Finance for Managers

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The first section (*from accounting to corporate finance*) answers the following questions: What is the net income? Is it what the shareholders “earn”, what the company “earns”, what someone “earns”? What does shareholders´ equity mean? Is it money? We show that net income is an arbitrary number which depends on several decisions on the accounting of expenses and revenues. We use three different definitions of cash flow: equity cash flow (ECF), free cash flow (FCF) and capital cash flow (CCF) and answer to the question: When is net income equal to the equity cash flow?

The second section (*shareholder value creation and shareholders return*) defines, analyzes and calculates shareholder value creation. It also differentiates the expected return from the required return. The *all-shareholder return* is the return that all the shareholders of a company had in a period. It is equal to the hypothetical return of a unique shareholder of the company. It is also the return of a shareholder that always had a constant proportion of the shares. The *all-period shareholder return* is the return that a shareholder that maintained the shares for the whole period had. There are many *all-period shareholder returns,* depending on the actions of the shareholder during the period: fraction of dividends reinvested, fraction of shares sold when the company repurchased them, number of shares subscribed when the company increased capital… Most databases provide a specific *all-period shareholder return* valid for a shareholder that reinvested 100% of the dividends, did not sell any share in repurchases and did not subscribe any new share when the company increased capital. In many situations, there are substantial differences among these returns.

The third section (*topics and real cases on valuation*) shows that It is a big mistake to use betas calculated from historical data to compute the required return to equity for seven reasons. It also shows two real valuation cases of companies.

The fourth section (*other finance and investing topics*) shows that the Market Portfolio is not efficient and that it was very easy to beat the S&P500 in 2000-2018. It also shows confusions, errors and inconsistencies of several Utilities Regulators when they calculate WACCs using CAPM.

Keywords: Value, Price, Free cash flow, Equity cash flow, Capital cash flow, Book value, Market value, PER, Goodwill, Required return to equity, Working capital requirements

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Finance for Managers

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This book contains materials of the MBA and executive courses that I teach that are not included in my book ***Valuation and Common Sense*** **(**http://ssrn.com/abstract=2209089**).**

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Glossary

Accounting cash flow. Net Income plus depreciation.
Adjusted Book Value Difference between market value of assets and market value of liabilities. Also called Net Substantial Value or Adjusted Net Worth.
Adjusted present value (APV). The APV formula indicates that the firm value (E + D) is equal to the value of the equity of the unlevered company (Vu) plus the value of the tax shield due to interest payments.
Arbitrage pricing theory (APT) An asset pricing theory that describes the relationship between expected returns on securities, given that there are no opportunities to create wealth through risk-free arbitrage investments.
Arbitrage. The purchase and sale of equivalent assets in order to gain a risk-free profit if there is a difference in their prices.
Arbitration Alternative to suing in court to settle disputes between brokers and their clients and between brokerage firms.
Benchmark Objective measure used to compare a firm or a portfolio performance.
Beta. A measure of a security's market-related risk, or the systematic risk of a security.
Binomial option pricing model. A model used for pricing options that assumes that in each period the underlying security can take only one of two possible values.
Black-Scholes formula. An equation to value European call and put options that uses the stock price, the exercise price, the risk-free interest rate, the time to maturity, and the volatility of the stock return. Named for its developers, Fischer Black and Myron Scholes
Book value (BV) The value of an asset according to a firm's balance sheet.
Break-up Value Valuation of a company as the sum of its different business units
Call Option. Contract that gives its holder (the buyer) the right (not the obligation) to buy an asset, at a specified price, at any time before a certain date (American option) or only on that date (European option).
Capital Asset Pricing Model (CAPM) Equilibrium theory that relates the expected return and the beta of the assets. It is based on the mean-variance theory of portfolio selection.
Capital Cash Flow (CCF) Sum of the debt cash flow plus the equity cash flow.
Capital Market line. In the capital asset pricing model, the line that relates expected standard deviation and expected return of any asset.
Capital structure. Mix of different securities issued by a firm.
Capitalization Equity Market Value.
Cash budget. Forecast of sources and uses of cash.
Cash dividend. Cash distribution to the shareholders of a company.
Cash Earnings (CE) Net income before depreciation and amortization. Also called Accounting Cash Flow and Cash Flow generated by operations.
Cash Flow Return on Investment (CFROI) The internal rate of return on the investment adjusted for inflation.
Cash Value Added (CVA) NOPAT plus amortization less economic depreciation less the cost of capital employed.
Collection period. The ratio of accounts receivable to daily sales.
Company's value (VL) Market value of equity plus market value of debt
Constant growth model. A form of the dividend discount model that assumes that dividends will grow at a constant rate.
Consumer Price Index Measures the price of a fixed basket of goods bought by a representative consumer.
Convertible debentures Bonds that are exchangeable for a number of another securities, usually common shares.
Correlation Coefficient The covariance of two random variables divided by the product of the standard deviations. It is a measure of the degree to which two variables tend to move together.
Cost of capital. The rate used to discount cash flows in computing its net present value. Sometimes it refers to the WACC and other times to the required return to equity (Ke).
Cost of Leverage The cost due to high debt levels. It includes the greater likelihood of bankruptcy or voluntary reorganization, difficulty in getting additional funds to access to growth opportunities, information problems, and reputation…
Covariance. It is a measure of the degree to which two asset returns tend to move together.
Credit Rating Appraisal of the credit risk of debt issued by firms and Governments. The ratings are done by private agencies as Moody's and Standard and Poor's.
Credit Risk. The risk that the counterpart to a contract will default.
Cumulative preferred stock. Stock that takes priority over common stock in regard to dividend payments. Dividends may not be paid on the common stock until all past dividends on the preferred stock have been paid.
Current asset. Asset that will normally be turned into cash within a year.
Current liability. Liability that will normally be repaid within a year.
Debt Cash Flow (CFd) Sum of the interest to be paid on the debt plus principal repayments.
Debt's Market Value (D) Debt Cash Flow discounted at the required rate of return to debt (may be different than the Debt's book value).
Debt's book value (N) Debt value according to the balance sheet.
Default risk. The possibility that the interest of the principal of a debt issue will not be paid.

