Finance Recruiting Guide

Western Investment Club

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Preface

This guide was written to provide guidance to students at Western University that are looking to pursue a career in finance, particularly in investment banking. It is predominantly meant for pre-Ivey and Ivey students, but also applies to main campus students that do not have access to business school resources. Ivey has a very unique program because of its 2+2 system. While this system offer many advantages, it also leaves students at a bit of a disadvantage in their first two years of university in comparison to other business schools. There is little recruiting guidance available for these students that may be in diverse programs such as science or engineering. This guide aims to make the recruiting process for these students easier.

The ideas, advice and tips in this guide are based on the personal experience of the contributors. Nothing in this guide is a concrete to-do and should serve only as a guideline. While the material in this guide is correct and accurate to the best of our knowledge, we recognize that we may be misinformed about some things. Although the contributors are providing advice that worked for them, it may not be applicable to everyone. Please use this guide as a reference only and use it to supplement what you may already know. We highly recommend using this guide in conjunction with other finance guides such as Breaking Into Wall Street ("BIWS") or Wall Street Oasis ("WSO"). The contributors take no credit for either your success or your failure as a result of this.

Throughout this guide the contributors recommend the use of other resources and guides by name. The contributors and this guide have no personal or professional association to any of these resources. There is no incentive that may skew the perspective of the guide. Similarly, the contributors have no control over the content of these resources and guides and take no responsibility for its accuracy or relevance. Please use them at your own discretion.

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Contributors

<u>Executive Team 2014 - 2015:</u>
Matt Ting
Kevin Gryp
Moses Li

<u>Executive Team 2015 - 2016:</u>
Vinayak Modi
Steve Yang

Chapter 1: Introduction and Overview

Introduction

This guide is tailored towards students at Western University and at the Ivey Business School. The guide is intended to be a supplementary resource that should be used in conjunction with school resources and traditional guides. Particularly, the guide aims to benefit pre-Ivey students that do not yet have access to resources offered by the Ivey Business School. Additionally, the guide includes advanced technical questions that the contributors came across through their recruiting processes. It should also be noted that this guide is a continuous work in progress.

In the first section, FAQs will be addressed a timeline will be outlined that will be help track your progress. The timeline is tailored towards Western students aiming to go to Ivey and may not apply to students in a different situation. Please keep in mind that this is merely a suggested timeline and will vary significantly from person to person in practicality.

In the second section, the will address networking practices. Recruiting is often subjective and networking can have a large impact. Due to constraints in resources such as time and manpower, recruiters often prioritize candidates that they already know and like. Networking is critical not only for getting an interview, but also for success on the job. This section will provide tips on how to construct a strong résumé and how to approach the informal interview processes.

In the last section, this guide will walk you through technical questions covering different valuation techniques. While basic behavioral questions are discussed here, only advanced technical questions are addressed. Please go through traditional technical guides such as BIWS to build a solid foundation before you go through these. Please also note that these questions will likely not be applicable if you are in first or second year. At this stage, BIWS is usually more than sufficient.

Frequently Asked Questions

The following section contains questions commonly asked by WIC members. It should be noted that these answers are reflective of the opinions and views of the authoring WIC Executive team.

What is investment banking?

Investment banks act as intermediaries between companies and the capital markets, providing a means for companies to raise debt, equity and acquire other companies. Investment bankers act as agents on behalf of companies (their clients) and connect them to buyers, sellers, and investors. To provide a simplified example, whenever General Motors needs to raise money or is acquiring a new company, it will enlist an investment bank for advisory and / or financing. The investment bank will advise on the best alternative and will facilitate the actual transaction. Different investment banks will pitch the sale of their services to these prospective companies. The nature of these tasks makes investment banking a client-serving role.

What is the difference between the sell-side and the buy-side?

The world of finance can be generally split into the **buy-side** and the **sell-side**, which are fairly distinct from each other and have certain unique characteristics.

The **sell-side**, which includes investment banking, is called so because it involves the creation, analysis, marketing and sale of securities. The **buy-side** engages in the opposite function - buying securities and services that the sell-side offers. The buy-side includes all asset managers and includes career paths such as **private equity** and **hedge funds.**

An analogy to frame the working relationship between the sell-side and the buy-side is to think about the purchase (and sale) of a house. Here, the real estate agent is the investment banker. The agent / investment banker profits off of commissions and accordingly, his/her success is driven by the size and volume of transactions. The buyer of the house would represent the buy-side. The buyer profits from property rent and the property's eventual sale. Accordingly, the buyer wants to guarantee that he/she is buying an asset at a good price and that the asset will appreciate in value over time. Although this house example dramatically simplifies the transaction process, it is a good indication of the mentality each party has.

How important is it to have finance experience in first or second year to get a job in investment banking?

The most important thing that formal finance work experience provides is an indication that you have been interested in finance for long period of time, which is highly valued by recruiters. Holding a finance position in first and second year makes your "story" very logical, making you a more attractive candidate. Having finance experience in first and second year is also important for personal development because it teaches you how to work in a professional environment in the industry and also helps you establish a personal network.

That being said, it is not imperative to have prior finance experience to successfully recruit for investment banking (or a related field) out of one's undergraduate degree. There are instances of people coming from food service industries, self-employment, and unemployment that break into investment banking every year.

How can I learn more about finance?

This largely depends on the amount of time you have. If you only have a short amount of time available, focus on going through *Investment Banking by Rosenbaum and Pearl* to learn the fundamentals of major valuation techniques. Additionally, keep up with news as much as possible and cram through the basic recruiting guides.

If you have a bit more time available, we recommend the following the timeline below. Based on experiences, the contributors have found the below to be the path of least resistance.

Ideal Timeline

First Year:

- Construct a "Mergers & Inquisitions" approved résumé
- Get involved with Western finance/business clubs such as the Western Investment Club
- Attend WIC meetings and join a researcher group - the goal this year is to learn as much as possible and get involved
- Begin following the news on a regular basis
- Look for entry level finance summer internships such as private wealth management
    - Travelling and other volunteer work can be considered as an alternative, as can the CSC

First Year Summer:

- Start developing your WIC pitch for Analyst interviews
    - Critical thinking and the integrity of your investment thesis are more important at this stage than the quality of your model
    - Spend time on your pitch and polish your slides
    - Understand the basics of key valuation methods: Comparables, Precedents, and DCFs
- Focus on performing well in your internship – obtain a strong recommendation
- If a finance internship is not an option, other work such as retail, travel and volunteer work can fill the void

Second Year:

- Continue to be involved in Western business clubs
    - Apply to be a WIC junior analyst
- Skim over "Investment Banking: Valuation, Leveraged Buyout, and Mergers & Acquisitions" by Joshua Rosenbaum & Joshua Pearl
- Reach out to as many boutiques and smaller financial companies in cities you are interested in as possible

Second Year Summer:

- Focus on performing well in your internship
    - Keep records of your responsibilities and results for future references
- Preparation for Ivey:
    - HBA1 first semester grades are important, but academic preparation is not needed
    - Prepare for public speaking, take courses if necessary. This will improve contribution
    - Rest up and begin the semester with a good attitude and a willingness to work hard

Third Year Fall:

- Focus on doing well in Ivey (if applicable). Although marks are not the only criteria for certain firms, having a high average will help you obtain a high number of interviews. Also, if your average is too low you will likely not be considered for a position regardless of how good your experience is

- Network with people at firms you want to work for, use information sessions effectively
- During the winter break (right after the first semester final exams), read finance recruiting guides in preparation for the upcoming recruiting season. Also start working on your cover letters. Do not rely on time in the first week back because you will be busy with mock interviews and course work
- Schedule mock interviews with your friends and mentors right after you return from winter break. Use the mock interviews set up by the Ivey Finance Club. You should aim to do as many mocks as possible. It is recommended to do at least 10
- Keep track of job application deadlines and submit your CV accordingly, keep mocking and reviewing guides in any free time you have

Third Year Summer:

- Do as well as you can in your internship and secure a full time offer
- If you want to potentially do full time recruiting, network throughout the summer at firms you want to work for
- Treat your internship as an extended interview for a full time offer

Reading List

News Sources:

- The Wall Street Journal: http://www.wsj.com
- Bloomberg: http://www.bloomberg.com
- DealBook: http://www.nytimes.com/pages/business/dealbook/index.html
- The Economist: http://www.economist.com
- Financial Times (UWO allows you to obtain a free subscription): http://www.ft.com

Online Investing Communities:

- Seeking Alpha: http://www.seekingalpha.com
- SumZero: http://www.sumzero.com
- Value Investors Club: http://www.valueinvestorsclub.com
- Distressed Debt Investors Club: http://www.distresseddebtinvestorsclub.com

Books:

- Investment Banking by Joshua Rosenbaum and Joshua Pearl
- Margin of Safety by Seth Klarman
- Monkey Business by John Rolfe and Peter Troob
- Young Money by Kevin Roose
- The Intelligent Investor by Ben Graham

Other Sources:

- Mergers & Inquisitions: http://www.mergersandinquisitions.com/
- Wall Street Oasis: http://www.wallstreetoasis.com/

Regardless of what year you are in, you should start following the news surrounding finance and the economy immediately. This will help you keep up-to-date with current topics, which is important because you may be asked questions related to the economy in your interviews. A list of recommended news sources have been provided above.

To find out more about investment banking / private equity / hedge funds, it is recommended to visit “Mergers & Inquisitions” (“M&I”). The site’s contributors interview individuals with experience in the finance industry and write articles containing their insights. Additionally, “Wall Street Oasis” (“WSO”) is another website you can visit to learn more about finance. You should read content from “certified users” or posts with high ratings.

Everything else is optional and will broaden your knowledge, but is not critical to recruiting.

