

FINANCIAL ENGINEERING PRACTITIONERS SEMINAR PRESENTS

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***TITLE: A Profitable Trading and Risk Management Strategy in
Presence of Transaction Cost
Friday, February 12, 2010
Ross 1210 2 - 4PM***

ABSTRACT

We present a new profitable trading and risk management strategy with transaction cost for an adaptive equally weighted portfolio. Moreover, we implement a rule-based expert system for the daily financial decision making process by using the power of spectral analysis. We use several key components such as principal component analysis, partitioning, memory in stock markets, percentile for relative standing, the first four normalized central moments, learning algorithm, switching among several investments positions consisting of short stock market, long stock market and money market with real risk-free rates. We find that it is possible to beat the proxy for equity market without short selling for S&P 500-listed 168 stocks during the 1998-2008 period and Russell 2000-listed 213 stocks during the 1995-2007 period. Our Monte Carlo simulation over both the various set of stocks and the interval of time confirms our findings. This is a joint work with Michael J. Bommarito.

BIO:

Ahmet Duran is an Assistant Professor of Mathematics at the University of Michigan. His areas of expertise include mathematical finance and economics, quantitative finance, numerical optimization, mathematical modeling, data analysis, time series analysis, high performance computing and networking simulations. He did projects for LGT Capital Management, RiskMetrics, the International Foundation for Research in Experimental Economics, and National Science Foundation. He is the author of a number of papers in Quantitative Finance, Optimization Methods & Software, Numerical Functional Analysis and Optimization, SIAM, IEEE and other journals. He has reviewed papers for Quantitative Finance journal and grant proposals for NSF. He has reviewed books for MIT Press, Pearson Addison-Wesley, and Wiley-Blackwell in quantitative finance, numerical analysis, and financial economics. He has taught Computational Finance, Mathematics of Finance and Numerical Methods with Financial Applications in the U of M Financial Engineering and Actuarial/Financial Mathematics programs. He has his Ph.D. in Mathematics from University of Pittsburgh and his M.S. in Computer & Information Sciences from University of Delaware