BBA315-BUSINESS FORECASTING SEMESTER 1, 2017
CASE STUDY REPORT

DUE: ***Part 1***: Tuesday 18th April (11pm) ***Part 2***: Friday 2nd June (11pm)

MARKS: The Case Study Report is worth 30% of assessment marks in this unit.

FORMAT: Both Parts 1 and 2 should be typed and for Part 2 be in **report format** with the main tables, charts and results presented throughout the report to highlight your responses to the case study report questions. All other computer output should be put into labelled and referenced appendices.

General Details of the Case Study Report:

The Case Study Report assessment will require two written submissions based around a comprehensive business forecasting project. Your group will need to determine and find suitable empirical data which will be then be used as the basis of relevant business forecasts and associated recommendations.

This is, in general, a group assessment task although there will be a separate **individual component** (Part 1) within the group assessment framework. Groups will be of either three (3) or four (4) participants with members in each group required to be enrolled in the same tutorial. **You may not do this case study report individually**. The number of people in the group will not be a consideration for the awarding of marks in the case study report. Groups will be formed in the tutorials in Week 2 of the semester and should be finalised by Week 4.

The Case Study Report submissions will be divided into two distinct report submissions; Each report submission (Parts 1 and 2) will be worth 15% of the total Case Study Report mark.

Part 1 consists of some preliminary data identification, analysis and provision of basic forecasts and will be done **individually** by each member of the group. Each student is required to submit their response to Part 1 through Turnitin on the unit website by **11 pm, Tuesday 18th April**.

Part 2 will involve the development of further forecasts for relevant business variables based on the empirical data and analysis in Part 1. This is to be done as a **group** and the analysis required may involve development of scenarios, strategies,

and provision of suitable recommendations to the relevant business organisation. Each group is required to submit their Part 2 final report (**one report only per group**) through Turnitin on the unit website by **11 pm, Friday 2nd June**. For the final report submission, you a required to provide a cover sheet with the names and SID's of each of the group members.

Important Instructions:

1. Students should have formed groups of 4 (possibly 3 in some circumstances) in their tutorial groups. Any intra-group allocation of tasks (**for Part 2**) must be sorted within the group. If the contribution of all members of the group is not approximately equal, all members of the group should complete the relevant **peer review** statement form suggesting the % contribution of each student to the Case Study Report task (Part 2). These statements should be either attached to the Case Study Report (Part 2) submission or emailed to your tutor. The unit convenor will consider the peer review statements and other evidence and may potentially **adjust individual student marks for Part 2**.

   If no peer review statements are received, then all members of the group will receive the same raw mark.

   Assignments must be the work of the students whose names appear on the assignment. Plagiarism, copied or paraphrased assignments will be heavily penalised with potential loss of all marks and further disciplinary action.

2. Both **Part 1 (individual)** and **Part 2 (group)** reports are required to be submitted through Turnitin by the relevant dates indicated above. **No extensions will be granted**.

   There will be a deduction of **10% of the total available marks** made from the total awarded mark for each 24-hour period, or part thereof, that the submission is late (for example, 25 hours late in submission – 20%, 6 marks, penalty). This penalty does not apply for cases in which an application for disruption of studies is made and approved.

   3. There are **two major task options** in the Case Study Report. Groups need only choose ***one*** of the two tasks A or B. They both involve approximately the same amount of work. Indicate your choice of task clearly on the cover sheet.

   However, all students in a group must do the same Task. This requires consensus within the group on the choice of Task. Groups will need provide a document to their tutor in Week 5 indicating their choice of Task and evidence (all student names, SID's and signatures) that all group members have agreed on the indicated Task.

4. Both major task options involve choosing appropriate data for the task. **The choice of appropriate data needs to be justified and relevant data selection is part of the assessment process.** In both cases, forecasts for the relevant target variable will be related to forecasts for variables potentially available through ABS and RBA websites. Often in forecasting and other research that available data will not perfectly match the situation. The forecaster/researcher needs to make a judgment on suitable data that approximate the exact variable (s) needed.

5. (i) **Part 1 Report (Individual)**: Students should formulate responses to the relevant questions indicated in Part 1 (for the task undertaken by their group) in the form of a short preliminary report. Although presentation will be important and will be assessed strict report format (Executive Summary, Introduction, Body etc.) is not required. However, all workings (spreadsheets, computer output), detailed methodological descriptions and references should be contained in the appendices. **The report for Part 1 should be around 1500 – 2000 words and no longer than 6 x 1½ spaced 12 point typed pages** excluding cover page, executive summary, references, and appendices.

(ii) **Part 2 Report (Group):** The Part 2 report is required to be a management style reports with an executive summary, introduction, body, conclusions, and appendices. The executive summary should summarise the report in **no more than a page** and include the main profit forecasts and any **key** recommendations.

