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**CAPITAL STRUCTURE OF
LISTED CONSUMER GOODS COMPANIES IN VIETNAM**

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INTRODUCTION

1. Rationale for the dissertation topic

Financing is one of the essential conditions for the establishment, continuity, and development of an enterprise. In its operations, an enterprise must choose an appropriate combination of debt and equity to form its capital structure. The use of debt can help meet financing needs and capture the benefits of debt financing, but it also increases financial obligations, bankruptcy costs, and default risk. Conversely, limiting debt may reduce financial pressure but may also prevent the enterprise from fully exploiting the benefits of this source of financing. Therefore, the key issue is not only to raise sufficient funds but also to select an appropriate combination of debt and equity that balances the benefits and risks of debt financing. This is why capital structure remains a central issue in corporate financial management.

In Vietnam, the consumer goods sector has favorable conditions for continued development alongside rising incomes, urbanization, and the expansion of the consuming class. McKinsey forecasts that approximately 36 million more people in Vietnam could join the consuming class in the decade to 2030, with the share of the population in this group rising from about 40% to nearly 75%. At the same time, the urban population is expected to increase by around 10 million, and cities could account for approximately 90% of consumption growth during this period. Recent forecasts continue to indicate substantial market potential: PwC suggests that Vietnam could become the world's 11th-largest consumer market by 2030, with around 80 million consumers, an increase of 34% compared with 2024. These trends indicate considerable development potential for enterprises supplying consumer goods and services in Vietnam.

In addition to expanding in scale, Vietnam's consumer market is undergoing rapid changes in its structure and consumer behavior. The development of digital technology, e-commerce, and new distribution channels is changing how consumers access, select, and purchase goods and services. Notably, McKinsey forecasts that digital-generation consumers, including Millennials and Generation Z, could account for around 40% of Vietnam's consumption by 2030. These changes create growth opportunities while requiring enterprises to expand their scale, innovate products, develop distribution systems, and adapt to new business models. At the same time, business operations remain affected by fluctuations in purchasing power, input costs, competition, and changes in the business environment. Accordingly, the ability to mobilize and use appropriate financing sources is becoming increasingly important to the development of consumer goods enterprises.

In this context, the financing issue is not limited to whether enterprises can raise sufficient funds for operations and growth; it also requires the selection of appropriate financing sources. Increasing debt can enable enterprises to exploit investment opportunities and expand operations without a corresponding increase in equity, but it

also raises payment obligations and financial risk. Consumer goods enterprises are particularly heterogeneous in size, profitability, asset characteristics, financing needs, and risk; therefore, an appropriate level of debt is unlikely to be identical across enterprises. This indicates that using a common capital structure ratio as an industry-wide benchmark cannot fully reflect the circumstances and conditions of each enterprise.

Therefore, to provide a basis for improving capital structure, it is necessary to determine an optimal capital structure appropriate to the conditions of each enterprise as a quantitative benchmark, and then assess whether the actual capital structure is above or below that level and by how much. At the same time, capital structure and debt financing are inherently associated with default risk. Two enterprises with similar debt ratios may still face different levels of risk because of differences in asset value and volatility, debt obligations, and financial characteristics. Accordingly, probability of default provides an essential risk dimension for capital-structure assessment, in addition to measuring the magnitude and direction of the deviation between actual and optimal capital structure.

For these reasons, the topic *“Capital Structure of Listed Consumer Goods Enterprises in Vietnam”* is significant from both theoretical and practical perspectives.

2. Research objectives and tasks

Overall research objective

The overall objective of the dissertation is to improve the capital structure of listed consumer goods enterprises in Vietnam.

Specific research objectives

To achieve the overall objective, the dissertation pursues the following specific objectives:

First, to clarify the characteristics and current state of the capital structure of listed consumer goods enterprises in Vietnam on both a book-value and market-value basis.

Second, to determine the optimal capital structure of listed consumer goods enterprises in Vietnam using the Leland (1994) and Leland and Toft (1996) models, thereby assessing the degree of alignment between actual and optimal capital structure.

Third, to assess enterprises' financial risk through probability of default and the degree of deviation between actual and optimal capital structure.

Fourth, to identify the factors affecting the gap between actual and optimal capital structure of listed consumer goods enterprises in Vietnam.

Fifth, to propose scientifically and practically grounded recommendations for improving the capital structure of listed consumer goods enterprises in Vietnam.

Research tasks

To achieve these objectives, the dissertation focuses on the following principal research tasks:

First, to review domestic and international studies related to capital structure, optimal capital structure, default risk, and the gap between actual and optimal capital structure; thereby identifying research gaps and developing the theoretical foundation of the dissertation.

Second, to develop an analytical framework and a system of measures for capital structure, optimal capital structure, probability of default, and the gap between actual and optimal capital structure.

Third, to analyze actual capital structure based on book and market values for the sampled enterprises; calibrate parameters and apply the Leland (1994) and Leland and Toft (1996) models to estimate the optimal capital structure and probability of default for each enterprise in each period.

Fourth, to measure the gap between market-value-based actual capital structure and optimal capital structure; classify enterprises according to whether debt usage is above, below, or close to the optimal level; and develop and test an econometric model to identify factors affecting the gap between actual and optimal capital structure.

Fifth, to synthesize and compare the empirical results in order to identify outstanding issues in the capital structure of listed consumer goods enterprises in Vietnam.

Sixth, to develop recommendations appropriate to the capital-structure position and risk characteristics of listed consumer goods enterprises in Vietnam.

3. Research questions

Research question 1: What are the characteristics of the actual capital structure, based on book and market values, of listed consumer goods enterprises in Vietnam?

Research question 2: How is the optimal capital structure of listed consumer goods enterprises in Vietnam determined under the Leland (1994) and Leland and Toft (1996) models, and how does actual capital structure deviate from the optimal level?

