PREDICTING THE TREND OF STOCK MARKET BY EXAMINING ITS RELATIONSHIP WITH MACROECONOMICS VARIABLES

By

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A Bachelor's Thesis
Submitted to the Faculty of

INFORMATION TECHNOLOGY

in partial fulfillment of the
requirements for the Degree of

BACHELOR OF SCIENCE
WITH A MAJOR IN INFORMATION TECHNOLOGY

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July 2009

STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

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Predicting the value of stock market index has been a much discussed topic in both scientific and financial researches. Some of the researches claimed that macroeconomics factors are one of the significant indicators in determining the future values of stock market index. In this study, Dynamic Interaction Network (DIN), which was inspired by a Gene Regulatory Network (GRN) extraction method commonly used in bioinformatics, is used to discover important and complex dynamic relationship between stock market index and macroeconomics factors. The results showed that DIN is capable to reveal and model the patterns of dynamic relationship from the observed variables (i.e. stock market index and macroeconomics factors). Additionally, it is found that extracted network models can be used to predict movement of not only the stock market index but other macroeconomics factors as well in a considerably good-accuracy.

DEDICATION

I dedicate this thesis to my family.

To my mum and dad.

To my sisters: Olivia, Eliza, and Elvina.

And lastly to little Hugo.

ACKNOWLEDGMENTS

First and foremost I present my biggest gratitude to God, for His blessing and guidance during the whole thesis working phase.

For both my advisors, Mr. Lukas and Mr. Harya Widiputra, I am very thankful for the counsels, ideas, revisions, guidance and support. They are very helpful for me to finish my thesis.

To my family, my mom and dad and my sisters, a really big thanks for your support to me in every way from cooking delicious foods to making me laugh after a stressed day.

For all my friends in IT 2005, I am very grateful for all the experience, inside and outside the campus.

To Rama, thank you so much for your support and company all the time.

For other individuals, I have not acknowledge, who either directly or not directly contribute to my thesis work.

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