Default Spread Difference between the interest rate on a corporate bond and the interest on a Treasury bond of the same maturity.

Depreciation (Book) Reduction in the book value of fixed assets such as plant and equipment. It is the portion of an investment that can be deducted from taxable income.

Depreciation (Economic) ED (economic depreciation) is the annuity that, when capitalized at the cost of capital (WACC), the assets' value will accrue at the end of their service life.

Derivative. Financial instrument with payoffs that are defined in terms of the prices of other assets.

Discounted dividend model (DDM). Any formula to value the equity of a firm by computing the present value of all expected future dividends.

Discounted value of the tax shields (DVTS) Value of the tax shields due to interest payments.

Dispersion. Broad variation of numbers.

Diversifiable risk. The part of a security's risk that can be eliminated by combining it with other risky assets.

Diversification principle. The theory that by diversifying across risky assets investors can sometimes achieve a reduction in their overall risk exposure with no reduction in their expected return.

Dividend payout ratio (p) Percentage of net income paid out as dividends.

Dividend yield. Annual dividend divided by the share price.

Duration. A measure of the sensitivity of the value of an asset to changes in the interest rates.

Earnings Per Share (EPS) Net Income divided by the total number of shares.

Economic Balance Sheet Balance sheet that has in the asset side working capital requirements.

Economic Profit (EP) Profit after tax (net income) less the equity's book value multiplied by the required return to equity.

Economic Value Added (EVA). NOPAT less the firm's book value multiplied by the average cost of capital (WACC) and other adjustments implemented by the consulting firm Stern Stewart.

Efficient portfolio. Portfolio that offers the highest expected rate of return at a specified level of risk. The risk may be measured as beta or volatility.

Enterprise value (EV) Market value of debt plus equity

Equity Book Value (Ebv) Value of the shareholders' equity stated in the balance sheet (capital and reserves). Also called Net Worth.

Equity Cash Flow (ECF) The cash flow remaining available in the company after covering fixed asset investments and working capital requirements and after paying the financial charges and repaying the corresponding part of the debt's principal (in the event that there exists debt).

Equity Market Value (E) Value of all of the company's shares. That is each share's price multiplied by the number of shares. Also called Capitalization.

Equity value generation over time Present value of the expected cash flows until a given year.

Exercise price. Amount that must be paid for the underlying asset in an option contract. Also called strike price.

Fixed-income security. A security such as a bond that pays a specified cash flow over a specific period.

Franchise Factor (FF) "Measures what we could call the growth's ""quality"", understanding this to be the return above the cost of the capital employed."

Free Cash Flow (FCF) The operating cash flow, that is, the cash flow generated by operations, without taking into account borrowing (financial debt), after tax. It is the equity cash flow if the firm had no debt.

Goodwill Value that a company has above its book value or above the adjusted book value.

Gross domestic product (GDP). Market value of the goods and services produced by labor and property in one country including the income of foreign corporations and foreign residents working in the country, but excluding the income of national residents and corporations abroad.

