

McCombs School of Business MBA

2004 Investment Banking Recruitment Guide

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SECTION 1

Introduction to UBS

Overview of UBS

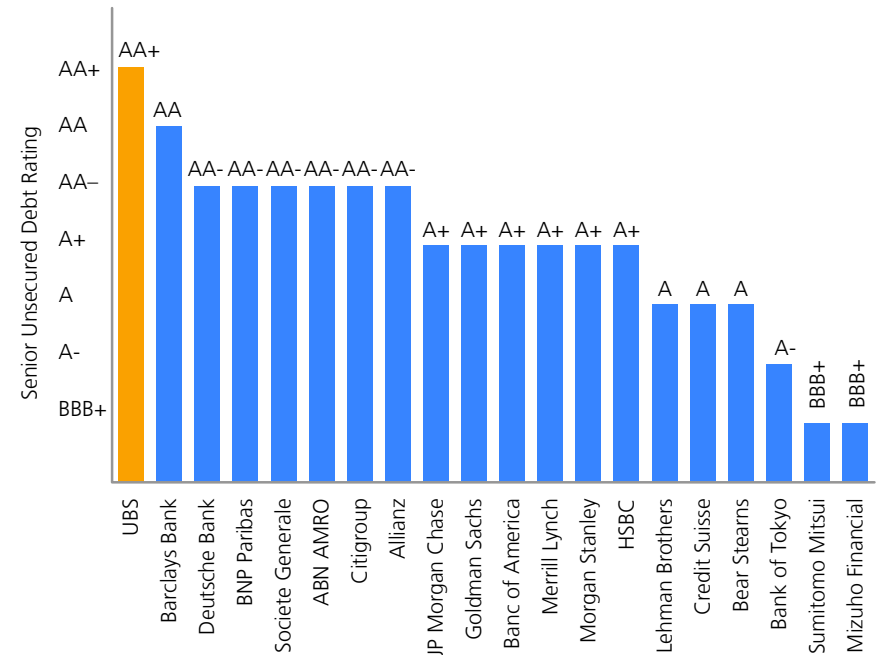
UBS is among the largest and most highly rated financial institutions in the world

- ◆ Total Assets of \$1 trillion (2nd largest)
- ◆ Equity Market Value of \$73 billion
- ◆ Last Twelve Months Revenue of \$30 billion
- ◆ Credit Ratings: Standard & Poor's AA+, Moody's Aa2
- ◆ 66,000 employees in over 50 countries

- ◆ Financial strength to:
 - support the investment bank
 - underwrite loans and finance buyouts, block trades, and overnight bought transactions
 - provide lower cost of financing to our clients in foreign exchange and equity risk management products

Company	Assets ¹ (\$bn)
Citigroup	1,397
UBS	1,339
Mizuho Financial Group	1,246
HSBC	1,154
BNP Paribas	1,092
Allianz	1,068
Banc of America	1,037
Deutsche Bank	1,022
Sumitomo Mitsui	968
Mitsubishi Tokyo	919
Credit Suisse	905
JP Morgan Chase	818
ABN AMRO	765
Morgan Stanley	730
Société Générale	604

Standard & Poor's



Note:

1 As of latest available financial statements

Overview of UBS Investment Bank

World's Best Investment Bank

July 2004, EUROMONEY

- “ UBS has achieved what once seemed impossible for any European investment bank; it has broken into the front rank in the US market...”
- “ In the 12 months ending in April 2004 it doubled its share in announced US M&A deals, working on high-profile transactions such as the \$16.4 billion sale of WellPoint Health Networks to Anthem Inc...”
- “ Over the same period, UBS has been a lead equity underwriter on deals such as International Steel's \$531 million IPO, Newmont Mining's \$1.1 billion follow-on and a £721 million concurrent offering for Interpublic Group in the US. These transactions ranked among the largest of these types of equity deals in the past 12 months in the US market...”
- “ The firm has continued to hire in the past 12 months, bringing in high-profile investment bankers...”

Previous winners of the Bank of the Year award include:

2003 Morgan Stanley	2001 Merrill Lynch
2002 UBS Warburg	2000 Morgan Stanley

The Economist Investment Bank Survey

March 2003, THE ECONOMIST

In 2003, The Economist asked over 1,000 senior executives and financial managers around the world to rank all investment banks on the 10 factors most important to a company's decision to choose an investment bank.

UBS ranked No. 1, 2 or 3 in ALL of the five most important factors considered by companies in choosing an investment bank.

The five most important factors in selecting an investment bank are:

Expertise/ Specific Skills	Client Service	Specific Sector Knowledge	Quality of Senior Management	Strong Reputation
Goldman Sachs	Goldman Sachs	Goldman Sachs	UBS	UBS
Morgan Stanley	UBS	UBS	Goldman Sachs	Goldman Sachs
UBS	Morgan Stanley	Citigroup	HSBC	ABN Amro
Citigroup	Citigroup	CS First Boston	Morgan Stanley	HSBC
JP Morgan	HSBC	Morgan Stanley	Citigroup	Deutsche Bank

Bank of the Year

January 2003, INVESTMENT DEALERS' DIGEST

- “ ...often referred to as the Academy Award of investment banking... The criteria for the award included the bank's overall excellence, competitiveness, significant financial progress and increase in market share.”
- “ *Investment Dealers' Digest* (IDD) editors and reporters selected UBS because they felt that the bank outshined its competitors on all fronts.”
- “ Reputation became an additional criteria this year... IDD concluded, “The Swiss giant has emerged from the Wall Street debacles of the past few years with one of the best reputations in the world.”

Previous winners of the Bank of the Year award include:

2003 Goldman Sachs	2001 Lehman Brothers
2002 UBS Investment Bank	2000 Salomon Smith Barney

World's Best Bank

July 2003, EUROMONEY

- “ UBS, the winner of this year's best bank award, has a sharper focus.”
- “ UBS has also been investing: notably in European wealth management and US investment banking. The plan in investment banking has been to build a business that is sufficiently balanced between the US, Europe and Asia – and between debt, equity, forex and classic investment banking – which has built-in hedges and a more stable and higher returns on equity.”
- “ It has won private-banking client assets, as other banks have lost them. It has risen to the top of the tree in foreign exchange, a market traditionally dominated by commercial banks, and in equities, traditionally dominated by the US securities houses.”
- “ It is after all, the world's sixth largest bank by shareholders' equity, the fourth largest by market capitalization and the world's largest private bank.”

Previous winners of the Bank of the Year award include:

2004 HSBC	2002 Citigroup
2003 UBS	2001 Citigroup

Global Award-Winning Expertise Across All Disciplines

Providing a full spectrum of products to corporate and institutional clients globally



World's Best Bank

EUROMONEY 2003

Bank of the Year

INVESTMENT DEALERS' DIGEST 2003

World's Best Investment Bank

EUROMONEY 2002

Best Investment Bank

FINANCEASIA 2003

Bank of the Year

IFRASIA 2003

Corporate Broker of the Year

ACQUISITIONS MONTHLY 2003

Privatization Advisory Team of the Year

MERGERS & ACQUISITIONS 2002



World's Best Equity House

EUROMONEY 2003

Asia-Pacific Equity House of the Year

IFR 2003

Best Global Research & Sales

INSTITUTIONAL INVESTOR 2003

No.1 Distributor of Secondary Cash Equities

LEADING PRIVATE INDUSTRY SURVEY 2002

Best All-Europe Research & Sales

INSTITUTIONAL INVESTOR 2004, 2003

Best US Bookrunner & Best Asia Pacific Bookrunner

EUROWEEK EQUITY MARKET POLL 2003

No.1 Equity Derivatives

EUROMONEY 2003, 2002

Best Pan-European Research, Sales, Trading & Execution

THOMSON EXTEL 2003/02



Global Emerging Market Bond House

IFR 2003

FX House of the Year

EUROMONEY 2003, THE BANKER 2002, 2003

Best Provider of Support in the Secondary Market

EUROWEEK 2004

No.1 for Global Mortgages, All US Mortgages & Agency MBS underwriting

THOMSON FINANCIAL 2003

FX Derivatives House of the Year

DERIVATIVES WEEK 2003

Best Bank Overall for FX

EUROMONEY 2003 and FX WEEK 2003 Polls

Financial Bond House – Subordinated Debt

IFR 2003


Asia Bond House


IFRAsia 2003


Best Bank for FX and FI Online Services

EUROMONEY 2003

UBS Investment Bank Transaction Highlights

 United States		
Client	Counterparty/ Offering Type	Value(\$mm)/ Industry
M&A TRANSACTIONS		
Nabisco Holdings US	Sale to Philip Morris US	19,275 Food
WellPoint US	Sale to Anthem US	16,441 Healthcare
Wachovia Corp US	Acq. of SunTrust US	14,300 Finance
Bell Atlantic US	Acq. of Vodafone Air Touch US	14,980 Telecom
Nabisco Group US	Sale to RJ Reynolds Tobacco US	11,065 Consumer
QVC US	Acq. of Liberty Media US	7,900 Media
Caremark Rx US	Acq. of AdvancePCS US	6,800 Healthcare
MiniMed US	Sale to Medtronic US	3,305 Healthcare
EQUITY AND EQUITY-LINKED TRANSACTIONS		
Sprint Corp US	Concurrent	3,700 Telecom
Baxter International US	Concurrent	1,680 Healthcare
Echostar US	Convertible	1,000 Satellites
Bombardier Canada	Common Stock	829 Transport
LabCorp US	Common Stock	825 Healthcare
Genzyme US	Convertible	690 Healthcare
FIXED INCOME TRANSACTIONS		
Pacific Gas & Electric US	Bonds	6,700 Oil & Gas
General Motors US	Debentures	4,300 Automobiles
Devon Energy US	Debentures	1,000 Energy
Ford Motor Co. US	Notes	690 Automobiles
Eli Lilly & Co. US	Notes	500 Healthcare
UnitedHealth US	Notes	500 Healthcare

 Europe		
Client	Counterparty/ Offering Type	Value(\$mm)/ Industry
M&A TRANSACTIONS		
Vodafone Group UK	Acq. of Mannesmann Germany	202,785 Telecom
Vodafone Group UK	Sale to France Telecom France	45,967 Telecom
Royal Bank of Scotland UK	Acq. of Nat'l Westminster US	38,525 Finance
Unilever UK	Acq. of BestFoods US	25,065 Consumer
Allianz Germany	Acq. of Dresdner Bank Germany	20,595 Finance
Credit Lyonnais France	Acq. of Credit Agricole France	16,243 Finance
Aventis Crop Science France	Sale to Bayer Germany	6,822 Healthcare
Centerpulse Switzerland	Sale to Zimmer Holdings US	3,756 Healthcare
EQUITY AND EQUITY-LINKED TRANSACTIONS		
Telia Sweden	IPO	8,900 Telecom
Deutsche Post Germany	IPO	5,292 Postal Service
Vodafone Group UK	Common Stock	5,094 Telecom
Belgacom Belgium	IPO	4,399 Telecom
AstraZeneca UK	Common Stock	1,039 Healthcare
Novartis Switzerland	Common Stock	890 Healthcare
FIXED INCOME TRANSACTIONS		
TDC Denmark	Notes	1,056 Telecom
EDF France	Bonds	921 Utility
Deutsche Bahn Germany	Bonds	905 Transport
Unilever Netherlands	Notes	888 Consumer
J Sainsbury UK	Bonds	849 Retail
Roche Switzerland	Bonds	395 Healthcare

