Investment Banking TOTAL Interview Guide

A Street of Walls Guide to Investment Banking Interviews.

By: Street of Walls Contributor

Current Investment Banking Analyst

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1 WELCOME LETTER

This guide is your starting point. It is constantly being updated and improved and should be able to give you the tools to start a career in investment banking.

I'll give you a little of my background and also explain what exactly is in this material. I have mastered the ins-and-outs of investment banking recruiting and I'm here to share everything I know with you. Along the way I made study material not only for myself but for younger friends who landed top investment banking jobs on Wall Street – so this material works!

2 INTRODUCTION FROM AUTHOR

I'm an ex-investment banker from one of the best investment banks in NYC, currently working as an analyst at a major hedge fund in New York. While at the bank I worked within the M&A group structuring countless deals and providing advisory services to our clients. In addition to my duties, I worked closely with the recruitment team, so over the years I've interviewed hundreds of applicants and reviewed thousands of resumes. This is why am able to provide such detailed, practical advice to those of you who are currently on the outside looking in, trying to get your foot in the door. Take a look at my sample questions. It will be apparent to you that the information contained in them has come from someone who has walked the walk.

But before I got my start in New York, I was just another Midwestern kid going to a "non-core" college. I had no connections whatsoever to Wall Street and no idea what to do with my degree.

During my sophomore year, I set getting a job in investment banking as my goal. After a tremendous amount of trial and error, I got a handle on the interviewing process. By junior year, I managed to land a summer internship at an NYC middle-market investment bank. Once I graduated, the recession was looming and the bank was not hiring, so I quickly had to start applying to others. After almost a year of interviewing, I landed a full-time job at one of the largest bulge bracket investment banks in Manhattan.

I found that unless you attended a few select colleges, it is very hard to know what is expected in this industry. I did go to a decent state school, but I was nowhere near prepared enough to make it through these interviews. I was completely blindsided. When I first began my job search, no one had prepared me—no professors and certainly not anyone else from school. They simply don't teach what you need to know to make it through IB interviews in college.

The hiring process at any bulge bracket bank is extremely regimented and insanely competitive— if you don't know what to prep for and what to expect, you WILL NOT make it through an interview. You most definitely need help to know how the process works, what these banks are looking for, and what questions they will likely ask you. My road to Wall Street was unbelievably tough, but as my own experience shows, investment banking recruiting can be learned.

3 INVESTMENT BANKING OVERVIEW

3.1 Background on Investment Banking

An investment bank is a financial institution that assists corporations and governments in raising capital by underwriting and acting as the agent in the issuance of securities.

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An investment bank also assists companies involved in mergers and acquisitions and derivatives, and provides ancillary services, such as market making and the trading of derivatives, fixed income instruments, foreign exchange, commodities, and equity securities.

Simply put, investment banks advise and raise money for companies.

3.2 Background on the Industry

Unlike traditional banks, investment banks cannot take deposits.

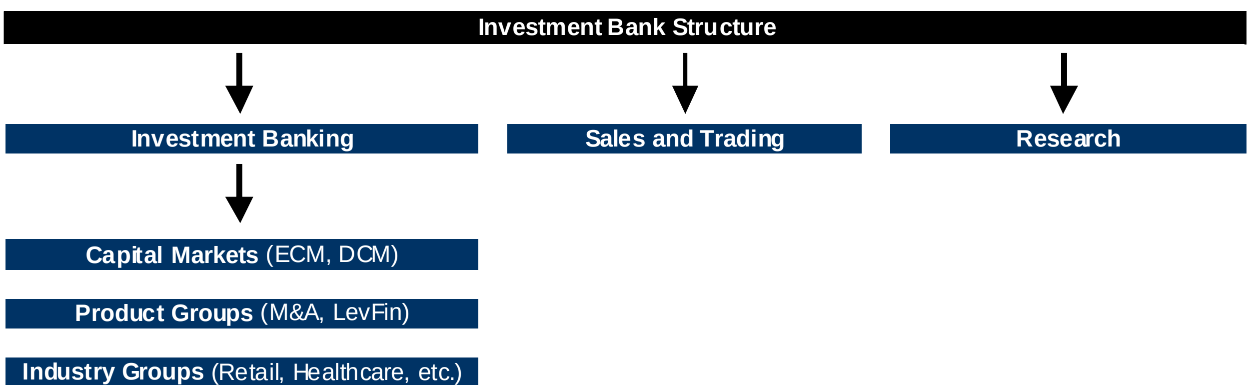
The Glass-Steagall Act maintained a separation between investment banking activities and commercial banking between 1933 and 1999.

In 2007, global investment banking revenues closed at a record $84.3 billion. Since then, many investment banks have experienced losses due to the sub-prime housing crisis.

3.3 Core Investment Banking Activities

1. **Investment Banking** (otherwise called corporate finance): This involves helping customers raise funds in capital markets and giving advice on mergers and acquisitions (M&A).
2. **Sales and Trading**: This involves large investment banks buying and selling products on behalf of the bank and its clients.
3. **Research**: This division reviews companies and writes reports about them with a “buy” or “sell” rating.

Exhibit 3.1: Investment Banking Structure



3.4 Investment Banking Groups

Investment banking groups are broken down between Capital Markets, Product, and Industry/Sector groups.

- **Product groups** consist of mergers and acquisitions (M&A), leveraged finance (Lev Fin), and Restructuring.
- **Industry groups** cover specific industries and tend to do a lot more pitching. Industry groups consist of Healthcare, TMT (Telecom, Media, Technology), FIG (Financial Institutions Group), Natural Resources, Consumer/Retail, Industrials, Gaming and Lodging, Financial Sponsors, and Real Estate.

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- **Capital Markets** consists of Equity Capital Markets (ECM), Debt Capital Markets (DCM), Converts.

3.5 Investment Banking Hierarchy

- The investment banking hierarchy is very strict.
- From most Junior to Senior: Analyst, Associate, Vice President, Director, Managing Director.
- Analysts will tend to work with an associate almost all of their time while an associate will work with a VP, etc.

Exhibit 3.2: Investment Banking Hierarchy

Most Senior
Managing Director
↓
Director
↓
Vice President
↓
Associate
↓
Analyst
Least Senior

3.6 Typical Deal Teams

Investment banking groups run very lean for the amount of work they produce. The question you will keep asking yourself is: if investment bankers work 100 hours a week, why don't they just hire more people? This is mostly just because of the culture and that this is the way it's been done for a long time. It is also partly because each transaction is very specific and it would take too much time to retrain employees on the transaction details.

Exhibit 3.3: Investment Banking Deal Teams

Investment Banking Deal Team Structure				
↓	↓	↓	↓	↓
1 Managing Director	0 or 1 Director	1 Vice President	1 Associate	1 Analyst

3.7 Salary: How much will you make?

Let's face it— it's important to know how much you're working for. First-year investment bankers typically receive a $10k signing bonus and $70k base salary. Internships are usually pro-rated first-year salaries

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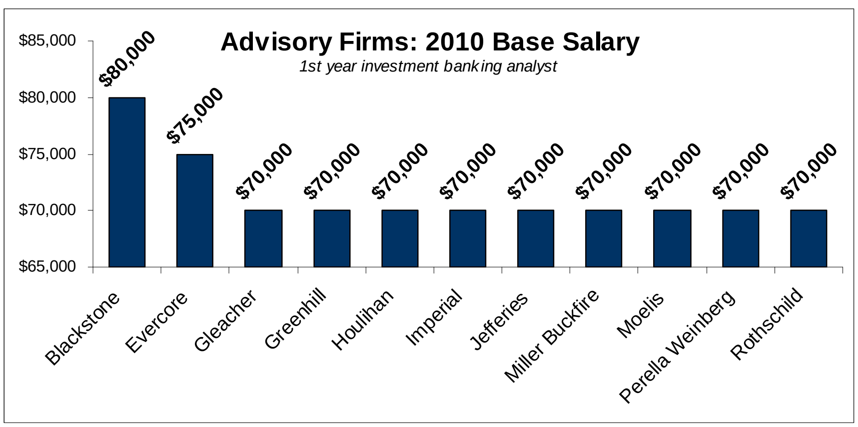
plus overtime—not too shabby. Associates out of an MBA program will receive a $30k signing bonus and $95k salary.

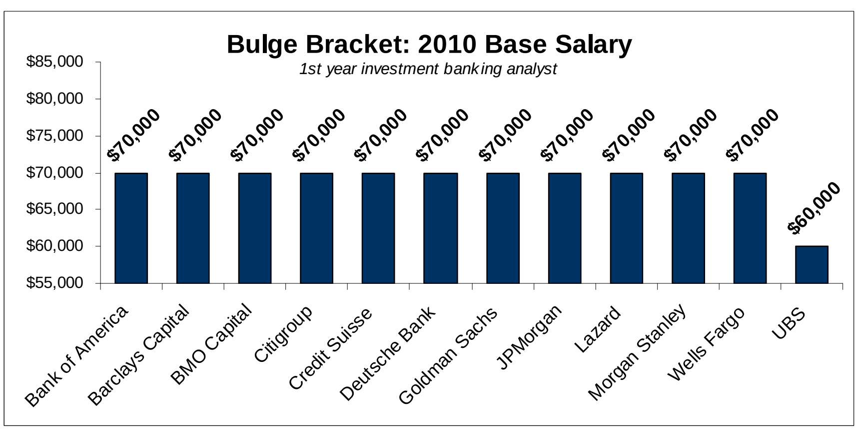
Exhibit 3.4: Investment Banking Salaries

Investment Banking Salaries

Summer Intem	First-year Analyst	First-year Associate
=	=	=
Signing Bonus: $0	Signing Bonus: $10,000	Signing Bonus: $30,000
+	+	+
Salary: Full Time Prorated	Salary: $70,000	Salary: $95,000

Exhibit 3.5: IB Salaries by Bank





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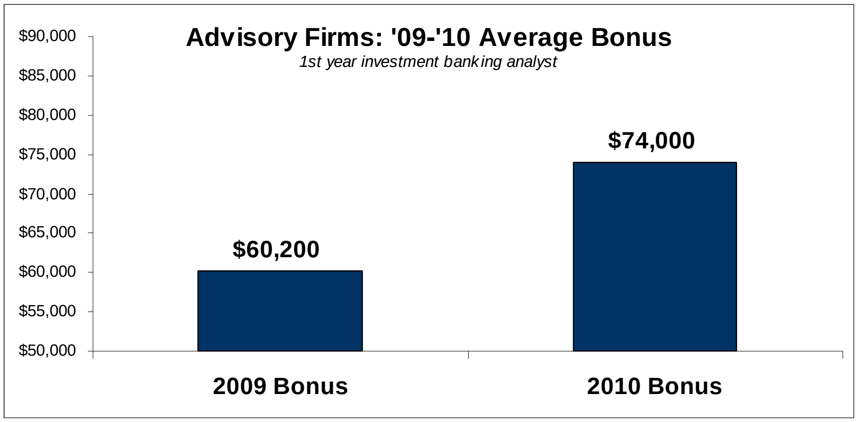

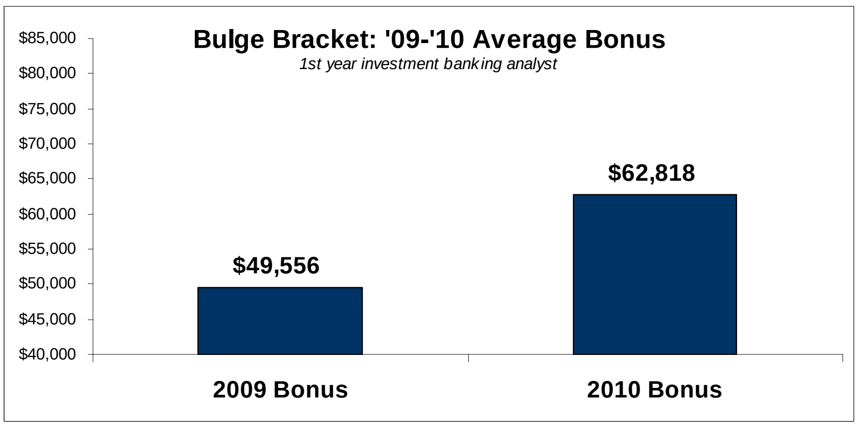

4 Role of an Investment Banker

Investment Bankers are responsible for a wide range of duties including raising capital, providing advisory on mergers and acquisitions, completing valuation work, and executing the pitching of the bank's expertise to client companies.

Analysts are typically right out of undergraduate colleges and join for a two-year program.

The bulge bracket banks will send their analysts through two months of intense training to prepare them.

The general role of an analyst is to do the bulk of the work preparing presentations and models.

- Presentations or pitchbooks are simply marketing material for the bankers. These PowerPoint presentations are printed and bound for meetings with clients/companies.
- The analytical work consists of building and running financial models. We will get into this in further detail later, but this would include DCF, Comps, M&A, LBO models.

These are 80-110 hour work weeks – expect to have no life outside of the office for the first year on the job. Yes, that means no weekends as well. While the hours are strenuous, in my opinion the upside is worth it.

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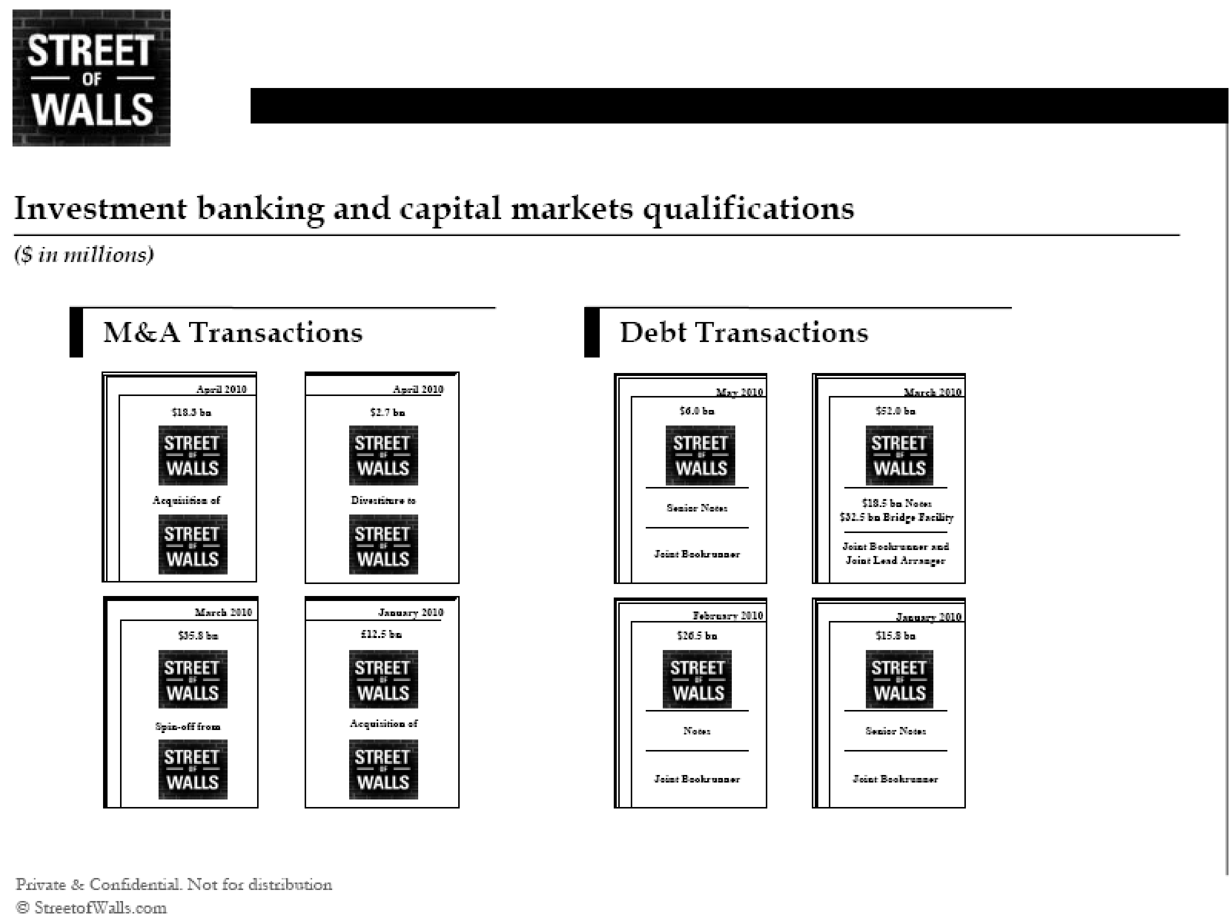
Investment banking analysts also spend a large majority of their time creating “pitchbooks” which are Company marketing material designed to pitch deals to clients. Below is a slide snapshot of a typical pitch book with qualifications a bank might pitch to clients.

Exhibit 4.1: Investment Banking Pitchbook Example



5 Exit Opportunities: What To Do Post Banking

Analysts are hired for a two-year program. A select few, at the top of the class, receive third year analyst offers from which they may potentially receive associate offers (you are then a career banker). Places like Goldman now hire analysts for two years with a direct bump to associate the next year, but they are the only bank to do this at the moment.

Almost all analysts end up leaving the investment bank sometime between year 1 and year 2 when the program ends. Analysts treat investment banking as a stair-step, unlocking higher-profile jobs in the investment community. The most popular jump is probably to the private equity world, investment bankers are taught to be very structured and transaction based, you are effectively being bred for private equity.

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Another popular move is the jump to Hedge Funds – partially funds that do fundamental type of investing or event- driven investing. While Hedge Fund work is not transaction based like IB or PE, it does require a great deal of fundamental analysis and valuation work.

StreetofWalls.com has plenty of information to help make the jump when the time comes. The entire team has been through the investment banking process and has landed high profile jobs in Private Equity and Hedge Funds.

Exhibit 5.1: Investment Banking Career Patch

While not always the case, this is the "Typical" path of an Investment Banking Analyst:

Typical Path of an Investment Banking Analyst

↓

Graduate College

↓

2 Year Investment Banking Program

↓ ↓ ↓

Private Equity	**Hedge Fund**	**Venture Capital**

6 General Interviewing Questions

What kinds of questions are asked?

- There are two types of questions:

    1. Behavioral questions (we will cover these in this packet)
    2. Technical questions (visit the website for the Technical Interview packet)

- Sometimes you'll be asked both or just behavioral – it really depends on who is interviewing you.
- Through experience, the older the person, the less technical it gets – younger people tend to drill you more on technical questions.
- Behavioral: These are fit questions, trying to see if you're the right kind of person for the job.
- Technical: The rule of thumb is that you CAN'T mess up 1 technical or you're done.
- We'll review behavioral questions in this packet, the technical guide is available online.

How long is the typical interview?

- Most interviews are about 30-45 minutes.
- Phone interviews tend to be 20-30 minutes.
- Live on-campus interviews tend to be 30-45 minutes.
- Super Day or Final Round interviews are 5-6 hours long.

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How to get better at interviewing?

- First things first: Know your stuff inside and out, especially on the technical side.
- Practice, Practice, Practice: Mock interviews are GREAT. Reading the material to yourself is just not the same as speaking to somebody else.
- Do mock interviews with your friends/parents/school career development.

Will brainteasers be asked?

- YES, some banks will ask you brainteasers, so study up.
- Generally, brainteasers will be asked during the first set of interviews.
- Brainteasers are discussed at the end of the packet.

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7 List of Investment Banks

There are hundreds of investment banks in the U.S., but only nine are currently part of the bulge bracket (I included Jefferies to make this 10).

The term 'bulge bracket' frequently refers to the group of investment banks considered to be the largest and most profitable in the world. They are usually the hardest to break into and the most prestigious to work at. The 10 banks below and the other top banks listed on the right make up 43 banks in total. There are hundreds more not listed here – simply searching the term "investment bank" on a search engine will yield an even larger list. The list I provided certainly includes the top in the industry. If you want a more expansive list visit the forums at StreetofWalls.com.

