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## This issue in brief

### **The stock market reaction to criticism of corporate governance practices of companies listed on the JSE**

*N Bhana*

This paper investigates a key aspect of possible reputational damage to a company: the publication of criticism of corporate governance practice in the financial press. To understand the valuation effect associated with such criticism, long-run abnormal returns following the publication date are examined. In addition to the initial negative reaction on publication, the companies in the sample experienced further significant risk-adjusted returns of -15,15% and -22,94% respectively over the next one and two years. A decline in future operating performance appears to be an important reason for the poor stock market performance of the companies. These results underscore the importance of investors fully understanding the disclosure of a company's corporate governance practice.

### **Evaluation of GARCH-based models in value-at-risk estimation: Evidence from emerging equity markets**

*P Thupayagale*

This paper evaluates the forecasting performance of a range of volatility models in Value-at-Risk estimation in the context of the Basle regulatory framework using stock index return data from a selection of emerging markets. It extends the current research in these economies by including a range of GARCH models and their long memory extension, in addition to some standard statistical methods often used by financial institutions. The results suggest that models with long memory or asymmetric effects or both are important considerations in providing improved VaR estimates that minimise occasions when the minimum capital requirement identified by the VaR process would have fallen short of actual trading losses. In addition, the results highlight the relevance Basel regulatory framework, and of using out-of-sample forecast evaluation methods for the identification of forecasting models that provide accurate VaR estimates.

### **Does survivorship bias really matter? An empirical investigation into its effects on the mean reversion of share returns on the JSE (1984-2007)**

*E Gilbert and D Strugnell*

This paper tests for the impact of survivorship bias by building on the work of Cubbin, Eidne, Firer and Gilbert (2006), and Bailey and Gilbert (2007). The former paper confirmed the existence of mean reversion of relative returns on the JSE, because portfolios of shares with high Price to Earnings (P/E) ratios (being those which had tended to outperform recently) underperformed significantly over five years against portfolios of shares with low P/E ratios. This definition of mean reversion is contentious, but the convention is followed. The latter paper confirmed the economic validity of this conclusion by applying liquidity constraints to portfolio formation. This tended to slightly dampen the observed effects, but confirmed the significant presence of mean reversion. In both cases, extensive efforts were made to include all delisted shares in the study to avoid the effects of survivorship bias. This paper updates both studies by extending the period for a further 21 months, and then quantifies the impact of survivorship bias by comparing the results against those of an equivalent study based on a data set of currently listed shares only. The results of our study confirm that, in general, the effects of survivorship bias are present and material. While similar patterns of mean reversion are detected on both data sets, the returns earned on portfolios selected from currently listed shares are significantly higher than the corresponding returns on portfolios selected from all shares. While survivorship bias does not necessarily affect the conclusion of the patterns of mean reversion revealed in the earlier studies, it is a potentially important issue in any empirical financial research, and effort ought to be made to avoid it.

### **A conditionally heteroskedastic time series model for certain South African stock price returns**

*MV Kulikova and DR Taylor*

The distributional properties of returns data have important implications for financial models and are of particular importance in risk-scenario simulation, volatility prediction and in the event of financial crisis. We present simple time-series models that capture the heteroskedasticity of financial time series and incorporate the effect of using heavy-tailed distributions. These models allow for time-varying volatility, which is an important extension of the conventional methodology. The models are an augmentation of the GARCH class of models, but allow for conditionally normal inverse Gaussian and variance gamma distributed errors. As in previous studies, this new approach permits a distinction between conditional heteroskedasticity and a conditionally leptokurtic distribution, but, compared with the well-known GARCH- $t$  model, it allows us to capture the asymmetric behaviour observed in actual returns series. The practical applicability of the models is confirmed by implementing a fitting procedure to a carefully chosen set of South African stock price returns.

### **If a portfolio manager who cannot count finds a four-leaf clover, is he still lucky?**

*DA Polakow*

This paper examines a poignant but essentially generic problem that plagues the world of financial analysis - the extent to which visual or analytical interpretation of relationships between accumulating (and therefore auto-correlated or serially dependent) series - are demonstrably fallacious by means of standard statistical techniques that assume stationarity. The problem, despite being age-old, continues to be ignored by an appreciable proportion of tertiary educated financial professionals the world over, and is imputed to contribute, in no small part, to broad market inefficiency. The problem persists from high-frequency pairs-trading strategies in hedge funds through to top-down macro-economic inferences by institutional strategists. We examine the mechanism for the error in accessible non-mathematical prose, and demonstrate by way of several common examples how easily well-used inferences fall foul of the requisite statistical rigour and correct interpretation. We further note that there is a well developed, although less frequently utilised, suite of econometric tools, termed cointegration, that considers relationships

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between two or more non-stationary price series. Cointegration techniques are cast at the unit of the non-stationary price series, rather than the unit of the stationary differences.