

THE BIG PICTURE OF CORPORATE FINANCE

Marian Moszoro

IESE Occasional Papers seek to present topics of general interest to a wide audience.

IESE Business School – University of Navarra

Av. Pearson, 21 – 08034 Barcelona, Spain. Phone: (+34) 93 253 42 00 Fax: (+34) 93 253 43 43

Camino del Cerro del Águila, 3 (Ctra. de Castilla, km 5,180) – 28023 Madrid, Spain. Phone: (+34) 91 357 08 09 Fax: (+34) 91 357 29 13

Copyright © 2014 IESE Business School.

The Public-Private Sector Research Center is a Research Center based at IESE Business School. Its mission is to develop research that analyses the relationships between the private and public sectors primarily in the following areas: regulation and competition, innovation, regional economy and industrial politics and health economics.

Research results are disseminated through publications, conferences and colloquia. These activities are aimed to foster cooperation between the private sector and public administrations, as well as the exchange of ideas and initiatives.

The sponsors of the Public-Private Sector Research Center are the following:

- Ajuntament de Barcelona
- Departament d' Economia i Coneixement de la Generalitat de Catalunya
- Departament d' Empresa i Ocupació de la Generalitat de Catalunya
- Diputació de Barcelona
- Endesa
- Fundació AGBAR
- Institut Català de les Empreses Culturals (ICEC)
- Mediapro
- PricewaterhouseCoopers
- Sanofi
- ATM, FGC and TMB

The contents of this publication reflect the conclusions and findings of the individual authors, and not the opinions of the Center's sponsors.

THE BIG PICTURE OF CORPORATE FINANCE

Marian Moszoro¹

Abstract

Corporate finance is an intricate but uncomplicated area of business once basic concepts have been grasped in a big picture. These charts depict a graphical representation of this “big picture” approach to corporate finance and comprehensibly present the following functional areas, concepts and tools. Functional areas: working capital management, capital budgeting, capital structure, business valuation, and payout policy. Concepts: working capital requirements vs. working capital, sustainable growth, book vs. market value, short-term vs. long-term decisions, cash flows, leverage, cost of capital, risks and returns, coverage ratios. Tools: uses and sources of finance, cash conversion cycle, DuPont analysis, valuation multiples, and cash flows discounted at the appropriate rate. Chart 1 shows a company that is in financial distress, while Chart 2 shows a company with cash surplus. The document includes a glossary that provides succinct definitions of key corporate finance terms. “The Big Picture of Corporate Finance” constitutes a handy support material for educators and practitioners of corporate finance.