Other top banks:

Blackstone
BNP Paribas
Centerview
Cowen Group
Evercore Partners
FBR Capital Markets
Fox-Pitt, Kelton
Greenhill & Co.
Houlihan Lokey Howard & Zukin
HSBC
Imperial Capital
Keefe, Bruyette & Woods
Lazard
Miller Buckfire & Co.
Moelis & Company
Morgan Keegan & Company
N M Rothschild & Sons
Needham and Company
Nomura Holdings
Oppenheimer & Co.
Perella Weinberg Partners
Piper Jaffray
Raymond James
Robert W. Baird & Company
Royal Bank of Scotland
Royal Bank of Canada
ROTH Capital Partners
Sandler O'Neill + Partners
Stephens Inc.
Société Générale
Thomas Weisel Partners
William Blair & Company
Wells Fargo

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8 FIGURING OUT THE PROCESS: DEADLINES, DATES, AND REQUIREMENTS

8.1 "Core" vs. "Non-core" Interviewing

The investment banking recruiting process is divided up between "core" and "non-core" college recruiting. Banks have a certain number of core schools where they interview on-campus and who they allocate a certain number of slots for. Whatever spots are left over after core interviewing are filled by non-core recruiting; this usually occurs a few months after core interviewing.

Core schools differ by bank but usually consist of: NYU, Wharton, UNC, IU, Michigan, Harvard, Northwestern, and Columbia, among others. Non-core recruiting is chosen from internal referrals and online applications. A typical bulge bracket bank usually hires 60-80 first-year analysts per year, with a majority being internship hires and core students. I went through the non-core process: it's a bit harder but can be done.

8.2 Summer Analyst (Intern) Schedule

Summer analyst or internship application deadlines are usually in Nov/Dec. The core internship recruiting is generally a live on-campus interview in Jan/Feb followed up with a Super Day in Feb/Mar.

Non-core internship recruiting is generally done via phone interview in Feb/Mar, followed by a live Super Day in Mar/Apr. Summer analyst programs generally last 10 weeks starting in June and are usually followed by a full-time offer.

8.3 Full-Time Analyst Schedule

Application deadlines for full-time are usually in July, so make sure **to apply online early**. Full-time interviewing for core schools usually starts in Sept-Oct. This consists of a live on-campus interview followed by Super Day in Oct/Nov.

Check your school career site for details. Non-core interviewing usually takes place in Oct/Nov. Non-core consists of a phone interview followed by Super Day in Nov/Dec.

8.4 Typical IB Application Requirements

- You must apply online at the banks' career websites before the deadline.
- It doesn't matter if you know people at the bank, you still HAVE TO APPLY ONLINE.
- You must have a 3.5 GPA at the bulge bracket banks; smaller banks are more flexible.
- You do NOT have to be a finance major – any major will do (History, Arts, Engineers, etc.).
- Resumes are key as investment banking resume books are sent around and voted on.

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Exhibit 8.1: Application Process

Are you from a top 20 school?
Examples: NYU, Upenn, UNC, IU, Michigan, Northwestern, Columbia, Wake Forest, Dartmouth

NO	YES
You are in the "non-core" recruitment	You are in the "core" recruitment
1. First-round will be on the phone 2. Final-round (Superday) will be at the bank 3. Networking & Internal referrals are a MUST 4. You must apply online via bank website	1. First-round will be on-campus 2. Final-round (Superday) will be at the bank 3. Internal referrals will help but not a must 4. You must apply online via bank website

9 NETWORKING & GETTING AN EDGE

You have about the same chance of winning the lottery as you do applying online and getting a call back. It is really helpful is you know someone at the bank who can send an internal referral. In general, people enjoy helping others out – it's a confidence booster, so don't feel bad asking for help. Employers want eager and hungry kids, so don't be afraid to be aggressive (but not too forceful).

Try the tips below to help your chances:
- Network with family and friends to see if anyone has Wall Street connections.
- Use your school alumni network to find mentors (Wall Street is a small place). School networks are great – alumni love helping current students out.
- Try contacting the Investment Banking HR team and scheduling an "informational interview" to learn more about the bank and recruiting process.
- For the smaller boutique banks, try "cold calling" and asking for the investment banking recruiter – try setting up information interviews with them and learning the process.

9.1 Thank-you Emails

After every interaction with somebody (this includes actual interviews), follow-up with a "Thank-you" email 24-48 hours after. This is expected by most interviewers or even alumni in your network.

Personalize emails as much as possible.

9.2 Informational Interviews: A great way to network

'Informationals' are laid-back meetings held by banks in an effort both for them to get to know you and also for you to become familiar with the firm and its culture. There is no set deadline for informationals—they are simply one-off meetings that are setup between you and either the HR manager or an investment banking employee (could be an analyst, associate, MD, etc.). While they are sometimes

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marketed as meetings, it is crucial to remember that they are evaluative and can definitely switch into interview-type questions at any time.

Informationals are less formal than a typical interview because the banks generally provide this time as an opportunity for you to ask them questions and better understand the firm. The later in the process you schedule an informational, the less technical or deal-related questions you will get. However, you should be prepared to talk about your interests in banking, background, current events, and anything that follows. You should also be aware of the structure of the bank's recruiting process, if not this is a good time to learn.

Nearly every bulge bracket investment bank in NYC will have a structured informational process. Typically, if you do not attend the informational you will not advance further in the recruiting process. The smaller middle-market and boutique banks will not have a structured informational process, so you will need to reach out to HR or bank employees and express interest in setting one up.

9.3 Informational Interviews: Questions asked

Informational Questions you may be asked:

- Tell me about yourself.
- Walk me through your resume.
- How do you like school? What's your favorite subject?
- Why are you here?
- Why are you interested in this bank?
- Which groups are you interested in? Who else have you spoken with?
- How would you describe the landscape for investment banking?
- With this current environment, why are you still interested in investment banking?
- What questions do you have for me?

9.4 Informational Interviews: Questions you can ask

Questions you can ask:

- How do you like it here? Can you briefly tell me about your background?
- How is the analyst/associate class structured? What makes a great analyst?
- What has been your favorite deal?

10 Resume Help

Most people think they have a good resume, and many do, but investment banking recruiters are looking for a very particular style. If you want to know what they want to see, check out my products. Without the right resume, it doesn't matter how smart or how hard-working you are, you won't get in the door.

Let the Street of Walls team build an investment banking resume for you. Simply visit the Guides section at StreetofWalls.com to learn more about our resume services.

Criteria investment bankers look for:

Quantitative & Analytical Ability: These are both critical for an investment banking resume, especially during the early years. The following skills and experiences would improve your resume. Have you…

- Filtered through data and assumptions, and identified reasonable responses to complex problems?
- Synthesized large amounts of information and identified issues?

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- Identified a problem and taken proactive approach to solving it?
- Done well in courses with heavy analytical and quantitative content?
- Performed experiments that required the formulation of a hypothesis and collection of evidence to prove or disprove it?

Drive for Results: Firms want to know whether you have the initiative, motivation, attention to detail and energy to deliver strong results. Start tracking and measuring your achievements. When you interview, you'll need to discuss your accomplishments quantitatively and qualitatively. Have you…

- Brought new customers and revenue into your company?
- Acted as a self-starter who goes above and beyond requirements?
- Shown the ability to switch priorities and move quickly among different tasks?
- Set a challenging goal and achieved it?
- Attended to the details while juggling multiple tasks (that is, you didn't let things fall through the cracks)?
- Taken an innovative and efficient approach in getting something done?

Communication Skills: The ability to write and speak well suggests that you'll be successful working with clients and colleagues. Have you…

- Presented in front of classes, teams, and organizations?
- Written successful papers, memos, and speeches?
- Worked effectively with clients to understand their needs?
- Articulated ideas in a clear and thorough manner?

Teamwork Skills: Teaming with clients and peers is a critical assignment. Bankers work in teams. Have you…

- Been a member of a sports team, study group, or committee?
- Worked effectively with people whose work style differs from yours?
- Inspired others to take action in an unstructured situation?
- Taken on the role of a team leader or player as needed?

Extra Resume Help: Every year investment banking resume books are sent around to investment bankers for reviews. Having seen thousands of resumes 90% are less than ideal just because of the formatting alone. Investment banking requires close attention to detail, so having the right look matters! Check out the Street of Walls resume-builder online—we can provide you with the right template or make it for you:

Street-of-Walls Resume Builder

Investment Banking Resume Template

Most people think they have a good resume, and many do, but investment banking recruiters are looking for a very particular style, and if you want to know what they want to see, check out my products. Without the right resume, it doesn't matter how smart or how hard working you are, you won't get in the door.

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11 Calendar of Events: U.S. Recruiting

Full-Time: Generally September kicks off Full-time interviews for both undergraduate and graduate students.

Internships: Generally January kicks off summer internship interviews for undergraduate and graduate students.

Exhibit 11.1: Calendar of Events

Internship
Dec: Submission Deadline
Jan: Interviews Start
Feb: Interviews
Jun: Start Date
Aug: End Date

Full Time
Jul: Submission Deadline
Sept: Interviews
Oct: Interviews
Nov: Interviews
Jul: Start Date

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12 OFF-CYCLE: MIDDLE-MARKET & BOUTIQUE

Off-Cycle: Middle-Market & Boutique

- The smaller the bank, usually the less structured the interview process (in terms of set guidelines and dates).
- Boutiques in particular will usually hire on a need basis, so interviewing can happen all year around.
- If you're having trouble breaking into the big banks, send me an email and I'll shoot you a list of boutique banks.
- Most of the boutiques will interview full-time in the spring (so about 3-4 months behind the big banks).
- If you find yourself behind the curve, I suggest targeting the boutique and middle-market banks.

Can't get a job? If you are caught outside of the typical recruitment cycle without a job, visit Street of Walls and get a hold of the middle-market and boutique investment banking list. These firms will be more likely to recruit off-cycle as opposed to a structured interview process at the bulge bracket firms.

13 WHAT TO WEAR FOR INTERVIEWS

Bottom line: Always wear a full suit to an interview. I suggest going out and getting at least one good suit – you'll need it. I'll give you suggestions on what types of suits and where to find them.

Looking good for your interview really does make a difference, so you don't want to look sloppy. In other environments it isn't as important, BUT for investment banking, appearances do matter, so look sharp.

Men, Style & Colors:

- **Suit**: I'd suggest getting a solid suit for a starter, either black or dark blue. Get a two-button Coat.
- **Shirts**: Get solid shirts as well. I'd go with white or light blue shirts; can't go wrong with white…NO FRENCH CUFFS.
- **Tie**: Wear something conservative.
- **Shoes**: Go with a nice pair – black Captoes are the classic banker look.

Men, Suggestions on shopping:

- **Suit**: Zegna (expensive but good), Hickey Freeman, Hugo Boss, Bloomingdales/Macy's.
- **Shirts**: Brooks Brothers, Charles Tyrwhitt, Bloomingdales, Macy's.
- **Tie**: Brooks Brothers, Charles Tyrwhitt, Vineyard Vines, Zegna, Hickey Freeman.
- **Belts**: Brooks Brothers has good belts.
- **Shoes**: Allen Edmond, Cole Haan, Ferragamo.

Women, Style & Colors:

- Good conservative suits, either navy or black.
- If it's a skirt suit, not too tight.
- Button down shirt should be a solid light color; can't go wrong with white.
- Easy on the make-up and perfume.

Women, Suggestions on shopping:

- J. Crew
- Banana Republic
- Try the department stores.

No French Cuffs, No Pocket Squares, No cut-back collars!!!!

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14 Investment Banking Lifestyle

Are the hours really that bad?
Bottom Line: YES. At the bulge bracket and top boutiques, analysts are expected to work 90-110 hours per week or more. A typical day will be somewhere from 10am to 2am; this includes weekends. During busy times analysts will even pull an "all-nighter" – working through the night. The higher you go up the ladder, the less time at the office – associates usually put in less time than analysts.

Why don't the banks just hire more analysts then?
This is just the culture of investment banking. You will be spending a lot of time in small teams working on M&A/LBO's, etc.; this is very difficult if you have multiple people. Bankers are expected to work a lot and thus get paid a lot of money for working those long hours.

What's the upside?
Bottom Line: THE MONEY. Investment bankers are the highest paid out- of- college graduates in the nation – you will be highly compensated. Second are the exit opportunities; many people treat investment banking as a stepping stone to other careers (as I did). Most of those include Private Equity, Venture Capital, and Hedge Funds. Finally, what is learned is invaluable. iBanking teaches you the ins-and-outs of finance and how to work and survive in a difficult environment. All of these skills will prove valuable regardless of what you do in the future.

Is the lifestyle worse/better in some groups than others? Bulge Bracket vs. Boutiques?
Yes and Yes. Generally the hours are much longer at the bulge bracket than at smaller boutiques (this is not always true) just because of deal flow. Larger banks will tend to do much more volume than smaller banks, hence much more work for you. In terms of groups, this varies by bank, but the product groups have a reputation for working the most hours (M&A, Leverage Finance).

Lifestyle different in New York vs. other areas?
Generally the life is much tougher for a New York investment banker. The other big finance hubs come in next: London and Hong Kong. The West Coast (L.A. area) has a somewhat large concentration of investment bankers, but the stereotype is a more laid-back atmosphere.

Do investment bankers get free dinner?
Yes, if you work past 7p.m. (which you will), you are eligible for dinner on the firm. When I was in banking, it was $25 every night and on the weekends $15/lunch and $25/dinner. The bank will also pay for your travel home every night and also travel to and from on the weekends.

Books to read? http://bit.ly/n387Wj

Periodicals to read:
1. *Street of Walls* Daily News
2. *Wall Street Journal* (Money & Investing section)
3. *Financial Times*
4. *Dealbreaker* (online tabloid, this is for fun)
5. *Leveraged Sell-Out* (online site, currently stopped publishing)

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15 International Recruitment: Hong Kong, Latin America, London

15.1 International Recruiting: Hong Kong

Tips on Hong Kong Recruitment:

- The Hong Kong recruitment process is less structured than the New York offices, interviews typically take place later than NYC deadlines.
- Need to have a good explanation why you're applying to Hong Kong instead of NYC or other areas of interest.
- Candidates that can speak Mandarin will have a huge advantage.
- Relationships or having spent time in Asia will be a big advantage.
- Pay close attention to the Asian markets, know current events and any big news.
- Generalist programs are more common because the analyst classes are much smaller than NYC offices.

Dates and Deadlines:

- **1st Round Interviews**: These are usually held over the phone and take place in Dec/Jan.
- **2nd Round Interviews**: Second round can be your Super Day, which is usually held at the New York office. This is usually anytime from Jan-Mar, and can include presentations, group discussions, aptitude tests, and translation tests. If you have a Chinese background the interview might be conducted in Mandarin or Chinese, so be honest regarding your abilities.

Interview Questions:

- Why do you want to work in Hong Kong vs. NYC?
- Do you speak Chinese? Can you please read this paragraph out of this Chinese book?
- Who have you spoken with in our Hong Kong office? How did you get in touch with them?
- What do you think the main differences are between working in Hong Kong and NYC?
- What are the current events in China?
- What is your view on the Chinese economy and outlook?
- We have met a lot of qualified candidates today, what sets you apart from them?
- Which sectors will benefit from the Chinese government's stimulus plans?

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- What do you know about this bank's Asian operations?

15.2 International Recruiting: Latin America

Tips on Latin American Recruitment:

- For most of the big banks, the LatAm teams are organized as a coverage group within the Investment Banking Division. The coverage groups act more of a hybrid between a coverage & product group since it executes most of its corporate finance products (M&A, Lev Fin, etc.) while managing relationships with the region.
- LatAm recruiting really stresses cultural fit.
- Need to have a good explanation why you're applying to LatAm instead of NYC or other areas of interest.
- Relationships or having spent time in LatAm will be a big advantage…really focus on personal relationships in LatAm.
- Big focus on teamwork – these are smaller teams than in NYC.
- Smaller teams mean more workflow: they are looking for really hard working candidates.
- Will need to be very up-to-date on the macro and geopolitical environment, read up on current news.
- Know the current capital market events in LatAm (Stock exchanges, debt markets, recent issuances, etc.).
- Know, by country, the industry specifics and what the key drivers are.
- Be sure to understand the influence on currency changes and how a changing US Dollar affects LatAm companies.

Interview Questions:

- Why do you want to work in Latin America vs. NYC?
- Do you speak Spanish?
- Who have you spoken with in our LatAm office? How did you get in touch with them?
- What do you think the main differences are between working in LatAm and NYC?
- What are the current events in LatAm?
- What is your view on the LatAm economy and outlook?
- We have met a lot of qualified candidates today, what sets you apart from them?
- What do you know about this bank's LatAm operations?
- With the U.S. Dollar at this level, what is our outlook on ABC industry?

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15.3 International Recruiting: London

Tips on London Recruitment:

- London is grouped in EMEA: Europe, Middle East, and Africa.
- EMEA recruiting is separate from NYC recruitment.
- NY and London HR (Human Resources) teams work together, but run SEPARATE interview processes.
- Since HR runs both processes, if you are applying to both NYC/London you need to confirm how the banks feel about applying to multiple locations…some banks discourage this!
- The London interview process has fewer events and less interaction than NYC recruiting.
- Having geographic knowledge is a plus.
- Analyst and associate classes are much smaller than NYC (NYC hires 50+, London will hire only 5-10).
- Majority of analysts go A-to-A (analyst to associate promote), where in NYC most analysts are required to get a MBA before making the move.

Interview Questions:

- Why do you want to work in London vs. NYC?
- Who have you spoken with in our London office? How did you get in touch with them?
- What do you think the main differences are between working in London and NYC?
- What are the current events in London? Current events in EMEA?
- What is your view on the London economy and outlook?
- We have met a lot of qualified candidates today, what sets you apart from them?
- What do you know about this bank's EMEA operations?
- What are the banks most recent issuances or deals?
- How would you value a pizza company? (Be prepared for mini-case studies like this)

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16 PHONE INTERVIEWS: PHONE CHEAT SHEET & ONE PAGE DCF

16.1 Phone Interview Cheat Sheet

First-round phone interviews are generally very predictable. Have this sheet available during the call in case you get tripped up. *Have this open during Phone Interviews*

Financial Statements

3 Financial Statements:
1. Income Statement
2. Balance Sheet Statement
3. Cash Flow Statement

Income Statement

Revenue
- COGS (cost of goods Sold)
Gross Profit
- Operating Expenses (SG&A, Comp, etc.)
Operating Income (EBIT)
- Non-operating Expenses (Interest Expense)
- Taxes
Net Income

Balance Sheet

ASSETS
Current Assets
    Cash & Cash Equivalents
    Short-term investments
    Inventories
PP&E (Plant Property & Equipment)
Total Assets

LIABILITIES
Current Liabilities
    Accounts Payable
    Short term debt
Long Term Debt
Total Shareholders Equity

Cash Flows

Operating Activities
- Net Income
- D&A (Depreciation & Amortization)
- Stock based Compensation

Investment Activities
- Purchase of Land & Equipment

Financing Activities
- Purchase of stock

When Depreciation goes ↑ by $100?
- Tax rate (40%) then net income will ↓ by $60.
- Cash flow from operating activities ↑ by $40
- Assets ↓ by $60, from a ↓ in PP&E $100 & ↑ cash by $40
- Retained earnings ↓ by $60 (now you're balanced)

Valuation Techniques

Enterprise Value = Debt + Preferred Equity + Minority Interest – Cash
Equity Value = Stock Price * Shares Outstanding (same as market cap)

Valuation Techniques:
1. DCF
2. Comparable company analysis
3. Precedent transaction analysis

1. DCF – (see DCF Page) Valuing a Company based on its future cash flows and using a discount rate to value those cash flows today

2. Comparable Company Analysis – valuing a company based on the valuation of similar companies within the same field

3. Precedent Transaction – valuing a transaction using past transaction of similar companies within the same field

Multiple – a metric used to in valuation of a company. Use the valuation techniques above to derive valuation multiples, shown below

PE, EBITDA & Revenue Multiples

PE Multiple – (Stock Price / EPS)
- Good b/c it goes all the way down to NI
- Disadvantage b/c differences in the amount of net debt also lead to differences in interest expense and earnings

EBITDA Multiple – (EV / EBITDA)
- Good proxy for Cash Flow
- But excludes CapEX & Interest payments

Revenue Multiple – (EV / Revenue)
- Rarely Used. Apply to Company with no Earnings, usually tech or healthcare companies with no income yet

Questions

What do Investment Banks do?
Investment Bankers provide advisory and due diligence for Mergers & Acquisitions, Equity Financings including IPO's and Secondary offerings and debt offerings

Typical Day?
I know analysts are expected to go through 2 years of finance boot camp. I expect the hours to be long, mostly doing financial modeling, making pitch-books, doing due-diligence, and rescheduling plans with their friends.

