TOP 10 SALES AND TRADING Q&A

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What are treasury futures?

Futures allow market participants to take views on future rate movements in an off-balance sheet capacity. There are six futures:

- TU (2-year)
- FV (5-year)
- TY (10-year)
- TN (10-year, ultra-long)
- US (30-year)
- AUL (30-year, ultra-long)

Treasury futures are used routinely in hedging and are incredibly liquid just like the benchmark treasuries themselves are. What this means practically, is that a rates trader will have a large book of inventory. Then a client comes in and wants to buy $100M of 10-year Notes. In order to readjust the risk of the trader's book, then may go into the market and buy some offsetting amount (not necessarily $100M worth!) of 10-year futures.

An important contextual note - that is always good to try to convey in an interview - is that market making does not mean that you hold no risk. It doesn't mean that you offset every position you execute for a client or perfectly hedge it in some manner. That's impractical in most asset classes. Rates traders can skew their books - partly by using treasury futures - in order to both service anticipated future client demand (maybe lots of clients are anticipated coming to get 30-year bonds) and to profit from anticipated movements of the yield curve.

Ultimately, a future obliges the seller to deliver an underlying security (not a future) sometime in the future (so a 10-year future would require a delivery of a 10-year Note).

There will be a basket of 10-year Notes that can be delivered - as obviously new 10yrs are routinely being issued, so there are a number of potential Notes that could be delivered to the seller of the future - and the specific 10yr Note delivered will ultimately be what is called the cheapest to deliver (CTD).

I should also note that those who buy treasury futures the most are (as you'd expect) those on the rates trading desk. However, you could imagine some other trading desks that are very sensitive to treasury movements buying some for hedging purposes to dampen the volatility of their book (or lock in profits from trades by netting out interest rate exposure).

Why sales and trading?

This is one of those sales and trading interview questions you'll inevitably get (probably multiple times during a superday). Some people try to develop a very personal and unique answer here. I think giving a standard answer, with maybe a bit of your personal touch on it, is far better.

You should not say that you have followed the markets since you were a child or that you love investing on your own. That doesn't clearly communicate that you know what sales and trading is (it's not picking stocks on an app). Were you following global macro trends as a teen? Can you break down the economic of a cross-currency basis swap? Are you doing interest rate swaps in your spare time? Obviously, the answer is likely no.

Your answer should clearly communicate you know what sales and trading is (serving clients by making markets for them) and that you are equipped to succeed in it.

You can say that you think sales and trading provides a great opportunity for someone who is intellectually curious and who has a mix of quantitative and qualitative attributes.

In my view, sales and trading provides an an incredible chance to get a front row seat to how a given market – depending on what desk you're on – operates and to see how clients think about a given market at any given time.

You should also be sure to bring up that you've networked with folks who are currently in sales and trading, at various levels, and that you know it's not all roses. But that you think on a risk-adjusted basis there's hardly a better job to have out of undergrad than in sales and trading given your personality and interests.

You should also bring up whether or not you are more interested in the sales-side or the trading-side. You should never give a definitive answer here, because that can come across as quite presumptuous given that you haven't even been on the trading floor yet.

However, if you're interested in the sales side it's a great idea to include that here and say that you love the idea of being able to talk to a wide range of clients, help execute what they need to execute, and be constantly thinking about markets and trying to anticipate what clients will do.

Likewise, if you're interested in trading you can say that you're fascinated with how traders position their books in anticipation of client demand, how they think about relative risks, and how they balance serving clients while at the same time ensuring they protect themselves (maybe the reason why a client wants to sell a lot of a particular security is because they know it'll likely be going down!).

Both of these answers demonstrate a deep understanding of the nature of these rolls - without you being asked directly about what these roles entail - which is highly impressive to hear in an interview setting.

Is there a particular area of sales and trading that interests you?

Like the last question, this is also an incredibly common interview question. However, it's one that you should be very careful in answering.

The reason being is that you want to avoid coming across as being certain that there is one area of the trading floor that is right for you before you have even begun.

What you want to do is have an idea of a broad area you *think* you would like to be in, while expressing that you could be entirely wrong and find a different area to be a far better fit.

In other words, you want to show that you've done your homework, while at the same time showing humility that you won't know what area is truly right for you prior to beginning a rotational program or being placed on a desk.

You can say that obviously it's hard to really have a grasp on what a desk truly does, what the culture is like, etc. before you begin. However, you can bring up that you know the bank you're interviewing with is strong in credit trading, for example, and that you have a particular interest in high yield trading.

