



The University of Chicago  
Department of Statistics

Master's Seminar

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**Cointegration Analysis**

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**110 Eckhart Hall, 5734 S. University Avenue**

### **ABSTRACT**

Futures markets are considered important to hedgers and speculators. Therefore, they are relevant to stock management. This is tested empirically by applying the methodology of cointegration analysis. In this paper, we introduce the cointegration. So what is the cointegration? For example, a *stock market index* and the price of its associated *futures contract* move through time, each roughly following a random walk. We try to test the hypothesis that there is a *statistically significant* connection between the futures price and the spot price. This could now be done by finding a cointegrating vector. In my paper by using two intraday stock BP and Mobile whose series are non-stationary, we try to find a stationary linear combination of them. Meanwhile, I also introduce the unit root test since cointegration is a means of valid hypothesis testing between two variables having *unit roots* (Integrated of order one). The data analysis result shows that the cointegrated series is stationary during a short time. In the long run, the cointegrated series is non-stationary.