Growth (g) Percentage growth of dividends or profit after tax.

Growth Value The present value of the growth opportunities.

Homogenous expectations. Situation (or assumption) in which all investors have the same expectations about the returns, volatilities and covariances of all securities.

IBEX 35 Spanish stock exchange index

Interest Factor The PER the company would have if it did not grow and had no risk. It is -approximately- the PER of a long-term Treasury bond.

Internal rate of return (IRR). Discount rate at which an investment has zero net present value.

Leverage ratio. Ratio of debt to debt plus equity

Leveraged buyout (LBO). Acquisition in which a large part of the purchase price is financed with debt.

Levered beta (bL) Beta of the equity when the company has debt

Levered Free Cash Flow (LFCF) Equity cash flow

Liquidation Value Company's value if it is liquidated, that is, its assets are sold and its debts are paid off.

Market portfolio. The portfolio that replicates the whole market. Each security is held in proportion to its market value.

Market risk (systematic risk). Risk that cannot be diversified away.

Market Value Added (MVA) The difference between the market value of the firm's equity and the equity's book value.

Market Value of Debt (D) Market Value of the Debt

Market-to-book ratio (E/Ebv) It is calculated by dividing the equity market value by the equity book value.

Net Operating Profit After Tax (NOPAT) Profit after tax of the unlevered firm.

Non systematic risk. Risk that can be eliminated by diversification. Also called unique risk or diversifiable risk.

Par value. The face value of the bond.

Pay in Kind (PIK) Financial instruments that pay interest or dividends using new financial instruments of the same type, instead of paying in cash.

Payout ratio (p) Dividend as a proportion of earnings per share.

Perpetuity. A stream of cash flows that lasts forever.

Put Option Contract that gives its holder the right to sell an asset, at a predetermined price, at any time before a certain date (American option) or only on that date (European option).

Real prices. Prices corrected for inflation.

Recurrent Cash Flows Cash Flows related only to the businesses in which the company was already present at the beginning of the year.

Relative PER The company's PER divided by the country's PER or the industry's PER.

Required Return to Assets (Ku) Required return to equity in the unlevered company

Required Return to Equity (Ke) The return that shareholders expect to obtain in order to feel sufficiently remunerated for the risk (also called Cost of Equity).

Residual income. After-tax profit less the opportunity cost of capital employed by the business (see also Economic Value Added and Economic Profit).

Residual value Value of the company in the last year forecasted.

Retained earnings. Earnings not paid out as dividends.

Return on assets (ROA). Accounting ratio: NOPAT divided by total assets. Also called ROI, ROCE, ROC and RONA. ROA = ROI = ROCE = ROC = RONA.

Return on Capital (ROC) See Return on assets

Return on Capital Employed (ROCE) See Return on assets

Return on equity (ROE). Accounting ratio: PAT divided by equity book value.

Return on investment (ROI). See Return on assets

Reverse valuation Consists of calculating the hypotheses that are necessary to attain the share's price in order to then assess these hypotheses.

Risk Free Rate (R_F) Rate of return for risk-free investments (Treasury bonds). The interest rate that can be earned with certainty.

Risk premium. An expected return in excess of that on risk-free securities. The premium provides compensation for the risk of an investment.

Security market line. Graphical representation of the expected return-beta relationship of the CAPM.

Share buybacks Corporation´s purchase of its own outstanding stock.

Share repurchase. A method of cash distribution by a corporation to its shareholders in which the corporation buy shares of its stock in the stock market.

Share's beta It measures the systematic or market risk of a share. It indicates the sensitivity of the return on a share to market movements.

Shareholder Return The shareholder value added in one year divided by the equity market value at the beginning of the year.

Shareholder Value Added The difference between the wealth held by the shareholders at the end of a given year and the wealth they held the previous year.

Shareholder Value Creation Excess return over the required return to equity multiplied by the capitalization at the beginning of the period. A company creates value for the shareholders when the shareholder return exceeds the required return to equity.

Shareholder Value Destroyer A company in which the required return to equity exceeds the shareholders return.

Specific risk. Unique risk.

Stock dividend. Dividend in the form of stock rather than cash.

Stock split. Issue by a corporation of a given number of shares in exchange for the current number of shares held by stockholders. A reverse split decreases the number of shares outstanding.

Substantial Value Amount of investment that must be made to form a company having identical conditions as those of the company being valued.

Systematic risk. Risk factors common to the whole economy and that cannot be eliminated by diversification.

Tax Shield The lower tax paid by the company as a consequence of the interest paid on the debt in each period.

