Ali Habibnia

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Contact Information

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Research Interests

Nonlinear Time Series Econometrics, Macroeconomic and Financial Forecasting, Statistical Machine Learning, High Dimensional Statistics, Economic Networks

Current Research

Forecasting using Many Predictors with Neural Network-Based Dynamic Factor Models, Econometric Modeling of Connectedness in Financial Markets and Systemic Risk

Education

London School of Economics and Political Science, London UK

Ph.D. Candidate, Statistics, (expected graduation date: 2016)

- Supervisor(s): Dr. Matteo Barigozzi & Dr. Angelos Dassios

Cass Business School, London UK

M.S., Quantitative Finance, 2012

- Supervisor: Prof. Giovanni Urga - Advisor: Lorenzo Trapani

University of Tehran, Tehran, Iran

M.S., Economics & E-Commerce, 2010

- Supervisor: Prof. Akbar Komijani & Dr. Shapour Mohammadi - Advisor: Prof. Caro Lucas

B.A., Economics, 2007

Honors and Awards

Economic & Social Research Council (ESRC) & Systemic Risk Centre Doctoral Fellowship, 2014

Department of Statistics Research Studentship, LSE, 2012-2013

Awarded by National Organization for Development of Exceptional Talents (NODET) for being as an Exceptional talented student, University of Tehran, 2007

Academic Experience

Teaching Assistant, LSE 2012 - present
Elementary Statistical Theory ST102, Applied Regression ST211, Time Series and Forecasting ST304, Quantitative Methods ST107.

Research Assistant, LSE Sep 2013 - Mar 2014
Research Assistant for Prof. Peter Pope, Department of Accounting and Finance.

Teaching Assistant, LBS Jan 2013 - Aug 2013
Global Business Environment (Taught by: Ben Broadbent and Elias Papaioannou)

Member of Student Experience Committee, Cass Business School Sep 2011 - Jun 2012
Course Representative and a member of Cass Student Experience Committee.

Executive Board Member, Iranian Economists Association (IEA) Jul 2008 - Jul 2012

WORKSHOP INSTRUCTOR

Artificial Intelligence in Economic and Financial Forecasting, (21hrs),
(Sharif University of Technology, University of Tehran, Agriculture Bank of Iran)

Technical Analysis in Financial Markets, (24hrs),
(More than 20 times in universities and financial companies)

Financial Modelling with MATLAB, (20hrs), (Bank Melat, Iran)

Econometrics with EVIEWS, (21hrs)(University of Tehran, Iran)

RESEARCH PAPERS

Forecasting using many predictors with neural network factor models
Modelling and forecasting financial returns aid understanding of market dynamics, but challenges include non-linearity, non-gaussianity, and comovenet of stock returns. This paper proposes a non-linear forecasting technique based on an improved factor model with two neural network extensions, which would be able to capture both non-linearity and non-normality of a high-dimensional dataset. This proposed model has been developed on the basis of statistical inference, and Special emphasis is given to data-driven specification. It has been proved that, a linear factor model is a special case of this neural network factor model.

Forecasting Financial Volatility By Introducing a GA-Assisted SVR-GARCH Model
An accurate forecast of volatility is essential to estimate the value of market risk and it is one of the primary inputs to a wide range of financial models. Many researchers use GARCH models to generate volatility forecasts and these models are usually estimated using maximum likelihood (ML) procedures, assuming that the data are normally distributed. In this paper, we will show that GARCH models can be estimated using support vector regressions (SVRs), as a nonparametric estimation technique, and that such estimates have a higher predicting ability than those obtained via common ML methods. In this study a novel method, named as GA assisted SVR has been introduced, which a genetic algorithm simultaneously searches for SVRs optimal parameters and kernel parameter.

Forecasting World Gold Price Using Optimized Neuro-Fuzzy with Genetic Algorithm (Ga-Anfis) and Smooth Transition Regression with Long Memory (Fi-Star) Modelling
The main purpose of this paper is to present a novel and precise hybrid model to forecast the world gold price. Predictability and nonlinearity assumption and chaoticity of time series data, have been examined by Largest Lyapunov Exponent (LLE) and BDS test. The results showed using nonlinear models is more appropriate. Considering markets are highly correlated, the lags of oil price, US dollar index and stock market index has been used as predictors. The first model is based on the combination of artificial intelligence techniques which structured optimized Adaptive Neuro-Fuzzy Inference System by Genetics Algorithm. Since there are a numerous combination of inputs can be exercise and there is exist a complex and nonlinear relationship between independent variables, in this paper, the idea of a combination of genetic algorithm and a neuro-fuzzy system is arose to find the best of the best significant inputs and optimal lags. The second model is Smooth Transition Autoregressive concerning long memory effect.The results showed that the hybrid artificial intelligence model produced more accurate forecasts and input selection and choosing appropriate model based on the nature of the data can play vital roles in forecast models.

PUBLICATIONS

Real Exchange Rate Misalignment and its Determinants: A BEER Approach by Using NLSTR Method to the Case of Iran, M. Musai, H. Mardantabar and A. Habibnia. American Journal of Scientific Research, Issue 62(2012), pp.15-25

Developing Mathematical Models for Forecasting on EURJPY in Foreign Exchange Market, A. Haeri and A. Habibnia, Iranian Economics Review, Winter 2011

Book chapter, Financial Economics I, Ghadir Mahdavi, 2009, chapter 5 (Modern Portfolio Theory), Published by Iran University of Economic Science

Conference Presentations

Financial Forecasting with Many Predictors using Nonlinear Dynamic Factor Models. 37th Conference in Probability and Statistics, Nottingham, UK, Apr 2014.

Forecasting US Business Cycles Using Adaptive Neuro Fuzzy Inference Systems and Smooth Transition Regression Models. 26th European Conference on Operational Research (EURO XXVI), Rome, Italy, Jul 2013.

Forecasting Financial Volatility by a Genetic Algorithm Support Vector Regression. 36th Conference in Probability and Statistics, Lancaster, UK, Mar 2013.

Foreign Exchange Rate Risk Measurement and Management. Fifth Conference on Development of Financing System, Tehran, Iran, Jan 2013.

Time Series Forecasting using Wavelet Kernel Support Vector Machine. LSE Time Series Reading Group, London, UK, Oct 2012.

Stock Market Development and Economic Growth. The national Conference of Iran Financial Market by Iran Expediency Council, Iran, Dec 2010

Auxiliary Tool for Investors in Mutual Funds. A. Habibnia, H. Shahmoradi, The International Conference Development of Financing System, Iran, May 2009

Professional Experience

Pantheon Ventures, London UK

Quantitative Research Analyst Jul, 2013 - Aug, 2013
Theoretical development and implementation of financial models in MATLAB & R.

Rahbord Investment Co, Tehran Iran

Head of Research Department Jun, 2008 - Jan, 2011
Development of trading strategies and mutual fund management.

Wise Enterprises FZCO, Dubai UAE

Financial Advisor Nov, 2009 - Jun, 2010
Providing expert advice in realm of trading steel billet futures in London Metal Exchange (LME) and Gold Market.

Nikan Capital, Tehran Iran

Stock Market Analyst Assistant Aug, 2005 - Jan, 2006
Team member of an econometric modelling group.

Computer Skills

Econometric Packages: R, EViews, G@RCH, OX Metrics, Stata, JMulTi
Languages: MATLAB, LaTeX, PHP, HTML some use of C and C++
Financial Packages: Bloomberg Terminal, AmiBroker, MetaTrader, MetaStock