

## 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

Engagement



Due Diligence and Documentation



Signing and Pricing



Closing

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## Pricing

### Debt Instruments

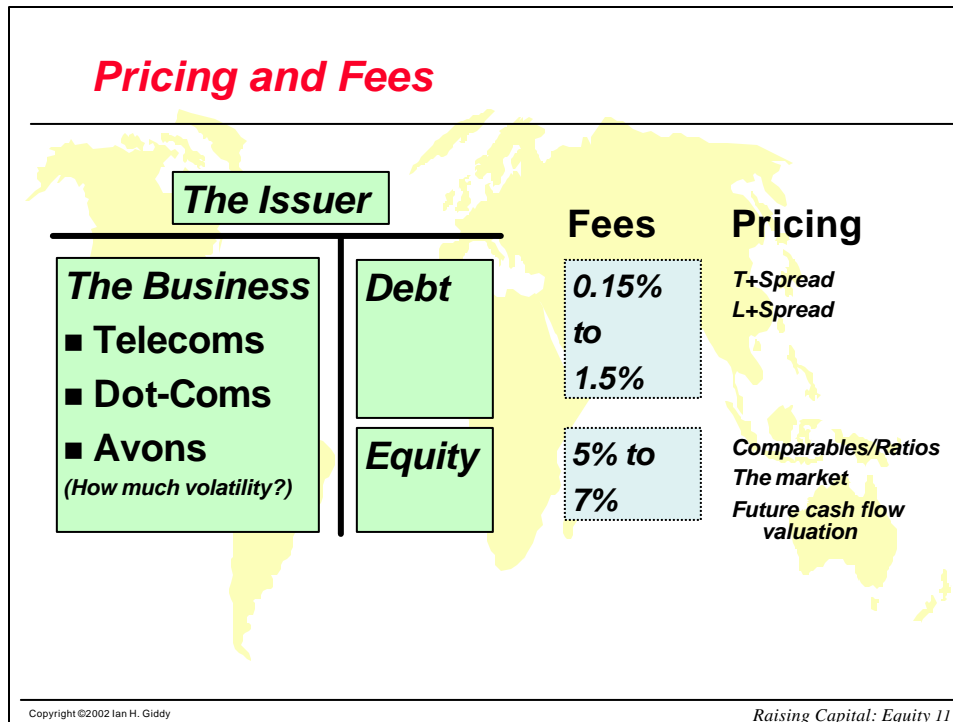
- Bonds priced according to yield over benchmark (spread)
- Yield too low – issue does not sell
- Yield too high – too much given away
- Generally syndicate holds price for a day; in a successful issue yields gradually tighten

### Equity

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

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## 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?*

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## The Cost of Equity

**Equity is not free!**

Expected return = Risk-free rate + Risk Premium

$$E(R_{\text{Risky}}) = R_{\text{Risk-free}} + \text{Risk Premium}$$

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## The Cost of Equity

- Consider the standard approach to estimating cost of equity:

$$\text{Cost of Equity} = R_f + \text{Equity Beta} * (E(R_m) - R_f)$$

where,

$R_f$  = Riskfree rate

$E(R_m)$  = Expected Return on the Market Index  
(Diversified Portfolio)

- In practice,
  - ◆ Short term government security rates are used as risk free rates
  - ◆ Historical risk premiums are used for the risk premium
  - ◆ Betas are estimated by regressing stock returns against market returns

