

# ***Capital Structure, Weighted Average Cost of Capital and Corporate Valuation: A Case Study of Costco Wholesale Corporation***

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**Abstract.** In modern corporate finance, the weighted average cost of capital is an important indicator for evaluating financing decisions, investment projects and enterprise valuation. With changes in market interest rates, investor expectations and operating risks, enterprises need to understand how their capital structure affects the overall cost of capital. This study examines how capital structure affects weighted average cost of capital (WACC) and corporate valuation using Costco Wholesale Corporation as a case. Based on Costco's FY2024 financial data and market inputs around September 2024, the study estimates the cost of equity, after-tax cost of debt, and market value weights. The result shows that Costco's FY2024 WACC is 7.539%, WACC provides a practical framework for evaluating enterprise financing decisions and company valuation. The analysis of Costco Wholesale Corporation shows that maintaining a balance between debt and equity helps improve financing efficiency and supports long-term value creation. The findings in this paper suggest that Costco maintains a conservative capital structure and that WACC is useful for evaluating financing decisions and long-term firm value.

**Keywords:** Weighted Average Cost of Capital, Capital Structure, Corporate Valuation, Capital Asset Pricing Model, Costco Wholesale Corporation

## **1. Introduction**

Corporate finance is becoming increasingly important in modern enterprises because it guides enterprises on how to raise capital, allocate financial resources and create long-term shareholder value [1]. In an environment of rising interest rates, market fluctuations and economic uncertainty, enterprises must carefully evaluate financing and investment decisions. Therefore, the weighted average cost of capital has become a key financial indicator. It represents the overall financing cost and serves as the benchmark discount rate in enterprise valuation [1, 2]. Improper estimation of weighted average cost of capital (WACC) may lead managers to accept unprofitable projects or give up valuable investment opportunities, ultimately affecting the competitiveness and sustainable development of enterprises [2].

The existing literature has extensively explored enterprise financing decisions and valuation methods. Classic theories, including the Modigliani-Miller theorem, trade-off theory and pecking

order theory, explain how enterprises determine their financing structure and financing costs [3-5]. At the same time, the capital asset pricing model (CAPM) is the most widely accepted method for estimating equity costs [6, 7], while the discounted cash flow model establishes WACC as the standard discount rate for enterprise valuation [2]. However, previous studies often examine capital structure, WACC and enterprise valuation independently, and discussion of how these concepts interact within a unified analytical framework supported by actual company evidence remains relatively limited.

To address this research gap, this article discusses how capital structure affects the weighted average cost of capital, and how changes in WACC further affect corporate valuation and financial decision-making. This study chooses Costco Wholesale Corporation as a case because of its stable financial performance, transparent information disclosure, and representative financing characteristics. The research adopts case analysis, financial statement analysis and WACC estimation to examine the relationship between financing decision-making and enterprise value. This study aims to provide practical reference for managers who seek to optimize capital structure and investors who evaluate the financial performance of enterprises.

## **2. Literature review**

### **2.1. Evolution of weighted average capital cost research**

The concept of WACC has gradually developed into one of the most important analytical tools in the field of corporate finance. Initially, financial decision-making mainly focuses on accounting profits and historical financial performance. However, with the development of financial markets and investment evaluation methods, researchers gradually realize that profitability alone cannot accurately measure whether an enterprise creates value for shareholders. The return generated by an investment should be compared with the opportunity cost of the invested capital. Therefore, WACC reflects the minimum rate of return required by creditors and equity investors, thus becoming an important tool for investment evaluation and enterprise valuation [2].

The theoretical basis of WACC can be traced back to the pioneering research of Modigliani and Miller in 1958, who put forward the theory of modern capital structure [3]. Under the assumption of a perfect capital market, they believe that the capital structure will not affect the value of the enterprise. Although these assumptions are rarely true in reality, their research lays the theoretical foundation for subsequent research on financing decision-making and capital costs. Their later work introduced the corporate income tax factor and proved that the tax shield effect of interest gave debt a financing advantage, thus directly linking the capital structure to the value of the enterprise [4].