 APAC		
Client	Counterparty/ Offering Type	Value(\$mm)/ Industry
M&A TRANSACTIONS		
Pacific Century Cyberworks China	Acq. of Cable & Wireless HKT China	38,100 Technology
BHP Australia	Acq. of Billiton UK	11,511 Mining
Colonial Ltd. Australia	Sale to Commonwealth Bank of Australia Australia	5,906 Bank
Chugai Pharmaceutical Japan	Sale to Roche Hldgs Switzerland	3,624 Healthcare
Gener SA Chile	Acq. of AES Corp US	3,232 Utility
Japan Telecom Co Japan	Acq. of Ripplewood Hldgs US	2,219 Telecom
FH Faulding Australia	Sale to Mayne Nickless Australia	1,279 Healthcare
EQUITY AND EQUITY-LINKED TRANSACTIONS		
BOC Hong Kong Hong Kong	IPO	2,607 Finance
Lawson Inc. Japan	IPO	2,440 Retail
West Japan Railway Japan	Common Stock	2,345 Transport
Korea Telecom South Korea	ADS	2,242 Telecom
China Telecom China	Common Stock	1,730 Telecom
Mass Transit Railway Hong Kong	IPO	1,384 Transport
FIXED INCOME TRANSACTIONS		
Kepeco South Korea	Notes	650 Utility
Petrobras Brazil	Notes	600 Oil & Gas
Ambev Brazil	Bonds	500 Consumer
Telstra Corp Australia	Bonds	270 Telecom
Singapore Post Singapore	Bonds	169 Postal Service
Coca-Cola Amatil Australia	Bonds	121 Consumer

Mergers and Acquisitions Group



2004

US\$8.2 billion
Financial Advisor to China Telecom on its acquisition of 10 target provinces



2004

US\$7.0 billion
Financial Advisor to National Commerce Financial in its sale to SunTrust Banks, Inc.



2004

US\$20.0 billion
Financial Advisor to Westfield Group on its merger to create one of the world's largest listed property investment groups



2004

US\$14.3 billion
Financial Advisor to Wachovia Corporation in its acquisition of SouthTrust Corporation



2004

US\$3.0 billion
Financial Advisor to NextWave Telecom on the sale of the company to the United States of America



2004

US\$2.3 billion
Financial Advisor to Millennium Chemicals Inc. on its merger with Lyondell Chemical Company



2004

US\$9.4 billion
Financial Advisor to Caesars Entertainment on sale to Harrah's Entertainment



2004

US\$8.9 billion
Financial Advisor to Kuwait Petroleum, a 13.5% shareholder in Aventis, in connection with the offer by Sanofi-Synthelabo



2004

US\$2.2 billion
Financial Advisor to CNL Hospitality on its acquisition of KSL Recreation Corporation



2004

US\$5.9 billion
Financial Advisor to Regions Financial Corporation on its merger with Union Planters



2004

US\$4.9 billion
Financial Advisor to Simon Property Group on acquisition of Chelsea Property Group



2004

US\$4.8 billion
Financial Advisor to Vodafone on the merger of Vodafone Holdings and Vodafone K.K.

UBS Investment Bank Equity Selling Power

UBS Investment Bank utilizes its four large sales forces to distribute equity



US Institutional

- ◆ One of the largest US institutional salesforces
- ◆ 68 direct salespeople
- ◆ 18 sector specialists
- ◆ 3rd largest US market maker

Direct Salesforce		Specialist Sales	NYSE Trading Ranking	
Location	Salesforce	Healthcare	Investment Bank	Mkt Share (%)
New York	28	Shantha Venkataraman	Merrill Lynch	12.4
Boston	8	Rebecca Irwin	Morgan Stanley	10.7
Stamford	8	Paul McCracken	UBS	10.1
Chicago	7		Citigroup	9.8
San Francisco	7		Goldman Sachs	8.9
Dallas	5		Lehman Brothers	8.1
Atlanta	2		CS First Boston	6.7
Denver	2		Bear Stearns	5.0
Minneapolis	1		Banc of America	4.5
TOTAL	68		JP Morgan	3.8

Source: Autex (06/30/04)



European Institutional

- ◆ Largest European institutional salesforce
- ◆ 152 direct salespeople
- ◆ 29 sector specialists
- ◆ 3rd largest European market maker

Direct Salesforce		Specialist Sales	EMEA Trading Ranking	
Location	Salesforce	Healthcare	Investment Bank	Mkt Share (%)
London	68	Richard Goldsbrough	Deutsche Bank	15.8
Zurich	33	Bruce Mackle	Citigroup	11.1
Frankfurt	14	Shantanu Nagpal	UBS	11.0
Paris	10		Merrill Lynch	8.4
Milan	10		CS First Boston	8.3
Madrid	7		Lehman Brothers	7.9
Stockholm	6		Morgan Stanley	7.0
Amsterdam	4		JP Morgan	6.3
Minneapolis	1		Dresdner	6.1
TOTAL	152		ABN Amro	4.8

Source: Autex (06/30/04)



US Private Client

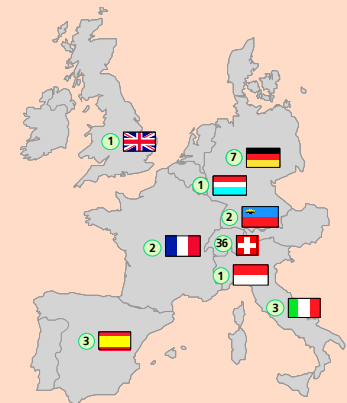
- ◆ \$500+ billion in client assets
- ◆ 2,700,000 client accounts

Company	Holding Value (\$mm)	"Institutional Shareholder Equivalent" Ranking
Pfizer Incorporated	4,460	8
Johnson & Johnson	3,543	5
Amgen Inc.	2,127	5
Merck & Co.	1,933	5
Medtronic	1,316	5
Abbott Laboratories	1,105	9
Bristol-Myers Squibb	1,082	6
Eli Lilly & Co.	777	15
Wyeth	716	16
Cardinal Health	502	9



European Private Client

- ◆ \$500+ billion in client assets
- ◆ 250,000 private client accounts



○ Number of offices in each country

Equity Capital Markets Group

UBS BOOK MANAGED EQUITY OFFERINGS



2004

US\$1.4 billion
Follow-on



2004

US\$1.4 billion
Follow-on

The Interpublic
Group of Companies, Inc

2003

US\$721 million
Concurrent



2003

US\$430 million
S&P Index Inclusion Trade



2004

US\$930 million
IPO



2004

US\$363 million
Follow-on



2003

US\$531 million
IPO



2003

US\$640 million
Concurrent



中国电信

2004

US\$1.7 billion
ADR



2003

US\$1.1 billion
Follow-on



2003

US\$330 million
Rule 144k Block Trade



2003

US\$114 million
Follow-on

CONVERTIBLES



2004

US\$600 million
Convertible



2004

US\$450 million
Convertible



2003

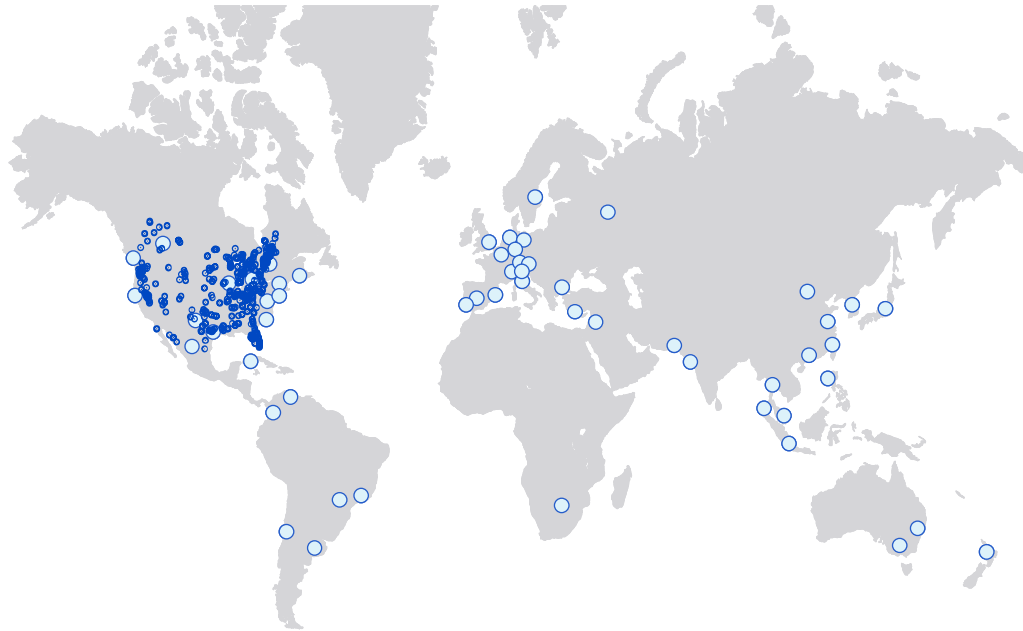
US\$4.3 billion
Convertible

The Interpublic
Group of Companies, Inc

2003

US\$800 million
Convertible

Fixed Income Trading and Distribution



- UBS Investment Bank offices
- UBS Wealth Management offices

- ◆ Approximately 49,000 staff worldwide, 66% of which are based in the US
- ◆ Principal US institutional sale centers include: Stamford; Chicago; Atlanta; Minneapolis; San Francisco; Los Angeles



<u>Asia</u>	<u>Australia</u>	<u>North America</u>	<u>UK and Europe</u>	<u>Switzerland</u>
Trading 19	Trading 4	Trading 91	Trading 63	Trading 27
Sales 42	Sales 10	Sales 162	Sales 101	Sales 35
Credit Research 8	Credit Research 2	Credit Research 56	Credit Research 34	Credit Research 2
		RIS 250		
		Client Advisers 8,857		

