


FAKULTI : FAKULTI SAINS
TAJUK : PERMOHONAN PELANJUTAN PEMBETULAN TESIS

BUTIRAN PELAJAR	KETERANGAN PELAJAR	ULASAN DAN TINDAKAN FAKULTI	KELULUSAN															
<p>NAMA : PUNG YEAN PING</p> <p>NO K/P @ ISID : 851112145390</p> <p>NO MATRIK : PS133037</p> <p>PROGRAM : DOKTOR FALSAFAH (MATEMATIK)</p> <p>JENIS PENGAJIAN : PENYELIDIKAN</p> <p>BENTUK PENDAFTARAN : SEPENUH MASA</p> <p>PENYELIA : PROF. MADYA DR. MAIZAH HURA BT AHMAD</p> <p>PENYELIA BERSAMA: DR. NORAZLINA BT ISMAIL</p> <p>BIL SEM: 08/16</p> <p>STATUS : PEPERIKSAAN</p> <p>PEMERIKSA LUAR: PROF. MADYA DR. NORIZAN MOHAMED</p> <p>PEMERIKSA DALAM: PROF. DR. MUHAMMAD HISYAM LEE@LEE WEE YEW</p> <p>PENGERUSI: PROF. DR. ZUHAIMY BIN HJ ISMAIL</p> <p>TAJUK TESIS: A HYBRID OF BEKK GARCH WITH NEURAL NETWORK FOR MODELLING AND FORECASTING TIME SERIES</p> <p>MUKASURAT : 1/1</p>	<p>1.1 Pelajar telah menjalani peperiksaan dan kronologi seperti di bawah:</p> <table border="1"> <thead> <tr> <th>Bil</th> <th>Tarikh</th> <th>Perkara</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>13 Ogos 2017</td> <td>Pelajar telah menghantar ke SPS bagi tujuan peperiksaan lisan.</td> </tr> <tr> <td>2</td> <td>22 November 2017</td> <td>Peperiksaan lisan dijalankan dan pelajar mendapat keputusan c2/12 bulan dan perlu disemak oleh semua panel pemeriksa dan menjalani peperiksaan lisan semula.</td> </tr> <tr> <td>3</td> <td>25 November 2018</td> <td>Tarikh akhir pelajar perlu menghantar pembetulan tesis ke SPS.</td> </tr> <tr> <td>4</td> <td>16 Januari 2019</td> <td>SPS menerima permohonan pelajar dan juga surat sokongan dari penyelia.</td> </tr> </tbody> </table> <p>1.2 Pelajar telah memohon pelanjutan penghantaran tesis bagi tujuan pemeriksaan semula tesis. Permohonan penangguhan di atas sebab yang berikut :</p> <p>i. Penyelia pelajar perlu lebih masa bagi semakan pembetulan tesis pelajar</p>	Bil	Tarikh	Perkara	1	13 Ogos 2017	Pelajar telah menghantar ke SPS bagi tujuan peperiksaan lisan.	2	22 November 2017	Peperiksaan lisan dijalankan dan pelajar mendapat keputusan c2/12 bulan dan perlu disemak oleh semua panel pemeriksa dan menjalani peperiksaan lisan semula.	3	25 November 2018	Tarikh akhir pelajar perlu menghantar pembetulan tesis ke SPS.	4	16 Januari 2019	SPS menerima permohonan pelajar dan juga surat sokongan dari penyelia.	<p>1.1 Pelajar telah memohon untuk pelanjutan tempoh penghantaran pembetulan tesis selama 3 bulan dan mendapat sokongan dari penyelia.</p> <p>1.3 Dokumen seperti dilampiran.</p>	<p>Disokong / Tidak disokong  Dekan/TD (Akademik) & Cop Rasmi</p> <p>PROF. MADYA DR. NOOR HAZARINA BT HAZRI Tarikh: _____ (Pembangunan Sistem & Profesional Sekolah Pengajian Siswazah Universiti Teknologi Malaysia 81310 UTM, Johor Bahru, Johor)</p> <p>Setuju / Tidak Setuju (Ulasan)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Pengerusi Mesyuarat Jawatankuasa Akademik Pengajian Siswazah Universiti (JAPSU) & Cop Rasmi</p> <p>Tarikh : _____</p>
Bil	Tarikh	Perkara																
1	13 Ogos 2017	Pelajar telah menghantar ke SPS bagi tujuan peperiksaan lisan.																
2	22 November 2017	Peperiksaan lisan dijalankan dan pelajar mendapat keputusan c2/12 bulan dan perlu disemak oleh semua panel pemeriksa dan menjalani peperiksaan lisan semula.																
3	25 November 2018	Tarikh akhir pelajar perlu menghantar pembetulan tesis ke SPS.																
4	16 Januari 2019	SPS menerima permohonan pelajar dan juga surat sokongan dari penyelia.																

