

# RETAIL-GIANT SALES FORECASTING CASE STUDY

Submitted By:

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## **Business Understanding:**

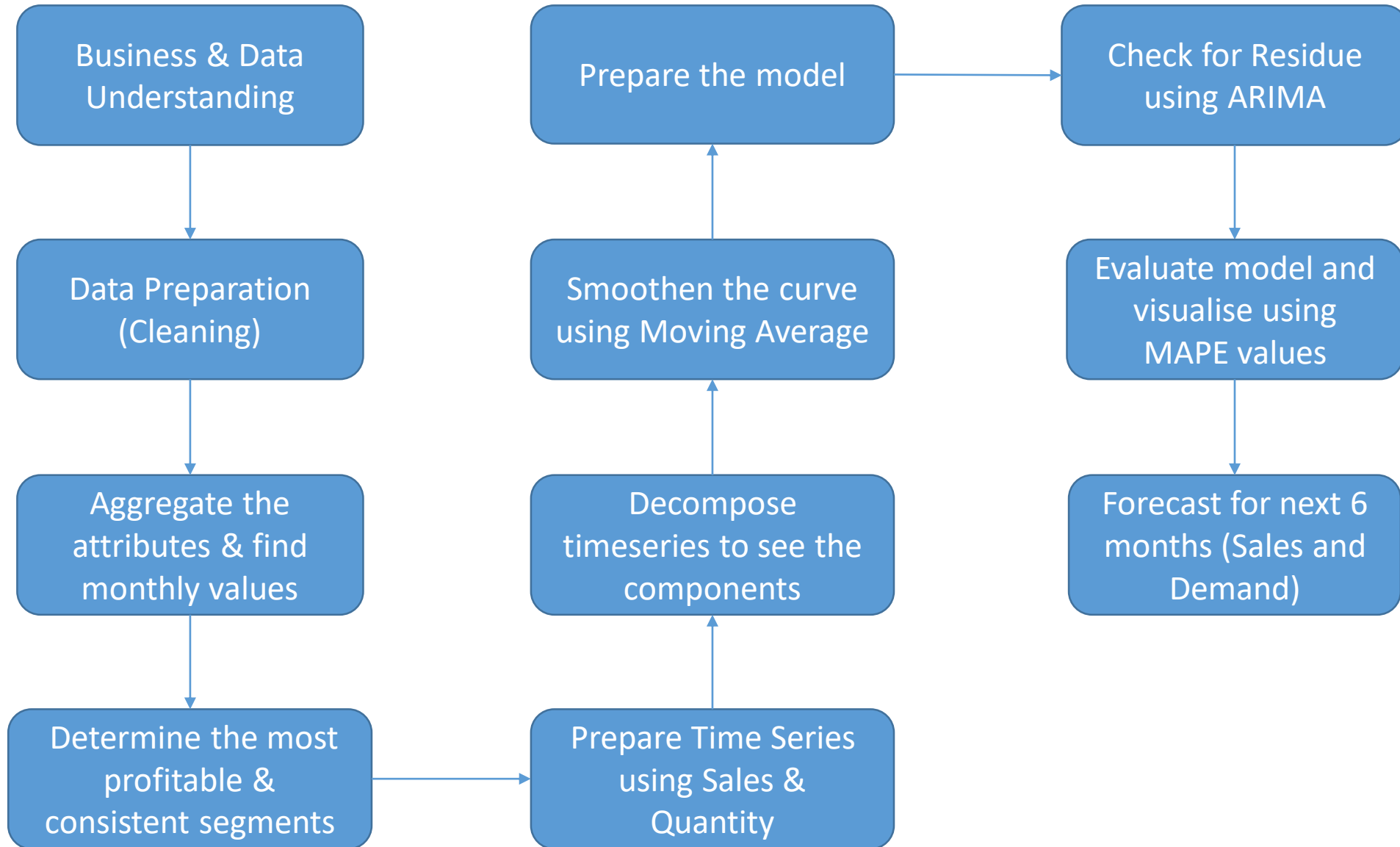
- Global Mart is an online store with worldwide operations.
- It deals with all the major product categories - consumer, corporate & home office.
- The store caters to 7 different market segments and in 3 major categories.

