You are quantitative analyst with a PhD in statistics and work for an international bank to project revenues for different businesses using GDP.

The data used for your model development is attached.

* visualize the time series plot for each business revenues and the scatterplot between each business revenue and GDP
* download all the plots as jpeg file with a reasonable name
* insert the plots in jpeg files into section 3 (EDA) in the final report
* develop a time series regression model to forecast revenue for each business

Create a detailed model development report, documenting the data observations, model specifications, and forecasted revenue for different businesses using GDP data as an external variable. The report should include the following sections:

### 1. Objective

- Clearly state the objective of projecting revenues for various businesses using a time series regression model that incorporates GDP.

- For each business, develop a time series regression model

- For sections 2, 3, 5, 6, 7, if there is a summary table, there should be one table for each business.

### 2. Data Overview

- Add a description of the dataset with a table outlining column names and their descriptions.

- Include a summary table with key dataset metrics (e.g., number of records, date range, average revenue).

### 3. Exploratory Data Analysis (EDA)

- Provide observations and visual analysis showing trends and relationships between GDP and revenue.

### 4. Model Selection and Implementation

- Specify the chosen model (linear regression) and other models considered with reasons for selection or exclusion.

- Include a table summarizing the model parameters with blue-bordered cells if possible.

### 5. Model Performance

- Include a table of evaluation metrics (e.g., RMSE, MAE, MAPE) showcasing the model's performance.

### 6. Visualizations of Forecasts

- Present a chart that combines historical data and forecasted data, highlighting confidence intervals.

- Add a table with projected revenue figures for the next 2 years for all businesses and GDP values, formatted with blue borders.

### 7. Fitted vs Actual Values

- Add a table comparing fitted and actual values for the last 12 time points to show model accuracy, formatted with blue borders if possible.

- Add a table comparing fitted and actual values for full time points to show model accuracy in the appendix.

### 8. Conclusion and Recommendations

- Summarize the results, key insights, and recommendations for further analysis or model adjustments.

### Appendix

### Formatting Requirements:

- All tables should be formatted as native Word tables with black borders.

- All tables should have a header, in the format like “Table 1: Summary of revenue by business”

- No empty rows in the table

- The final document should be exported as a Word document ready for download.

- Make sure all sections specified above are in the reports

Add the block of prompt below to generate tables and graphs only for refresh purpose

Create a new docx word document named “NewTablesandGraphs.docx”

Identify all tables in the generated report/word document

Copy and paste those into NewTablesandGraphs.docx

Identify all plots as jpeg file, download all and insert those into NewTablesandGraphs.docx

Double check the plots/graphs are copied into it.

Give me a link to download NewTablesandGraphs.docx.