Merger Model Questions and Answers – Advanced (22 Questions)

179. **What's the difference between purchase accounting and pooling accounting in an M&A deal?**

In purchase accounting the seller's shareholders' equity number is wiped out and the premium paid over that value is recorded as goodwill on the combined BS post-acquisition. You revalue the target's assets and liabilities to their fair market value in purchase accounting. In pooling accounting, you simply combine the 2 shareholders' equity numbers rather than worrying about goodwill and the related items that get created

There are specific requirements for using pooling accounting, so in 99% of M&A deals you will use purchase accounting

Purchase accounting think of it as purchasing back the target's equity. And goodwill = purchase price – fair market value of net assets (assets – liabilities). And goodwill is then recorded as an intangible asset after. Pooling accounting you just combine the market values and don't report goodwill, you combine shares instead of issuing new ones, discontinued under GAAP in 2001. Companies prefer pooling accounting because it makes their numbers look better

180. **Walk me through a concrete example of how to calculate revenue synergies**

If, for example, for the same service provided you're able to collect more revenue

Let's say that Microsoft is going to acquire Yahoo. Yahoo makes money from search advertising online, and they make a certain amount of revenue per search (RPS). Let's say this RPS is $0.10 right now. If Microsoft acquired it, we might assume that they could boost this RPS by $0.01 or $0.02 because of their superior monetization. So to calculate the additional revenue from this synergy, we would multiply this $0.01 or $0.02 by Yahoo's total # of searches, get the total additional revenue, and then select a margin on it to determine how much flows through to the combined company's operating income

181. **Walk me through an example of how to calculate expense synergies**

If, for example, in an acquisition that there are now too many employees so you lay them off

Let's say that Microsoft still wants to acquire Yahoo!. Microsoft has 5,000 SG&A-related employees, whereas Yahoo has around 1,000. Microsoft calculates that post-transaction, it will only need about 200 of Yahoo's SG&A employees, and its existing employees can take over the rest of the work. To calculate the operating expenses the combined company would save, we would multiply these 800 employees Microsoft is going to fire post-transaction by their average salary

182. **How do you take into account NOLs in an M&A deal?**

You apply section 382 to determine how much of the sellers' NOLs are usable each year

Allowable NOLs = equity purchase price * highest of past 3 months' long term rates

So if our equity purchase price were $1 billion and the highest adjusted long term rate were 5% then we could use $1 billion * 5% = $50 million of NOLs each year

If the seller had $250 million in NOLs, then the combined company could use $50 million of them each year for 5 years to offset its taxable income

Rem NOLs are a deferred tax asset

183. **Why do deferred tax liabilities (DTLs) and deferred tax assets (DTAs) get created in M&A deals?**

These get created when you write up assets – both tangible and intangible – and when you write down assets in a transaction. An asset write-up creates a deferred tax liability, and an asset write-down creates a deferred tax asset.

You write down and write up assets because their book value – what's on the balance sheet – often differs substantially from their "fair market value"

An asset write-up creates a deferred tax liability because you'll have a higher depreciation expense on the new asset, which means you save on taxes in the short-term – but eventually you'll have to pay them back, hence the liability. The opposite applies for an asset write-down and a deferred tax asset

They get created because of the difference of the value on the balance sheet and the fair market value. On a high level think of it that the tax implications of writedowns/writeups are delayed. You writeup an asset and know that there are now additional tax obligations in the future, this is a DTL. You writedown an asset and know that there are now less tax obligations in the future, this is a DTA

In an asset writeup/writedown the DTA/DTL is created immediately and is paid off/applied over the depreciation life. On a writeup, you will comparatively "overpay" which gradually "reverses" the DTL. You "overpay" because the additional depreciation isn't included in taxable income. Your book value will reflect less tax paid comparatively but you will add in the appropriate DTL amount to reflect this actual difference. On a writedown there is decreased depreciation (so more book taxable income recorded) but the cash taxable income is the same. You apply your DTA to the difference each year in the book tax (that you overpay) and the cash tax (that you actually pay).