You then should get into why you find areas of credit like high yield to be fascinating. For example, by saying because of the more-narrow range of clients who traders in high yield deal with it, the illiquidity compared to many other products on the floor, and the potential events that can rapidly move prices (such as an out-of-court restructuring or actual Chapter 11).

I think it's always a good idea to end this question by saying that you know many people come into the sales and trading with an idea of where they want to be and end up realizing another area is an even better fit so I'm open to exploration.

It's also a good idea to speak to whether or not sales *or* trading within the particular desk is of most interest. You can re-use the points mentioned in the previous question when speaking to why the sales-side or the trading-side is most appealing to you.

Can you give me an example of a markets-based story you've read recently and why you found it interesting?

For an interview, you should have one or two recent news articles you've read - from Bloomberg, WSJ, or the Financial Times - that you can speak to.

Generally, it's a good idea to find one about global macro. For example, around what's happening currently or what could affect rates in the future as these generally tie into broader economic or political themes.

For instance, you could speak to how forward looking indicators of the yield curve - such as treasury futures - are indicating a steepening yield curve and mounting inflationary pressures. This puts the Fed - which has said they will keep rates where they are until 2023 - in a bit of a bind. Given their dual mandate, if inflation begins to rise significantly above the target of 2% - which still not being at full employment - does the Fed continue to run the economy hot? Does the market test the Fed?

Goldman Sachs also came out with their 2021 expectations report, which also signaled the likelihood of a steeper yield curve in 2021. Of course, many people have been anticipating steeper yield curves for years now and for the most part it has just got flatter!

You can then tie this all up by saying you wonder if the Fed will start engaging in more targeted yield curve control to try to suppress down any steepening if it does begin to happen. That would seem like a logical next step given how their conventional policy tools have largely been taken as far as they can go.

To get more technical, you can speak to the Fed not rolling over the SLR exemption - which allowed for large banks, like J.P. Morgan - to buy more treasuries than they would otherwise do.

This could also lead to a bit of a bond market tantrum in the future where rising yields leads to selling (as when yields rise, bond prices fall), while the treasury is pumping out new securities to fund ballooning deficits, and banks are unable to absorb as many treasuries as they otherwise would without the SLR exemption. This in turn could lead to the Fed needing to buy more treasuries themselves - which would be a monetization of debt - that could further fuel inflation expectations rising.

There's no need to go as in-depth, but what I'm trying to illustrate in this interview answer is that you don't need to have a defined view. Rather just rambling about a current market story and then elaborating on its implications - whether your interviewer agrees with you or not - is a good way to show off in an acceptable manner.

I would strongly recommend not speaking about a market story surrounding equities as they are far more common. If you insist, it should be around something like the rise of SPACs or elevated options volumes and their implications for volatility (in other words, more esoteric equites concepts).

Talking about more Main street equity stories like the Gamestop or whatnot can give an impression - as I've mentioned many times before - of you perhaps not having a grasp on exactly what's important on a trading floor (no one cares about those stories, except for the entertainment value).

What are some important economic indicators to watch out for?

Obviously, this will be somewhat desk dependent. For example, if you're dealing with mortgage backed securities, then you'd keep a careful eye on not only rates, but particularly where mortgage rates are. This is due to how prepayments on mortgages affects the valuation of mortgage backed securities and issues stemming from that like convexity.

In general terms, things you should probably keep your eyes on, even if it's not viewed as being directly relevant to the product you're involved with, would include things like:

- GDP
- CPI (in particular, core CPI)
- Changes in 5Y5Y swap rates
- Federal reserve speeches
- Initial jobless claims
- Non-farm payrolls
- PMI
- Moves in the VIX
- High yield and investment grade index trends (as spreads to treasuries)
- Moves in the 10-year yield
- Moves in Fed Funds
- The S&P 500 level (or whatever equity index is most relevant)
- P/E ratio (and forward P/E ratio)

As you can see from the above list, things directly related to equity markets make up a pretty small sample of what you're really concerned about on the vast majority of trading desks.

Equities are volatile (as they have a claim on the residual value of the firm) and what moves most asset classes are tied to rates (which in turn are driven by economic and political factors).

Some other things you may want to keep an eye on are FX rates (strong or weak dollar) along with any major spending news coming out of Washington (or whatever political capital is most relevant to where you're applying).

