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Adjusting for risk: An improved Sharpe ratio

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Abstract

This paper proposes a new rule for risk adjustment and performance evaluation. This rule is a generalization of the well-known Sharpe ratio criterion, and under normal conditions enables a manager to correctly assess alternative risky investments. The rule is superior to existing rules such as the standard Sharpe rule and the RAROC, and can make a substantial difference in estimates of required returns. © 2000 Elsevier Science Inc. All rights reserved.

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1. Introduction

As is well known, the general problem of risk adjustment has two main aspects. The first is adjustment before the event, the typical case being that of investment managers choosing between alternative risky investment opportunities. How do they choose between investment *A*, which has a high expected return and a relatively high risk, and investment *B*, which has a low expected return but is relatively safe? We can answer this question only if we have some means of adjusting expected returns for risk. We therefore have to adjust *expected* returns *before* we take on the relevant risk. The second side of the problem is that of evaluating *actual* investment performance *after* the event, when decisions have already been made and the results of those decisions are apparent. For example, we may need to compare trader *A*, who made a high profit but took a lot of risks, with trader *B*, who made a low profit but took

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