carried out using Hierarchical Linear Modeling (HLM) with robust standard errors. This research is characterized

as descriptive and documentary since data collection took place through the Refinitiv Eikon® database, which provides annual information from accounting statements and data relating to Economic Freedom, coming from The Heritage Foundation.

The study population comprises companies listed on stock exchanges in the Americas with positive net worth, as it is understood that companies with uncovered liabilities do not have financing decisions. From this research population, the sample was composed using an unbalanced panel. Regarding the composition of the final sample, it was observed that the 4,068 companies investigated represented the energy, materials, industrial, consumer discretionary, consumer goods, information technology, and communication services sectors.

Regarding sampling, companies belonging to the territories of Bermuda, Cayman Islands, and Puerto Rico were removed, as they did not have the Economic Freedom Index. Furthermore, companies in the financial, public utility, and health sectors and those that did not have a sectoral classification were excluded. Finally, the companies that corresponded to the research outliers were eliminated, excluding extreme data at the 5% level to correct possible outlier problems. Thus, the final sample included 4,068 companies with 24,365 observations between 2014 and 2021, according to the sample shown in Table 1:

Table 1
Composition of the research sample

Phases	Firms	Observation
= Research population	7,278	58,224
(-) Companies belonging to the territories	78	624
= Initial Sample – Countries (America)	7,200	57,600
(-) Financial Institution	1,081	8,648
(-) Public utility	892	7,136
(-) Health	589	4,712
(-) No sector classification	162	1,296
(-) <i>Outliers</i>	408	11,443
= Final Sample	4,068	24,365

Table 2 presents the number of companies and observations per country and the respective Economic Freedom scores according to the years of analysis.

Table 2

Composition of the research sample by country and Economic Freedom according to year

Countries	Firms	Observ.	Economic Freedom Index							
			2014	2015	2016	2017	2018	2019	2020	2021
Argentina	49	322	44.6	44.1	43.8	50.4	52.3	52.2	53.1	52.7
Brazil	192	1,159	56.9	56.6	56.5	52.9	51.4	51.9	53.7	53.4
Canada	1,345	7,479	80.2	79.1	78	78.5	77.7	77.7	78.2	77.9
Chile	107	819	78.7	78.5	77.7	76.5	75.2	75.4	76.8	75.2
United States	2,286	13,909	75.5	76.2	75.4	75.1	75.7	76.8	76.6	74.8
Mexico	89	677	66.8	66.4	65.2	63.6	64.8	64.7	66	65.5
Total	4,068	24,365	67.1	66.8	66.1	66.2	66.2	66.5	67.4	66.6

Among the companies in the sample, the majority (56.19%) correspond to the United States (USA), with the countries Argentina, Mexico, and Chile responsible for the lowest representation studied with, respectively, 1.2%, 2.19%, and 2.63%. About Economic Freedom, it is noteworthy that Canada obtained the highest score in all years of analysis. On the other hand, Argentina and Brazil had the lowest scores on the index.

In general, there is a slight decrease in the average of Economic Freedom between 2014 and 2018 (-0.9), followed by a recovery between 2019 and 2020 (1.2) and a drop of 0.8 points in the average of these countries in the sample in 2021. Furthermore, Table 3 highlights the variables used in this study.

Multilevel regression models were used for panel data, as it considers nested data structures that “allow the identification and analysis of individual heterogeneities and between groups to which these individuals belong, making it possible to specify random components at each level of analysis” (Fávero & Belfiore, 2017, p. 855-856). Thus, three level hierarchical linear models with repeated measures were applied, where the first level characterizes the model in terms of temporal evolution, the second level portrays the companies, and the third recognizes the factors of the country where the company operates.

Table 3
Specification of variables

Variables	Definition	Formula	Collect	Related literature
Dependent variable – CS				
AL_1	Accounting Leverage 1	$\frac{\text{Long-Term Debt (book value)}}{\text{Total Debt + Equity}}$	<i>Refinitiv Eikon</i> ®	Kayo and Kimura (2011)
AL_2	Accounting Leverage 2	$\frac{\text{Total Debt (book value)}}{\text{Total Assets}}$	<i>Refinitiv Eikon</i> ®	Saccone and Deaglio (2019)
Independent variables – Profitability (PRO)				
ROA	Return On Assets	$\frac{\text{EBIT}}{\text{Total Assets}}$	<i>Refinitiv Eikon</i> ®	Diniz et al. (2020)
ROE	Return On Equity	$\frac{\text{EBIT}}{\text{Equity}}$		Fama and French (2002)
Control variables				
SAL	Sales Growth	$\frac{\text{Sales}^t - \text{Sales}^{t-1}}{\text{Sales}^{t-1}}$		Kayo and Kimura (2011)
RIS	Business Risk	$\frac{\text{Standard deviation of EBITDA}}{\text{Total Assets}}$	<i>Refinitiv Eikon</i> ®	Correa et al., (2007), Artica et al. (2019)
SIZ	Size	Logarithm of total assets.		Brown et al. (2019)
TAN	Tangibility	$\frac{\text{Fixed Assets}}{\text{Total Assets}}$		Pamplona et al. (2021)
Moderating variable – Economic Freedom				
EF	Economic Freedom	From 0 to 100: The closer to 100, the more economically free	<i>The Heritage Found.</i>	Graafland (2019), Arévalo and Meurer (2021)