JEL Classification: G31, G32, G33, G35

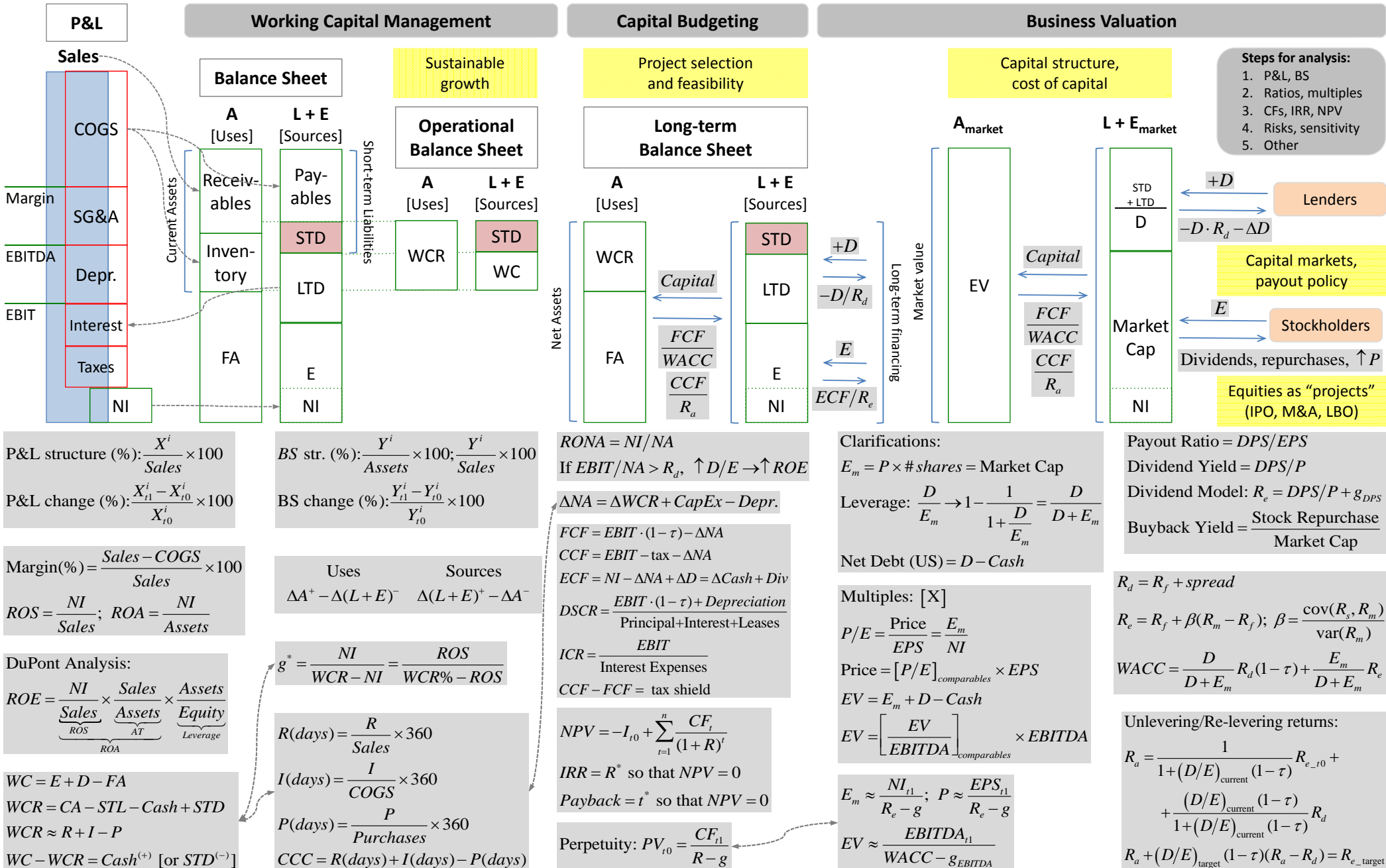
Keywords: Working Capital Management, Capital Budgeting, Business Valuation, Payout Policy

¹ Lecturer, IESE

The Big Picture of Corporate Finance

Short-term Financial Decisions

Long-term Financial Decisions



P&L structure (%): $\frac{X^i}{Sales} \times 100$

P&L change (%): $\frac{X_{t1}^i - X_{t0}^i}{X_{t0}^i} \times 100$

Margin(%) = $\frac{Sales - COGS}{Sales} \times 100$

$ROS = \frac{NI}{Sales}; ROA = \frac{NI}{Assets}$

DuPont Analysis:

$ROE = \underbrace{\frac{NI}{Sales}}_{ROS} \times \underbrace{\frac{Sales}{Assets}}_{AT} \times \underbrace{\frac{Assets}{Equity}}_{Leverage}$

$WC = E + D - FA$
 $WCR = CA - STL - Cash + STD$
 $WCR \approx R + I - P$
 $WC - WCR = Cash^{(+)} [or STD^{(-)}]$

