Assessment Brief

Northumbria University NEWCASTLE

Programme:	BSc (Hons) Economics BSc (Hons) Economics and Finance BSc (Hons) Finance and Investment Management
Module Code:	AF5039
Module Title:	Econometrics
Distributed on:	16th January 2023
Submission Time and Date:	22nd May 2023 23:59 GMT (tentative date)
Word Limit:	2,000 words
Weighting:	This assignment accounts for 60% of the total mark for this module.
Submission of Assessment:	**Electronic Management of Assessment (EMA):** This assignment must be submitted electronically to the correct Turnitin link titled "Final submission" that is located under the "Assessment and Submission" folder on the AF5039 module site. IT IS YOUR RESPONSIBILITY TO ENSURE THAT YOUR ASSIGNMENT ARRIVES BEFORE THE SUBMISSION DEADLINE STATED ABOVE. SEE THE UNIVERSITY POLICY ON LATE SUBMISSION OF WORK. **Please note that assignments are subject to anonymous marking.**

Instructions on Assessment:

The assignment is an individual written piece of work, and you are required to address all three sections (**A**, **B**, and **C**) of this question in order to achieve the maximum grade. Please choose **ONLY ONE (1)** out of **THREE (3)** datasets provided in the Assessment and Submission folder on Blackboard. All datasets include a continuous dependent variable, two continuous independent variables, and a dummy independent variable. You must supply evidence of your calculations and analysis where tables, charts, and figures should be presented from Excel, EViews, Stata, SPSS, or other software of your choice.

Section A: Ordinary Least Squares (400 words, 12 marks)

Estimate the regression equation $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$ via ordinary least squares (**2 marks**). Interpret all regression coefficients and assess their statistical significance using a T-test (**4 marks**). Discuss the explanatory power of the model using the R-squared and the F-test (**2 marks**). Briefly explain the implications of documented relationships or lack thereof for theory and practice in context of relevant academic sources (4 **marks**).

Section B: Diagnostic Tests (800 words, 24 marks)

Discuss the assumptions you used when performing an ordinary least squares regression (**4 marks**). Formally test for any **THREE (3)** different assumption violations using appropriate statistical procedures, justifying and critically evaluating these using relevant literature (**15 marks**). Briefly discuss the implications of the results for model validity (**5 marks**). In this section, you can address concepts such as, for example, autocorrelation, heteroskedasticity, multicollinearity, endogeneity, heterogeneity, or omitted variable bias.

Section C: Robustness Checks (800 words, 24 marks)

Perform **ONE (1)** robustness check of your choice for your model. Present the procedure using necessary equations, tables, and figures, and referencing appropriate academic sources (**15 marks**). Discuss the relevance of the robustness test employed in relation to model and diagnostic test results (**5 marks**). Compare the coefficients qualitatively and quantitatively to those obtained from ordinary least squares (**4 marks**). In this section, you can address concepts such as, for example, subsample estimations, structural shifts, robust standard errors, weighted least squares, autoregressive models, GARCH, quantile regression, ridge regression, or LASSO.

Mapping to Programme Goals and Objectives

Knowledge and Understanding	
Apply knowledge of contemporary professional practice in business and management informed by theory and research.	X
Apply knowledge of business and management to complex problems in or related to professional practice in order to identify justifiable, sustainable and responsible solutions.	X
Intellectual and Professional Skills and Abilities	
Apply effective interpersonal communication skills and the ability to work in multi-cultural teams.	
Produce evidence of self-reflection as a means of informing personal development planning.	
Demonstrate skills and attitudes for progression to post-graduate contexts including professional work, entrepreneurship and higher-level study.	X
Personal Values Attributes (Global and Cultural Awareness, Ethics, Curiosity)	
Develop an awareness of the cultural and ethical contexts in which international business operates.	