Research question 3: What is the probability of default of listed consumer goods enterprises in Vietnam, and what does it indicate about their financial risk?

Research question 4: Which factors affect the gap between actual and optimal capital structure of listed consumer goods enterprises in Vietnam?

Research question 5: What recommendations are needed to improve the capital structure of listed consumer goods enterprises in Vietnam?

4. Research subject and scope

Research subject

The research subject of the dissertation is corporate capital structure.

Research scope

+ Spatial scope: The dissertation examines 101 consumer goods enterprises listed on the Ho Chi Minh Stock Exchange (HSX) and the Hanoi Stock Exchange (HNX).

+ Time scope: The dissertation examines the capital structure of 101 listed consumer goods enterprises in Vietnam over the ten-year period from 2015 to 2024.

+ Content scope: The dissertation focuses on the capital structure of listed consumer goods enterprises in Vietnam, including actual capital structure based on book and market values; optimal capital structure under the Leland (1994) and Leland and Toft (1996) models; probability of default; the gap between actual and optimal capital structure; and the factors affecting this gap. On this basis, the dissertation proposes recommendations for improving the capital structure of the sampled enterprises.

5. Research methods

The dissertation combines qualitative and quantitative research methods to achieve its research objectives. Synthesis, analysis, and comparison are used to systematize the theoretical foundations, review relevant studies, and analyze the actual capital structure of listed consumer goods enterprises in Vietnam. For the quantitative analysis, the dissertation applies a structural approach: Leland (1994) and Leland and Toft (1996) are used to determine optimal capital structure and the corresponding probability of default, while KMV is used to determine probability of default associated with the actual capital-structure position. Based on actual and optimal capital structure, the dissertation measures the magnitude and direction of the deviation between the two positions and uses a panel-data model to analyze firm characteristics affecting this gap.

Leland (1994) and Leland and Toft (1996) are used to determine levered firm value, the endogenous default threshold, and optimal capital structure. Optimal capital structure is identified at the debt level that maximizes firm value. KMV is used to determine distance to default and probability of default at the actual capital-structure position.

The research methods, implementation process, data, variables, and models used in the dissertation are presented in detail in Chapter 3.

6. Scientific and practical significance of the dissertation

Scientific significance

The principal scientific contributions of the dissertation are as follows:

First, the dissertation contributes an approach to capital-structure research that integrates actual and optimal capital structure. By applying Leland (1994) and Leland and Toft (1996), it determines the optimal capital structure of each enterprise as a quantitative benchmark for assessing actual capital structure, rather than considering only the observed debt ratio or applying a common capital-structure level across enterprises.

Second, the dissertation extends capital-structure assessment from determining an optimal level to examining the gap between actual and optimal capital structure. The gap is quantified in both magnitude and direction, thereby distinguishing situations in which actual capital structure is above or below the optimal level. On this basis, the

dissertation further analyzes firm characteristics affecting this gap, adding empirical evidence on differences between firms' actual and optimal capital structures.

Third, the dissertation integrates capital-structure assessment with probability of default under different capital-structure positions. KMV is used to determine probability of default associated with the actual capital structure, whereas Leland (1994) and Leland and Toft (1996) are used to determine probability of default corresponding to the optimal capital structure and the endogenous default threshold in each model. The dissertation thereby develops an analytical framework combining actual capital structure, optimal capital structure, the gap between them, and probability of default, adding a risk perspective to corporate capital-structure assessment.

Fourth, the dissertation provides additional empirical evidence on the capital structure of listed consumer goods enterprises in Vietnam during 2015–2024, a group for which research simultaneously integrating actual capital structure, optimal capital structure, the gap between the two positions, and probability of default remains limited.

Practical significance

First, for listed consumer goods enterprises in Vietnam, the research results provide a basis for a more comprehensive assessment of current capital structure. Considering capital structure simultaneously on a book-value basis, a market-value basis, and relative to optimal capital structure enables enterprises not only to identify the financing characteristics reflected in financial statements but also to assess capital structure from an economic-value perspective. By comparing actual capital structure with the optimal levels determined under Leland (1994) and Leland and Toft (1996), enterprises can identify whether their debt usage is above, below, or relatively close to the optimal level.

Second, measuring the gap between actual and optimal capital structure provides a quantitative basis for enterprises to assess deviations in financing policy. This is an important basis for financial managers to consider the need for and direction of capital-structure adjustment, rather than relying solely on individual leverage indicators or comparisons with industry averages. Identifying both the direction and magnitude of deviation enables enterprises to consider decisions concerning increases or reductions in debt, increases in equity, or restructuring of financing sources in accordance with firm-specific conditions.

Third, determining probability of default incorporates risk into capital-structure assessment. The results help enterprises better identify the relationship between debt usage and financial risk, thereby avoiding the pursuit of high leverage solely to exploit the benefits of debt financing without fully considering the potential increase in insolvency risk. Combining optimal capital structure with probability of default provides a more prudent basis for financing decisions that is better aligned with each enterprise's risk-bearing capacity.

Fourth, the analysis of factors affecting the gap between actual and optimal capital structure helps identify the principal reasons why enterprises may not achieve or maintain an appropriate capital structure. This allows enterprises to identify more clearly the internal factors that need adjustment and the external conditions that should be considered when formulating financing policy. The results provide a basis for differentiated recommendations suited to different groups of enterprises rather than a single capital-structure orientation for the entire sector.

Fifth, for investors, creditors, and credit institutions, the research results provide additional reference information for assessing leverage, the gap relative to optimal capital structure, and enterprises' probability of default. This information can support assessments of financial safety, debt-servicing capacity, and enterprise risk when making investment, lending, or financing-condition decisions.

Sixth, for regulators and policymakers, the research provides additional empirical evidence on capital-structure characteristics, deviations from optimal capital structure, and factors affecting such deviations among listed consumer goods enterprises in Vietnam. This can serve as reference information in improving policies related to capital markets, credit markets, access to financing sources, and corporate financial-risk management.