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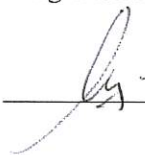
15 January 2019

Request an Extension of Thesis Submission Date

I am Pung Yean Ping (851112-14-5390) with matrix no PS133037 requests for late submission of papers for a period of three months to 25 February 2019.

My supervisor and I need time to read to make sure there are no mistakes in the thesis.
Sorry for any inconvenience caused. Thank you.

Pung Yean Ping



Deadline. 25/11/2018

Supervisor : Dr. Norazlina Ismail



Department of Mathematical Sciences,
Faculty of Science
Universiti Teknologi Malaysia
81310 Johor Bahru
Johor, Malaysia





**LAPORAN PENILAIAN OLEH PEMERIKSA
IJAZAH DOKTOR FALSAFAH MELALUI PENYELIDIKAN
(EXAMINERS' REPORT FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY BY RESEARCH)**

Tajuk Tesis : **A HYBRID OF BEKK GARCH WITH NEURAL NETWORK FOR
(Title of Thesis) MODELLING AND FORECASTING TIME SERIES**

Nama Pelajar : **PUNG YEAN PING
(Name of Candidate)**

Nama Penyelia Utama : **PROF. MADYA DR. MAIZAH HURA BT AHMAD
(Name of Main Supervisor)**

Kami, sebagai Panel Pemeriksa, telah menilai tesis di atas dan mengadakan ujian lisan untuk ijazah kedoktoran (We, the Panel of Examiners, have successfully evaluated the above thesis and examined him/her for the degree of Doctor of Philosophy) pada (on) **22/11/2017** dan mencapai satu keputusan seperti berikut: (and arrived at the following decision:)

A: KEPUTUSAN/RESULT

KEPUTUSAN VIVA (Decision:)	TEMPOH PEMBETULAN TESIS: (Duration of corrections:)	TESIS YANG TELAH DIBETULKAN PERLU DISAHKAN OLEH: (The corrected thesis will be verified and certified by:)	Sila tanda (/)
a	Tiada pembetulan/no correction	Penyelia/Supervisor	
b1	Maksimum 3 bulan (Maximum 3 months)	Penyelia/Supervisor	
b2	Maksimum 6 bulan [Maximum 6 months]	Pemeriksa Dalam/Internal Examiner	
		Pemeriksa Luar/External Examiner	
c1	Maksimum 12 bulan [Maximum 12 months] Pemeriksaan semula tesis [Thesis Reexamination]	Pemeriksa Luar dan Dalam [External and Internal Examiners]	
c2	Maksimum 12 bulan [Maximum 12 months] Pemeriksaan semula tesis dan viva [Thesis reexamination and reviva]	Pemeriksa Luar dan Dalam [External and Internal Examiners]	✓
d	3 Bulan/3 months)	Penyelia/Supervisor	
e	Gagal [Fail]	-	