Debt Capital Markets Group

UBS LEAD MANAGED DEBT OFFERINGS



2004

US\$6.7 billion 5-Tranche
Due from 2006 to 2034



2004

US\$3 billion 2-Tranche
Due 2005 to 2009



2004

€1.5 billion 2-Tranche
Due 2006 to 2011

HIGH YIELD



2004

US\$625 million Senior
Subordinated Notes
Due 2014



2004

US\$1 billion 2-Tranche
Due from 2010 to 2016



2004

CHF250 million
Due from 2008 to 2014



2004

US\$500 million
Due 2009



2004

US\$250 million Senior Notes
Due 2014



2004

US\$500 million
Due 2011



2004

US\$500 million 2-Tranche
Due 2009 to 2014



2004

US\$500 million 2-Tranche
Due 2009 to 2014



2004

US\$300 million Senior Notes
Due 2014



2004

US\$600 million
Due 2007



2004

US\$500 million
Due 2007



2004

US\$300 million
Due 2019



2004

US\$195 million Senior
Subordinated Notes
Due 2011

SECTION 2

UBS Recruiting

McCombs MBA Recruiting Team

Name	Group	Business Title	Email	Phone #	
Colella, John ¹	Power	Director	john.colella@ubs.com	212-821-5377	Co-Captain
Sivy, Brian ¹	Power	Director	brian.sivy@ubs.com	212-821-5379	Co-Captain
Loeffler, Lance	Healthcare	Associate	Lance.loeffler@ubs.com	212-821-4115	

Bogle, Tamasine	Recruiting	MBA Recruiter-IBD	tamasine.bogle@ubs.com	212-821-3457	
Odogbili, Gloria	Recruiting	Asst MBA Recruiter-IBD	gloria.odogbili@ubs.com	212-821-3339	

Notes:

¹ John Colella and Brian Sivy are Co-Captains of the Non-core Recruiting Team. They both graduated from the Goizueta Business School at Emory University.

These individuals are available for informational interviews

SECTION 3

Internship Timeline

First Semester Recommended Recruiting Timeline

Item	Goal	Date of Completion
Meet with Peer Counselors / other MBA2s if you have general concerns	<ul style="list-style-type: none"> ◆ To determine if Investment Banking is for you ◆ To start focusing your search ◆ To help you get started 	Mid October
Read your WSJ	<ul style="list-style-type: none"> ◆ To be able to speak intelligently about current events in the finance industry ◆ To spot key deals and which banks are involved ◆ To understand general trends over time 	Every day! Spending an hour/day is key (but realistically this will get difficult to do; the closer to corporate presentations/ interviews the more important this will be)
Attend CMC Recruiting Events	<ul style="list-style-type: none"> ◆ To understand what is happening in the market ◆ To gain valuable information pertaining to recruiting ◆ To help assist you in your Investment Banking job search 	Every week Go to these events as often as you can. They can only help.
Join the Finance Club and attend the IBG Academy	<ul style="list-style-type: none"> ◆ To gain valuable information about others' experiences ◆ To accelerate your proficiency with qualitative and quantitative skills 	Weekly
Follow an Industry (research, magazines or reports); CNBC and websites are useful sources of info for following happenings and trends in certain industries	<ul style="list-style-type: none"> ◆ Have a current understanding of a particular industry and be able to speak intelligently about your industry with bankers ◆ Understand the market ◆ Help narrow down an area of interest 	Start this ASAP as well. Designate a period of time each week.
General Research/Information gathering about Investment Banking	<ul style="list-style-type: none"> ◆ To determine if Investment Banking is for you ◆ To determine areas of interest in Investment Banking 	ASAP For Informationals or corporate presentations (i.e. anytime you have set up a meeting or will be speaking in depth with bankers)
Training the Street	<ul style="list-style-type: none"> ◆ To learn how investment bankers value companies ◆ As an introduction to mergers & acquisitions ◆ To gain exposure to advanced technical skills 	Mid October
Corporate Presentations	<ul style="list-style-type: none"> ◆ Make some contacts/establish some connections ◆ Gather information/obtain corporate materials handed out at events ◆ Get a feel for the bank 	September to November

Note: Times are subject to change and the above are suggestions to assist you in your job search

First Semester Recommended Recruiting Timeline

Item	Goal	Date of Completion
Corporate Events	<ul style="list-style-type: none"> ◆ Attend those designated specifically towards areas of interest ◆ Make some contacts/get your name out there ◆ Get a feel for the bank 	All fall and recruiting season
Put together a strong resume Includes reviewing with a career counselor, peers and those in the industry	<ul style="list-style-type: none"> ◆ Attend OCD events and workshops ◆ Have a resume that is focused on IB ◆ Know how to tailor a specific resume in IB terms ◆ Have a working resume ASAP; it is better to have a decent resume in case bankers or anyone needs to see something before your "official" Stern resume is posted 	Start putting this together ASAP, but gather information from club and OCD events to help you. DO NOT WAIT UNTIL THE LAST MINUTE (The resume deadline sneaks up quickly) The bulk of this work should be done during October
Resumes Completed	<ul style="list-style-type: none"> ◆ Have a strong working resume for Investment Banking events ◆ Have one main resume which you will always use (not great to have floating copies of former resumes going out to the banks) 	October
Specific Bank Analysis Industry Information	<ul style="list-style-type: none"> ◆ Be able to speak intelligently to bankers about their specific bank 	Before informational interviews
Set up and prepare for Informationals	<ul style="list-style-type: none"> ◆ To help make contacts for closed lists in Jan. ◆ To understand the bank better ◆ To demonstrate what a good candidate you are ◆ To show interest and do your homework 	Usually time period of mid-to-late October to Winter Break Some banks make lists earlier than others (Start with junior bankers first)
Finance Conference	<ul style="list-style-type: none"> ◆ Participate in hosting visitors ◆ Meet as many people as you can 	Early November
Send out resumes and cover letters	<ul style="list-style-type: none"> ◆ TO GET ON CLOSED LISTS SO YOU CAN INTERVIEW 	Usually right before Thanksgiving; allow sufficient time, it takes longer than you think to come up with good cover letters and gather all of the addresses Pay attention to club and CMC reminders as the semester progresses
Complete Informationals	<ul style="list-style-type: none"> ◆ To help with that closed list 	Usually before Winter Break is the <i>very last chance</i> to visit—check each bank's deadlines so you don't miss out!
Attend remaining recruiting events	<ul style="list-style-type: none"> ◆ To meet more people and get your name out there 	

Note: Note that times are subject to change and the above are suggestions to assist you in your job search

SECTION 4

Overview of Investment Banking

Overview of Investment Banking

PURPOSE

- ◆ Raise capital through issuance of securities
 - equity and debt
 - specialized securities and derivatives
- ◆ Advise companies in M&A and restructuring
- ◆ Provide valuation and strategic advisory

SKILL SET

- | | |
|----------------|------------------------------|
| ◆ Motivated | ◆ Aggressive |
| ◆ Team player | ◆ Deal oriented |
| ◆ Quantitative | ◆ Willing to take initiative |
| ◆ Personable | ◆ Handle stress well |
| ◆ Flexible | ◆ Professionalism |
| ◆ Articulate | ◆ Responsible |

PROS/CONS

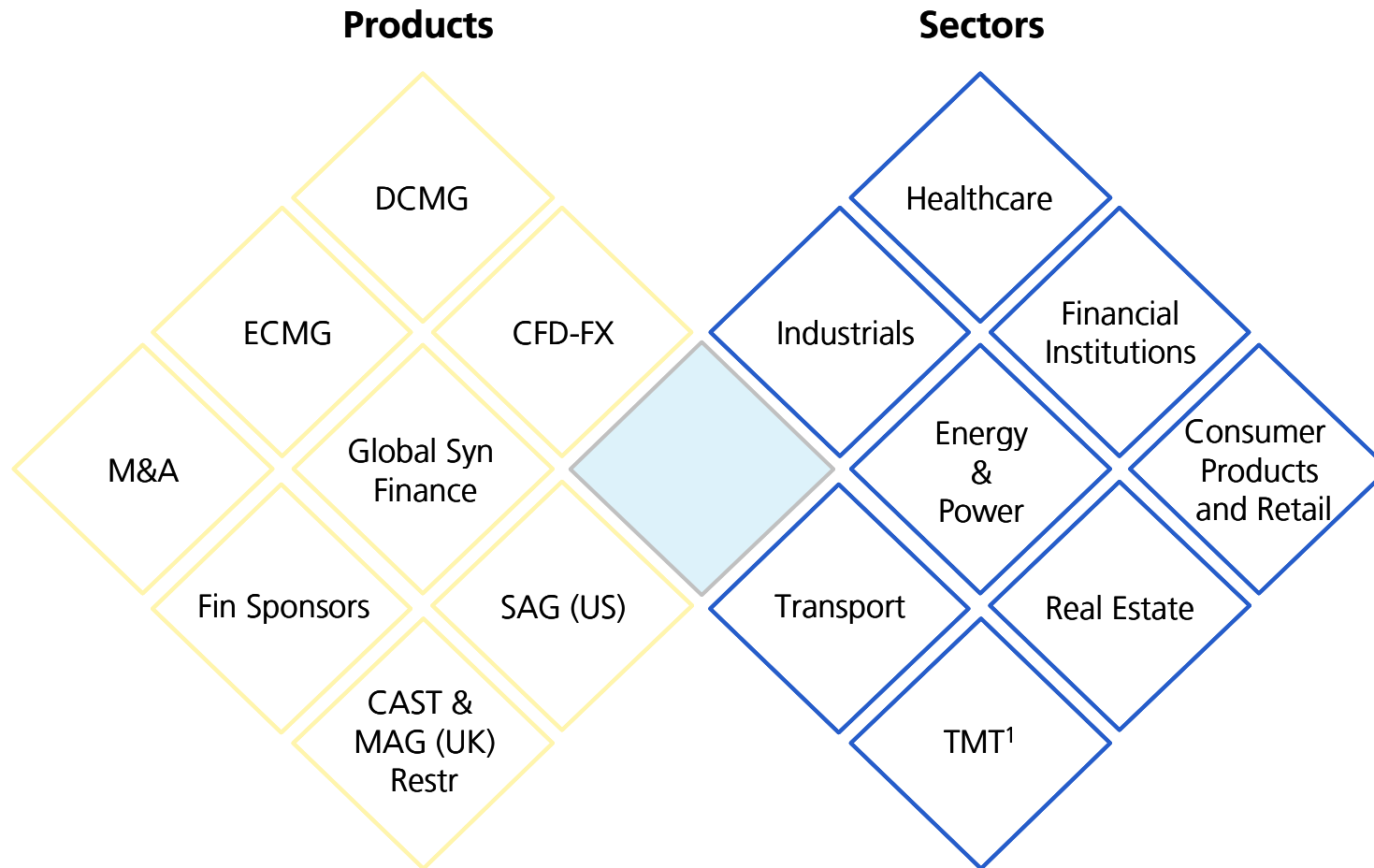
Uppers

- ◆ Exposure/network
- ◆ Magnitude/notoriety of deals
- ◆ Responsibility
- ◆ Skill and knowledge base development
- ◆ Compensation