Module Specific Assessment Criteria and Rubric

Section A:

Grade	Description
0-9	No real attempt made.
10-19	Demonstrates extremely poor understanding of the ordinary least squares regression, its model equation, estimation procedure, and significance testing. Supporting evidence of calculations and analysis may be entirely missing or have significant omissions.
20-29	A poor attempt showing little understanding of the ordinary least squares regression, its model equation, estimation procedure, and significance testing. Supporting evidence of calculations and analysis may have material omissions.
30-39	A fair attempt that is however showing substantial limitations in of the ordinary least squares regression, its model equation, estimation procedure, and significance testing. Supporting evidence of calculations and analysis may have omissions.
40-49	A reasonable attempt that shows some engagement with the assignment question and demonstrates understanding of ordinary least squares regression, its model equation, estimation procedure, and significance testing that is sufficient to pass. Supporting evidence of calculations and analysis may be superficial or contain substantive errors.
50-59	A good attempt that shows engagement with the assignment question and demonstrates necessary knowledge of ordinary least squares regression, its model equation, estimation procedure, and significance testing. However, the presentation is more descriptive than analytical. Supporting evidence of calculations may contain errors.
60-69	A very good attempt that shows engagement with the task and demonstrates knowledge and understanding of ordinary least squares regression, its model equation, estimation procedure, and significance testing with some discussion of real-world implications. The presentation could have been more consistently analytical rather than descriptive. Supporting evidence of calculations may contain minor errors.
70-79	An excellent attempt that shows engagement with the task and demonstrates in-depth knowledge and understanding of ordinary least squares regression, its model equation, estimation procedure, and significance testing with discussion of real-world implications. High presentation standard, rigorous analysis employed and properly evidenced with relevant materials.
80-89	An outstanding attempt showing continuous engagement with the task and demonstrating in-depth knowledge and understanding of ordinary least squares regression, its model equation, estimation procedure, and significance testing with in-depth discussion of real-world implications. Very high presentation standard, rigorous analysis employed and properly evidenced with relevant materials.

Grade	Description
90-100	An attempt that would be of a standard of a professional econometrician. An exceptionally researched and analysed piece of work. Exemplary standard of presentation, in-depth and rigorous analysis, very professional.

Section B:

Grade	Description
0-9	No real attempt made.
10-19	Demonstrates extremely poor understanding of the Gauss-Markov assumptions, their implications for result validity, and relevant diagnostic tests. Supporting evidence of calculations and analysis may be entirely missing or have significant omissions.
20-29	A poor attempt showing little understanding of the Gauss-Markov assumptions, their implications for result validity, and relevant diagnostic tests. Supporting evidence of calculations and analysis may have material omissions.
30-39	A fair attempt that is however showing substantial limitations in of the Gauss-Markov assumptions, their implications for result validity, and relevant diagnostic tests. Supporting evidence of calculations and analysis may have omissions.
40-49	A reasonable attempt that shows some engagement with the assignment question and demonstrates understanding of the Gauss-Markov assumptions, their implications for result validity, and relevant diagnostic tests that is sufficient to pass. Supporting evidence of calculations and analysis may be superficial or contain substantive errors.
50-59	A good attempt that shows engagement with the assignment question and demonstrates necessary knowledge of the Gauss-Markov assumptions, their implications for result validity, and relevant diagnostic tests. However, the presentation is more descriptive than analytical. Supporting evidence of calculations may contain errors.
60-69	A very good attempt that shows engagement with the task and demonstrates knowledge and understanding of the Gauss-Markov assumptions, their implications for result validity, and relevant diagnostic tests with some discussion of their implications for model validity. The presentation could have been more consistently analytical rather than descriptive. Supporting evidence of calculations may contain minor errors.
70-79	An excellent attempt that shows engagement with the task and demonstrates in-depth knowledge and understanding of the Gauss-Markov assumptions, their implications for result validity, and relevant diagnostic tests with discussion of their implications for model validity. High presentation standard, rigorous analysis employed and properly evidenced with relevant materials.
80-89	An outstanding attempt showing continuous engagement with the task and demonstrating in-depth knowledge and understanding of the Gauss-Markov assumptions, their implications for result validity, and relevant diagnostic tests with in-depth discussion of their implications for model validity. Very high presentation standard, rigorous analysis employed and properly evidenced with relevant materials.
90-100	An attempt that would be of a standard of a professional econometrician. An exceptionally researched application of diagnostic tests with extremely insightful interpretations. Exemplary standard of presentation, in-depth and rigorous analysis, very professional.

