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Estimating Economic Index Trends Using Statistical and Computational Simulations CHANYEOL KIM, RICHARD KYUNG, Choice Research Group — In order to speculate about the future of an economy, it is crucial to understand economic trends. The fundamental relationship between the share price of a companys stock and its per-share earnings, also known as the P/E ratio, is a good indicator of the trend of the economy. While investors have used the P/E ratio to determine whether to buy or sell a certain stock, relatively less attention has been paid to the significance of the P/E ratio in terms of its ability to reflect the status of the economy. This paper collected about a centurys worth of P/E ratio data and used the Gumbel distribution to analyze the data. Then, the processed data were plotted in a frequency graph in order to visualize the general trend of the data. In addition, the data were plugged into MATLAB, a programming software, and were experimented with multiple fitting models that could offer further insight to the data trend. Using these methods revealed that lower P/E values are more likely to repeatedly occur, while higher P/E values are much less likely to repeatedly occur.

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