Chapter 2: Networking and Informal Job Processes

Résumé Building

Before thinking about job applications or reaching out to people, the first step you should take is to create a presentable résumé. A well written résumé is more than a summary of one's accomplishments; a good résumé conveys attention to detail, the ability to format documents, and the ability to summarize important information. These skills are critical in the finance world and having a good résumé can signal competence (or at the very least, disguise incompetence).

This guide recommends the *Mergers & Inquisitions* investment banking student résumé format, which can be found online. The *Mergers & Inquisitions* résumé is the gold standard for finance résumés and although not particularly exciting, it is very safe. Other university mandated templates do exist for career management purposes, but it is suggested to stick with the general framework of the *Mergers & Inquisitions* résumé for actual job applications. That being said, feel free to make minor alterations to suit your personality and style. Be careful while doing this and make sure the résumé remains consistent and everything is properly aligned and spaced. In general, be very mindful of formatting. Investment bankers have been trained to catch the slightest of mistakes, such as an italicized colon.

In addition to the rules outlined by the résumé, there are certain Do's, Do Not's, and General Tips that should generally be followed:

<u>**Do:**</u>

- Write in the past tense, even for jobs currently maintained
- Use meaningful bullet points that start with action-oriented verbs and reveal the impact of your action. If possible, connecting these actions to some sort of improved $, # or % figure would be valuable (e.g. Analyzed and pitched Ebix Inc. as an investment opportunity using financial database resources, and performing comparables analysis and discounted cash flow valuations; the stock appreciated 52.0%)
- Have a skills and interests section that highlights what you do outside of school. These provide an easy way for interviewers to connect with you and can help distinguish you from your peers
- Save your ultimate résumé file in PDF format. .Doc and other word processing formats are susceptible to formatting problems when viewed on different platforms. Using a PDF also prevents unwanted future alteration
- Name your résumé file something logical and easy to understand such as "FirstName_Lastname" or "FirstName - LastName"
- Stretch your margins and boundaries if necessary. The default margins by most word processors are pretty restrictive and playing with margins is generally accepted

Do Not:

- Lie on your résumé. On the off chance that the interviewer or reader can debunk your claim, this is an auto-ding
- Have a résumé longer than one page. This rule is just for the reader's convenience, but is a generally accepted norm in the finance world
- Use an illegible font or have a font size greater than 12 point for standard text. Times New Roman, Calibri, and Arial are safe choices
- Use creative deviations such as coloured font, watermarks or headshots

General Tips:

- Anything you put on your résumé is fair game for an interviewer to grill you on. You should be able to defend every line of your résumé and be able to explain in reasonable detail the context of each point
- Putting "Ivey Business School" as your education before being accepted into the program can be viewed as aggressive and inaccurate. A more appropriate approach would be having a bullet point with "Advanced Entry Opportunity into the Ivey Business School"
- Try to be as consistent as possible with your formatting, down to the most detailed points. For example, ensure that all dashes are the same kind of dashes, spacing is similar throughout, bullet points are the same style, etc.
- Try to maximize the horizontal space of each written line. For example, it is not advised to have a bullet point entry under a job experience where the second line only takes up a couple words of space
- It does not really matter if you use Canadian or American spelling for certain words. It is more important that you remain consistent throughout your résumé on which spelling you use
- If you worked a particularly short period of time, you can refer to the season of the year to hide that fact, e.g. "Summer 2014" instead of "June - July 2013"

Informal Application Processes

As a first or second year student, finding work opportunities in a relevant finance role can be very difficult. The reality is that most finance firms hire junior students for a summer internship with the intent of signing them back for full time employment. Furthermore, a first or second year at Western - even an AEO student - will not have access to Ivey's recruiting opportunities. These factors put the onus on students to be proactive and diligent throughout the school year to secure a summer internship. Broadly speaking, there are three avenues that people find jobs through: **personal connections, online applications,** and **cold e-mailing/networking.**

Personal Connections

Personal connections should be the first avenue approached in search of a job. This includes family, family friends, professors, estranged lovers, etc. Having a warm lead and a strong introduction is the easiest way into any firm and will often help you bypass meaningless rounds of administration. You should not hesitate to use personal connections to break into the industry. While you may receive a negative stigma, the pros definitely outweigh the cons. This guide will not talk much more about personal connections because it is inherently difficult to create new personal connections. If you do have a meaningful personal connection, make sure you still appear to be a top-notch candidate. Polish your résumé and prepare as you would if the connection did not exist. This will make it easier for people to vouch for you and will gain you respect.

Online Applications

The second avenue that should be approached is online applications, essentially taking a "spray and pray" approach to applying to firms through their online portals. These job applications can either be found through the company's website or through job boards that aggregate postings such as Monster.com, Indeed.com, Talentegg.ca, and Randstad.ca. Applications usually start going live in January and prospective applicants should diligently check these websites on a daily to weekly basis to maximize their chances of getting a job.

It should be noted that the online application route often results in a very low success rate. To improve chances, you may want to supplement an online application with cold e-mailing and networking with employees at the firm, a process that is explained below.

Cold E-mailing/Networking

Cold e-mailing and networking is the avenue that most undergraduate students must rely on to find jobs in finance given the nature of the former two options. A cold e-mail is an e-mail sent to someone with whom you have had no prior contact, while a warm e-mail is an e-mail sent to someone who you have been introduced to. Warm e-mails are a superior method of making connections; one should ask to be introduced to someone through a mutual connection whenever possible.

The purpose of cold e-mailing is to connect with people in the industry who are in a position to employ you. There are many boutique finance firms that could potentially employ a summer intern, but do not have the human resources to run a formal recruiting process. Accordingly, the logical approach is to be proactive and reach out to as many of these firms as possible.

The first and often most difficult step is finding the contact information of these people. The easiest way to do so is through school alumni directories (Western, Ivey, high school), LinkedIn, online databases (Jigsaw.com, Manta.com, Lead411.com), or Google. A successful strategy is to ask juniors and seniors at Western for the contact information of their employers or other places they have applied to. Logically, one can infer that if a firm employed summer interns in the past that they would be willing to take on summer interns in the future as well. To be comprehensive and organized, it is recommended that one maintain some sort of Excel file or database to keep track of applications sent, associated important dates, and application statuses.

The next step is to draft the cold e-mail. Cold e-mails should be very brief (7-10 sentences, a length that can be easily scrolled through on a Blackberry). Within the body of the e-mail, you should introduce yourself, discuss any relevant experience you have had, state the intent of the e-mail and then conclude either by asking if there are any opportunities at their firm or inviting them to talk on the phone / for a coffee. Cold e-mails should also be as personalized as possible, as it generally increases the likelihood of a positive response. If you are confident in your résumé, you can attach it in your e-mail. If the recipient is on the fence, a strong résumé may tip the odds in your favour. However, a mistake on your résumé could cost you a sure shot interview, so be careful. Finally, make sure the email is as polished as possible, a grammatical mistake here will likely result in no response.

Aside from these general tips, the most important factor in a cold e-mailing strategy is sheer diligence. It is very common for people to not respond to cold e-mails or be generally unhelpful. Do not be afraid to follow up with cold e-mails, though you should try to be very cognisant of whether you are bothering the contact or not. An important caveat to all networking is to be socially aware of your actions, as reaching out to people can be just as detrimental as it can be helpful.

Chapter 3: Preparing for the Interview

Introduction

The remaining sections outline the most common behavioural questions and also some advanced technical questions. It is recommended to first read through the standard finance guides such as *Breaking Into Wall Street 400 Questions* and the *Wall Street Oasis* guides and use the following questions to deepen your understanding. It should be noted that these questions are geared towards HBA1 summer recruiting and HBA2 full time recruiting at Ivey - the aforementioned guides are usually overkill for most first and second year internships by themselves.

An understanding of the basic content in the BIWS 400 guide will prepare you very well for almost all first and second year internships. It is highly recommended that you read through the BIWS 400 guide if you are at this stage. Focus especially on the behavioural section of the guide because those questions can have the largest impact in an interview. You can supplement the BIWS 400 guide at this stage with brainteasers and by developing an understanding of the markets. The more advanced technical questions will most likely never come up at this stage, but questions about recent events likely will. Also prepare a quality stock pitch because it can set you apart and demonstrate your knowledge.

It is worth mentioning that it is very important to be able to answer questions in a coherent manner. A coherent answer is automatically perceived as being more credible and leaves a better impression on the interviewer. Many people memorize answers from guides. Memorization can be the first step, but understanding the concepts and practicing the delivery are by far the most important. Companies are aware of these guides and come up with their own questions. As a result, if you simply memorize the guide, you won't be able to answer the question if they make a slight change to it. Also, reading over answers in your head is very different from being able to talk about it coherently when the pressure is on and there are interviewers looking at you. Practice is key, do a lot of mock interviews. In HBA1, 20 - 30 mocks are common.

Specifically for HBA1s, be careful about using 48 hour reports in your answers because they are something that most of the student body will talk about. 48s are the easy go to for any question that asks about a team based or pressure situation. Only use them if you can truly distinguish your answer or impact in a significant manner. A very specific situation with a group member could be a good example. Having a high 48 average can also back up your response if you talk about your contribution to groups.

Personality Questions

<u>Tell me about yourself / Walk me through your résumé</u>

This question will be asked in every single one of your interviews, so mastering it is essential. This question may be asked in some other form, but should be easy to identify as it is usually the first thing the interviewer asks.

First, start with "a beginning". You can use a sentence or two to talk about where you were born or went to high school, or jump directly to your first job. Where you start does not matter too much, the key is to be chronological and show how your experiences have led you to believe finance is what you want to do in the future. You can tie in some skills here as well by saying something like "growing up I excelled at math and liked business courses so I feel finance would be a great fit for me".