Why Investment Banking?
One of the best advice my dad gave me was whatever you do, "Put yourself in a position to succeed". And I think right out of college, I-banking hands-down offers the best experience available. I know the work is going to be tough and the hours excruciating, but I enjoy the pressure and challenge to execute. Also contrary to accounting, finance is unpredictable and exciting; I enjoy the fact that there is never a typical day.

Why this middle-market bank?
I have spoken to many people within my career center - very good reputation.
Also, this bank as a Middle Market bank offers a unique experience, an opportunity to gain exposure with higher level executives and also the opportunity if I work in the M&A group to work on both buy side and sell side deals That's definitely something that Bulge Brackets can not offer

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16.2 DCF – Walk me through a DCF

Use this for phone interviews. The interviewer will most certainly ask you to walk them through a DCF…follow the outline below.

Three essential parts to a DCF:
1. Company's Free Cash Flow
2. Terminal Value of the Company
3. The Weighted Average Cost of Capital (WACC)

1. Free Cash Flow = Operating Cash Flow – Capital Expenditures – Change in Net Working Capital

Operating Cash Flow = Operating Income*(1-tax rate) + Depreciation & Amortization

Capital Expenditures (CapEx) = found on the cash flow statement under investing activities

Net Working Capital = Current Assets (excluding cash) – Current Liabilities (excluding debts)

Project out FCF from projections in research or management

2. Terminal Value of the Company – two methods

A. EBITDA Multiple – take last year's EBITDA, apply a multiple to it, and discount that value back to Year 0

B. Perpetuity Growth – Last years FCF * (1+Growth Rate). All that Divided by (WACC – Growth Rate)

3. WACC – two components

A. Cost of Equity (CAPM) = Risk free rate + Beta * Risk market premium

B. After tax cost of debt = risk free rate + applicable company spread

Use Market Value of Equity and Book value of Debt to figure out the ratios to apply to each component to find WACC

Final Step: Discount all back to find your Enterprise Value (EV) of the Company

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17 BEHAVIORAL QUESTIONS

17.1 Investment Banking Questions

Q: What is investment banking?

The investment bank has primarily two functions, acting as an intermediary and as an advisor. As an intermediary, it connects companies that need capital and investors who have capital to spend. It facilitates this through debt and equity offerings. As an advisor, an I-bank advises companies on mergers, acquisitions, and restructurings.

Q: What exactly do investment bankers do?

- Investment banking is the business of raising capital for companies and providing advising services on financing and merger activities. So a company will approach an investment bank when it needs to raise capital or when it needs advice in negotiating and structuring a merger.
- Underwriting: an arrangement whereby investment bankers make outright purchases of a security from the issuer to be offered to the public. The investment bank makes a profit on the spread between the purchase price and the public offering price.
- Financial Restructuring: renegotiating payment terms on debt obligations, issuing new debt, and restructuring payables to vendors. Bankers provide guidance by recommending the sale of assets, the issuing of new special securities, or even working with M&A bankers to sell the company entirely.
- Hierarchy: Analysts → Associates → VP's →Directors →MD's
- General pitchbook: used to guide introductions and presentations during a sales call. They contain general information and include a wide variety of selling points, such as an overview of the I-bank, and details of its specific capabilities in research, corporate finance, and S&T.
- Deal-Specific pitchbook: highly customized; includes valuations, comparable company analyses, and industry analyses, as well as the bank's reputation/prominence of its analysts, performance on past/similar work, and information on rankings/expertise.

Q: Why do you want to be an investment banker?

As I have grown and matured, I have had the opportunity to experience various jobs and have been able to converse with people involved in various professions. Among these fields are law, education, entrepreneurship, medical, non-profit organizations, banking, investment banking, and sales and trading. Based on these experiences and contacts, I decided that the most appealing field to me is investment banking.

In particular, I believe investment banking offers the best environment for growth in the knowledge of finance, economics, and accounting – all important areas for business – thanks to its steep learning curve, competitive nature, and the people with whom you work with. I believe it offers the best opportunity to enhance my skill set and apply it on a real- life and current basis. Furthermore, for personal reasons I would like to enter investment banking – I enjoy situations that involve analyzing strategies, environmental conditions, structure, and future opportunities. Additionally, there is no other industry in the world that offers a first- year graduate with the amount of responsibility that investment banking offers. I can't think of a better way than to hit the ground running right out of school.

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Q: Why do you want to be an investment banker? (different response)

The best advice my dad gave me was whatever you do, “Put yourself in a position to succeed." And I think right out of college, I-banking hands down offers the best experience available. I know the work is going to be tough and the hours excruciating, but I enjoy the pressure and challenge to execute. Also contrary to accounting, finance is unpredictable and exciting; I enjoy the fact that there is never a typical day.

Q: Why do you want to be an investment banker?

- I think for me the work is rewarding. Nowhere else out of college will you get a better experience. The work will always be challenging and you’re going to be working with some of the brightest people.
- I think that’s one of the main reasons I wanted to come to New York. One of the great advantages out of New York is the network. Chicago will always be my home, but New York is the center of the financial world and I want to get the best experience possible.

Q: What qualities do you think would make you successful investment banker?

I can be successful in investment banking because I have a “whatever it takes” attitude. In many ways it can be inconvenient and draining to do so, but it’s been ingrained in my head to have an entrepreneurial mindset. I had my internship with a paint company my freshman year. During the spring semester, interns were expected to go home once a week or once every two weeks in order to have enough time to do marketing and sales work. Obviously for freshmen in college. Such an industry can be very taxing when it takes place during the first year of college. I knew it was going to be tough, but I tried to dedicate as much time to the program as possible. Some weeks I went home twice a week if I had to get work done.

I can be successful in investment banking because I’m a grinder that will do whatever it takes, whenever it takes. My parents brought me up with an entrepreneurial mindset that you just have to Work Hard to Play Hard. Also, I know what I’m getting myself into. I know the hours; I know what is expected of me. This isn’t something that I’m applying for just because I see the dollar signs. I think this can be an invaluable experience that will only set me up for success in the future.

Other qualities:

- Fast learner
- Energetic
- Work hard / play hard
- Good attitude
- Not afraid to ask questions
- Not afraid to be wrong
- Attention to detail

Q: What do you think an analyst does on a typical day?

I know analysts are expected to go through 2 years of finance boot camp. I expect the hours to be long, mostly doing financial modeling, making pitchbooks, doing due-diligence, and rescheduling plans with their friends.

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Q: Why do you want to work for this Bulge Bracket Bank?

I like the exposure of being in a bulge bracket, knowing I'm going to get the best learning experience possible. Also, I like how this bank has both a more casual and also a more entrepreneurial environment than other banks. I think that also being in Industry groups, I will get more exposure to a multitude of products.

SOW Comments: Make sure you know about the bank you're interviewing at! There is a lot of ass kissing for this question – you want to express that you'll be working for the smartest people who will challenge you to learn more.

Q: Why do you want to work for Middle Market?

My # 1 priority is to be in NYC, if I'm going to be working 90-100 hours a week, I want to be near my family and friends in NY. Also, this Middle Market bank offers a unique experience, an opportunity to gain exposure with higher-level executives and also the opportunity, if I work in the M&A group, to work on both buy side and sell side deals. That's definitely something that bulge brackets cannot offer. I want to work on deals that are really important to the people involved because it will give me a pressure to perform to the best of my ability. And lastly if I'm going to be working 90-100 hours a week, I want to be working for a firm that I will enjoy. And this bank's being rated one of the "Best Companies to Work For" is definitely a plus.

Q: Why do you want to work for Goldman Sachs?

I want to work with Goldman Sachs because I want the best experience possible. I want to work with people that are smarter than I am so that I will be continually challenged to become better. Also, I think that, hands down, Goldman Sachs will offer the best deal experience. Goldman has revolutionized what defines an "investment bank" and, only Goldman Sachs can offer an outstanding deal flow across the board.

And when it comes down to it, the work is rewarding and I enjoy it. I think my internship this summer definitely affirmed that I want to do I-banking at least for a couple of years. Although I will be making a 2 -year sacrifice, I enjoy the challenge to execute and I can't see my see myself working for a better firm than Goldman Sachs.

SOW Comment: Express there is no other bank you want to work for.

Q: How was your internship experience at Merrill Lynch?

I had a great experience with Merrill Lynch. I worked with the Consumer Retail group in Chicago and it was a very tight-knit group, a group of 28 including the VP and MD. Though I enjoyed the experience and I got a glimpse of a variety of deals, it did not offer the extensive network of people that New York provides. I received an offer from the ML Energy group, but I know if I work for Goldman Sachs, I'm going come out with a network of the best and brightest people on the street.

Q: Tell me about a deal you've worked on?

SOW Comment: If you have prior investment banking experience the interviewer will more likely want to spend a lot of time talking about your experience. The most important thing to takeaway here is: Do NOT put down any deal experience unless you are very confident you understand everything. If an interviewer starts asking you questions you don't know then it could be game over for you. The interviewer will also want to know if you did any sort of modeling for the deal, if so you'll need to really understand how the

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company functions (economics of the industry, how the company makes money, how investors value the industry) and how you valued the company (DCF, multiples, etc.). Make sure you know why the company wanted to sell, raise equity, or be bought.

Q: Tell me about the model you worked on either in your internships or school.

- Liquidity model: for management to see how much a bidder could lever the company.
- 2 different projection sets – CIM (Confidential Information Memorandum), NPV.
- 4 different financing scenarios – Term Loan, Cash Pay Note, Securitization, and PIK toggle.
- Know purpose of model, talk intelligently about leverage ratios, drivers of model.

SOW Comments: If you took a financial class that walked through financial modeling then great. If you did NOT, then visit StreetofWalls.com and start going through the financial modeling course and models on the site. This will help you understand how a model works and you will be able to talk about this in your interview.

Q: Why would you be a good investment banker?

I think one of my best attributes is the ability to learn quickly and to be efficient with my time. Currently, I have a 3.7 cumulative GPA, which isn't amazing, but taking into account that I have run my own business during school and am supporting myself through college, I think it's a good accomplishment. I didn't always have enough time to put into my studies, but I knew that if I was productive and efficient, I could still get by with relatively good grades.

Q: What is one concern you have about investment banking?

Honestly, my biggest concern with investment banking is the politics that come along with the business world. I definitely had a first-hand experience, since it was not a completely smooth transition moving locations and on top of that changing groups. I currently have an offer with Bank of America Consumer Retail, and it's the offer I wanted since it's arguably the best group at BofA, but it wasn't one of my favorite experiences of the summer.

Another Way to Answer: One concern I have about investment banking is the balance between work life and family life. Family and friends are an important part of my life because they have shaped the person that I am today. That is why my #1 priority is to stay in New York. If I'm going to be working 90-100 hours a week, then I want to be as close to family as possible.

Q: What do you think an analyst does on a typical day?

Analysts do what they're asked to do. Their responsibilities can vary from running their own financial model or pitchbook, to the most minuscule of duties including making copies and setting up conference calls. An average day is reflected in whatever makes their Associate / VP / MD's life easier.

Q: Would you prefer a product or industry group? Why?

I would prefer an industry group because I think I would get more exposure to all types of deals. And I also enjoyed the TMT space that I was in this summer. But honestly, I'm not too worried about what group I am in because I know each group will offer relatively the same experience.

Q: Why should I pick you instead of someone from Harvard?

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Yes, I am from the [Insert College], but I think I can offer experiences that other students can't. I chose this college mainly because of tuition. I've definitely learned a lot and have been stretched far beyond just the confines of academics by having to support myself through college. Being from a non-core school, I have a bit of a chip on my shoulder. I know I have to prove myself. And also, I think I'm a good analyst. I think my track record speaks for itself, moving from a regional office to the best group at [insert bank].

SOW Comments: Be careful of how you come off when saying this; be humble but confident. Speak of your accomplishments, what sets you apart.

Q: What are 4-5 skills that you think are essential for Banking?

- Work- Ethic – essential, lifestyle of a banker, not for everyone, "work-hard, play-hard."
- Great Attitude – you are workhorse for 2 years, hard to work w/ a negative person.
- Attention to detail –everything needs to be right, enjoy the pressure, learned this summer.
- Learn quickly – steep learning curve, expected to pick things up after the first time.
- Know the industry – need to know what you're getting into, NOT for everyone.
- Not afraid to ask questions – a lot of material, expect to pick things up quickly.

Q: Where else are you interviewing? Are you interviewing outside of banking?

I am currently only interviewing at investment banks; I am not interested in any other field at the moment. At the moment I am only interviewing at 2 other investment banks.

SOW Comment: Say you are only interested in investment banking. If you can name the other firms you are interviewing at then that is good. Just make sure not to make up any other interviews, Wall Street is a small place and bankers have friends at almost every other bank.

Q: If you had the opportunity to jump early to a Private Equity or Hedge Fund like some of the other analysts/associates here would you?

No I am not, I enjoy investing but truthfully do not enjoy the nature of the work where you would rather be taking action and doing deals opposed to "looking at deals." After speaking to alumni and other connections, I am dead set on banking.

Q: If we gave you an offer right now would you accept?

YES. I will sign right now!

Q: What other investment banks do you like the most?

SOW Comment: Suggest one bank that you admire in the industry and state a good quality of theirs. Then counter that with saying the bank you are interviewing at also has this great quality and they might even be better. A way to think about this is "Goldman has a well known culture and teamwork but [Insert Bank] has exactly that but after talking to employees at the bank I'm convinced the level of teamwork and culture could even be better."

17.2 Personality & Experiences

Q: Walk me through your resume (i.e. tell me about yourself).

SOW Comments: You should really know this question well, it will 100% be asked. Start at the beginning by talking about where you grew up and how you chose the college you attended. Make sure to mention

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that you looked at several colleges and that you chose your college because of its strong business/economics program or a strong academic curriculum.

SOW Comments: Tie to the interview, read the interviewer (Easy-going vs. All Business). A majority of interviews will start out with the interviewer asking you to “walk me through your resume.” This gives the interviewer a chance to read over your resume and also to get to know you. This is a case where you can talk about your background and also make your case for why you want to be a banker. Give the interviewer a story that shows your achievements and how everything fits together for you to be a banker. Make sure to point out how each job has let you take on more responsibility or required you to acquire more than finance/business knowledge than before.

SOW Comments: I’d start off with where you grew up, but make sure to spend a majority of your time talking about your most recent job experience and the classes you are taking in college. Do NOT point or reference to your resume when answering this question. This is your first impression, so make sure to practice this!!! Plan to spend about three minutes or so on this.

Exhibit 17.1: Walk me through your resume question

Walk me through your resume?

↓

Chronological Order:
Start with where you grew up

↓

College Search:
You looked at a lot of places but [Insert College] had a strong academic curriculum, etc.

↓

Your Interest in Business:
How your interests in business has evolved and tie into why you are interviewing at this iBank

Aim for 3 minutes

Q: Why did you attend [insert] college?

Upon graduating HS, I was accepted to 8 schools, among which were UNC and IU. Relative to other schools I visited, the combination of business curriculum, research facilities, specific professors, atmosphere on campus and personal fit allowed me to make this decision and I felt without a doubt that [insert school] was the school I wanted to attend.

I knew going in that I would have to work extremely hard not only to differentiate myself not only from my classmates, but also from the candidates I would be facing in the banking interviews. I have pressed myself to learn as much as possible about the banking industry. While I understand that I have an incredibly long journey ahead of me, I believe that my personal, professional and academic accomplishments to date have positioned me for success in the banking world.

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SOW Comments: Say that you looked at a lot of colleges and you chose this college because of a strong business/economics program or a strong academic curriculum. If you attended the school for some sort of scholarship (academic, sports, musical, etc.) make sure to include that as well.

Q: Why did you major in [insert Degree]?

SOW Comment: If you are a business major try to discuss your interests in that field. If you are a non-business major, express that you are always interested in a challenge and that you chose your major because you have a real interest in the field at the time you picked it.

Q: What are your 3 greatest strengths?

Hard Worker: I am a really hard worker—I like to shut up and get the job done. I like to lead through example and even though the hours are going to hurt, I'm definitely not someone that's going to complain.

Attitude: I have a good attitude. With i-banking, I know what I'm getting myself into and know that the hours are going to be tough, but I'm definitely a person that doesn't complain.

Networking: I try to build my network rolodex every time I have the chance. I'm smart enough to know that there is always something to learn from others.

Q: What are your 3 greatest weaknesses?

1. Public Speaking: I've never been a good public speaker. I took initiative last semester and joined a class focused on helping students prepare for public speaking. This forced me to speak in front of groups that put me out of my comfort zone.

2. Networking: I think my greatest weakness would have to be networking. Initially, with people I am soft-spoken. I like to concentrate on my work, so much that it often hinders me from developing relationships. That's exactly why I want to go to New York, so that I can build my network.

3. Big Picture: One of my criticisms this summer was that I concentrated too much on getting my work done quickly without sometimes taking a step back and realizing the rationale behind everything.

SOW Comment: What most candidates fail to do is actually give real strengths and weaknesses. This might sound counterintuitive but this is a chance for you to be honest and focus on the qualities interviewers are looking for when answering the question. When listing your weakness make sure to list real weaknesses but make sure you can explain how you can improve upon this.

Q: Give an example where you encountered a difficult situation while working in a group.

I worked in a bunch of small groups my senior year within Financial Management. Each student had a really busy schedule and I took initiative to help reprioritize everyone's schedules and found areas to compromise. This helped to balance workload and work quality for the group.

In the same situation, there was a person in the group that was not doing their work. I helped to solve the problem by helping him discover his strength and letting him focus on his strengths while the others helped to fill the gap.

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Q: Give an example of a time you had to work hard

My sophomore and junior year I was juggling school while essentially working fulltime and trying to balance this with internship recruiting, making phone calls, setting up meetings and doing interviews. I was able to successfully balance all of this by keeping very organized priority sheets and setting daily goals for items to be completed.

Q: What kind of feedback did you receive from your previous internship?

SOW Comment: The best way to answer this is give specific examples of times where you demonstrated attention to detail, willingness to work harder than everyone else, or a time when you helped add value to the group. These are all great to mention—simply saying you did well and had great feedback isn't enough.

Q: Did you receive an offer from your previous internship?

SOW Comment: Tell the truth here. If you did, then great. If not, then say you did not receive an offer. There are tons of reasons why a company might not hire you back: Your group was simply not hiring full-time, the economy made cutbacks in the hiring program, etc.

Q: Give an example of a time when you were very driven / very committed.

First semester freshman year I joined the school ROTC group. It was a gruelling program where I was going to bed at 9p.m. every night and waking up at 4:30a.m. I was really thankful I had a very considerate and patient roommate. At some points I definitely wanted to quit, but in the end it was worth it. There were only 3 out of 10 freshmen that made it through the program, and I was one of them.

SOW Comment: Talk about teamwork or something you are really involved with. This is another way to ask, "what are your strengths."

Q: Give an example of when you failed.

During my last internship I had to help out another intern, I taught him incorrectly and made the assumption he would figure it out. That friend of mine had to quit the program. We were really close and it was devastating. From that experience, I learned that I had to take being a leader so much more seriously and that my example was crucial for others to succeed. I also learned that I must give great attention to detail and not assume all is running well without my input.

SOW Comment: Really think this one out and give a truthful answer. Again, this is another "weakness question."

Q: Where do you see yourself in five years? (Show DEDICATION)

Five years is a long way down the road, but I know that finance will always have a grip on me. I could see myself in investment banking for the long-term, but that would have to depend on my performance and my family. I would definitely like to stay in financial services, using the skills I've learned and continue to build solid / meaningful relationships.

SOW Comments: You want to demonstrate that you are committed to investment banking, but you don't want to be disingenuous by stating that banking is the only job you'll ever want to do. If you're interviewing for an analyst role, I don't think you need to be committed long-term; bankers are in a two-

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year program; then you're out. I would mention that you are really excited about becoming an analyst and that you want to learn as much as possible, get as much transaction experience as possible, etc.

SOW Comments: If you're interviewing for an associate position out of MBA school, you need to demonstrate commitment.

Q: Are you interviewing for jobs outside of investment banking?

SOW Comment: I would say no to this. You want to get across that you're interviewing at only investment banks or at least that banking is by far your main focus.

Q: What motivates you?

What drives me the most is competition. I always want to be the best in everything I do, whether it is academics, sports, or even poker. One example is with golf. My Managing Director took me to the golf course for the first time this summer, and since then I've bought my own Callaway clubs and have gone to the driving range every other day during school. I'm an all-or-nothing kind of guy. My initial reasoning for wanting to get into banking was that it was the hardest position to get out of college.