The Introduction should outline the purpose of the study and the general background. The body should include **brief** methodology description and outline key findings (eg. forecasts) and **briefly** how they were determined. Use plots, graphs, summary tables and other evidence to highlight key discussion points. Conclusions should contain key recommendations and limitations. All workings (spreadsheets, computer output), detailed methodological descriptions and references should be contained in the appendices. Although the assignment questions and hints have been framed using (a), (b) etc. you will lose marks if you respond to each question sequentially in (a), (b) etc format. It must be in the style of a **coherent** management report. It is feasible to have different members of the group work on different parts of the assignment; however, the final report must be logical, co-ordinated, and consistent in style and font. Different fonts and styles from contributions made by different students will be penalised.

Presentation/style of both reports and relevant findings will be important. This includes proper presentation of graphs, tables and charts used to highlight key points in the report.

The report for Part 2 should be around 5000 – 6000 words and no longer than 15 x 1½ spaced 12 point typed pages excluding cover page, executive summary, references, and appendices. It should include standard elements such as references if you have used external sources (Harvard reference style).

Your group can only select one of the forecasting tasks

A: Forecasting task A:

Suppose you are employed by a firm which markets interior trim insurance to new car owners. The insurance can only be provided on new cars and is valid for a 12-month period after which the policy lapses and cannot be renewed. The insurance covers things like stain removal from upholstery and minor repairs from scratches and other blemishes. You have been asked to predict the likely potential market for this insurance service for **each month** from July 2017 -Jun 2019. Currently the firm offers the same insurance policy type for all passenger vehicles (excluding trucks and utilities) but is considering offering separate insurance policies for normal passenger vehicles and SUV type vehicles. You have been assigned the task of analysing relevant time series and providing forecasts for the relevant period. Your group will also need to provide recommendations to management on possible outcomes associated with the proposed segmentation outlined above. In addition to providing forecasts, you are also required to outline relevant considerations due to changing economic circumstances and other environmental factors.

Part 1: Individual (15%) Due: 11 pm, Tuesday 18th April

(a) Provide a relevant time series which would will be useful in forecasting the number of motor vehicles in Australia for July 17 – Jun 19. Justify your choice of time series.

(i) Provide plots of the relevant time series for the ***last 10 years***.

(ii) Provide comment on the nature of the time series plots.

(iii) Comment on what factors are likely to have influenced the nature of the time series? What circumstances may have produced certain characteristics of the time series? Will those circumstances apply to future periods?

(b) Apply appropriate methods to **smoothe** the time series and help identify the relevant underlying components of the time series. Provide numerical estimates for the underlying systematic components.

(c) Provide at least one appropriate **time series model** for the time series you have selected. **Justify your choice of model**. For this model **provide forecasts for Jul-17 to Jun-19**.

Part 2: Group (15%) Due: 11 pm, Friday 2nd June

Remember the Part 2 Group Report should be in the style of a coherent management report and you should not answer the questions below as (a), (b) (c) etc. The questions are provided as a guide to the tasks that need to be completed within the report.

(a) to (c) - From the individual members' Part 1 reports provide a group response to parts to the tasks suggested in Part 1 (a) to (c) above. **Combine and synthesise** the findings of each of the group members into a single coherent response to (a) to (c) above. This combined and synthesised response should be part of your group report (Part 2) submission.

(d) Provide at least one regression model approach for forecasting the relevant time series. For this model **provide forecasts for Jul-17 to Jun-19**.

(e) Compare the results of the time series and regression model approaches. Which of these models do you prefer? **Justify your choice of model**.

(g) Suppose that the insurance premium **presently** no matter the type of vehicle is $400 for 12 months. The firm is considering using a split premium of $365 for normal passenger vehicles and $425 for SUV's. From current data and market research studies the organization is confident of about a 6 % penetration ie approximately 6% of registered new vehicles each month will opt for this type of insurance cover. Market research indicates that the penetration for SUV's could be approximately 8%. Provide **revenue projections** for the nominated months for each type (normal passenger and SUV's) and total passenger vehicles.

(h) Suppose that the firm has been in business in the USA since July. Data obtained from the USA database has revealed that presently **each month** approximately 2% of the **total** number of vehicles who have a **current** interior insurance policy cover will have a claim for damage covered under the policy filed by their owners. The average cost of the repair in Australia is estimated to be approximately $400 per claim. Overheads are approximately $200,000 a month.

The **expected** figures for the different segments in **2017-2019** are as follows;

	Normal Passenger	**SUV's**	**Total**
Claim % per month	1.85%	2.75%	2%
Average cost of Repair	$ 370	$ 505	$400

Provide a monthly **profit prediction** for the indicated months for each type (SUV, Passenger) and **Total** (combined SUV, Passenger). Be sure to explain any assumptions you have made and demonstrate how the profit predictions have been made.

(i) Indicate how a change in the values of assumed values in (h) might affect the profit forecasts. Provide forecasts for a **few** relevant scenarios (assume that overheads are fixed at $200,000 and the average cost of repairs given in the table above per month is not alterable). **Justify your choice of scenarios.**

(j) Make recommendations (based on the quantitative forecasting analysis only) on the proposed segmentation strategy of the insurance company.

(k) Indicate any limitations and qualifications to your forecasts and conclusions based on economic or other relevant circumstances. How will these factors impact on the forecasts, if at all?