Later, Myers put forward a trade-off theory, emphasizing that enterprises should weigh the tax benefits and the cost of financial difficulties brought about by debt, and use it to determine the optimal capital structure [5]. At the same time, the pecking order theory points out that due to the asymmetry of information between managers and investors, enterprises are more inclined to prioritize internal financing rather than issuing debt or equity [5]. These theories show that WACC is not fixed, but continues to be affected by financing options, market conditions, tax policies and investment risk awareness.

### **2.2. Capital structure theory and its impact on the weighted average cost of capital**

Capital structure has always been a key factor for enterprises and analysts. Although researchers generally believe that financing decisions will affect the value of the enterprise, different theories

provide different explanations for how companies should choose between debt and equity financing. It is crucial to understand these theoretical perspectives because they reveal the mechanism of capital structure affecting WACC.

The MM theorem lays the foundation for modern corporate financial research. Their subsequent research introduced the corporate income tax factor and pointed out that interest expenditure has a tax shield effect, indicating that debt financing can create additional value through tax savings [4]. On this basis, the trade-off theory believes that enterprises should weigh the tax advantages of debt financing with the cost of financial difficulties [5]. The after-tax cost of debt can be expressed as:

$$R_d(1 - T) \quad (1)$$

where  $R_d$  represents the pre-tax cost of debt and  $T$  is the corporate income tax rate.

Formula (1) shows that taxation reduces the actual cost of borrowing, making debt financing relatively more attractive. However, excessive borrowing increases financial risks and may increase debt costs and equity costs. Therefore, enterprises should pursue the optimal capital structure to minimize WACC, rather than simply increasing debt financing.

The pecking order theory provides another explanation from the perspective of information asymmetry between managers and investors. Myers and Majluf pointed out that enterprises usually give priority to internal financing, followed by debt financing, and the issuance of new shares is considered the least desirable financing method [5]. These theories together show that capital structure decision-making is influenced by factors such as taxation, financing costs and financial risks.

### 2.3. Equity cost estimation and capital asset pricing model

As mentioned in the previous section, the capital structure determines the ratio of debt to equity used by the enterprise. But it is not enough to determine the appropriate financing structure, because the cost of each source of capital must also be estimated. Compared with debt financing, it is more difficult to measure the cost of equity because it reflects the rate of return required by investors, not the interest payment agreed in the contract.

In the existing valuation model, CAPM is still the most widely used method for estimating equity costs. The model was proposed by Sharpe and further developed by Lintner 1965 [6, 7]. Its core point is that investors should be compensated for the time value of funds and the systemic risks incurred by holding company shares. The expression of the model is:

$$R_e = R_f + \beta(R_m - R_f) \quad (2)$$

where  $R_e$  denotes the cost of equity,  $R_f$  is the risk-free rate,  $\beta$  represents the firm's systematic risk, and  $(R_m - R_f)$  is the market risk premium.

Formula (2) shows that the necessary rate of return of equity depends not only on the market situation, but also on the degree of systemic risk faced by the enterprise. A higher beta coefficient means that the company is more sensitive to market fluctuations, so investors demand a higher expected rate of return, thus pushing up the overall capital cost of the enterprise. CAPM is still widely used because of its simplicity, transparency and practical applicability in enterprise valuation [2].

## 2.4. Does increasing debt reduce the weighted average cost of capital

The previous sections have explained the estimation method of equity and debt costs. But determining these financing costs does not mean that increasing debt will always reduce the WACC of the enterprise. Although early studies emphasized the tax advantages of debt financing, subsequent research showed that the relationship between leverage and WACC was more dynamic than originally envisaged.