Second, talk about "a catalyst". This should be an experience or activity you participated in that initiated your interest in finance. Make sure your "catalyst" is strategically placed so your experiences thereafter all revolve around it. You could use a course, a competition, a club, or other external event as a catalyst. You can also have multiple catalysts in your story that subsequently narrow your interest. The first may have gotten you interested in business, the next may have gotten you interested in investment banking.

Third, build on your "catalyst". Think about the internships or activities that you have subsequently completed in the realm of finance and structure them logically.

Finally, this question should be finished by saying something along the lines of "After my experience in 'Experience 1' and 'Experience 2', I believe I have developed the necessary skill set for 'XX job' and have realized it is exactly what I want to do. I strongly believe that 'XX firm' would be able to provide me with the experience I am looking for and that I would be a great fit here." Ideally, you should prepare a normal version (90 seconds to 120 seconds) and a quick version (around 30 seconds) to be safe in case the interviewer asks for one. You can use the short version for phone calls as well.

Sample Answer #1:

<u>The Beginning</u>

I was born in Southern China and grew up in Vancouver. I decided to go to Ivey Business School because of its unique case study method. Going into university, I had no idea what business really entails. As a result, I joined as many business-related clubs at Western as possible to explore the *different areas in business.*

The Catalyst

One of the clubs that I joined was Western Investment Club. Looking back, it was really my heavy involvement at the club that allowed to me explore the different areas in finance and learn various valuation techniques. At the same time, I started reaching out to many alumnus and boutiques for internship opportunities

Building on the Catalyst

For my first year summer, I had the opportunity to intern at a boutique investment bank. I thought it was a fantastic learning experience and really enjoyed working on transactions.

Going into my second year, I wanted to gain more investing experience. Not only did I became more involved with Western Investment Club by being selected as an analyst, I also worked at a private equity search fund during my second year summer where I monitored a portfolio company and analyzed potential investments.

Finisher

After my experience in investment banking and private equity, I know I want to work in "XX industry" and I strongly believe your firm will be able to offer me with this excellent opportunity.

Sample Answer #2:

The Beginning

I was born in India and came to Canada in grade 7. Growing up I enjoyed and excelled at courses such as math and science. I also have a family background in business so I was always interested in that area.

The Catalyst

In grade 12, I took a course in finance which brought these two together. What I really liked were just simple concepts such as what a stock is or how money acts as a medium for exchange. Conducting a lot of research, I thought investment banking would be a good fit for me. It was something I could see myself doing for the long term.

Second Catalyst

I came to Western because of the opportunities Ivey offers in this space and quickly became involved with the Western Investment Club. Here I learned more about different careers in finance, built my technical knowledge, and most importantly I had the chance to speak to many investment banking analysts which further solidified my interest.

<u>Building on the Catalyst</u>

I became highly involved with the Western Investment Club in my second year as an analyst. I also wanted to gain some relevant experience so I summered that year as an analyst at CIBC World Markets. I developed a lot of softer skills here such as attention to detail and how to work in teams in a work environment.

<u>The Finisher</u>

Given the interest I have built up, the skills I have accumulated, and the experiences I have had, I think I would be a great fit for this investment banking position at XXX bank, and that it would be a great fit for me.

<u>Why do you want to work in investment banking / private equity / etc.?</u>

In order to answer this question, you first need to understand the nature of these industries and the role of a junior employee. For example, one key difference between these two roles is that one (investment banking) acts as a middleman while the other (private equity) act as the buyer. In an investment banking interview, you can mention how you find it interesting to be in the middle of the transaction that connects the buyer and the seller. In a private equity interview, you can talk about your interest in analyzing investments, which to you is more interesting than being the middleman.

You must also do a lot of self-reflection and really understand **why** you want to do investment banking or private equity or whatever else it may be. What about it interests you? Why are you willing to work so many hours? It is best to be as specific as possible to make your answer more legitimate. Ideally, you should have 2-4 specific reasons that highlight the core of your interest.

Side Note: If you are pursuing a career in finance just for money, the contributors of this guide would highly recommend reconsidering. The time and effort you will have to put into the job is not worth it just for money. There are several jobs and opportunities out there that can provide a comfortable lifestyle and income. The people that emphasize money coming into finance tend to be the ones that burn out the fastest. Also, you can only enjoy money if you have time to spend it.

Why do you want to work in this city?

If you have genuine reasons for wanting to work in this city, then list those out. Family is always a strong reason that you can always mention. For major cities in North America such as Toronto, Calgary, New York, Los Angeles, and San Francisco, Western and Ivey have a significant amount of presence in each of the cities. Alumni support is something that you can talk about in your interviews.

Your answer should be geared towards why you want to be in this city not just for the summer, but for at least the next few years. You can use lifestyle reasons to answer this question as well. Perhaps you really like to surf or to ski or to eat at good restaurants that can be found in this particular city. It can also be used as an opportunity to show some of your personality and bring up something cool (like surfing). Similar to the first paragraph of your cover letter, if the answer can be applied to another city, it is not specific enough.

Ideally, you should find 3 reasons why you want to work in the specific city. If you have any questions in regards to certain cities, you can also use LinkedIn or the alumni database to reach out to alumnus that work in the city to hear about their perspective.

Why do you want to work at this firm?

The best answer to this question is a genuine answer. Your answer should be as specific as possible and should not really be applicable to other firms. Think about the structure of the firm, how are their groups set up? Also think about team sizes and the level of responsibility the firm may offer. You can mention the culture and talk about fit, especially if you have formed a good relationship with someone at the firm. Use specifics even if you want to talk about generics. For example, if you want to talk about the teamwork oriented culture at Goldman Sachs, you can start by talking about the blast policy (anyone at the bank can email **everyone** in the firm) at the firm and indicate how that showcases this culture.

You should also answer this question by speaking with people that are working or have worked at the firm. You can find out much more about the culture and the work environment through this. It will also make you seem better prepared and interested during interviews. If you did not get a chance to speak with someone at the firm, then you should research online. There is always a "why our firm" page on the company's website, though it may not be too helpful.

Are we your first choice?

This is a difficult question to answer and different people will approach this differently - there is no "right" answer. It will likely only come up in your final round interview / superday. Honesty is usually the best policy. If you say yes and get the offer, you are essentially obligated to take it so be careful. Many firms would consider it a renege if you do not. If you say no, you likely will not get the offer. If the firm is not your first choice, you should say that they are in your top three for sure, but you are still trying to make your decision. Highlight the fact that this a learning process for you and that you are forming your opinion as you meet the team at each bank. You may be able to ask for some time as well, which would let you complete the rest of your interviews before answering.

<u>Where else are you interviewing?</u>

You should be honest here, but do not need to disclose everything. Most likely, you are interviewing at a range of other places, you should mention only a few of the **most comparable ones** here. If you are interviewing at a bulge bracket firm mention a couple other bulge bracket firms by name and finish by saying something like "among some other smaller firms". It is a little more difficult for first and second year recruiting, but the answer should still be framed this way. Doing so makes you seem more competitive, but does not make it seem like you are unfocused. You also want to mention firms/offices in the same city to show interest.

If you have no other interviews, try to say that you are in the process with some other firms and go on to talk about how you really want to be where you are currently interviewing. You want to avoid saying "none" in this situation because it makes you seem unattractive.

<u>If we gave you an offer, would you accept it on the spot?</u>

The purpose of asking this question is to see if you are serious about this opportunity. If you say no or show that you might say no, it is likely that you will be eliminated from the process. Not only do firms want the most competitive candidate, they also prefer candidates that really want to work at their firm and will take the offer.

If the firm is one of your top few choices, it is recommended to say yes because the risk of waiting for another firm isn't worth it. Another way you can approach this is to reiterate your interest in the firm, but also asking for additional time to speak with family. Here is an example of a response if you don't want to say yes concretely:

"I can't say for sure I will be able to accept immediately because I would like the opportunity to discuss it with my family. However, given the fantastic work culture and great work experience that this firm offers, I don't see any reason why I wouldn't say yes"

If these do not fit your situation, you should just be honest. It will likely work out for the better for both of you. If you have enough attractive prospects that you would not take it on the spot, diplomatically say no and explain they are in your top tier, but you are trying to learn more about firms.

What are three of your strengths?

Here you want to talk about two strengths that are directly related to the job you are interviewing for and will make you better at it. The third should be related to fit and should showcase your personality. Interviewers want to know that you are the best person for the job, and also that you are the best person to be around. You also want to tie each strength to specific examples. If you talk about attention to detail, mention projects that have required it and how you have developed it. For the third strength, you can say anything that makes you seem interesting. You can even say that you are interesting or fun to be around, as long as you follow it up with an example or two.

Sample strengths and examples:

1. Financial knowledge - Built through my experiences at WIC where I have built several DCFs and through my own reading of materials such as "Investment Banking" by Rosenbaum and Pearl

2. Ability to work under pressure and late at night - Showcased through my concurrent involvement in X, Y, Z and through my consistently high grades on 48 hour reports on which I worked all night / through the high quality of my deliverables during my last internship

3. Great attitude - No matter what work my boss assigned to me and when he assigned it, not only did I make sure that I owned my work, I also made sure that I always did it with a smile on my face. A positive attitude is something that you can always expect from me.

What are three of your weaknesses?

Every weakness you talk about should satisfy a few requirements. The weakness must be spun as an improvement story. It must be somewhat relevant to the position you are applying for, but should not be critical to any job function. You should only spend a small amount of time talking about the weakness. The majority of the time should be spent talking about how you have been and are improving. Be careful to not state a weakness and then say you have completely improved it, because then it won't be a weakness. It must be a work in progress. You can also state how the weakness is not directly relevant to the position and will not impact your ability to perform.