Q: What is your greatest accomplishment?

SOW Comments: This can be a tuition answer for some people, i.e. working hard to pay for school.
SOW Comments: Awards? Achievements?

Q: What was your favorite class in college?

While I found all of my business courses interesting, the most interesting class I took was Psychology. I found the science of human behavior very interesting and all the benefits it has leant to society fascinating.

Q: Why should we hire you? (Different way to ask your strengths)

I believe you should hire me because as a diligent, organized, and goal-oriented person, I will work hard in any task presented no matter how difficult or time consuming it might be. I always strive to perform as best as I can, and will go the extra mile in order to perform my task at hand. Schoolwork is a good example— when assigned a task, I organize myself and my materials in order to work efficiently, and then set to work on the task. I perform the necessary research and more in order to ensure that no mistakes are made, and I check my finished work repeatedly to ensure it is good.

Q: Why are you applying to this firm? Why RBC?

RBC is one of Wall St.'s most successful firms, with the necessary size to offer the potential for a better working environment than other firms, one that is more personable and offers better opportunities for growth for its employees. Compared to other bulge bracket firms, RBC seems to have the better culture. Also, over the past few years, RBC has been one of the few continuously successful firms and appears to have great potential for continued success and growth. I am looking to learn more about financial services and would very much like to be a part of this firm's success.

Q: Give me an example of a time you worked as part of a team.

Most recently, I had to work as part of a team for my Management and Organizational Analysis class. We organized the teams at the beginning of the semester and were required to create a business idea,

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followed by various reports on strategy, structure, and culture, as well as a presentation and final report encompassing our overall idea. Working in a group can be challenging due to differences in working styles and personalities. Conflicts can arise and team dynamics are hard to manage. As a team member, I sometimes would take lead roles of organizing research assignments, meeting times, and the production of a final product. However, I helped others and received help in turn. Each member contributed in his or her own manner – someone would step up when the need arose, and there was always a system of checks and balances.

Q: What is the biggest risk you have taken in your life?

I am risk-averse, but that does not mean I do not take my chances. However, when I do take chances, I base them on a rational analysis so that I can ensure success to a certain degree.

Q: What motivates you to put forth your best effort? What type of work environment brings out your best effort?

Any challenging situation motivates me to put forth my best effort. I want to succeed and enjoy accomplishing and overcoming hard tasks. When I face a challenge, I strive to overcome it by working hard and going the extra mile so that I can do a good job.

Q: What do you see yourself contributing to our organization, both in the short term and in the long term?

In the short term I see myself contributing my energy, enthusiasm, hard work and willingness to learn. In the long term, if the opportunity arises, I would continue working with Bear Stearns and providing to its growth and success.

Q: What do you do for fun?

While I don't do it enough, I enjoy traveling and scuba driving. I find other parts of the world really interesting and would love to travel much more later on in my life. I also participate in club hockey. I'm not good I have met some really nice friends through the local program.

Q: What is your favorite book?

I have a family of nutritionists that recommended *The Wellness Revolution,* which is a book that predicts that the sales of vitamins and other health-related items will grow to over $1 trillion annually within the next 10 years. I thought this was very interesting.

SOW Comment: Do not say *Liar's Poker* or *Harry Potter*, give a truthful answer that's somewhere in the middle

Q: Tell me something about yourself that is not on your resume.

My club hockey team in college recently won the nationwide club championship that competes with 80 other colleges. This was a big success not only for the team but also for myself, because I have been successfully balancing a tremendous amount of schoolwork with interviews and practice.

17.3 Industry Questions

Q: What's the difference between investment banking and commercial banking?

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An investment bank offers advisory services in M&A and restructurings and acts as an intermediary between investors and companies in need of capital. Commercial banks work more on the retail side, where they take deposits from customers and loan money to individuals.

Q: What is the Glass-Steagall Act?

The Glass-Steagall Act was a law that separated commercial and investment banks because of the belief of conflict interests. Banks were essentially blamed for the Stock Crash of 1929 and the start of the Depression.

Q: What is a fairness opinion?

A fairness opinion is an opinion from the investment bank regarding the price offered in a merger or takeover. It is provided for a fixed fee, typically by an institution not involved in the transaction.

Q: What are the different arms of an investment bank?

- Sales and Trading
- Corporate Finance (same as Investment Banking)
- Research

Q: Sample Interview Questions asked at a MBA Class:

Investment banking interviews have been described as "quick and painful." The banks are the first firms to interview on campus (early in the second quarter), and the process is usually over within a week or two. Because the interviews last between thirty minutes and one hour, the interviewers like to get straight to the point. Besides knowing your resume thoroughly, prepare concise answers to standard investment bank interview questions. Listed below are questions that are frequently asked in the interviews.

Top 10 questions:

1. Walk me through the highlights of your resume. I'm interested in the decisions you have made.
2. Why investment banking? Why our bank?
3. How do you value a company?
4. Why did you choose Kellogg?
5. What other firms are you interviewing with and why? Are you interviewing with consulting firms also? What career opportunities are you exploring other than I-Banking?
6. What were your grades in college? What were your grades for the first semester at Kellogg? What was your GMAT score? Be ready to explain any weak points.
7. What qualities would you consider most important for a career in I-Banking? What are your greatest strengths? What are your weaknesses?
8. What do you understand the responsibilities of an associate/summer associate to be?
9. Describe a current event in the market (i.e., LTCM at the end of 1998)?
10. What questions do you have for me? Always have at least two questions prepared per bank.

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18 Questions for the Interviewer

SOW Comment: These questions are important because it shows the banker your interest not only in the firm but in the 1-on-1 conversation. Try asking about 4-5 questions max—you don't want to be over-eager.

Q: Basic Questions to ask the Interviewer

- How long have you been with the bank and how has your experience been?
- What do you like best about working here. Worst?
- How do you compare working here with other banks at which you have worked?
- What kind of responsibility does the typical Analyst/Associate receive?
- What differentiates a good analyst from a great analyst?
- What's your favorite deal that you've worked on since you've been here?
- Can you tell me about your training program?
- How do Analysts/Associates get staffed?
- On what types of deals are you currently working?
- How is the deal flow?

Q: More Targeted Questions to Ask the Interviewer

- What's the difference between a good investment banker and a great one? What kind of qualities do you look for when inviting analysts to stay on board for a third year? What makes them stick out?
- What's your favorite part of the job? What's your least favorite part?
- What qualities do you have that helped you succeed in i-banking?
- What are Citigroup's goals? Are they looking to overtake Goldman & Morgan Stanley, or are they content with just doing business the way they have?
- How do you distinguish yourself from other bulge bracket firms?
- Where do YOU want to be 5 years from now?
- Why did you choose this career path?
- On a typical day in this position, what do you do? With whom do you interact?
- How do you manage work, family, and community involvement?
- Describe your typical first-year assignments.
- What is the most effective way to find employment in this field?
- Has the work changed recently due to technology, the marketplace, or competition, etc.?
- How did you find your job?
- How do you see this job changing in the future?
- Where does your work fit into the organization's objective and structure?
- Is there a "career path" that most in this field follow?
- What is the demand for people in this occupation?
- What are the basic prerequisites for a job in this field?
- In your opinion, what would assist me in preparing for this career? (clubs, classes, experiences)
- What is your level of freedom to solve problems and take action on issues?
- What are the opportunities for advancement?
- What personal qualities or abilities are important to be successful in this job?
- What part of this job do you find most satisfying? Most challenging?
- Are there other sources of information you might suggest to students interested in this field?
- What advice do you have for students who are considering this career path?
- What effects does the economy have on your career?
- What is the most valuable lesson you have learned since coming out of school?
- What industry/product group do you work in? Which are offered in your office?

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- What are the current drivers in this industry for M&A? How is it different now than it has been in the past?
- What announced deals are you working on? What are some of the key considerations in this deal?
- Who are the MDs in your office, and what groups do they work in? (Managing directors bring have relationships with companies and bring in business, so this is important)
- What drew you to banking?
- What are some of the exit opportunities from banking? (Ask analysts, they very aware of this one)
- How much responsibility will I take on?

Q: Resume and personality questions:

- [Be ready to explain any line on your resume].
- What made you choose your undergraduate institution? Why did you pursue a major in finance (or anything else)?
- Are you a leader or a follower? Give me an example where you were successful in both roles.
- What other business school did you apply to? Which ones accepted you? Why did you choose Kellogg?
- What was your favorite class at Kellogg so far? Why?
- What classes are you currently taking to get ready for the summer?
- What are your 5-10 year long-term career plans?
- What are your proudest accomplishments? What was your most challenging professional experience?
- Are you a leader or a follower? Give me an example where you were successful in both roles.
- What do you do to relax?
- Tell me a joke.
- Who has influenced you the most, besides family members?
- Say you are at a meeting with a client and your MD is giving a presentation. You suddenly notice a mistake in some of the calculations, which you have prepared. Do you mention it? When? What do you say?
- Why should I take you instead of someone from Wharton?
- What is one skill that you think is most relevant to Banking?
- You seem to like marketing. Why are you interested in finance?
- What is one word that describes you best?
- Your weaknesses? Your strengths?
- How would your classmates describe you? How would you characterize yourself in the group dynamic?
- Highlight your quantitative accomplishments.
- Describe an ethical decision you had to make.
- If you were a vegetable - what would you be?
- What do you read? What's your favorite book?
- As an associate, what tasks would you like to spend most of your time doing? What percent of each day do you see yourself spending on those tasks?
- What is in a pitch book?
- What's been your greatest challenge since beginning Kellogg? Greatest accomplishment?
- What accomplishment are you most proud of?
- Describe a time you failed, why did you fail, what did you learn?

Q: Questions on Investment Banks:

- Why I-Banking vs. Consulting? Sales & Trading? Research? Finance in Industry?

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- How does your past career qualify you for a position in investment banking? Why are you not going back to prior career?
- What do you hope to accomplish over the summer?
- What department do you want to work for inside i-banking and why?
- Who is in the bulge bracket?
- Rank firms on Wall Street and where do we fit? Who is our competition (in the major categories)? What differentiates our firm? What are our firm's strengths? Weaknesses?
- If you were the CEO of our firm, what major changes would you implement?
- Describe a typical day of an investment banking associate.
- Do you understand the lifestyle issues associated with this profession? Why don't you have a problem with these issues?
- What is your greatest concern about investment banking?

Q: Miscellaneous:

- Who has influenced you the most besides family members?
- What is your personal Beta?
- How would you spend $1,000,000 besides investing it?

Q: Other Questions:

- Which of your college achievements are you most proud of?
- What [major (i.e. finance, economics, etc.)] classes have you taken so far? What did you get out of each of those classes/ what did you learn?
- What has been your favorite class at U of I?
- On a scale of 1-10 (1=hardworking, 10=naturally smart) where do you fall?
- How do you feel about the long hours?
- When did you discover that you wanted to be an investment banker?
- Do you understand the commitment?
- Give me an example where you had a lot of responsibility. Can I trust you with a critical project?
- Can you think of a time when you came up with a creative solution?
- What are your interests outside the classroom?
- Why should we hire you?
- What other interviews do/did you have?
- Why not Sales & Trading?
- What do you expect as a summer analyst?
- What would friends say about you?
- Tell me a time when you were working with someone and who wasn't pulling his/her weight.
- Tell me about your biggest failure.
- How do you deal with adversity?
- Discuss a difficult ethical decision you recently faced.
- What is one skill that you think will be the most important in doing banking?
- What is your most challenging professional experience?
- What is your relationship like with junior-people?
- What is the one thing you wish you knew before banking?
- Give an example that demonstrates your analytical skills.

Q: Random Questions (that were actually asked!):

- Tell me something about you that is not on your resume.

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- Suppose I were going to evaluate you and 30 of your Kellogg compatriots on one quality with the winner receiving something very desirable, such as one million dollars, and you are allowed to determine that quality, what would it be?
- What did you eat for lunch?
- How do you like Chicago?
- What do you do when you're bored?
- What is the riskiest thing you've ever done?
- Think of the team you worked with the most and give me a word that describes each team member.
- Are you more risk-averse or risk-seeking?
- Let’s imagine you died and are giving a speech at your funeral. What would you say?
- While interviewing for a Chicago office, the interviewer tells you that he/she is getting the impression that you are more interested in the New York office. You are. However, what do you say?

Tips: Don’t give too much background info. Jump straight into questions being asked. Be direct, concise. Answer the questions precisely. Be confident with answers. Don’t use “ums.” Be sure to answer the question. Most people are going to have the same answers—this doesn’t mean I need extraordinary stories; I just need to make my answer memorable. E.g. When talking about pulling all-nighter, a lot of people have done this. I need to make things stick out… like friends were all going to sleep, and I felt so much pressure to do the same, but I persevered. Stories need to be precise, need an introduction, need to be easy to follow.

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19 Technical Interview Questions

There are almost an unlimited number of Technical Questions that could be asked in an interview; we will go over 95% of anything that could possibly be covered. While behavioral questions can be very opened ended, there is almost ways a right or wrong answer to technical questions.

A rule of thumb for investment banking interviews is that if you miss one technical question, you are usually out of the race. Make sure you review this material several times. If you are looking for a more in-depth review of financial modeling, check out the Street of Walls Financial Models online at StreetofWalls.com.

20 Valuation Questions

20.1 How would you value a company? What are the ways to value a company?

Exhibit 20.1: Investment Banking Valuation

Investment Banking Valuation

Discounted Cash Flow | **Comparable Transaction** | **Comparable Company**

Solving for Enterprise Value and Equity Value

Equity Value = Stock Price x number of shares outstanding

Enterprise value =
- Equity Value (Stock Price x number of shares outstanding)
- \+ debt at market value
- \+ minority interest at market value, if any
- – associate company at market value, if any
- \+ preferred equity at market value
- – cash and cash equivalents

Cash is subtracted out of Enterprise value because cash is considered a non-operating asset and can be used to pay down the Company's debt, which reduces the enterprise value of the Company.

What is the difference between Enterprise Value and Equity Value?

Equity value presents the market capitalization of a firm. Enterprise value is the total value of the firm and includes the equity value plus the value of net debt (Total debt minus cash).

Enterprise value should be used for ratios that measure the total return to all capital holders (Revenue, EBIT, EBITDA), whereas Equity value should be used for ratios that measure the total return to shareholders (Earnings).

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Which valuation methodology gives you the highest expected value?

While it is not always the case, Precedent Transaction Valuation Methodology will generally give you the highest possible valuation. This is the case because Precedent Transaction takes into account a control premium paid by the acquiror because of realizable merger synergies. Discounted Cash Flow (DCF) valuation will also lead to a high expected value because the model has many projections, which can easily be overstated.

Exhibit 20.2: Highest to Lowest Valuation Methodologies

Here's a quick chart of the valuation methodologies listed from highest expected value to lowest:

Highest Valuation

↓

Precedent Transaction
Control premium will be paid because of merger synergies

↓

Discounted Cash Flow (DCF)
Model has many projections which can be overestimated

↓

Comparable Company Analysis
Based on similar companies, does not inlcude premium or synergies

↓

Market Valuation
This is just equity value, no premiums or synergies

↓

Lowest Valuation

When is it best not to use DCF?

Investment bankers will typically not use a DCF analysis when a Company has unstable or hard to predict cash flows. This makes estimating future cash flows extremely hard and gives a lot of room for error in the valuation. Good examples of this are life science and technology companies.

Would you do an LBO analysis even if you are not looking at a Leverage Buyout situation?

While this is seldom done, investment bankers will look to a LBO analysis even if a private equity sponsor isn't looking to buy out the firm. This valuation places a floor on possibly Company valuations (i.e. M&A would generally lead to higher valuations than LBO's because of synergies).

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What are other Valuation methodologies?

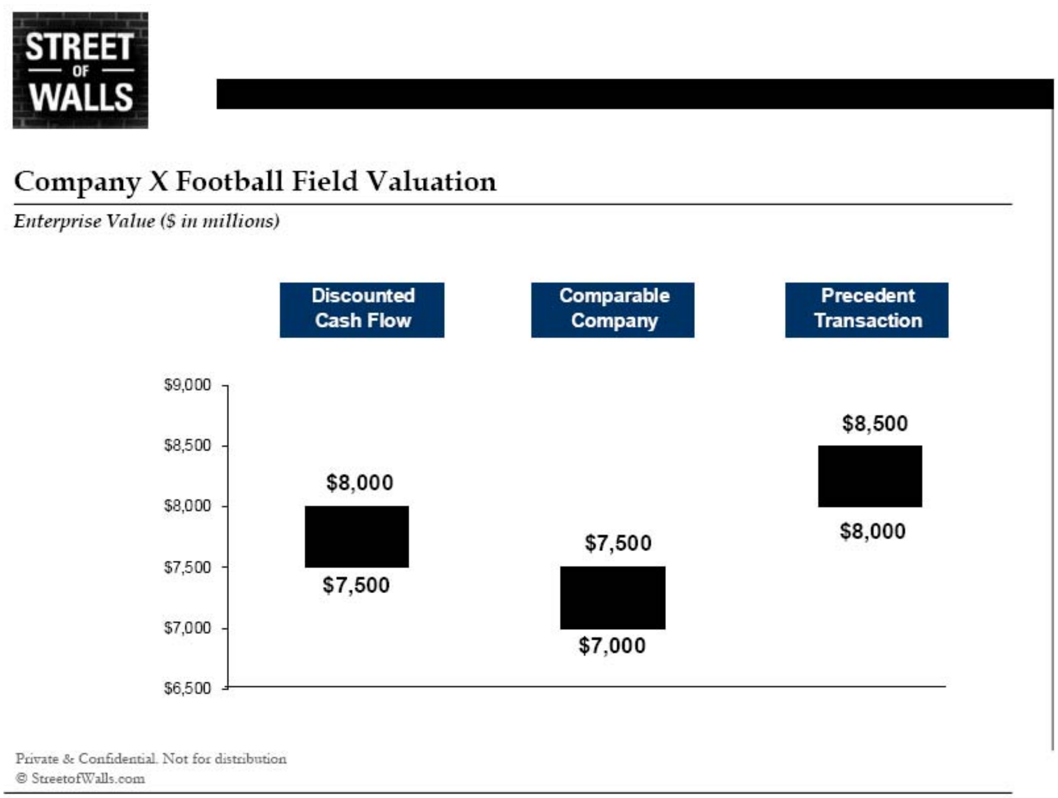
Liquidation Valuation Method: Valuing the remaining equity assuming all the firm's assets are sold off.
Replacement Valuation Method: Valuing the company based on the cost of replacing the asset.
LBO Analysis: Determining now much a private equity sponsor would pay for the Company.
Sum of the Parts: Valuing each division of the Company separately.

How do bankers present multiple valuation methodologies?

Investment Bankers will put together a "football field" chart which shows each separate valuation, i.e. DCF implied the Company is worth $7,500-$8,000, Comparable Company implies $7,000-$7,500, and Precedent Transaction implies $8,000-$8,500.

Here's a "football field" example you will do as an investment banker:

Exhibit 20.3: Pitchbook View: Football Field Valuation



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21 Discounted Cash Flow Valuation

What is a DCF?

A DCF values a company based on the Present Value of its future cash flows. A DCF model simply discounts back future cash flows to the present to figure out how much something is worth (solves for Enterprise Value).

Why do you use 5- or 10-year Free Cash Flow projections and not 20?

5 to 10 years is about as far as you can reasonably predict the future; nobody knows what could happen in 20 years. Anything less than 5 is too short to be useful, so typically modeling is done over 5- or 10-year projections.