Downers

- ◆ Long hours
- ◆ Work-life balance
- ◆ Stress environment
- ◆ Intensity
- ◆ Focus on detail

Product And Sector Teams



Note:

1 TMT = Technology, Media, Telecommunications

Product/Sector Interaction

Product Strengths

Product Expertise
Global Product Liaison
Execution Experience
Specialized Resources
“Inch wide – Mile Deep”

Sector Strengths

Sector Knowledge
Client Management Skills
Global Coverage
Specialized Resources
“Mile Wide – Inch Deep”

- ◆ While there is an emphasis on execution of transactions in the product groups and an emphasis on marketing and client management in the sector groups, there is a high degree of overlap
- ◆ Investment bankers have one client at the end of the day. Specialization maximizes the efficiency in covering that client

The Associate/AD Role

Responsibilities

- ◆ Technical Analysis
- ◆ Team Management
- ◆ Logistics/Processing
- ◆ Whatever it takes

Qualities

- ◆ Leadership
- ◆ Teamwork
- ◆ Communication
- ◆ Dedication
- ◆ Professionalism

- ◆ Little things can mean a lot and poor execution can mask good skills
 - attention to detail
 - formatting/professionalism
 - timeliness
- ◆ Communication is the key to good teamwork and efficiency
 - ask questions if you don't know
 - understand what expectations are (timing/deliverable)
 - let people know your limitations
- ◆ Treat your Associate/AD years as an investment (more experiences = more personal capital)
 - seek out work
 - try to vary the people and types of projects you work with or on
 - get included in as many client calls or meetings as possible

The Associate/AD In a Team

- ◆ You are a member of the team not the bottom
 - team is organized by skills and responsibilities
 - you need to work closely with the Analyst and the person above you
 - you will be in a position where you represent the bank
 - you have support, use it wisely to maximize your own leverage
- ◆ You will have to develop a management style
 - support staff can hurt you or help you, you are not their only “Boss”
 - you will need to train Analysts, summer interns and new Associates
 - you will need to build relationships and understand motivations
 - you need to take advantage of the bigger “Team”
- ◆ Understand who the contact people are in different areas of the bank
 - use contacts in different groups amongst your class
 - you will be the decision maker in certain circumstances
 - help each other as a team of Associates/ADs in your group (“Fresh Eyes”)
- ◆ The Associate/AD role is best summed up as:
 - Managing ↑ to superiors requesting work
 - Managing ↓ to analysts/other associates working for you
 - Managing ↔ with associates in other groups coordinating on your deal

SECTION 5

Interview Preparation

Developing Your Story: Key Pieces of Advice

- ◆ Pick relevant time frames
 - high school probably isn't relevant
 - usually just begin at graduation from undergrad
- ◆ Have different length versions of your story, but be sure to include the most important points or themes in each version
- ◆ Your story should flow with your resume, but you should not be re-hashing your resume
- ◆ Don't read off of your resume or pause to refer to it when interviewing
- ◆ Keep your story consistent
- ◆ Your story should always answer "why banking?"
 - even seemingly unrelated experiences have relevance
 - think of the characteristics that the bank is evaluating
 - managing deadlines
 - team work
 - leadership
 - communication
- ◆ If you mention it, it is fair game
 - be careful what you bring up
- ◆ Practice, practice, practice!
 - if you wait until mock interviews begin, you're too late

Developing Your Story: Key Pieces of Advice

Some Key Questions That You May Encounter, Which Translate into ... "Tell Me Your Story":

- ◆ So, tell me about yourself...
- ◆ I haven't had time to read your resume, fill me in...
- ◆ Tell me why banking?
- ◆ Walk me through your resume...
- ◆ What did you do before b-school?
- ◆ What do you want me to know about you and your background?
- ◆ You are a career-changer. What makes you want to do banking?
- ◆ You have never done banking before. Why now?
- ◆ You have done XYZ before, what makes you think you can do banking?

Interview Questions—General Theory

- ◆ What is Working Capital?
- ◆ Define Beta; what are the limitations of Beta?
- ◆ Show how to unlever and relever Beta.
- ◆ What is CAPM; what are the assumptions of CAPM?
- ◆ Define reward to risk ratio.
- ◆ Write formula for WACC.
- ◆ Define Sharpe ratio.
- ◆ Draw the yield curve.
- ◆ Define duration.
- ◆ Show how convexity impacts a bond's price to yield relationship.
- ◆ Write the formula for Black Scholes.
- ◆ Discuss different accounting treatment for different securities (e.g. trading, available-for-sale, held-to-maturity).
- ◆ Discuss how minority active, passive and majority active are handled.
- ◆ What is a carve-out, spin-off and split-off?
- ◆ What is accretion and dilution? — Give an example.
- ◆ Go over a cash flow statement.
- ◆ What are some liquidity/leverage ratios?
- ◆ How do you go from NI to cash flow? FCF and FCFE?
- ◆ How do you value a company?
- ◆ If you know a company's P/E, what is its ROE?
- ◆ Where do Deferred Tax Liabilities come from? — Give an example.

Interview Questions—Other General Questions

- ◆ What did Dow, S&P and Nasdaq close at yesterday?
- ◆ What is the Fed Funds rate?
- ◆ What is the discount rate?
- ◆ When does the Fed meet next?
- ◆ What is the 10-year bond yield?
- ◆ What is the yield on all other bonds?
- ◆ What is the \$/Yen?
- ◆ Where are the markets going?
- ◆ What did the markets do last week and why?
- ◆ What have the markets been doing this week and why?
- ◆ What are three major news items related to the industry in which you are interested? What is the most interesting article you read in the WSJ of late?
- ◆ What was in the Journal today?
- ◆ What business publications do you read? What interesting articles have you read in those publications of late?
- ◆ What activities have you participated in college and undergrad?
- ◆ What multiples are used in the industry in which you are interested?
- ◆ Tell me about a recent IPO you followed.
- ◆ Describe a recent M&A deal you read about—what were the reasons that they merged.

Interview Questions—Big Picture Must–Practice Items

- ◆ Why do you want to do I-Banking?
 - challenge, visibility, opportunity to work with the best
- ◆ What skills does Investment Banking require—what in your background shows you can do it?
 - intelligence, initiative, communication skills, attention to detail, teamwork
- ◆ What do I-Banks do?
 - I-Banks act as financial consultants on a range of issues including M&A, restructuring and capital raising activities. Once a course of action is decided the Bank then executes the strategy by underwriting securities, etc
- ◆ In which industry/(ies) do you wish to focus?

Interview Questions—Bank-Specific Items

- ◆ Why Bank XX?
- ◆ Compare Bank XX and Bank YY.
- ◆ What is the market cap, current price, 52 week high and low, and expected EPS and next earnings date for Bank XX?
- ◆ Name 3 major news items related to Bank XX in the last 2 months.
- ◆ What is Bank XX known for?
- ◆ Who are Bank XX's competitors?
- ◆ What is the structure of Bank XX?
- ◆ Who is the CEO of company XX??
- ◆ **Think about what questions you will ask!!!**

More Sample Interview Questions—Investment Banking Fit

- ◆ What three adjectives would your: a. peers; b. superiors; c. subordinates use to describe you?
- ◆ What is the greatest risk we face in hiring you?
- ◆ What are your greatest team and personal achievements?
- ◆ Describe your leadership style.
- ◆ Describe a team situation you were in where things did not work out.
- ◆ Why did you choose NYU-Stern?
- ◆ What other B-schools did you apply to and get in?
- ◆ Do your grades reflect your abilities?
- ◆ Why do you want to be an investment banker?
- ◆ Why do you want to work for our firm?
- ◆ What differentiates you from all the other highly qualified candidates we are looking at today?
- ◆ What other types of jobs are you interviewing for and why?
- ◆ What other investment banks are you interviewing with? If you got offers from all of them, where would you go?
- ◆ Name three traits you would want to have in a friend and show how you have those too.
- ◆ Walk me through your resume explaining why you made the choices you did in the past.
- ◆ Tell us about three of your strengths and three of your weaknesses.
- ◆ What non-finance and accounting electives have you taken?
- ◆ What is your favorite class and why?
- ◆ How do you know you will be able to handle the hours required of an investment banker?
- ◆ Describe what you learned in class this morning.
- ◆ Do you consider yourself a risk-taker?

More Sample Interview Questions—Investment Banking Fit

- ◆ What is your greatest accomplishment outside of school?
- ◆ Tell me about something creative you have done.
- ◆ Tell me about a situation where you disappointed your boss and why.
- ◆ What have you done to learn about investment banking?
- ◆ What are your undergraduate GPA, GMAT and SAT scores. What are your class-by-class B-school grades?
- ◆ What kind of skills do investment bankers need?
- ◆ With what other bankers have you spoken at this bank?
- ◆ What product or industry group are you interested in working with?
- ◆ How well do you function under pressure?
- ◆ Why do you want to work on Wall Street?
- ◆ What qualifications will help you do well at this job?
- ◆ Are you a smart person?
- ◆ Who is your best friend? — Would you lie for them?

More Sample Interview Questions—IB Technical

- ◆ What type of a company would be a good candidate for an LBO?
- ◆ What are the two largest ways companies can play with their earnings?
- ◆ How does Net Income flow into the Balance Sheet, Income Statement and Statement of Cash Flows?
- ◆ Describe how to value a privately held company.
- ◆ Describe three valuation methods
 - Discounted Cash Flow
 - Comparable Company or Multiple Valuation
 - Comparable Transaction Valuation
- ◆ What is a stock that you follow?
- ◆ What is the difference between commercial and investment banking?
- ◆ Do you think the market is efficient?
- ◆ How would you describe the cost of capital to a non-finance person?
- ◆ What is CAPM?
- ◆ Define Beta for a layman.
- ◆ What kind of financial modeling have you done in the past?
- ◆ Suppose your client had significant excess cash on the balance sheet. Would you tell him to put it to good use? (Followed by about six successive, "why's")
- ◆ Have you ever worked with a difficult group?
- ◆ If I had 1 million dollars today, how should I invest?
- ◆ Who is our CEO? What is his background? What would you ask him?
- ◆ Do you see yourself as a trader or a salesman?