Note: Don't worry about needing to know the exact levels for all of these items. It's generally a good idea to know what GDP and GDP expectations are along with where core CPI is. Everything else you can memorize if you have time, but otherwise shouldn't spend a great deal of time on.

If we have a bond trading at 90 with a 10% coupon and it matures next year, then what is the yield to maturity?

To get the YTM for a bond maturing in just one year, then you can use the formula: YTM = (coupons + (face value – current price)) / current price, which gives you: 20/90 or 22.22% (you don't have to do the mental math to get the exact percent in an interview, as long as you get the formula right).

Note: You should not bring a calculator to your sales and trading interview. However, you should bring a pen and paper in case you need to work anything out. If you're doing a remote interview, then you can have a calculator off to the side just in case.

For bonds maturing in two years or more, to calculate this in an interview you would have to use the YTM estimation formula, which is:

$$\text{Yield to Maturity} = \frac{\text{Annual Interest} + \dfrac{\text{Par Value} - \text{Market Price}}{\text{Number of Years to Maturity}}}{\dfrac{\text{Par Value} + \text{Market Price}}{2}}$$

If you're looking to test out more variations of this question, you can use a YTM calculator.

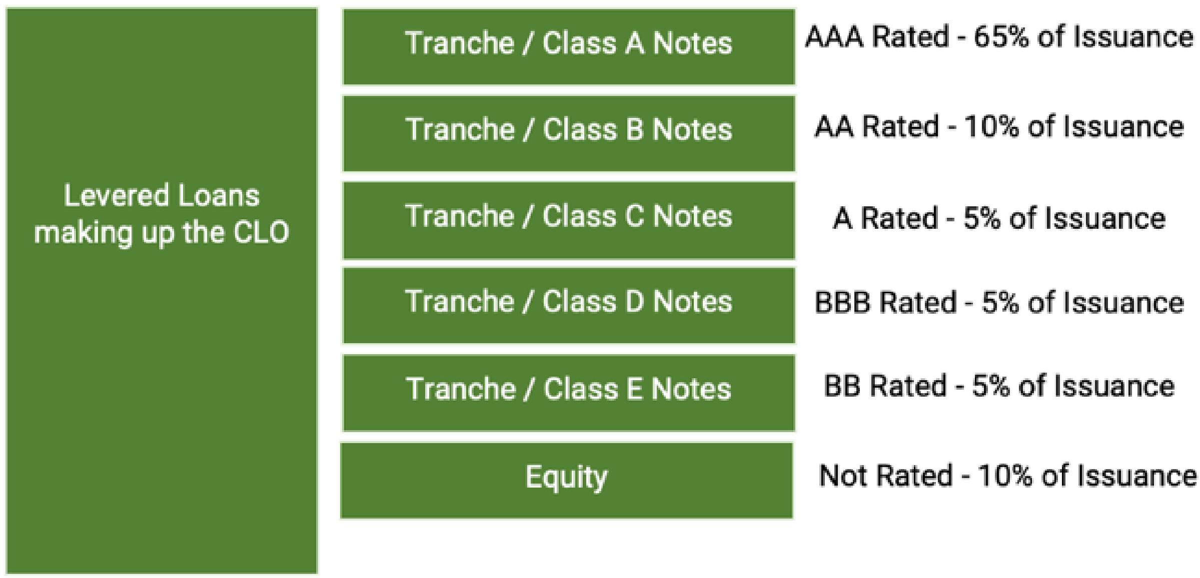
How is a collateralized loan obligation (CLO) structured?

Getting asked about the structure of more esoteric parts of the trading floor is a great way to discern whether or not an interviewee has taken the time and effort to understand various desks.

Don't worry, no one is expecting you to know everything about how to model out a CLO waterfall (although that's a common test for a summer analyst at the end of their time on the CLO desk).

A CLO will be broken down into several tranches. These tranches will have decreasing levels of priority on the underlying cash flows of the levered loans that make up the CLO (to be discussed later).

The top tranche, which makes up the *majority* of the notes issued by the CLO, will often be structured to ensure that it gets a AAA rating from credit agencies (thus making investors feel it is safe). The bottom tranche, called “equity”, will have the lowest payment priority and is not rated and viewed as being quite risky.



An important point in the graphic above is that the levered loans that make up the CLO often *overcollateralize* the issuance. What this means is that in theory, if none of the loans default, then equity should get much more than what they put in!

