

Module 7 – (Ch. 14) Capital Structure in a Perfect Market

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Note: This summary will be delivered **in printed form only**. No PDF version is available.

Overview: Key points from Chapter 14 of *Berk & DeMarzo*

1) Equity vs. Debt and Capital Structure

Firms raise funds through **equity**, **debt**, or a **mix** of both. The mix defines the firm's **capital structure**.
Main questions: Does leverage affect investment decisions? Does it change **firm value**?

2) Unlevered vs. Levered Equity

Changing financing from all-equity to debt + equity only **reallocates risk and return** between investors—it does not change total enterprise value.

- **Unlevered equity:** expected return R_u
- **Debt:** expected return R_d (close to risk-free)
- **Levered equity:** riskier, so higher expected return.

3) MM Proposition I – Capital Structure Irrelevance

In perfect markets: $V_L = V_U = \text{PV}(\text{Assets CFs})$.

Investors can use **homemade leverage** (borrow or lend personally) to replicate any firm leverage; therefore **capital structure does not affect value**.

4) MM Proposition II – Leverage and the Cost of Equity

$$R_e = R_u + \frac{D}{E}(R_u - R_d).$$

As leverage rises, equity becomes riskier and investors require a higher expected return.

5) WACC in Perfect Markets (No Taxes)

$$R_u = R_a = R_{\text{WACC}} = \frac{E}{D + E}R_e + \frac{D}{D + E}R_d.$$

Even though debt has a lower cost of capital, the firm's **WACC remains unchanged**, so enterprise value is independent of leverage.

6) Levered and Unlevered Betas

$$\beta_u = \frac{E}{D + E}\beta_e + \frac{D}{D + E}\beta_d, \text{ and } \beta_e = \beta_u + \frac{D}{E}(\beta_u - \beta_d).$$

With risk-free debt ($\beta_d \approx 0$), $\beta_e \approx \beta_u \left(1 + \frac{D}{E}\right)$. Leverage amplifies systematic risk.

7) Common Capital Structure Fallacies

- **“Leverage raises EPS, so value increases.”** EPS may rise, but so does risk; R_e increases and the stock price is unchanged.
- **“Issuing equity dilutes shareholders.”** Issuing new equity at fair value for a zero-NPV project leaves the **share price unchanged**; only the project’s NPV affects value.

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