Exhibit 21.1: DCF Walk-through

Visual Aid, walking through a DCF:

Discounted Cash Flow

Project Out Free Cash Flows
Typically 5 or 10 years

Terminal Value beyond last year
Two Methods: Terminal Growth Multiple or Perpetuity Method

Applying a discount rate
Use the Weighted Average Cost of Capital (WACC)

Discount Cash Flow Back to Year 0
This gets to Enterprise Value of the company

Enterprise Value (EV)

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Exhibit 21.2: Free Cash Flow Walk-through

Visual Aid, solving for Free Cash Flow and which statement the figures are from:

Net Income (Income Statement)
+
Depreciation & Amortization (Cash Flow Statement)
-
Net Change in Working Capital (Balance Sheet)
-
Capital Expenditures (Cash Flow Statement)
=
Free Cash Flow

21.1 Walking through a DCF

1. First you need to project free cash flow (FCF) out – this is usually done 5 or 10 years.
2. FCF = after tax EBIT + D&A – capital expenditures – net change in working capital
   - Note: this FCF does not include interest, so it is unlevered
3. After projecting out your FCF, you will then need to predict the terminal value (the value of the company for the years beyond your projections).
4. There are two methods for calculating terminal value: Perpetuity Growth or Terminal Multiple method.
5. Perpetuity growth: choose a long-term growth rate (usually GDP growth). You then multiply the last year's FCF (year 5 if we projected FCF out 5 years) by 1 plus the chosen growth rate, and then divided by the discount rate minus the growth rate.
6. If you purchased the Financial Model, check out row 18 on the DCF tab.
7. The second method, terminal multiple, is used the most often in banking. Here you take a multiple (I used EBITDA in the DCF snapshot below) and multiply that times your year 5 FCF
8. If you purchased the Financial Model, check out row 30 on the DCF tab.
9. Now that you have your projections of FCF plus Terminal Value, you then need to "present value" these at an appropriate discount rate, aka Weighted Average Cost of Capital (WACC). WACC is simply the discount rate used in the DCF to present value the projected FCF's and terminal value.
10. Formula for WACC: Cost of Equity (Ke) times % of Equity (E/E+D+P) + Cost of Debt (Kd) times % of Debt (D/E+D+P) times (1-tax rate) + Cost of Preferred (Kp) times % of Preferred (P/E+D+P)...hint: (debt ("D"), equity ("E") and preferred stock ("P").
11. To estimate the cost of equity, you will be using the Capital Asset Pricing Model (CAPM). CAPM states the cost of equity equals the risk free rate plus the multiplication of Beta times the equity risk premium.
    - CAPM and WACC are discussed in more detail below.

21.2 DCF: Pros and Cons

Pros: Theoretically the soundest method if one is very confident in the projections and assumptions.
Pros: Not influenced by temporary market conditions or non-economic factors.
Cons: Valuation obtained is very sensitive to assumptions.
Cons: Valuations obtained can vary over a wide range and are very sensitive.
Cons: Involves forecasting future performance, which is very subjective.

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What is the CAPM?

The CAPM is the Capital Asset Pricing Model. The CAPM calculates the expected return a company should receive using the risk-free rate and a risk-premium that takes into account a company's risk compared to the market.

Describe CAPM.

CAPM (Capital Asset Pricing Model) is used to calculate the expected return on an investment. It is a linear model with one independent variable, Beta. Beta for a company is a measure of the relative volatility of the given investment with respect to the market ("the market" refers to a well diversified index such as the S&P 500). A beta of 1 implies that the returns will vary identically with market returns. A beta less than one means the investment is less volatile than the market. A beta greater than one means the investment is more volatile.

How do you calculate the Cost of Equity?

Use the Capital Asset Pricing Model (CAPM) = Risk Free Rate + Beta x Equity Risk Premium

- Risk Free Rate: How much a 10 or 20 year U.S. Treasury should be yielding.
- Beta: Represents the investment's volatility to the overall market.
- Equity Risk Premium: The percentage stocks are expected to outperform "risk-less" assets.

What is Beta and where would you find a firm's Beta? How and why would you un-lever a Beta?

Beta is the value that represents an investment's volatility with respect to the overall market. You would measure a company's beta by measuring the slope between the returns of the investment and the market.

Un-levered beta is the beta of a company assuming that it has no debt. Un-levering the beta removes any beneficial effects gained by adding debt to the firm's capital structure. Comparing companies' un-levered betas gives an investor a better idea of how much risk they will be taking on when purchasing a firm's stock.

What are the formulas for unlevered and levered Beta?

- Unlevered Beta = Levered Beta / (1 + ((1 – Tax Rate) x (Debt/Equity)))
- Levered Beta = Unlevered Beta x (1 + ((1 – Tax Rate) x (Debt/Equity)))

What would you use WACC for?

WACC is the weighted average cost of capital. The WACC value measures the expected return that the firm expects from its debt and equity. It is based on the capital structure of a company, since different companies use different proportions of debt and equity.

How do you calculate WACC?

Formula: Cost of Equity x (% Equity) + Cost of Debt x (% Debt) x (1 – Tax Rate) + Cost of Preferred x (% Preferred)

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Who has a higher cost of equity, smaller or larger companies?

The cost of equity for smaller companies will be higher as they are less liquid and have a higher risk of default.

21.3 Extra Thoughts on Discounted Cash Flow

- A good check on the terminal value calc is to look at EBITDA multiples at the implied future value – if it is way out of whack to the current industry average, that's not good.
- CAPM – Take the riskless rate plus the market risk premium which is multiplied by the beta (i.e. the non-diversifiable risk of the stock).
- Cash Flows to Equity Investors = NI + Depreciation – Capex – Net Inc. in WC + Increase in Debt (which is a source of cash for equity-holders).
- Cash Flows to Debt Investors = After-tax interest – Increase in net debt.
- Note that any asset or liability that has no cash-flow consequences registered in the projections will be missed by the DCF valuation (e.g. – unutilized land – may want to establish a disposal value that is added to the EV).
- Typical equity risk premium is between 3-5%.
- Mid-year discounting can be done by multiplying year-end cash flows by (1+WACC)^1/2.
- Volatility and Interest Rates change the Equity Risk Premium.
- The cost of debt is computed on an after-tax basis in order to capture the tax shield resulting from the tax deductibility of interest expense (which is not included in the FCF calculation).
- Cash and marketable securities are not valued by DCF because interest income is not part of EBITDA and FCF (cash and marketable securities are used as an offset to outstanding debt).
- You take a longer T-bond as the risk-free rate because in a shorter-term one you need to differentiate between the term premium and the pure risk premium (as most equity investments are longer-term in nature).
- The YTM of corporate bonds provides a close estimate of cost of debt, as it includes a risk component plus a negligible default risk premium.
- The cost of leases is included in the cost of debt as leases displace debt capacity.
- Problems with DCF – Projecting into the future is always tough, using an adequate discount rate
- Debt is less expensive than equity for two reasons: 1. Interest on debt is tax deductible and 2. Debt is senior to equity in a firm's capital structure (meaning equity holders get wiped out first)
- A DCF value should be adjusted for non-operating items.

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Exhibit 21.3: DCF Snapshot

- Check out the DCF Model online at SteetofWalls.com
- Showing a 5-year projected FCF, 2015 is my Terminal Value.
- Using both the Perpetuity Growth & EBITDA Multiple Approach to Terminal Value.

Discounted Cash Flow Valuation	Projected					
Calendar Years ending December 31,	**2010E**	**2011E**	**2012E**	**2013E**	**2014E**	**2015E**
($ in thousands)						
EBITDA	$8,954	$9,898	$10,941	$12,093	$13,367	$13,367
Less D&A	1,112	1,222	1,343	1,476	1,623	1,623
EBIT	7,842	8,676	9,598	10,617	11,745	11,745
Less: Cash Taxes (35%)	(2,745)	(3,037)	(3,359)	(3,716)	(4,111)	(4,111)
Tax-adjusted EBIT	**5,097**	**5,639**	**6,239**	**6,901**	**7,634**	**7,634**
Plus: D&A	1,112	1,222	1,343	1,476	1,623	1,623
Less: Capital Expenditures	(1,750)	(1,750)	(1,750)	(1,750)	(1,750)	(1,750)
Less: Change in Net Working Investment	(318)	(350)	(384)	(423)	(465)	(465)
Unlevered Free Cash Flow	**$4,141**	**$4,762**	**$5,447**	**$6,205**	**$7,042**	**$7,042**

	Perpetuity Growth Rate Approach					
Discount Rate		**11.0%**			**12.0%**	
Perpetuity Growth	1.0%	2.0%	3.0%	1.0%	2.0%	3.0%
2015 Unlevered FCF	$7,042	$7,042	$7,042	$7,042	$7,042	$7,042
Terminal Value	$71,124	$79,809	$90,665	$64,658	$71,828	$80,591
PV of Terminal Value	$42,209	$47,363	$53,805	$36,689	$40,757	$45,730
PV of Free Cash Flows ('10 - '14)	$23,610	$23,610	$23,610	$22,877	$22,877	$22,877
Implied Enterprise Value	**$65,818**	**$70,972**	**$77,415**	**$59,566**	**$63,635**	**$68,607**
Less: Net Debt	$10,750	$10,750	$10,750	$10,750	$10,750	$10,750
Implied Value of Equity	**$76,568**	**$81,722**	**$88,165**	**$70,316**	**$74,385**	**$79,357**

	EBITDA Multiple Approach					
Discount Rate		**11.0%**			**12.0%**	
Terminal EBITDA Multiple	6.0x	7.0x	8.0x	6.0x	7.0x	8.0x
2015 EBITDA	$13,367	$13,367	$13,367	$13,367	$13,367	$13,367
Terminal Value	$80,203	$93,571	$106,938	$80,203	$93,571	$106,938
PV of Terminal Value	$47,597	$55,530	$63,462	$45,510	$53,094	$60,679
PV of Free Cash Flows ('10 - '14)	$23,610	$23,610	$23,610	$22,877	$22,877	$22,877
Implied Enterprise Value	**$71,207**	**$79,139**	**$87,072**	**$68,387**	**$75,972**	**$83,557**
Less: Net Debt	$10,750	$10,750	$10,750	$10,750	$10,750	$10,750
Implied Value of Equity	**$81,957**	**$89,889**	**$97,822**	**$79,137**	**$86,722**	**$94,307**

Source: Company Website, Management, and financial projections.

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22 Comparable Company Analysis

What is Comparable Company Analysis (aka multiple analysis)?

Comparing your company to other companies using their valuation metrics
Calculating the most common multiples:

- Price to Earnings Multiple (P/E): Stock Price divided by Company EPS
    - Company EPS: Usually current year annual EPS or next year estimated EPS
    - Example of P/E Comps are in the below image
- EBITDA Multiple (EV/EBITDA): Enterprise Value divided by Company EBITDA
    - Company EBITDA: Usually current year annual EBITDA or next year estimated EBITDA
    - Example of EBITDA Comps are in the below image
- Revenue Multiple (EV/Rev): Enterprise Value divided by Company Revenue
    - Company Revenue: Usually current year annual Revenue or next year estimated Revenue

Comparable Company Pros vs. Cons:

Pros: Market efficiency ensures that trading values reflect industry trends, business risk, market growth, etc.
Pros: Values obtained are a reliable indicator of the value of the Company for a minority investment.
Cons: Always comparing apples to oranges, never finding a true comparable.
Cons: Illiquid stocks that are thinly traded might not reflect fundamental value.

Comparable Company Characteristics:

Sector: Refer to the industry or markets in which a company operates.
Products and Services: Companies that produce similar products or provide similar services.
Customer: Companies with a similar customer base tend to share similar opportunities and risk.
Distribution Channel: Refers to avenues through which a company sells its products and services.
Geography: Companies that are based in different regions of the world often differ substantially in terms of fundamental business drivers and characteristics.

Why can't you use EV/Earnings or Price/EBITDA as valuation metrics?

EV (enterprise value) is the value of the operations of the Company that is attributable to all providers of capital. If we use EV in the numerator of our multiple, to be consistent (apples to apples) we must use an operating or unlevered metric in the denominator, such as Sales, EBIT, or EBITDA.

Operating metrics such as earnings <u>do</u> include interest and are thus considered levered. Therefore EV/Earnings is an apples to oranges comparison, similar to Price/EBITDA, because Price is dependent on capital structure (levered) while EBITDA is unlevered.

Price/Earnings is fine because they are both levered.

You have a set of Comparables; do you take the Mean of the Multiples?

Generally you would want to use the Mean or Median of the Comps set. If you are trying to take into account a Company's competitive advantage in a valuation, you can look at the top percentile or higher for the multiple rather than the mean.

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Exhibit 22.1: Comparable Company Snapshot

Comparable Company	Summary				P/E			EV/EBITDA		
	Price	Shares	Mkt Cap	EV	2011	2012	2013	2011	2012	2013
Company Comps										
Company A	$16.95	60.2	$1,032	$1,805	13.6x	11.7x	10.9x	4.4x	3.8x	3.7x
Company B	$5.26	1,730.2	$9,257	$19,074	15.8x	15.2x	14.5x	4.4x	4.6x	4.7x
Company C	$7.57	352.7	$2,635	$5,190	18.5x	13.8x	11.1x	5.2x	4.5x	4.2x
Company D	$11.07	456.6	$5,014	$10,033	12.8x	12.6x	13.5x	5.7x	5.8x	6.1x
Company E	$17.88	77.5	$1,398	$3,611	14.0x	13.2x	12.1x	5.9x	4.9x	4.3x
Company F	$15.03	30.2	$422	$417	10.4x	10.0x	8.6x	6.0x	5.4x	4.9x
Company G	$3.28	201.1	$640	$2,777	7.7x	7.5x	6.9x	6.0x	6.1x	6.1x
Company H	$1.49	63.1	$95	$78	17.5x	12.4x	9.9x	8.9x	8.0x	6.2x
Company I	$1.60	200.0	$318	$470	10.7x	8.9x	7.3x	7.9x	6.9x	6.5x
Median					**13.6x**	**12.4x**	**10.9x**	**5.9x**	**5.4x**	**4.9x**
Mean					**13.4x**	**11.7x**	**10.5x**	**6.1x**	**5.6x**	**5.2x**
Min					7.7x	7.5x	6.9x	4.4x	3.8x	3.7x
Max					18.5x	15.2x	14.5x	8.9x	8.0x	6.5x

Source: Company Filings, Bloomberg Consensus Estimates

22.1 Comparable Example

Assumptions for Company F:

- Company F Shares of 400
- Total Debt of $5,000
- Cash of $2,000

Company F has an estimated EPS of $1.35 in 2011. How much is it worth using comps above?
Calculation:

- Comp Set above is trading at 13.6x 2011 Earnings Per Share
- Company F has a 2011 estimated EPS of $1.35
- 13.6 * $1.35 = **$18.36** (P/E multiples gives us Market value per share, so we are done)

Company F has an estimated EBITDA of $1,750 in 2011. How much is it worth using comps?
Calculation:

- Comp Set above is trading at 5.9x 2011 EBITDA
- Company F has a 2011 estimated EBITDA of $1,750
- 5.9 * $1,250 = $10,325 (this is the Enterprise Value, need to back out Net Debt to get to Market Value)
- $10,325 - $5,000 + $2,000 = $7,325 (This is Market Value, need to divided by shares to get price)
- $7,325 % 400 = **$18.31**

Conclusion: Based on comparable company analysis Comp F is worth between $18.31-$18.36 based on 2011 P/E and EBITDA multiples of public competitors.

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23 PRECEDENT TRANSACTION ANALYSIS (AKA COMPARABLE TRANSACTIONS)

Precedent Transaction Analysis (or Comparable Transactions) looks at historical M&A of similar companies to get a range of valuation multiples. You will be screening for Precedents the same way you screen for Comparable Company. For precedent transaction, you will be looking for the price the buyer paid for the target. For example, if you are looking at a pizza company, you would do a precedent transaction looking at pizza companies that were acquired over the past 10 years – this would give you an idea of how much your pizza company is worth today. This valuation is set up to give you a range of multiples like Comparable Company, i.e. in the last 10 years, 25 pizza companies have been acquired at 18x current year EPS.

23.1 Characteristics of Precedent Transaction (Same with Comps):

Sector: Refers to the industry or markets in which a company operates.
Products and Services: Companies that produce similar products or provide similar services.
Customer: Companies with a similar customer base tend to share similar opportunities and risk.
Distribution Channel: Refers to avenues through which a company sells its products and services.
Geography: Companies that are based in different regions of the world often differ substantially in terms of fundamental business drivers and characteristics.

Exhibit 23.1: Pitchbook View: Precedent Transaction

Here's how a typical Precedent Transaction Analysis would look in a banker Pitchbook:

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Precedent Transaction Analysis

($ in millions)

Date Acquired	Target / Acquiror	Equity Value	Enterprise Value	Enterprise Value / LTM Revenue	Enterprise Value / LTM EBITDA	LTM P/E
8/20/2004	Company X / Company Y	$360	$302	2.3x	10.3x	20.3x
10/25/2004	Company X / Company Y	285	280	2.6	10.6	20.6
1/5/2005	Company X / Company Y	35	67	2.4	10.4	20.4
5/8/2005	Company X / Company Y	1,058	1,090	2.6	10.6	20.6
12/25/2005	Company X / Company Y	579	611	2.4	10.4	20.4
4/6/2006	Company X / Company Y	89	121	2.7	10.7	20.7
8/1/2006	Company X / Company Y	2,587	2,645	1.9	9.9	19.9
7/8/2008	Company X / Company Y	789	847	2.2	10.2	20.2
9/1/2008	Company X / Company Y	497	555	1.8	9.8	19.8
12/14/2009	Company X / Company Y	614	672	3.1	11.1	21.1
12/28/2009	Company X / Company Y	129	191	1.6	9.6	19.6
2/17/2010	Company X / Company Y	119	181	3.3	11.3	21.3
5/28/2010	Company X / Company Y	893	955	1.0	9.0	19.0
Min				**1.0x**	**9.0x**	**19.0x**
Max				**3.3x**	**11.3x**	**21.3x**
Mean				**2.3x**	**10.3x**	**20.3x**
Median				**2.4x**	**10.4x**	**20.4x**

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24 Leveraged Buyout Analysis (LBO)

A leveraged buyout (or LBO) happens when a financial sponsor acquires a controlling interest in a company's equity with a significant portion of the purchase price financed with debt. Industries and companies of all sizes have been targets of leveraged buyout transaction. Through 2004 and 2005, major buyouts were becoming more common with large scale LBO's of Toys "R" Us, led by Bain and KKR, and Hertz Corporation.

Exhibit 24.1: LBO Walk-through

Walking through an LBO Model:

LBO Steps

↓

Purchase Price Assumptions
First step is making assumptions on the Purchase Price, Debt Interest Rate, etc.

↓

Create Sources and Uses
Sources tells how you are financing the transaction and Uses shows the capital uses

↓

Balance Sheet Adjustments
Adjust the Balance Sheet for the new Debt and Equity

↓

Financial Projections
Project out the 3 Financial Statements and determine how much debt is paid down each year

↓

Exit
Last step is making assumptions on the exit Multiple usually after a 5 year horizon

↓

Calculating Internal Rate of Return (IRR) on your Investment

24.1 LBO Basics

- An LBO occurs when an investor, typically financial sponsor, acquires a controlling interest in a company's equity and where a significant percentage of the purchase price is financed through leverage (borrowing).

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- Typically, leveraged buyout uses a combination of various debt instruments from bank and debt capital markets. The bonds or other paper issued for leveraged buyouts are commonly considered not to be investment grade because of the significant risks involved.
- In an LBO, an acquisition is financed mainly by borrowing against the target's future cash flows.

24.2 Walk me through an LBO

- First, you need to make some transaction assumptions: what is the purchase price and how will the deal be financed? This information will create the Sources and Uses table.
- Second, you will change the existing balance sheet of the company to reflect the transaction and the new capital structure. This is known as a pro forma balance sheet.
- 3 Main Drivers
    - Debt capacity: The amount that the company can effectively borrow against its future cash flow while still amortizing senior debt and paying interest on both its senior and subordinated notes.
    - Future EBITDA projections: Helps determine exit valuation.
    - FCF estimates are important as well – help determine effective debt paydown over the course of the LBO.
- Subordinated notes have the same risk and compensation of equity, but are classified as debt as higher debt increases the tax shield of interest payments and debt commitments force management to assume a credible risk of their own.

What is Debt Capacity?

Debt capacity is an estimate of how much the company can borrow against its expected cash flow and still be able to amortize senior debt and pay interest to both its senior and subordinated lenders.

Private vs. Public investments, which have higher returns?

Private company investments have higher returns due to the higher risk – the sponsor is essentially making a highly illiquid long-term investment.

How do you obtain the enterprise value of a private company?

- Obtaining the enterprise value of a public firm with the same projected leverage as the LBO and reducing it by 15-20%
- Discounting exit equity at a rate in the mid-20% and adding the debt capacity of the LBO

What happens to LBOs when the high yield market is illiquid?

- When HY financing is not available, the gap is filled by mezzanine financing.
- These investors demand a higher compensation (i.e. through warrants).
- Thus, sponsors have to put in more equity and IRR's fall.
- Therefore, bid prices and the number of LBO transactions fall.

