

Discount Rates

Discount rates are used to compare the values of payoffs that occur at different times. They can be calculated at increasing levels of accuracy:

1. *No discounting*
2. *Single-rate discounting*
3. *Scenario-specific discounting*

No Discounting

The simplest and least accurate method of discounting is to use no discount rate at all.

If no discount rate is used, the implication is that the timing and risk of a payoff is irrelevant. This is the appropriate discounting method to use when the stated goal is to “maximize profits,” since there is no distinction as to *when* the profits occur.

It is easy to see the inconsistencies with this method. For example, would a corporation prefer \$100 in profits today or ten years from now? Since \$100 in profits today could be invested in a risk-free ten-year bond and result in more money at the end of ten years, it should be considered more valuable than the \$100 ten years from now.

Single-Rate Discounting

If the same discount rate is used for all future payoffs, the implication is that all payoffs have the same risk type.

An oft-used discount rate for corporations is the Weighted Average Cost of Capital, or WACC. If the only thing we know about an uncertain future payoff is that it is “typical” for a corporation and there are no future decisions affecting that payoff, the WACC can be applied to compute the present value of that payoff.

To see the inconsistency in always using the same discount rate, consider if a corporation would prefer its typical uncertain payoff or a risk-free payoff of the same size. Since shareholders prefer less risk, the risk-free payoff is generally more valuable¹. To find the present value of the risk-free payoff, the risk-free discount rate should be applied instead of the WACC.

Scenario-Specific Discounting

Discounting each possible future scenario with its own discount rate is the most accurate possible method of discounting and profoundly influences the optimal strategy of most corporate decisions.

¹ This is true for almost all public corporations. There is the rare exception of a firm whose typical payoffs have a negative correlation with the Market.

Most real-world business problems contain many future choices, uncertainties, and payoffs. Each choice and each possibility can exponentially increase the number of possible future scenarios. Each of these scenarios may contain a different risk to the shareholders.