7. Structure of the dissertation

Apart from the Introduction and Conclusion, the main content of the dissertation is organized into five chapters:

Chapter 1: Literature Review on Corporate Capital Structure and Research Gaps

Chapter 2: Theoretical Foundations of Corporate Capital Structure

Chapter 3: Research Methodology and Sample

Chapter 4: Research Results on the Capital Structure of Listed Consumer Goods Enterprises in Vietnam

Chapter 5: Recommendations for Improving the Capital Structure of Listed Consumer Goods Enterprises in Vietnam

In addition, the dissertation includes references, a list of the author's published works, and appendices.

CHAPTER 1: LITERATURE REVIEW ON CORPORATE CAPITAL STRUCTURE AND RESEARCH GAPS

1.1. Overview of studies related to the dissertation topic

1.1.1. Studies on corporate capital structure

Capital structure is one of the most extensively studied topics in corporate finance. Studies focus on explaining the choice between debt and equity, differences in capital structure across enterprises, and factors influencing financing decisions. Building on Modigliani and Miller, several approaches have been developed, including trade-off theory, pecking-order theory, agency theory, and market-timing theory.

Empirical studies show that capital structure varies across enterprises and over time. Profitability, firm size, growth opportunities, asset characteristics, cash flow, and financing needs are commonly examined as determinants of debt usage. However, most studies focus on observed capital structure without directly determining a firm-specific optimal capital structure.

1.1.2. Studies on optimal capital structure

Research on optimal capital structure develops from the trade-off between the benefits and costs of debt. Increasing debt may create benefits for the enterprise but also raises bankruptcy costs and financial risk. Accordingly, an optimal debt level exists at which firm value is maximized.

An important research direction is the structural approach, in which firm asset value and the default process are modeled directly. Merton (1974) laid the foundation by treating equity as an option on the firm's asset value. Black and Cox (1976) extended the framework by introducing a default threshold before debt maturity.

Leland (1994) further developed the structural approach by endogenizing financing decisions and the default threshold, thereby determining the optimal debt level on the basis of firm-value maximization. Leland and Toft (1996) extended Leland (1994) by considering finite-maturity debt and a continuous issuance and maturity mechanism. Subsequent studies have applied and extended these models to analyze optimal capital structure in different contexts.

The literature review shows that the structural approach has the advantage of linking capital-structure decisions, firm value, and default risk within a unified framework. However, applications of these models to Vietnamese enterprises, particularly consumer goods enterprises, remain relatively limited.

1.1.3. Studies on corporate probability of default

Studies of probability of default employ various methods, among which the structural approach based on Merton (1974) is important. Under this approach, default depends on the relationship between the firm's asset value and its debt obligations and is also affected by asset-value volatility.

The KMV model builds on Merton's framework and uses market information to estimate asset value, asset volatility, distance to default, and probability of default. Leland (1994) and Leland and Toft (1996), meanwhile, determine the default threshold endogenously together with financing decisions. These models therefore allow capital structure, firm value, and default risk to be examined jointly.

Empirical studies show that probability of default depends not only on debt levels but also on asset value, asset volatility, and firm characteristics. Debt ratios alone are therefore insufficient for a comprehensive assessment of financial risk.

1.1.4. Studies on the gap and the adjustment of capital structure toward the target level

Another research stream focuses on the gap between actual and target capital structure. Partial-adjustment models suggest that firms tend to adjust capital structure toward a target, but the adjustment is not instantaneous because of adjustment costs and financial constraints.

Research indicates that the gap between actual and target capital structure is affected by firm characteristics such as profitability, size, growth opportunities, asset structure, and financing needs. In most studies, however, the target is estimated from regression models based on firm characteristics. The use of optimal capital structure determined directly from structural models as a benchmark for measuring the gap with actual capital structure remains relatively underexplored.

1.1.5. Studies on capital structure in the consumer goods sector

Studies of consumer goods enterprises show that capital-structure decisions are influenced by operating characteristics, size, profitability, tangible assets, growth opportunities, financing needs, and market conditions. Differences across consumer subsectors may also lead to substantial differences in financing needs and debt usage.

In Vietnam, capital-structure research has mainly examined listed enterprises in general or selected industries. Studies simultaneously considering actual capital structure, optimal capital structure, the gap between the two positions, and probability of default for consumer goods enterprises remain limited.

1.2. Research gaps and orientation of the dissertation

Based on the review of domestic and international studies, the dissertation identifies several principal research gaps.

First, research on the capital structure of listed consumer goods enterprises in Vietnam remains limited, particularly over a sufficiently long period to reflect changes in business and market conditions.

Second, most empirical studies in Vietnam focus on explaining actual capital structure or determinants of debt ratios, whereas firm-specific optimal capital structure based on structural models has not been sufficiently investigated.

Third, the gap between actual and optimal capital structure has not been examined systematically. Identifying both the magnitude and direction of the deviation makes it

possible to determine whether an enterprise uses debt above, below, or close to the optimal level.

Fourth, factors affecting the gap between actual and optimal capital structure have not been sufficiently studied for listed consumer goods enterprises in Vietnam. GAP analysis can provide a perspective distinct from studies that explain the actual debt ratio directly.

Fifth, capital structure and probability of default are often studied relatively separately. Yet debt decisions are associated both with financing benefits and with changes in financial obligations and default risk. An integrated framework combining actual capital structure, optimal capital structure, the gap between them, and probability of default is therefore needed.

Based on these gaps, the dissertation examines 101 consumer goods enterprises listed on HSX and HNX during 2015–2024; analyzes actual capital structure based on book and market values; determines optimal capital structure under Leland (1994) and Leland and Toft (1996); estimates probability of default; measures GAP; analyzes factors affecting GAP; and develops recommendations for improving capital structure.