BS str. (%): $\frac{Y^i}{Assets} \times 100; \frac{Y^i}{Sales} \times 100$

BS change (%): $\frac{Y_{t1}^i - Y_{t0}^i}{Y_{t0}^i} \times 100$

Uses: $\Delta A^+ - \Delta(L + E)^-$ | Sources: $\Delta(L + E)^+ - \Delta A^-$

$g^* = \frac{NI}{WCR - NI} = \frac{ROS}{WCR\% - ROS}$

$R(\text{days}) = \frac{R}{Sales} \times 360$

$I(\text{days}) = \frac{I}{COGS} \times 360$

$P(\text{days}) = \frac{P}{Purchases} \times 360$

$CCC = R(\text{days}) + I(\text{days}) - P(\text{days})$

$RONA = NI/NA$
 If $EBIT/NA > R_d, \uparrow D/E \rightarrow \uparrow ROE$

$\Delta NA = \Delta WCR + CapEx - Depr.$

$FCF = EBIT \cdot (1 - \tau) - \Delta NA$

$CCF = EBIT - \text{tax} - \Delta NA$

$ECF = NI - \Delta NA + \Delta D = \Delta Cash + Div$

$DSCR = \frac{EBIT \cdot (1 - \tau) + Depreciation}{\text{Principal} + \text{Interest} + \text{Leases}}$

$ICR = \frac{EBIT}{\text{Interest Expenses}}$

$CCF - FCF = \text{tax shield}$

$NPV = -I_{t0} + \sum_{t=1}^n \frac{CF_t}{(1 + R)^t}$

$IRR = R^*$ so that $NPV = 0$

$Payback = t^*$ so that $NPV = 0$

Perpetuity: $PV_{t0} = \frac{CF_{t1}}{R - g}$

Payout Ratio = DPS/EPS

Dividend Yield = DPS/P

Dividend Model: $R_e = DPS/P + g_{DPS}$

Buyback Yield = $\frac{\text{Stock Repurchase}}{\text{Market Cap}}$

$R_d = R_f + \text{spread}$

$R_e = R_f + \beta(R_m - R_f); \beta = \frac{\text{cov}(R_s, R_m)}{\text{var}(R_m)}$

$WACC = \frac{D}{D + E_m} R_d (1 - \tau) + \frac{E_m}{D + E_m} R_e$

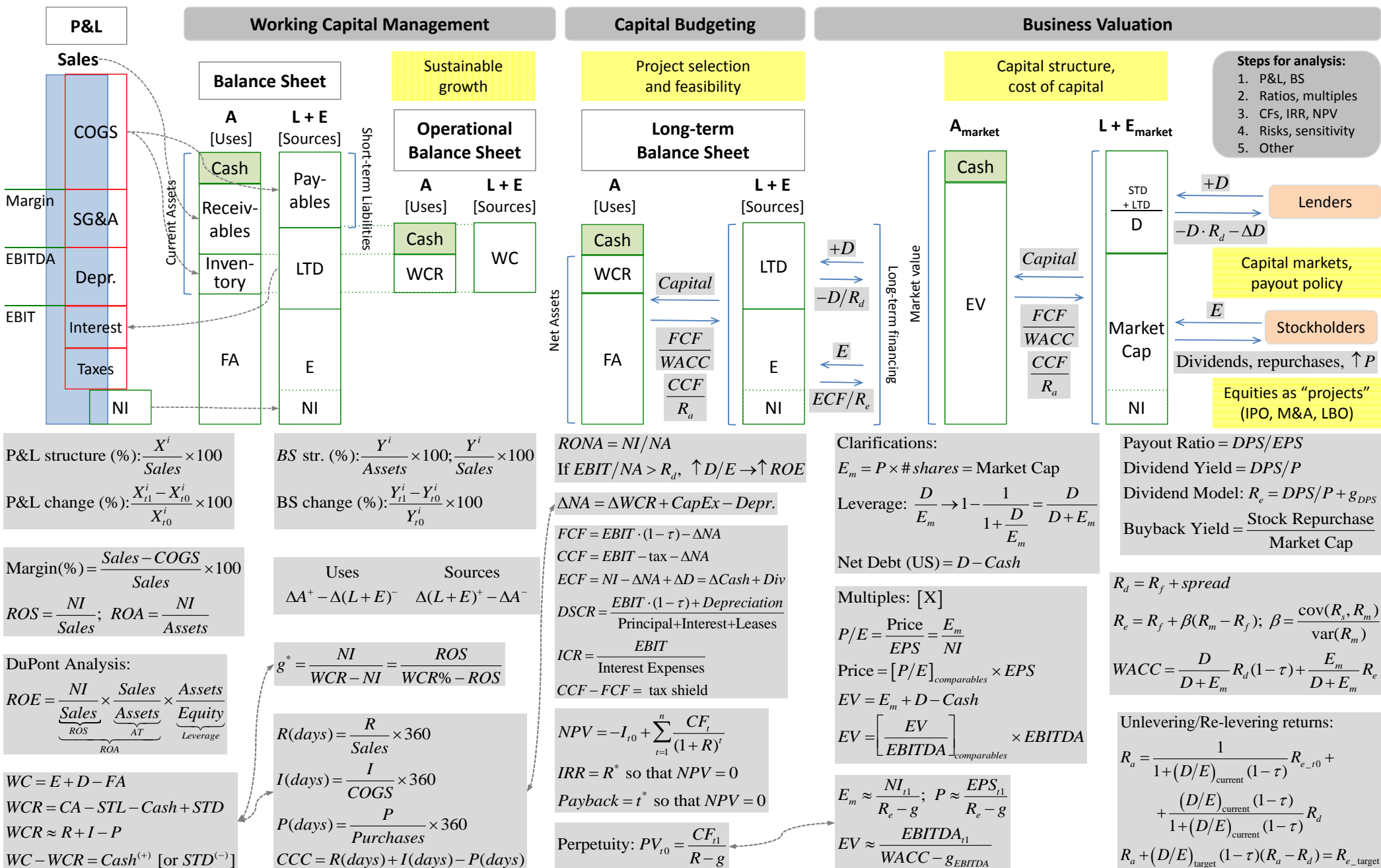
Unlevering/Re-levering returns:

$R_a + (D/E)_{\text{target}} (1 - \tau) (R_a - R_d) = R_{e_{\text{target}}}$

The Big Picture of Corporate Finance

Short-term Financial Decisions

Long-term Financial Decisions



At Book Value

At Market Value

Glossary

Buyback: A way of giving back money to the shareholders by repurchasing shares

Capital: Financing from debt and equity

Capital Asset Pricing Model (CAPM): Describes the relationship between risk and expected return on equity and is used in the pricing of risky securities

Capital Cash Flow (CCF): Cash produced by the asset after tax payment and available to the capital providers

Cash Conversion Cycle (CCC): Time it takes to recover money invested in operations

Cost of Debt (R_d): Annual equivalent rate of interest expenses and debt-related fees; equals the IRR of debt service

Cost of Goods Sold (COGS): Variable operating costs

Current Assets (CA): Assets whose life is shorter than one year; operational assets

Debt Beta (β_d): A measure of the volatility, or systematic risk, of a bond or portfolio of bonds; normally, it is assumed to be close to zero

Debt Market Premium (DMP): Spread between the risk-free rate and a debt security or portfolio of debt securities

Debt Service Coverage Ratio (DSCR): Measures an entity's ability to produce enough cash to cover its debt payments (including leases). A minimum DSCR ratio of 1 may be used as a loan condition or covenant, the breaching of which may, in some circumstances, be considered an act of default

Dividend per Share (DPS): Total dividends paid out over an entire year (including interim dividends but not including special dividends) divided by the number of outstanding ordinary shares issued

Earnings Before Interest and Tax (EBIT): A measure of a firm's profitability that excludes interest and income tax expenses; it is used for FCF and valuation calculations

Earnings Before Interest, Tax, Depreciation, and Amortization (EBITDA): A measure of a firm's profitability that excludes interest, income tax expenses, and depreciation; it is widely used in multiple-based valuation as the measure is unaffected by the capital structure, differences in depreciation methods, goodwill accounting, and deferred tax

Earnings per Share (EPS): Net income divided by shares outstanding

Equity Cash Flow (ECF): Cash available to shareholders after debt service

Equity Market Risk Premium (EMRP): Market return (R_m) minus risk-free rate (R_f)