In addition to this multivariate technique, informational entropy is adopted as a multi-criteria decision support method to diagnose which indicators have greater information weight that is greater relevance (Aras & Yıldırım, 2021). This approach can reduce subjectivity by offering weights capable of indicating the importance of each information and synthesizing the ROA and ROE variables into a single Profitability dimension (PRO).

The following equations show the influence of the consolidated variable of the Profitability dimension on the companies' CS through an HLM with robust standard errors. The difference between these two equations is due to the sensitivity test, which measures the CS using another formula based on the literature. This phase only analyzes the relationship between Profitability and CS and supports hypothesis H₁, in which Profitability influences CS. It is also noteworthy that all equations recognize the influence of control variables.

Equation 1

$$AL_{1tj} = \beta_{0tj} + \beta_{1tj}(YEAR_{tj}) + \beta_{2tj}(PRO_{tj}) + \beta_{3tj}(SAL_{tj}) + \beta_{4tj}(RIS_{tj}) + \beta_{5tj}(SIZ_{tj}) \\ + \beta_{6tj}(TAN_{tj}) + e_{tj}$$

Equation 2

$$AL_{2tj} = \beta_{0tj} + \beta_{1tj}(YEAR_{tj}) + \beta_{2tj}(PRO_{tj}) + \beta_{3tj}(SAL_{tj}) + \beta_{4tj}(RIS_{tj}) + \beta_{5tj}(SIZ_{tj}) \\ + \beta_{6tj}(TAN_{tj}) + e_{tj}$$

Model evolution was tested using the likelihood ratio test (LR test), and model estimation was calculated using restricted maximum likelihood. It is noteworthy that, unlike Equations 1 and 2, Equations 3 and 4 recognize the moderating effect of Economic Freedom on the relationship between Profitability and CS. Similar to Equation 2, Equation 4 depicts a sensitivity test, which differs when measuring Leverage using another formula.

Equation 3

$$AL_{1tjk} = \beta_{0tjk} + \beta_{1tjk}(YEAR_{tjk}) + \beta_{2tjk}(PRO_{tjk}) + \beta_{3tjk}(SAL_{tjk}) + \beta_{4tjk}(RIS_{tjk}) \\ + \beta_{5tjk}(SIZ_{tjk}) + \beta_{6tjk}(TAN_{tjk}) + \beta_{7tjk}(EF_{tjk}) + \beta_{8tjk}(EF_{tjk} \cdot PROF_{tjk}) \\ + e_{tjk}$$

Equation 4

$$AL_{2tjk} = \beta_{0tjk} + \beta_{1tjk}(YEAR_{tjk}) + \beta_{2tjk}(PRO_{tjk}) + \beta_{3tjk}(SAL_{tjk}) + \beta_{4tjk}(RIS_{tjk}) \\ + \beta_{5tjk}(SIZ_{tjk}) + \beta_{6tjk}(TAN_{tjk}) + \beta_{7tjk}(EF_{tjk}) + \beta_{8tjk}(EF_{tjk} \cdot PROF_{tjk}) \\ + e_{tjk}$$

4 RESULTS ANALYSIS

4.1 Results presentation

STATA® MP 16.0 software was used to obtain descriptive statistics, heteroscedasticity test, variance inflation factor, and hierarchical regression results. After data collection, descriptive statistics were tabulated, as shown in Table 4.

Table 4
Descriptive statistics of variables

Variables	Mean	Median	Standard Deviation	Minimum	Maximum	Observations
ROA	-0.026	0.015	0.159	-1	0.288	24,365
ROE	-0.013	0.035	0.268	-0.999	1	24,344
PRO	-0.018	0.028	0.213	-0.849	0.683	24,365
AL_1	0.427	0.448	0.251	-0.824	1	24,365
AL_2	0.207	0.132	0.228	0	1	24,355
SAL	0.162	0.155	0.320	-1	0.999	17,243
SIZ	188.931	206.885	63.215	10.428	969.577	24,365
TAN	0.091	0.029	0.128	0	0.901	24,365
RIS	0.052	0.029	0.077	0	0.997	21,056
EF	74.922	76.2	6.105	43.8	80.2	24,365

Companies generate a negative return on assets of -0.026 (-2.6%), with a median of 0.015, standard deviation of 0.159, minimum of -1, and a maximum of 0.288. For comparison with other studies, a low average return on assets in these companies analyzed can be considered since Kayo and Kimura (2011) found average profitability (ROA) of 3.2% in 40 countries diagnosed between 1997 and 2007 as well as Bernardo et al. (2018) indicated average profitability of 7.3% when considering the seven largest economies in Latin America (Brazil, Mexico, Argentina, Colombia, Venezuela, Chile, and Peru) in the period between 2009 and 2014.

