

What you can get out of comparables

Forecast-based vs. market-based

We differentiate basically between two large groups of valuation methods. The first is forecast based and comprises risk-adjusted net present value (or discounted cash flows in a broader sense), real options (a DCF method as well), or even the venture capital method. The second group is market based and deals with comparables. The market-based methods serve as a reality check. One could even add a third group including scoring systems or valuations based on other qualitative assumptions. But these methods are more for evaluation than for valuation. In valuation we want to end up with a number or at least a range in a currency.

Getting a significant difference between the values derived with methods of the two groups means that either the assumptions underlying the cash flow predictions and the subsequent discounting are not in line with what the market thinks, or the company or project under consideration really stands out from peers in terms of potential or risk. Either way having a forecast-based method and a market-based method adds considerably to the picture; either you can adjust your assumptions or you have good arguments why that asset is so different.

Companies as comparables

When running a valuation you actually try to predict what a hypothetical agent called "Market" would pay for your asset. We postpone the discussion whether such an agent actually exists to another article and assume it is true. So, what would that well-informed Market pay? Un-

fortunately we only know once the transaction took place. But we can observe some transactions of assets that are similar to ours. And since they are similar, the value or the price should be similar as well.

The usual comparable relate to the value of companies. If the company is public then you can observe its market capitalisation, i.e. the number of outstanding shares multiplied with the share price. This is the value of the company's equity. Together with the company's debt it sums up to the company value. In biotech the companies very rarely have significant debt, so we often can assume that the market capitalisation equals the company value. And if we subtract the amount of cash that the company holds we get the enterprise value, i.e. the value of all their assets. It is important to boil the market capitalisation down to the enterprise value because the two companies are only comparable because of their similar assets, certainly not because of their cash amounts.

Another useful comparable is the pre-money valuation in case that this is available. Here investors certainly have it a lot easier, as they have many term sheets. But sometimes it is possible to find out about these valuations even without having access to confidential information, e.g., when a public fund is invested in a private company and discloses its equity stake.

License agreements as comparables

While company comparables are relatively easy to get they are often little useful. Our asset may be similar to the lead asset of a company, but the enterprise value does not tell us

how much of the company's value is really attributable to that one asset. Or sometimes it isn't even the lead asset, which makes the situation much worse. We would therefore prefer to have a direct measure that relates to the one project we are interested in.

License contracts are one possible comparable. Unfortunately, a license contract doesn't tell us much about the value. Especially the so-called "deal value", which is nothing more than the sum of all possible milestones that are or are not likely to be paid, is a very misleading figure. If you want to use a license agreement as a comparable for your project you need to invest quite some time to analyse what the deal and the underlying assumptions could have been. We have already discussed this in detail in a previous newsletter¹.

Share price events as comparables

Another less common comparable measure is a movement in share price that is clearly attributable to an event of a project. Imagine that a project failed. Often we can observe a big drop of the share price following that announcement. This is due to setting the value of that project to 0. Therefore the contribution of that project to the company value vanishes from one moment to the other and we observe a cliff in the price chart.

On July 24, 2013 we could observe such a drop in Elan's share price, it fell from USD 13.26 to USD 11.30 following the announcement that the Alzheimer treatment bapineuzumab

did not meet the clinical endpoints in the phase 3 trial. This corresponds to a value loss of about USD 1.2 bn. This figure becomes even more impressive considering that also Johnson and Johnson and Pfizer had a stake in bapineuzumab.



Figure 1: Share price of Elan (source: Bloomberg.com)

However, looking at the price charts of JnJ and Pfizer the loss of bapineuzumab looks much less breath taking. The reason for this is that it is compared to much larger companies. JnJ and Pfizer each have market capitalisations beyond USD 200 bn while Elan looks next to them with only USD 7 bn like a dwarf.



Figure 2: Share price of JnJ (source: Bloomberg.com)



Figure 3: Share price of Pfizer (source: Bloomberg.com)

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http://www.avance.ch/avance_on_reading_deals.html

Interestingly, the lost value on that day was USD 2.1 bn for JnJ and USD 1.6 bn for Pfizer. But these values do not necessarily display the ownership of these three companies in bapineuzumab correctly as already some small noise in the share prices of JnJ and Pfizer can affect that number considerably. The value loss distilled from Elan's share price is much more reliable, as the movement was considerably larger than that of any other day and cannot be attributed to some normal noise.

But in summary the three companies almost lost USD 5 bn of value that day. So we could say that an Alzheimer therapy right before the end of phase 3 is worth about USD 5 bn.

While this is interesting, often it is more advisable to look at trials that actually went well. Such an example is Reolysin of Oncolytics. On December 13, 2012 Oncolytics reported positive top line results in a phase 3 trial in head and neck cancer. As a result the share price went from USD 2.17 to USD 3.03.

Oncolytics



Figure 4: Share price of Oncolytics (source: Bloomberg.com)

In April 2013 Oncolytics had 84,760,000 shares outstanding. But in February 2013 they offered 8,000,000 common shares. So back in December 2012 they had 76,760,000 shares outstanding. This means, that in total the company value rose by

USD 66 mn. The positive phase 3 data increased the value by USD 66 mn. We can assume that the project moved from being a phase 3 project right before filing to a project at filing. The phase 3 success rate does not have to be considered anymore. Assuming further that the phase 3 success rate for biological (it is an oncolytic virus) is 71% this means that these USD 66 mn correspond to the missing 29% of value to make a phase 3 project a filing project. The project value is therefore USD 228 mn. And since we observe changes in company value we have to consider taxes as well. The USD 228 mn are an after-tax value. Pre-tax this would correspond to USD 367 mn (tax rate of 38%). Applying a phase specific discount rate (14%) and using some assumptions on the filing phase, the launch and then the COGS and marketing and sales costs, we can now find out to what peak sales assumption this value corresponds. We think that USD 250 mn peak sales are a good estimate.

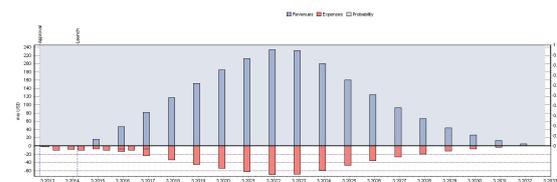


Figure 5: Reolysin at filing (calculated with ri:val)

We therefore have a rather useful number derived from a share price increase of USD .86: the market assumes that the head and neck cancer indication leads to peak sales of around USD 250 mn.

Of course, our assumptions could be modified in some way. Maybe there is a higher approval attrition rate (which would increase the final peak sales number). Or maybe we can calculate with a discount rate that is

lower than 14% (which lowers the resulting peak sales estimate). Or maybe the sales curve is different, or the full amount of the head and neck cancer indication is only captured in the share price difference of the following 5 days, which in this case would increase the value and therefore the peak sales estimate.

Further application

Even though our project is not necessarily in phase 3, we still can get a reality check on the peak sales assumptions. Or if we are fairly comfortable with the peak sales, we could of course also check what success rates would be realistic – either one. It is also conceivable to work back from the observed value using the venture capital method, i.e. the cash flows to get to a project in phase 3, the success rates and the “exit value”, which is here the observed comparable value. This way we can also get comparables for projects in very early stages, even though there aren’t any direct comparables available.

After all comparables are mainly meant to make sure that the assumptions and the final value are in the right ballpark. But to justify a valuation, one always needs to know to what assumptions a value corresponds. It is not a good idea to base a valuation solely on comparables, just as bad as to rely only on forecast-based valuations. But it is almost impossible to design a license contract with comparables. If you want to make serious business you must sit down and calculate the rNPV of the project and the license terms.