184. How do DTLs and DTAs affect the BS adjustment in an M&A deal?

You take them into account with everything else when calculating the amount of Goodwill & Other Intangibles to create on your pro-forma balance sheet. The formulas are as follows:

Deferred Tax Asset = Asset Write-Down * Tax Rate
Deferred Tax Liability = Asset Write-Up * Tax Rate

So let's say you were buying a company for $1 billion with half-cash and half-debt, and you had a $100 million asset write-up and a tax rate of 40%. In addition, the seller has total assets of $200 million, total liabilities of $150 million, and shareholders' equity of $50 million

Here's what would happen to the combined company's balance sheet (ignoring transaction/financing fees):

1. First, you simply add the seller's Assets and Liabilities (but NOT Shareholders' Equity – it is wiped out) to the buyer's to get your "initial" balance sheet. Assets are up by $200 million and Liabilities are up by $150 million
2. Then, Cash on the Assets side goes down by $500 million
3. You have an asset write-up of $100 million, so Assets go up by $100 million
4. Debt on the Liabilities & Equity side goes up by $500 million
5. You get a new Deferred Tax Liability of $40 million ($100 million * 40%) on the Liabilities & Equity side
6. Assets are down by $200 million total and Liabilities & Shareholders' Equity are up by $690 million ($500 + $40 + $150 + $50)
7. So you need Goodwill & Intangibles of $940 million on the Assets side to make both sides balance

185. Could you get DTLs or DTAs in an asset purchase?

No, bc in an asset purchase the book basis of assets always matches the tax basis. They get created in a stock purchase bc the book values of assets are written up or written down, but the tax values aren't. The tax rules are different in asset vs stock purchases

186. How do you account for DTLs in forward projections in a merger model?

You create a book vs. cash tax schedule and figure out what the company owes in taxes based on the pretax income on its books, and then you determine what it actually pays in cash taxes based on its NOLs and newly created amortization and depreciation expenses (from any asset writeups)

Anytime the cash tax expense exceeds the book tax expense you record this as a decrease to the deferred tax liability on the BS. If the book expense is higher, then you record that as an increase to the DTL

Think of accounting income based on when rev is earned and taxable income based on when income is received

187. Explain the complete formula for how to calculate goodwill in an M&A deal

Goodwill = equity purchase price – seller book value + seller's existing goodwill – asset writeups – seller's existing deferred tax liability + writedown of seller's existing deferred tax asset + newly created deferred tax liability

Think of it like Goodwill = equity purchase price – fair value of net assets acquired

And fair value of net assets acquired = seller book value – seller's existing goodwill + seller's existing DTL - newly created DTL + asset writeups - writedown of seller's existing DTA

1. Seller book value is just the shareholders' equity number
2. You add the seller's existing goodwill bc it gets written down to $0 in an M&A deal
3. You subtract the asset writeups bc these are additions to the assets side of the BS, goodwill is also an asset, so effectively you need less goodwill to "plug the hole"
4. Normally you assume 100% of the seller's existing DTL is written down
5. The seller's existing DTA may or may not be written down completely (see next question)

188. Explain why we would write down the seller's existing DTA in an M&A deal

You write it down to reflect the fact that DTA include NOLs, and that you might use these NOLs post transaction to offset the combined entity's taxable income

In an asset or 338(h)(10) purchase you assume that the entire NOL balance goes to $0 in the transaction, and then you write down the existing DTA by this NOL write-down

In a stock purchase the formula is:

DTA write-down = buyer tax rate * MAX(0, NOL balance – allowed annual NOL usage * expiration period in years)

This formula is saying, if we're going to use up all these NOLs post transaction, let's not write anything down. Otherwise, let's write down the portion that we cannot actually use post-transaction, like whatever our existing NOL balance is minus the amount we can use per year times the number of years

You writedown whatever amount of NOL you can't use in the expiration period of the NOLs acquired

