THESIS

FORECASTING STOCK PRICE INDEX USING BAYESIAN COMBINATION APPLIES IN INDONESIA STOCK EXCHANGE (IDX),
July 1st, 1997 – February 17th, 2012

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I am Channa Khing.

Sincerely aware of this thesis, it was represented result of masterpiece by me. Title of this thesis is "Forecasting Stock Price Index Using Bayesian Combination Applies in Indonesia Stock Exchange (IDX), July 1st, 1997 – February 17th, 2012." It is accumulated by myself. The ideas, statements, bibliographies and notes, my knowledge in this thesis, are written maintain in references. I strongly recognize that my writing does not comprehend others’ script, apart from those that have been situated and point out in references.

Yogyakarta, April 3rd, 2012

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LIST OF ABBREVIATIONS

ACF : Autocorrelation Function
A\(\hat{\phi} R^2\) : Adjusted Squared Residual or \( R \) bar squared
ADF : Dickey-Fuller Test
AIC : Akaike Information Criterion
AR : Autoregression
ARCH : Autoregression Conditional Heteroscedasticity
BEI : Bursa Efek Indonesia (Indonesian Language or IL)
BIC or SC : Bayes Information Criterion or Schwarz Criterion
BMA : Bayesian Model Averaging
CSD : Conditional Standard Deviation
CSPI : Composite Stock Price Index
CW : Clark and West Statics
DGP : Data Generating Process
GARCH : Generalized Autoregressive Conditional Heteroscedasticity
JCI : Jakarta Composite Index or in IL: Indeks Harga Saham Gabungan (IHSG)
JSX : Jakarta Stock Exchange Index
iid : Independent, identically distributed
IDR : Indonesia Rupiah
IDX : Indonesia Stock Exchange
ME : Mean Error
MAE : Mean Absolute Error
MAPE : Mean Absolute Percent Error
MSE : Mean Square Error
MSPE : Mean Square Prediction Error
IST : Investment Strategy Team
OLS : Ordinary Least Square
<table>
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<tr>
<td>PACF</td>
<td>Partial Autocorrelation Function</td>
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<tr>
<td>PDF</td>
<td>Probability Distribution Function</td>
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<td>RMSE</td>
<td>Root Mean Square Error</td>
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<td>SMC</td>
<td>Sequential Monte Carlo</td>
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<tr>
<td>SSR</td>
<td>Sum Squared Residuals</td>
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<td>SV</td>
<td>Stochastic Volatility</td>
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<td>WN</td>
<td>White Noise Model</td>
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ABSTRACT

Forecasting of stock price index is measuring the level of stock prices; in addition, its practical application is to compare values at different points in time. Using Bayesian combination in this paper, it is a mixture approach to forecast based on a distribution state planetary of predictive models. We use Bayesian Model Averaging (BMA) to forecast real-time measures of stock price index, employing a large number of real and financial indicators. This aim of this study is to analyze forecasting stock price index in Indonesia Stock Exchange (IDX) index. Moreover, the forecasted time series data is an important issue in finance. It can put forward an up-to-date review of approximation approaches available for the Bayesian implication of Generalized Autoregressive Conditional Heteroskedasticity (GARCH) models. They may be important nonlinearities, asymmetries, and long memory properties in the volatility process. We will introduce GARCH models that give the alternative volatility forecasting models. They can involve that constant updating of parameter estimates. We will explain how to measure and model volatility is an important issue in finance. BMA can give us good reason to improve forecasting when we change away from linear models and average over requirement let GARCH effects in the modernizations to log-volatility. Therefore, BMA consistently dispenses a high posterior weight to models that infer of GARCH models.

Keywords: BMA, GARCH models, factor models, RMSE, MAE, MAPE
INTISARI


Kata Kunci: BMA, GARCH model, faktor model, RMSE, MAE, MAPE