Twelve Questions Your Risk Management Tools Should Help You Answer

Northfield Information Services

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Major Points of this Presentation

- Almost all asset management firms have a quantitative risk assessment system of some kind in place
- Few, if any, asset managers get full value from their risk systems because they limit use of their risk systems to the most basic reporting functions, such as determining if tracking error is within acceptable limits
- We'll illustrate a dozen lines of enquiry for which existing risk systems can be fruitfully employed

#1 The Mean Variance Utility Function

- It is mathematically demonstrable that volatility in portfolio returns reduces the contribution of compounding to long term wealth accumulation.

  For a given portfolio, what is the reduction in the geometric (compound) rate of return as compared to a constant return at the same arithmetic average rate?

  This is why all investors, even those with long time horizons should be paying attention to portfolio risk.

- See Markowitz and Levy (1979)

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#2 Asset Allocation and Risk Budgeting

- Investors measure active management returns relative to some benchmark index. They also use the benchmark index as a proxy for participation in an asset class or portfolio style in making asset allocation decisions.

  Can you demonstrate that your actively managed portfolio is not so different from the benchmark index that the validity of the investor's asset allocation decision has been compromised?

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#3 Investor Preferences for Absolute and Benchmark Relative Risks

- While managers are typically measured by benchmark relative returns, investors cannot pay their financial obligations with "benchmark relative money". Investors therefore have concerns both about absolute risk and benchmark relative risk.

  What is the relative importance of these two concerns to our investors, and how is that preference observable in the composition of the portfolio? Put in another way, what our portfolios imply about how risk averse our investors are to these two different aspects of risk?

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#4 “Integrity” of Portfolio Strategy

- As active managers, we employ strategies that incorporate our skills in "stock picking" and also in making sector/country/style decisions. To the extent we wish to outperform benchmarks via a particular source of skill, we must accept uncertainty in that aspect of portfolio returns in order to have an opportunity set.

  Does the risk decomposition of our portfolio properly reflect our expected sources of superior performance?

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#5 Understanding Strategy Risk

- Volatility of benchmark relative returns arises from two sources. The first is "tracking error" which arises from the random influence of changing market conditions and firm specific events. The second source of volatility is “strategy risk”, which is the extent to which the effectiveness of our strategies varies over time for internal reasons. For example, if a star research analyst resigned, the potential impact on our portfolios would be a form of strategy risk, not tracking error.

  Have we been able to analyze our past performance track record to quantify the degree of strategy risk, and formulate policy accordingly?

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#6 Quality Control Across Portfolios

- For a portfolio to represent the best balance of expected returns and risks at the portfolio level, the weight of each security position must balance expected returns and expected risks at the margin. As such, it is possible to infer the expected returns on securities from the composition of a portfolio.

  To the extent we obtain these implied expected returns, are they consistent with our actual beliefs about the expected returns from different securities? Are the implied expected returns consistent across the many portfolios under management (if we believe that stock X will outperform stock Y, we must believe that for all portfolios!)?

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#7 Distinguishing Between Weight and Exposure

- The sensitivity of a portfolio's return to the returns of a given sector (or country) involves both the weight of the portfolio allocated to that sector (country) and the extent to which the specific firms held in the portfolio are more or less sensitive to business and economic conditions in that sector (country).

  How does your risk management process differentiate between the value weights allocated to a sector (country) and the economic exposure of your portfolio to the influence of that sector (country)?

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#8 Reconciling Top-down Views

Macroeconomic relations to security returns are often unintuitive. For example, we might believe that oil companies benefit from high oil prices, while airlines suffer greatly. However statistical tests have demonstrated that certain industries such as "chain retail" are even more sensitive to energy costs than airlines (consumer spending power declines, travel expense increases, shipping costs, HVAC costs, etc.).

How does your risk management process alert you to broad macroeconomic exposures in your portfolio that may not be intuitively obvious?

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#9 Meeting Regulatory Requirements

- Regulations in many European countries (e.g. UCITS 3) now require that most mutual funds sold across national borders have a standing risk management process that includes a periodic calculation of a 10 day Value-At-Risk, and the reporting of those results to boards of directors and in some cases regulators. Current regulatory discussions are likely to extend this requirement to separately managed accounts in many countries, even for investors with long term investment horizons.

  Does your risk management process producing the necessary reporting?

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#10 Efficient Trading

- Large asset management organizations typically manage many portfolios with heterogeneous goals and requirements. Lets assume we want to purchase 3,000,000 shares of stock X in aggregate for our portfolios, but market liquidity limits us to 150,000 per day of buying.

  How do we decide in which portfolios this purchase has the most benefit, and is therefore the most urgent?

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#11 Controlling Dispersion

- Investment consultants often use the dispersion between returns of similar portfolios as evidence of poor quality control on the part of an asset manager. On the other hand, the differences in client goals and preferences should produce different portfolios for different clients and therefore different returns.

  Can you estimate the expected level of dispersion between portfolios, and therefore show that the observed dispersion arises from differences in client need, rather than sloppy management?

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#12 Private Clients are Different

- To the extent that capital gain taxes reduce the range of possible return outcomes to the investor, the proper balance of portfolio return and risk is quite different when taxes are considered, even for investors of identical risk tolerance.

  How are the risk profiles of your portfolios differentiated between institutional clients that are not subject to capital gain taxes and private clients that normally are subject to capital gain tax?

#13 Reducing Trading Costs

- Market impact costs are a function of how quickly we execute trades. The costs of trading quickly must be weighed against the loss of opportunities, and increased risk of trading slowly. You can think of your desired but undone trades as a long/short portfolio you are trying to liquidate. You are long stocks you do have and don't want, and short stocks you do want and don't have.

  Do you use your risk management system to determine which trades contribute the most to the transition of the portfolio, and hence are the ones you are willing to bear more cost to complete?

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Conclusions

- Risk assessment systems provided by Northfield and other providers have many uses beyond routine portfolio risk values
- Thoughtful asset management organizations can explore many other important aspects of investment management through the perspective of their risk system
- Efficient use of your risk system extends beyond day-to-day portfolio management into many aspects of trading, investment policy, compliance and organizational behavior

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