189. What's a section 338(h)(10) election and why might a company want to use it in an M&A deal?

A stock deal that gets asset sale benefits

A section 338(h)(10) election is the choice for a acquirer to treat the stock purchase as an asset purchase. This saves taxes in the future with a step-up in the tax basis of acquired assets. The target is doubly taxed on the tax step up and proceeds from the sale but it entices the acquirer to pay more. If a company has been an S-corporation for over 10 years it doesn't have to pay a tax on the appreciation of its assets

A section 338(h)(10) election blends the benefits of a stock purchase and an asset purchase

1. Legally it is a stock purchase, but accounting-wise it's treated like an asset purchase
2. The seller is still subject to double-taxation – on its assets that have appreciated and on the proceeds from the sale
3. But the buyer receives a step-up tax basis on the new assets it acquires, and it can depreciate/amortize them so it saves on taxes

Even though the seller still gets taxed twice, buyers will often pay more in a 338(h)(10) deal because of the tax-savings potential. It's particularly helpful for:

1. Sellers with high NOL balances (more tax-savings for the buyer because this NOL balance will be written down completely – and so more of the excess purchase price can be allocated to asset write-ups)
2. If the company has been an S-corporation for over 10 years – in this case it doesn't have to pay a tax on the appreciation of its assets

The requirements to use 338(h)(10) are complex and bankers don't deal with this – that is the role of lawyers and tax accountants

190. What is an exchange ratio and when would companies use it in an M&A deal?

An exchange ratio is an alternate way of structuring a 100% stock M&A deal, or any M&A deal with a portion of stock involved

Let's say you were going to buy a company for $100 million in an all-stock deal. Normally you would determine how much stock to issue by dividing the $100 million by the buyer's stock price, and using that to get the new share count

With an exchange ratio, by contrast, you would tie the number of new shares to the buyer's own shares – so the seller might receive 1.5 shares of the buyer's shares for each of its shares, rather than shares worth a specific dollar amount

Buyers might prefer to do this if they believe their stock price is going to decline post transaction – sellers, on the other hand, would prefer a fixed dollar amount in stock unless they believe the buyer's share price will rise after the transaction

191. Walk me through the most important terms of a purchase agreement in an M&A deal

There are dozens, but here are the most important ones:

1. Purchase price: stated as a per-share amount for public companies
2. Form of consideration: cash, stock, debt, …
3. Transaction structure: stock, asset, or 338(h)(10)
4. Treatment of options: assumed by the buyer? Cashed out? Ignored?
5. Employee retention: do employees have to sign non-solicit or non-compete agreements? What about management?
6. Reps and warranties: what must the buyer and seller claim is true about their respective businesses?
7. No-shop / go-shop: can the seller shop this offer around and try to get a better deal, or must it stay exclusive to this buyer?

192. What's an earnout and why would a buyer offer it to a seller in an M&A deal?

An earnout is a form of deferred payment in an M&A deal – it's most common with private companies and startups, and is highly unusual with public sellers

It's usually contingent on financial performance or other goals – for example, the buyer might say, "We'll give you an additional $10 million in 3 years if you can hit $100 million in revenue by then"

Buyers use it to incentivize sellers to continue to perform well and to discourage management teams from taking the money and running off to an island in the South Pacific once the deal is done

193. How would an accretion/dilution model be different for a private seller?

The mechanics are the same, but the transaction structure is more likely to be an asset purchase or 338(h)(10) election. Private sellers also don't have EPS so you would only project down to NI on the seller's IS

Note that accretion/dilution makes no sense if you have a private buyer because private companies do not have EPS

194. **How would I calculate "break-even-synergies" in an M&A deal and what does the number mean?**

To do this, you would set the EPS accretion/dilution to $0.00 and then back-solve in excel to get the required synergies to make the deal neutral to EPS

It's important bc you want an idea of whether or not a deal works mathematically, and a high number for the break-even synergies tells you that you're going to need a lot of cost savings or revenue synergies to make it work

