



Fund managers could be understating risk by 40%: Wilshire

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US – The conventional quantitative methods of portfolio analysis widely used by fund managers could systematically understate the risks in both passively managed and actively managed investment portfolios, Wilshire Associates has warned.

According to research by the consulting firm, excess value at risk in retirement equity portfolios could be as high as 5% of the portfolio.

Robert Kuberek, a senior managing director at Wilshire, commented: “The biases are such that the standard deviation of return in a pension fund’s equity portfolio may be understated by 40% or more.

“As a result, the excess value at risk for a conventional equity portfolio may be as much as 5% of the portfolio. For a typical individual investor with a US\$500,000 retirement nest egg, this could amount to an unintended exposure to loss of as much as US\$25,000 during a one year period.”

In an effort to reduce the biases in risk estimation, Kuberek said Wilshire Analytics, a business unit of Wilshire Associates that develops and markets asset allocation, risk management and accounting analytical solutions, had developed new technology and incorporated it into the most recent versions of the firm’s analytical systems.

Traditionally, managers use historical returns to estimate variances and covariances for the variables that drive changes in portfolio value when measuring risk.

But Kuberek says the use of historical returns is prone to errors.

Peter Matheos, a managing director at Wilshire and the lead researcher for the study, explains: “On average, these errors in the sample covariance matrix will tend to cancel: the sample covariance matrix is said to be an unbiased estimator for the true covariance matrix.

“However, if optimisation is applied to the portfolio with the objective of minimising risk, using the sample covariance matrix as an input, the resulting ‘optimised’ portfolio will almost always appear to be less risky than it really is – optimisation tends to favour portfolios for which risk is underestimated. The amount of the bias will depend on the number and magnitudes of the underlying true covariances and on the length of the historical sample used to estimate them.”

Wilshire said its new SHaPTSE estimator addresses the possibility of being caught off-guard by portfolios whose true risks are large but whose estimated risk are small, by “optimally adjusting the measured risk in the portfolio and offering a better characterisation of that risk”.

Matheos said: “This is a material step forward in practical modern risk management.”