More Sample Interview Questions

Things to mention whether you are asked or not:

- ◆ Mention the names of all other bankers at that bank with whom you have met and done informationals
- ◆ Mention the names of all other banks with which you are in final rounds or from whom have received offers
- ◆ Tell your story of why you want to work in investment banking
- ◆ Mention names of prominent deals the bank has done
- ◆ Show that you have done your homework and know what groups are strong at the bank

Skills/Qualities to demonstrate you have:

- ◆ Academic Excellence
- ◆ Relevant Business Experience
- ◆ Demonstrated Leadership Experience
- ◆ Demonstrated Work Ethic
- ◆ Interviewing Skills
- ◆ Computer/Math Skills—Problem Solving/Analytical/Modeling
- ◆ Perceived Client Relationship Skills
- ◆ Know why you want to be a banker (story)
- ◆ Know why you want to be at their bank

SECTION 6

Technical Reference

Being an Associate—A Few Tips

- ◆ What makes a good Associate?
 - professionalism (interaction with clients and co-workers)
 - timeliness (know deadlines and meet them, time management, parallel processing)
 - technical skills (accounting, finance and spreadsheet skills)
 - accuracy (every possible research source examined, **no** typos, careful numbers work)
 - learning to eyeball the output every time you print it out, and to spot unreasonable numbers at a glance
 - judgment (what makes sense for the client and for the firm)
 - good attitude and a strong work ethic
 - think like a project manager (anticipate work that needs to be accomplished and be proactive)
- ◆ Questions:
 - do not be afraid to ask well thought-out questions
 - for general questions ask peers; for specific project oriented questions, ask the immediate supervisors and your team
 - if no one is around to ask, use your best judgment and footnote your assumption
- ◆ Dealing with Subordinates
 - learn to do what you ask them to do—and take time to teach
 - they are valued resources of the firm. Expect superior output and a strong work ethic; however, be fair

Necessary Tools—Information is Everything

Most things have been done—ask other bankers before recreating the wheel

Public Filings (US)	Additional Company Information and Estimates	On-Line Databases	Other Databases	Others
Annual Report	Investext/Multext (research reports)	Capital IQ	Dun & Bradstreet	New Articles—Library (Lexis/Nexis)
10-K (20-F – foreign filers)	S&P Tear Sheet	FactSet	One Source	The Wall Street Journal
10-Q (6-K – foreign filers)	Value Line	Bloomberg	OneSource Private	Forbes
Proxy	I/B/E/S	Datastream	Spectrum	The Financial Times
13-D/14D-1	First Call	SDC	Technimetrics	Business Week
Registration Statement/ Prospectus (S-1, F-1)	Zack's	Spectrum	Securities Data	The New York Times – Dealbook Email
8-K	Nelson's Moody's Company Reports UBS research	ILX	Equidesk Bondesk Amadata Bondware M&A Desk Reuters	TheDeal.com Management Files Colleagues

Selected Valuation Methodologies Overview

Method	Description	Pros	Cons	Comments
Comparable Companies Analysis	<ul style="list-style-type: none"> ◆ Compare the trading and operating performance of the Company to that of its peers ◆ Specifically, determine how the market has capitalized the earnings and cash flows of similar companies. Also, analyze other parameters such as book value, leverage and margins. Compare these ratios to the Company's performance and/or use them to impute an implied market value for the Company 	<ul style="list-style-type: none"> ◆ Market efficiency ensures that trading values reflect industry trends, business risk, market growth, etc. ◆ Values obtained are a reliable indicator of the value of the Company for a minority investment ◆ Useful technique for assessing vulnerability; when fundamental vs market value is large, vulnerability is high 	<ul style="list-style-type: none"> ◆ Always comparing apples to oranges. Truly comparable companies are rare for which differences are hard to account ◆ Thinly traded, small capitalization and poorly followed stocks may not fully reflect fundamental value ◆ Many people feel that the stock market is "emotional" and that sometimes it fluctuates irrationally 	<ul style="list-style-type: none"> ◆ The unaffected trading level does not include a control premium or synergy value associated with strategic acquisitions ◆ Explaining value gaps between the Company and its comparables can involve subjective interpretation ◆ The market is not always an efficient one; small capitalization and thinly traded stocks may not trade actively and the share price therefore may not reflect financial value ◆ It is important to select truly comparable companies to reflect accurate comparability
Precedent Transactions Analysis	<ul style="list-style-type: none"> ◆ Determine the value offered in past acquisitions of similar companies ◆ Specifically, determine the pricing of past deals as compared to the target's financial performance and unaffected market value 	<ul style="list-style-type: none"> ◆ Recent comparable transactions can reflect supply and demand for salable assets ◆ Realistic in the sense that past transactions were successfully completed at certain premiums. Indicates a range of plausibility for premiums offered ◆ Trends such as consolidating acquisitions, foreign purchasers or financial purchases may become clear 	<ul style="list-style-type: none"> ◆ Past transactions are rarely directly comparable—always comparing apples to oranges ◆ Public data on past transactions can be nonexistent or misleading ◆ Values obtained often vary over a wide range and thus are of limited usefulness 	<ul style="list-style-type: none"> ◆ Interpretation of the data requires familiarity with the industry and the properties involved ◆ Analysis is typically based on historical data, not forward looking data ◆ It is important to understand terms and logistics of transactions (e.g., unsolicited transactions tend to occur at higher multiples)

Selected Valuation Methodologies Overview

Method	Description	Pros	Cons	Comments
Discounted Cash Flow Analysis	<ul style="list-style-type: none"> ◆ Discount unleveraged, after-tax projected free cash flow at Company's weighted average cost of capital to obtain an economic present value of assets. Subtract outstanding debt from the present value of assets to get present value of equity ◆ Several discount rates and operating scenarios are used to estimate the uncertainty of the values obtained 	<ul style="list-style-type: none"> ◆ Theoretically the most sound method if one is very confident in the projections and assumptions ◆ Not influenced by temperamental market conditions or non-economic factors 	<ul style="list-style-type: none"> ◆ Present values obtained are sensitive to assumptions and methodology ◆ Values obtained can vary over a wide range and thus be of limited usefulness ◆ Involves forecasting future performance, which is inherently subjective 	<ul style="list-style-type: none"> ◆ DCF value should be adjusted for non-operating items such as environmental liabilities and the value of excess assets ◆ Need realistic five- to ten-year projected financial statements ◆ Sales growth rate, margins, terminal multiples and discount rates are key to value

Enterprise Value vs. Equity Value

Definitions

Equity Value

- ◆ On a trading basis, Equity Value or Market Value is defined as:
 - latest Shares Outstanding x Current Market Price
- ◆ The latest shares outstanding should be taken from the cover page of the latest Form 10-K or Form 10-Q (20-F, 6-K, Annual Report or Interim Statement for non-US companies), whichever is more recent
DO NOT USE SHARES OUTSTANDING FROM BLOOMBERG OR FACTSET. THESE FIGURES ARE OFTEN WRONG
 - be sure to check whether there has been any kind of stock split or other change in the number of shares (e.g., secondary offering, stock dividend, acquisition for stock, etc.) since the latest filing
- ◆ On a transaction basis, Equity Value is defined as:
 - latest Shares Outstanding x Offer Price
 - + Shares for Options¹, Warrants¹, SARs², etc. x (Offer Price – Average Exercise Price)
 - + Shares for Convertible Debt x Offer Price³
 - + Shares for Convertible Preferred Stock x Offer Price³

- = Equity Value

Enterprise Value⁴

In addition to Equity Value, Enterprise Value includes all other sources of capital utilized by the company. Enterprise Value is used in ratios that measure the return to all sources of capital (e.g., Enterprise Value/EBITDA, Enterprise Value/EBIT, etc.)

Notes:

- 1 Also referred to as Firm Value, Adjusted Market Capitalization and Aggregate Value
- 2 SAR= Stock Appreciation Rights
- 3 Only if offer price exceeds conversion price
- 4 Also referred to as Firm Value, Adjusted Market Capitalization and Aggregate Value

Enterprise Value vs. Equity Value

Enterprise Value is defined as:

Equity Value

- + Short-Term Debt and Long-Term Debt
 - + Capital Lease Obligations
 - + Preferred Stock at Liquidation Value ¹
 - + Out-of-the-Money Convertible Debt
 - + Out-of-the-Money Convertible Preferred Stock
 - + Minority Interest (at market value, if publicly traded)
 - Cash and Cash Equivalents ²
-
- = Enterprise Value

Net Income to Common

- ◆ Net Income to Common represents the earnings available to common shareholders *after* interest expense, taxes and preferred dividends. Net Income should always be taken before extraordinary items and adjusted for non-recurring items on an after-tax basis

EBIT

- ◆ EBIT (“Earnings Before Interest {interest expense less interest income} and Taxes”) represents the earnings stream (operating income) available to all investors, including debt holders and preferred shareholders. In a typical income statement, it is defined as:

Gross profit

- SG&A
 - Depreciation and Amortization ³
 - Any other recurring operating expenses/(income) ⁴
-
- = EBIT

Notes:

- 1 All preferred stock which is not included in Equity Value
- 2 Used as a proxy for excess cash, which is cash over and above that needed to run the business on a daily basis
- 3 Often included in part or in whole in the Cost of Goods Sold. When calculating EBIT using this method, use Depreciation and Amortization from the Income Statement (if available) since a portion of the Depreciation & Amortization may already be included in COGS. Do not use Depreciation & Amortization from the Statement of Cash Flows. However, when calculating EBITDA (see next page), you should use Depreciation & Amortization from the Cash Flow Statement and add it back to EBIT
- 4 Note that other income/expense below the operating income line should be included assuming that it is both recurring and non-financial. Check the notes to the financial statements!

