

# **Cyclical in Catastrophic and Operational Risk Measurements**

## **ABSTRACT**

Using equity returns for financial institutions we estimate both catastrophic and operational risk measures over the period 1973-2001. We find evidence of cyclical components in both the catastrophic and operational risk measures obtained from the Generalized Pareto Distribution and the Skewed Generalized Error Distribution. Our new, comprehensive approach to measuring operational risk shows that approximately two thirds of financial institutions' returns represent compensation for operational risk. Moreover, we find that large unexpected losses are more likely to emanate from operational risk events and that the value at risk from operational risk events is significantly higher than the value at risk from all possible risk events.

*Keywords:* operational risk, catastrophic risk, value at risk, extreme value theory, skewed fat tailed distribution.

*JEL Code:* G20, C13