Corporate Finance

INVESTMENT
- PORTFOLIO
- CAPITAL
- M&A

FINANCING
- DEBT
- EQUITY

RISK MGT
- MEASUREMENT
- TOOLS

Corporate Finance

INVESTMENT

FINANCING

RISK MANAGEMENT
Primary Market for Equities

- Private Equity Placement
- Initial Public Offering (IPO)
- Subsequent Offering
- Stock Buyback?
- Management Buyout?

Investment Banking: Organization

Banking
- “Coverage”
  - Corporate Finance
  - Mergers & Acquisitions
  - Investment Banking

Fixed Income
- Debt Capital Markets (DCM)
  - Syndicate
  - Marketing
- Sales
  - Institutional
  - Retail
- Trading (proprietary)
  - Risk
  - Profits
- Structured Finance
- Credit Research
- Private Placement
- Loan Syndication

Equity
- Equity Capital Markets (ECM)
  - Sales
  - Trading
  - Research
Investment Banking: Organization

**New Deal Pitch Team**
- Coverage/Investment banking
- Product (DCM or ECM)

**Commitment Committee**
- Investment banking
- ECM/DCM
- Senior sales/trading
- Research

Underwriting Sequence

- **Engagement:** Mandate signed by issuer engaging lead manager
- **Due Diligence:** Conducted by Lead manager
- **Documentation:** Loan agreement, Prospectus
- **Signing:** Underwriting agreement signed and issue priced
- **Closing:** Settlement of the offering
The Beauty Contest

Criteria for Selecting a Lead Manager 1

- Experience with similar transactions (sector, market, currency, maturity, high or low-quality issuers)
- Ranking in League Tables
- Placement power with institutional and/or retail investors
- Standing in secondary market as “market maker” and commitment to secondary market trading

The Beauty Contest (Cont.)

Criteria for Selecting a Lead Manager 2

- Quality/reputation of research
- Proposed marketing strategy (pricing, timing, issue size, etc.)
- Proposals for “Roadshow”
- Relationships with potential co-managers
- Senior management commitment to backing issue with people and capital
**The Roadshow**

- Organized by global coordinator and lead managers
- Informal presentation by management to potential investors
- Attendance limited to professional intermediaries and investing institutions
- Content must be consistent with information in draft version of prospectus or offering circular.

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**Syndication: The Structure**

- Lead Manager
- Book-Runner
- International Coordinator
- Joint Co-Lead Managers
- Lead Managers
- Managers
- Co-Lead Manager
- Selling Agent
Securities Underwriting: Relationships

Issuer

Agents

Debt: Fiscal agent
Equity: Depositary institution

Investment Bankers

Lead manager/Bookrunner
Registered offering: Underwriting Agreement
Unregistered: Purchase Agreement

Co-managers
Agreement Among Underwriters

Prospectus/Offering Circular

Institutional Buyers
Retail Buyers

Subscription or Underwriting Agreement

- Between issuer, global coordinator and all managers
- Signed after pricing when “book-building” completed
- Firm commitment to underwrite, subject to delivery of certain confirmatory certificates and no “material adverse change” or “force majeure”
- Indemnity: By the issuer in favor of Global Coordinator and Managers against liability arising as a breach of warranty, material inaccuracy or omission
- Lock up: Issuer will not offer other securities for a period of time (e.g., six months)
**What Form of Issue?**

### Domestic market

- **Foreign market**
  - (Depositary Receipts)

<table>
<thead>
<tr>
<th>BNY ADR Index (1996-98)</th>
<th>MSCI Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia</td>
<td>-7.47%</td>
</tr>
<tr>
<td>Lat Amer</td>
<td>-13.54%</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>-19.28%</td>
</tr>
</tbody>
</table>

---

**ADR (American Depository Receipts)**

**U.S. BANK**
- U.S. investor buys certificate which represents a foreign market security. It receives the same treatment as a U.S. security and trades freely in the U.S.
- Holds shares of non-U.S. issuer on behalf of investors