As for ROE, companies generate a negative return on invested equity of -0.013 (-1.3%), with a median of 0.035, a standard deviation of 0.268, a minimum of -0.999, and a maximum of 1. Regarding Profitability, there is a negative average of -0.018, with a median of 0.028, a standard deviation of 0.213, a minimum of -0.849, and a maximum of 0.683.

Regarding Accounting Leverages 1 and 2, there is an average of 0.427 and 0.207, with a median of 0.448 and 0.132 and a standard deviation of 0.251 and 0.228. These values are

higher than those shown by Kayo and Kimura (2011), who report an average of 16.1%. Otherwise, the study by Bernardo et al. (2018) presents two accounting leverage variables with averages of 25.25% and 50.04%.

Economic Freedom shows an average of 74.92, a median of 76.2, a standard deviation of 6.1, a minimum value of 43.8 and a maximum of 80.2. This average of the 6 countries in the Americas analyzed is higher than what was reported in the study by Harkati et al. (2019), pointing out an Economic Freedom of 69.32 during the period from 2011 to 2017 in Malaysia. Furthermore, Table 5 shows the mean and standard deviation of the variables according to the countries.

Table 5
Mean and Standard Deviation of variables according to countries

Variables	Argentina		Brazil		Canada		Chile		Mexico		EUA	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
ROA	0.029	0.005	0.038	0.002	-0.113	0.002	0.026	0.002	0.037	0.002	0.009	0.001
ROE	0.052	0.013	0.089	0.005	-0.135	0.003	0.052	0.004	0.071	0.006	0.034	0.002
PRO	0.045	0.009	0.067	0.004	-0.124	0.003	0.041	0.003	0.056	0.004	0.024	0.002
AL_1	0.565	0.112	0.567	0.006	0.266	0.003	0.489	0.007	0.551	0.007	0.489	0.002
AL_2	0.145	0.009	0.265	0.006	0.104	0.002	0.211	0.006	0.317	0.008	0.254	0.002
SAL	0.099	0.023	0.094	0.008	0.114	0.007	0.096	0.011	0.171	0.011	0.185	0.002
SIZ	186.9	3.544	200.1	1.941	188.7	1.048	196.7	2.085	208.9	2.397	198.8	0.6
TAN	0.174	0.008	0.106	0.003	0.086	0.002	0.12	0.004	0.111	0.005	0.115	0.001
RIS	0.056	0.003	0.037	0.001	0.059	0.001	0.025	0.001	0.032	0.003	0.044	0.001
EF	49.23	0.22	53.96	0.59	78.37	0.01	76.73	0.05	65.36	0.04	75.77	0.01

Brazil has the highest averages in four variables: ROA (0.038), ROE (0.089), PRO (0.067), and AL_1 (0.567). On the other hand, Canada was responsible for the lowest averages in five variables: ROA (-0.113), ROE (-0.135), PRO (-0.124), AL_2 (0.104), and TAN (0.086). It is also noteworthy that Canada has the highest Economic Freedom score during the eight years analyzed (78.37). Furthermore, the United States stands out in Sales Growth, averaging 0.185.

Regarding the Leverage Accounting means, it is noteworthy that Brazil, Chile, the United States, and Mexico have higher mean in the two variables adopted compared to the study by Kayo and Kimura (2011). The countries Argentina and Chile only have the variable AL_1 with a higher mean compared to the results of Kayo and Kimura (2011). These differences can

be justified since the studies by these authors cover the period from 1997 to 2007, while the present research investigates the period between 2014 and 2021.

About the composite indicator, EF, Canada, Chile, and the United States have the highest scores on average with, respectively, 78.37, 76.73 and 75.77. Although this result is expected, since two of the three countries are developed, the emerging country Chile stands out, which shows a higher average than the United States according to the period analyzed. On the other hand, Argentina, Brazil, and Mexico have the lowest mean, respectively, 49.23, 53.96 and 65.36. This result is similar to that reported by Arévalo and Meurer (2021), who found Argentina and Brazil to have the lowest EF rates.