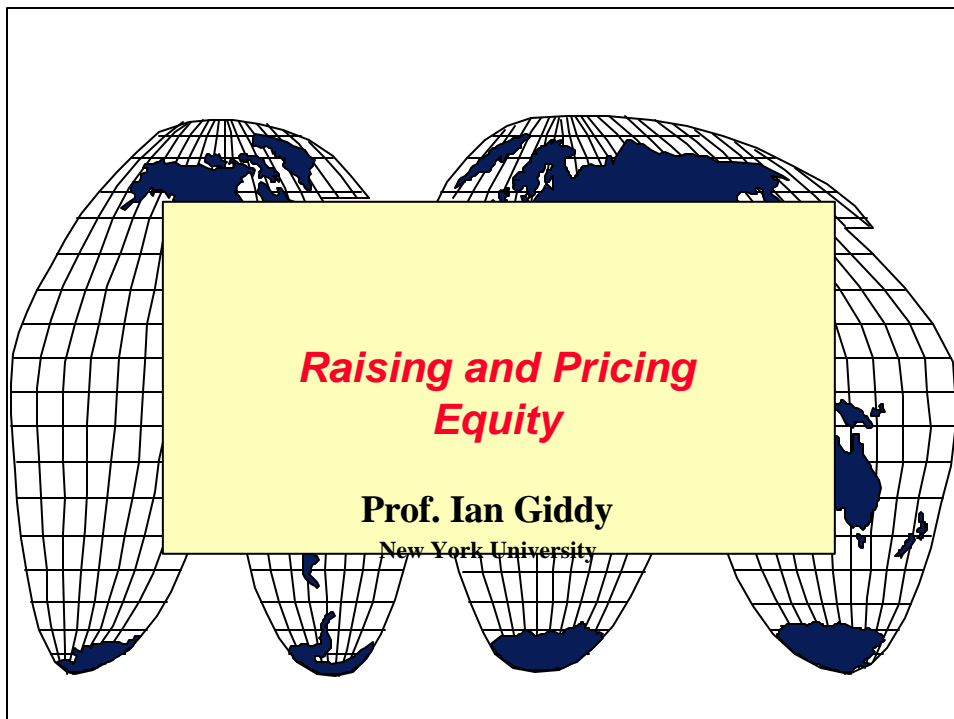
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Valuing a Firm from Different Risk Perspectives										
Firm is assumed to have a cash flow of 100 each year forever.										
Investor Type		Cares about	Risk Measure	Cost of Equity	Firm Value					
Private Business: Owner has all his wealth invested in the business	<table border="1"> <tr><td>Project Risk</td></tr> <tr><td>Competitive Risk</td></tr> <tr><td>Sector Risk</td></tr> <tr><td>Int'l Risk</td></tr> <tr><td>Market Risk</td></tr> </table>	Project Risk	Competitive Risk	Sector Risk	Int'l Risk	Market Risk	Total Risk	Standard Deviation	40%	$100/.4=250$
Project Risk										
Competitive Risk										
Sector Risk										
Int'l Risk										
Market Risk										
Venture Capitalist: Has wealth invested in a number of companies in one sector	<table border="1"> <tr><td>Sector Risk</td></tr> <tr><td>Int'l Risk</td></tr> <tr><td>Market Risk</td></tr> </table>	Sector Risk	Int'l Risk	Market Risk	Risk added to sector portfolio	Beta relative to sector	25%	$100/.25=400$		
Sector Risk										
Int'l Risk										
Market Risk										
Publicly traded company with investors who are diversified domestically or IPO to investors who are domestically diversified	<table border="1"> <tr><td>Int'l Risk</td></tr> <tr><td>Market Risk</td></tr> </table>	Int'l Risk	Market Risk	Risk added to domestic portfolio	Beta relative to local index	15%	$100/.15=667$			
Int'l Risk										
Market Risk										
Publicly traded company with investors who are diversified globally or IPO to global investors	<table border="1"> <tr><td>Market Risk</td></tr> </table>	Market Risk	Risk added to global portfolio	Beta relative to global index	10%	$100/.10=1000$				
Market Risk										

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## Raising Equity: The Investment Banker's Job

