

<b>題目</b>	厚尾分配之風險值估計—以股價指數為例
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<b>摘要</b>	<p>本文以香港恆生股價指數、南韓綜合股價指數之日資料為對象，對 GARCH-N、GARCH-t 及 GARCH-HT 三種風險值模型，進行實證，探討何種資產報酬率的分配，對風險值估計具有較佳的表現。不同於以往研究經常使用之常態分配或 t 分配，本文採取 Politis(2004)提出之具高峰、厚尾特性的 HT 分配來描繪資產報酬率的分配。同時以準確性、效率性兩個層面來評價風險值模型在多頭、空頭部位之績效表現，使實證結果更具廣泛性。</p> <p>實證結果顯示，GARCH-N 模型即便在較低的信心水準下，絕大多數的情況下都是最有效率的，但其在準確性的表現上令人失望。GARCH-t 模型除了無法完全通過回溯測試外，且在大多數的情況下，亦為最不具效率的模型。然而，在多頭、空頭部位下，GARCH-HT 模型在所有實證資料、不同信心水準下，皆能通過回溯測試，顯示 GARCH-HT 模型之風險值估計最具準確性。另外，在較高的信心水準下，GARCH-HT 模型大都是最有效率的，顯示 GARCH-HT 模型能同時兼顧風險值預測的準確性與效率性。實證結果建議持有多頭部位或空頭部位的投資者，使用 GARCH(1,1)模型並搭配高峰、厚尾的 HT 分配，可有效提升 VaR 值的風險管理績效。</p>
<b>關鍵字</b>	厚尾、風險值、GARCH-HT、市場風險
<b>Title</b>	Value-at-Risk under Fat Tails in Returns Innovation— The Case of Stock Price Index
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<b>Abstract</b>	<p>This study investigates the influence of fat-tailed innovation process on the performance of VaR (Value-at-Risk, VaR) estimates by three GARCH models (GARCH-N, GARCH-t and GARCH-HT). Daily spot prices of two Asian emerging stock indices (Hangseng Index-Hongkong and South Korea-KOSPI Index) are used as the empirical sample to discuss and compare the accuracy and efficiency of these VaR models. In contrast to previous literature, this study encompasses both the GARCH(1,1) model and heavy-tailed returns innovation (proposed by Politis, 2004) in stead of the normal or student-t distributions. Meanwhile, the empirical performance of VaR models is more comprehensive by accommodating both accuracy and efficiency aspects for long and short trading positions.</p> <p>Empirical results indicate that for asset returns that exhibit leptokurtic and fat-tailed, the VaR forecasts generated by the GARCH-N models deliver unsatisfactory accuracy even though it is more efficient than the others at lower confidence levels. The GARCH-t model not only cannot pass the back-testing but also is the least efficient model in general. However, the VaR forecasts generated by the GARCH-HT models can fully pass the back-testing method for all cases, which provide the most reliable accuracy. In particular, the GARCH-HT is more efficient than alternatives at high confidence levels for most cases, which reveal that it can look after both sides for VaR forecasts. Thus, VaR for traders having both long and short positions, we suggest using an GARCH(1,1) model based on the HT distribution to enhance the performance of risk management.</p>
<b>Key Words</b>	Fat Tails, VaR, GARCH-HT, Market Risk