Enterprise Value vs. Equity Value

EBITDA

- ◆ EBITDA (“Earnings Before Interest, Taxes, Depreciation and Amortization”) represents the pre-tax operating cash flow available to all investors. Defined as:

EBIT (as defined above)

+ Depreciation and Amortization (taken from Statement of Cash Flows)

= EBITDA

Equity Value vs. Enterprise Value Multiples

Equity Value (or Market Value) Multiples

- ◆ Certain flows or values apply to equity holders only—these include net income and book value of equity. Since each of these values is after debt and preferred financing is taken into account, multiples of these flows or values should be based on the value of the equity only
- ◆ Therefore, the only relevant ratios are:
 - Equity Value to: Net Income to Common Shareholders, Book Value and Cash Flow

Enterprise Value (“EV”) Multiples

- ◆ Other flows apply to all capital providers (i.e., debt and equity), and therefore Enterprise Value should be used
- ◆ Relevant ratios are:
 - Enterprise Value to: Sales, EBITDA and EBIT
- ◆ Also use Enterprise Value as the numerator for industry specific measures (e.g., EV/mineral production, EV/retail sales space, EV/R&D)

Comparable Companies

Definition

- ◆ The comparable companies analysis (“Comps”) typically consists of a comparison of several companies’ operating and trading statistics. The exact ratios and range analyzed will vary from project to project
- ◆ Comps are good for valuing companies in virtually any given industry. Almost all of our valuation presentations include comparables—usually one set for each sizable segment of the valuation target. Comps serve as the primary measure of value when analyzing a public offering
- ◆ Use of comps will give you a TRADING VALUE. You will need to add a “control premium” to obtain an ACQUISITION VALUE

Concept

- ◆ A comparable peer group should embody the same business and financial attributes such that their public trading values represent a reasonable proxy for those of the company under consideration
- ◆ Relevant attributes include:
 - industry group
 - business mix (products, markets served, distribution channels, etc.) and respective weight of each product
 - geographic location
 - operations (production processes, critical inputs/components)
 - size (revenues, assets, market capitalization)
 - financial parameters (leverage, historical and future growth rates, cash flow characteristics, margins, and dividend yield)

Comparable Companies

Methodology

- ◆ The first step in putting together a comparables exhibit is to identify companies that are considered comparable. An SIC code run from the library and on FactSet are the main sources for a search. Research reports, the proxy statement, the 10-K and Bloomberg may also list comparable companies. You want to identify “pure plays” or those companies that closely resemble the company (or segment of a company) that you are evaluating
- ◆ Once you have the output from the SIC code run and FactSet search, read Value Line, S&P Tear Sheet descriptions, Bloomberg “DES” page and/or Moody’s Company Reports to pinpoint those companies that are most similar. These publications also have industry groupings that may be helpful in identifying comparables. Finally, run your list of comparables by another member of your team or industry analyst for a final check
- ◆ The median values for the comparables chosen are always included in the exhibit. Mean values must be used carefully because skewed or outlying data can result in misleading values. Thus, outliers are often excluded from the mean calculation
- ◆ It is critical to be attentive to how particular industries trade. Some trade based on EBITDA multiples (i.e., most manufacturing companies), some trade on Price/Earnings or Price/Book multiples (i.e., financial institutions) and some trade on industry specific statistics (i.e., cellular companies trade on a “per pop” basis and paging companies trade on a “per subscriber” basis)
- ◆ Using the appropriate multiple for the industry and even the individual company to be valued will more accurately reflect the true value of the enterprise

Comparable Companies Analysis

Also known as “trading comps” or “equity comps”

Assumptions and Footnotes

- ◆ Reported information is almost never complete enough to meet all inputs for your analysis
 - ◆ Read the Notes to the Financial Statements; answers are often found there
 - ◆ Check with bankers on your deal team or in your industry group; methodologies may differ
 - ◆ Do not be afraid to make assumptions for which there are reasonable foundations
 - ◆ Footnote all company-specific assumptions accordingly:
 - sources of assumptions and estimates
 - methodologies used for calculations
 - adjustments for non-recurring items and marginal tax rate, if appropriate
 - ◆ Footnote all global definitions where applicable, including:
 - inclusion of minority interests in net debt
 - treatment of preferred stock
 - ◆ Mark your source material with a highlighter and post-its so that inputs are easily located and checked
- LEAVE AN AUDIT TRAIL AND MAKE NOTES OF ALL SOURCES, ASSUMPTIONS AND CALCULATIONS**

Basics of Trading Comps

Inputs to the Comparables

Item	Source
Latest Indicated Annual Dividend	On Bloomberg under Current News (CN); look for the latest dividend declaration headline. Look at the article to get the most recent dividend and annualize it (e.g., multiply by 4 for quarterly dividends). Alternatively, go to the same screen as the stock split screen
Common Shares Outstanding	On the front page of the 10-Q or 10-K near the bottom. Make adjustments for subsequent events, if any (e.g., announced share repurchase, stock split, etc.)
Long-Term ("LT") Debt	LT debt plus redeemable preferred stock plus capital lease obligations (if any). Other types of preferred stock are not considered LT debt
Short-Term ("ST") Debt	Under current liabilities, "short-term borrowings" or "bank notes", plus "current maturities of LT debt", "accrued interest" ¹ , if any
Minority Interest	Minority interest at market value if publicly traded
Preferred Stock	Preferred Stock at liquidation value, not included in LT Debt.
Book Value	Common Shareholders' Equity from the latest balance sheet.
Net Interest Expense ²	Interest expense less interest income both from income statement
D,D&A (D&A)	Depreciation, Depletion and Amortization (Depreciation and Amortization) is found on the Statement of Cash Flows (some 10-Qs may not disclose this)
EBIT	Earnings before Net Interest Expense and Taxes
EBITDA	EBIT plus D,D&A.
Net Income	Net Income to Common Shareholders
E.P.S.	Primary before extraordinary items. Watch for stock splits: if Net Income/Shares Outstanding differs from E.P.S. by more than 5%, try to find out why. Remember that some discrepancy is normal, because total shares outstanding does not usually equal weighted average shares outstanding
Cash Flow from Operations per Share Estimates	Cash Flow per Share is equal to Net Income + D,D&A + Deferred Taxes (from Statement of Cash Flows) + Other Non-Cash Charges divided by Shares Outstanding. Research reports or Value Line (in library)
E.P.S. Estimates	From First Call, I/B/E/S, FactSet, Bloomberg or research reports

Outputs to the Comparables

Item	Source
Equity Value	Stock Price × Common Shares Outstanding
Enterprise Value	Equity Value + LT Debt + ST Debt + Minority Interest + Preferred Stock (not included in LT Debt) – (Cash + Cash Equivalents)
Price/Earnings	Price/E.P.S.
Price/Cash Flow	Stock Price/Cash Flow per Share
Dividend Yield	Dividends per Share/Stock Price
Price/Book	Equity Value/Book Value
% Payout	Dividends per Share/E.P.S. (last 12 months)
Interest Coverage ²	EBIT/Interest Expense
Enterprise Value/Sales ³	Enterprise Value/Sales
Enterprise Value/EBITDA ³	Enterprise Value/EBITDA
Enterprise Value/EBIT ³	Enterprise Value/EBIT

Notes:

- 1 Accrued Interest is sometimes detailed on the balance sheet or in the Accrued Liabilities footnote
- 2 For an Interest Coverage ratio, i.e., EBITDA/Interest or EBIT/Interest, be sure to add Capitalized Interest to your Net Interest Expense and subtract it from EBITDA. Capitalized Interest, if available, can be found in the Management's Discussion and Analysis section or in the notes (P,P,&E) to the financial statements
- 3 The idea here is that since EBIT, EBITDA and Sales are not affected by the company's choice of capital structure (as are cash flow, net earnings and book value), the appropriate multiples use total capital (i.e., equity and debt), and not just equity capital

Precedent Transactions Analysis

Today, XYZ announced the sale of its Danco subsidiary to LBO Partners for \$135 million, including the assumption of debt and other liabilities.

Today, IBM announced the sale of its printed circuit board operations for \$80 million, plus \$100 million of assumed debt.

Definition

- ◆ The precedent transactions exhibit contains information about selected M&A transactions in the same industry as the company (or segment of a company) that you are evaluating, thereby allowing a value to be imputed to the company under consideration. The purpose is similar to that of the comparables trading statistics except that by looking at prior acquisitions, you can get a sense of the premium that is paid to gain control of the target company (i.e., control premium). This is another way to assess the value of the company from a potential buyer's perspective

Methodology

- ◆ Unlike the DCF analysis, this technique does not focus on the operating assumptions of the current or prospective owner. Rather, such multiples represent an index of recent market prices paid by other acquirers and accepted by other sellers. From a potential seller's viewpoint, the multiples suggest a target price range at which other buyers have been willing to buy. Conversely, for potential buyers, the multiples suggest price ranges that are acceptable to sellers
- ◆ However, because each acquisition is unique and buyers and sellers typically do not know all the factors and motives that went into the formulation of another acquisition price, acquisition multiples often suggest a wide range of values and must be used with care. Moreover, because the acquisition market is not continuous in time, the fact that a particular multiple was paid in the past does not necessarily mean that it still applies today. Unlike the stock market, there is no current P/E benchmark other than the most recent industry transaction which may be several months or even years old. Furthermore, many transactions occur at the subsidiary or division level for which no trading valuations exist

Precedent Transactions Analysis

- ◆ Prices paid as a multiple of net earnings and/or operating profit (EBITDA and EBIT) are typically the most useful for a broad range of industrial companies. An important requirement for such multiples to be meaningful is that the accounting principles underlying earnings be comparable across the sample of transactions
- ◆ The output for precedent transaction analysis is largely similar to that of comparable companies with one difference:
 - Equity Value—Equity value should be calculated based on the fully-diluted number of shares outstanding because convertible securities and options will typically come “in-the-money” in an M&A transaction. Note that management options, not to be confused with publicly-traded options, typically vest in change of control transactions
 - Enterprise Value—Since a majority of M&A transactions are done at the division and subsidiary level, financial data is sometimes difficult to procure. If no debt is assumed, Equity Value and Enterprise Value will be equal

Warrants and Options

- ◆ Warrants, options and similar securities are considered common stock equivalents at all times unless conversion of these securities proves antidilutive (i.e., E.P.S. is actually increased after accounting for these securities. This occurs if the market price of the stock is lower than the exercise price of the option). As a result, both primary and fully-diluted E.P.S. should reflect the dilution that would result from exercise or conversion of these securities
- ◆ The amount of dilution reflected in E.P.S. data should be computed by application of the “treasury stock” method. Under this method, E.P.S. is calculated as if the warrants and options were exercised at the beginning of the reporting period (or, if later, at the time of issuance) and as if the funds obtained by the exercise were used to purchase common stock at a market price

Precedent Transactions Analysis

$$\begin{aligned} \text{Shares for E.P.S. purposes} &= \text{Shares Outstanding} + \text{Incremental Shares} \\ \text{Incremental Shares} &= \frac{\text{Number of Options} - \text{Number of Options} \times \text{Exercise Price}}{\text{Market Price of Stock}} \end{aligned}$$

For primary shares outstanding, use the average market price during the period as the denominator.

To calculate fully-diluted shares outstanding, substitute the closing market price of the stock (for the period in question) for the market price if the closing price is higher.

If the closing market price is higher, the number of shares repurchased will be smaller and therefore more shares will be left outstanding. This results in a more diluted E.P.S.

As a practical matter, we typically use the current stock price for both calculations for the sake of simplicity, unless the stock price has changed dramatically over the period in question.