Examples:

Sometimes I fail to understand the entire scope of the project. Last summer I spent much more time and effort on a project than I had to when my boss just wanted a quick and simple turnaround.

This happened because I only thought about what he would do with it, not what his boss would do with it. Since then I have made an effort to ask better questions and try to understand the entire process.

Sometimes it takes me time to trust my teammates because I hold my work to very high standards. This can result in taking on more than I can chew sometimes. I have been learning to find a better balance by doing more in the revision stage and dividing the work in a more manageable way.

<u>Name three people you would like to have dinner with.</u>

Almost any answer is acceptable for this one, just don't be boring. These types of questions are designed to judge your creativity and your personality. The only real mistake you can make is to be a boring person that only thinks about finance. That said, you can still name one or two people in finance. The others should be related to one of your interests. It would be a bad idea to say Warren Buffett, Carl Icahn, and Bill Ackman. It would be a better answer if you said Stephen Hawking, Kanye West, and Warren Buffet. Like any other answer with a list, be sure to provide a brief explanation for why you chose each person. The explanation can be completely unrelated to the job.

<u>Let's say there is a scale from 1 - 10, where 1 represents the most hard-working and 10 represents the most intelligent. Where would you put yourself on this scale?</u>

Always say a number between 2 and 4 even if you don't really believe so. Employers want to know that you are hard-working and humble. It is not necessary to be a genius to do finance. You also want to be careful of phrasing. Do not frame the answer so it seems like you make up for intelligence through hard work. Rather, make it seem like you are intelligent, but still work really hard for things you want and believe in. That being said, make sure the answer sounds humble.

<u>Tell me about a time you faced an ethical dilemma.</u>

In these types of questions you are telling a story. Make sure it is structured well and is chronological. For this question specifically, start by explaining what the ethical dilemma was, what choice you made, and most importantly **why** you made it. Finally, state the result of the situation, especially if it was positive. If you have not faced any real dilemma in your life until now, talk about a time you had the opportunity to cheat or steal something. Use the following example as a guide:

Last year while superdaying at a fund, I was asked a brain teaser by one of the partners that I had already come across during my preparation. I had the choice to pretend not to know it and provide the correct answer, potentially securing the position. My other choice was to be honest and risk *being asked another brain teaser that I did not know. I chose the latter because of my ethical standards and because honesty has never let me down. The partner was highly impressed by my honesty and later that day I received the offer, further reinforcing my belief.*

<u>Tell me about a time when you worked to overcome a problem.</u>

Make sure to talk about a real problem here, regardless of the setting. You can talk about a troublesome leader, a group member that left, or anything that could have been a setback. Tell a coherent story where you first outline the situation and your role, and then follow it up with how you overcame it and what you learned. The latter two aspects are most important because they can be used to show your character and strengths. You want to end the story with a result, which was preferably positive. If not, you can say that even though the situation ultimately did not work out, you improved the outcome and learned from the process. An example follows:

In my first year, I was in charge of a four person team for a case competition as part of a case competitions club. We had a week to go through a detailed case and present a recommendation. This week was a very busy one as it was midterm season and all of my group members, including myself, had at least one exam and several other commitments of high priority. A day and a half into the competition one of my teammates decided he no longer wanted to commit the time to the competition and dropped out. I overcame this with the support of my team. We all took more responsibility upon ourselves, slept less, and I made executive decisions when necessary in the interest of time. We didn't play the blame game and simply worked hard. We were successful in the end and placed among the top three.

<u>Tell me about a time when you received negative criticism from a superior / a time you failed</u>

This is very similar to the weakness question. You want to tell a personal development story, not a failure story. Spend little time talking about the actual failure, spend most of it explaining your thought process and how you learned from the mistake. You will often make mistakes in finance, interviewers want to see that you can get back up and learn from them. Also, talk about real criticism here, something irrelevant like "my superior criticized me working too hard" is not a good answer. A sample is provided below:

During my internship this summer, my boss asked me to update a presentation that was not used for the next month. Due to a miscommunication, I updated the entire the presentation, except for one slide because the numbers on it had initially been provided by a different department and I expected to receive an update from them. The day the presentation was needed, the slide had still not been updated and my boss was highly upset. I in turn was extremely upset at myself. I hold myself and my work to very high standards so it was the first time I had been in such a situation, which made it very difficult. I realized that I should have taken more responsibility myself and *should have pressed for the information or should have manually calculated the numbers myself. I worked very hard that day to resolve my mistake and was able to finish it before it was needed so there was no real impact from the mistake. However, it was a great personal failure and I learned a lot from it. My work from that point rose in quality and I became more diligent.*

Market Questions

Pitch me a stock. What are the main risks to your thesis?

This is a very common interview question and you should take your time to prepare. First, use one to two sentences to describe the company's business model. Second, mention a few key financial metrics such as market capitalization, EBITDA margin, EV/EBITDA or P/E multiple. Finally, you should list three arguments as part of your investment thesis to back up the stock pitch. Each of the arguments should be no more than two sentences. You want to make it short and precise because your interviewer will follow up with additional questions for more details. However, this is not a set rule, you could have fewer arguments that are stronger and then you can explain them more clearly. It is also more impressive if you can back up your pitch with some sort of valuation, even if it is just comparables.

In most cases, the strength of your stock pitch is directly tied to the strength of your investment thesis. We recommend spending time thinking critically about the company you are pitching to come up with legitimate arguments. You can refer to the past pitches on the WIC website (http://westerninvestmentclub.ca/resources/) to see what a thesis might look like.

For the follow up questions, be ready to answer any questions regarding the investment thesis, the company's competitors, the catalysts, and so on. If you are asked about the main risks to your investment thesis, you can talk about the different assumptions that you have made or anything that could impact the business model. However, be sure to point out mitigating factors that help combat these risks, and explain why you believe it is still a good investment despite the risks.

Generally, having one stock pitch should be sufficient. However, in certain interviews you may be asked for two stock pitches. If there is enough time, prepare for two buy pitches. This is especially necessary if you are recruiting for the buy side because it is more relevant to the work you will do, and therefore more relevant to the interviewer.

Short me a stock.

You will likely not be asked for a short pitch in most of your interviews, but you should have one prepared regardless for the odd interview it might come up in.

Similar to the buy pitch, the structure of a short pitch starts with a business description and financial metrics. You should again follow these up with your short thesis. Your short thesis can be much more reliant on valuation rather than actual business practices. You could pitch a company that is fundamentally strong simply on the basis of it being overvalued. However, you can also pitch a company based on fundamental problems even if it is trading cheaply compared to the industry.

What is your opinion on the American/Canadian stock market? What is the S&P / NASDAQ / Dow Jones / TSX trading at?

You should have at least a rough idea of what all major indices are trading at on the day of your interview. Keep a cheat sheet with you during the day and update it every morning.

When expressing your opinion on the market, make sure to be coherent and demonstrate a logical flow of conclusions. It is very important to have kept up with news to answer this question well. If you have, you are likely aware of many events over the last few months that have had a major impact on the market and will be able to extrapolate a direction for the future based on it. Highlight approximately three major factors that you believe will affect the market and explain why you think this will happen. Make sure you choose a direction for the market, the only wrong answer is saying it could go either way.

Questions such as these are an opportunity to really set yourself apart. Everyone will talk about the same major events, but if you can explain fundamental drivers or talk about a factor that no one else has thought of, you will be remembered by the interviewer.

What is the price of gold? Where do you think the price of gold is headed?

This is very similar to the above question and the same advice applies. Make sure to be consistent with your other viewpoints. Gold generally moves opposite to the market so do not be bullish on both unless you have very compelling reasons for each. It is advisable to be knowledgeable about gold regardless of what bank or geography you are interviewing in. If interviewing for firms in Canada, you should also know about some other major metals such as copper and silver and have an opinion on those as well.

Where do you think oil benchmarks are headed? What is the price of Brent and WTI?

Same as the above two questions, but a bit more specialized. Generally you would not need to know this for firms outside Canada, but given the recent volatility in oil prices, everyone should know about major events in the industry.

Explain a recent market trend that you have been following (e.g. 2007 financial crisis, European debt crisis, debt ceiling, tax inversion, etc.)

Talk about any trend you find interesting here and explain **why** you find it interesting. Follow up the why with how you think it is going to impact the market and companies in the future. Like any such question, it is important to be coherent and logical. Organize your answer so it flows.

There are two ways to distinguish yourself here. Either talk about a trend that most people have not considered, or draw implications from a common trend that other people have likely not drawn. You may be asked follow up questions on any trend you discuss so make sure you understand it well.

Alternatively, you may be asked for three trends or a non-financial trend. If you read the news consistently beginning a few a months before the recruiting period, you should be well prepared for any of these variations.

<u>Tell me about a recent deal that our firm worked on. What were the terms of the deal (EBITDA multiple, premium, cash / stock consideration)? What was the strategic rationale of the deal?</u>

Firms usually ask this type of question to see if you are interested enough in their firm to take time researching about deals they worked on. Another variation of this question could be “Tell me a deal that you are interested in”. Both of which should follow identical structures:

First, give a quick one sentence overview of the transaction. Then, move onto a briefing of what the companies do and their financial metrics. This is where you bring up statistics such as EBITDA, revenue, stock price, purchase multiple, premium paid, etc. Next, you should mention the qualitative parts of the deal such as the strategic rationale. Finally, talk about your opinion of the deal and why it interests you.

Here is an example of an answer:

A deal that interests me is Tyson Food’s $8.5B acquisition of Hillshire Brands, announced in the summer of 2014.

