3: Introduction to Corporate Finance

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Concepts

Time value of money (TVM)

Cost of Capital (Cost of Capital)

Reward v Risk

Business Quality

Time Value of Money

Money today is worth more than the same amount in the future

Due to earning potential, inflation and opportunity cost

Fundamental principle in finance and investment decisions

Components of TVM

Present Value (PV)

Future Value (FV)

Interest Rate (r)

Time Period (t)

Payments (PMT)

Future Value (FV)

$FV = PV \times (1 + r)^t$

Example: $1,000 invested at 5% annual interest for 3 years

$FV = 1000 \times (1.05)^3 = 1,157.63$

Present Value (PV)

PV = FV / (1 + r)^t

Example: Receiving $1,157.63 in 3 years at 5% interest

PV = 1157.63 / (1.05)^3 = $1,000

Used to determine today’s value of future cash flows

Applications of TVM

Investment decisions

Loan amortization and mortgages

Retirement planning

Valuation of bonds and annuities

Cost of Capital

Definition: Cost of obtaining funds to finance operations and investments

Key in corporate finance decisions

Guides capital structure and investment choices

Components of Cost of Capital

Cost of Debt: Interest expense on borrowed funds

Cost of Equity: Required return by equity investors

WACC: Blended cost of debt and equity

Risk-free Return

Definition: Return on an investment with zero risk

Common risk-free assets: Government securities (e.g., U.S. Treasury Bonds)

Importance: Baseline for assessing risk premiums

Risk-Adjusted Return

Risk-free return + Risk premium

Risk-premium:

Efficient market theory holds that risk-premium is volatility

Alternative definition is probability of permanent loss of capital

Calculating Cost of Capital

Cost of Debt = kd = (Interest Expense / Total Debt) * (1 - Tax Rate)

Cost of Equity = ke = Rf + β (Rm - Rf)

WACC = WACC = (D/D+E) * kd * (1 - Tax Rate) + (E/D+E) * ke

D = Amount of Debt

E = Amount of Equity

Compare TVM Examples - Time

	Example 1	Example 2
Risk-free Interest Rate	10%	10%
Present Value (PV)	$1,000	$1,000
Time	5 yrs	10 yrs
Future Value (FV)	$1,610	$2,590

Example of TVM and Cost of Capital

	Example 1	Example 2
Cost of Capital	5%	10%
Future Value (PV)	$1,000	$1,000
Time	5 yrs	5 yrs
Present Value (FV)	$784	$621

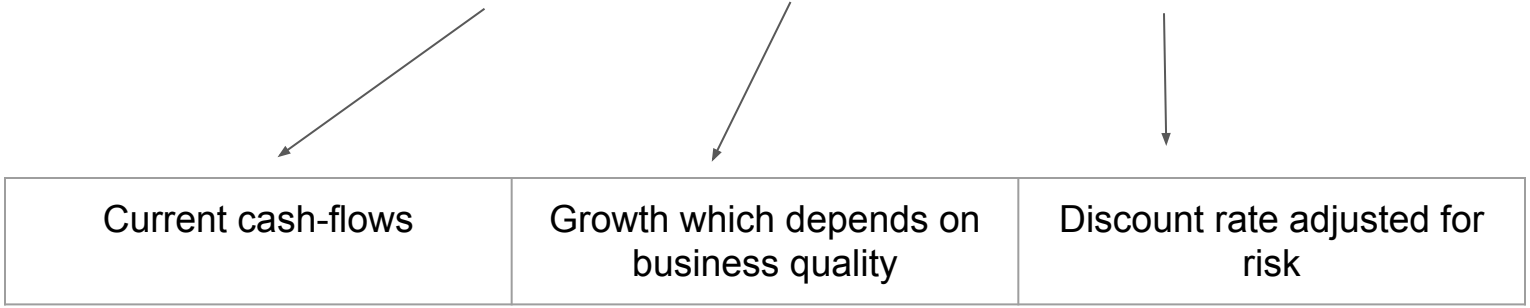
Risk-adjusted Return

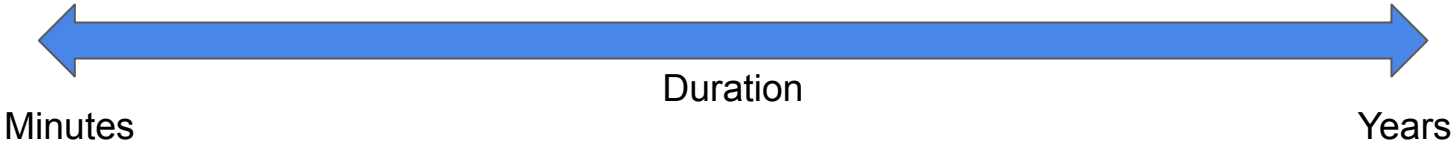
Quantitatively, risk can be measured by volatility of the asset prices