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

**Telekom**

## Deutsche Telekom: The Sequence

- See case Exhibit 2

Date	Event
Mon, 21 Oct.	<ul style="list-style-type: none"> <li>• Filing of "Red Herring"</li> <li>• press conference to announce price range and request for track record and underwriting commitments</li> </ul>
Tue, 22 Oct.	<ul style="list-style-type: none"> <li>• Distribution of "Red Herring"</li> <li>• Start of roadshow in Germany</li> <li>• Start of bookbuilding</li> </ul>
Fri, 23 Oct.	<ul style="list-style-type: none"> <li>• End of German roadshow</li> <li>• Start of international roadshow (in US)</li> </ul>
Mon, 4 Nov.	<ul style="list-style-type: none"> <li>• End of international roadshow (in US)</li> </ul>
Tue, 5 Nov.	<ul style="list-style-type: none"> <li>• Start of US roadshow</li> <li>• Dry run with US investors (4<sup>th</sup> Andover), 4:30 p.m. EST</li> </ul>
Wed, 6 Nov.	<ul style="list-style-type: none"> <li>• End of study order period for AIF registered retail investors</li> </ul>
Wed, 13 Nov.	<ul style="list-style-type: none"> <li>• End of US roadshow</li> </ul>
Thu, 14 Nov.	<ul style="list-style-type: none"> <li>• End of book building period</li> <li>• Close of books:                             <ul style="list-style-type: none"> <li>• Germany: 2:00 p.m. (Frankfurt time)</li> <li>• RaE: 2:00 p.m. (Frankfurt time)</li> <li>• UK: 11:00 a.m. (New York time)</li> <li>• HoW: 9:00 p.m. (Hong Kong time)</li> </ul> </li> </ul>
Sun, 17 Nov.	<ul style="list-style-type: none"> <li>• Announcement of offer price</li> <li>• Setting of final underwriting status and underwriting commitments</li> <li>• Release of allocations</li> <li>• Completion of allocations (US)</li> </ul>
Mon, 18 Nov.	<ul style="list-style-type: none"> <li>• Completion of allocations (outside US)</li> <li>• Trade date for offering</li> <li>• Start of trading:                             <ul style="list-style-type: none"> <li>• Frankfurt: 12:00 noon</li> <li>• New York: 9:30 a.m.</li> </ul> </li> </ul>
Tue, 19 Nov.	<ul style="list-style-type: none"> <li>• Start of trading in Tokyo</li> </ul>
Wed, 20 Nov.	<ul style="list-style-type: none"> <li>• Settlement and closing</li> </ul>
Fri, 22 Nov.	<ul style="list-style-type: none"> <li>• End of global book-out period</li> </ul>

## **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

***Telekom***

## **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

	At December 31,				At June 30	
	1992 DM (unaudited)	1994 DM (unaudited)	1995 DM (unaudited)	1995(1) \$ (unaudited)	1996(2) DM (unaudited)	1996(1)(2) \$ (unaudited)
<b>Consolidated Balance Sheet Data:</b>						
<i>Amounts in accordance with German GAAP</i>						
Fixed assets	132,916	139,216	139,215	91,529	143,015	94,027
Total assets	148,480	168,066	160,247	105,336	163,557	107,532
<b>Debt</b>						
Total liabilities (including accruals and deferred income)	108,477	125,459	110,387	72,575	107,124	70,410
Shareholders' equity	13,139	19,332	24,732	16,260	26,068	17,139
<i>Amounts in accordance with U.S. GAAP</i>						
Shareholders' equity(?)	--	24,013	30,372	19,968	30,916	20,326

(in millions except per share/ADS amounts)

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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!

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## Deutsche Telekom: Ratios and Comparables

- See case page 9

### □ P/E Ratios Analysis (for 690 million Shares)

	DM25		DM27.5		DM30		German
	EPS	P/E	EPS	P/E	EPS	P/E	MKT P/E
1996E	DM0.45	35.6x	DM0.45	61.1x	DM0.45	66.7x	17.4x
1997E	DM1.74	14.4x	DM1.74	11.8x	DM1.74	17.2x	14.3x
1998E	DM2.11	11.8x	DM2.11	13.0x	DM2.11	14.2x	13.0x

Source: Goldman, Sachs & Co.