B. PERAKUAN PANEL PEMERIKSA

	NAMA/[NAME]	TANDATANGA N/ [SIGNATURE]	TARIKH/[DATE]
PEMERIKSA LUAR [EXTERNAL EXAMINER]	PROF. MADYA DR. NORIZAN MOHAMED		22/11/2017
PEMERIKSA LUAR 2 EXTERNAL EXAMINER 2			
PEMERIKSA DALAM 1 INTERNAL EXAMINER 1	PROF. DR. MUHAMMAD HISHAM LEE@LEE WEE YEW		22/11/2017
PEMERIKSA DALAM 2 INTERNAL EXAMINER 2			
PENGERUSTI [CHAIRMAN]	PROF. DR. ZUHAIMY BIN HJ ISMAIL		22/11/2017
PEMBANTU PENERUSTI [ASST. CHAIRMAN]	DR. MUHAMMAD FAUZEE BIN HAMDAN		22/11/2017



**LAPORAN PENILAIAN OLEH PEMERIKSA
IJAZAH DOKTOR FALSAFAH MELALUI PENYELIDIKAN
(EXAMINERS' REPORT FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY BY RESEARCH)**

C. MERIT/MERIT YA/YES TIDAK/NO

- Calon adalah cemerlang untuk ijazah ini dan dianugerahkan ijazah dengan merit.
The candidate is outstanding for this degree and should be awarded the degree with merit.
- Calon layak dianugerahkan dengan 'Merit' sekiranya keputusan peperiksaan lisan adalah A atau B1 sahaja.
The candidate may be awarded with 'Merit' provided that the result of viva-voce session is A or B1 only.

D. PERNYATAAN LAIN:

E. PERAKUAN PANEL PEMERIKSA

	NAMA/[NAME]	TANDATANGAN/ [SIGNATURE]	TARIKH/[DATE]
PEMERIKSA LUAR [EXTERNAL EXAMINER]	PROF. MADYA DR. NORIZAN MOHAMED		22/11/2017
PEMERIKSA LUAR 2 EXTERNAL EXAMINER 2			
PEMERIKSA DALAM 1 INTERNAL EXAMINER 1	PROF. DR.MUHAMMAD HISYAM LEE@LEE WEE YEW		22/11/2017
PEMERIKSA DALAM 2 INTERNAL EXAMINER 2			
PENGERUSI [CHAIRMAN]	PROF. DR.ZUHAIMY BIN HJ ISMAIL		22/11/2017
PEMBANTU PENERUSI [ASST. CHAIRMAN]	DR. MUHAMMAD FAUZEE BIN HAMDAN		22/11/2017

**SEKOLAH PENGAJIAN SISWAZAH
UNIVERSITI TEKNOLOGI MALAYSIA
LAPORAN Pengerusi Doktor Falsafah / IJAZAH SARJANA
(CHAIRMAN REPORT OF DOCTOR OF PHILOSOPHY / MASTER OF PHILOSOPHY)**

TARIKH (Date) : 22/11/2017

MASA (Time) : 9.00 pagi

TEMPAT (Venue) : Bilik Viva 3
Sekolah Pengajian Siswazah, (School of Graduate Studies)
Tingkat 2, Blok F54 (2nd floor, Block F54)
UTM, Johor Bahru

NAMA PELAJAR : Pung Yean Ping
(Name of Student)

PROGRAM : Doktor Falsafah (Matematik)
(Programme)

FAKULTI : Fakulti Sains
(Faculty)

PENGERUSI : Prof. Dr. Zuhaimy bin Hj Ismail
(Chairman)

PEMBANTU PENERUSI : Dr. Muhammad Fauzee Bin Hamdan
(Assistant Chairman)

PEMERIKSA LUAR : Prof. Madya Dr. Norizan Mohamed
(External Examiner)

PEMERIKSA DALAM : Prof. Dr. Muhammad Hisyam Lee @ Lee Wee Yew
(Internal Examiner)

TAJUK (Title) : A Hybrid Of Bakk Garch With Neural Network For
Modelling And Forecasting Time Series

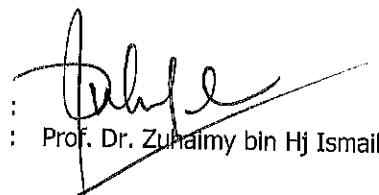
KOMEN SELEPAS VIVA

(The following are comments from the Viva Session)



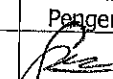
TAJUK BARU (New Title) :

