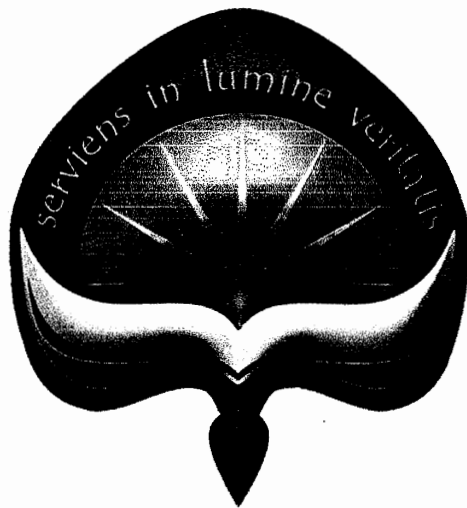


THESIS

**FORECASTING STOCK PRICE INDEX USING
BAYESIAN COMBINATION APPLIES IN INDONESIA
STOCK EXCHANGE (IDX),**

July 1st, 1997 – February 17th, 2012



CHANNA KHIENG

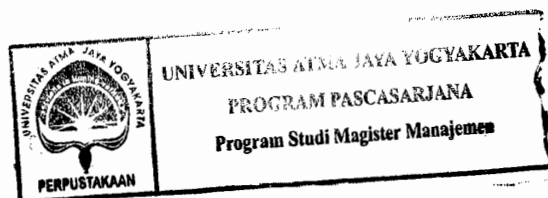
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POSTGRADUATE PROGRAM

MASTER OF MANAGEMENT

UNIVERSITY OF ATMA JAYA YOGYAKARTA

2012





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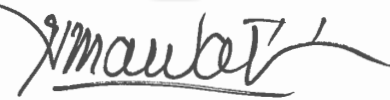
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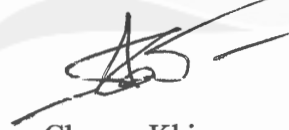
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I am Channa Khing,

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



Channa Khieng

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LIST OF ABBRVIATIONS

ACF	: Autocorrelation Function
Adj. 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 SIC	: Bayes Information Critcrion 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

PACF	: Partical Autocorrelation Function
PDF	: Probability Distribution Function
RMSE	: Root Mean Square Error
SMC	: Sequential Monte Carlo
SSR	: Sum Squared Residuals
SV	: Stochastic Volatility
WN	: White Noise Model



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

Peramalan indeks harga saham adalah mengukur tingkat harga saham, di samping itu, aplikasi praktis adalah untuk membandingkan nilai di berbagai titik dalam suatu kurun waktu. Makalah ini menggunakan metode *Bayesian combination*, yaitu pendekatan campuran untuk meramalkan berdasarkan *state planetary of predictive models*. Makalah ini menggunakan *Bayesian Model Averaging* (BMA) untuk meramalkan real-time ukuran indeks harga saham, mempekerjakan sejumlah besar indikator riil dan keuangan. Tujuan dari penelitian ini adalah untuk menganalisis peramalan indeks harga saham di Indeks Harga Saham Gabungan (IHSG). Selain itu, data time series diperkirakan merupakan masalah penting di bidang keuangan. Hal ini dapat mengajukan peninjauan up-to-date dari pendekatan aproksimasi tersedia untuk *Bayesian* implikasi *Generalized Autoregressive Conditional Heteroskedasticity* (GARCH) model. Mereka mungkin non-linier penting, asimetri, dan sifat memori lama dalam proses volatilitas. Kami akan memperkenalkan model GARCH yang memberikan model peramalan volatilitas alternatif. Mereka dapat melibatkan yang memperbarui konstan estimasi parameter. Kami akan menjelaskan bagaimana mengukur dan volatilitas model adalah isu penting di bidang keuangan. BMA dapat memberi kita alasan yang baik untuk meningkatkan peramalan ketika kita mengubah diri dari model linier dan rata-rata kebutuhan membiarkan efek GARCH dalam modernisasi untuk log-volatilitas. Oleh karena itu, BMA konsisten mengeluarkan berat posterior tinggi untuk model yang menyimpulkan model GARCH.

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