

with 12% for all companies. This is due to the fact that only one medtech respondent indicated rNPV discount rates. In medtech, the method of choice is clearly NPV. Furthermore, in large companies, often one discount rate is applied over all sorts of investments.

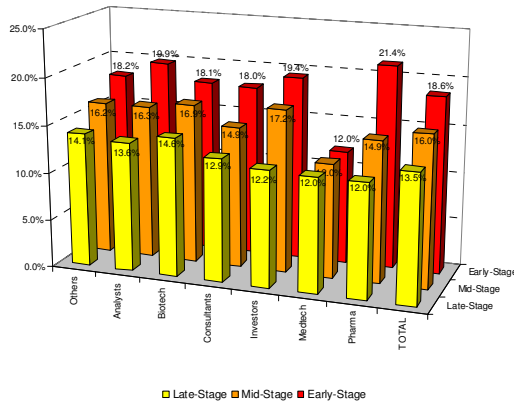


Figure 7: rNPV discount rates by profession.

The average rNPV discount rates of valuation experts and rNPV users are very close.

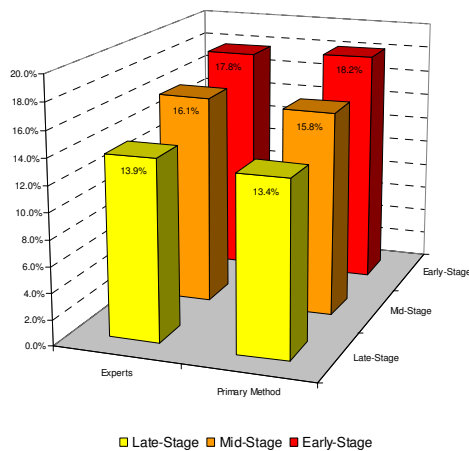


Figure 8: rNPV discount rates by specialist groups.

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For rNPV, we observed a slight difference between the regions. In the United States, the discount rates are always a bit higher, consistent with interest rates. But the trend is not very significant.

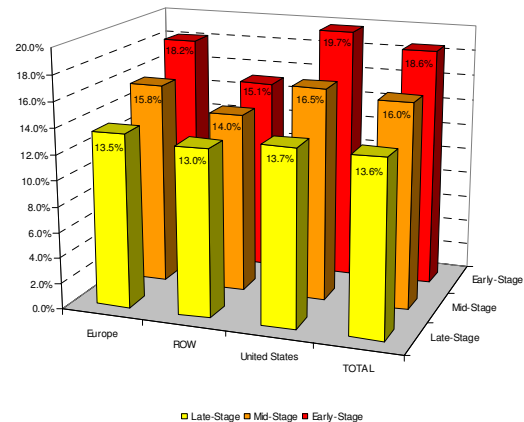


Figure 9: rNPV discount rates by region.

Again, the answers were quite widely distributed, although understandably less than for NPV discount rates which also included different assumptions about the success rates. The 80% intervals give us an already quite reasonable range of the discount rates:

Table 3: 80% intervals of rNPV discount rates.

Early-stage	12%-28%
Mid-stage	10%-22%
Late-stage	9%-20%

Given that the questionnaire remained somewhat vague about the company profiles, we think that these ranges are a very good indication of where rNPV discount rates typically lie.

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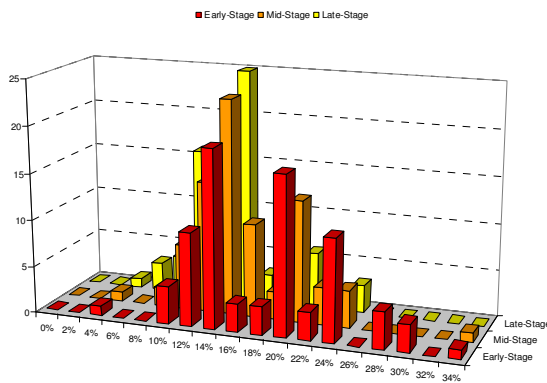


Figure 10: All indicated rNPV discount rates.

Conclusion

The overall picture of the survey conveys a very reasonable picture of the discount rates as they are used for discounted cash flows methods in biotech.

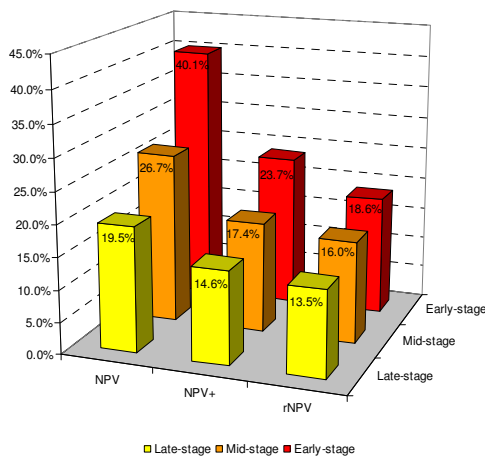


Figure 11: Average results for all discounted cash flows methods.

Earlier-stage companies are always more heavily discounted because they contain more risks. This is even true for rNPV, although the attrition risk is accounted for in a separate way. The range of the discount rates is naturally much larger for NPV where the attrition risk needs to be factored into the discount rate. But there seems to be a certain degree of agreement on the rNPV discount rates; finally rNPV is the standard method within the biotech and pharma community. However, we need to mention that a difference of only 1% can already make a huge difference in value. And moreover, assumptions might also differ for sales, success rates, timelines, and costs. So, even a relatively good match of the discount rates doesn't mean that the value is clearly determined.

The analysis of the responses has revealed that there is still quite a lot of confusion amongst industry practitioners about the names of the various valuation methods. In the context of this survey, we call a discounted cash flows method without success rates, i.e. without risk-adjustment, NPV; a discounted cash flows method which then multiplies the result with a probability is called NPV+; and a discounted cash flows method that risk-adjusts each cash flow with its specific probability is called rNPV. But some talk about rNPV because a high discount rate is also some sort of risk-adjustment in their eyes. Others always mention NPV even though they use rNPV; but they think that in a biotech context it is natural to include success rates in a valuation and this doesn't need to be mentioned additionally.

In view of the absence of a rigorous theory about how to determine the cost of capital for biotech companies, we believe that the results of this survey are a valuable step towards a better understanding of this important parameter.

About Biostrat Biotech Consulting

BIOSTRAT provides strategic decision making services to pharmaceutical, life sciences, and biotech companies. Operating in a highly competitive and one of the most capital and research intensive industries significantly increases the importance for these companies to make the right strategic choices. BIOSTRAT specialises in assisting companies in making strategic decisions with regards to corporate strategy, partnering, licensing, fundraising and M&A. Read more at www.biostrat.dk.

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