Treasury Stock Method Example

	(US\$)
Net Income	5,000,000
Shares Outstanding	2,000,000
Shares for Warrants and Options	200,000
Exercise Price per Share	20
Average Market Price per Share	25
Closing Market Price per Share	30

Primary E.P.S.

$$\begin{aligned} 200,000 &- \frac{200,000 \times \$20}{\$25} = 40,000 \text{ incremental shares} \\ \text{Primary E.P.S.} &= \frac{\$5,000,000}{2,000,000 + 40,000} = \$2.45 \end{aligned}$$

Precedent Transactions Analysis

Fully-Diluted E.P.S.

$$\begin{aligned} 200,000 & - \frac{200,000 \times \$20}{\$30} = 66,667 \text{ incremental shares} \\ \text{Fully-Diluted E.P.S.} & = \frac{\$5,000,000}{2,000,000 + 66,667} = \$2.42 \end{aligned}$$

Sources: Securities Data Company ("SDC")—SDC provides a comprehensive M&A and corporate finance database that can be used to screen for and download information related to M&A transactions. This data is frequently inaccurate and must be checked. Nevertheless, an SDC screen should only be used to identify transactions. Analysis should always be done using official documentation and filings

You must utilize the relevant merger proxies and public filings available at the time of acquisition to accurately reflect the purchase price and other operating data

Note: The number of shares assumed to be repurchased using option proceeds cannot exceed 20% of outstanding stock (400,000 limit in our example, versus 160,000 shares assumed to be repurchased for the Primary calculation). The additional option proceeds should be assumed to retire short-term debt first, then long-term debt, and finally, to be invested in government securities

Discounted Cash Flow (DCF)

Definition

- ◆ Discounted Cash Flow is one method of valuing a company, business segment or project. The DCF value represents the present value of unlevered, after-tax cash flows to all providers of capital using the weighted average cost of capital (WACC) as the discount rate

Methodology

The DCF method entails estimating the free cash flow available to debt and equity investors (i.e., the annual cash flows generated by the business, and the terminal value of the business at the end of the time horizon) and discounting these flows back to the present using the weighted average cost of capital as the discount rate to arrive at a present value of the assets

- ◆ Pros and pitfalls:
 - the DCF is not tied to historical accounting values; it is forward-looking
 - it recognizes the time value of money
 - it allows an expected operating strategy to be incorporated into the model
 - pay particular attention to the generation of cash flows and the assumptions you use. Since there is a great deal of subjectivity in making assumptions, a poorly constructed set of assumptions may yield inaccurate or unmeaningful results. Make sure that the cash flow assumptions and calculations are reasonable
 - check to see how much of the total value comes from the terminal value. If the terminal value represents significantly more than 50–60% of the total value, then the DCF value is less reliable since much of the value is driven by your assumptions about how much the business is worth in the future
 - be careful about inflation forecasts. Discount current dollar cash flows at nominal discount rates and constant dollar cash flows at real discount rates
 - DCF valuations are based on assumptions. Use several scenarios about the future to create bounds on the target's value

Free Cash Flow (FCF)

Definition

- ◆ Cash flow generated by all assets
- ◆ Unlevered; “free from financing considerations”
- ◆ Accrual to all providers of capital

Calculation

EBITDA
– Depreciation
= EBITA
– Notional Taxes¹
= After tax EBITA
+ Depreciation
– Investment in Working Capital ((Current Assets-Cash)-(Current Liabilities-STD))
– Capital Expenditures
= Free Cash Flow

Alternatively

Net Income²
+ Deferred Taxes and other Non-Cash Charges (e.g., depreciation, amortization and deferred taxes)³
+ After-tax Interest Expense
– Investment in Working Capital
– Capital Expenditures⁴
= Free Cash Flow

Notes:

- 1 At the company’s effective tax rate, typically 40%
- 2 Net Income before preferred dividends, equity income and minority interest
- 3 Note that goodwill amortization is only deductible for tax purposes under limited circumstances in the US
- 4 Capital expenditures will fluctuate from year to year. It is assumed that in the terminal year, capital expenditures equals the depreciation, depletion and amortization charge. On average, capital expenditure is likely to be higher than in the terminal year

Free Cash Flow (FCF)

- ◆ Contrasted with Cash Flow from Operations (which consists of Net Income plus Depreciation and Amortization plus Deferred Taxes and Non-Cash charges)

Methodology

Income Statement

- ◆ Project growth in Net Sales:
 - base assumptions on:
 - research reports
 - client forecasts (if available)
 - industry trends
 - percent growth is usually an input; aggregate sales is derived from this input
- ◆ Estimate the following by percent of sales:
 - Cost of Goods Sold (COGS)
 - Selling, General and Administrative (SG&A) Expenses
- ◆ Determine Interest Expense based on the notes to the most recent form 10-K. Refer to the debt schedule and calculate the weighted average interest rate. If no debt schedule is available, then compute Interest Expense as a percent of average Long-Term Debt:
 - average LTD outstanding = $(\text{Beginning LTD} + \text{Ending LTD})/2$
 - note that this interest expense calculation will cause a CIRC in Excel; therefore, you need to iterate the model several times. Remember that the amount of interest will have no impact on a DCF's value since the analysis is done on an unlevered basis
- ◆ Assess tax rate based on the marginal tax rate (federal, state and local) and current tax regulation

Free Cash Flow (FCF)

- ◆ Net Income from the income statement ¹
- ◆ Depreciation:
 - beginning Property, Plant and Equipment (PP&E) plus ½ Capital Expenditures divided by average asset life
 - also express as % of PP&E
 - note: this depreciation calculation will cause a CIRC in Excel. Therefore, you need to iterate the model several times
 - excludes owned property because it is not depreciable (leased property is)
 - average asset life = PP&E divided by depreciation expense
- ◆ Deferred Taxes:
 - some percentage of depreciation based on historical relationship
- ◆ After-tax interest expense:
 - interest expense x (1-t) where t = marginal tax rate
 - note: Interest Expense should be net of interest income (i.e., gross interest expense minus interest income) because interest income is not a function of operations (excluding financial institutions)
- ◆ Capital Expenditures (CapEx):
 - the expenditures necessary to maintain the required capital intensity (see PP&E analysis under selected balance sheet items)

Note:

1 Before preferred dividends, equity income and minority interest

Free Cash Flow (FCF)

- ◆ Investment in Working Capital (WC):
 - difference between beginning and ending WC (see WC analysis under Selected Balance Sheet Items below)
 - exclude Cash and Cash Equivalents
 - exclude Short-Term Debt (STD)

Selected Balance Sheet Items

- ◆ Working Capital excluding cash and cash equivalents and STD:
 - estimate WC as a percent of sales: $WC = (Current\ Assets - Cash\ and\ Cash\ Equivalents) - (Current\ Liabilities - STD)$
 - possible to squeeze cash from WC by operating more efficiently
 - the three major components of working capital are: inventories, receivables and payables
 - inventories are calculated based on “turns”. The equation is:

$$\frac{\text{Inventories}}{\text{Cost of Goods Sold}} \times 365$$

- receivables are based on days outstanding. The equation is:

$$\frac{\text{Receivables}}{\text{Sales}} \times 365$$

- payables are also based on days. The equation is:

$$\frac{\text{Payables}}{\text{Cost of Goods Sold}} \times 365$$

- “other current assets” should be calculated as a percentage of sales and “other current liabilities” as a percentage of COGS

- ◆ Property, Plant and Equipment (PP&E):
 - project by capital intensity/efficiency: sales divided by (PP&E)

Beginning PP&E	known	
– Depreciation	known	
+ CapEx		solved for
= Ending PP&E	known	

Free Cash Flow (FCF)

- ◆ Capitalization: STD, LTD and Equity:
 - project STD as a percentage of LTD
 - equity for each year can be calculated directly

Beginning equity	known
+ Net Income to Common Shareholders	known
+ / – Stock issue/buyback	known
– Common dividends	known by % payout
<hr/>	
= Ending equity	solved for

- debt projected by debt to equity ratio
- know LTD/Equity ratio and equity, solve for LTD
- if appropriate, LTD can be paid down with free cash flow

Discounted Cash Flow Tables

- ◆ Examines sensitivity of present value to:
 - discount rate (the weighted average cost of capital or WACC)
 - terminal perpetual growth rate or terminal multiple
- ◆ Elements:
 - 1st year FCF
 - present value of FCF years 2 through 10
 - present value of terminal value
 - add other assets not accounted for by free cash flows (e.g., cash, option proceeds, pension surplus)
 - subtract liabilities not accounted for by free cash flows (e.g., STD, LTD, pension deficit)
- ◆ To obtain an equity value per share, divide by the fully-diluted number of shares—(i.e., include options and convertible securities which would be advantageous to exercise)

Forecasting Terminal Value: Two Methods

Perpetual Growth

- ◆ Implicit assumption: the firm will be owned forever
- ◆ Digression—dividend discount model
 - states that you can value a stock by taking the present value of the dividend in perpetuity

$$\text{Expected Stock Value} = \frac{\text{Div}}{r}$$

- where Div = a dividend to be received one period from now
- r = discount rate
- If the dividend is expected to grow forever at the same rate, the formula is modified to read:

$$\text{Expected Stock Value} = \frac{\text{Div}}{r-g}$$

- where g = perpetual growth of the dividend

Perpetual Growth Formula:

$$\text{Terminal Value} = \frac{\text{FCFn} * (1 + g)}{(r-g)}$$

- where FCFn = free cash flow in period “n”
- g = perpetual growth rate
- r = weighted average cost of capital

Forecasting Terminal Value: Two Methods

- ◆ Implications of the perpetual growth formula:
 - $FCF_n * (1 + g)$ means you have converted the period “n” FCF into the period “n + 1” FCF (i.e., FCF_{n+1})
 - $/(r-g)$ —means you have taken the present value of a perpetuity of FCF starting at period “n + 1” and growing at “g”
 - the formula assumes that you receive the first FCF one year from now. (“now” being the middle of period “n” since all FCFs are assumed to occur at mid-period), so the “present value” of this perpetuity is at time “n-0.5”
 - you can make a variety of assumptions about when the cash flows are received

Terminal Multiple

- ◆ Implicit assumption: the firm will be sold at the end of period “n”
- ◆ Use a multiple of any relevant figure: Book Value, Net Income, Cash Flow from Operations, EBIT, EBITDA, Sales, etc.
 - note: Terminal Value should be an Enterprise Value; NOT ALL multiples produce an Enterprise Value (e.g., P/Es)
 - LITMUS TEST: Has interest been subtracted before you arrive at this figure?
 - if yes: the multiple gives an EQUITY Value
 - if no: the multiple gives an ENTERPRISE Value

Multiple of	Value Produced
Book Value	Equity
Net Income	Equity
Cash Flow from Operations (as defined on page 21 and page 24)	Equity
Net Sales	Enterprise
EBITDA	Enterprise
EBIT	Enterprise

- ◆ Since the firm is sold at the end of the period of projected FCFs, the terminal multiple value is at time “n”

Forecasting Terminal Value: Two Methods

Reality Check: Imputing a Perpetual Growth Rate or a Terminal Multiple

- ◆ To equate the terminal values produced by the perpetual growth method and by the terminal multiple method, grow the terminal value generated by the perpetual growth method by half a period

Equity Multiple Example:

$$TV = \frac{FCFn * (1 + g) * (1 + r)^{1/2}}{(r-g)} = P/En * NIn + TDn$$

Where

TV	=	unlevered terminal value
FCFn	=	free cash flow of period "n"
g	=	perpetual growth rate of free cash flow
r	=	weighted average cost of capital
P/En	=	terminal P/E multiple
NIn	=	net income of period "n"
TDn	=	total debt of period "n", including preferred stock