Moving on to the HLM analysis, its assumptions for running the regressions were checked, which were duly met. Using Equations 1 to 4 and multivariate analysis, Tables 6 to 8 show the results of the fixed effect with random intercepts, the coefficient of determination, the Intraclass Correlation Coefficient (ICC), LR test, and the number of observations.

Table 6 attests to the direct relationship between Profitability and CS, according to Equation 1. Firstly, the influence of temporal evolution (level 1) is analyzed in the column on the left, to later consider the variables at the company level (level 2) on the right.

The results in Table 6 show that temporal evolution (level 1) has a positive and significant influence at the 1% level. Therefore, during the period analyzed, the Accounting Leverage 1 of the companies in this sample increased over the years studied. This result is consistent with the descriptive findings of the variables regarding the years of analysis, as there was an average evolution of Accounting Leverage 1 from 0.415 in 2015 to 0.434 in 2021.

In addition to the level 1 analysis, Equation 1 highlights the company-level determinants of AL₁. About Profitability, there is a positive and significant relationship at the 1% level, indicating that the company is heading towards a defined target of a debt/value ratio, as expected by Trade-Off. In economic terms, an increase of one standard deviation in Profitability

(Table 4) is associated with a 2.67% increase in AL₁ in relation to the mean [(0.213*0.053559)/0.427]. This result indicates that organizations seek an optimal capital structure capable of maximizing the company's value (Brown et al., 2019; Titman & Wessels, 1988).

Table 6
Equation 1 Regression Results

Variables	Dependent variable: Accounting Leverage 1 (AL ₁)			
	Time Level		Firm Level	
Fixed effects	Coefficient	Z statistics	Coefficient	Z statistics
Level 1 (time)				
Intercept	0.403878***	111.62	0.405271***	53.19
YEAR	0.004990***	7.11	0.006890***	8.52
Level 2 (firm)				
PRO	-	-	0.053559***	5.08
SAL	-	-	0.038515***	6.73
RIS	-	-	-0.700485***	-15.86
SIZ	-	-	0.000401***	15.00
TAN	-	-	-0.002357	-0.21
Determination coefficient				
Level 1 (time)				
R ²	0.0021		-	
Level 2 (time and firm)				
R ²	-		0.0786	
Intraclass Correlation Coefficient				
	ICC	Standard error	ICC	Standard error
Level 1 (time)	0.000754	0.000617	0.000754	0.000617
Level 2 (firm)	-	-	0.928979	0.006192
Verifiability Test				
	Chi square	p-value	Chi square	p-value
Test LR (HLM3xLinear)	5.99	0.0072	22,081.03	0.0000
Observations	24,355		17,212	

Legend: YEAR: Temporal Evolution; PRO: Profitability; SAL: Sales Growth; RIS: Business Risk; SIZ: Size; TAN: Tangibility; Significance levels: *** p < 0.01.

As for the control variables, Business Risk presents a negative and significant relationship at the 1% level. This finding is consistent with what POT presupposes since the more significant the volatility of results, the greater the risk of not honoring their commitments, which will make creditors more insecure about lending resources, making the financial cost more significant for the riskiest companies (Correa et al., 2007).

Concerning Size, there is a positive and significant relationship at the 1% level with AL₁, as, according to POT, these companies are more mature, have a reputation in the debt market, and consequently, face low costs of agency (Frank & Goyal, 2009). Furthermore, large

companies tend to have more significant debt because they are diversified and have a low risk of default (Rajan & Zingales, 1995).

As for the ICC, the relative importance of each level in the variance of Accounting Leverage 1 can be observed. Thus, a large proportion of the variance in AL₁ is due to the company level, approximately 93%, suggesting that the intrinsic characteristics of the firms are responsible for a significant portion of financing decisions. Furthermore, the temporal evolution maintained an ICC of around 1% of the AL₁ variance.

Previous studies, which are dedicated to analyzing the influence of company-level characteristics on CS, reflect this relatively high influence of the company level (Kayo & Kimura, 2011; Bernardo et al., 2018). However, an important point that can be derived from the results is that the lower levels (time and company) are mainly responsible for most of the variance in leverage, which are more likely to change over time than the higher levels (country). Company characteristics, on the other hand, tend to be more dynamic and volatile.

The LR test proves the need to rule out the use of a traditional linear regression model, as the test rejected the null hypothesis in all models ($H_0: u_{00k} = r_{0jk} = 0$). Furthermore, while the first model, which included only the time variable, explained a slight variation in AL₁ (0.21%), the second model (level 2), which included company-level variables, notably improved the first model. In this sense, the second model explained approximately 7.86% of the variation in AL₁.