Hillshire Brands is the largest maker of hotdogs and breakfast sausages with about $4B in revenue and $500M in EBITDA. It was caught up in a bidding war between Pilgrim’s Pride and Tyson Foods with its own merger with Pinnacle Foods pending. Tyson Foods ended up being the winner by paying nearly 16 times Hillshire’s adjusted EBITDA at $63/share. Hillshire terminated the merger with Pinnacle Foods by paying $163M in break-up fees.

The deal repositions Tyson Foods as the leader in prepared foods and illustrates how the food industry is pushing for consolidation. Hillshire provides a higher margin in the branded food business compared to Tyson’s commoditized meat business.

In my opinion, while there are strategic reasons to acquire Hillshire Brands, it is difficult to justify the 70% premium to Hillshire’s stock price in May (before the bidding happened). The CEO had unspecific justifications for the $300M in synergies during the conference call, though only time *can tell whether this was a good deal or not.*

For bonus points, you can also talk about what you learned in the last section. Perhaps you learned about a new way to structure a deal or how break-up fees work.

Which two companies do you think should merge?

This is a very open-ended question and the interviewer probably just wants to see if you have prepared for it. As long as you back up what you say with logic, the interviewer shouldn't spend too much time on this. It is a chance to shine though, if you can provide a unique and insightful answer.

One way to come up with an answer is to look at a recently announced transaction and replicating it with similar companies. This is a bit risky as the interviewer may perceive you to be lazy, but the interviewer may also think that you are simply well informed.

Here is an example in point form on a potential merger. Please note that these two companies actually did announce a bid for a merger, but the structure of the response and the idea remain the same for answering this question:

Two companies that should merge are Staples and Office Depot, both are office supplies giants in North America:

- *Both are facing declines in sales, store closures and stiff competition from Amazon, Walmart*
- *If they merge, they can be more strategic about store closings and saving costs; right now they are operating unprofitable stores to not give up market share to each other*
- *They would have greater supplier power and better positioning to compete with other players in the industry*

Corporate Finance Questions

<u>What should a company do if it has excess cash on its balance sheet?</u>

Broadly speaking, *excess* cash on the balance sheet suggests that a company is giving up potential earnings that could be gained from investing into new opportunities. Having a high cash position is good for liquidity and for maintaining financial stability, but can suggest that company resources are not being utilized fully to maximize shareholder value. Companies should seek to invest in positive NPV projects or return capital to shareholders. Accordingly, if a company has excess cash it can:

- Invest in PPE
- Invest in research and development
- Acquire another company
- Pay out excess earnings as salaries or bonuses to management
- Pay out dividends to reward shareholders
- Engage in share repurchases to reward shareholders and re-obtain voting control

<u>Why do companies such as Apple have such a high cash balance?</u>

Larger technology companies typically carry high cash balances for two main reasons. The first reason is to ensure that the company will be able to make an acquisition if the opportunity to do so arises. High growth technology companies frequently grow inorganically through acquisitions and must have cash on hand to take advantage of opportunities.

The second reason is a matter of practicality. Since most of this cash is usually stored offshore, retrieving it without paying heavy taxes can be very difficult.

<u>What is the difference between effective taxes and statutory taxes? Why do differences arise between these two figures?</u>

Effective taxes represent the tax amount that is actually paid, while **statutory taxes** represents the tax percentage imposed by regulations. Actual tax calculations are very complex and are subject to many items that can make these two numbers very different from each other. These include but are not limited to:

- Geographic differences in operations. Statutory taxes typically differ across regions, so the effective tax rate paid by the company would be a blend of multiple statutory rates
- Net operating losses and deferred tax assets. These can arise from previous losses or acquisitions and can be used to offset the amount of tax paid
- Tax subsidies from the government. The government often gives out subsidies for environmental and societal purposes, which can also offset absolute tax amounts

What is the cash conversion cycle?

The cash conversion cycle refers to the time it takes a company to convert resource inputs into tangible cash flows. This is an important concept in the consumer retail space and measures a company's ability to internally generate new cash. This is defined as **Days Sales Inventory + Days Sales Outstanding - Days Payable Outstanding**, which measures the time it takes turn an inventory purchase into actual cash.

Why would a company prefer a share buyback to starting a dividend issuance?

Both actions would return value to shareholders and deplete the company's cash resources. The disadvantage is that issuing dividends are often done on a recurring basis and issuing it once creates a precedent for the future. Alternatively, share buybacks are often accepted as one-time events and would not require cash to be spent in the future. Also, if shares are trading at a low valuation, a buyback could generate greater value.

What is considered investment grade debt?

This distinction is set by bond rating firms. According to Standard & Poor's, anything below BBB is not considered investment grade and is referred to as a **junk bond**. Companies with lower bond ratings usually have to offer a higher yield to incentivize purchases from investors.

What is restricted cash?

Restricted cash refers to monies that are kept for a specific purpose and are not available for general use by the company. For balance sheet purposes, restricted cash is a distinctly separate item from cash and cash equivalents and does not contribute to the enterprise value formula.

Under what circumstances would a company prefer to issue equity over debt?

This is a common question that gauges your ability to understand the advantages and disadvantages of raising both kinds of capital. In general, a company would prefer to issue equity over debt if:

- The company does not have the cash flows available to service debt
- The company does not have the collateral available to raise debt
- The company's share price is perceived to be high
- The company is not concerned about dilution
- The overall equity markets are attractive or are on a bull run
- The overall debt markets are unattractive, perhaps because interest rates are high
- The company needs to adjust its capital structure or total capitalization

Which of the following options would you prefer to own: 1) $2,000 in cash or 2) an annuity that pays $100 per annum?

This question requires basic understanding of the annuity value formula, which is equal to the annual coupon divided by a discount rate. The piece of information that is missing from the original question is what that discount rate is. Upon asking for the discount rate, we can assess whether the value of the bond would exceed or be under $2,000 in cash. Mathematically, we can compute that any discount rate 5% or below would make the annuity more attractive.

General Valuation Questions

<u>If you could only chose two financial statements to evaluate a mature company, which two would you pick?</u>

There are three traditional financial statements: the balance sheet, the income statement, and the cash flow statement. Here, you would want the balance sheet and the income statement, as the cash flow statement can be constructed from these other two statements. This assumes that you would be given the balance sheet for both the beginning of the time period and the end of the time period.

<u>If you could only choose one financial statement to valuate a mature company, which would you pick?</u>

It gets a little bit trickier here, but if you could only choose one financial statement then you would likely choose the cash flow statement. This is because the cash and the cash flow statement is the best determinant of a company's health and its ability to sustain itself. Net income can be skewed by different accounting practices, while cash is the one balance sheet item that can be certifiably trusted. With the cash flow statement, you can also gauge important details such as whether the company is utilizing the matching principle as well as its ability to service interest expenses.

<u>What about a high-growth company? What about a company that recently IPO'd?</u>

There is no correct answer to these questions. Here, you should think about what information would be most valued in the particular situation and pick a statement accordingly.

This question pivots slightly when asked about a high-growth company. High-growth investors may not be as focused on its ability to currently generate cash, but instead be focused on its ability to generate sales and reach profits. The primary concern for growth investors is usually revenue growth and earnings potential, which makes the income statement an attractive financial statement.

For a company that recently IPO'd, investors become more concerned with how it stacks up against comparable companies. Accordingly, an investor may want an income statement here for its earnings or to calculate EBITDA to ultimately determine multiples such as EV/EBITDA and P/E. The balance sheet is also helpful to gauge liquidity and stability of assets, but it only captures a snapshot in time and may not reveal as much information.

<u>What is the difference between intrinsic value and relative value?</u>

All valuation methods stem in one way or another from the principles of either intrinsic value or relative value. Financiers often combine both methodologies in arriving at an asset's estimated price.

Intrinsic value is a concept often used by value investors that refers to an asset's *true value*. This value is based on tangible and intangible factors, and is ingrained in the asset's ability to generate future cash flows. This intrinsic value may be distinctly different from the asset's market value, which would signal a buying/selling opportunity. Intrinsic valuation methods include but are not limited to: the discounted cash flow model, the net asset value model, the replacement value model.

The **relative value** of an asset is found by taking into account the value of similar assets, often gauged by trading multiples and financial metrics. Relative valuation methods include but are not limited to: trading comparables, precedent transaction analysis, M&A premiums analysis.

DCF Valuation Questions

<u>What are the three ways that lowering tax can affect a DCF valuation?</u>

Lowering tax seems like a beneficial change for the business, but that may not translate into an improvement in the DCF valuation. There are three main changes, which can oppose each other, that occur when you alter the tax rate:

- First, simply flowing through an income statement would reveal that net income increases if tax decreases. This would similarly increase the free cash flow amount and improve the valuation
- Secondly, the after-tax cost of debt is equal to Debt x (1 - tax rate), so decreasing the tax rate would increase the cost of debt. Conceptually, this happens because the effect of the tax shield decreases. Here, an increase of the cost of debt would increase the WACC and lower the valuation
- Lastly, the tax rate also affects the beta. Assuming that CAPM is being used, the formula for beta is equal to: Unlevered Beta x (1+(D/E)x(1-t). Mathematically, lowering the tax rate will increase the levered beta, which in turn increases the WACC and lowers the valuation. Conceptually, the decrease in the tax rate reduces the tax shield increasing the effect of interest, making the equity riskier

Cumulatively, one would have to flow through all three changes to determine the net change in valuation.