1.3. Analytical framework of the dissertation

The dissertation's analytical framework follows the logic: actual capital structure – optimal capital structure – probability of default – GAP – factors affecting GAP – recommendations for improving capital structure.

First, the dissertation analyzes actual capital structure based on book and market values to identify enterprises' financing characteristics. Next, Leland (1994) and Leland and Toft (1996) are used to determine the optimal capital structure of each enterprise in each year. The gap between market-value-based actual capital structure and optimal capital structure is then measured to identify the magnitude and direction of deviation for each enterprise.

Alongside the capital-structure analysis, probability of default is estimated using KMV, Leland (1994), and Leland and Toft (1996) to incorporate the risk dimension. A panel-data model is then used to identify factors affecting GAP. The results are synthesized as the basis for assessing the current situation and developing recommendations for improving capital structure.

CHAPTER 2: THEORETICAL FOUNDATIONS OF CORPORATE CAPITAL STRUCTURE

2.1. Sources of corporate financing

2.1.1. Concept of corporate financing sources

Corporate financing sources reflect the sources from which the assets used by an enterprise in its operations are formed. Financing sources can be considered under different classification criteria depending on the purpose of management and financial analysis.

2.1.2. Classification of financing sources

By ownership relationship, corporate financing sources comprise equity and liabilities. Equity belongs to owners or shareholders and does not create a fixed repayment obligation, whereas liabilities are funds raised from external parties and are associated with payment obligations.

By financing and utilization horizon, financing sources are divided into permanent and temporary financing. Permanent financing includes equity and long-term debt and is relatively stable, while temporary financing mainly consists of short-term liabilities.

By source of mobilization, financing is classified as internal or external. Internal financing is primarily generated from operating results and the enterprise's self-financing capacity, whereas external financing is raised from parties outside the enterprise.

2.2. Corporate capital structure

2.2.1. Concept of corporate capital structure

Capital structure reflects the proportions and relationships among the financing components used by an enterprise to finance its assets and business operations. In this dissertation, capital structure is examined by ownership relationship, financing and utilization horizon, source of mobilization, and market value.

2.2.2. Indicators of corporate capital structure

By financing and utilization horizon, financing sources are divided into permanent and temporary financing. Permanent financing includes equity and long-term debt and is relatively stable, while temporary financing mainly consists of short-term liabilities.

To enable comparison with optimal capital structure derived from structural models, the dissertation also determines actual capital structure on a market-value basis, with equity measured at market value.

2.3. Theoretical foundations of corporate capital structure and default risk

2.3.1. Foundational and modern theories of capital structure

Modigliani–Miller theory provides the foundation for modern capital-structure research. Under perfect-market conditions, capital structure does not affect firm value.

When corporate income tax is incorporated, debt financing generates benefits and can increase firm value.

Trade-off theory holds that firms choose debt levels by balancing the benefits of debt financing against the costs that arise as debt increases, particularly financial-distress and bankruptcy costs. This provides the theoretical basis for the existence of an optimal capital structure.

2.3.2. Theories explaining firms' actual capital structure

Pecking-order theory suggests that firms tend to prefer internal financing, followed by debt, and only then new equity issuance because of information asymmetry and issuance costs.

Agency theory explains financing decisions through conflicts of interest among shareholders, managers, and creditors. Debt can impose financial discipline on managers but may also generate conflicts between shareholders and creditors.

Market-timing theory emphasizes firms' choice of when to issue equity or use debt based on market conditions and security valuations.

These theories help explain why actual capital structure differs across firms and may deviate from the optimal level.

2.3.3. Limitations of capital structure theories and the need for a quantitative approach

Capital-structure theories provide a basis for explaining financing decisions but do not directly yield an observable optimal debt ratio for each enterprise at each point in time. Therefore, the dissertation employs structural models to quantify optimal capital structure and link financing decisions with default risk.

2.3.4. Structural models in capital structure and default-risk analysis

Merton (1974) treats equity value as a call option on the firm's asset value. The firm defaults at maturity when asset value is insufficient to meet debt obligations. The model provides a foundation for inferring asset value and asset volatility from market information on equity.

Black and Cox (1976) extend Merton by introducing a default threshold, allowing the firm to default before maturity when asset value falls to the specified threshold.

Leland (1994) endogenizes the debt decision and the default threshold. Levered firm value is determined as unlevered firm value plus the benefits of debt financing minus expected bankruptcy costs. For debt without a covenant restricting the firm's default threshold, the threshold is determined endogenously by shareholders' optimal decision. Optimal capital structure is identified at the debt level that maximizes firm value.

Leland and Toft (1996) extend Leland (1994) by introducing finite debt maturity. The firm maintains a stable debt structure through continuous issuance and replacement of maturing debt. The model therefore permits debt level and debt maturity to be considered jointly in the optimal capital-structure decision.

KMV builds on Merton's framework and is used to assess default risk at the actual capital-structure position. From the market value and volatility of equity, the model estimates asset value and asset volatility and then determines distance to default and probability of default.

In the dissertation, the three models are not used as substitutes. Leland (1994) and Leland and Toft (1996) are used to determine optimal capital structure and the corresponding probability of default at the optimal position, whereas KMV is used to assess probability of default associated with the actual capital structure.

2.4. Factors affecting corporate capital structure

Factors affecting capital structure can be divided into internal and external groups. Internal factors include profitability, size, growth opportunities, asset structure, liquidity, financing needs, and other financial characteristics. External factors include macroeconomic conditions, interest rates, taxation, financial-market development, and industry characteristics.

Based on theory and prior studies, the dissertation selects five firm characteristics for the analysis of factors affecting GAP: profitability (PROFIT), growth opportunities (GROWTH), firm size (SIZE), tangibility (TANG), and financial deficit (FINDEF). The variables are lagged by one year to reflect the possibility that financial characteristics in the preceding period affect the current capital-structure position.