## **Goal:**

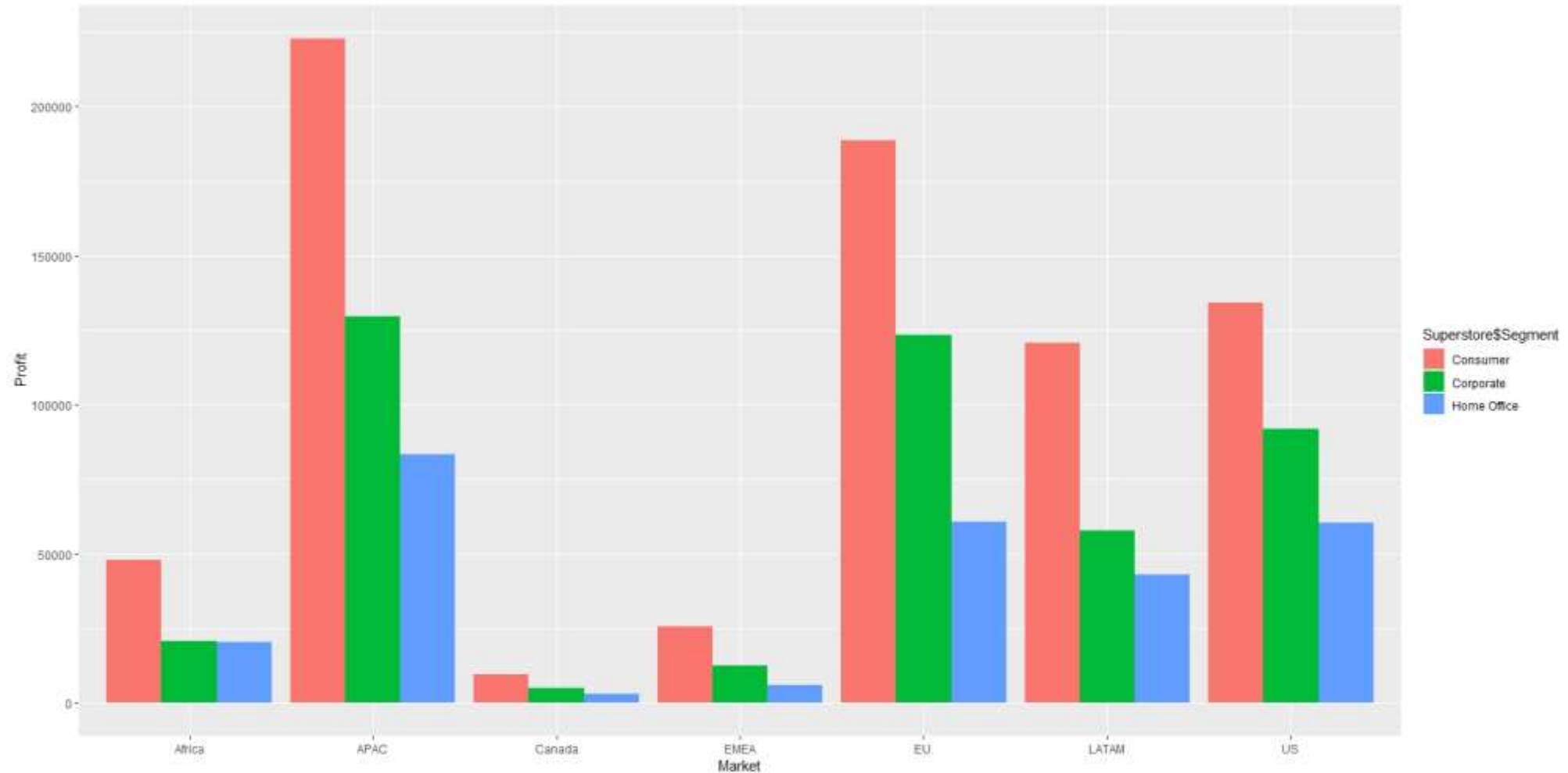
- To Forecast Sales and Demand For Next 6 Months which would help us manage the revenue and inventory accordingly

