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Whilst emphasis has been given to short-term dependence of financial returns, long-term dependence remains overlooked. Despite financial literature provides evidence of long-term's memory existence, serial-independence assumption prevails. This document's long-term dependence assessment relies on rescaled range analysis (R/S), a popular and robust methodology designed for Geophysics but extensively used in financial literature. Results correspond to most of the previous evidence of significant long-term dependence, particularly for small and illiquid markets, where persistence is its most common

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kind. Persistence conveys that the range of possible future values of the variable will be wider than the range of purely random and independent variables. Ahead of R/S financial literature, authors estimate an adjusted Hurst exponent in order to properly estimate the covariance matrix at higher investment horizons, avoiding the traditional independence-reliant square-root-of-time rule. Ignoring long-term dependence within the mean-variance portfolio optimization results in concealed risk taking; conversely, by adjusting for long-term dependence the weight of high (low) persistence risk factors decreases (increases) as the investment horizon widens. This alleviates some well-known shortcomings of conventional portfolio optimization for long-term investors (e.g. central banks, pension funds and sovereign wealth managers), such as excessive risk taking in long-term portfolios, extreme weights, home bias, and reluctance to hold foreign currency-denominated assets.