
Skewness in the conditional distribution of daily equity returns

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The conditional distribution of asset returns is important for a number of applications in finance, including financial risk management, asset pricing and option valuation. In the GARCH framework, it is typically assumed that returns are drawn from a symmetric conditional distribution such as the normal, Student- t or power exponential. However, the use of a symmetric distribution is inappropriate if the true conditional distribution of returns is skewed. This study models the conditional distribution of daily returns in five international equity market indices and a world equity index using the skewed generalised- t (SGT) distribution, a distribution that allows for a very wide range of skewness and kurtosis, and which nests the three most commonly used distributions as special cases. It is shown that the use of a conditional SGT distribution offers a substantial improvement in the fit of both GARCH and EGARCH models. Moreover, for both models, the study strongly rejects the restrictions on the SGT that are implied by the normal, Student- t and power exponential distributions. With the GARCH specification, the conditional distribution is negatively skewed for all six series. However, for three of these series – namely the US, Japan and the World index – this skewness can be explained by leverage effects, which are captured by the EGARCH model. For the remaining three series – the UK, Canada and Germany – the skewness in the conditional distribution of returns remains even after allowing for leverage effects.