Section C:

Grade	Description
0-9	No real attempt made.
10-19	Demonstrates extremely poor understanding of robustness checks, relevant tests, and estimation techniques. Supporting evidence of calculations and analysis may be entirely missing or have significant omissions.
20-29	A poor attempt showing little understanding of robustness checks, relevant tests, and estimation techniques. Supporting evidence of calculations and analysis may have material omissions.
30-39	A fair attempt that is however showing substantial limitations in understanding of robustness checks, relevant tests, and estimation techniques. Supporting evidence of calculations and analysis may have omissions.
40-49	A reasonable attempt that shows some engagement with the task and demonstrates understanding of robustness checks, relevant tests, and estimation techniques. Supporting evidence of calculations and analysis may be superficial or contain substantive errors.

50-59	A good attempt that shows engagement with the task and demonstrates necessary knowledge of robustness checks, relevant tests, and estimation techniques. However, the presentation is more descriptive than analytical. Supporting evidence of calculations may contain errors.
60-69	A very good attempt that shows engagement with the task and demonstrates knowledge and understanding of robustness checks, relevant tests, and estimation techniques with some discussion and interpretation. The presentation could have been more consistently analytical rather than descriptive. Supporting evidence of calculations may contain minor errors.
70-79	An excellent attempt that shows engagement with the task and demonstrates in-depth knowledge and understanding of robustness checks, relevant tests, and estimation techniques with discussion and interpretation. High presentation standard, rigorous analysis employed and properly evidenced with relevant materials.
80-89	An outstanding attempt showing continuous engagement with the task and demonstrating in-depth knowledge and understanding of robustness checks, relevant tests, and estimation techniques with in-depth discussion and interpretation. Very high presentation standard, rigorous analysis employed and properly evidenced with relevant materials.
90-100	An attempt that would be of a standard of a professional econometrician. An exceptionally researched application of a robustness test with extremely insightful interpretations. Exemplary standard of presentation, in-depth rigorous analysis, very professional.

ASSESSMENT REGULATIONS

You are advised to read the guidance for students regarding assessment policies. They are available online here.

Late submission of work

Where coursework is submitted without approval, after the published hand-in deadline, the following penalties will apply.

For coursework submitted up to 1 working day (24 hours) after the published hand-in deadline without approval, **10% of the total marks available for the assessment shall be deducted** from the assessment mark.

For clarity: a late piece of work that would have scored 65%, 55% or 45% had it been handed in on time will be awarded 55%, 45% or 35% respectively as 10% of the total available marks will have been deducted.

Coursework submitted **more than 1 day (24 hours)** after the published hand-in deadline without approval will be marked as zero but will be eligible for referral. The reassessment should where appropriate, and as determined by the Module Leader, be the same method and the same task as indicated in the Module handbook.

In modules where there is more than one assessment component, Students are not required to complete all assessment components if an overall Pass Mark (40%) has been achieved.

In modules, where there is more than one assessment component and an overall pass mark has not been achieved, Students will be eligible for a referral* in the individual failed module and/or not attempted component(s) of assessment.

These provisions apply to all assessments, including those assessed on a Pass/Fail basis.

The full policy can be found here.

Word limits and penalties

If the assignment is within +10% of the stated word limit no penalty will apply. For this assignment, it implies if the declared word count of the work is not higher than 2,200 words (2,000 words + 10%), no penalty applies.

The word count is to be declared on the front page of your assignment and the assignment cover sheet. The word count does not include tables, charts, appendices, footnotes, tables, and the reference list. Please

note, in text citations [e.g., (Smith, 2011)] and direct secondary quotations [e.g., "*dib-dab nonsense analysis*" (Smith, 2011 p.123)] are INCLUDED in the word count.

If this word count is falsified, students are reminded that under ARTA this will be regarded as academic misconduct.

If the word limit of the full assignment exceeds the +10% limit, 10% of the mark provisionally awarded to the assignment will be deducted. For example: if the assignment is worth 70 marks but is above the word limit by more than 10%, a penalty of 7 marks will be imposed, giving a final mark of 63.

Students must retain an electronic copy of this assignment (including ALL appendices) and it must be made available within 24 hours of them requesting it be submitted.

Academic Misconduct

The Assessment Regulations for Taught Awards (ARTA) contain the ***Regulations and procedures applying to cheating, plagiarism and other forms of academic misconduct***.

The full policy is available at here

You are reminded that plagiarism, collusion and other forms of academic misconduct as referred to in the Academic Misconduct procedure of the assessment regulations are taken very seriously. Assignments in which evidence of plagiarism or other forms of academic misconduct is found may receive a mark of zero.