Seperti yang dicadangkan oleh Panel Pemeriksa (As proposed by Panel of Examiner)
jika ada, (if any) (Nota: Sila rujuk panduan tajuk tesis yang dilampirkan):

Tandatangan (Signature)
Nama (Name)


: Prof. Dr. Zuhaimy bin Hj Ismail

Tarikh (Date) : 21/11/2017

Panel	Pemeriksa Luar	Pemeriksa Luar 2	Pemeriksa Dalam	Pemeriksa Dalam 2	Pembantu Pengerusi	Tarikh
Tandatangan						21/11/2017

KOMEN (General Comments) :

The proposed method proof was not provided.

Abstrak (Abstract)

Miss two sentences in malay abstract.

Gold prices and USD mentioned in the abstract not reflected in title.

The reason why need to develop the best model not stated clearly.

The last sentence used hidden nodes

Bab 1 (Chapter 1)

Section 1.3 : Did not achieve some of the objectives. Rewrite the objectives based on the results.

Research problem not stated in section 1.2, but what it mentioned was the research question

Rewrite the problem statement. Rewrite the contributions.

Bab 2 (Chapter 2)

Need to improve. Section 2.1 just only a sentence.

Must be emphasis between the methods and gold prices that have been applied.

Need to rewrite to cover various methods have been used related to gold prices and USD.

Recheck the references.

Refer thesis for other corrections.

2.4 and 2.6 : need rewrite to find the references to fill the gap between previous researches.

Bab 3 (Chapter 3)

Section 3.5 and 3.6 need to improve. Give references that can support the model. Fig3.1 and eq3.26 need references. Methodology stated need to rewrite. Fig 3.2 too general. Need to specify and give references. yang dinyatakan agak lemah terutama bahagian neural network. Zhat change to ehat and redefine. (Refer thesis). Revise Eq 3.27

Proposed trivariate GARCH in mean model need proper proof. Need to do simulation.

Flowchart Fig 3.3 not appropriate.

Refer thesis for other corrections

Artificial neural network and hybrid model need to be improved. Section 3.8 removed.

Bab 4 (Chapter 4)




Need to verify the models on page 89 and 90 for bivariate GARCH

Tandatangan (Signature) :

Nama (Name)

: Prof. Dr. Zuhafmy bin Hj Ismail

Tarikh (Date) : 21/11/2017

Panel	Pemeriksa Luar	Pemeriksa Luar 2	Pemeriksa Dalam	Pemeriksa Dalam 2	Pembantu Pengerusi	Tarikh
Tandatangan						21/11/2017

Need to verify models on page 97 to 100 for trivariate GARCH. Do the simulation.

p77: need to clarify what is means by highly correlated and slightly correlated, need to add p-value to determine either high or slightly correlated.

Refer to the thesis.

p86: the fig not clearly review.

p89: need to write the equation of ANN.

The results against the general understanding. Need to state why.

Bab 5 (Chapter 5)

Need to verify and proof the model on pages 109 to 113 are the best models of tri bivariate GARCH in mean.

Models built without explanation

Results unable to shows gold price inversely shifts with USD

combine with chapter 4

Refer to thesis

p113: there is no different with the value when goes to 2 or three decimal points. The proposed model is same with exist model.

Bab 6 (Chapter 6)

Need to explain how to select the number of neurons in hidden layer

The input variables for four time period and hybrid models need to be stated

State the equations of hybrid models which were reported in Table 6.2

Eq 6.1, 6.2 and Fig 6.2, 6.3 6.4 need to be explained about the input variables.

combine with chapter 4

p116: give a reference for back propagation.

tab 6.1: state the input variable used.

eq 6.2-6.3:

table 6.2: give the equation used

Give the reason for every steps. Need to justify

p123: the difference very small. Need to justify

Bab 7 (Chapter 7)

the summary and conclusion need to be recheck. Refer the thesis.

Rewrite the conclusion based on the changes made.

NOTA (Notes)

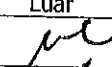

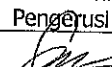
References need to recheck either used or not. Refer to thesis. Format.

