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Estimating the time Varying Components of international stock markets' risk

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Title:	Estimating the time Varying Components of international stock markets' risk
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Abstract:	<p>In this study an alternative approach for assessing securities' risk is applied. Various authors have argued that security returns are not homoskedastic but exhibit variation over time. They have observed that large changes tend be followed by more large changes in either direction, and so volatility must be predictably high after large changes. This phenomenon of securities' volatility, referred to as clustering, has important implications for security pricing and risk management. Among the most popular techniques currently used to capture the clustering effect and to forecast future volatility are those belonging to the family of Autoregressive Conditional Heteroskedastic (ARCH) models. The main aim of this paper is to investigate whether such volatility modelling can be used to capture the time variation not only in the total risk of a security return but also its systematic and unsystematic components. Using weekly local stock market data, the time varying beta with the World Index has been estimated via a bivariate GARCH-M model. The GARCH-M parameterization used here is a dynamic specification of the SIM. The hypothesis that this dynamic specification holds cannot be rejected for 11 out of 13 local portfolios. The results provide evidence that both the systematic and the non-systematic counterparts are also changing over time. However, in some markets those risk changes may take place with some delay. This suggests that some of the low correlation coefficients computed for certain stock market returns may not be due to differences in business cycles among those countries, but may be caused by the non-synchronous response to world market developments. This finding should have important implications in many investment decisions such as portfolio selection, market timing and risk hedging.</p>