What is an ideal LBO candidate?

- A firm with predictable revenues and cash-generating capabilities
- Competent management that realizes the demands imposed by the LBO structure
- Possibility of reducing working capital and selling some non-core assets for cash proceeds
- Stable and predictable cash flows
- Low-capital expenditures

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- Potential for expense reductions
- High free cash flow business

LBO Pros vs. Cons:

Pros: Will determine realizable financial bidder value that a strategic bidder will have to exceed
Pros: LBO value is realistic, does not require synergies to achieve
Cons: Ignoring synergies could result in an underestimated valuation
Cons: Valuation obtained is very sensitive to financing costs, projections, and operating assumptions

Why is leverage important in an LBO model?

Bottom Line: To increase your returns. The more debt an investor can assume at purchase, the smaller the equity invested becomes. At the end of the investment, the rate of return is calculated based on beginning and ending equity value. Therefore, the lower the initial equity investment (from more leverage), the more potential return there is for an investor.

What are the most sensitive inputs to an LBO model?

The most sensitive inputs in the LBO model will be the purchase and exit multiples.

LBO Model: Going over the big items

LBO is a strategy involving the acquisition of a company using borrowed money. The acquirer uses the company's own assets as collateral for the debt, assuming that the future cash flows will cover the interest payments.

Start with the Sources & Uses:

- Sources (how are you financing the LBO):
  - Cash will be total cash less minimum balance
  - Bank revolver is the plug
  - Bank term loan and subordinated notes are as a % of total
  - Sponsor equity is also as a % of total
- Uses (what you are buying):
  - Refinance debt (all of it)
  - Financing fees (on Bank revolver, Term Loan and Sub. Notes from Sources)
  - Transaction Expenses (whatever)
  - Purchase of existing equity (shares outstanding x price incl. Premium)
- Goodwill Calculation: Purchase price (from Uses) + Existing Goodwill (from BS) + Transaction Expenses (from Uses) – Book Value of Equity (from starting BS, includes option proceeds)

LBO: Opening Balance Sheet Adjustments

Assets:

- Cash: reduce by the amount in Sources
- Goodwill: reduce by existing amount and add in net figure from Goodwill calc
- Add Financing Fees from Uses

Liabilities:

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- Add in new Bank Revolver and Term Loan and delete existing balance (because they get refinanced)
- Do the same for the subordinated notes and debentures
- Reduce shareholders' equity by current amount and increase by sponsor equity from Sources

Pro Forma Income Statement:

- Driven by certain income statement drivers such as % margin and % of revenues
- PF Interest Expense Calc: Interest Income (from Cash on PF BS) + Interest on Revolver / Term Loan / Sub. Notes & Debentures (1st Year is Rate x Balance on PF BS, after that it's the average of the balances) + Amortization of Financing Fees (Fees from Uses amortized over their entire term)

LBO: Pro Forma Balance Sheet:

Assets:

- Cash stays constant at minimum balance.
- Net Working Capital – as a % of revenues from IS Drivers.
- PP&E – Previous Years Balance – Depreciation + Capex.
- Goodwill is unchanged assuming no amortization.
- Deferred Financing Fees drop every year by amortized amount.

Liabilities:

- Debt falls by amount repaid (as per Cash Flow Statement).
- Equity increases by Net Income amount (assuming all Retained Earnings).

Pro Forma Cash Flow Statement:

- Net Income (from IS) + Depreciation (from IS) + Amortization of Financing Fees (from IS).
    - Increase in Working Cap (from BS) – Capex (from IS and Drivers) = Free Cash Flow
- Free Cash Flow for Revolver Paydown = FCF – Term Loan Amortization (Term Loan / Term).
- Pay down debt accordingly (Revolver first).

Calculating Returns

- EBITDA Exit Multiple: EBITDA x Multiple = Enterprise Value – Net Debt = PF Equity Value (Calculate IRR based on original Sponsor Equity)
- IPO Exit: Net Income x Multiple = PF Equity Value (Calculate IRR based on original Sponsor Equity)
- CAGR (Compounded Annual Growth Rate) = (New / Old)^(1/Years)-1
- IRR (Internal Rate of Return) = annualized effective compounded return rate

What is a strip-financing arrangement in LBOs?

- Under strip- financing, each investor receives a percent participation in both the debt and equity portions of the LBO.
- Thus, a debt lender who tries to enforce a covenant may bring the company to bankruptcy and dilute his or her equity stake.
- Also, this is consistent with the need to provide an equity kicker to the lender in order to supplement the low coupon on debt affordable by the LBO.

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- Why no longer popular? High-Yield market allows firms to attract many investors with varying interests and portfolio needs. Also, coordination in the event of default would be too costly.
- A bond plus warrant structure can effectively mimic the incentive properties of a strip structure.

How do banks temper the lending of LBO firms?

- Require that not only is interest paid but also that the principal amount is amortized over a number of years.
- The high amortization amount ensures some degree of self-restraint on the part of the borrower.
- Repayment of principal also allows the lenders to recoup their investment tax-free.

Exhibit 24.2: LBO Snapshot

LBO models available at StreetofWalls.com

In this scenario we are using a mix of cash and debt to purchase the target company's equity and refinance their existing debt, thus giving us a higher deal multiple than the public market is currently giving.

LBO Summary

($ in millions)

ILLUSTRATIVE SOURCES OF FUNDS
Assumes transaction closes on 12/31/2008

	Indicative Spread	Indicative Interest Rate	Amount	% of Total	2008 Leverage [a]
Cash		3.00%	$66	2.6%	
Revolver ($100M)	L + 450 bps	7.50%	0	0.0%	0.00x
Term Loan A	L + 450 bps	7.50%	1,100	42.2%	3.03
Subordinated Notes		13.50%	400	15.4%	1.10
Total Debt			$1,500	57.6%	4.13x
Sponsor's Equity			1,037	39.8%	
Existing Shareholders' Equity			0	0.0%	
Parent's Equity			0	0.0%	
Total Sources of Funds			**$2,604**	**100.0%**	

ILLUSTRATIVE MARKET AND DEAL STATISTICS
Assumes 30.0% premium to the current stock price

	Market	Deal
Stock Price	$30.40	$39.52
Price Premium	-	*30.0%*
Shares Outstanding	45.634	46.017
Equity Value	$1,387.3	$1,818.6
Plus: Debt	666.6	666.6
Plus: Minority Interest	0.0	0.0
Less: Excess Cash	(66.5)	(66.5)
Enterprise Value	**$1,987.4**	**$2,418.7**
Enterprise Value / 2008 EBITDA	5.5x	6.7x
Enterprise Value / 2009 EBITDA	5.0	6.1
Enterprise Value / 2010 EBITDA	4.6	5.6

ILLUSTRATIVE USES OF FUNDS

	Amount	% of Total
Refinancing Existing Debt	$667	25.6%
Purchase of Equity	1,819	69.9%
Retained Equity	0	0.0%
Minimum Cash on Balance Sheet	50	1.9%
Estimated Transaction Costs (b)	68	2.6%
Total Uses of Funds	**$2,604**	**100.0%**

ILLUSTRATIVE 4 YEAR IRR

Stock Price	2008	Exit Multiple				
Premium (%)	Multiple	6.2x	6.4x	6.7x	6.9x	7.1x
20.0%	6.2x	16.5%	17.5%	18.5%	19.5%	20.5%
25.0%	6.4	15.2%	16.2%	17.2%	18.2%	19.1%
30.0%	6.7	13.9%	14.9%	15.9%	16.9%	17.8%
35.0%	6.9	12.7%	13.7%	14.7%	15.7%	16.6%
40.0%	7.1	11.5%	12.6%	13.5%	14.5%	15.4%

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Leveraged Buyout Analysis

2012

($ in millions, except per share amounts)

Illustrative EBITDA Exit Multiple		9.0x			10.5x			12.0x	
2012 Projected EBITDA		$515.7			$515.7			$515.7	
Implied 2012 Enterprise Value		$4,641.4			$5,415.0			$6,188.6	
Less: (Net Debt) / Cash in 2012		(685.1)			(685.1)			(685.1)	
Implied 2012 Equity Value to Sponsor	$3,956.3	$3,956.3	$3,956.3	$4,729.9	$4,729.9	$4,729.9	$5,503.5	$5,503.5	$5,503.5
Illustrative Required Return	**15.0%**	**17.5%**	**20.0%**	**15.0%**	**17.5%**	**20.0%**	**15.0%**	**17.5%**	**20.0%**
Implied Maximum Equity Contribution	**$2,262.1**	**$2,075.6**	**$1,908.0**	**$2,704.3**	**$2,481.4**	**$2,281.0**	**$3,146.6**	**$2,887.3**	**$2,654.1**
Plus: Maximum Transaction Debt	1,500.0	1,500.0	1,500.0	1,500.0	1,500.0	1,500.0	1,500.0	1,500.0	1,500.0
Less: Minimum Cash	(50.0)	(50.0)	(50.0)	(50.0)	(50.0)	(50.0)	(50.0)	(50.0)	(50.0)
Plus: Rollover Equity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less: Financing & Transaction Fees	(68.4)	(68.4)	(68.4)	(68.4)	(68.4)	(68.4)	(68.4)	(68.4)	(68.4)
Implied Transaction Value	**$3,643.7**	**$3,457.2**	**$3,289.6**	**$4,086.0**	**$3,863.1**	**$3,662.7**	**$4,528.3**	**$4,268.9**	**$4,035.7**
Less: Existing Debt	(666.6)	(666.6)	(666.6)	(666.6)	(666.6)	(666.6)	(666.6)	(666.6)	(666.6)
Plus: Cash on Hand	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5
Implied Equity Value	**$3,043.6**	**$2,857.1**	**$2,689.5**	**$3,485.8**	**$3,262.9**	**$3,062.5**	**$3,928.1**	**$3,668.8**	**$3,435.6**

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25 MERGER MODEL ANALYSIS

Investment bankers put together merger models to analyze the financial profile of two combined companies. Bottom line, you are trying to figure out whether the buyer's earnings per share (EPS) will increase or decrease as a result of the merger.

Exhibit 25.1: Merger Model Walk-through

Steps of a Merger Model:

Merger Model Steps

↓

Making Acquisition Assumptions
Assumptions on financing the Merger: Cash, Stock, Debt or a combination

↓

Making Projections
Next you will project out the Income Statements of each Company and determine valuation

↓

Combining the two Companies
Last step is combining the Income Statements by adding together Revenue and Operating Expenses and adjusting for cash/debt used to finance the merger

↓

Deal Accretion/Dilution
Combining Net Incomes and dividing by the new shares outstanding will give you the pro forma EPS of the combined merger. Deal is Accretive if EPS > before acquision and Dilutive if <

↓

Pro Forma Company

25.1 M&A Model Basics

- Investment Banking M&A model is online at StreetofWalls.com.
- The purpose of an accretion/dilution analysis is to project the impact of an acquisition to the acquirer's EPS and how the new EPS compares with the old EPS.
- If the new EPS is higher, then the transaction is "accretive" while the inverse is called "dilutive."
- At some point an M&A transaction needs to be "accretive" to create value.
- "Synergies" are very important in M&A: look at both revenue and cost synergies.

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Walking through an M&A Model:

1. Add the two Net Incomes together.
2. Figure out the amount of debt / stock to be raised to buy the target.
   - Usually stock is used if the valuation multiple is higher for the acquirer, while cash is used if the multiple is lower. Transaction will generally be dilutive if the target is trading at a higher valuation then the buyer.
3. Calculate pro forma shares and capital structure (how much equity do you need to raise, etc.).
4. PF Net Income = Combined Net Income's - After-Tax Interest Expense of Debt Raised / Cash Used / Dividends
5. Calculate EPS and Accretion/ Dilution.
6. Pre-tax synergies to breakeven is calculated as: ((Old EPS – New EPS)*PF Shares))/(1-Tax Rate)
7. PF Net Debt / Interest Expense are Target + Acquiror + Transaction Adjustments
8. In a merger, the surviving company assumes all the assets and liabilities of the merged company, while in an acquisition, the buyer purchases some or all of the assets/stock of the target.
9. Stock Purchase: Avoids taxes at the corporate level, you can use the NOLs of the target, shareholders are taxed on their capital gains, and the acquirer cannot write-up the target's assets for tax purposes.
10. Cash Purchase: Subject to corporate taxes, can write-up assets and amortize goodwill, but cannot use the NOLs of the target.

What is the difference between pooling vs. purchase accounting?

Under purchase accounting, goodwill is not amortized but is tested for impairment.
Under pooling, the targets assets were accounted at book value.

What can lead to EPS dilution in an M&A acquisition?

- The target company has negative net income.
- The targets P/E multiple is greater than the acquirers.
- The M&A creates a lot of intangible assets.
- Increased interest expense due to debt is used to finance the M&A.
- There are low or negative synergies.

Are synergies important to M&A transactions?

Yes, "Synergies" are very important in M&A: defined as two or more agents working together to produce a result not obtainable by any of the agents independently…pretty much saying that 1 + 1 = 3…the acquirer has capabilities to create more value than the original company. A lot of the "value" is found by cutting overhead costs.

If a company with a low P/E acquires a company with a high P/E in an all stock deal, is this accretive or dilutive?

The deal will likely be dilutive to EPS. This is because the acquirer will be paying more for each dollar of earnings than the market currently values its own earnings.

Why might a company do M&A?

- The buyer feels that the target is undervalued.
- The buyer's growth has stalled and needs to grow in other ways to satisfy investors.

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- The buyer expects significant synergies.

What does Accretion or Dilution to EPS mean?

After combining the two companies, you will get a new EPS number of the merged companies. This new EPS number represents the Buyer's Net Income + Seller's Net Income divided by the new share count to determine the combined EPS. If this combined EPS is greater than the buyer's original EPS, then the deal will be accretive to earnings, meaning it makes sense to do the M&A deal because it will add value to shareholders. If the new combined EPS is lower than the buyer's original EPS, then it is considered Dilutive to EPS. It is important to note not all M&A deals are accretive year 1; some deals are done on a dilutive basis year 1 and are accretive at some point in the near future.

What factors should a company consider when analyzing an acquisition target?

- Type of business the target operates
- Geographic presence of the target— will the acquisition expand the acquirers reach into new markets?
- Strength of target's business
- Strengths of target's management
- How expensive is the target? (look at P/E relative to acquirer and to the industry average)
- If you are using cash, does the acquirer have capacity for additional debt?
- If you are using stock, how much in synergies will need to be unlocked in order to make the transaction accretive to shareholders?

Would this transaction be accretive in a 100% stock-financed acquisition? (Assume zero premium)

Acquiror: $3.25 EPS, P/E 11.0x, Shares 1,000
Target: $3.75 EPS, P/E 13.0x, Shares 300

- Bottom Line: Transaction will be Dilutive.
- Calculative Acquiror Info: Total Earnings $3,250, Total Price: $35,750, Price/share $35.75
- Calculative Target Info: Total Earnings $1,125, Total Price: $14,625, Price/share $48.75
- Thus Acquirer will have to issue 409 new shares to acquire the Target at market price ($14,625/$35.75).
- Pro Forma for transaction the acquiror will have shares of 1,409 (1,000 + 409).
- New combined earnings of $4,375 ($3,250 + $1,125), this assumes zero synergies.
- New EPS of $3.10 ($4,375/1,409)
- New EPS of $3.10 is less than pre-transaction EPS of $3.25
- Thus, the transaction is Dilutive to the acquirer's EPS.

How do you calculate a breakeven offer price in a 100% transaction?

- Acquirer's P/E ratio (x) Target EPS
- In the above example, breakeven for the target would be at $40/share (10.0 x $4.00) vs. current $48

Other Mergers & Acquisitions Questions:

- What is M & A? What is the process for an IPO, an M & A transaction?
- Why would two companies merge? What major factors drive mergers and acquisitions?
- What are some common anti-takeover tactics?

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- What do accretion / dilution mean in an acquisition context?
- If you are a public company, what should you think about in terms of what currency (stock or debt) to use to acquire the target?
- Company A trades at a P/E of 20. Company B trades at a P/E of 10. Both are considering acquiring Company C, which trades at a P/E of 15. For which of the two acquiring companies would the deal be dilutive? For which would it be accretive? Explain why for each.

Exhibit 25.2: Merger Model Snapshot

In this scenario the M&A transaction is accretive in all years - $0.10 in 2010 and $0.23 in 2011
Snapshot from Merger Model online: **www.StreetofWalls.com/ guides-menu**

Accretion / (Dilution) Analysis

		2010E	2011P	2012P
Company A				
Projected Company A Standalone EPS		$2.57	$2.98	$3.42
Projected Company A Standalone Net Income		$3,711.8	$4,158.2	$4,685.0
Company B				
Projected Company B EPS		$2.57	$2.82	$3.06
Projected Company B Standalone Net Income		$303.6	$335.8	$365.1
Pre-Tax Acquisition Adjustments				
New Incremental Intangibles		$0.0	$0.0	$0.0
Synergies		0.0	0.0	0.0
New Interest Expense @	**10.0%**	(25.1)	(25.1)	(25.1)
Total Pre-Tax Acquisition Adjustments		($25.1)	($25.1)	($25.1)
After-Tax Acquisition Adjustments				
New Incremental Intangibles		$0.0	$0.0	$0.0
Synergies		0.0	0.0	0.0
New Interest Expense @		(15.1)	(15.1)	(15.1)
Total After-Tax Acquisition Adjustments		($15.1)	($15.1)	($15.1)
Pro Forma EPS Calculation - 6 Months First Year Impact				
Projected Company A Standalone Net Income		$3,711.8	$4,158.2	$4,685.0
Projected Company B Standalone Net Income		151.8	335.8	365.1
- After-Tax Acquisition Adjustments		(7.5)	(15.1)	(15.1)
Pro Forma Combined Net Income		**$3,856.1**	**$4,478.9**	**$5,035.0**
Pro Forma Combined Shares Outstanding		1,444.298	1,395.366	1,369.879
Pro Forma EPS		**$2.67**	**$3.21**	**$3.68**
Projected Company A Standalone EPS		**$2.57**	**$2.98**	**$3.42**
$ Accretion / (Dilution)		**$0.10**	**$0.23**	**$0.26**
% Accretion / (Dilution)		**3.9%**	**7.7%**	**7.5%**
Break-Even Pre-Tax Synergies Required		**($240.4)**	**($534.5)**	**($583.4)**

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26 OTHER VALUATION METHODOLOGIES

26.1 Leveraged Recap

A strategy where a company takes on significant additional debt with the purpose of either paying a large dividend or repurchasing shares. The result is a far more financially leveraged company.

26.2 Restructuring

The purpose of a restructuring/recapitalization is to reduce the burden of debt on the cash flow of the company to make it consistent with its debt capacity and to maximize the cash recovery of the different claimants.

In an out-of-court workout, debtors/creditors negotiate extensions and reductions on the amount to be repaid – as a result of the extensions, creditors assume that they will receive more than from the immediate enforcement of their liquidation rights.

When assets are transferred to a creditor in total or partial payment of debt, a restructuring gain equal to the difference between the carrying value of the debt and the fair value of the assets transferred (net of taxes) is recorded.

The write-down of assets that are no longer worth their carrying amounts is recorded as asset impairment.

27 VALUATION QUESTIONS

Methods include the Discounted Cash Flow (DCF), Comparable Companies, and Precedent Transactions Method

The Discounted Cash Flow values a company by projecting its future cash flows and then using the NPV method to value the firm.

Comparable Companies values a company through multiples used from similar publicly traded companies (EV/EBITDA, P/E ratios). This information is readily available because companies are valued every day. This approach is used to evaluate whether a company is overvalued or undervalued compared to its peers.

Precedence method uses similar companies' transactions that have occurred in the past to estimate how much a company would be purchased for currently. It uses multiples from those transactions to give a range of the value of the company in question.

What is the most relevant valuation?

The most relevant valuation would probably be the Past Transactions valuation method. This is because the Precedence method is based off actual data or deals that have happened in the past, which accounts for market intangibles and also a control premium. A control premium is the excess amount over a company's tangible assets that a company will pay for in order to take control of the company. The DCF would be the least relevant valuation because many of the values used to calculate the DCF are based on assumptions and are very subjective (growth rate, interest rate, projected cash flows, etc.).