## **Data Understanding:**

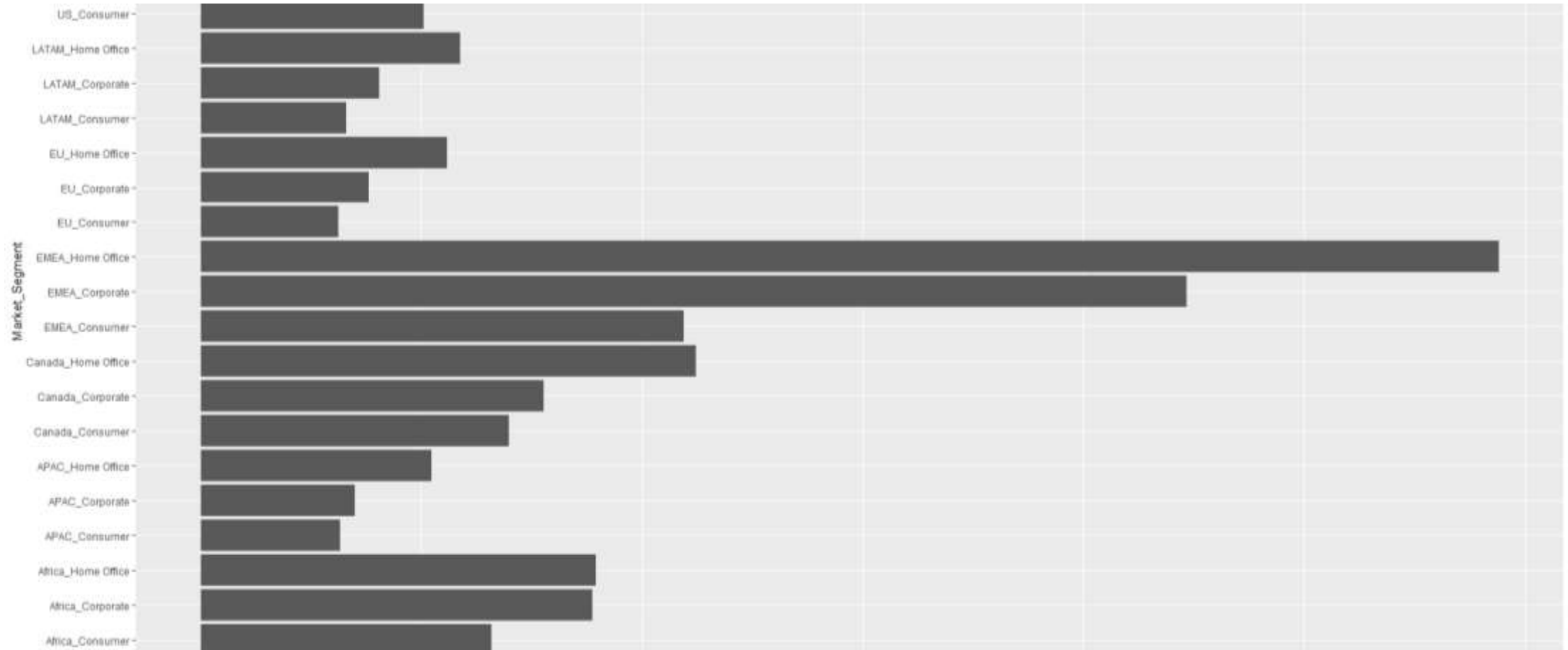
- The data currently has the transaction level data, where each row represents a particular order made on the online store.
- There are 24 attributes, out of which Market, Segment, Quantity, Sales and Profit are of our interest.
- We will subset the data into 21 ( $7*3$ ) buckets before analyzing.
- We will find out 2 most profitable (and consistent) segment from these 21 and forecast the sales and demand for these segments.



