

7th International Conference on Applications of Physics in Financial Analysis 2009

(APFA7)

Journal of Physics: Conference Series Volume 221

**Tokyo, Japan
1-5 March 2009**

Editors:

**Misako Takayasu
Yuichi Ikeda**

**Tsutomu Watanabe
Hideki Takayasu**

**ISBN: 978-1-61738-655-8
ISSN: 1742-6588**

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2009) by the Institute of Physics
All rights reserved.

Printed by Curran Associates, Inc. (2010)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Rank-Correlations and Value-Correlations of Gross Domestic Product per Capita in Latin American Countries	1
<i>F. O. Redelico, A. N. Proto, P. Clippe, M. Ausloos</i>	
Fractal Geometry of Prior-to-Crash Market Situations: The NASDAQ100 April 2000 Crash Case	8
<i>F. O. Redelico, M. N. Piacquadio</i>	
Random Matrix Theory Filters and Currency Portfolio Optimisation	15
<i>J. Daly, M. Crane, H. J. Ruskin</i>	
A Media Information Analysis for Implementing Effective Countermeasure against Harmful Rumor	29
<i>M. Nagao, K. Suto, A. Ohuchi</i>	
Cascade Dynamics on Clustered Network	40
<i>Y. Ikeda, T. Hasegawa, K. Nemoto</i>	
The Bursting of Housing Bubble as Jamming Phase Transition	46
<i>K. Nishinari, M. Iwamura, Y. U. Saito, T. Watanabe</i>	
The Difference of Growth Rate Distributions between Sales and Profits	55
<i>A. Ishikawa, S. Fujimoto, M. Tomoyose</i>	
A Multiplicative Stochastic Process Deriving the Probability Distribution in Exact Form	67
<i>S. Fujimoto, A. Ishikawa, M. Tomoyose</i>	
Non-Gibrat's Law and the Size Dependence of Growth Rate Distributions	78
<i>M. Tomoyose, S. Fujimoto, A. Ishikawa</i>	
Log-Amplitude Statistics of Non-Gaussian Fluctuations	85
<i>K. Kiyono</i>	
Bayesian Inference with an Adaptive Proposal Density for GARCH Models	90
<i>T. Takaishi</i>	
Community Structure in a Large-Scale Transaction Network and Visualization	101
<i>T. Iino, K. Kamehama, H. Iyetomi, Y. Ikeda, T. Ohnishi, H. Takayasu, M. Takayasu</i>	
Structure Analyses of a Large-Scale Transaction Network through Visualization Based on Molecular Dynamics	113
<i>K. Kamehama, T. Iino, H. Iyetomi, Y. Ikeda, T. Ohnishi, H. Takayasu, M. Takayasu</i>	
The Low Volatility Fluctuations Regime of the Exponential Ornstein - Uhlenbeck Model	122
<i>G. Bormetti, V. Cazzola, D. Delpini, G. Montagna, O. Nicosini</i>	
Dependence of the Number of Dealers in a Stochastic Dealer Model	132
<i>K. Yamada, H. Takayasu, M. Takayasu</i>	
Time Scale Defined by the Fractal Structure of the Price Fluctuations in Foreign Exchange Markets	142
<i>Y. Kumagai</i>	
Forecasting the Portuguese Stock Market Time Series by Using Artificial Neural Networks	149
<i>M. Isfan, R. Menezes, D. A. Mendes</i>	
Life-Span Distributions of Supermarket Products	162
<i>H. Ueno, T. Watanabe, M. Takayasu</i>	
Simulating the Microstructure of Financial Markets	169
<i>T. Preis</i>	
Author Index	