<u>What are common alterations that one can make to the basic WACC formula to make it more company-specific?</u>

The basic WACC formula is a fairly generic formula that can be improved upon by accounting for nuances in a company's business model or capital structure. A couple of examples for making it more company-specific include:

- If assessing a private company or a company with a small market capitalization, one could add a size premium or a liquidity discount. This can be accomplished simply by multiplying the entire WACC by a %, with typical discounts ranging from 15 - 30%
- On top of the standard vehicles of debt and equity, a company may employ preferred shares in their capital structure. One can account for this in the WACC by adding another component to the equation of cost of preferred shares x preferred shares' composition of total capitalization
- If a company recently IPO'd, there may be no historical beta available. Similarly, if a company has no true comparables, using beta to derive cost of equity may not be appropriate. If possible, using the DDM formula to calculate cost of equity would improve the WACC formula for these companies, provided that it has a predictable dividend policy

Ignoring the effect of taxes, how would changing from LIFO to FIFO affect FCF during a period of rising costs?

LIFO (Last in First Out) is the inventory accounting method that recognizes the more recently purchased inventory as COGS, i.e. the "last goods in" are recognized as the "first goods out". During a period of rising costs, this suggests that COGS would be composed of the more expensively purchased goods.

FIFO (First in First Out) applies the opposite practice, in which the earliest purchased inventory is treated as COGS. Newer inventory, which in this scenario would be purchased at a comparatively higher price, would remain on the balance sheet. In a period of rising costs, FIFO has a lower COGS but has a higher balance sheet value.

With regards to free cash flow, we should think through the equation to determine its net change. Firstly, COGS decreases, which increases the gross profit and eventually increases the free cash flow. However, we must remember that the inventory amount has increased because more expensive goods are now on the balance sheet. This increase in inventory is an increase in working capital, which is a use of cash. Ignoring taxes, this would be the exact same amount as the COGS decrease, which nullifies the previous effect of COGS and makes the FCF perfectly neutral.

The conclusion here is that changes in the accounting policy will not materially affect FCF and should not affect valuation. Changing the accounting policy may manipulate the financial results on the income statement or balance sheet, but hold little relevance to a company's true value.

In a DCF valuation, which of the following 3 actions increases the valuation the most: a $10 decrease in capital expenditures, a $10 decrease in expenses or a $10 increase in revenues?

All three of these changes will increase the calculated value in a discounted cash flow model, as they either decreases cash outflows or increase cash inflows. However, some of these changes would not move in isolation and would not necessarily result in an increase in company value of $10. The ranking of attractiveness is as follows:

- First would be a decrease in capital expenditures because it is a direct cash use and there is no tax deduction component. Decreasing capital expenditures by $10 directly improves the value of a company by $10, although it is arguable that it may hurt the ability to generate cash flows in the future
- Second would be a decrease in expenses because is only affected by tax. Flowing through an income statement, you would get a direct increase in value equal to $10 * (1-t)
- Third would be an increase in revenues because any generation of revenues requires associated COGS. In addition to COGS, gross profit would also be subject to tax, making

this impact on valuation lower

What is the difference between asset beta and equity beta?

These two terms are alternate definitions for traditional definitions for betas; asset beta is simply **unlevered beta** and equity beta is simply **levered beta**. The unlevered beta is the risk of an asset without the additional risk of any leverage that the asset has, which would represent the company's debt. Additional leverage increases the risk level for the equity holder, which is accounted for with the levered beta.

How would raising $100M debt in Year 3 affect the DCF valuation of a company?

Within the context of a DCF, the amount of debt you have directly impacts the WACC formula. Accordingly, you could change the WACC formula for periods after Year 3 and discount cash flows beyond that at the new WACC. Note that the other component of the DCF valuation is based on **unlevered** free cash flows, so additional interest from any raised debt will not affect them.

Enterprise Value Questions

<u>If you start a company by raising $100M in debt, what is the enterprise value of your company?</u>

Questions that ask about the numeric changes in enterprise value can typically be approached using the basic enterprise formula: Equity Value + Debt + Preferred Shares + Minority Interest - Cash. The rule of thumb is that changes in a company's capital structure do not change the absolute number of enterprise value. It may also be helpful to remember that enterprise value theoretically represents the price a buyer must pay to purchase a company.

Here, if we start a company completely debt financed with $100M, then the balance sheet will have $100M in cash on the assets side and $100M in debt on the liabilities side. Using the formula from above, the enterprise value will be 0.

<u>How does paying down $100M debt affect a company's enterprise value?</u>

In this scenario, we would be spending $100M in cash to pay down $100M in debt. Using the enterprise value formula, the changes in debt and cash would equal each other out. Paying down debt is also considered a capital structure change, so we should immediately recognize that this does not change the enterprise value of the company.

<u>How does raising $100M debt to purchase assets affect a company's enterprise value?</u>

Firstly, raising $100M in debt increases the cash amount by $100M, which we have established has no effect on the enterprise value. However, spending $100M to purchase assets will deplete the cash amount, which increases the company's enterprise value by $100M.

Multiples Questions

If two companies have the same growth prospects, market capitalizations and industries why might you value one using EV/Sales and the other using EV/EBITDA?

Ideally under a comparables analysis, one would use the same trading multiple to evaluate two similar companies. However, there are certain exceptions to this rule that make it appropriate to evaluate one company on the basis of top line sales and one on the basis of EBITDA. Some of these exceptions include:

- Despite having similar growth prospects and business models, one of the companies may have had historical financial weakness and have a negative EBITDA value. If this is the case, then an EV/EBITDA multiple would not be relevant
- One company may have went through several one-time occurrences such as restructuring costs or legal expenses, which would distort the company's EBITDA value
- The two companies may utilize different business practices that make their EBITDA values incomparable. For example, one company may use operating leases instead of capital leases or rent its properties as opposed to leasing them

What characteristics of a company would generate a higher valuation multiple?

Mathematically speaking, a higher valuation multiple implies that the numerator is comparatively larger than the denominator when contrasted against peers. Using P/E as an example, the numerator represents market capitalization. Market capitalization is driven upwards when investors bid up the stock price, or rather, when demand for the company's equity increases.

This *premium* in valuation corresponds to a greater interest in the company's stock, suggesting that the company has a competitive advantage over its peers. The most common characteristics that lead to this presumed competitive advantage / a higher valuation multiple include:

- Higher growth projections than peers
- Market leadership / economic moat
- Access to proprietary information or key patents
- Geographic superiority or access to geographically limited resources
- Key personnel such as talented upper management

When looking at forecasted multiples, what would a rapidly declining P/E multiple imply about a company?

When forecasting multiples, the numerator stays constant while the denominator is changed according to analyst or management estimates. Accordingly, a rapidly declining P/E multiple mean that the numeric value of earnings is increasing rapidly over the coming years, signalling strong earnings growth. Examining future multiples is a good way of determining how the market feels about a company's growth prospects. This logic is applicable to any trading multiple.

What is the P/E of cash?

P/E represents price-to-earnings and in principle can be applied to the vehicle of cash. This concept is best understood using a price of $1 and determining how much you could earn off that $1. At the minimum, you would be able to invest it in risk-free assets, which would ordinarily yield between 1-3%. If the price is $1 and the earnings are between $0.01 and $0.03, the P/E could potentially range between 33x to 100x.

What are limitations of using the Exit Multiple Method when conducting valuation?

One of the key limitations of using the Exit Multiple Method is that it is difficult to predict what multiple you will be able to sell the company at in the terminal year. Certain industries such as airlines and automotives are notoriously cyclical and can have wildly different valuation multiples at the trough and peak of the industry. The best way to mitigate this is to sensitize your model to accompany a range of different valuation multiples or concurrently use the Gordon Growth method to provide another data point.

What happens to a public company's Price/Earnings ratio on its ex-dividend date?

When dealing with questions that ask for changes in a ratio, it is best to examine what happens to both the numerator and denominator in the given scenario. The ex-dividend date is the date that the holder of a security is entitled to a dividend. For ex-dividend related questions, you must clarify what happens to the cash on the balance sheet.

For the P/E ratio, the numerator is *Share Price* and the denominator is *Earnings per Share*. Under the efficient markets hypothesis, we know that if a public company announces that it is issuing a dividend its share price should be reduced by the exact amount of that dividend. This is because a share's intrinsic value theoretically represents the cash flows that it will provide to the investor and paying out a dividend explicitly reduces this amount. For the denominator, the *Earnings per Share* is not affected by issuing a dividend. Accordingly, the numerator decreases and the denominator stays the same, which reduces the P/E ratio.

What happens to a public company's EV/EBITDA ratio on its ex-dividend date?

Following similar logic, we examine both the numerator and denominator of the ratio. The numerator is the *Enterprise Value*, which equates to Equity Value + Debt – Cash. On the ex-dividend date, the share price should drop, but cash also decreases by the equivalent amount because it becomes restricted cash. The net effect is that EV does not change. EBITDA is also not affected on this date, so the result is that the EV/EBITDA ratio remains constant.

What happens to a public company's Price/Book ratio on the ex-dividend date?

Here, we know that the numerator, *Share Price,* decreases by the amount of the dividend. The denominator refers to the book value of equity, which is composed of items such as retained earnings, common stock, and contributed surplus. The share price decreases, and the retained earnings goes down by the same amount, as that is where the restricted cash amount is taken from. We now know that both the numerator and denominator change by the same amount, the amount of the paid dividend.

What occurs to the ratio depends on what the two specific numbers are, which is a function of how fractions work:

- If P/B is below 1, P/B should decrease (Think of going from 4/5 to 3/4)
- If P/B is exactly 1, P/B should stay the same (Think of going from 1/1 to 0.5/0.5)
- If P/B is above 1, P/B should increase (Think of going from 5/3 to 4/2)

M&A Questions

<u>Company A has a P/E of 5x and Company B has a P/E of 8x. If Company A purchases Company B in an all-stock deal, is the deal accretive or dilutive?</u>

This question is asking whether the deal is accretive or dilutive. A deal is accretive if the pro forma EPS (i.e. after the acquisition) of the company is higher than the original company's EPS. The change in EPS is dependent on additional earnings from the acquired company, additional interest from raised debt, the opportunity cost of cash and any newly issued shares. This transaction being an all-stock deal indicates that there will be no new raised debt and no foregone cash.

