

# The Importance of Detecting The Presence of Long Run Dependencies in Time Series Analysis

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It has been known for a while that the presence of long run dependencies in time series can confound analyses using statistical procedures that assume Gaussian or Poisson distributions. The implications are that unless this long memory effect is identified and factored into consideration, statistical conclusions assuming Gaussian and Poisson distributions can be overly biased.

The report estimates the presence of long memory(LRD) in the stream of daily visitors, arriving from various sources to New Zealand from 1997 to 2010, using selected estimators of the Hurst-exponent. It is found that, after minimising the effects of short-term trends, periodicities, and cycles, there exist significant long memory embedded in data of all sources and in the aggregate.

Further, existence of strong embedded “long memory” implies the existence of the “Joseph Effect” – that good times beget good times and bad times beget bad – in the underlying process and may have interesting implications for policy makers in the tourism industry in this particular case.

Field of Research: Contemporary Issues in Economic and Financial Research, Development and Policy, Migration and Tourism, International Trade, Long Run Dependencies, Hurst Exponent.

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