CHAPTER 3: RESEARCH METHODOLOGY AND SAMPLE

3.1. Research process

The research process proceeds from theoretical foundations to empirical analysis and recommendations. The dissertation first reviews the literature, identifies research gaps, and develops the theoretical framework. It then defines the sample and data, analyzes actual capital structure, estimates structural-model parameters to determine optimal capital structure and probability of default, calculates GAP between actual and optimal capital structure, and uses panel-data models to analyze factors affecting GAP. Finally, the findings are synthesized to assess the current situation and formulate recommendations.

3.2. Research methods

3.2.1. *Qualitative research methods*

Synthesis, analysis, and comparison are used to review prior studies, systematize the theoretical foundations, select factors for the model, and formulate recommendations. Qualitative methods are also used to analyze the operating and financial characteristics of consumer goods enterprises.

3.2.2. *Quantitative research methods*

The dissertation uses descriptive statistics and comparative analysis to assess actual capital structure over time, by firm size, and by industry group.

To apply the structural models, daily stock-price data are used to determine the trend and volatility of equity. Market value of equity is calculated from stock prices and the number of shares outstanding. Based on information on equity and debt obligations, the Merton system of equations is solved to estimate asset value and asset-value volatility for each firm-year.

Leland (1994) and Leland and Toft (1996) are used to determine levered firm value, the endogenous default threshold, and optimal capital structure. Optimal capital structure is identified at the debt level that maximizes firm value. KMV is used to determine distance to default and probability of default at the actual capital-structure position.

The gap between actual and optimal capital structure is defined as actual capital structure minus optimal capital structure. The optimal levels are determined separately under Leland (1994) and Leland and Toft (1996). A positive GAP indicates that the actual debt ratio is above the optimal level; a negative GAP indicates that it is below the optimal level; and a zero GAP indicates equality with the optimal level.

$$GAP_{L94} = CCNV_{thvc\ t\check{e}} - CCNV_{L94}$$

$$GAP_{LT96} = CCNV_{thvc\ t\check{e}} - CCNV_{LT96}$$

Here, the two optimal capital-structure measures are determined under the Leland (1994) and Leland and Toft (1996) models, respectively. A positive GAP indicates that the actual debt ratio is higher than the optimal level; a negative GAP indicates that the

actual debt ratio is lower than the optimal level; and a zero GAP indicates that the actual debt ratio equals the optimal level.

3.3. Research model and variables

The research model is specified as follows:

$$GAP_{it} = \beta_0 + \beta_1 PROFIT_{i,t-1} + \beta_2 GROWTH_{i,t-1} + \beta_3 SIZE_{i,t-1} + \beta_4 TANG_{i,t-1} + \beta_5 FINDEF_{i,t-1} + \mu_i + \lambda_t + \varepsilon_{it}$$

In the model, the dependent variable is the gap between actual and optimal capital structure for enterprise *i* in year *t*, determined separately under Leland (1994) and Leland and Toft (1996). PROFIT, GROWTH, SIZE, TANG, and FINDEF are the firm characteristics measured at year *t*-1; the specification includes an intercept, estimated coefficients, firm fixed effects, year effects, and a random error term.

For robustness testing, the dissertation also uses the absolute value of GAP to examine factors affecting the magnitude of the deviation regardless of whether actual capital structure is above or below the optimal level.

3.4. Research sample and data

The research data are collected from audited financial statements, stock-price data, and other sources required to estimate model parameters. After screening according to the research criteria, the structural-model sample comprises 101 consumer goods enterprises listed on HSX and HNX during 2015–2024, equivalent to 1,010 firm-year observations. With one-year-lagged explanatory variables in the GAP model, the number of observations is 909.

The sample is classified by firm size and industry group to assess heterogeneity across enterprises. The sample characteristics show substantial differences in total assets, fixed-asset ratios, liquidity, revenue, and profitability. Total assets and revenue generally increased over the study period, while profitability fluctuated and differed considerably across years, firm sizes, and industry groups. This provides the basis for deeper analysis of actual capital structure, optimal capital structure, and GAP in Chapter 4.

CHAPTER 4: RESEARCH RESULTS ON THE CAPITAL STRUCTURE OF LISTED CONSUMER GOODS ENTERPRISES IN VIETNAM

4.1. Current capital structure of listed consumer goods enterprises in Vietnam

4.1.1. Capital structure by ownership relationship

The results show that the financing scale of listed consumer goods enterprises increased during 2015–2024, while debt usage fluctuated and varied substantially across enterprises.

Both liabilities and equity play important roles in financing enterprise operations. However, debt ratios differ considerably by firm size and industry group, indicating that there is no homogeneous financing structure across consumer goods enterprises. Within liabilities, borrowed debt and non-interest-bearing liabilities play different roles across enterprises, while equity is formed from contributed capital, share premium, and accumulated internal funds.

4.1.2. Capital structure by financing and utilization horizon

Financing is examined in terms of permanent and temporary sources. The results show that short-term debt generally accounts for a larger share than long-term debt in many enterprises, reflecting the significant role of short-term financing.

However, dependence on short-term financing is not uniform. Differences in the share of permanent financing across firm-size and industry groups reflect differences in asset characteristics, operating cycles, and financing needs. Net working capital also varies across years and enterprises, indicating differing degrees of safety in financing short-term assets.

4.1.3. Capital structure by source of financing

Internal financing reflects an enterprise's ability to generate funds from its operations. The results show substantial differences in the share of internal financing by firm size and industry group. Enterprises with stronger profitability and accumulation capacity have greater ability to use internal financing, whereas those whose financing needs exceed their self-financing capacity rely more heavily on external financing.

4.1.4. Capital structure based on market value

To ensure comparability with optimal capital structure from structural models, the dissertation determines actual capital structure on a market-value basis. Market equity is calculated from stock prices and shares outstanding, while debt in actual capital structure is measured as short-term debt plus long-term debt.