In an all-stock deal, companies use their own shares as a form of currency, so we start by determining the cost of stock for Company A. Here, we can invert the P/E of the company to determine what the cost of equity would be. Inverting the P/E arrives at the company's earnings yield and implies how much earnings investors get per dollar of share (e.g. inverting 5x gets 20% and implies that an investor gets $0.20 for every dollar invested). We apply the same methodology and invert the P/E of Company B, arriving at a 12.5% earnings yield.

The deal is **dilutive** because Company A is purchasing a company with a lower earnings yield in an all-stock deal. A quick shortcut is to just compare the P/E multiples of both companies: if you purchase a company with a lower P/E in an all-stock deal, the transaction will be accretive, if you purchase a company with a higher P/E in an all-stock deal, the transaction will be dilutive.

<u>Company A has a P/E of 5x and Company B has a P/E of 8x. Company A's cost of debt is 5%, its cost of cash interest is 2% and its tax rate is 50%. If Company A purchases Company B using 50% stock, 25% debt and 25% cash, is the deal accretive or dilutive?</u>

Here, we apply a similar methodology but we must also determine the cost of debt and cash for Company A as well as the cost of stock. We already know that Company A's implied cost of equity is 20% and the earnings yield we receive from Company B is 12.5%. To determine the cost of debt, we simply take the given 5% and apply the tax rate because of the tax shield (5% * (1 - 50%) = 2.5%). We determine the cost of cash using an identical methodology (2% * (1 - 50%) = 1.0%).

Next, we need to multiply each of these costs by their weighting. We multiply 50% stock consideration by the 20% cost of equity (10%), 25% debt consideration by the 2.5% after-tax cost of debt (0.625%) and the 25% cash consideration by the 1% after-tax cost of cash (0.25%). We then add each of these rates up (10% + 0.625% + 0.25%) to get 10.875% blended cost. We compare this to the 12.5% and determine that the deal is now accretive.

This exercise also shows us that in general, debt and cash are cheaper methods of financing.

Company C has a net income of 200, share price of \$6 and has 10 shares outstanding. Company B has a net income of 200, share price of \$5 and has 6 shares outstanding. If Company C purchases Company D in an all stock deal at a 20% premium, what is the % change in accretion or dilution?

Here, we have to calculate the actual % change in accretion or dilution, so we must flow through the actual calculations to determine the change in pro forma EPS. We must first determine the EPS of Company C by dividing the net income of \$200 by the 10 shares outstanding, resulting in an EPS of \$20.

Next, we determine the purchase price of Company D. We can accomplish this by calculating the market capitalization (share price of \$5 x 6 shares outstanding equaling a \$30 market cap) and applying the premium of 20% (\$30 market cap. x 120% = \$36 purchase price).

Because this is an all stock deal, we divide the Company D's \$36 purchase by Company C's \$6 share price. This implies that 6 new shares will be created and given to Company D's shareholders (\$36/\$6 = 6). We add this number to Company C's existing share count of 10 to get to a pro forma share total of 16 shares.

Next, we get the pro forma earnings by simply adding the net income from both companies: \$200 + \$200 = \$400. We then divide this by the pro forma shares of 16 to arise at an EPS of \$25 (\$400 / 16). This is higher than the original EPS of \$20 so we know that the deal is accretive. To determine the actual % change, we divide \$25 by \$20 to determine that the deal is 25% accretive.

Company E has an EBITDA of \$200M and Company F has an EBITDA of \$100M. Let's say that Company E acquires Company F and realizes \$100M in revenue synergies from additional unit sales and \$100M from cost synergies. What is the pro forma EBITDA? Assume that the pro forma company has a gross margin of 70%.

To determine the pro forma EBITDA, we must add the EBITDA of both companies and also add in the synergies. However, we must note that the revenue synergies of \$100M are from additional unit sales and are not a direct addition to EBITDA. These revenue synergies of \$100M imply that the pro forma company will be able to drive more unit sales, but they will be subject to COGS. The impact on EBITDA will be \$100M in revenue synergies x 70% gross margin, equaling \$70M in additional EBITDA.

We then add the remaining synergies and calculate pro forma EBITDA (\$200M Company E EBITDA + \$100M Company F EBITDA + \$100M cost savings + \$70M from revenue synergies) to arrive at \$470M EBITDA for the pro forma company.

Under what circumstances would $100M in revenue synergies be a straight addition to the pro forma company's EBITDA?

The synergies would be a full $100M if they were driven by a price increase and not additional unit sales. The logic here is that if you are only increasing the pricing of previous products, you will not generate any additional COGS. This could be possible if an acquisition improved your pricing power or competitive positioning in the market. It is also possible that a service or software company may be able to convert 100% of the revenue synergies into EBITDA even with higher unit sales, though less likely.

How can you calculate break-even synergies in an M&A deal?

Break-even synergies can be calculated by reversing the typical accretion/dilution calculation if the purchase price and the terms of the M&A deal are known. To accomplish this, one would create a pro forma income statement and make the ordinary adjustments: consolidating earnings and income statement items, increasing interest expense for any debt, decreasing interest revenue for any lost cash, and increasing the number of shares based off of issued equity. After making these adjustments, one could determine how much EPS was lost and how much synergies are required to offset the amount.

How much debt could a company raise for a merger or acquisition?

This question is similar to asking how much debt a standalone company would be able to raise. You would most commonly assess a firm's ability to raise debt based on its interest coverage ratio, its leverage ratio and its credit rating. The key difference in a merger or acquisition scenario is that you would have to look at the combined company's EBITDA figures for these calculations rather than standalone EPS.

What is contribution analysis?

Contribution analysis is an evaluation of how much each company in a merger contributes to the pro forma financials. By analyzing the companies' pre-existing EBITDA, revenue, and assets, one can understand the specific percentage that each player is adding to the overall pie. For a simple example, if Company A had $600M EBITDA and Company B had $400M EBITDA, then contribution analysis would determine that EBITDA was split 60 – 40. This tool can be useful in determining voting rights, tax implications, and related deal terms. It can also impact pricing and influence the stock exchange ratio in a stock deal.

Debt and LBO Questions

<u>What is the interest tax shield?</u>

The interest tax shield is a phenomenon that makes debt a cheaper vehicle of capital than equity. Interest is tax-deductible, as it appears higher than the tax line on the income statement and is treated as a cash expense. Mechanically, the greater the amount of expenses that a company has, the less tax it has to pay, which provides financial benefits for the company. The interest tax shield is one of the reasons that debt is such an attractive financing vehicle and is also the reason we calculate after-tax cost of debt for the WACC. The PV of a tax shield is Debt Amount x Tax Rate.

<u>What is leverage and how do its mechanics amplify returns in an LBO?</u>

Leverage and the act of "levering up a company" refers to taking on debt or other forms of borrowed capital in order to increase a company's returns. LBO's use leverage to improve returns for the investor, which is possible because of three key functions of debt:

- Taking on debt gives you access to other people's capital that you would otherwise not be able to use. A greater resource pool allows you to purchase a greater quantity of productive assets while reducing the up-front cash investment
- Using the company or asset's cash flows to repay debt principal produces a better return than just keeping the cash. This is partially a result of the tax shield that is applied to interest, which is a function of how governments and regulators treat debt. Similarly, allowing interest to be tax-deductible makes debt a cheaper source of capital than equity
- Typically a business experiences growth in EBITDA so the exit price is higher than the entry price even at the same multiple. Since the sponsor typically pays back a lot of the debt, a much larger portion of the exit price belongs to the sponsor, creating high returns. For example, entering and exit at an EV of $100, a sponsor may only invest $25 in cash, but receive $80 upon exit, simply by paying down debt

<u>What are the three ways investors can retrieve funds or capital in an LBO?</u>

There are three major ways an LBO investor can retrieve cash or funds from an LBO investment:

- **Exit:** The sale of the investment at the end of the holding period is the largest inflow of capital for the sponsor as all gains are realized at this point
- **Dividend Recapitalization:** A dividend recapitalization is when the LBO candidate pays out a special dividend to the sponsors, funded through additional debt. This increases leverage of the company and typically increases IRR because of the time value of money
- **Dividends.** Yes, although this is very similar to a dividend recapitalization, it is important to recognize these two things as distinctly different actions

What is the internal rate of return (IRR)?

Academically speaking, the IRR is the rate at which the present value of an asset's cash inflows and outflows is equal to 0. Practically speaking, IRR is the compound rate you can expect to earn on an investment into an asset. A lower initial investment means that the cash outflow is lower, which would increase the IRR. Higher returns in the future means that the cash inflows are higher, which would also increase the IRR. If there is only one initial cash outflow and one final inflow, the IRR is simply the compound annual growth rate on the investment. This can be used to sometimes estimate the IRR of projects.

What actions or strategies can you take to improve the IRR in an LBO?

IRR (internal rate of return) is one of the most used metrics to determine the success of an LBO. There are several actions that a firm can take to improve the IRR, which include:

- Lowering the initial purchase price of the company, which reduces the cash investment
- Improving the exit multiple, which increases the funds received
- Increasing leverage, which reduces the amount of upfront investment required
- Conducting a dividend recapitalization
- Exiting the investment earlier
- Accelerating the company's growth, which should increase EBITDA and the exit multiple
- Improving margins, which has the same effects as faster growth
- Realizing synergies with other portfolio companies or rolling in new acquisitions

What are factors that would make an LBO more difficult to perform on a private company?

