

EQUITY IN A



Monitoring the risk of an equity portfolio

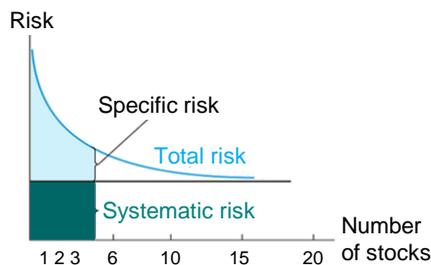
Investors willing to build an equity portfolio should develop an overall understanding to manage risks and meet their return targets. They must consider the portfolio as a whole and not as a simple sum of individual stocks. Investors' objectives determine the level of risk they are prepared to accept. It is this risk/return ratio that must be anticipated, monitored, and optimised. To this end, a plethora of portfolio construction theories and numerous risk indicators are available.

An equity portfolio presents several risks relating to its overall construction...

From a portfolio viewpoint, specific risk is always weighed against systematic risk, and together, the two constitute the portfolio's total risk.

Systematic risk represents the minimum risk that a client will bear by investing in a certain class of assets, in this case equities. It is also known as **market risk**.

In contrast, **specific risk** is the portfolio's intrinsic risk related to its constituent securities. It is also known as **diversifiable risk**, as it can be mitigated through appropriate portfolio construction and the allocation of the selected securities. According to Modern Portfolio Theory, holding 20 securities in a market reduces this risk by 29.2%, while adding additional securities (from 20 to 1000) only reduces it further by 0.8% (see adjacent chart). In addition, these 20 stocks must not be chosen from the same sector or the same country, in which case the risk would still be significant, because most events that influence them are identical.



Usually, a portfolio replicating the CAC40 will have an identical systematic risk to the index, even though its specific risk would be almost zero. If a US security is added, portfolio allocation will move away from that of the index, and a specific risk is thus created.

... but each equity carries its own risks

Each line of a portfolio thus presents a specific risk. This in turn can break down into several risks, for example liquidity and exchange rate risks.

Liquidity risk is the risk that the investor will not be able to exit from the position quickly, and without influencing the share price. It depends on the size of the position in relation to the floating capital, i.e. the portion of the company's share capital that may be traded daily on the stock market. A large-cap company listed on several markets with a high floating capital generally has a low liquidity risk.

Conversely, investors holding a small-cap share listed on an alternative market will face a high liquidity risk. As a consequence, they expect the return to be greater than for a share with less risk, all else being equal. This excess value is defined as the **liquidity premium**. At the time of the initial investment, the factors to consider are daily transaction volumes and the scope of the position held in relation thereto.

Investors can either spread sales over several days/weeks with the risk that price trends will work against them, or place a single sales order with the risk that this will spark a reaction among buyers, who will propose a lower price, reducing the return.

Exchange rate risk needs to be taken into account when investors buy securities listed on foreign markets. Let's consider a fund manager who holds a portfolio of equities denominated in euros. If he buys Apple shares in dollars, the trend in the EUR/USD exchange rate will have a significant impact on the portfolio's performance. In fact, if Apple's share price rises but the euro appreciates against the dollar at the same time, the net performance including exchange rate effects could be negative.

The Fund manager's role is to set its expected return...

An equity portfolio is compared with a **benchmark index**. If it is a global portfolio, it will be compared for example with the MSCI World, a European portfolio will be measured against the Euro Stoxx 50, while a US portfolio will target a **relative performance** against the S&P 500. Investors must first define their targeted return as well as the investment time horizon. A defensive portfolio seeks to outperform its benchmark index by 2-3% a year, while an aggressive portfolio may target at least 10%. If a portfolio of French equities falls by 5% while the CAC 40 sheds 10% over the same period, it would outperform the benchmark by 5%, even though its absolute performance would be negative. In the same way, if the portfolio advances by 8%, versus 15% for the CAC 40, the target would not be met.

... and to take the necessary risks to achieve it

It is understood that an equity portfolio's performance is optimised by precisely measuring its risk. To this end, numerous risk indicators are available: those relating to absolute risk, relative risk, and the effectiveness in terms of the risk/return ratio or maximum loss. A fund manager is interested in the following indicators, for example:

Volatility is at the heart of risk models, and measures the past range of price changes. Mathematically, it is calculated by the standard deviation of the asset's daily performances. A very volatile stock is risky in the sense that its price has a high potential to fall. Conversely, it has a symmetric potential to rise. Equity investors targeting high yields may select very volatile stocks: biotechnology, internet and small caps as a whole are by nature more volatile than very mature and large companies, such as those operating in the energy sector.

Tracking Error (TE) is a variant of volatility, the difference being that it is calculated in relation to the portfolio's benchmark index.

It measures the risk that the portfolio's performance will deviate from that of the index, and also enables the portfolio's management style to be classified. A weak TE symbolises **defensive management**, while a high TE indicates to an **aggressive management** strategy that aims to significantly outperform the index. TE will be higher if fund managers take more risks to meet their more ambitious targets.

Finally, there is another indicator based on volatility: **Value at Risk (VaR)**. A portfolio's VaR evaluates the **risk of a maximum loss** for a given probability and period. For example, a five-day 95% VaR of -8% means that there is a 95% probability that it will not lose more than 8% on our investment over five days.

The risk/return ratio is the key indicator of the management's profitability and added value versus the benchmark index

Wise investors will only be ready to take risks in exchange for higher expected returns. In the same way, they may expect an improvement in potential returns only if their risk exposure increases. Measuring the expected risk/return ratio is therefore inevitably the basis for good risk management of an equity portfolio.

The **beta** coefficient offers a good guide to the performance that can be expected for, given the risk taken. It corresponds to the portfolio's sensitivity in relation to the market. In this way, it characterises the portfolio's **risk premium** against its benchmark. A portfolio whose beta is equal to 1 will thus reproduce the market's variations. Conversely, a beta of more than 1 (less than 1) amplifies (diminishes) the variations in the market, corresponding to an aggressive (defensive) strategy. A defensive sector like health care will tend to have betas of lower than 1. In contrast, betas will often be more than 1 for cyclical sectors like technology. Pfizer, for example, has a beta of around 0.7, while that of Samsung is around 1.5.

What simple methods are available to manage a portfolio's risk level?

A fund manager holds a portfolio in equities and wishes to boost its expected profitability. He has understood that he must therefore take action on the portfolio's risk. But what means are available for him to do so?

The first choice available to him is allocation. If he wishes to increase its potential return, he may be overweight on the riskiest securities against the others, and vice versa if he wants to decrease its risk.

Diversification may also play this role, by exposing the portfolio to different markets (and currencies) and to different sectors, which reduces overall risk. If the manager adds stocks with a strong weighting in the S&P 500 to his US portfolio, its risk will move closer in line with that of the US market. Conversely, by selling these securities, in favour of others not included in the S&P 500, in theory the portfolio moves away from the market risk, and thus increases its tracking error. Given the beta of these securities, the risk of the portfolio can be adjusted in relation to market risk.

Conclusion

Investors who wish to optimise their equity portfolio's performance must implement a rigorous risk management strategy. The first step, perhaps the most tricky, is to measure risk effectively.

Numerous risk indicators have been developed to this end over the years. They enable managers to quantify absolute risk, risk relative to a benchmark, effectiveness in terms of risk/return ratio and maximum possible loss.

While these "traditional" indicators are undoubtedly of interest, it is indispensable to bear in mind that they are in some respects limited, in that they do not for example take into account market instability or the resulting cycles.