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<p>Tiivistelmä-Referat-Abstract</p> <p>The investment atmosphere has changed significantly due to the European integration that took place in the 21st century. Thus there has been a need to chart the prevailing risks more carefully. Special attention has been given to risk measures in particular. The focus has been especially on static risk measures, since significant problems have been detected in the application of dynamic risk measures. Attention is paid also on the coherency of risk measure, and the terms of a coherent risk measure are determined.</p> <p>We will adopt a mean-variance approach in this study because it is still common to use the portfolio variance (standard deviation) as a measure for risk, although the concept of market portfolio dating back to the times of Harry Markowitz has been perceived as too much of a sweeping single variable that would hold all risk information occurring in the prevailing market.</p> <p>So models, which use several different variables for measuring risk have been developed. These models attempt to “suck in” exhaustively all risk-information available in the market. Arbitrage Pricing Theory (APT) functions as a starting point. APT is in principle the first multi-factor model introduced, but it presents the used variables in a very limited manner. Later on, the qualifiers in multi-factor models have been specified, and special attention has been given to defining and choosing the variables. Various theories, which try to model the real activities of the finance market, have been used to justify the choice of variables. Hence, multi-factor models concentrate above all on the choice of variables. These variables have mainly been chosen according to macroeconomic, fundamental and statistical grounds.</p> <p>Macroeconomic models concentrate on explaining the dependency between external forces of the economy and asset returns. Fundamental models on the other hand believe that asset returns are determined mainly based on company-specific factors, and statistical models estimate variables from the historical return development of a single asset. Two fundamental models are described more carefully, a 3-factor model by Fama and French (1993) and a 4-factor model by Carhart (1997). By comparing the explanatory powers of these three different models we can deduct which model can best explain the asset returns and consequently the risk it includes. Connor (1995) gives a thorough study on the explanatory power of these models. After this, by comparing each of them separately with Capital Asset Pricing Model (CAPM) we can discover the optimal risk management instrument. This specific comparison is done by Fletcher and Hillier (2002).</p> <p>The basic idea is therefore to study whether the variables used in multi-factor models include some additional information that single variable models cannot explain. Finally we end up with the conclusion that in certain conditions and with certain restriction, very realistic ones though, the explanation power of a multi-factor models is greater than in single-factor model (CAPM). Thus they include additional information about the prevailing risk compared to single-factor model and give more realistic, detailed and more reliable description of the risk involved with the asset or a portfolio.</p>			
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