Treasury bill. Short-term, highly liquid government securities issued at a discount from the face value and returning the face amount at maturity.

Treasury bond or note. Debt obligations of the federal government that make semiannual coupon payments and are issued at or near par value.

Treasury stock. Common stock that has been repurchased by the company and held in the company's treasury.

Unique risk See unsystematic risk.
Unlevered company´s value (Vu) Value of the equity if a company had no debt
Unsystematic risk. Risk that can be eliminated by diversification.
Variance. A measure of the dispersion of a random variable. Equals the expected value of the squared deviation from the mean.
Volatility The annualized standard deviation of the shareholder returns. It measures the share's total risk, that is, the market risk and the diversifiable risk.
Weighted average cost of capital before taxes ($WACC_{BT}$) Appropriate discount rate for the capital cash flow.
Weighted average cost of capital (WACC) Appropriate discount rate for the free cash flow.
Working Capital Requirements (WCR) The difference between current operational assets and current operational liabilities
Yield curve. A graph of yield to maturity as function of time to maturity.
Yield to maturity. Internal rate of return on a bond.

Notation

APV	Adjusted Present Value
BV	Book Value.
CAPM	Capital asset pricing model.
CCF	Capital Cash Flow
CE	Cash Earnings
CF	Cash Flow
CFd	Debt Cash Flow
CFROI	Cash Flow Return on Investment
CPI	Consumer Price Index
CVA	Cash Value Added
D	Market Value of the Debt
DCF	Discounted Cash Flow
Dep	Depreciation
Div	Dividends.
DPS	Dividend per share
DVTS	Discounted value of the tax shield.
E	Market Value of the Equity
EBIT	Earnings Before Interest and Taxes.
EBITDA	Earnings before interest, taxes, depreciation and amortization.
EBT	Earnings Before Tax
Ebv	Equity Book Value
ECF	Equity Cash Flow
ED	Economic depreciation
EG	Earnings growth
EMU	European Monetary Union
EP	Economic Profit
EPS	Earnings Per Share
EV	Enterprise value
EVA	Economic Value Added
FAD	Funds Available for Distribution
FCF	Free Cash Flow
FF	Franchise Factor
g	Growth rate.
G	Growth Factor
G_L	Present value of the taxes paid by the levered co.
GNP	Gross National Product
GOV	Present value of taxes paid to the government
Gu	Present value of the taxes paid by the unlevered company.
I	Interest payments
IBEX 35	Spanish stock exchange index

Inp	Interest not paid
IRR	Internal Rate of Return
Kd	Required Return to Debt, before taxes
Ke	Required Return to Equity
K_{TL}	Required return to tax in the levered company.
K_{TU}	Required return to tax in the unlevered co.
Ku	Required Return to Equity in the unlevered firm
LFCF	Levered Free Cash Flow
MVA	Market Value Added
N	Debt's book value or nominal value of debt
NFA	Net Fixed Assets
NI	Net income = profit after tax
NOPAT	Net operating profit after tax. Also *Earning before interest and after tax (EBIAT)* and *Net operating profit less adjusted taxes (NOPLAT)*
NPV	Net Present Value
NS	Number of shares
P	Share's price.
p	Pay – Out Ratio
PAT	Profit After Tax or Net Income
PBT	Profit Before Tax
PER	Price – Earnings Ratio
P_M	Expected Market Risk Premium
PV	Present Value
r	Cost of debt.
R_F	Risk-free interest rate
R_M	Market return.
ROA	Return on Assets. It is calculated by dividing the NOPAT by the equity and debt (at book value). Also called ROI, ROCE, ROC and RONA. ROA = ROI = ROCE = ROC = RONA.
ROC	Return on Capital
ROCE	Return on Capital Employed
ROE	Return on Equity. It is calculated by dividing the net income by the shares' book value.
ROGI	Return on Gross Investment
ROI	Return on Investment
RONA	Return on Net Assets
S	Sales
S&P500	Standard and Poor's 500 Index
β	Share's beta
βd	Debt's beta

β_L	Levered Beta
β_u	Unlevered Beta or beta of the assets
T	Tax rate
TBR	Total Business Return.
TSR	Total Shareholder Return.
UEC	Union of European Accounting Experts
V_L	Value of the levered company

Vu	Value of the unlevered company.
WACC	Weighted Average Cost of Capital
$WACC_{BT}$	WACC Before Tax
$WACC_{bv}$	Weighted Average Cost of Capital using weights of debt and equity at book value
WCR	Working Capital Requirements
σ	Volatility

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