## Risk and Return - Basics

Assuming a modest level of risk may yield modest, relatively lower returns. - Assuming higher levels of risk, on the other hand, may yield significantly higher returns, coming along with an enhanced probability, though, of losing, perhaps even an entire investment.

If – for instance – one decided to invest in a stock, then such an engagement will come with expectations, not least, how much one wants to get out of that investment, or: what the yield should be. - In the case of a stock, the expected return will consist of some combination of an increase in the share price as well as dividend payments.

Now, the distribution of the periodic changes of the returns in an investment – by times higher, then lower - fluctuates more or less widely around the center of a bell-shaped curve, the investment's average return. Whereby average historical returns frequently serve as the basis for – though, unguaranteed - future expected returns.

A core hypothesis in Corporate Finance is that variables, such as the return of a stock, follow a normal distribution (also: Gaussian distribution). However, this assumption has frequently been rejected in both, theoretical studies as well as specific cases. Nevertheless, in the "real" world of finance — where risk averse investors prefer to hold government bonds, to a lesser extent equities and no derivatives at all — the normal distribution still plays a lead role.

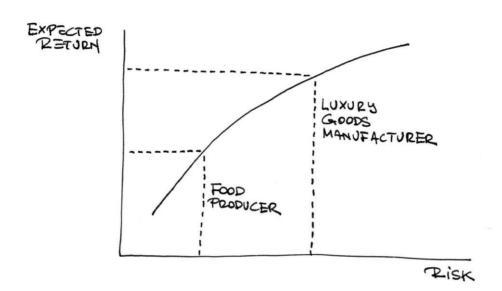
Now, in a Corporate Finance context, the disparity (i.e. gap) between historical (as well as expected future) average returns in comparison to actual returns is most commonly expressed in mathematical terms, in form of the standard deviation: The wider this disparity, the father the

data points spread from the mean, the flatter the normally distributed, bell-shaped curve will be. And, the higher the standard deviation, the higher the volatility of an investment, the higher an instrument's financial risk will be.

The previous example used to compare the expected share price performance of a mature, reasonably stable food producer with that of a rather cyclical luxury goods manufacturer illustrates the concept of volatility.

However, prior to deciding on an investment a much wider set of additional risk aspects and parameters will have to be considered: For instance, an investment in a well-established, mature company will almost certainly be less risky than one in an early-stage startup which has yet to prove the viability of its – perhaps yet untested – product. Or, an investment in a packaging company – benefitting from high order volumes during a booming economy and few or no orders in an economic downturn - will assumedly have a significantly higher performance-and return-related volatility than a manufacturer focused on toilet paper.

Therefore, the higher the assumed risk, the higher the yield or return an investor may expect, and deserve. - The question remains, though: Exactly, how much? - Benchmarking with similar investment propositions seems like a good start: In regards to stocks, for instance, one could compare the returns of a firm's peers (i.e. similar companies in the same industry with a focus on more or less the same product or geography). As for making a specific investment, one certainly wishes to earn as much yield as would be achievable with a comparable investment with a similar risk profile (i.e. similar volatility profile or standard deviation). – As outlined in the following sections, Corporate Finance tools can help transforming risk-return expectations into quantitative benchmarks.



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