Fixed Assets (FA): Assets whose life is longer than one year

Free Cash Flow (FCF): Cash produced by the assets after tax and available to capital providers. CCF and FCF differ in the tax treatment. The difference between CCF and FCF is the tax shield

Initial Public Offering (IPO): A type of public offering where shares of stock in a company are sold to the general public, on a securities exchange, for the first time

Interest Coverage Ratio (ICR): Used to determine how easily a company can pay interest on its outstanding debt. When a company's interest coverage ratio is 1.5 or lower, its ability to meet interest expenses may be questionable. ICR below 1 indicates the company is not generating sufficient revenues to satisfy interest expenses

Internal Rate of Return (IRR): Rate at which the NPV of a stream of cash flows equals zero; used to compare returns across different assets

Leverage: Amount of debt used to finance a firm's assets; borrowed capital increases the potential return of an investment, i.e., if $EBIT/NA > R_d$, then an increase in leverage increases ROE

Leveraged Buyout (LBO): Acquisition of a company using a significant amount of borrowed money to cover the cost of acquisition. It allows companies to make large acquisitions without having to commit a lot of their own capital

Loan Life Coverage Ratio (LLCR): Gives an estimate of the credit quality of the project from a lender's perspective. It ranges from 1.25, in a highly leveraged infrastructure investment, to 2.5 or higher in an oil and gas transaction

Management Buyout: An LBO performed by the management of the acquired company

Market Beta (β): A measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole. Beta is used in the capital asset pricing model (CAPM), a model that calculates the expected return of an asset based on its beta and expected market returns

Market Capitalization (Market Cap): Market value of equity; equals share price times number of shares outstanding

Market Return (R_m): Expected return from a diversified portfolio of stocks; long-term averages of stock indices are commonly used as a proxy for market return

Multiple: Value per unit; used in business valuation

Net Assets (NA): Assets that need to be financed with long-term sources; equals working capital requirements (WCR) plus fixed assets (FA)

Net Debt: Debt minus surplus cash (used in the US)

Net Present Value (NPV): Present value (PV) net of investments

Payback: Time to recover an investment; it may be computed on plain or discounted basis

Perpetuity: An asset that generates a perpetual streaming of cash flows

Present Value (PV): Current value of discounted future cash flows; "price" of a cash-flow yielding asset

Price-Earnings Ratio (P/E): A valuation ratio of a company's current share price compared to its per-share earnings

Required Return on Assets (R_a): Required return on assets, also called unlevered returns; when debt is zero, R_a equals R_e

Required Return on Equity (R_e): Required return on equity given its risk; "cost" of equity

Return on Assets (ROA): A measure of financial performance calculated as net income over total assets at book value

Return on Equity (ROE): A measure of financial performance calculated as net income over equity at book value

Return on Net Assets (RONA): A measure of financial performance calculated as net income over net assets at book value

Return on Sales (ROS): A measure of financial performance calculated as net income over sales

Risk-free Rate (R_f): Return of a security which does not depend on the performance of the market; 10-year T-bond yields are commonly used as a proxy for the risk-free rate

Selling, General, and Administrative Expenses (SG&A): Major non-production cost presented in an income statement

Short-term Liabilities (STL): Liabilities whose life is shorter than one year; operational liabilities

Sustainable growth rate (g^*): Sales growth that a company can support by relying on internal financing, i.e., without increasing debt or equity

Tax rate (τ): Rate at which income is taxed

Tax shield: Savings on paid tax due to lower taxable income

Weighted Average Cost of Capital (WACC): Rate that a company is expected to pay to finance its assets. WACC is the minimum return that a company must earn on its existing asset base to satisfy its creditors, owners, and other capital providers

Working Capital (WC): Long-term financing available to finance short-term needs

Working Capital Requirements (WCR): Amount of short-term assets that need to be financed with long-term sources. If $WCR > WC$, there is a need for financing; if $WCR < WC$, there is cash surplus