Tandatangan (Signature) :

Nama (Name)

: Prof. Dr. Zuhaimy bin Hj Ismail

Tarikh (Date) : 21/11/2017

Panel	Pemeriksa Luar	Pemeriksa Luar 2	Pemeriksa Dalam	Pemeriksa Dalam 2	Pembantu Pengerusi	Tarikh
Tandatangan						21/11/2017

UNIVERSITI TEKNOLOGI MALAYSIA

IJAZAH DOKTOR FALSAFAH (*DEGREE OF DOCTOR OF PHILOSOPHY*)
LAPORAN PEMERIKSAAN TESIS (*EXAMINER'S REPORT ON THESIS*)Nama Calon : Pung Yean Ping
(Name of Candidate)Tajuk Tesis : A Hybrid Of Bekk Garch With Neural
Network For Modelling And Forecasting
Time Series
(Title of Thesis)Fakulti : Fakulti Sains
(Faculty)Nama Pemeriksa dan Institusi : Prof. Dr. Muhammad Hisyam Lee@Lee Wee Yew
(Name of Examiner and Institution) Pejabat TNCA&A
UTM Johor BahruSILA TANDATANGAN DI DALAM RUANG YANG DISEDIAKAN UNTUK PERAKUAN
(Please initial in space provided for the recommendation)

TANDATANGAN

(INITIAL)

1. Perakuan (*Recommendation*)Setelah memeriksa tesis, saya perakuan (*After examining the thesis, I recommend that*)

- a) Calon dianugerahkan ijazah Doktor Falsafah (*The candidate be awarded the degree of Doctor of Philosophy*);.....
- atau (or) b1) Calon dianugerahkan ijazah Doktor Falsafah setelah membuat pembedulan kecil kepada tesis seperti yang disenaraikan dalam laporan ini dan disahkan telah berbuat demikian oleh Penyelia (*The candidate be awarded the degree of Doctor of Philosophy subject to minor corrections as listed elsewhere in this report being made in the thesis to the satisfaction of the Supervisor*);.....
- atau (or) b2) Calon dianugerahkan ijazah Doktor Falsafah setelah membuat pindaan dan pembedulan kepada tesis seperti yang disenaraikan dalam laporan ini dan disahkan telah berbuat demikian oleh Pemeriksa Dalam/Luar berkenaan (*The candidate be awarded the degree of Doctor of Philosophy subject to the amendments and corrections as listed elsewhere in this report being made in the thesis to the satisfaction of the Internal/External Examiner(s)*);.....
- atau (or) c) Calon tidak dianugerahkan ijazah Doktor Falsafah tetapi dibenarkan menghantar semula tesis untuk pemeriksaan setelah menjalani kajian dan penyelidikan lanjutan. (*The candidate not be awarded the degree of Doctor of Philosophy but be permitted to resubmit the thesis for further examination in a revised form after a further period of study and research*);.....
- atau (or) d) Pencapaian calon tidak memuaskan untuk ijazah Doktor Falsafah tetapi dicadangkan satu ijazah yang lebih rendah. (*The candidate not be awarded the degree of Doctor of Philosophy but a lower*);.....
- atau (or) e) Calon tidak dianugerahkan ijazah Doktor Falsafah. (*The candidate not be awarded the degree of Doctor of Philosophy*);.....

WHE.

2. Pendapat (*Opinion*)Saya berpendapat (*In my opinion*),* (Dibenarkan tanda (√) lebih dari satu kriteria dibawah/ *You may tick (√) more than one criteria*).