**INVESTORS**

- Non-U.S. issuer gains better access to U.S. market and may provide superior disclosure

**LOCAL DEPOSITARY INSTITUTION**

**NON-U.S. ISSUER**
Depositary Receipts: Alternatives

- Domestic market
- Foreign market (Depositary Receipts)
  - Unsponsored
  - Private placement
  - Exchange traded
  - Global issue or GDR
  - Private placement IPO
  - Exchange traded IPO

Equity-Linked Eurobonds

- Eurobonds with warrants
- Convertible Eurobonds
- Index-linked Eurobonds
Equity Financing Choices

- Warrants
- Convertibles
- Equity
- ADRs
- Common

Pricing

**Debt Instruments**
- Bonds priced according to yield over benchmark (spread)
- Yield too low – issue does not sell
- Yield too high – too much given away
- Generally syndicate holds price for a day; in a successful issue yields gradually tighten

**Equity**
- Mature issue: based on current market price and market conditions, small premium for dilution; comparables
- IPO: comparables and discounted cash flow analysis
### Pricing and Fees

#### The Issuer

<table>
<thead>
<tr>
<th>The Business</th>
<th>Fees</th>
<th>Pricing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telecoms</td>
<td>0.15% to 1.5%</td>
<td>T+Spread</td>
</tr>
<tr>
<td>Dot-Coms</td>
<td></td>
<td>L+Spread</td>
</tr>
<tr>
<td>Avons</td>
<td>5% to 7%</td>
<td>Comparables/Ratios</td>
</tr>
</tbody>
</table>

**(How much volatility?)**

### Relative Valuation

- Do valuation ratios make sense?
  - Price/Earnings (P/E) ratios
    - and variants (EBIT multiples, EBITDA multiples, Cash Flow multiples)
  - Price/Book (P/BV) ratios
    - and variants (Tobin’s Q)
  - Price/Sales ratios
- It depends on how they are used -- and what’s behind them!
Valuing a Firm with DCF: An Illustration

- Historical financial results
- Adjust for nonrecurring aspects
- Gauge future growth
- Projected sales and operating profits
- Adjust for noncash items

Projected free cash flows to the firm (FCFF)

Year 1 FCFF → Year 2 FCFF → Year 3 FCFF → Year 4 FCFF → Terminal year FCFF

Discount to present using weighted average cost of capital (WACC)

Present value of free cash flows + cash, securities & excess assets + Market value of debt → Value of shareholders equity

Dividend Discount Models: General Model

\[ V_o = \sum_{t=1}^{\infty} \frac{D_t}{(1 + k)^t} \]

- \( V_o \) = Value of Stock
- \( D_t \) = Dividend
- \( k \) = required return
**Constant Growth Model**

\[ V_0 = \frac{D_0(1 + g)}{k - g} \]

- \( g \) = constant perpetual growth rate

**Constant Growth Model: Example**

- Motel 6 has earnings of $5 per share. It reinvests 40% and pays out 60% dividend.
- The required return that shareholders expect is 15%.
- The earnings are expected to grow at 8% per annum.
- What's an M6 share worth?

\[ E_1 = $5.00 \quad b = 40\% \quad k = 15\% \]
\[ (1-b) = 60\% \quad D_1 = $3.00 \quad g = 8\% \]
\[ V_0 = \frac{3.00}{(.15 - .08)} = $42.86 \]

Plowback rate
Shifting Growth Rate Model

\[ V_o = D_o \sum_{t=1}^{T} \frac{(1+g_1)^t}{(1+k)^t} + \frac{D_r(1+g_2)}{(k - g_2)(1+k)^T} \]

- \( g_1 \) = first growth rate
- \( g_2 \) = second growth rate
- \( T \) = number of periods of growth at \( g_1 \)

The Investors’ Viewpoint: Equity Risk and Return

- Investors diversify, because you get a better return for a given risk.
- There is a fully-diversified “market portfolio” that we should all choose
- The risk of an individual asset can be measured by how much risk it adds to the “market portfolio.”