The results show that market-value-based capital structure fluctuates more substantially than indicators based entirely on book values because it is affected by stock-price movements. Differences across industry groups further indicate that a common debt ratio cannot fully represent the position of each enterprise.

4.2. Optimal capital structure of listed consumer goods enterprises in Vietnam

Optimal capital structure is determined separately for each firm-year using Leland (1994) and Leland and Toft (1996). The results show that the optimal level changes over time and differs considerably across enterprises.

The two models generate different optimal capital-structure levels because of differences in assumptions regarding debt structure and maturity. The results are therefore not treated as a fixed ratio applicable to all enterprises but as two structural benchmarks for assessing each enterprise's capital-structure position.

Analysis by firm size shows that optimal capital structure is not identical between large and small enterprises. Similarly, industry-group analysis indicates that operating and financial characteristics of different subsectors are associated with different optimal debt levels. This reinforces the need to determine optimal capital structure at the enterprise level rather than apply an industry average.

4.3. Probability of default of listed consumer goods enterprises in Vietnam

Probability of default is estimated using KMV, Leland (1994), and Leland and Toft (1996). The level and time pattern of default probability differ across models because of differences in the determination of default thresholds and the capital-structure position being evaluated.

Under KMV, average probability of default declined from 5.68% in 2016 to 0.30% in 2024, although it rose again in some years and reached 5.31% in 2022. Under Leland (1994), average probability of default was lower, declining from 0.24% in 2015 to 0.05% in 2024 and peaking at 0.82% in 2021. Under Leland and Toft (1996), average probability of default declined from 1.36% in 2015 to 0.52% in 2024 and peaked at 3.94% in 2021.

The results also show that probability of default does not depend solely on the debt ratio. Asset volatility, asset value, and the default threshold jointly determine risk. Consequently, two enterprises with similar capital structures may have different probabilities of default.

A comparison of KMV probability of default with credit ratings in 2024 is conducted as an additional check of the model's ability to reflect risk.

4.4. Assessment of the difference between actual and optimal capital structure

The dissertation defines GAP as market-value-based actual capital structure minus optimal capital structure. On average, actual capital structure is higher than the optimal capital structure under both Leland (1994) and Leland and Toft (1996). However, firm-level results are not entirely homogeneous.

Most observations have a positive GAP, indicating that actual capital structure is above the optimal level. Nevertheless, there are also enterprises with a negative GAP, meaning actual capital structure is below the optimal level, as well as cases in which actual capital structure is close to the optimal level.

When the two models are compared, most observations yield the same directional conclusion regarding the position of actual capital structure relative to the optimal level,

although some observations differ. This indicates that optimal capital structure depends on model assumptions and should be used as a reference range rather than treated as a single rigid target.

4.5. Analysis of factors affecting the gap between actual and optimal capital structure

4.5.1. Descriptive statistics and correlations among variables

The model uses two dependent GAP variables determined under Leland (1994) and Leland and Toft (1996). The explanatory variables are PROFIT, GROWTH, SIZE, TANG, and FINDEF, each lagged by one year.

Correlation analysis and variance inflation factors indicate no evidence of serious multicollinearity among the explanatory variables.

Correlation analysis and variance inflation factors indicate no evidence of serious multicollinearity among the explanatory variables.

4.5.2. Selection of estimation method and model diagnostics

The dissertation conducts tests to select an appropriate estimation method. The results support the use of a fixed-effects model with firm and year effects. Standard errors are clustered by firm to address possible heteroskedasticity and within-firm serial correlation over time.

4.5.3. Estimation results for the effects of firm characteristics on GAP

The results show that firm characteristics do not affect GAP in the same way under the two optimal-capital-structure models. Using GAP based on both Leland (1994) and Leland and Toft (1996) makes it possible to assess the extent to which the findings depend on the optimal benchmark employed.

In interpreting the results, coefficient signs are considered in relation to the definition $GAP = \text{actual capital structure} - \text{optimal capital structure}$. A positive coefficient implies that the corresponding characteristic increases GAP, meaning actual capital structure tends to be relatively higher than the optimal level; a negative coefficient implies that GAP decreases.

The results are used to identify financial characteristics that should be considered when enterprises assess the causes of deviations between actual and optimal capital structure, rather than treating the gap solely as a consequence of the current debt level.

4.5.4. Robustness checks

The dissertation conducts a robustness check using the absolute value of GAP. The dependent variable then reflects the magnitude of the deviation between actual and optimal capital structure without regard to direction. This supplementary analysis tests whether firm characteristics affect how far an enterprise lies from the optimal level.

4.6. Overall assessment of the capital structure of listed consumer goods enterprises in Vietnam

4.6.1. Achievements

First, the financing scale of enterprises generally expanded during the study period, helping meet operating and growth needs.

Second, enterprises use a combination of financing sources, including equity, borrowed debt, non-interest-bearing liabilities, permanent financing, temporary financing, and internal and external financing.

Third, the optimal-capital-structure results show that appropriate debt levels differ across enterprises and change over time. This provides a basis for assessing capital structure at the enterprise level rather than relying entirely on industry averages.

Fourth, combining actual capital structure, optimal capital structure, and probability of default provides a clearer identification of each enterprise's financing position and risk.

Fifth, GAP results allow enterprises to be classified according to their position relative to the optimal level, providing a direct basis for determining the direction of capital-structure improvement.

Overall, the results show that assessing the capital structure of consumer goods enterprises should not be limited to the actual debt ratio. Simultaneously determining market-value-based actual capital structure, optimal capital structure under Leland (1994) and Leland and Toft (1996), and probability of default provides a more comprehensive basis for assessing each enterprise's capital-structure position. In particular, the similarity in the direction of deviations produced by the two models in most cases strengthens their value as reference benchmarks, while cases in which the models differ also demonstrate the need for caution in using a single optimal level as the basis for adjustment.