- a) Tesis ini mengandungi banyak sumbangan asli ke arah pembangunan ilmu dalam bidang berkenaan (*The thesis has substantial original contribution to the knowledge of the subject concerned*);.....
- b) Keaslian tesis dibuktikan dengan penemuan fakta-fakta baru (*The thesis affords evidence of originality by the discovery of new facts*);
- c) Keaslian tesis dibuktikan dengan kebolehan memberi kritikan yang bernas dan jelas (*The thesis affords evidence of originality by exercising of independent critical ability*)
- d) Tesis ini memuaskan dari segi penyampaian (*The thesis is satisfactory in regards to literary presentation*);.....
- e) Terdapat hasil kajian dalam tesis sesuai untuk diterbitkan (*A significant amount of findings in the thesis are worthy of publication*);

3. Merit (*Merit*)Calon layak dianugerahkan 'merit' sekiranya keputusan pemeriksaan tesis pada Bahagian I diatas adalah A dan B1 /*The candidate may be awarded with 'merit' provided that the result of thesis examination in Part I is A or B1*).Dalam membuat perakuan di atas, saya sahkan calon adalah cemerlang untuk ijazah ini dan dianugerahkan ijazah dengan merit. (*In making the above recommendation, I consider that the candidate is outstanding for this degree and should be awarded the degree with merit*).....Tandatangan (*Signature*): WHE.Tarikh (*Date*): 9/10/17

4. Sila berikan ulasan terhadap perkara berikut untuk dijadikan asas perakuan (*Please provide your comments on the following items and use it as the grounds for recommendation*)

4.1 Tajuk Tesis (*Title of the Thesis*)

The title only addresses part of what is proposed in the thesis. The title needs to be changed to reflect its contents.

4.2 Abstrak (*Abstract*)

1. Gold prices and USD mentioned in the abstract not reflected in the title.
2. The reason why the need to develop the best model was not stated clearly.
3. The main aim of the study seems not up to research required to PhD level. Candidate must remember that she is pursuing a PhD in mathematics.

4.3 Pengenalan, Masalah Penyelidikan, Objektif, Skop dll. (*Introduction, Research Problem, Objective, Scope etc.*)

1. Research problem not stated in section 1.2 what was mentioned was research questions. Kindly rewrite.
2. Did not achieve some of the objectives.

Tandatangan (*Signature*): WHE Tarikh (*Date*): 9/10/17

4.4 Kajian Literatur (Literature Review)

1. Sec. 2.1 only have a sentence. It's not sufficient for a section. This section needs to improve.
2. Sec. 2.2 and 2.3 merely mentioned about gold and its relationship with USD in general. Emphasis must be given in term of what methods have been applied.
3. Sec 2.4-2.6 stated studies conducted using MGARCH and ANN for non-related to gold prices and USD is not beneficial for the research. This sec. needs to rewrite to ensure cover various methods have been used related to gold prices and USD.
- 4.5 Metodologi/Bahan/Rekabentuk dan Kaedah (Methodology/Material/Design and Methods)
5. The gaps need to be filled not clearly stated.

1. Proposed trivariate GARCH-in-mean with additional term stated in eq. 3.17 without proper proof will not be acceptable. Proper proof must be provided.
2. Only measures of forecast accuracy used to be included in sec. 3.4.3. Some go for performance measurement in sec. 3.5.1.2.
3. Some typos, kindly refer to the thesis.
4. Part of the flowchart in fig. 3.3 not appropriate and need correction. Kindly refer to the thesis.

4.6 Analisis dan Penyampaian Data/Keputusan (Analysis and Presentation of Data/Findings)

USD index and gold prices have been analyzing with the bivariate and trivariate GARCH models.

Tandatangan (Signature):

Wute

Tarikh (Date):

9/10/17

4.7 Perbincangan dan Interpretasi Keputusan Kajian (*Discussion and Interpretation of Research Results/Findings*)

1. Models built without explanation.
2. Current results unable to show ~~what~~ that gold price inversely shifts with USD.

4.8 Kesimpulan dan Cadangan (*Conclusion and Recommendations*)

—

4.9 Penyampaian Penulisan (*Writing Style*)

Must write in a more concise manner.
Should exercise critical ability.

4.10 Kekuatan Tesis (*Strength of the thesis*)

Co-movement of gold prices and USD was analysed with several methods.

Tandatangan (*Signature*):

Wite

Tarikh (*Date*):

9/10/17

4.11 Kelemahan Tesis (*Weakness of the thesis*)

1. A handful of repeated statement related to data description and the purpose of the study.
2. Test with a single set of data is not sufficient to indicate ~~sup~~ superior of the proposed method.
3. Proposed method without proper proof.

