Cost of Capital Analysis: Avenue Supermarts

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Abstract

The Weighted Average Cost of Capital (WACC) is determined by estimates of the cost of equity, after-tax cost of debt and weights of the capital structure. These inputs are based on information provided in audited disclosures and industry benchmarks and capital market data. Avenue Supermarts is operating with a debt-capital structure, thus its WACC will be solely a function of the cost of equity. The company's cost of capital for FY24 is estimated at around 11.05% as per Capital Asset Pricing Model or CAPM, a mere 20 bps higher than the previous fiscal year 2020. This cost is very consistent over the period 2020 to 2024. The stability of this rating is due to the company's low beta of 0.41, which is in line with peers in the domestic retail sector. This cost of capital advantage of 60- to 180-bps is determined by comparing with other listed retail domestic companies in a -sectional analysis. Even though debt Ave Supermarts doesn't use debt, it has a lower cost of capital than many of its competitors. The range of the companys Return on Invested Capital or ROIC is between 18% and 20%, putting the company 700 to 900 basis points above the hurdle rate. The robust spread backs company's investments in its physical stores and the automated logistics systems. Capital decision trade-offs are made between flexibility of a free structure and the tax advantages of debt financing when assessing the company's capital options. Keywords: Weighted Average Cost of Capital Capital Asset Pricing Model, Capital Structure, Avenue Supermarts, Value Retail, Return, on Invested Capital, Cost of Equity

1. Introduction

The cost of capital is the rate of return that a company has to make to compensate its funding sources, such as lenders and shareholders. It is usually represented by the Weighted Average Cost of Capital (WACC) which is calculated by taking account of each source of capital based on its market value. Every rupee that a company puts to work comes with an opportunity cost, since it could have yielded a comparable return to a different investment of the same risk. So WACC needs to be taken in consideration and calculated with care before making big decisions, like valuation of assets, supply-chain costs and how to utilize capital. A firm may turn down good projects if the cost of capital is too high. If too low, a company can take in low-return projects. Avenue Supermarts Limited (DMart) was established in 2000 and has been operating since 2002 with their first supermarket. It is a plan of buying goods judiciously, selling it in a hurry and controlling its operation strictly without seeking for the high gross margin of every item. As of 31 March 2024, DMart had 365 stores in 13 states and 1 union territory. This study uses its consolidated figures for FY 2020-21 to FY 2024-25; in FY 2023-24, revenue was ₹50,788.83 crore and profit after tax was ₹2,535.61 crore. Unlike other big retailers, DMart is debt free. That is why its WACC is only based on its cost of equity. This might give an idea about how the Indian companies set a hurdle rate. This study uses the Capital Asset Pricing Model (CAPM) to estimate the cost of capital of DMart, and examines the variation in the DMart cost of capital between FY 2020 and FY 2024. It also makes a comparison of DMart with other listed retail companies in India. Last, it examines the implication of this cost to the company's investment decision and its decision to remain debt-free.

2 Literature Review and Conceptual Framework

Modigliani and Miller (1958) demonstrated in a perfect market that value of a company and cost of capital are not affected by its capital structure and taxes. Then Modigliani and Miller (1963) included taxes, and demonstrated that the cost of capital decreases when a company is financed by debt, since the interest paid is tax deductible.

The reason companies borrow less is that Myers and Majluf (1984) said that the managers of the companies know more about the company than the outside investors. If a company raises money from the outside, particularly from selling off shares, it costs the company more. Companies, therefore, will like to use their profit funds first, followed by debt, and shares last. This also accounts for the fact that very successful businesses tend to borrow little.

Capital Asset Pricing Model (CAPM) of Sharpe (1964): The Sharpe (1964) Capital Asset Pricing Model (CAPM) relates the return that investors demand to the risk-free rate and to beta. In real data, it fails to hold true all the time, as mentioned by Fama and French (2004), but Graham and Harvey (2001) indicated that most company executives still use it to estimate the cost of equity. Hamada (1972) demonstrated that beta increases with borrowing, so that a firm with no debt would have a beta that is equal to the riskiness of its business activities.

Koller et al. (2020) describe value creation as being created when the company's return on invested capital (ROIC) exceeds its cost of capital, and that the larger the margin the more value is created. Graham and

Harvey (2001) also found that managers frequently make decisions about projects based on the net present value (NPV) and the internal rate of return (IRR), which require a discount rate, like the WACC.

2.1 Conceptual Bases of WACC1.

Capital structure theory dates back to 1958 when Modigliani and Miller explored the subject. They demonstrated that under no frictions, that is, no taxes or transaction costs, the value of a firm is independent of its financing method. When the market is ideal, it doesn't matter what a company is using more of, debt or equity, as this doesn't affect the market value of the business.