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Your company is private and earning $2.50/share for EPS. Your closest competitors are trading at 10.0x P/E. What is the comparable valuation of your private company based on the comps?

$25.00 share. Simply 10.0 multiplied by $2.50 = $25/share
There will be a premium to your private company based on liquidity and control premium.

Which method will give the highest valuation?

The **Discounted Cash Flow method** will give the highest valuation because this type of valuation is very subjective. Assumptions that have to be made are the forecasted growth rate of cash flows, discount rate (WACC), and exit multiples (TV), etc. This, coupled with management's tendency to provide optimistic assumptions, would create the likeliest highest valuation.

Precedent transactions would also carry a relatively higher valuation compared to Comparables because precedent transactions take into account market intangibles, control premiums, and synergies that are assumed through the purchase of a company. In addition, hostile-takeovers would assume a higher valuation (i.e. multiples) for the same reason.

Walk me through a DCF (Discounted Cash Flow).

The Discounted Cash Flow approach tries to estimate the value of a company through its projected future cash flows. A company's cash flows can depend on factors including the health of the economy, the health of the industry, management skill, etc.

The first step to a DCF is to project the "Free Cash Flows" for the next 10 years. Because you can't project a company's cash flows accurately for a long period of time, companies use a terminal value, which acts a perpetuity which a constant growth rate that will project a company's cash flow to infinity. After projecting a firm's cash flow, we then have to calculate a firm's discount rate using WACC, which is the measurement of a firm's riskiness. We then discount the cash flows using the WACC value in order to come up with the present value for the dollar amount of the firm.

When using Comparables, how do you determine who are the right peers to use?

You can determine your comparable peers by comparing different operating and financial characteristics of your firm and other public firms. Operational characteristics include industry, types of products, distribution channels, geography, customers, and cyclicality. Financial characteristics include size (Revenue, EBITDA, market cap), growth potential, profitability / margins, capital structure (debt/equity) and ownership entities.

When you find the right peers, what are you comparing?

Although you can never find the "perfect" peer, you are trying to compare the relative value that the market puts on your firm compared to others, based on different financial metrics. Relative financial metrics that can be used are various equity and enterprise multiples.

What is a control premium?

The control premium is the premium above the market value of a firm that is paid in order to gain ownership of the company and to be able to make independent business decisions.

What is the difference between an EBITDA and P/E multiple— when would you use each?

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EBITDA and PE multiples compare different pieces of a firm. An EBITDA multiple takes a holistic view of a firm, by not taking into account its capital structure, while a PE multiple takes into account the capital structure of a firm by only accounting for profit after its debt holders have been paid off. EBITDA multiples can be used to measure overall profitability of firms in a specific space, while PE multiples can be used to compare how the market values peers depending on their different capital structures.

What is a LBO? Why leverage up a firm? How would a buyer choose how much equity to invest? (Make sure to review an actual LBO financial model)

In an LBO, a financial buyer acquires a firm with a substantial amount of debt in order to maximize their equity return on their investment. Financial buyers, usually P/E firms or hedge funds, look to exit from their investment after a term of 4-6 years. When looking for a potential target, buyers look for a firm with high growth potential, high margins, a steady and consistent cash flow, a strong asset base, and a strong management team.

A buyer would estimate how much equity to invest based on a number of factors. These factors include the sponsor's return expectations ("hurdle-rate"), expectations of the firm's financial performance, the investment horizon, the forecasted exit value, and the company's ability to maintain leverage. This analysis is referred to as the "ability-to-pay" analysis.

How much would a financial buyer lever up a firm in current markets?

In the current markets, with the credit crunch it will be more difficult for P/E firms to find cheap, affordable debt. Before the credit crunch, buyers would put maybe 30-40% equity of the purchase price but now will have to put approximately 45-55% equity because they will have a more difficult time finding cheap debt.

What is capital structure? And why would a company choose to finance equity vs. debt?

Capital structure is the mixture of debt and equity that is used to finance a company's activities. Capital structure will give an idea of how leveraged a firm is and is an item that can be used to compare a company to its peers and industry.

A company would choose to finance activities through equity because the more debt a company has, the riskier a company will be—due to all of the interest payments it has to make on a regular basis. The more equity a company has, the less likely a company is to default on its payments.

A company would choose to finance activities through debt for tax purposes because interest payments are tax deductible. In addition, the cost of debt is usually lower than the cost of equity. A company might not want to raise more equity because this will also dilute the value of equity for its shareholders and will essentially generate a lower return for its shareholders.

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Exhibit 27.1: Capital Structure

Most Senior on Capital Structure (Least Risky)

Senior Secured Debt (borrower pledges collateral)

Mezzanine or Subordinated Debt

Preferred Stock

Common Stock

Least Senior on Capital Structure (Most Risky)

One company has a P/E of 10x and one has a P/E of 20x. Compare the two companies.

If both the companies are comparable by being the same industries or producing similar products or services, the market values one firm's growth potential more than another. This could possibly illustrate the different stages each company might be in, with a start-up company valued as a growth-stock and another company valued as a value-stock with a lower P/E ratio. It also depends on what the average P/E ratio is for the industry or its peers. The P/E ratio simply illustrates how much investors are willing to pay per dollar of earnings.

How do you know if a stock is undervalued or overvalued?

You can tell if a stock is undervalued or overvalued by using comparable analysis of firms with similar financial and operating characteristics. Through the use of multiples, investors can figure out how the market values a firm compared to its peers.

27.1 "Depreciation" Question

Depreciation Question (everyone asks this question, important to know!)

- Depreciation goes up by $100. How does this affect the 3 financial statements?
- Assume a 40% Tax Rate…approach this one statement as a time.
    - **Income Statement**: Depreciation is an expense on the Income Statement, so operating income (EBIT) declines by $100…You'll pay $40 of taxes so net income declines by $60.
    - **Cash Flow Statement**: Net income declines by $60 and deprecation increases by $100, so cash flow from operations increases to $40.

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- **Balance Sheet**: Net PP&E decreases by $100 (b/c subtracting $100 of depreciating asset out of PP&E), on the cash flow statement the cash increased $40, and there's a $60 reduction in net income that causes retained earnings (equity) to decrease by $60.
- **Now we're balanced**: Assets decreased $60 (PP&E -$100 and Cash +$40) and shareholder's equity decreased $60.
- This question can also be asked as "what if you purchased $100mn of property" or "what if you purchased property and took a loan out to do so." It's practically the same question because property has to be depreciated; hence all 3 statements are affected. If you are still confused, go to my website and follow-up with me via email.

Exhibit 27.2: Depreciation Question

Here's a step-by-step graph of the previous Depreciation Question:

Depreciation goes up by $100, what happens to all 3 statements?

↓

Income Statement
$100 Depreciation Expense, assuming 40% tax rate then reduction in Net Income by $60
$100 x (1-40%) = $60

↓

Cash Flow Statement
Net Income reduced by $60, Depreciation increases by $100
Thus net increase in cash from operations of $40 (-$60 +$100), Ending cash increase of $40

↓

Balance Sheet
Cash increases by $40, PP&E declines by $100. Decline in assets of $60 ($40 - $100)
Now you balance: Assets -$60 and Equity -$60 from Net Income Drop

↓

All 3 Statements are now balanced

Company owned 100% by you – has $20mm in EBITDA infinitely – how can you improve returns?

- By putting on more debt – allows you to leverage existing shareholder returns.
- Assuming you can put on 5x EBITDA - $100MM of debt – interest rate of 6%.
- Remember— you already own 100% of the company, so you also gain $100mm of the debt balance.
- Total Returns = $100mm of New Debt + Value of Company after paying interest.

Merger Model: When a Company with a higher P/E acquirers a lower P/E Company

- When a company with a higher PE buys one with lower PE, its accretive.
- Earnings increase proportionally more than the increase in the number of shares.

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- Because while you get full credit for the Net Income of the target (numerator), your share count increases by less than 100% given your higher existing PE ratio
- Low multiples correspond to low earnings growth – the acquirer ends up with higher earnings in the short run but lower future growth.

What is Enterprise Value?

- Total Debt + Total Preferred (has many of the same characteristics and at the time of acquisition will have to be bought out) + Minority Interest (these investments will also have to be bought out) – Unconsolidated investments (could be sold quickly, so a proxy for cash) – cash and short-term investments.
- When we acquire a company, we don't just acquire the market value of the shares but also have to incur the company's debt obligations and to gain its cash reserves.
- Minority Interest is a significant, but non-controlling, outside ownership interest in a company that is consolidated with the parent for financial reporting purposes.

What is a PEG Ratio?

- PEG is the ratio of a company's P/E to its earnings growth rate.
- Helps show if a company's high P/E is justified by its growth rate.
- A company with a high P/E can be an attractive buy if its growth rate is also higher than that of a comparable company with a lower P/E and slower growth.
- A PEG ratio below 1 means that the share is attractively priced and a PEG above 1 means indicates that it's expensive.

PIK (Payment in Kind) Bond Question
Assumptions: 10% Cash Interest, 10% PIK Interest – Principal go up by $100 million

- Net Income falls by $12 (40% tax rate on Cash Interest).
- On the Cash Flow Statement, Net Income falls by $12, but Cash Flow from Operations go up by $10 (PIK Amount – Non-Cash Interest) – Net effect is $2 fall in cash.
- On the Balance Sheet, Assets fall by $2 (Cash), Debt increases by $10, but NI falls by $12.

Two similar firms, one at 1.0x leverage the other at 2.0x leverage, which one would you invest in?

- This depends on your risk appetite; the 2.0x leverage Company will generate higher returns on equity since its equity base is smaller because of more debt.
- Question to ask: Does one have a higher cost of capital?
- If one company has a higher Debt-to-Equity ratio, its discount rate is lower given the cheaper cost of capital.

What's the different between operating and capital leases?

When a company wants to purchase assets, they sometimes choose to lease these assets instead of buying them. The two types of leases a company can choose are operating and capital leases. Both of these leases will affect the treatment of financial accounting differently.

Capital leases give ownership rights and are used for longer-term assets. Capital leases are counted as debt on the balance sheet and the company is able to depreciate the asset and incur interest payments.

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Operating leases are not given ownership rights and are generally used for shorter-term assets. Unlike capital leases, operating leases are not considered a debt obligation and show up on the Income Statement as an expense.

Why convert operating leases to capital leases?

- Operating leases are classified as rent expense, so they affect your EBITDA.
- Capital leases, on the other hand, are classified as interest expense, so they allow you to increase leverage.

How do you diligence a company?

- Predictable revenues and cash generation capabilities
- Competent management
- Look at the historical company / industry pricing structure to determine viability of projections
- Understand where costs can be cut and where they have to be added – advertising, accruing enough on workers comp., customer acquisition costs that will drive future growth etc.

Why would a firm consider raising equity over debt?

- The firm is already highly levered and cannot take on additional debt.
- Debt ties up cash whereas dividends (an equity distribution) are distributed at the discretion of the firm.
- Debt has covenants that restrict activities and limit amount of additional debt.

Why would a firm consider raising debt over equity? (Inverse from above)

- The company has capacity to take on additional leverage.
- Increased leverage improves ROE (return on equity).
- Interest payments are tax deductible where dividends are not.
- Equity is more expensive than debt.
- Issuing equity shares will dilute current shareholders, whereas raising debt will not.

Conceptually, how does a firm create value?

- By generating return on invested capital (ROIC)
- Revenue Growth
- Margin Growth
- Positive cash flow

What are adjustments that need to be made to ensure consistency of financial information?

- Gaines or losses on sales of assets
- Restructuring charges
- Write-down of assets
- Legal settlements
- Discontinued operations
- Tax adjustments relating to prior years

How do you calculate fully diluted shares outstanding (FDSO)?

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- FDSO = Basic Shares Outstanding (Found on Cover of 10-Q) + In the Money Options – (Options proceeds / Share Price)

Problems with Comparable Company Analysis

- True comparables are almost never available.
- Firms in the same industry may be in a different growth cycle and have different leverage.
- Despite these problems, comparables are still a useful check on DCF.

Advantages / Disadvantages of looking at EBITDA multiples

- Decent proxy for cash flow.
- Excludes Capital Expenditures and interest payments.

Advantages / Disadvantages of looking at Revenue multiples

- Good for valuing companies for fast-growing companies that are sacrificing profits to build up market share.
- Also useful for companies with no reliable cost information, especially if the acquirer is confident of being able to impose its own cost structure.
- But doesn't factor in earnings – only a top-line multiple.

Advantages / Disadvantages of looking at P/E multiples

- Goes all the way down to Net Income.
- But D&A charges depend on previous write-ups of assets, which may differ among companies.
- Differences in the amount of net debt also lead to differences in interest expense and earnings.

Why are EBITDA and Revenue multiples to Enterprise Value and not Equity Value?

- They both exclude interest payments; therefore they have to be pegged to EV. That includes the Net Debt component of capitalization.

Why would one company have a higher multiple than another?

- Growth Characteristics
- Risk Profile

Why can fast-growing, smaller firms borrow less debt than larger, established firms?

- Smaller, fast-growing companies inherently have more risk.
- Smaller, fast-growing firms have a higher proportion of intangible assets.
- Values of future growth and intangible assets are more easily dissipated under financial distress.

How does an increase in leverage affect a company's valuation?

- Value increases by the additional value of the interest tax shield.
- This is partially offset by an increase in the cost of equity as leverage magnifies risk.

What is delta hedging?

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- An options strategy designed to reduce the risk associated with price movements in the underlying security, achieved through offsetting long and short option positions.

How do companies manipulate earnings?

- Booking revenues before they've been realized
- Accelerated or straight-line depreciation – LIFO/FIFO
- Capitalizing expenses (e.g. – customer acquisition, marketing costs)

What is Yield to Maturity and Yield to Worst?

- YTM is the rate of return anticipated on a bond if it is held until the maturity date.
- YTW is when you calculate the yield at different call dates and figure out which one's the worst.

28 Accounting Questions

Walk me through the 3 Financial Statements

1. Income Statement: this is a report that shows how much revenue a company has earned over a specific time period. An income statement also shows the costs and expenses associated with earning that revenue. You will find earnings per share (EPS) on the income statement.

2. Balance Sheet: this sheet provides detailed information about a company's assets, liabilities, and shareholder's equity. Formula for balance sheet: ASSETS = LIABILITIES + SHAREHOLDERS' EQUITY. A company's assets have to equal the sum of its liabilities and shareholders' equity.

3. Cash Flow: this sheet shows a company's inflows and outflows of cash. This is important because a company must have enough cash on hand to pay its expenses and purchase assets. Each part of the cash flow statement reviews the cash flow from one of three activities: 1. Operating Activities, 2. Investing Activities, 3. Financing Activities

How do the 3 Financial Statements Flow Together?

Net Income:

- Everything comes from your IS Drivers.
- Net Interest Expense comes from your Debt Schedule (say only if you build one).

Balance Sheet:

- Cash is from opening balance, AR is as Days * (Revenues/365)
- Net PP&E is Opening Balance + Capex – D&A – Capitalized Interest
- AP is as Days * ((Opex + Capex)/365)
- Long-Term Debt is from the Debt Schedule
- Shareholders' Equity is Previous Balance + Net Income

Cash Flow Statement:

- Net Income + D&A (from IS)
- Operating Activities (IS Adjustments):
    - Subtract Cash Interest (from Debt Maturity Schedule)

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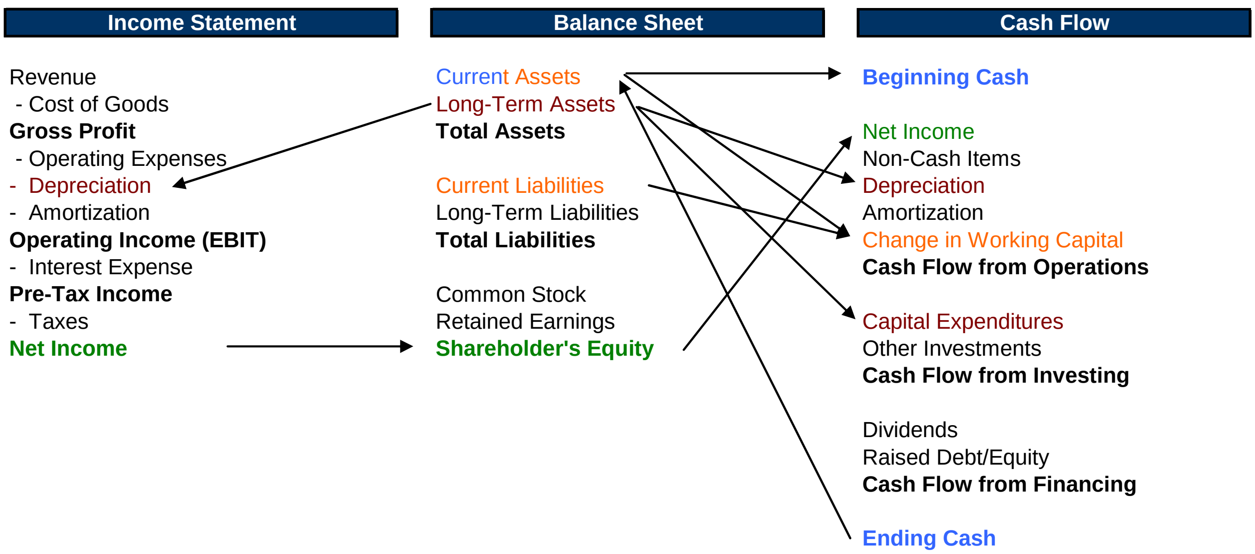
  - AR & Inventories – Difference between current and last year – an increase is a negative
  - Same for other Assets (Deferred Income Taxes, Prepaid Expenses, Other Assets)
  - Opposite for Liabilities such as Accounts Payable, Accrued Expenses etc.
  - Why? Income in Account Receivable means you haven't really gotten the cash yet, AP increase means you haven't paid the cash out yet
- Investing Activities (Asset Adjustments):
  - Capex (negative number from Net PP&E calc) – also include Purchase of Intangibles
- Financing Activities (Liabilities Adjustments):
  - Reduction / Increase in Long term Debt, Paydown of Preferred Stock, equity raise etc.

Exhibit 28.1: Financial Statement Relationship

How the 3 Financial Statements Flow Together:



Want to practice building a 3 statement standalone model?
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Exhibit 28.2: Income Statement Snapshot

Model Snapshot of Income Statement from Street of Walls financial models available online:

Income Statement		2009	2010	2011	2012	2013	2014
Revenues		$20,000	$22,000	$22,000	$22,000	$22,000	$22,000
COGS (ex. depreciation)		9,000	9,856	9,812	9,768	9,724	9,680
Gross Profit		$11,000	$12,144	$12,188	$12,232	$12,276	$12,320
G&A		1,800	1,980	1,980	1,980	1,980	1,980
Sales & Marketing		1,100	1,210	1,210	1,210	1,210	1,210
EBITDA		$8,100	$8,954	$8,998	$9,042	$9,086	$9,130
Depreciation		1,000	1,100	1,100	1,100	1,100	1,100
Amortization		12	12	12	12	12	12
EBIT		$7,088	$7,842	$7,886	$7,930	$7,974	$8,018
Interest Expense			947	800	800	800	800
Interest Income			27	125	304	487	676
EBT			$8,816	$8,811	$9,034	$9,261	$9,494
Taxes	40.0%		3,526	3,524	3,613	3,704	3,797
Net Income			$5,290	$5,287	$5,420	$5,557	$5,696

What is the difference between the income statement and the statements of cash flows?

The income statement represents the results of operations of a business over a specified period of time (1-yr, 1 qtr). It provides investors and creditors with information needed to determine the enterprise's profitability and creditworthiness. It is composed of:

- **Revenue**: source of income that arises from the sale of goods/services and is recorded when earned.
- **Expenses**: costs incurred by a business over a specified period of time to generate the revenues earned during that time period.
- **Net Income**: Revenue – Expenses (positive = profit, negative = loss)

In comparison, the statement of cash flows presents information about the actual source and use of cash generated during operations. It provides a detailed summary of all cash inflows and outflows during a period. Flow of cash is divided into three activities:

- **Cash flows from operating activities**: cash effects of transaction involved in calculating net income.
- **Cash flows from investing activities**: involves items classified as assets and includes purchase and sale of equipment/investments.
- Cash flows from financing activities: involves items classified as liabilities/equity in the Balance Sheet; includes payment of dividends and issuing payment of debt/equity.
- Net income from the income statement is presented on the statement of cash flows under operating activities.