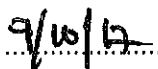
4.12 Kepentingan Kajian (*Significance of the study*)

More fundamental work needs to be carried out before significance study can be achieved.

4.13 Perakuan penganugerahan (*Recommendation for the award*)

No.

4.14 Lain-lain ulasan (*Other comments*)Tandatangan (*Signature*):

Tarikh (*Date*):


UNIVERSITI TEKNOLOGI MALAYSIA

IJAZAH DOKTOR FALSAFAH (DEGREE OF DOCTOR OF PHILOSOPHY)
LAPORAN PEMERIKSAAN TESIS (EXAMINER'S REPORT ON THESIS)

Nama Calon : Pung Yean Ping
(Name of Candidate)

Tajuk Tesis : A Hybrid of BEKK GARCH with Neural Network for Modelling and Forecasting Time Series
(Title of Thesis)

Fakulti : Faculty of Science
(Faculty)

Nama Pemeriksa dan Institusi : Norizan Mohamed, UMT
(Name of Examiner and Institution)

SILA TANDATANGAN DI DALAM RUANG YANG DISEDIAKAN UNTUK PERAKUAN
(Please initial in space provided for the recommendation)

TANDATANGAN

(INITIAL)



1. Perakuan (Recommendation)

Setelah memeriksa tesis, saya perakuan (After examining the thesis, I recommend that)

- a) Calon dianugerahkan ijazah Doktor Falsafah (The candidate be awarded the degree of Doctor of Philosophy);.....
- atau (or) b1) Calon dianugerahkan ijazah Doktor Falsafah setelah membuat pembetulan kecil kepada tesis seperti yang disenaraikan dalam laporan ini dan disahkan telah berbuat demikian oleh Penyelia (The candidate be awarded the degree of Doctor of Philosophy subject to minor corrections as listed elsewhere in this report being made in the thesis to the satisfaction of the Supervisor);.....
- atau (or) b2) Calon dianugerahkan ijazah Doktor Falsafah setelah membuat pindaan dan pembetulan kepada tesis seperti yang disenaraikan dalam laporan ini dan disahkan telah berbuat demikian oleh Pemeriksa Dalam/Luar berkenaan (The candidate be awarded the degree of Doctor of Philosophy subject to the amendments and corrections as listed elsewhere in this report being made in the thesis to the satisfaction of the Internal/External Examiner(s));.....
- atau (or) c) Calon tidak dianugerahkan ijazah Doktor Falsafah tetapi dibenarkan menghantar semula tesis untuk pemeriksaan setelah menjalani kajian dan penyelidikan lanjutan. (The candidate not be awarded the degree of Doctor of Philosophy but be permitted to resubmit the thesis for further examination in a revised form after a further period of study and research);.....
- atau (or) d) Pencapaian calon tidak memuaskan untuk ijazah Doktor Falsafah tetapi dicadangkan satu ijazah yang lebih rendah. (The candidate not be awarded the degree of Doctor of Philosophy but a lower);
- atau (or) e) Calon tidak dianugerahkan ijazah Doktor Falsafah. (The candidate not be awarded the degree of Doctor of Philosophy).....

2. Pendapat (Opinion)

Saya berpendapat (In my opinion),

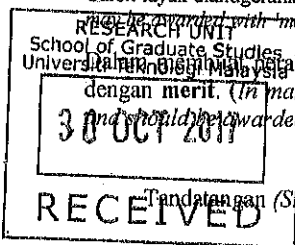
* (Dibenarkan tanda (✓) lebih dari satu kriteria dibawah/ You may tick (✓) more than one criteria).