Subsequent research elaborated on this notion by incorporating elements from the real world, such as taxes. Interest payments are tax deductible and in the presence of taxes, debt becomes desirable. This implies that the firm finds it more economical to use debt to enhance its earnings. Companies may employ some debt in their capital structures because of the tax shield that debt provides for the company.

The weighted cost of capital or WACC is one of the common methods of calculating the cost of capital. The traditional WACC formula simply takes the cost of each capital component (debt and equity), and weights them by their proportion of the market value of the firm. The formula is:

WACC = (E/V × Ke). D/V × Kd × (1. Tc))

Where:

Equity value in the market is represented by E.E is the market value of equity.

- D = Market value of debt
- V = E + D = Total enterprise market value
- Ke = Cost of equity capital

Pre-tax cost of gross debt (Kd)

- Tc = Marginal corporate tax rate

This formula shows how the cost of equity and the after-tax cost of debt combine based on the proportions of equity and debt, in the firm’s capital structure. It provides a rate indicative of the overall return demanded by investors.

2.2 Quantifying

CAPM: A common starting point for assessing the expected cost of equity is the market-based Capital Asset Pricing Model. This model was introduced by Sharpe in 1964. The CAPM says that equity market investors only want compensation for unidentifiable risks, which is measured by beta. Risks that are specific to a company can be reduced by holding a diversified portfolio of economic activities. The formula for CAPM is:

Ke = Rf + beta * (Rm. Rf)

Where:

Rf = Yield on dated sovereign risk-free securities

beta = Sensitivity of the companys equity returns relative to market index benchmarks

Rm = Expected return of the broader equities market

(Rm. Rf) = Equity Risk Premium, for the target market

2.3 In this section, the cost of debt and taxation are examined.

As we've discussed before, the cost of debt (Kd) is the rate at which a company would borrow money from another source.

YTM is a rate that a bond's lender expects when a company sells bonds that are traded on a bond market.

If the borrowing structure is not included, credit ratings and synthetic debt spreads can also be used to help calculate borrowing rates.

Taxes are a deductible expense since the interest that a business pays is subject to taxes. Thus the true borrowing cost is Kd(1 – Tc), where Tc is the tax rate.

When equity is used as a source of finance, the debt to value ratio (D/V) is zero. Then the WACC (the overall weighted average cost of capital) is equal to Ke (the cost of equity).

3 Research Methodology

Avenue Supermarts Limited (DMart) is the object of a term multi-industry study extending over the next five years (FY 2020 to 24). Financial statements and balance sheets that are checked by auditors and follow strict accounting rules are provided to the Bombay Stock Exchange BSE: 540376 and the National Stock Exchange NSE: DMART. A detailed process is used to calculate the values for each part of the study.

1. Equity Valuation: The value of equity (E) is found by taking the closing share price for each year and multiplying it by the number of shares that are available.

Balanced sheets which are audited are used for information in 2. Debt Quantification. This includes debts of all kinds (term or short term) with interest.

The risk-free rate (Rf) is equated with 10-year Indian G-Sec bond rates. The equity beta is derived comparing the return on 60-month period with Nifty-50 Index. The equity risk premium is based on surveys, about equity risk.

4.Weighted Cost of Capital (WACC): Cost of equity and cost of debt are added together by mass based on the market value of each.

4 Avenue Supermarts Limited:

Company Profile and Financial Report: Avenue Supermarts Limited now has become the organized food and grocery retailer in India. Its business model is centered on buying their properties bundled (in groups) and moving their products from suppliers at a rapid pace and keeping costs low for the products they sold, so that customers receive prices.