195. **Normally in an accreditation / dilution model you care most about combining both companies' IS. But let's say I want to combine all 3 financial statements – how would I do this?**

You combine the IS like you normally would (see previous question), and then you do the following:

1. Combine the buyer's and seller's BS (except for the seller's shareholders' equity number)
2. Make the necessary pro-forma adjustments (cash, debt, goodwill/intangibles, etc.)
3. Project the combined BS using standard assumptions for each item
4. Then project the cash flow statement and link everything together as you normally would with any other 3 statement model

196. **How do you handle options, convertible debt, and other dilutive securities in a merger model?**

The exact treatment depends on the terms of the Purchase Agreement – the buyer might assume them or it might allow the seller to "cash them out" assuming that the per-share purchase price is above the exercise prices of these dilutive securities

If you assume they're exercised, then you calculate dilution to the equity purchase price in the same way you normally would – Treasury Stock Method for options, and assume that convertibles convert into normal shares using the conversion price

197. **What are the 3 main transaction structures you could use to acquire another company?**

Stock purchase, asset purchase, and 338(h)(10) election. The basic differences:

Stock purchase

1. Buyer acquires all asset and liabilities of the seller as well as off-balance sheet items
2. The seller is taxed at the capital gains tax rate
3. The buyer receives no step-up tax basis for the newly acquired assets, and it can't depreciate/amortize them for tax purposes
4. A DTL gets created as a result of the above
5. Most common for public companies and larger private companies

Asset purchase:

1. Buyer acquires only certain assets and assumes only certain liabilities of the seller and gets nothing else
2. Seller is taxed on the amount its assets have appreciated (what the buyer is paying for each one minus its book value) and also pays a capital gains tax on the proceeds
3. The buyer receives a step-up tax basis for the newly acquired assets, and it can depreciate/amortize them for tax purposes
4. No DTL is created as a result of the above
5. Most common for private companies, divestitures, and distressed public companies

Section 338(h)(10) election:

1. Buyer acquires all asset and liabilities of the seller as well as off-BS items
2. Seller is taxed on the amount its assets have appreciated (what the buyer is paying for each one minus its book value) and also pays a capital gains tax on the proceeds
3. The buyer receives a step-up tax basis for the newly acquired assets, and it can depreciate/amortize them for tax purposes
4. No DTA is created as a result of the above
5. Most common for private companies, divestitures, and distressed public companies
6. To compensate for the buyer's favorable tax treatment, the buyer usually agrees to pay more than it would in an Asset Purchase

198. Would a seller prefer a stock purchase or an asset purchase? What about the buyer?

A seller almost always prefers a stock purchase to avoid double taxation and to get rid of all its liabilities. The buyer almost always prefers an asset deal so it can be more careful about what it acquires and to get the tax benefit from being able to deduct depreciation and amortization of asset write-ups for tax purposes

199. **Explain what a contribution analysis is and why we might look at it in a merger model**

A contribution analysis compares how much revenue, EBITDA, pre-tax Income, cash, and possibly other items the buyer and seller are "contributing" to estimate what the ownership of the combined company should be

For example, let's say that the buyer is set to own 50% of the new company and the seller is set to own 50%. But the buyer has $100 million of revenue and the seller has $50 million of revenue – a contribution analysis would tell us that the buyer "should" own 66% instead because it's contributing that much of the combined revenue

It's most common to look at this with merger of equals scenarios, and less common when the buyer is significantly larger than the seller

200. **How do you account for transaction costs, financing fees, and miscellaneous expenses in a merger model?**

In the "old days" you used to capitalize these expenses and then amortize them; with new accounting rules introduced at the end of 2008, you're supposed to expense transaction and miscellaneous fees upfront, but capitalize the financing fees and amortize them over the life of the debt

Expensed transaction fees come out of retained earnings when you adjust BS, while capitalized financing fees appear as a new asset on the BS and are amortized each year according to the tenor of the debt