To provide more excellent reliability to the results, Table 7 attests to the direct relationship between Profitability and CS, according to Equation 2. Considering the Hierarchical Model, we first analyze the influence of temporal evolution (level 1) on Accounting Leverage 2, a column on the left, to later consider variables at the company level (level 2), a column on the right.

Table 7
Equation 2 Regression Results

Variables	Dependent variable: Accounting Leverage 2 (AL_2)			
	Time Level		Firm Level	
Fixed effects	Coefficient	Z statistics	Coefficient	Z statistics
Level 1 (time)				
Intercept	0.188605***	57.94	0.182715***	23.42
YEAR	0.004990***	7.11	0.004865***	5.78
Level 2 (firm)				
PRO	-	-	0.073229***	6.93
SAL	-	-	0.012308**	2.32
RIS	-	-	-0.872361***	-22.79
SIZ	-	-	0.000507***	17.60
TAN	-	-	-0.167269***	-13.82
Determination coefficient				
Level 1 (time)				
R ²	0.0016		-	
Level 2 (time and firm)				
R ²	-		0.1047	
Intraclass Correlation				
Coefficient	ICC	Standard error	ICC	Standard error
Level 1 (time)	0.000684	0.000580	0.000684	0.000580
Level 2 (firm)	-	-	0.878472	0.003906
Verifiability Test				
	Chi square	p-value	Chi square	p-value
<i>Test</i> LR (HLM3xLinear)	7.03	0.0040	18,789.31	0.0000
Observations	24,365		17,218	

Legend: ** p < 0.05.

As shown in Table 7, the results demonstrate the sensitivity test using the dependent variable AL_2 when adopting another formula that measures the CS. Thus, about level 1, there was also a positive and significant influence at the 1% level. Furthermore, regarding Profitability, a positive and significant relationship is also evident at the 1% level, as expected by Trade-Off. In economic terms, an increase of one standard deviation in PRO (Table 4) is associated with an increase of 7.53% in AL_2 in relation to the mean $[(0.213 \times 0.073229) / 0.207]$.

Unlike Equation 1, which does not portray a significant relationship for the tangibility of companies, Equation 2 shows that all control variables present significant relationships. Thus, despite the POT theory assuming that tangible assets are a means of offering collateral as companies raise funds from third parties (Myers & Majluf, 1984), Table 7 presents a negative and significant relationship at the 1% level between tangibility and AL_2.

As for the ICC, it can be observed that a large proportion of the variance in AL_2 is due to the company level, approximately 88%, suggesting that the intrinsic characteristics of

the firms are responsible for a significant portion of financing decisions. Furthermore, like Equation 1, the temporal evolution had an ICC of around 1% of the AL₂ variance.

According to Table 7, the LR test proved the need to discard the use of a traditional linear regression model, as the test rejected the null hypothesis in all models ($H_0: u_{00k} = r_{0jk} = 0$), as pointed out by Fávero and Belfiore (2017). Furthermore, while the first model (level 1), which included only the time variable, explained a small amount of variation in AL₂ (0.16%), the second model (level 2), which included firm-level variables, presents a notable improvement compared to the first model, explaining approximately 10.47% of the variation in AL₂.

When considering Equations 1 and 2, hypothesis H_1 cannot be rejected, as there is a significant relationship between Profitability and CS. In general, the results indicate that, without considering country-level determinants, Trade-Off provides excellent theoretical support for this relationship, as it expects a positive sign, as greater profitability reduces the expected costs of financial difficulties and allows a firm to increase tax benefits, increasing accounting leverage.

Without recognizing the institutional aspect of countries regarding Economic Freedom, one cannot fail to note that the result in Tables 6 and 7 can be explained by the Trade-Off theory since profitable companies make greater use of the volume of debt since they would benefit from the tax deductibility of interest (Modigliani & Miller, 1963). Thus, even with high Profitability, the companies in the sample choose to refrain from using their internal resources (PRO) for financing decisions, resorting to third-party resources.

Table 8, in addition to recognizing the influence of temporal evolution and firm-level determinants on the CS (AL₁ and AL₂), presents the moderating effect of Economic Freedom on this relationship through Equations 3 and 4. This process allows us to verify the robustness of results when adopting another formula that represents Accounting Leverage.