The theory of trade-off believes that debt financing creates value through interest tax deductions, but with the increase of financial leverage, these gains will gradually decrease. Excessive borrowing will increase the risk of financial difficulties, reduce financial flexibility, and push up the cost of borrowing and the rate of return required by shareholders. Therefore, the decline in financing costs brought about by the tax shield may eventually be offset by higher financial risks [2, 5].

This view is also reflected in the financing decision-making of many mature enterprises. Companies with stable business performance tend to maintain a moderate level of leverage even if they have additional financing capacity. This evidence shows that financing decisions are not only affected by taxes, but also by industry characteristics, cash flow stability and management risk preferences.

## 2.5. Integrated financing cost: weighted average capital cost framework

After studying the estimation of equity costs and the role of debt financing, the next step is to integrate these components into a single measure of enterprise financing costs. WACC combines the required returns according to the proportion of debt and equity in the company's capital structure, thus providing an overall measure of financing costs. The calculation formula of the WACC model is as follows:

$$WACC = \frac{E}{V} R_e + \frac{D}{V} R_d(1 - T) \quad (3)$$

WACC does not evaluate a single source of financing alone, but reflects the minimum return required by all capital providers. Therefore, changes in financing costs or capital structure will directly affect the total capital cost of the enterprise. Because WACC includes both financing decision-making and investment risk, it is widely used as a benchmark discount rate in enterprise valuation and investment evaluation [1, 2]. Based on the above theoretical framework, the next chapter applies the WACC model to the recent financial data of Costco Wholesale Corporation.

## 3. Methodology

Based on the theoretical framework established in the previous chapter, this study adopts a single case study to explore the application of WACC in enterprise valuation. Costco Wholesale Corporation was chosen as the research object because it is one of the largest retail enterprises in the world, with stable business performance, transparent financial reporting, and publicly available financial information.

The empirical analysis is mainly based on Costco's FY2024 10-K annual report and market data around September 2024 [8]. The market inputs include the 10-year U.S. Treasury yield, beta coefficient, market capitalization, and Damodaran implied equity market risk premium [9-12]. These data are used to estimate the cost of equity through CAPM, calculate the after-tax cost of debt, and determine Costco's WACC.

## 4. Results and discussion

### 4.1. Data collection and WACC estimation

According to the method described in the previous chapter, Costco's financial statements for fiscal year 2024 and public market information are used to estimate WACC. The estimation process combines equity cost, after-tax debt cost and the ratio of market value of equity to debt to determine the overall financing cost of the company.

Table 1 summarizes the key variables used in the WACC calculation. Equity costs are estimated by CAPM, while debt costs are adjusted according to Costco's actual corporate tax rate. Capital structure weights use market value rather than book value because market value better reflects current investor expectations [1, 2].

Table 1. WACC calculation inputs and estimated weighted average cost of capital for Costco FY2024

| Variables                                   | Value                 | Source      |
|---------------------------------------------|-----------------------|-------------|
| Beta (5Y)                                   | 0.87                  | [9]         |
| Market capitalization, September 2024       | \$390,810.706 million | [10]        |
| Fair value of long-term debt, FY2024        | \$5412 million        | [8]         |
| Carrying long-term debt, FY2024             | \$5919 million        | [8]         |
| Carrying long-term debt, FY2023             | \$6484 million        | [8]         |
| Interest expense, FY2024                    | \$169 million         | [8]         |
| 10-year Treasury yield, Sep. 3, 2024        | 3.846%                | [11]        |
| Damodaran implied equity risk premium, 2024 | 4.33%                 | [12]        |
| Effective tax rate, FY2024                  | 24.4%                 | [8]         |
| Cost of equity                              | 7.613%                | Calculation |
| Pre-tax cost of debt                        | 2.725%                | Calculation |
| After-tax cost of debt                      | 2.06%                 | Calculation |
| Equity weight                               | 98.634                | Calculation |
| Debt weight                                 | 1.366%                | Calculation |