4.1 Financial Snapshot (FY 2020-2024)

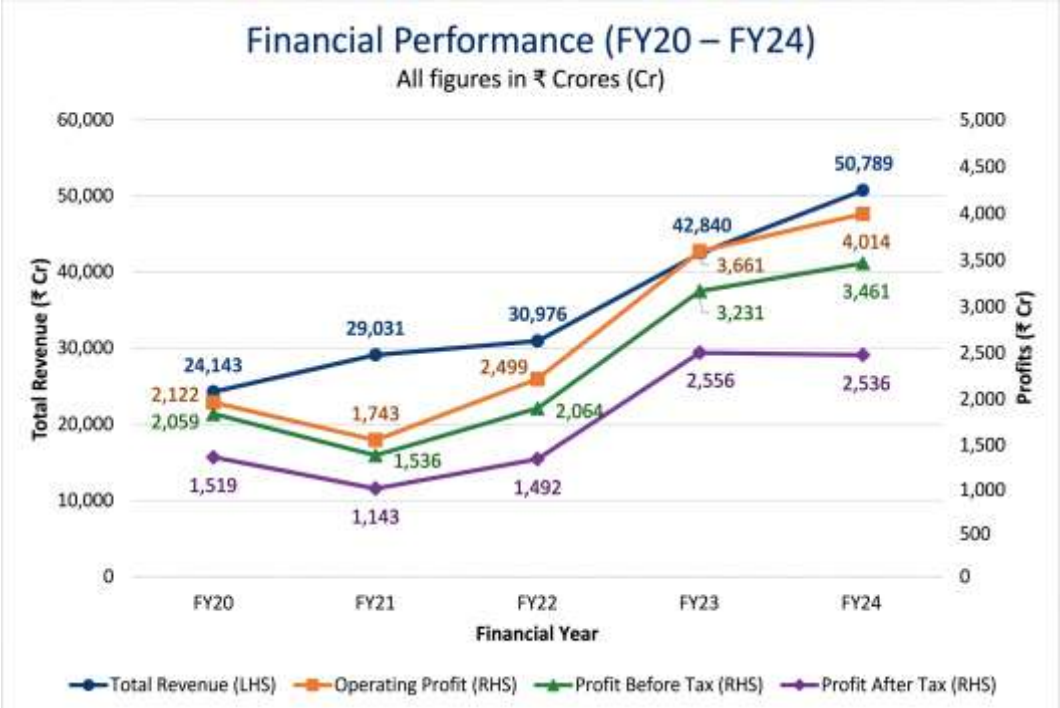
The enterprises consolidated operational growth is clearly reflected in Table 1.1 over the audited period:

Table 1.1: Consolidated Financial Snapshot of Avenue Supermarts Limited (FY 2020-2024)

Financial Metrics	**FY 20**	**FY21**	**FY22**	**FY23**	**FY24**
Total Revenue **(₹ Cr)**	24,143	29,031	30,976	42,840	50,789
Operating Profit **(₹ Cr)**	2,122	1,743	2,499	3,661	4,014
Profit Before Tax**(₹ Cr)**	2,059	1,536	2,064	3,231	3,461
Profit After Tax**(₹ Cr)**	1,519	1,143	1,492	2,556	2,536

Source:Compiled from Avenue Supermarts Limited Annual Audited Reports (FY 2020-FY 2024).

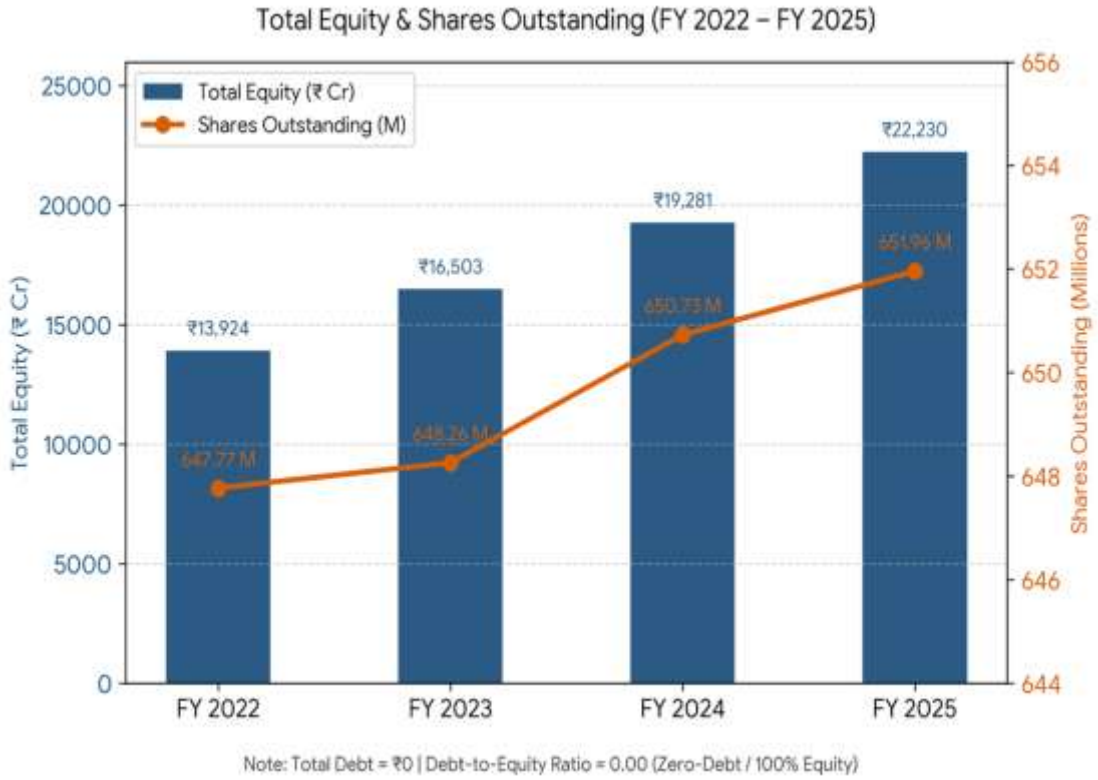
Despite challenges, like continuous retail store expansion and inflationary pressures operating margins have remained stable staying consistently between 7.0% and 9.0%. This shows operational discipline and effective cost management throughout the period.