Table 8
Regression of Equations 3 and 4

Variables	Dependent variable: AL_1		Dependent variable: AL_2	
	Equation 3		Equation 4	
Fixed effects	Coefficient	Z statistics	Coefficient	Z statistics
Level 1 (time)				
Intercept	0.744737***	38.58	0.233698***	11.63
YEAR	0.006452***	8.04	0.004817***	5.72
Level 2 (firm)				
PRO	-0.836437***	-6.22	-0.623619***	-4.43
SAL	0.044932***	7.93	0.013262***	2.49
RIS	-0.679997***	-15.63	-0.864155***	-22.69
SIZ	0.000395***	14.87	0.000506***	17.57
TAN	-0.009460	-0.83	-0.168265***	-13.90
Level 3 (country)				
EF	-0.004521***	-18.65	-0.000669***	-2.69
PRO x EF	0.011660***	6.52	0.009248***	4.97
Determination coefficient				
Level 3 (time, firm, and country)				
R ²	0.0938		0.1060	
Intraclass Correlation Coefficient	ICC	Standard error	ICC	Standard error
Level 1 (time)	0.000754	0.000617	0.000684	0.000580
Level 2 (firm)	0.931817	0.008148	0.883089	0.006525
Level 3 (country)	0.153128	0.09802	0.061974	0.043619
Verifiability Test	Chi square	p-value	Chi square	p-value
Test LR (HLM3 x Linear)	21,830.09	0.0000	18,792.42	0.0000
Observations	17,218		17,212	

As for the company level, Equations 3 and 4 indicate that Profitability has a negative impact at the level of 1% on CS, a finding similar to that reported by Kayo and Kimura (2011), who highlight the theoretical support of POT as an explanation for the lower levels of debt of the most profitable companies. As for the country level, these equations allow us to observe that there is moderation of Economic Freedom on the influence between Profitability and CS. Therefore, hypothesis H₂ cannot be rejected, as Economic Freedom moderates the relationship between Profitability and CS.

In relation to the ICC observed in Equation 3, it can be seen that the correlation between the AL₁ of companies in the Americas, for the same country, is 15.31%. This finding is due to the heterogeneity of the firms that made up the sample analyzed between countries. The correlation between AL₁, for the same company in a given country, was approximately

93.18%. In other words, while this CS is little correlated between countries, it is moderately correlated for firms originating from a given country.

In Equation 3 and 4, the models that recognize level 3 (country) present an improvement in relation to the first models represented in Table 6 and 7, explaining approximately 9.38% of the variation in AL_1 and 10.60% of the variation in AL_2. When recognizing the country level, Equations 3 and 4 allow us to observe that the control variables at the company level maintain the signs of the relationships reported at level 2, as evidenced in Table 8.

4.2 Discussion of Results

As shown in Figures 2 and 3, the results indicate that companies operating in countries with less Economic Freedom are more exposed to credit restrictions and prefer internal funds over debt to finance their financing options, as assumed by the POT (Myers & Majluf, 1984). This result reinforces the findings of Bernardo et al. (2018), who highlight the importance of the institutional environment and its effects on companies' financial decisions.

On the other hand, organizations located in countries with greater Economic Freedom pursue a pre-established CS, that is, the higher the firms' Profitability, the more they would have reasons to resort to debt and thus try to reduce the tax burden, due to deductibility interest on taxable income (Fama & French, 2002). This result indicates the importance of the government guaranteeing the Economic Freedom of individuals/entrepreneurs to reduce trade barriers (Arévalo & Meurer, 2021).

Through Figures 2 and 3, it is observed that, in countries with less Economic Freedom, the increase in Profitability is harmful to the CS. Furthermore, it is observed that companies that operate in countries with greater Economic Freedom can reverse the influence of this relationship to a positive sign. These findings are statistically significant at the 1% level, and

the inversion of this relationship is enhanced in Equation 4 when portraying the dependent variable Accounting Leverage 2 about Equation 3.