Based on the data in Table 1, Costco's cost of equity is 7.613%, while its after-tax cost of debt is 2.060%. Because equity represents 98.634% of Costco's market-based capital structure, the final WACC is mainly driven by the cost of equity. The estimated WACC for Costco FY2024 is 7.539%. The calculation process is shown below:

$$R_e = 3.846\% + 0.87 \times 4.33\% = 7.613\% \quad (4)$$

$$R_d = \frac{169}{(5,919+6,484)/2} = 2.725\% \quad (5)$$

$$R_d (1 - T) = 2.725\% \times (1 - 24.4\%) = 2.06\% \quad (6)$$

$$\text{WACC} = 7.539\% \quad (7)$$

The calculation results provide an overall basis for evaluating Costco's financing costs and lay the foundation for the subsequent analysis of its financing strategy and enterprise valuation.

#### 4.2. Explanation of the result

The estimated WACC of 7.539% shows how Costco balances different sources of financing while maintaining long-term financial stability. Instead of pursuing the lowest financing cost by increasing borrowing, the company adopts a relatively conservative financing strategy, emphasizing sustainable growth and financial flexibility. This approach enables Costco to reduce the risk of financial difficulties while maintaining stable operations.

The calculation results also show that equity financing contributes much more to Costco's overall capital cost than debt financing because equity represents 98.634% of the company's market-based capital structure. Since equity investors need compensation for market risk, changes in systematic risk, investor expectations and market conditions may have a greater impact on Costco's WACC than moderate changes in borrowing costs.

These findings are consistent with the trade-off theory discussed in Chapter 2. Although debt financing has tax incentives, excessive leverage may increase financing risks and offset these advantages. Therefore, Costco's financing decision shows that maintaining an appropriate balance between debt and equity is more important than simply reducing financing costs.

#### 4.3. Practical significance

The empirical research results provide practical insights for enterprise financial management. Financing decision-making should not only focus on reducing borrowing costs, but should also consider financing costs, financial flexibility, tax factors and long-term strategic goals. A reasonable balance between debt and equity is more conducive to sustainable growth than an over-leveraged capital structure.

WACC should also be regarded as a dynamic financial indicator, not a fixed value. Changes in market interest rates, investor expectations and corporate financing policies may affect the overall cost of capital. Therefore, enterprises should regularly re-evaluate their capital structure to ensure that financing decisions remain consistent with the changing market environment. For investors, WACC can serve as an important benchmark for judging whether an enterprise's investment strategy is likely to create long-term shareholder value.

#### 5. Conclusion

Based on the empirical results, this study confirms that WACC provides a practical framework for evaluating enterprise financing decisions and company valuation. The analysis of Costco Wholesale Corporation shows that maintaining a balance between debt and equity helps improve financing efficiency and supports long-term value creation. The estimated WACC of 7.539% reflects Costco's overall cost of capital under its FY2024 capital structure.

The result also shows that Costco's WACC is mainly influenced by the cost of equity because equity accounts for most of the company's market-based capital structure. Although debt financing provides tax benefits, Costco does not rely heavily on debt to reduce financing costs. This supports the trade-off theory discussed earlier, because excessive debt may increase financial risk, reduce

financial flexibility, and raise the required return of investors. Therefore, the case of Costco shows that a conservative financing structure can still support stable enterprise value.

This study also suggests that WACC should be regarded as a dynamic financial indicator. Changes in market interest rates, investor expectations, risk-free rates, market risk premiums, and corporate financing policies may all affect a company's cost of capital. For managers, regularly evaluating WACC can improve investment decisions and help determine whether a project can create value. For investors, WACC provides a useful benchmark for understanding whether a firm's expected return is sufficient compared with its financing cost. Although this study focuses on Costco Wholesale Corporation, the analytical framework can also be applied to other listed enterprises. Future research may compare companies across different industries or examine how changes in interest rates affect WACC and corporate valuation over time.

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