4.6.2. Limitations and outstanding issues

Alongside these achievements, the capital structure of enterprises in the sample still exhibits several limitations.

First, for many enterprises, actual capital structure remains relatively far from the optimal level; on average, actual capital structure is higher than the optimal level under both models.

Second, some enterprises depend substantially on debt, particularly short-term financing, increasing payment pressure and cash-flow management requirements.

Third, the capacity to generate internal financing is uneven; enterprises with low profitability have limited scope to accumulate funds for self-financing.

Fourth, default risk varies considerably across enterprises and over time. Capital-structure adjustment therefore cannot rely solely on the debt ratio but must also consider risk.

Fifth, enterprises exist on both sides of the optimum, with actual capital structure either above or below the optimal level; therefore, a common recommendation to increase or reduce debt across the entire sector is inappropriate.

These limitations show that the capital-structure issue lies not only in the level of debt usage but also in the degree to which actual capital structure is appropriate relative to each enterprise's optimal position. An enterprise with a high debt ratio does not necessarily need to reduce debt if its actual capital structure remains consistent with the optimal level and default risk is controlled; conversely, a low debt ratio is not sufficient to conclude that capital structure is appropriate. Actual capital structure must therefore be assessed in relation to optimal capital structure and probability of default.

4.6.3. Causes of the limitations

Objective causes include changes in economic and financial-market conditions, interest rates, access to financing, purchasing power and input costs, as well as differences in prospects across consumer-goods subsectors.

Subjective causes arise from profitability and the ability to accumulate internal funds; growth-financing needs; asset characteristics; firm size; financial deficit; financing-source selection policies; and debt-obligation management. Differences in these factors across enterprises and over time can cause actual capital structure to deviate from the optimal level and require the direction of adjustment to be determined separately for each enterprise.

These causes do not operate independently and may jointly affect enterprises' need and ability to use different financing sources. The gap between actual and optimal capital structure is therefore the combined result of firm-specific characteristics and the financing conditions faced by the enterprise. This also explains the heterogeneity of GAP across enterprises and provides the basis for Chapter 5 to develop recommendations by capital-structure position rather than applying a single adjustment direction to all enterprises.

CHAPTER 5: RECOMMENDATIONS FOR IMPROVING THE CAPITAL STRUCTURE OF LISTED CONSUMER GOODS ENTERPRISES IN VIETNAM

5.1. Context and requirements for improving capital structure

5.1.1. Vietnam's socio-economic and financial-market context

In the coming period, consumer goods enterprises will continue to be affected simultaneously by economic-growth prospects, interest-rate movements, credit conditions, capital-market development, input-cost fluctuations, and changing consumer behavior. These factors directly influence financing needs, access to funding, and the cost of capital.

The development of financial markets broadens financing opportunities but also imposes higher requirements for information transparency, credit quality, and risk management. Enterprises therefore need to view capital structure as a dynamic decision that should be reviewed periodically as financial and business conditions change.

5.1.2. Prospects and development orientation of the consumer goods sector

Vietnam's consumer goods sector retains growth potential owing to population size, urbanization, rising incomes, and the expansion of the consuming class. However, rapid changes in consumer behavior, e-commerce, digital technology, and competition create new investment requirements and financing needs.

Heterogeneity across subsectors and business models means that financing needs and debt capacity differ among enterprises. Capital-structure improvement must therefore be linked to firm-specific characteristics rather than a common debt ratio for the entire sector.

5.2. Recommendations for improving capital structure

5.2.1. Principles for improving capital structure

Improving capital structure should follow several principal principles.

First, capital structure should be assessed on both book-value and market-value bases. Book values reflect the financing structure recorded in financial statements, whereas market values provide information more suitable for comparison with optimal levels from structural models.

Second, a single optimal capital-structure ratio should not be applied to all enterprises. The optimal level depends on asset value, asset volatility, debt obligations, and firm-specific parameters.

Third, capital-structure adjustment must consider both GAP and default risk. An enterprise with a positive GAP and low risk should not follow the same adjustment pace and measures as an enterprise with a positive GAP and high risk.

Fourth, the results from Leland (1994) and Leland and Toft (1996) should be used as reference benchmarks. When the two models produce different conclusions,

enterprises should proceed cautiously and consider actual conditions before making adjustments.

Fifth, capital structure should be reviewed periodically. Profitability, growth opportunities, financing needs, asset structure, cash flow, interest rates, and market conditions change over time; consequently, optimal capital structure is not a fixed ratio to be maintained indefinitely.

In summary, improving capital structure does not mean uniformly increasing or reducing debt. The focus is to identify each enterprise's position correctly on the basis of actual capital structure, the gap from the optimal level, default risk, and specific financial characteristics.

5.2.2. Recommendations for improving the capital structure of listed consumer goods enterprises in Vietnam

First, establish a mechanism for assessing and determining the direction of capital-structure adjustment according to the enterprise's position.

Enterprises should periodically determine market-value-based actual capital structure, estimate a range of optimal capital structures, and calculate GAP. On this basis, enterprises can be identified in three basic positions: actual capital structure above the optimal level, below the optimal level, or close to the optimal level.

For enterprises with a positive GAP, the focus should be on controlling debt usage and reducing pressure from financial obligations. Debt should not, however, be reduced mechanically. Profitability, cash flow, debt maturity, and probability of default should be considered jointly to determine the scale and pace of adjustment. Enterprises with a large positive GAP and high default risk should prioritize reducing debt pressure, limiting new borrowing obligations, and strengthening self-financing capacity.

For enterprises with a negative GAP, actual capital structure below the optimal level indicates potential debt capacity under the model benchmark. This does not mean that debt must necessarily be increased. Additional debt is appropriate only when there is a genuine financing need, cash flow is sufficient to service debt, and the use of funds is capable of creating value.