Figure 2

Moderation of Economic Freedom – Equation 3

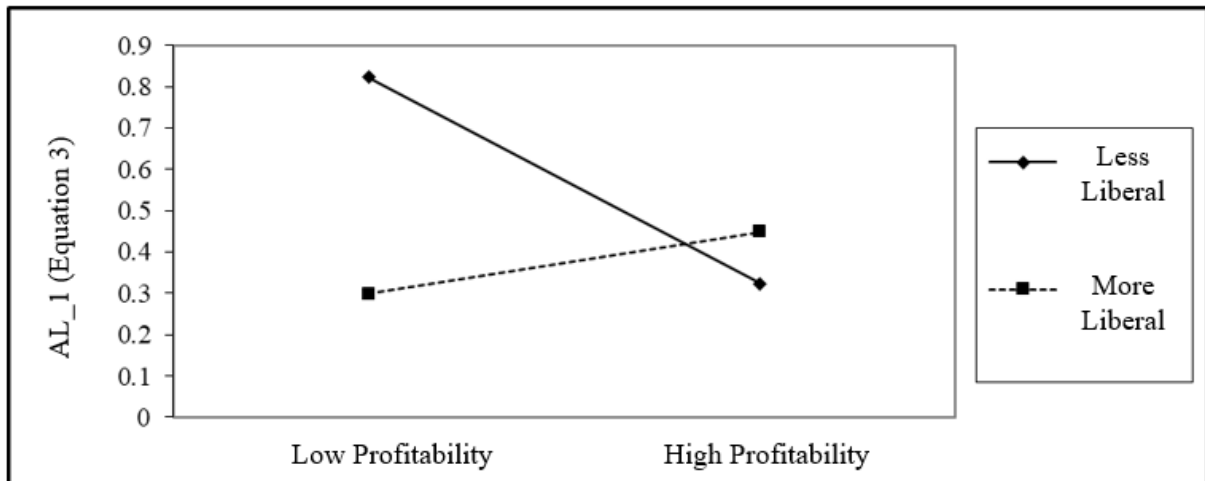
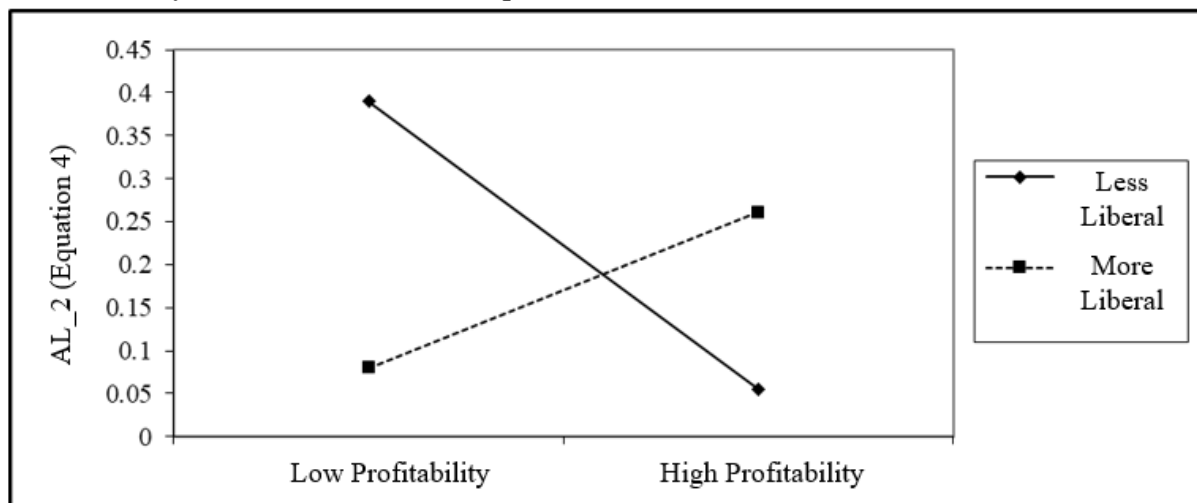


Figure 3

Moderation of Economic Freedom – Equation 4



Therefore, when analyzing the proposed hypotheses, illustrated in Figure 1, the following hypotheses can be confirmed: H₁, as there is a significant relationship between Profitability and CS (according to estimates in Equations 1 and 2); H₂, as Economic Freedom moderates the relationship between Profitability and CS (estimates from Equations 3 and 4). Furthermore, the findings suggest a better suitability for the Trade-Off theory when the country level is not considered. However, POT provides greater theoretical support when considering

the variable Economic Freedom since internal finances are used in the first instance through hierarchical preference.

The results provide robustness regarding the negative influence of Economic Freedom on Capital Structure, as in all tests (Table 8), the relationship maintained the sign. Similarly, Kayo and Famá (2004) justify that companies tend to take on less debt when there are good growth opportunities. As Economic Freedom is also an indicator associated with business opportunities, companies located in more economically free countries are believed to have less dependence on external capital (Ferreira & Malanski, 2023).

The relevance of Economic Freedom as a country's image triggers implications for the relationship between Profitability and Capital Structure, as this index is linked to government intervention in the market, as well as the government's good judicial action to combat corruption (Harkati et al., 2019; Mendonça et al., 2019). Thus, a country's institutional environment, such as Economic Freedom, encourages companies to resort to debt. At the same time, in economic repression, they are forced to reduce their accounting leverage using internal resources (PRO). This result is like that of Pamplona et al. (2021), who emphasize the naturalness of the change in organizations' debt as the transition from a period of prosperity to an economic crisis.

The results bring to companies the advantages of operating in conducive business environments that promote strategies for financing decisions according to aspects measured by Economic Freedom. It becomes possible to recognize that the Capital Structure is constantly impacted by economic and commercial liberalization, attractive privatization programs, the adoption of international business standards, and improvements in the quality of institutions and the political environment. Therefore, these findings are relevant for managers and shareholders who demand third-party capital to finance their activities and for creditors who need to reduce their credit risks.