First, the financials of a private company are much more opaque than public companies. Private companies are not legally required to publish audited financials, which can make it much more difficult to gauge the health and attractiveness of a company. These financials would be necessary to determine the potential returns a firm could generate and the target's ability to service debt.

Second, the absence of floating shares on public exchanges can make it difficult for a firm to acquire a controlling stake in the company. Private equity firms that conduct LBO's can only do so because they hold a controlling stake in the company and can force the target to assume a greater quantity of debt. Without direct access to these shares, the private equity firm would have to directly solicit shareholders.

Finally, obtaining debt can be difficult because of a lack of information, history, and credit rating. Public debt markets are difficult to access for private companies because of the above and also because they simply don't have the scale for a major issuance.

What is the rule of 72? What is the rule of 114?

The rule of 72 and 114 are two mental math tricks you can use to determine the IRR of an LBO transaction. Whenever you are asked to derive an actual number for an IRR, you can typically use these rules.

The rule of 72 stipulates that the time it takes to double an investment is 72 divided by that time period. Although not 100% accurate, it will suffice in an interview setting. For example, the rate you get if an investment doubles in 3 years is 24%; 4 years is 18%; 5 years is 14.4%, etc.

The rule of 114 stipulates that the time it takes to triple an investment is 114 divided by that time period. For example, the rate you get if an investment triples in 3 years is 38%; 4 years is 28.5%, 5 years is 25%, etc.

If you purchased a company for $100M and sold it for $200M after 5 years, what was your IRR?

Whenever asked a question about IRR, you must first clarify how much debt the company had at the beginning of the holding period and how much debt it had at the end of the period. The company's debt at the start of the period reduces the amount of initial investment and what the cash outflows are, while the company's debt at the end of the period must be paid down before returns can be realized.

Now armed with the rule of 72, we can recognize that this is simply a doubling of an investment over 5 years. Assuming that the company had no debt throughout the entire investment, the IRR would be approximately 14.4% (actually closer to 15%).

If you purchase a company for $12M with $5M debt and sell it without any debt after 2 years, what would your exit price need to be in order to earn 10% IRR?

If the company was purchased for $12M with $5M in debt, then the original cash investment put up was worth $7M. We know that there was no debt at the sale, so the 10% IRR over 2 years strictly applies to the base $7M. Neither of the mathematical rules apply to this number, so we can just use basic multiplication.

A 10% return on $7M would earn us $0.7M and cumulatively give us $7.7M at the end of year 1. A 10% return on $7.7M would earn us $0.77M and cumulatively give us $8.47M at the end of year 2. Therefore, the exit price would need to be $8.47M to earn a 10% IRR.

Why would a revolver have the lowest interest rate?

A revolver is the cheapest form of debt in an LBO. A revolver acts similarly to a credit card, as it is drawn upon if the company has cash shortfalls and is also the first thing paid down. Revolver interest rates are the lowest because they are pledged against collateral, which reduces its riskiness. Concurrently, revolvers have the lowest interest rate because commercial banks and lenders treat it as a sweetener in a deal and compete for a company's business based on how low the rate is.

Why would an LBO not be relevant for the metals and mining industry?

An ideal LBO candidate has dependable cash flows, low capital expenditures and is not exposed to commodity risk. The metals and mining industry embodies the opposite of this; high initial investments, continual capital expenditures, and direct exposure to unpredictable commodity fluctuations. During periods of weak commodity prices, senior miners are forced to sell their assets with high cash costs, while junior miners do not have enough money to fuel their capital expenditures. Accordingly, mergers are more common in the metals and mining industry.

If a company could service debt up to 7X EBITDA, why would it only take debt up to 5X EBITDA?

Raising the maximum amount of debt is not always in the best interest of a company. Some of the reasons that make additional debt unattractive include, but are not limited to:

- It may be a bad secular debt market and it may be hard to raise capital right now. Interest rates could be comparatively higher than the future, which might make it better to defer raising debt
- Raising more debt would hurt cash flows, which increases the overall company risk and compromises its profitability
- Additional debt may impact the company's perception among potential investors or credit agencies, potentially leading to a reduction to the company's credit rating

You have the option of either receiving $200M now or $40M each year for 5 years. What IRR would you need to make the value of these two options equal?

This is a trick question, which is tipped off slightly as it is very difficult to mentally calculate an IRR to gauge two investment options.

Here, we remember that IRR makes all future cash flows equal 0 when discounted to the present value. If any of the five future $40M payments are discounted, the sum of their present value would be less than $200M. If any of the five future $40M payments are appreciated, the sum of their present value would be greater than $200M. The only mathematical possibility is if the IRR is 0.

<u>There are two companies with identical growth prospects, margins, business models, etc. The only difference is that one company has 50% debt-to-total capitalization, while the other has 0%. If you were a PE firm and were going to bring the company's debt-to-total capitalization to 70%, which investment would yield a higher IRR (assuming that the equity purchase price is the same)?</u>

First, we make the assumption that the ability to service debt is the same for both companies, so the interest rates, covenants and debt tolerance for both firms is identical.

With that out of the way, we recognize that the two company's initial debt-to-total capitalization is irrelevant from a returns basis. It does not matter if you are the firm who raised the debt or if the debt was refinanced from before, the IRR and returns will be the same mathematically. At 70% debt-to-total capitalization, the EV of the two companies would be the same, implying that the IRR would be the same as well.

However, this assumes that the purchase EV is the same in both situations. This is not entirely correct because sponsors typically have to pay a premium on equity (control premium), which does not apply to debt. In this case, the company with the higher debt will result in a higher IRR because it will have a lower purchase price.

<u>Company XYZ has $50M EBITDA, a 6X EBITDA multiple, $200M in bank debt and $200M in high yield debt. What is the value of the debt? What dollar value is the debt trading at?</u>

First, we can determine that the EV of the company is $300M ($50M EBITDA x 6X EBITDA multiple). We can also determine that the total debt of the company is $400M ($200M bank debt + $200M high yield debt). It is clear at this point that the company is undergoing bankruptcy. Based on this, market capitalization and cash are $0 so we allocate the EV to the different tranches of debt by their seniority. We know that bank debt has a higher priority than high yield debt so we allocate $200M from the EV to it.

The remaining $100M in EV ($300M EV - $200M bank debt) represents the value of the high yield debt. The dollar value is $0.50 because it is trading at half of its full value ($100M / $200M)

Finance Brain Teasers

<u>Company A has a market capitalization of $6B and purchases Company B at a market capitalization of $3B. If Company A owns 75% of the pro forma company, how much cash did it use in the transaction?</u>

The first clue is that Company A's shareholders own 75% of the pro forma company. Because all of the shares of Company B disappear after the transaction closes, the implied market capitalization of the pro forma company is equal to $8B ($6B / 75%). The pro forma value of the company is equal to $9B (Company A $6B + Company B $3B), so the difference of $1B must be cash. This transaction says that Company B shareholders own $2B of stock in the pro forma company and were paid $1B in cash in exchange for their old shares worth $3B.

<u>The spot price of gold rises, but the value of a Canadian gold ETF falls. What are some potential reasons this may have occurred?</u>

- Gold is denominated in USD, which means that the spot price of gold refers to USD. This implies that the revenues that Canadian gold companies receive are first in USD and then converted to CAD. Accordingly if the value of the USD fell relative to the CAD, then Canadian gold companies would be worse off as they must still pay their expenses in CAD. Therefore, if the price of gold rose, the USD could fall a larger amount and offset the benefits for Canadian gold companies
- ETFs are a basket of different securities and a Canadian gold ETF would likely track the performance of many different Canadian gold companies. Here, if one Canadian gold company did very poorly, it could pull down the value of the overall ETF. For example, if Barrick Gold missed earnings and the market reacted poorly, it could offset any improvement in gold prices
- A final cheeky answer could be that the ETF was a reverse-ETF, implying that it should move in the opposite direction of the price of gold

<u>There is a coupon bond that returns $10 in Year 1, $20 in Year 2, $30 in Year 3 and continues into perpetuity. What is the value of this coupon bond if the discount rate is 10%?</u>

This is a twist on the traditional perpetuity bond formula, in which you would divide a constant payment amount by the discount rate. We must view this coupon bond differently, as the payments are not constant over time. A simple growth % would not explain these returns so you must think about it differently. This coupon bond can be split into different perpetuity bonds as follows:

We can treat the perpetual payment of $10 that starts in Year 1 as a standard 0 growth perpetuity bond. We apply the normal formula to it to determine that it is worth $100 ($10 / 10%). You essentially get one of these every year. Your returns are now $100 in Year 1, $100 in Year 2 and so on. You apply the perpetuity formula again with 0 growth (100/10%) to get a value of $1,000.

The final step is the trickiest part of this brain teaser. The first $100 value obtained is actually at time 0 rather than at the end of the year. When the perpetuity formula is applied again to result in the $1,000 value mentioned, it misses the first $100. Due to this, we add it in to get a final answer of $1,100.

<u>How would you value a completely unique piece of property with no neighbours or history of sale?</u>

Even though the property may be completely unique, it is likely that the drivers that affect it or the end markets it serves are not. In this case, you should first assess the drivers and markets and find properties that may be different, but have the same drivers and end markets. If such properties exist, they can be used as benchmarks for a Comparables Analysis.

If the above is not possible, intrinsic valuation is necessary. In this case, you can use any traditional financial model that is applicable. The difficulty here may be in projecting revenues and cash flows. If there is no basis for assumptions, you must forecast them yourselves using either a top-down approach or a bottom-up approach.

Valuation is an art and this question exemplifies it. You can come up with other creative methods to value the property here, and if thought through properly, it can be an opportunity to shine.