Special feature: Econophysics 2017: synergetic fusion of econophysics and other fields of science—Part II

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Workshop “Econophysics 2017: Synergetic Fusion of Econophysics and Other Fields of Science” was held 7–8 December 2017. The workshop addressed a number of largely unanswered questions such as how statistical physics and network science should be used to provide the right microfoundations for macroeconomics with utilization of the other fields of science. More than 60 participants presented their original studies and actively engaged in discussions of the questions and exchanges of their ideas.

Four papers (Inoue 2018; Nakamoto and Ikeda 2018; Ikeda and Iyetomi 2018; Maskawa et al. 2018) have been published in Special Features on Econophysics 2017: Synergetic Fusion of Econophysics and Other Fields of Science—Part I, *Evolutionary and Institutional Economics Review*, Vol. 15, No. 2, December 2018. The following is a brief summary of the other four papers as major outcomes from the workshop.

The article “Macroscopic features of a production network and sequential graph drawing”, authored by Fujita (2019), proposed a new method that can generate successive layouts of changing large-scale complex networks to visualize series of Japanese production networks with supplier–customer link directions. The analysis successfully shows how the bow-tie structure changes with time to find stable core parts and ephemeral peripheral parts.

The article “Statistical law observed in inactive rate of firms”, authored by Ishikawa (2019), analyzed the dependence of the inactive rate of firms on firm-size variables: total revenue, net income, total assets, and net assets in Japan, Germany, Spain, France, the United Kingdom, Italy, Korea, and the Netherlands during 2015 and 2016. The author showed that the inactive rate of firms is constant regardless of the firm-size variables in the large-scale data range, while the inactive rate increases under a power-law function as financial variables decrease in the mid-scale data range.

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The article “Exogenous shock and multifractal random walk”, authored by Kuroda (2019), developed a log-volatility process model for multifractal random walk by considering exogenous shock and volatility relaxation. The author asserted that the convergence of the scale limit of the log-volatility process is obtained for transaction with different investment time horizons, using the method of cluster expansion.

The article “Analyzing outliers activity from the time-series transaction pattern of bitcoin blockchain”, authored by Islam (2019), analyzed bitcoin time-series transaction patterns. The author investigated bitcoin’s weekly patterns as a real economic currency that has been minted, stored, and exchanged inside the bitcoin blockchain network. The author identified outliers’ activities with the help of computer simulation and descriptive statistical analysis. The findings in this study give us some stylized facts of the time-series in cryptocurrency transactions.

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