Qualitatively, risk depends on long-term impairment of capital

Security Analysis 101

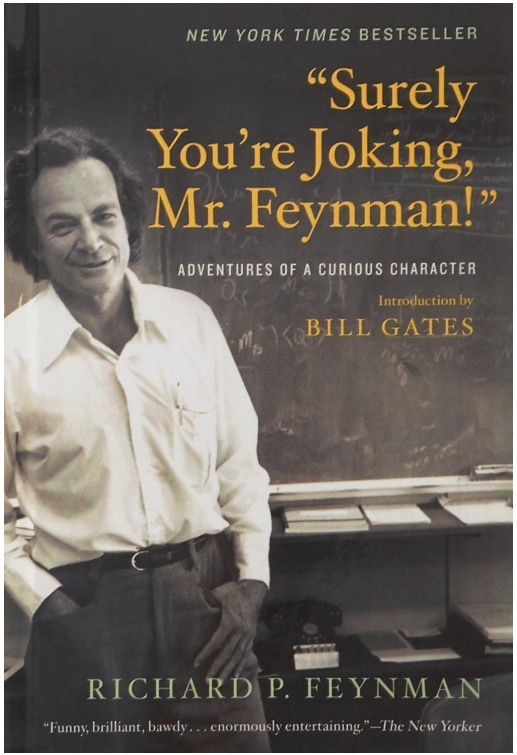
Value of a security is its **cash-flows** in **future periods** **discounted** to today





The first principle is that you must not fool yourself, and you are the easiest person to fool.”

Richard Feynman



Warning: A DCF works on the principle of garbage-in-garbage-out (GIGO)

The Hardest Questions…

What will the business quality likely to be in the future?

Will earnings grow for the forseeable future?

Is valuation reasonable?

Position sizing?

Knowing when to hold ‘em and knowing when to fold ‘em?

Hold on to yourself…remain rational, remain solvent

Measuring Business Quality (Now or Future)

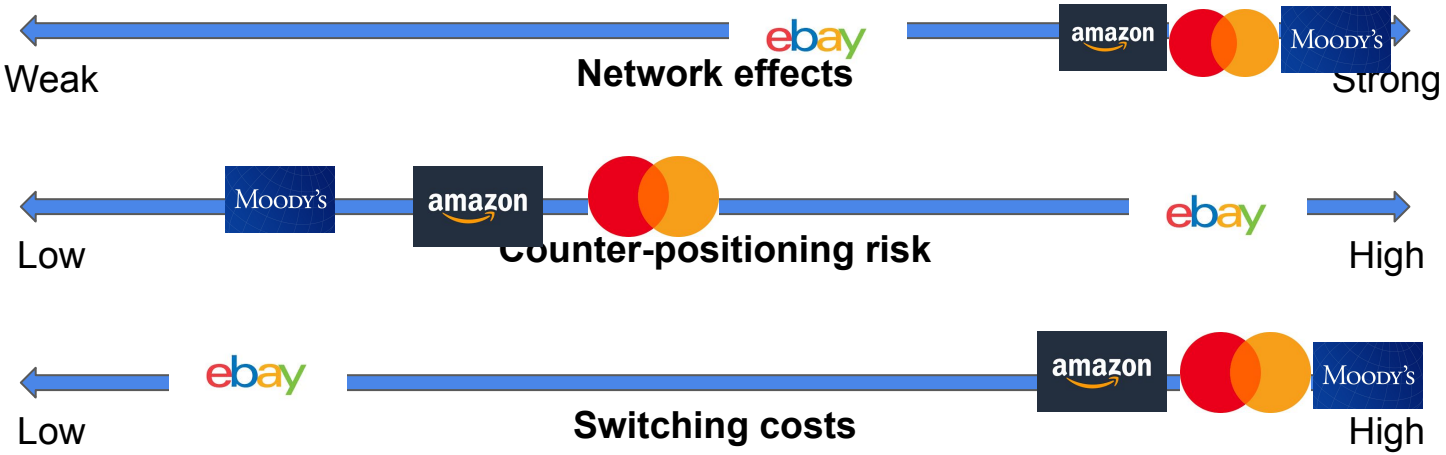
Network effects, Scale effects	**Counter-Positioning (competition)**	**Change functions (switching costs)**	**Stewart Brand Pace Layering model**	**5 stages of grieving**

Check for hidden assumptions (Coca Cola sells sugar!)

Ask unlocking questions (Is Apple a hardware company?)

History rhymes but it does not repeat

Now we have a way of understanding change and context of quality



Can value be created over time?