

## Information in Financial Asset Prices

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### **Confidence Intervals and Constant-Maturity Series for Probability Measures Extracted from Options Prices**

*William Melick and Charles Thomas*

#### **General Discussion**

Melick responded first to Hanweck's comments. He liked the idea of examining how the probabilities vary when options prices are subjected to shocks, and in fact he was planning to examine that question with his co-author. While admitting that there is always a margin of error, Melick declared himself reasonably confident of the results obtained with the bimodal distribution. He noted, among other things, that the results obtained from the sum of the quadratic errors are much better than those obtained using a unimodal distribution. Melick agreed with Hanweck on the importance of taking account of the increased volatility observed on the publication dates of certain key statistics—the CPI, for example. That, in fact, was one of the reasons why he was in favour of regression techniques for building a fixed-maturity series. With this technique, it would be very simple to include binary variables to capture these more volatile episodes.

Melick said he was well aware of the difficulty of interpreting the results, since options prices reflect not only actuarial possibilities but also risk preferences. This point was stressed by Hanweck, Black, and several others during the discussion of the Levin, Mc Manus, and Watt paper. On this point, Melick noted that it would be interesting to examine how the results compare with the probabilities suggested by the density functions. However, such an exercise would be seriously hampered by the small sample size. Still, this avenue merits exploration, and he is now working on it with his co-author.

During the open discussion, some participants raised questions about Figure 4 in the paper, which presents the relative probabilities of variance of plus or minus 10 per cent in the future Standard & Poor's 500 index. Alexander Levin noted that the authors should not use a fixed rate of 10 per cent for the whole period under study, since the statistics vary depending on the maturity of the contract.

Melick agreed with Levin, and said it would be better to correct the series for the maturity effect, as he proposed in the second part of his paper.

Des Mc Manus said that, when looked at in isolation, these relative probabilities contain little useful information. For example, the ratio can be very high while the probabilities attaching to each of the events are very low.