Maximum entropy models for financial systems

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Stellingen

Behorend bij het proefschrift

Maximum Entropy Models for Financial Systems

1. Recent events in the world economy, pave the road for an interdisciplinary academic effort to develop tools from complexity theory, as a complement to existing economic modelling approaches.

   S. Battiston et al., Science **351** (2016) 818-819.

2. The fact that purely local information is enough to reproduce the large-scale structure of the ITN does not strictly imply that additional mechanisms should be discarded.

   R. Mastrandrea et al., Phys. Rev. E **90** (2014) 062804

3. Subject to the observed system, maximum-entropy can provide a greatly distorted picture of it or a very accurate one.

   T. Squartini et al., Scientific Reports **3** (2013) 3357

4. Despite their limited reliability, empirical correlation matrices are of great importance in data analysis.

   L.Laloux et al., Phys. Rev. Lett **83** (1999) 1467

5. Binary time series can be analysed with the aid of much simpler mathematical models than required by non-binary data.

   (*Chapter 1*)

6. Macroeconomic models have mainly focused on the weighted representation, because economic theory perceives the latter as being a priori more informative than the purely binary representation.

   (*Chapter 2*)

7. The occurrence probability of a network will be guided by the important requirement that the expected topology should not depend on the (arbitrary) units of measure chosen to measure the link weights.

   (*Chapter 2*)

8. The simple knowledge of the direction of increments of each stock can reproduce the complex structure successfully.

   (*Chapter 3*)

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