However, the risk equity runs is that levered loans are risky and some that make up the CLO may end up defaulting. So even though the CLO itself is overcollateralized at issuance, equity and some of the tranches above it may be at risk of not being paid back in full over time.

What do we mean by curve trades in rates trading?

When we talk about a rates trader’s book being properly positioned and taking advantage of the market, this obviously doesn’t mean that if 2yr bonds are overvalued he or she just won’t have any!

Rates traders have such large books that they will always have millions of dollars’ worth of bonds that they may or may not like in order to facilitate client flow and generally be in the market.

Instead the way that a rates trader positions their book is by taking advantage of changes in the yield curve. For example, there’s nothing you can do about owning a lot of 2s. However, maybe you think that 2s will go down more than 5s. This would create a flattening of the yield curve between those two points in the yield curve.

Curve trades involve taking advantage of the relative changes in one bond compared to another along the yield curve by using treasuries and treasury futures to be relatively overweight or underweight certain areas of the curve.

It's generally a good idea to know if the yield curve has been steepening or flattening over the past few months prior to your interview. While this may not be something that comes up in every interview, if you express an interest in any area of rates trading (broadly defined, so this would include MBS trading) then you should know this.

What assumptions does the Black-Scholes model make that are wrong?

If you know anything about equity derivatives, you know that the Black-Scholes model is incredibly important and foundational model.

However, showing you know the limitations - or perhaps better put, the erroneous assumptions - of the model is a common interview question (if you express interest in equity derivatives) and will set you far apart if you can answer it.

Normal Distribution

There exists pronounced skew or negative tail in actual returns on shares, meaning that there is a bigger chance of significant losses than is built into the shape of the bell curve.

Continuous Random Walk

The model assumes that returns follow a random walk, which is not what is actually observed.

Dynamic Hedging

The model assumes it is possible to delta hedge without transaction costs and without liquidity constraints (which is obviously not true, even liquid markets are costly or have times of limited liquidity!).

Fixed Volatility

The model assumes you know the level of volatility and that it stays constant over the life of the option.

What are some reasons why a corporate client – beyond mere speculation – may want to do a FX trade?

Another way to stand out in interviews is not only to know the products dealt with, but also why clients are coming to the bank to trade. Many naively suspect - especially in areas like FX - that it's all hedge funds engaged in speculation.

The reality is that every desk will have a diversity of clients who often come to the bank in search of practical solutions to their problems. In FX this normally means corporations who have FX exposure - due to running their multi-national business - that they would prefer not to have.

- A client may be able to issue debt cheaply in a certain country with a certain currency, but will want to swap it to a different currency
- A client may want to lock in a certain conversion rate in the forward market (creating certainty against unfavorable potential developments in the market of a certain country)
- A client may be anticipating the need to spend capital – to build a new plant, for example – in a foreign country and wants to lock in an exchange rate to ensure they can more accurately predict the total cost of the project

Sales and trading interview prep advice

Entering into the sales and trading interview process can appear daunting. It's true that there are a lot of questions that could be asked, and entirely missing on a few of them could be the difference between getting an offer or not.

However, that's ultimately why I created *Sales and Trading Interviews*. It is possible to get up to speed on sales and trading and not leave any glaring holes in your preparation without getting bogged down in reading dozens of academic books (which is simply impractical and likely to confuse more than help).

By breaking down the types of questions that can be asked into the five buckets mentioned at the beginning of this article you'll be able to quickly figure develop answers to the most common questions.

Part of the reason why I spent so much time creating the desk guides as well is that knowing where you want to end up (in terms of desks on the trading floor) is not just important in the context of your interviews. It's also critical to making sure you begin your program in the spot that is likely where you'd like to end up. Everyone who has been on the trading floor knows of talented, intelligent people who exited the industry simply because they started off in the wrong area.

The reward of getting your foot in the door and ending up on the right desk is having the opportunity to land an extremely high-paying job, with reasonable (for high finance) hours, that involves being intimately connected with the markets.

Sales and trading is a job unlike any other and thoroughly worth it for the right people. Just remember that while getting an offer is the first step, it's not the final one. Don't let others tell you what desk to try to join or what role is best. Gather as much information as you can, think critically about your attributes and interests, and then make an informed choice for yourself.

As always, best of luck in your preparation! Just remember to not get bogged down or discouraged as you go along. Remember that most come into sales and trading interviews incredibly unprepared, so the bar is most certainly not too high to clear with good preparation.