### □ Comparable P/E Ratios

	Unit	Price	1995	1996	Yield	1997 (E)	1998(E)
BT	£	3.12	x11.6	x10.9	5.7%	x10.2	
Netherland Tel	NLG	60.7	x12.0	x11.3	4.7%	x10.3	
Italia T	LIT	3429	x19.0	x15.2	3.9%	x13.2	
Denmark T	DKK	292	x10.4	x12.4	5.8%	x10.9	
AT & T	\$	39.88		x11.5	3.3%	x10.8	
Bell Atlantic	\$	60.25		x14.2	4.8%	x13.1	x12.2
US Tel Average				x14.0	4.6%	x13.2	x12.4
DT				x63.3	2.1%	x16.4	x15.5
German market				x17.4	2.2%	x14.3	x13.0

As of October 18, 1996 except for DT (issuance price and 690 million shares issued).

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## Corporate Cash Flow Valuation: The Steps

- Estimate the **discount rate** or rates to use in the valuation
  - ◆ Discount rate can be either a cost of equity (if doing equity valuation) or a cost of capital (if valuing the firm)
  - ◆ Discount rate can be in nominal terms or real terms, depending upon whether the cash flows are nominal or real
  - ◆ Discount rate can vary across time.
- Estimate the **current earnings** and **cash flows** on the asset, to either equity investors (CF to Equity) or to all claimholders (CF to Firm)
- Estimate the **future earnings and cash flows** on the asset being valued, generally by estimating an expected growth rate in earnings.
- Estimate **when** the firm will reach “**stable growth**” and what characteristics (risk & cash flow) it will have when it does.
- Choose the **right DCF model** for this asset and value it.

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## Deutsche Telekom: Earnings

- See case page 8

Q Deutsche Telekom: Sales and Earnings Estimates

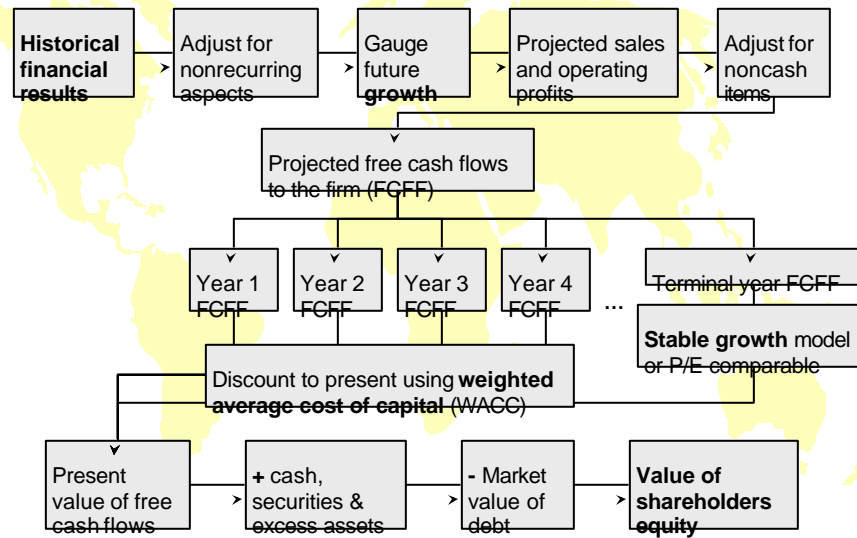
(DM millions)	1995A	1996E	1997E	1998E
Net Revenues	66,135	62,636	65,952	68,771
EBITDA	33,900	30,781	34,816	36,687
EBIT	18,523	13,470	16,644	19,580
Net Income	5,272	1,234	4,775	5,784
EPS (2,553.7m shs)*	2.64A	0.48	1.87	2.26
EPS (2,743.7m shs)**		0.45	1.74	2.11

A: Actual numbers

\*: Estimates for a 500m shares offering.

\*\* : Estimates for a 690m shares offering.

## Valuing a Firm with DCF: An Illustration



## **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?*

**Lycos**

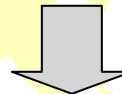
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## **Raising Equity:**

### **The Investment Banker's Job**

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

**Telekom**



**T-Online**

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