

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

By

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### 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

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

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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.



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