Your group can only select one of the forecasting tasks

B. Forecasting Task B

Suppose you are employed by a firm which is involved in Tourism. One idea that management currently have is to establish an all-day tour of Sydney which is primarily designed to highlight a unique Australian experience including a "backyard" barbeque where kangaroo and crocodile meats will be available, indigenous cultural displays and unique presentation of key points of Australian history at suitable locations near the City CBD. There is no comparable tour available in the Sydney market and the suggested price for adults (all inclusive) is $100, children $50 and family pass (2 adults and 2 children) for $200.

Management believes that approximately 6% of all tourists who come to Sydney (for tourism) will be interested in such a tour. (Assume any small variations in demand can be catered for without altering overheads). It is also believed demand from domestic tourists visiting Sydney will be negligible. A promotional campaign to maximize awareness of the tour among tourists is being planned for May-June in various overseas media, local outlets, and publications and with the first tours likely to start at the beginning of July 17 (provided the tour is forecast to achieve an adequate return). You have been asked as the senior forecasting analyst to predict the likely potential demand for each month from July 2017 – June 2018 and to provide a report to the likely viability of the tour. The tasks you are required to perform are indicated below;

Part 1: Individual (15%) Due: 11 pm, Tuesday 18th April

(a) Provide relevant time series which would will be useful in forecasting the number of tourists in Australia for July 17 – Jun 18. **Justify your choice** of time series.

(i) Provide plots of the relevant time series for the ***last 10 years***.

(ii) Provide comment on the nature of the time series plots.

(iii) Comment on what factors are likely to have influenced the nature of the time series? What circumstances may have produced certain characteristics of the time series? Will those circumstances apply to future periods?

(b) Apply appropriate methods to **smoothe** the time series and help identify the relevant underlying components of the time series. Provide numerical estimates for the underlying systematic components.

(c) Provide at least one appropriate **time series model** for the time series you have selected. **Justify your choice of model**. For this model **provide forecasts for Jul-17 to Jun-18**.

Part 2: Group (15%) Due: 11 pm, Friday 2nd June

Remember the Part 2 Group Report should be in the style of a coherent management report and you should not answer the questions below as (a), (b) (c) etc. The questions are provided as a guide to the tasks that need to be completed within the report.

(a) to (c) - From the individual members' Part 1 reports provide a group response to parts to the tasks suggested in Part 1 (a) to (c) above. **Combine and synthesise** the findings of each of the group members into a single coherent response to (a) to (c) above. This combined and synthesised response should be part of your group report (Part 2) submission.

(d) Provide at least one regression model approach for forecasting the relevant time series. For this model **provide forecasts for Jul-17 to Jun-18**.

(e) Compare the results of the time series and regression model approaches. Which of these models do you prefer? **Justify your choice of model**.

(f) Provide revenue projections for the **proposed all-day tour** for the nominated 12 months (Jul-17- Jun 18). (You will need to think about the composition of demand in terms of adults, children, and families – provide some evidence to justify your assumed composition).

(g) Suppose the average cost to the firm is $40 per adult and $30 per child. The overheads are approximately $280,000 a month. Provide **monthly** profit forecasts for the all-day tour for the nominated 12 months (Jul-17 – Jun 18) and a forecast of **annual** total profit for the Jul-17 to Jun-18 financial year. Be sure to explain any assumptions you have made and demonstrate how the profit forecasts have been made.

(h) Indicate how changes in the assumed values or other assumptions might affect the profit forecasts. Provide forecasts for a **few** relevant scenarios (assume that overheads are fixed at $280,000 as are the costs per adult and child no matter the demand). **Justify your choice of scenarios.**

(i) Suppose some market research has indicated the demand (% of tourists who would be interested in the tour) will vary with price charged. The research indicates the % uptake will be related to price with the following equations:

Comment [TL1]: Introduction [300 words]

Comment [TL2]: Combine the synthesis

Justify the choice of time series
- -Does the team come to a conclusion?
- -Team member use the same series
- -Find reasons to justify the use and paraphrase it
- -Do you agree with factors that affect the series in future periods?

Any smoothing techniques used ?
- -Describe smoothing techniques used
- -Do they reach a consensus?
- -Which model should be used?

[1200 words]

Comment [TL3]: You need to justify the choice of model by looking at

Forecasting error
R-squared value of the regression model
Compare the results by forecasting error
Time series model preferred

[500 words]

Adult Singles/Couples/Single Children: **% uptake = 6% - (0.08* [% change in Price])**

Families: **% uptake = 6% - (0.04* [% change in Price])**

Provide advice as to the impact a **10% increase** and a **10% decrease** in pricing (across the board) will have on revenues and profits. What pricing strategy might produce higher forecast revenues and profits?

(j) Make recommendations (based on the quantitative forecasting analysis only) on the viability and pricing of the proposed tour.

(k) Indicate how current and possible future economic conditions may impact on the forecasts, revenues, and profits. If possible, provide adjusted forecasts, revenues, and profits.

Comment [TL4]: Write a conclusion for the report : 200 words