ASSESS THE SIGNIFICANCE OF RETURN INTERVAL ON THE ESTIMATION OF SYSTEMATIC RISK IN LISTED COMPANIES TRADING IN THE NAIROBI SECURITIES EXCHANGE.

Constance Furaha Mwahunga - MBA

Department: Business Administration

Supervisors:

1. Dr. Jagongo A.O

Systematic risk estimations are broadly used in investment analysis and portfolio management. The popular measure of systematic risk is the CAPM beta. The CAPM states that the expected return on an asset depends upon its level of systematic risk which is measured relative to that of the market portfolio. The estimation of systematic risk poses major challenges to researchers and different economic agents as per which return interval to use. Whereas it is by now widely recognized that risk varies over time, on the other hand, the risk profile of an investor, in terms of investment horizon, makes it crucial to also assess risk at the frequency level. This study proposes a unified approach to measuring market risk by examining the relationship between the return of the stock and its systematic risk at different time intervals. In particular, the study attempts to assess the significance of time intervals in the estimation of systematic risk in an emerging market, the Nairobi Securities Exchange. The proposed procedure is acted on a sample composed of 21 equity stocks that constituted the NSE 20 share index for the period January 1997 to December 2011. Systematic risks of the 21 equity stocks were estimated on the basis of daily, weekly, monthly, and yearly. The study used raw secondary data consisting of the NSE listed companies daily prices for the 15 years under review as obtained from the NSE data centre. The data was then complied and analyzed by means of a secondary data schedule Microsoft Excel form and a regression model. The study used the variance or standard deviation of expected returns as the measure of risk. The individual stock returns and the market return were calculated first followed by the estimation of beta coefficient for each stock using the different return intervals. The analysis of risk and return of all the sampled companies revealed that 99.9% had positive returns that increased with increase in time interval from daily to annual while beta estimation indicated substantial (90%) differences in beta values when different return intervals are employed more so an increase in beta across intervals by 57%. These results confirm that there exist a positive relationship between multi scale returns and systematic risk coefficients, and that beta changes according to time interval. From the two findings therefore, the convincing evidence is that at the NSE, the listed companies with the highest beta also have the highest returns while
the companies with the lowest beta also have the lowest return. Finally the study confirmed that return intervals and frequency levels are significantly important in the estimation of systematic risk as evidenced by the substantial differences in returns and beta values when different return intervals are employed. In both cases the results showed an increase in values across return intervals from daily to yearly. The estimates of average return versus average stock beta also revealed an increasing slope as one moves across intervals across intervals from daily to yearly making longer period intervals more stable and therefore usable compared to the rest. This evidence indicates that the NSE is more efficient at longer periods. To maximise returns at the NSE, the study recommends to short-term investors to consider short estimation periods; daily and weekly return intervals to estimate beta for short term expected returns as shorter estimation period reflect recent changes in restructuring, acquisitions, disinvestment and policy issues. On the other hand while making long term investment decisions, investors are advised to consider beta estimated on longer estimation periods since their systematic risk appears to be more stable and therefore usable. All the same, due to rapid changing economic conditions at the NSE, investors are advised to take adequate risk management strategies apart from considering one’s risk tolerance levels so as to cope with risk in a portfolio by quantifying the potential for losses and take suitable actions to minimize these depending on one’s investment objectives.