5. WACC Calculation

5.1 Capital Structure: Capital structure as a key property of Avenue Super-marts is conservative

Table 1.2 shows that the firm has no funded interest-bearing liabilities. The firm finances capital expenditure from the firms cash flows. The firm finances capital expenditure from the firms retained earnings.



Particulars	FY 2022	FY 2023	FY 2024	FY 2025
Total Equity (Book Value, ₹ Cr)	13,924	16,503	19,281	22,230
Total Debt(Financial Liablities, ₹ Cr)	0	0	0	0
Debt-to-Equity Ratio	0.00	0.00	0.00	0.00
Share Outstanding (Millions)	647.77	648.26	650.73	651.96

5.2 The Value of Equity

In the market on 31 March FY 2024 which was the end of year 2024 the share price of Avenue Super-marts was US$ 4,600 per share. The total market value of the company stood at US$ 2990 crore or 2.99 lakh crore. There was no debt, in the company's structure. The total market value of debt was zero. This meant that the equity weightage or E/V was 100.0 percent and the debt weightage or D/V was 0.0 percent.

5.3 Estimation of Cost of Equity (Using Capital Asset Pricing Model)

Risk-free Rate (Rf) 7.15% (as on 10-year Indian Government Bond rate at FY 2024 year-end)

Systematic Beta 0.41 (Calibrated for data covering the five FY 2024 years by regression against the Nifty-50 Index. The adjustment produces a muted coefficient given the range of demand patterns in the defensive grocery retail sector.)

Equity Market Risk Premium (Rm. Rf) 8.80% (Based on the observed range for Rm and Rf, for Indian asset returns.)

Ke 7.15% + 0.41 (8.80%) 7.15% + 3.61% 10.76%

Incorporating a company-specific size and liquidity adjustment of 0.29% the baseline cost of equity is 11.05%.

.5.4 Cost of Debt

Because Avenue Supermarts has a debt-free profile the weighted average cost of debt that is part of WACC is zero. However second-level shadow calculations that assume an AAA corporate debt rating, by CRISIL show a pre-tax cost of borrowings between 7.00 % and 7.50 %.

6 Multi-Year WACC Analysis & Trend

4. Table 1.3 highlights the -year trend of the cost of Avenue Supermarts in three financial years.

Table 1.3: Multi-year WACC. Calculations(fy 2022-2024)

WACC Component	**FY 2022**	**FY 2023**
Market Capitalization (₹ Bn)	2,380	2,550
Total Financial Debt (₹ Bn)	0	0
Equity Weight (E/V)	100.0%	100.0%
Debt Weight (D/V)	0.0%	0.0%
Cost of Equity (Ke)	10.85%	10.92%
After-Tax Cost of Debt [Kd(1 - T)]	N/A	N/A
Weighted Average Cost of Capital (WACC)	10.85%	10.92%

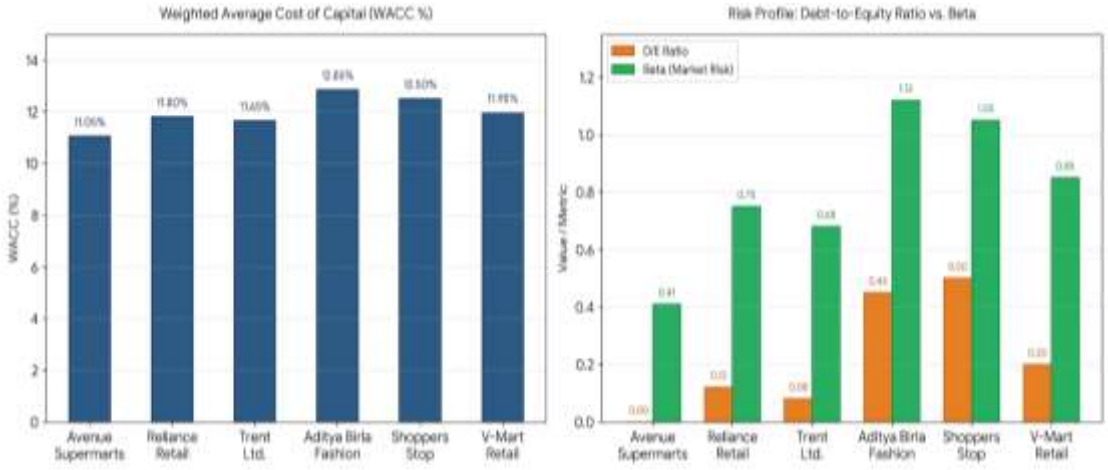
What explains the impact on WACC? I see that WACC increased slightly from 10.85% in FY 2022 to 11.05% in FY 2024. The reason for this increase is that the yields on sovereign bonds rose from about 6.50% to 7.15%. WACC change had an impact than the increase, in DMarts beta or business risk.