What is the link between the balance sheet and the income statement?

- The balance sheet presents the financial situation of a company at a given point in time. It is comprised of:
    - o **Assets**: the economic resources of a company used to operate its business (cash, inventory, and equipment).

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- **Liabilities**: presents the debt of a company/claims creditors have on the company's resources (accounts payable).
- **Equity**: presents the net worth of a company = Assets – Liabilities/claims investors have on the company's resources (common stock, retained earnings).

- ***Repeat***: In comparison, the income statement represents the results of operations of a business over a specified period of time (1-yr, 1 qtr., 1 mo.). It provides investors and creditors with information needed to determine the enterprise's profitability and creditworthiness. It is composed of:
  - Revenue: source of income that arises from the sale of goods/services and is recorded when earned.
  - Expenses: costs incurred by a business over a specified period of time to generate the revenues earned during that time period.
  - Net Income: Revenue – Expenses (positive = profit, negative = loss)
- The link between the two statements is that profits generated in the income statement are added to shareholder's equity on the Balance Sheet under the title "retained earnings." Also, the debt on the balance sheet is used to calculate interest expense.

What is the link between the Balance Sheet and the Statement of Cash Flows?

- The statement of cash flows starts with the beginning cash balance, which is taken from the balance sheet under assets. Also, to figure out cash from operations, you need to use the changes in the balance sheet accounts (i.e. accounts payable, accounts receivables, etc).

How can a company have positive earnings and negative cash flow?

- **Operating activity**: earnings are recorded based on accrual method; therefore cash changes may not occur at the time of transaction.
- **Investing activity**: if the company is growing, it might be investing in a lot of PP&E (Plant, Property, & Equipment); therefore, since investments are not an expense, earnings could be positive while Cash Flow is negative.
- **Financing activity**: the company could be paying off debt, resulting in negative cash flow.

What is a Differed Tax Asset (DTA) and a Deferred Tax Liability (DTL)?

Both of these arise when there is a difference between what a company can deduct for cash tax purposes and what a company can deduct for book tax purposes.

Deferred Tax Asset is held on the company's balance sheet and is used to reduce any future income taxes. DTAs arise due to net operating loss and are carried forward for future income tax expenses. A good example of large DTA's is seen in the home building industry (Pulte, Lennar, etc.) where these Companies recorded huge operating losses in the Credit Crisis of 2007-2009. These operating losses were recorded as tax assets on the balance sheet; once these companies return to profitability they will be able to use these DTA to shield from tax expenses.

A Deferred Tax Liability (DTL) represents a temporary difference between GAAP and cash tax liabilities. This often happens when a company depreciates an asset faster for tax purposes than it does for financial reporting purposes. Bottom Line: DTL is the difference between a company's actual taxable income and its reported GAAP income before taxes.

What is the difference between cash and accrual accounting?

Cash-based accounting recognizes revenue and expenses when cash is actually received.

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Accrual-based accounting recognizes revenue when collection is reasonably certain and recognizes expenses when they are incurred rather than when they are paid out in cash.

FIFO vs. LIFO

FIFO (first-in first-out) assumes that the first unit making its way into inventory is the first sold.

LIFO assumes that the last unit making its way into inventory is sold first.

What are some common leverage ratios?

- **Debt to Equity Ratio**: Market value of debt / market capitalization
- **Leverage Ratio**: Net Debt / Trailing 12M EBITDA
- **EBITDA** interest coverage: EBITDA / Interest Expense

When you write down an asset, what is the impact on the three financial statements?

- The value of the asset is reduced on the balance sheet by the amount of the impairment loss.
- That loss is recognized as a charge on the income statement.
- EBIT will also decline by the amount of the impairment loss since asset write-downs are recognized as a charge to operating income.
- Net income will decline by the amount of the impairment loss net of taxes.
- An impairment charge is a non-cash charge, so it will not impact the cash flow statement.

Which financial statement is most useful in valuing a company?

The Statement of Cash Flow is the most useful financial statement because most of the multiples used to value a company are all within the cash flow statement. Also, company's health can ultimately be based upon its ability to generate cash since it is used to finance a lot of their activities. The cash flow statement is also very important because accounting is based on the accrual system, so a company can be generating revenues without necessarily being able to pay its interest payments to stay in business because it has no cash available.

How do the balance sheet, income statement, and statement of cash flow relate to each other?

The **Balance Sheet** is a company's financial position at a specific time. The Income Statement and Statement of Cash flows are financial statements that are used to consolidate certain accounts in the Balance Sheet.

The **Income Statement** is used to measure how a company has performed for a certain period. Its "bottom-line" is Net Income, which, when subtracted by Dividends, equals Retained Earnings. The Change in Retained Earnings is then added to the beginning balance of Retained Earnings on the balance sheet. Also, short-term and long-term debt on the balance sheet is used to calculate interest expense on the income statement.

The **Statement of Cash Flow** shows a company's cash flows for a specific period and then is consolidated back into the cash account on the balance sheet. The SOCF uses relevant balance sheet accounts in its statement as well.

Walk me through the major lines of a cash flow statement.

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There are three main lines of a cash flow statement: Operating Activities, Investing Activities, and Financing Activities. Operating Activities include balance sheet accounts: Net Income, Depreciation, A/R, A/P, etc. Investing Activities include activities where cash is used to purchase capital. Balance sheet accounts include Inventory, Equipment, Property, Plant, etc. Financing activities include the activities used to generate more capital, like the issuance of common stock and the issuance of debt.

What is the difference between equity value and enterprise value (or firm value)?

Equity value is the value the market values the firm. Enterprise value is the value of the entire firm including the stake to debt holders. For example, when Firm A acquires Firm B, Firm A takes on Firm B's current debt and cash account balances, which should be taken into account when acquiring a company.

What is EBITDA?

- EBITDA is Earnings before Interest, Taxes, Depreciation and Amortization.
- EBITDA is essentially earnings before "all the bad stuff." EBITDA is a value that will give a general idea of how profitable a company is but is not a good evaluation of cash flow.
- EBITDA = EBIT (Operating Cash Flow) + Non-Cash Expenses (D&A, stock-based comp., etc.)

What is Free Cash Flow (FCF)? (un-levered)

- **Free Cash Flow** measures the financial performance of a firm calculating operating cash flows subtracted by capital expenditures. FCF is a company's cash flow assuming that it has no debt (paid off its cap-ex).
- FCF (un-levered) = EBIT – Taxes + D&A – Increase in WC – CapEx
- FCF (levered) = EBIT – Interest Expense - Taxes + D&A – Increase in WC – CapEx

What could a company do with excess cash on the balance sheet?

A company can do all sorts of things with excess cash. They can use excess cash to repurchase stock, give out dividends, make other investments (positive NPV), purchase capital expenditures, raise debt levels, or acquire another company.

A company would repurchase stock if it felt that it was currently undervalued by the market. A company could increase dividends to signal to the market that it foresees profit growth in the future and also to make its stock a more attractive investment. A company could raise debt levels or purchase capital expenditures because it expects the company to continue to grow in the future. The company could also take advantage of current cheap debt levels because it has excess cash available to pay off the additional interest expense.

Suppose you are buying a new fixed asset - part cash and part debt. Take through how it affects all the financial statements. Example: $10M

Balance Sheet:

- Assets: PPE increase 10M, Cash decrease 5M
- Liabilities: Debt increase 5M

Cash Flow Statement:

- Net Cash from Financing Activities – decrease 5M

What is goodwill? How does it affect net income?

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Goodwill is an intangible asset that usually arises through an acquisition of a company. Goodwill is usually the amount paid over the book value of a firm. It can represent a company's strong brand name, outstanding patents, technology, or other intangibles (good relations with the union, employees, strong management team, etc.). Goodwill affects Net Income because it must be amortized, as any asset will decrease in value over time, thus decreasing NI.

Other Accounting questions:

- What is EBITDA?
- Walk me through the major line items of a Cash Flow Statement.
- Say you knew a company's net income. How would you figure out its cash flows?
- What is the difference between the balance sheet and the income statement?
- What is goodwill? How does it affect net income?
- A firm is using LIFO and the COGS start decreasing. What are effects on I/S, BS and CFS?
- What is the difference between Purchase and Pooling accounting? Under what circumstances would you use one or the other?
- What are deferred taxes? How do they arise?
- What is working capital? How would you calculate it?

Other Random Points:

- FCF is different from regular cash flow because it accounts for cash reinvestment in the business and thus denotes the actual amount of cash available for distribution.
- Deferred Taxes are generated when companies elect to choose a depreciation method different from the one specified in the U.S. tax code (which permits accelerated depreciation) – the difference between the reported computed tax and the actual tax liability is booked as Deff. Taxes – you reduce this amount in the future when book dep. exceeds tax dep.
- Enterprise Value = PV of the FCF to all security holders computed at the WACC of the firm.
- Net Investment = Capex + Increase in WC – Depreciation
- **Acid Test Ratio** = (Cash + AR + Short-Term Investments) / Current Liabilities
  - A stringent test that indicates if a firm has enough short-term assets to cover its immediate liabilities without selling inventory.
- **Interest Coverage Ratio** = EBITDA / Interest Expense (unified valuation analysis, in terms of EBITDA)
  - A ratio used to determine how easily a company can pay interest on outstanding debt.
  - Bring yourself down after an LBO by doing an equity offering, divesting assets etc.
- Why convert operating leases to capital leases?
  - Your EBITDA increases as op. leases are taken off the IS, while your Net Debt/EBITDA decreases, thereby allowing you to pile on more debt.
- **Economic Value Added** (EVA) = NOPAT – (Capital * Cost of Capital)
- **Discount Rate** = The interest rate used to calculate the PV of the expected future cash flows
- Less liquid stocks provide higher returns than liquid stocks as investors price securities net of trading costs and thus, require higher returns given the higher trading costs of a less liquid stock.
- A liquid asset is one that can be traded at a desired quantity without reducing the price.
- **Liquidity** = Daily Dollar Return / Daily Dollar Volume
- P/E of Peers * EPS of Company = Estimated Share Price of Company
- Price-to-Book ratios (Stock Price / Book Equity per share) are useful in determining the replacement value of the assets in place.
- Multiples are affected by changes in debt (change the tax shield) and growth (changes the FCF).
- Management is typically reluctant to issue new equity because of the volatility of stock prices, the high cost of floating a new issue and the dilution of ownership.

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- A convertible bond has a low coupon rate because of its conversion feature, which is essentially a warrant on the firm's equity.

29 Further Interview Thoughts

Know your resume in detail; be prepared to talk about anything on your resume, from job experience to your hobbies. If you TA'd for Finance for two semesters, talk about that when they ask about your leadership skills. They may also ask questions about team experience, about a time when you had problems with your co-workers and how you solved the conflict, etc.

Know how the financial statements are related to each other:

- Balance Sheet: Assets = Liabilities + Shareholders Equity. To break the formula, we can rewrite that:
  - Cash + Non-cash Assets =Liabilities + Shareholders Equity (Contributed Capital + Accumulated Other Comprehensive Income + Retained Earnings)
- Retained Earnings is the Net Income from Income Statement (that's how income statement is related to balance sheet. Also, Net income is the first item on cash flow statement). Don't forget about the tax shield on the income statement.

Learn as much as you can about the company you are interviewing with. Be prepared to give a good answer why you want to work with them.

30 Other Finance Questions

- Why would two companies merge? What major factors drive mergers and acquisitions?
- What are some common anti-takeover tactics?
- What is an LBO? Why lever up a firm?
- Why might a company choose to issue debt vs. equity?
- What could a company do with excess cash on the balance sheet?
- How would you calculate a firm's WACC? What would you use it for?
- What is the Beta and where would you find a firm's Beta? How and why would you unlever a Beta?
- How do you calculate the firm value for the following firm?
- What would greater impact a firm's valuation, a 10% reduction in revenues or 1% reduction in discount rate?
- What major factors affect the yield on a corporate bond?
- How would you evaluate the creditworthiness of manufacturer with three factories in different locations throughout the U.S.?
- Company A trades at a P/E of 20. Company B trades at a P/E of 10. Both are considering acquiring Company C, which trades at a P/E of 15. For which of the two acquiring companies would the deal be dilutive? For which would it be accretive? Explain why for each.
- Suppose you are buying a new fixed asset—part cash and part debt. Talk through how it affects all the financial statements.
- Financial market questions:
  - What did our firm's stock close at yesterday?
  - What is the DJIA at today? NASDAQ? S&P500? Long Bond? Fed funds rate?
  - Where is the market going? Bond, equity and foreign exchange? Where do you think?
  - What will interest rates be in the next 12 months?
  - What happened in the markets in the past three months?
  - Do you read the Wall Street Journal every day? What's on the front page today?

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  - Do you follow an industry, a stock?
  - What do you personally invest in?
  - What industry do you follow and what numbers do you look at to determine if a firm is doing well in the industry?
- What is prime rate? Federal funds rate? Federal Discount Rate?
- What was a recent article you read?
- Tell me about a stock you think is a good buy and why.
- What's your opinion on the market? On the economy?
- What are some of the most significant factors affecting the market today?
- What has been a deal that you have followed?
- What's a Secondary Offering?

What signs would indicate management's manipulation of earnings?

- When earnings are above the industry benchmark.
- When there is a sudden change in accounting policies.
- Sudden change of auditors, lawyers, executives or directors.
- When the firm is engaged in significant related-party transactions.
- Significant difference between percentage changes in Net Income vs. EPS.

Multiples

- Revenue multiples: usually technology and early tech startups—don't use P/E and EBITDA because there are usually no earnings.
- EBITDA – good proxy for Cash flows, not influenced by any other expenses.
- P/E – a lot can influence the NI, like depreciation expense and other ways management makes up the statements.
- Pick undervalued stock – look at what comps are traded at. If it's trading under, then it's something interesting to look at, also look at FCF yield (inverse of the P/E ratio).

Earnings Yield

The earnings per share for the most recent 12-month period divided by the current market price per share. The earnings yield (which is the inverse of the P/E ratio) shows the percentage of each dollar invested in the stock that was earned by the company.

Why would a company be overvalued?

- Some legal overhang
- Terrible management
- Slow growth
- Missed earnings

Precedent vs. Public Multiples, which is higher?

Precedent, because they bought the whole company: "have to pay premium for controlling ownership."

Bonds / NPV Questions:

- If you are paid a dollar a year for the rest of your life, how much is that worth today?
- How much is a dollar in 20 years worth today?
- What is the relationship between the yield and the price of the bond?

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- How does the future value of money relates to the present value (i.e. FV=PV(1+r)^t)?
- What major factors affect the yield on a corporate bond?
- What is the Black-Scholes model?
- What does the yield curve look like?

31 BRAINTEASERS

The best way to prepare for brainteasers is to run through some practice questions. Bottom line, investment bankers are looking for your thought process when they ask brainteasers. They want you to work through the problem, starting with the basics and to be able to explain your math.

If you look at a clock and the time is 12:15, what is the angle between the hour and the minute hand?

- *Answer*: We know that at 12:15 the angle is slightly less than 1/4, so a bit less than 90.
- Start off with the basics – a clock, which is a circle, is 360 degrees.
- Each hour on the clock represents 30 degrees (360 degree clock divided by 12 hours).
- Now, the minute hand has only moved ¼ of the way through the hour (minute hand is at 15, which is ¼ of the way around).
- So the hour hand has moved 7.5 Degrees (30 degrees per hour times ¼ move in the minute hand).
- Now we know the hour hand moved 7.5 degrees…so the answer is 82.5 degrees (90-7.5)
- Banks want to be able to see your math – they want analytical minds that can think through hard problems like this. Don't worry if this is tough – the more practice, the better you'll get!
- Another similar question: What is the angle at 3:15?

A car travels a distance of 60 miles at an average speed of 30 mph. How fast would the car have to travel for the same 60 mile distance home to average 60 mph over the entire trip?

- *Answer*: This is a trick question, it's impossible
- The first trip took 2 hours (60 miles / 30 mph).
- In order for you to average 60 mph over the entire trip you would have to travel for 2 hours (120 miles / 60 mph).
- Since you already were driving for 2 hours it is impossible for you to average 60mph for the entire trip.

How many Hershey's chocolate bars were sold in the US last year?

- *Answer*: For this type of question, you would start by saying the U.S. population is approximately 330 million; Chocolate bars are mostly consumed at age group of x to x; each of these people may consume approximately 3 to 5 chocolate bars a year; you do the math (330 people x (# that consume / 330) x # of chocolate bars each person consumes).

You have a 5-gallon jug and a 3-gallon jug. You must obtain exactly 4 gallons of water. How will you do it?

- *Answer:* Fill the 5-gallon jug and then pour it into the 3-gallon jug. The 5-gallon jug has 2-gallons left. Now throw the 3-gallon water away. Pour the 2-gallons from the 5-gallon jug to the 3-gallon jug. So now the 3-gallon jug has just 2-gallons of water. Fill the 5-gallon jug again, and pour 1 gallon to the 3-gallon jug. You are then left with 4-gallons of water in the 5-gallon jug.

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You are faced with 2 doors. One door leads to your job offer (that's the one you want!), and the other leads to the exit. In front of each door is a guard. One guard always tells the truth. The other always lies. You can ask one question to decide which door is the correct one. What will you ask?

- *Answer:* Ask a guard: "If I were to ask you if this door were the correct one, what would you say?" The truthful consultant would answer yes (if it's the correct one), or no (if it's not). Now take the lying consultant. If you asked the liar if the correct door is the right way, he would answer no. But if you ask him: "If I were to ask you if this door were the correct one, what would you say," he would be forced to lie about how he would answer, and say yes.

I'm drinking beer and you're drinking light beer. Your light beer is 1/3 less filling than my regular beer. I drink 3 beers. How many do you have to drink to be equally full?

- *Answer:* 1 beer = 4/3 of a light beer, so if you drink 3 beers (3 x 4/3), you would need to drink 4 light beers.

You are playing a game against one opponent. The game starts of 21 cards on a table. You and your opponent alternate turns, and during each turn, a player may pick up 1, 2 or 3 cards. The winner is the person that picks up the last card. You go first. What is your first move, and what is the optimal strategy to win this game?

- *Answer:* You pick 1 card first (leaving 20)… then you want to respond to all opponent picks by picking a number that totals 4 combined with their last pick. So, you pick 1…then, if they pick 3, you pick 1…if they pick 2, you pick 2…if they pick 1, you pick 3. This ensures that you're always leaving them with a multiple of 4 (first 20, then 16, 12, 8, 4), right until the end, when you leave them with exactly 4. When they're stuck with 4, they are out of luck…because regardless if they pick 1, 2 or 3, you will be able to win in the next turn.

You are given 9 marbles that look the same, but 1 of them weighs slightly less than the other 8. You are also given a balance scale. What is the LEAST amount of times you could use the balance to determine which of the marbles is the lighter one? (Also explain the different balance weightings you would perform).

- *Answer:* On the first weigh, you would weigh 3 marbles on each side, leaving 3 off. If one side of scale is lighter, you are left with 3 marbles. Then you would place 1 marble on each side of scale, and leave 1 off. Least amount of time you can use the balance is 2 times.

There are 4 people are on one side of a bridge at night and would like to cross it. Only 2 can cross at a time. In order to cross, a flashlight must be used. There is only one flashlight. The 4 people each take different amounts of time to cross the bridge (see below), so if 2 people cross together, they will cross at the speed of the slower person (since they need to be together and use the flashlight). Describe how all 4 people can reach the other side of the bridge in 17 minutes (Time to cross bridge: Person A: 1 minute; Person B: 2 minutes; Person C: 5 minutes; Person D: 10 minutes).

- *Answer:* A & B across (2 minutes), A comes back (1 minute), C & D across (10 minutes), B comes back (B was left there from the first move) (2 minutes), A & B across (2 minutes).

What is the sum of the numbers from 1 to 50?

- *Answer:* Pair up the numbers into groups of 51 (1+50=51; 2+49=51; etc.). Twenty-five pairs of 51 = 1,275.

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You have 18 blue socks and 14 black ones in a drawer. It is very dark. How many do you have to pull out before you have matching pair?

- *Answer:* You need to pick 3 socks. No color was specified so after choosing 3 socks, 2 should be the same color.

Tips: if you don't know an answer, that's OK; just say "I don't know." Technical questions are not only posed to test your knowledge but also to see how you handle stress. You will generally do much better with the interviewer if you are calm and under control.

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THE END: What Now?

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