*But does this apply to the global capital market?*
The Weighted Average Cost of Capital

<table>
<thead>
<tr>
<th>Choice</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Equity</td>
<td>Cost of equity</td>
</tr>
<tr>
<td>- Retained earnings</td>
<td>- depends upon riskiness of the stock</td>
</tr>
<tr>
<td>- New stock issues</td>
<td>- will be affected by level of interest rates</td>
</tr>
<tr>
<td>- Warrants</td>
<td></td>
</tr>
</tbody>
</table>

Cost of equity = riskless rate + beta * risk premium

2. Debt         | Cost of debt                                                        |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Bank borrowing</td>
<td>- depends upon default risk of the firm</td>
</tr>
<tr>
<td>- Bond issues</td>
<td>- will be affected by level of interest rates</td>
</tr>
<tr>
<td></td>
<td>- provides a tax advantage because interest is tax-deductible</td>
</tr>
</tbody>
</table>

Cost of debt = Borrowing rate (1 - tax rate)

Debt + equity = Cost of capital = Weighted average of cost of equity and cost of debt; weights based upon market value.

Cost of capital = \( k_d \frac{D}{D+E} + k_e \frac{E}{D+E} \)

The Cost of Equity Depends on the Company’s Risk Premium

\[ r_j = R_F + \beta_j (r_m - R_F) \]

where:
- \( r_j \) = Required return on asset j;
- \( R_F \) = Risk-free rate of return
- \( \beta_j \) = Beta Coefficient for asset j;
- \( r_m \) = Market return

The term \( \beta_j (r_m - R_F) \) is called the risk premium and \( (r_m - R_F) \) is called the market risk premium.
International Equity Markets and Portfolio Diversification

- No well-accepted international version of the capital asset pricing model.
- The benefits of diversification globally are empirical issues.
- The empirical case for international diversification has two components:
  - Establish the riskiness of foreign investment, and the extent to which combining a foreign with a domestic portfolio reduces risk.
  - Even if it reduces risk, does foreign investment also reduce expected return?
- Then what we have to do is make sure we understand how international diversification is best achieved.

International Diversification Pays More

![Graph showing total risk, diversifiable risk, and non-diversifiable risk as the number of securities in a portfolio increases.](image_url)
The Global Efficient Frontier

Returns with FX

- Return in US is a function of two factors
  1. Return in the foreign market
  2. Return on the foreign exchange
Returns with FX

\[(1 + r_{US}) = (1 + r_{FM}) (1 + r_{FX})\]

- \(r_{US}\) = return on the foreign investment in US Dollars
- \(r_{FM}\) = return on the foreign market in local currency
- \(r_{FX}\) = return on the foreign exchange

Example

<table>
<thead>
<tr>
<th>ROI with FX Change</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Local currency ROI</td>
<td>17%</td>
</tr>
<tr>
<td>Rate of change of the exchange rate</td>
<td>-8%</td>
</tr>
<tr>
<td>Foreign currency ROI</td>
<td>7.64%</td>
</tr>
</tbody>
</table>

Source: giddy.org
Raising Equity: The Investment Banker’s Job

- Market conditions
- Corporate needs
- Valuation
- Information
- Distribution

Telekom
Deutsche Telekom: The Sequence

See case Exhibit 2

What's a Company Worth to Investors?

- Required Returns
- Types of Models
  - Balance sheet models
  - Dividend discount & corporate cash flow models
  - Price/Earnings ratios
  - Option models
- Estimating Growth Rates
Equity Valuation: From the Balance Sheet