Solve for the Implied Terminal P/E Ratio:

$$P/En = \frac{FCFn * (1 + g) * (1 + r)^{1/2} - TDn * (r-g)}{NIn * (r-g)}$$

Solve for the Implied Perpetual Growth Rate:

$$g = \frac{(P/En * NIn + TDn) * r - FCFn * (1 + r)^{1/2}}{(P/En * NIn + TDn) + FCFn * (1 + r)^{1/2}}$$

Forecasting Terminal Value: Two Methods

- ◆ Asset multiple example—with an asset multiple, the formula is the same as with an equity multiple, but total debt = zero (TD_n = 0):

$$TV = \frac{FCFn * (1 + g) * (1 + r)^{1/2}}{EBITn + (r-g)} = A/EBITn * EBITn$$

– where A/EBITn = asset value to EBIT multiple

Solve for the Implied A/EBIT Ratio:

$$A/EBITn = \frac{FCFn * (1 + g) * (1 + r)^{1/2}}{EBITn + (r-g)}$$

Solve for the Implied Perpetual Growth Rate:

$$g = \frac{(A/EBITn * EBITn) * r - FCFn * (1 + r)^{1/2}}{(A/EBITn * EBITn) + FCFn * (1 + r)^{1/2}}$$

- ◆ One fallacy of the DCF analysis is that the two methods (i.e., the terminal method and the perpetual method) do not always concur. Determining the growth rate is somewhat subjective and the analysis is highly sensitive to it. The terminal multiple is also somewhat subjective as it requires an estimate of future trading multiples, which may very well be different from current multiples. The analysis is highly sensitive to this as well and oftentimes results in a total present value heavily weighted toward the terminal value, rather than the stream of cash flows
- ◆ Notwithstanding the above mentioned text, it is often useful to determine the enterprise value via both methods so that you can compare the two results and their implied multiples of current operating results. For example, if the terminal method results in a total present value of 8x Year 1 EBITDA and the perpetual method results in 5x Year 1 EBITDA, both analyses and their respective assumptions deserve further review
- ◆ In addition, you should also compare the terminal multiple implied by the perpetual growth rate and vice versa. If, for example, you are using the perpetual method and the implied terminal multiple is 3x EBITDA (and your industry trades at 9x EBITDA), chances are your perpetual growth rate is too low. Similarly, if you are using the terminal method and the implied perpetual growth rate is 11%, chances are your terminal multiple is too high. It should be noted that this is not necessarily always the case and sometimes one particular method might be irrelevant to that particular company. They should be checked nevertheless, and you should consult someone else on your team to determine appropriate measures

Calculating WACC

Weighted Average Cost Of Capital (WACC)

- ◆ To determine the WACC of a company, one must ascertain the costs of the various sources of capital for the company, with a given capital structure. The after-tax costs of the various sources are then averaged to arrive at an appropriate discount rate to value unlevered cash flows
- ◆ We incorporate three basic sources of capital into our methodology
 - debt
 - preferred Equity
 - common Equity
- ◆ Since the cost of each financing source is partly a function of the mix between the various sources of capital, you may need to calculate the WACC and its individual cost components at various capitalization structures
- ◆ As a practical matter, you should determine the credit rating of the company at the targeted capital structure(s), and seek rate views based on those credit ratings
- ◆ Where to find cost of debt:
 - check the footnote referring to debt to see what the Company is currently paying
 - consult with the debt capital markets group for a 10-year maturity all-in new issue rate at the credit rating corresponding to the targeted capital structure. As part of this process, you should look at the yield on new issues of comparable companies since the cost of debt is a function of the risks associated with a given business/industry
 - if the company has public debt outstanding and you do not intend to change its capital structure, find the debt rating in Moody's, the S&P handbook or on Bloomberg

Calculating WACC

- ◆ Where to find cost of preferred equity:
 - check to see if there is any outstanding in the market
 - consult with the equity capital markets group to determine the rate at which the company could raise similar preferred stock today
- ◆ Calculating the cost of common equity:
 - use the Capital Asset Pricing Model (CAPM)
 - cost of Equity (k_e) = Risk-free Rate(r_f) + (Predicted Beta (β) * Equity Risk Premium)
- ◆ The risk-free rate can be taken as the interest rate on a generic 10-year government note. You can obtain this generic ten-year rate on Bloomberg by typing “GT20”, pressing the <<Govt>> key, and then pressing the green <<Go>> key
 - justification comes from the observation that the cash flow pattern of a 10-year bond roughly approximates the cash flow pattern of a typical ten-year DCF analysis

Equity Risk Premium: The “equity risk premium” refers to the premium demanded by equity investors on shares which have an “average” degree of market-related risk and an “average” level of leverage (i.e., debt/equity ratio). Assuming that the historical risk premium is a good proxy for the expected risk premium, our methodology calculates the relevant risk premium as the mean of excess returns of common stocks versus long-term government bonds. Data for this calculation is taken typically from the Ibbotson and Sinquefeld study, Stock, Bonds, Bills and Inflation. For the study published at the end of 2003, the Equity Risk Premium was 7.2%.

Calculating WACC

- ◆ Obtain the predicted (not historical) Beta (β) from FactSet. If you are working with a public company and do not intend to change its capital structure, simply obtain the predicted Beta from Barra and use it in the CAPM formula above. It is also common to use the Adjusted Beta from Bloomberg. Bloomberg's Adjusted Beta is calculated by adding 2/3 of the stock's actual Beta (2 years, weekly) and 1/3 of a Beta of 1.0. The theory behind this adjustment is that over time, all stocks' Betas will converge to 1.0. If you do intend to alter the capital structure or when valuing private companies or a segment of companies, you will need to calculate an average or median Beta of comparable companies to get a more accurate measure of the risk associated with a given business
- ◆ Betas and equity risk premium data are normally available only for major stock markets. It may still be possible to use this data when the target business is in a different country, although the equity risk premium might be higher for a developing economy or an emerging stock market than for, say, the NYSE or London Stock Exchange
- ◆ Beta reflects the assumed level of leverage (or "gearing" in the EU). Betas obtained from FactSet, Datastream, Value Line and most other sources are "levered betas" which reflect the actual level of leverage for the company concerned. Within normal leverage ranges, Beta can be adjusted to reflect assumed leverage levels different from the actual levels of leverage
- ◆ The problem with taking an average of the published Betas is that a stock or Beta is a function of a company's capital structure. Betas will be higher for more highly leveraged companies. Thus, we use a formula to unlever all Betas to get an unlevered Beta for each comparable company
- ◆ "Levered Beta"—calculated assuming firm's current leverage: total debt/adjusted market capitalization. Obtain predicted levered Betas for your company and/or comparable companies from FactSet
- ◆ Unlever the predicted Beta(s) to arrive at an unlevered Beta for your company or each comparable company:

Calculating WACC

$$\text{Unlevered Beta} = \frac{\text{Levered Beta}}{1 + ((1-t) \times (\text{Debt/Common})) + \text{Pfd/Common}}$$

Where

Beta	=	predicted Beta (from FactSet or Barra Rosenberg)
t	=	marginal tax rate
Debt	=	market value of total debt
Common	=	market value of common equity
Pfd	=	market value of preferred equity

- ◆ Note: It is more technically correct to use the average market values of debt, preferred equity and common equity from the period over which the predicted beta was calculated. However, we typically use the most recent values since they are usually not significantly different and since it is much easier to do so
- ◆ Calculate the mean or median unlevered Beta from your sample and relever the mean or median unlevered Beta with different capitalization structures to examine various scenarios
 - relevered Beta = Unlevered Beta * [1 + ((1-t) * (Debt/Common)) + Pfd/Common]
 - use the relevered Beta as the “predicted Beta” in the CAPM formula
 - the Debt, Equity and Capitalization values used should represent the “target” capital structure (the capital structure that includes planned debt and equity financings)

Calculating WACC

Weighted Average Cost of Capital

◆ Note: Always use MARKET VALUE of common equity and preferred stock

$$\text{WACC} = K_e \times \frac{E}{\text{TD} + E + \text{Pfd}} + K_d (1-t) \times \frac{\text{TD}}{\text{TD} + E + \text{Pfd}} + K_p \times \frac{\text{Pfd}}{\text{TD} + E + \text{Pfd}}$$

Where

K_e	=	Risk Free Rate + (Levered Beta x Market Risk Premium)
K_d	=	10-year all-in cost of borrowing for a new issue (actuals or comparables)
K_p	=	Estimated cost of preferred stock (same type as existing)

DCF Analysis

Consistency of assumptions concerning interest rates, inflation rates, tax rates and the cost of capital is critical

The Following Points Should Be Considered

- ◆ The risk-free rate should normally be 2-6% above the assumed general long-term rate of inflation
- ◆ The currency used for projections should be the same as the currency on which the WACC is based
- ◆ The assumptions about capital structure (i.e., proportions of debt, equity and preferred) and tax rates should be reviewed carefully if the company will pay little or no tax under those assumptions
- ◆ If management provides a discount rate, the underlying assumptions should be checked. Is it after-tax? Is it a return on equity or a return on capital? For what currency is it calculated? Is it a hurdle rate?
- ◆ An after-tax discount rate should be used with after-tax cash flows
- ◆ Sales and costs are generally projected as nominal values (i.e., they include inflation). There are some situations in which it is acceptable to discount real cash flows using a "real" discount rate, but using nominal figures (i.e., which include inflation) is usually more accurate, reduces the possibility of confusion and is often simpler
- ◆ Preferred stock should be included in the WACC calculation and in the capital structure weightings if it represents a significant part of the capital structure

Accretion/Dilution Analysis

- ◆ The analysis is simple: if the after-tax costs are greater than the after-tax benefits, the transaction will be dilutive, and if the after-tax benefits are greater than the after-tax costs, the transaction will be accretive

Accretion/Dilution (\$)

$$\text{Acc/Dil} = \frac{\text{Acq NI} + \text{Tgt NI} + \text{After-tax Effects of Acquisition}}{\text{Acq Shares Outstanding} + \text{Shares issued in Transaction}}$$

- ◆ In general, executives of acquiring companies are very concerned with the effects of an acquisition on the acquiring company's future E.P.S. A quick rule of thumb is: if a lower P/E company acquires a higher P/E company, the transaction is dilutive and vice versa (if stock is used as consideration)
- ◆ When comparing acquisitions using 100% Stock or 100% Cash consideration, you can calculate the "P/E of Cash"
 - generally, the P/E of cash will be much higher than that of the stock; therefore, using 100% Cash is usually more accretive than using 100% Stock

P/E of Cash

$$\text{P/E} = \frac{100}{((1-t) \times K_d)}$$