5 CONCLUSIONS

This study aimed to analyze the effect of Economic Freedom on the relationship between Profitability and CS of companies listed on stock exchanges in the Americas. While POT's theoretical assumptions suggest that Profitability and CS present a negative relationship due to the hierarchy of financing sources, Trade-Off expects a positive relationship. To investigate the signs of these relationships, we used economic, financial, and market information regarding companies extracted from Refinitiv Eikon and Economic Freedom indicators collected from The Heritage Foundation.

These relationships were analyzed in light of CS Finance Theories, which seek to understand companies' financing decisions. To this end, the measures adopted through Profitability and CS literature were used to verify the moderating effect of Economic Freedom in publicly traded companies in the Americas.

As the main results, without considering Economic Freedom, there is a positive and significant relationship between Profitability and CS, as expected by Trade-Off, indicating that the company is heading towards a defined debt ratio /value target. However, when recognizing the moderating effect of Economic Freedom, this relationship becomes negative, as POT assumes, since there are lower debt levels for the most profitable companies. Furthermore, company- and country-level variables are essential determinants of companies' CS. However, firm variables explain a more significant percentage of CS variance.

As for the control variables, larger companies with greater sales growth have greater financing capacity and, consequently, greater leverage due to their lower probability of default. On the other hand, companies with more incredible tangibility and business risk will have lower financing capacity, as profit variability is an estimate of the company's ability to pay for its fixed obligations.

The regressions that recognize the country level improve the first models, explaining approximately 9.38% of the variation in AL_1 and 10.60% in AL_2. Although Economic Freedom has less explanatory power when compared to company-level variables, Kayo and Kimura (2011) highlight the importance of considering country characteristics, as, despite these characteristics, they vary less than firms' leverage over time. There is still much to be done to analyze the effects of institutional and macroeconomic factors on companies' CS.

The study indicates the importance of the government guaranteeing the Economic Freedom of individuals/entrepreneurs to reduce barriers to trade, corruption, and financing, promoting political stability through governance indicators and institutional aspects. Furthermore, it is suggested that Executive Directors demand greater Economic Freedom to seek more excellent growth opportunities from stakeholders by reducing risk exposure.

This study should have addressed the choice of debt source, such as bond debt versus bank debt, and its maturity. Thus, the specificities of choosing the CS according to performance and macroeconomic issues have yet to be intensely investigated, constituting a topic for further research. Future research could use quarterly data and extend the time analyzed to cover turbulent periods and periods of economic growth.

The results may be relevant for capital market agents when analyzing the determinants of CS considering the Economic Freedom of countries to contribute to the analysis of value generation for shareholders of companies in different countries. Furthermore, the findings highlight the importance of strengthening the institutional aspects of companies' CS, supporting the development of policies that expand access to financing and protection for creditors, shareholders, and investors.

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A Liberdade Econômica Modera a Relação entre o Desempenho Econômico e a Estrutura de Capital?

RESUMO

Objetivo: Analisar o efeito da Liberdade Econômica na relação entre o Desempenho Econômico e a Estrutura de Capital das companhias das Américas.

Método: Realizou-se pesquisa descritiva, documental com uma abordagem quantitativa por meio da Modelagem Linear Hierárquica. Os dados secundários referentes às empresas foram extraídos da Refinitiv Eikon, enquanto as informações de Liberdade Econômica foram coletadas da The Heritage Foundation. As relações foram verificadas à luz da Pecking Order Theory e Trade-Off, sendo que os países foram analisados conforme variável institucional da Liberdade Econômica. A população da pesquisa foi composta por países das Américas, os quais resultam uma amostra final de 4.068 empresas no período de 2014 a 2021.

Originalidade/Relevância: O estudo mostra que a Liberdade Econômica dos países pode alterar as decisões de financiamento das empresas.

Resultados: Sem considerar a Liberdade Econômica, há uma relação positiva e significativa entre o Desempenho Econômico e a Estrutura de Capital, conforme esperado pela Trade-Off, indicando que a empresa está se direcionando a uma meta definida de uma relação dívida/valor. Entretanto, ao reconhecer o efeito moderador da Liberdade Econômica, essa relação passa a ser negativa, como presume a Pecking Order Theory, já que há menores níveis de endividamento para as empresas mais rentáveis.

Contribuições Teóricas/Metodológicas: Indica a importância de o governo garantir a Liberdade Econômica dos indivíduos/empresários, de forma a diminuir as barreiras ao comércio, à corrupção e ao financiamento, promovendo uma estabilidade política por meio de indicadores de governança e institucionais.

Palavras-Chave: Estrutura de Capital, Desempenho, Liberdade Econômica, Pecking Order, Trade-Off.

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