Value of Assets
- Book
- Liquidation
- Replacement

Value of Liabilities
- Book
- Market

Value of Equity

Deutsche Telekom: Book Value

- See case Exhibit 3

<table>
<thead>
<tr>
<th></th>
<th>At December 31</th>
<th>At June 30</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ADS (unaudited)</td>
<td>DM</td>
</tr>
<tr>
<td>Consolidated Balance Sheet Data: Amounts in accordance with German GAAP.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed assets</td>
<td>132,016</td>
<td>139,216</td>
</tr>
<tr>
<td>Total assets</td>
<td>148,410</td>
<td>168,016</td>
</tr>
<tr>
<td>Debt</td>
<td>108,477</td>
<td>125,437</td>
</tr>
<tr>
<td>Total liabilities (including accrued and deferred income)</td>
<td>133,721</td>
<td>148,714</td>
</tr>
<tr>
<td>Shareholders’ equity</td>
<td>15,119</td>
<td>19,312</td>
</tr>
</tbody>
</table>

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Relative Valuation

- Do valuation ratios make sense?
  - Price/Earnings (P/E) ratios
    - and variants (EBIT multiples, EBITDA multiples, Cash Flow multiples)
  - Price/Book (P/BV) ratios
    - and variants (Tobin’s Q)
  - Price/Sales ratios
- It depends on how they are used -- and what’s behind them!

Deutsche Telekom: Ratios and Comparables

- See case page 9

<table>
<thead>
<tr>
<th>EPS</th>
<th>P/E</th>
<th>EPS</th>
<th>P/B</th>
<th>EPS</th>
<th>P/E</th>
<th>EPS</th>
<th>P/E</th>
</tr>
</thead>
<tbody>
<tr>
<td>DM22</td>
<td>DM22</td>
<td>DM10</td>
<td>DM10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.85</td>
<td>25.0x</td>
<td>0.70</td>
<td>21.0x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.91</td>
<td>21.0x</td>
<td>0.73</td>
<td>17.0x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Goldman, Sachs & Co.
**Discounted Cashflow Valuation: Basis for Approach**

\[
\text{Value} = \sum_{t=1}^{n} \frac{CF_t}{(1+r)^t}
\]

- where
  - \( n \) = Life of the asset
  - \( CF_t \) = Cashflow in period \( t \)
  - \( r \) = Discount rate reflecting the riskiness of the estimated cashflows

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**Deutsche Telekom: Earnings**

- See case page 8

*Deutsche Telekom: Sales and Earnings Estimates*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Revenues</td>
<td>66,135</td>
<td>62,636</td>
<td>65,952</td>
<td>68,771</td>
</tr>
<tr>
<td>EBITDA</td>
<td>33,900</td>
<td>30,781</td>
<td>34,816</td>
<td>36,687</td>
</tr>
<tr>
<td>EBIT</td>
<td>18,523</td>
<td>13,470</td>
<td>16,644</td>
<td>19,580</td>
</tr>
<tr>
<td>Net Income</td>
<td>5,272</td>
<td>1,234</td>
<td>4,775</td>
<td>5,784</td>
</tr>
<tr>
<td>EPS (2,353.7m shs)*</td>
<td>2.64A</td>
<td>0.48</td>
<td>1.87</td>
<td>2.26</td>
</tr>
<tr>
<td>EPS (2,743.7m shs)**</td>
<td>0.45</td>
<td>1.74</td>
<td>2.11</td>
<td></td>
</tr>
</tbody>
</table>

A: Actual numbers

*: Estimates for a 500m shares offering.

**: Estimates for a 690m shares offering.
Valuing a Firm with DCF: An Illustration

**Historical financial results** → Adjust for nonrecurring aspects → Gauge future growth → Projected sales and operating profits → Adjust for noncash items

Projected free cash flows to the firm (FCFF)

Year 1 FCFF → Year 2 FCFF → Year 3 FCFF → Year 4 FCFF → Terminal year FCFF

Discount to present using **weighted average cost of capital** (WACC)

Present value of free cash flows + cash, securities & excess assets + Market value of debt → Value of shareholders equity

What's a Company Worth? Alternative Models

- The options approach
  - Option to expand
  - Option to abandon
- Creation of key resources that another company would pay for
  - Patents or trademarks
  - Teams of employees
  - Customers
- Examples?

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Global Equity 47
**Raising Equity:**
*The Investment Banker’s Job*

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