- a) Tesis ini mengandungi banyak sumbangan asli ke arah pembangunan ilmu dalam bidang berkenaan (The thesis has substantial original contribution to the knowledge of the subject concerned);.....
- b) Keaslian tesis dibuktikan dengan penemuan fakta-fakta baru (The thesis affords evidence of originality by the discovery of new facts);.....
- c) Keaslian tesis dibuktikan dengan kebolehan memberi kritikan yang bernas dan jelas (The thesis affords evidence of originality by exercising of independent critical ability)
- d) Tesis ini memuaskan dari segi penyampaian (The thesis is satisfactory in regards to literary presentation;)....
- e) Terdapat hasil kajian dalam tesis sesuai untuk diterbitkan (A significant amount of findings in the thesis are worthy of publication;)

3. Merit (Merit)

Calon layak dianugerahkan 'merit' sekiranya keputusan pemeriksaan tesis pada Bahagian 1 diatas adalah A dan B1 /The candidate may be awarded with 'merit' provided that the result of thesis examination in Part 1 is A or B1).

Setelah membuat perakuan di atas, saya sahkan calon adalah cemerlang untuk ijazah ini dan dianugerahkan ijazah dengan merit. (In making the above recommendation, I consider that the candidate is outstanding for this degree and should be awarded the degree with merit).....



Tandatangan (Signature):

Tarikh (Date):

30/10/17

4. Sila berikan ulasan terhadap perkara berikut untuk dijadikan asas perakuan (*Please provide your comments on the following items and use it as the grounds for recommendation*)

4.1 Tajuk Tesis (*Title of the Thesis*)

Acceptable

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4.2 Abstrak (*Abstract*)

1. Acceptable but the number of hidden layers should be changed to the number of hidden nodes.

2. Please check the Malay abstract.

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4.3 Pengenalan, Masalah Penyelidikan, Objektif, Skop dll. (*Introduction, Research Problem, Objective, Scope etc.*)

Acceptable

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4.4 Kajian Literatur (*Literature Review*)

Acceptable

4.5 Metodologi/Bahan/Rekabentuk dan Kaedah (*Methodology/Material/Design and Methods*)

Chapter 3

3.5- Need to be improved

3.5.1 -Need to be improved

3.6- Need to be improved and please explain the linear and nonlinear component

Figure 3.2- Need to be improved

Please give the architecture of Equation 3.27

Equations 3.27, 3.28 and 3.29- Need to be explained.

Equations 3.30 until 3.39 need to be improved.

Please check figure 3.5

4.6 Analisis dan Penyampaian Data/Keputusan (*Analysis and Presentation of Data/Findings*)

Chapter 4

How to verify that the models in pages 89 and 90 are the best models of Bivariate GARCH.

How to verify that the models in pages 97 until 100 are the best models of Trivariate GARCH.

Chapter 5

How to verify that the models in pages 109 until 113 are the best models of Trivariate GARCH in Mean.

Equations in pages 109 until 112 need to be explained.

The last sentence in page 113 also need to be explained.

Chapter 6

Please explain how to select the number of neurons in hidden layer (6.2, page 116).


Please give the input variables for the four time periods which were reported in Table 6.1 (page 117).

Equations 6.1 and 6.2 need to be explained.

Figures 6.2, 6.3 and 6.4 need to be explained

Please give the input variables for the hybrid models which were reported in Table 6.2 (page 123).

Please give the equations of hybrid models which were reported in Table 6.2 (page 123).

Tandatangan (*Signature*):

Tarikh (*Date*):

30/10/17

4.7 Perbincangan dan Interpretasi Keputusan Kajian (*Discussion and Interpretation of Research Results/Findings*)

Need to be improved

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4.8 Kesimpulan dan Cadangan (*Conclusion and Recommendations*)

Please check the summary and conclusions on page 126 (paragraph 2) and page 127 (paragraph 1 and paragraph 2)

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4.9 Penyampaian Penulisan (*Writing Style*)

Acceptable

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4.10 Kekuatan Tesis (*Strength of the thesis*)

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Tandatangan (*Signature*):  Tarikh (*Date*): 30/10/17

4.11 Kelemahan Tesis (*Weakness of the thesis*)

Chapter 3

3.5:Artificial Neural Netwok and 3.6: Hybrid model- Need to be improved.

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4.12 Kepentingan Kajian (*Significance of the study*)

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4.13 Perakuan penganugerahan (*Recommendation for the award*)

...None.....

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4.14 Lain-lain ulasan (*Other comments*)

Please check the references

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