# Grouping property of complex network in financial markets.

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We investigate the grouping coefficients of industry sectors in the complex network based on stock data for US and Korean stock markets. The complex networks are constructed by the minimal spanning tree (MST). We proposed a novel approach based on the shortest path length (SPL) between stocks to quantify the grouping property of industry sectors. We find that the grouping coefficient for the US have a higher value than those of the Korean stock market. We also find that the grouping coefficients calculated based on the correlation matrix, which filtered the random and largest eigenvalue parts by the random matrix theory, have a higher value than those of the original network. In particular, for the Korean stock market the conglomerates, which have the companies belonging to diverse industry sectors, have a significant grouping coefficient.

Keywords: complex network, minimum spanning tree, grouping coefficient, random matrix theory

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