For enterprises whose actual capital structure is close to the optimal level, the focus should be on maintaining relative stability, managing risk, and avoiding financing decisions that move the enterprise too far from its current position.

When Leland (1994) and Leland and Toft (1996) produce different conclusions regarding the position of actual capital structure, enterprises should not make major adjustments based on a single model. Instead, the interval between the two results should be treated as a reference range and combined with information on cash flow, debt maturity, profitability, and investment needs.

Second, strengthen the capacity to generate internal financing by improving profitability and cash-flow quality.

Internal financing reduces dependence on external funding and gives enterprises greater flexibility in adjusting capital structure. Enterprises should therefore improve operating efficiency, control costs, enhance profitability, and strengthen operating cash-flow quality.

For enterprises with a positive GAP, the focus should be on controlling debt usage and reducing pressure from financial obligations. Debt should not, however, be reduced mechanically. Profitability, cash flow, debt maturity, and probability of default should be considered jointly to determine the scale and pace of adjustment. Enterprises with a large positive GAP and high default risk should prioritize reducing debt pressure, limiting new borrowing obligations, and strengthening self-financing capacity.

Third, select and combine financing sources in accordance with the direction of capital-structure adjustment.

Enterprises should proactively combine equity, retained earnings, bank credit, corporate bonds, trade credit, and other appropriate financing sources on the basis of cost, maturity, flexibility, and risk.

Enterprises should limit the use of short-term financing for long-term needs. Long-term investments should preferably be financed with sources of corresponding maturity to reduce refinancing pressure and liquidity risk.

For enterprises that need to reduce debt, adjustment can be achieved by limiting new borrowing, using cash flow and retained earnings to repay debt, extending maturities where appropriate, or increasing equity when conditions permit. For enterprises able to increase debt usage, the choice of debt source should be based on cash-flow generation capacity and the maturity of the financed assets.

Fourth, strengthen debt-maturity, cash-flow, and default-risk management.

The research results show that the debt ratio is not the only determinant of probability of default. Enterprises should therefore integrate capital-structure management with cash-flow forecasting, debt-repayment schedules, and the ability to meet financial obligations.

Enterprises should prepare cash-flow plans under different scenarios, monitor maturing debts, avoid concentrating payment obligations at a single point in time, and maintain appropriate liquidity reserves. Enterprises with high asset volatility or rising probability of default should be more cautious about taking on additional debt even when the current debt ratio is not high.

Fifth, improve the mechanism for periodic monitoring and updating of capital structure.

Enterprises should incorporate capital-structure assessment into their regular financial-management processes. Indicators should include not only book debt ratios but also market-value-based capital structure, GAP, profitability, cash flow, debt maturity, and risk indicators.

When the market value of equity, interest rates, profitability, or investment needs change substantially, enterprises should update their assessment rather than continue using an optimal capital-structure level derived from historical data.

5.3. Recommendations for the State and regulatory authorities

First, continue developing financial markets and diversifying enterprises' financing channels. Balanced development of credit and capital markets provides enterprises with more financing options, reduces excessive dependence on bank credit, and facilitates the selection of financing sources suited to the maturity of capital use.

Second, enhance transparency and information quality in the market. The quality of corporate disclosure, market data, and credit information should continue to improve so that enterprises and capital providers can assess risk and financing capacity more accurately.

Third, continue improving conditions for the development of the corporate bond market and other long-term financing sources. Expanding long-term funding is important for enterprises investing in long-term assets and reducing maturity mismatches between assets and financing.

Fourth, improve the quality of databases and credit-risk assessment systems. Access to reliable information on enterprises' financial position, credit status, and risk can reduce information asymmetry and support more effective capital pricing and allocation.

Fifth, maintain a stable and transparent macroeconomic and financial-policy environment. Sharp fluctuations in interest rates and credit conditions can change the cost of debt and access to financing. A stable environment enables enterprises to formulate long-term financing plans and adjust capital structure appropriately.

CONCLUSION

The dissertation examines the capital structure of listed consumer goods enterprises in Vietnam during 2015–2024 by integrating analysis of actual capital structure, determination of optimal capital structure, assessment of probability of default, measurement of the gap between actual and optimal capital structure, and analysis of factors affecting this gap.

The results show that the capital structure of consumer goods enterprises differs substantially over time, by firm size, and by industry group. Determining optimal capital structure under Leland (1994) and Leland and Toft (1996) shows that appropriate debt usage differs across enterprises and is not constant over time. A common debt ratio for the entire sector therefore cannot fully reflect the specific conditions of each enterprise.

The probability-of-default results from KMV, Leland (1994), and Leland and Toft (1996) show that default risk varies substantially over time and depends not only on the debt ratio but also on asset value, asset volatility, and the default threshold. Integrating capital-structure assessment with probability of default therefore provides a more complete view of enterprises' financing position and risk.

GAP analysis shows that, on average, actual capital structure is above the optimal level under both Leland (1994) and Leland and Toft (1996), while enterprises exist with actual capital structure above, below, and close to the optimal level. The two models generally provide conclusions in the same direction but are not fully identical, indicating that optimal capital structure should be used as a reference benchmark rather than a rigid target ratio.

The panel-data model further clarifies the role of firm characteristics in the gap between actual and optimal capital structure. Using one-year-lagged explanatory variables, firm and year effects, and a robustness check based on the absolute value of GAP enables assessment of both the direction and magnitude of deviations between the two capital-structure positions.

Based on the research findings, the dissertation recommends improving capital structure in a differentiated manner according to each enterprise's position. Enterprises should determine where actual capital structure lies relative to the optimal level while also considering probability of default, profitability, cash flow, financing needs, and asset characteristics before selecting an adjustment direction. Improving capital structure therefore does not mean that all enterprises should increase or reduce debt; rather, it requires selecting and combining financing sources in accordance with the specific conditions and position of each enterprise.

LIST OF AUTHOR'S RESEARCH RELATED TO THE THESIS

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