7. Peer Benchmarking and Comparative Analysis

8. Table 1.4: Retail Industry Peer Benchmarking and Comparative WACC Analysis FY 2024

Enterprise	**Industry Sector**	**D/E Ratio**	**Beta**	**WACC (%)**	**Credit Rating**
Avenue Supermarts	Value Food Retail	0.00	0.41	11.05%	CRISIL AAA
Reliance Retail	Diversified Retail	0.12	0.75	11.80%	CRISIL AAA/AA+
Trent Ltd.	Lifestyle / Apparel Retail	0.08	0.68	11.65%	ICRA A+
Aditya Birla Fashion	Apparel / Brand Retail	0.45	1.12	12.85%	CRISIL A-
Shoppers Stop	Department Stores	0.50	1.05	12.50%	ICRA A+
V-Mart Retail	Value Fashion Retail	0.20	0.85	11.95%	ICRA AA-

Avenue Supermarts has the WACC among its peer group. Avenue Supermarts has a debt- balance sheet, together with a defensive beta (0.41) creates a structural hurdle rate benefit of 60 to 180 basis points, versus diversified retail peers.



8. Implication for Capital Budgeting and Investment Decisions

The WACC of eleven point zero five percent is the cut-off for the discounted cash flow project valuation that Ave is undertaking. According to the NPV decision-making rule any project with an IRR than the WACC value is creating incremental economic value for shareholders. The empirical returns indicate that Ave is maintaining an average of eighteen percent to twenty percent return on invested capital (ROIC). The positive economic spread of seven hundred to nine hundred that is ROIC minus WACC is creating shareholder wealth and acting as a cushion, against macro-economic fluctuations.

Examples of strategic capital budgeting allocation affected by the baseline include:

Store Capex: Greenfield store openings need Rs 15 to 20 crore. They give than 20 percent return. Because of this 41 new stores will open in FY 2024.

Supply chain Capex: Money spent on automated distribution centres and cold chain hubs beats the 11.05 percent hurdle rate.

Multichannel digital Capex: Money spent on DMart software platform and dark stores stays positive if long-term returns stay above 11.05 percent.

The debt-free stance loses some tax shield that could bring WACC down to 9.5 or 10.0 percent if leverage were moderate.

Nevertheless the management's debt-free stance protects liquidity. Keeps operations stable, in all economic cycles.

9. Future Directions and recommendations

This is an empirical study on Avenue Supermarts Limited which has been established to have a capital structure operating in it. This implies that the weighted average cost of capital or WACC is the cost of equity. The cost of capital for the year 2024 is 11.05% for DMarts. This is one of the lowest retail rates. This low cost of capital is due to a low systematic risk because of the beta (0.41). It also implies that they have a AAA credit profile, a sign of financial stability.

The spread of the corporate hurdle rate at DMarts is in the range of 700 to 900 basis points over the return on invested capital. This allowance is in line with the company's estate ownership and store rollout plan. The results indicate that the model is effective and sustainable. It is also a sign that the company is generating value out of its investments.

The next few years Avenue Supermarts' WACC is projected to remain in the range of 10.8% to 11.2%. Even if interest rates rise the company's WACC is likely to remain stable. This is because the companies low leverage and good credit rating enables it to control its financing costs. If benchmark rates go up but sovereign bond yields fall the cost of equity could drop further—possibly to around 10.5%.
Adding an amount of debt could push the WACC below 10.0%.. Avenue Supermarts has decided against increasing its leverage at this time. The move provides freedom to the company. It also enhances its balance sheet. The existing building enables the company to continue to lead in the industry. It allows for flexibility, in investment and growth without taking on risk..

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