# TOTAL PROFIT ACROSS MARKET SEGMENTS

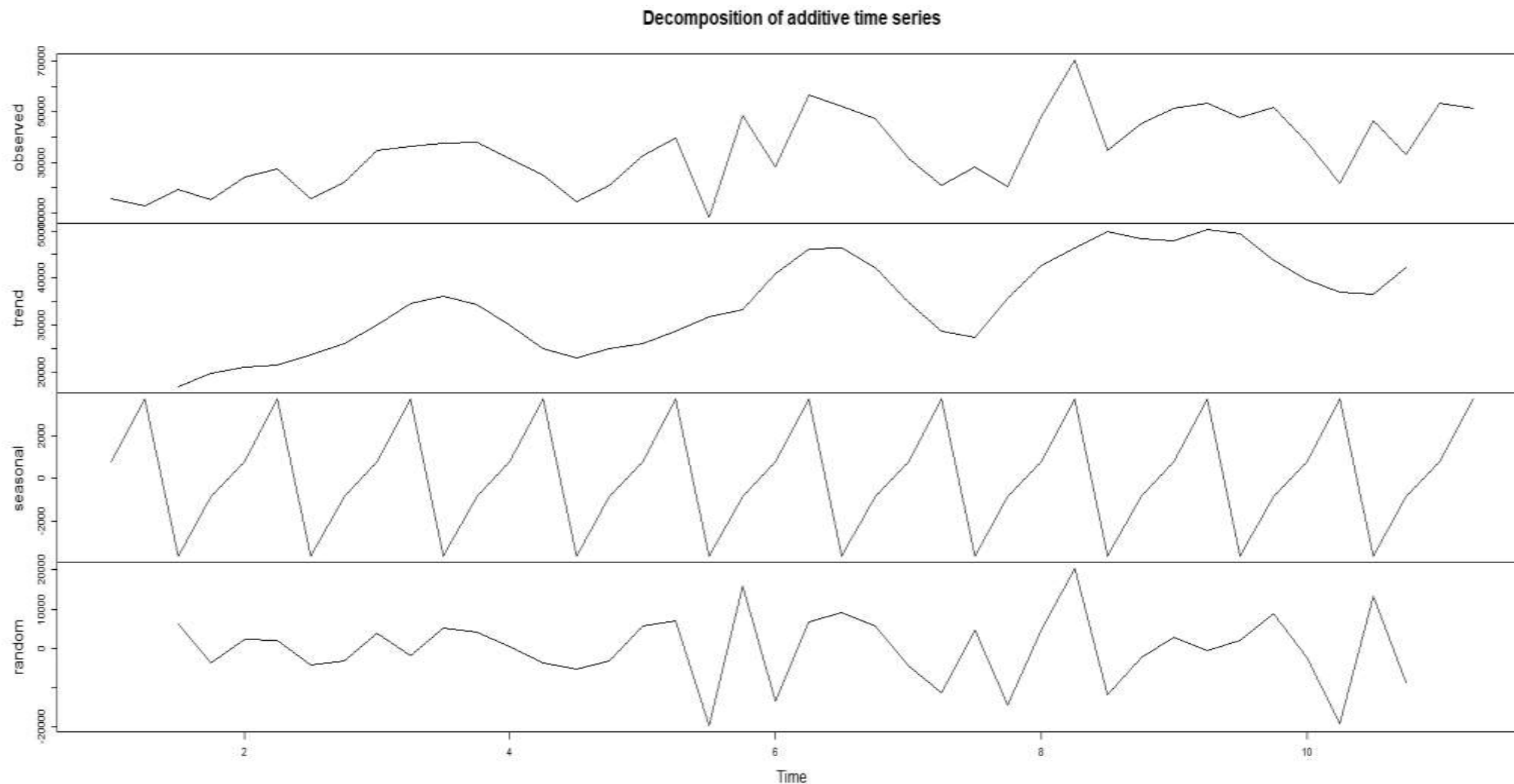


# COEFFICIENT OF VARIANCE (Market-Segment)



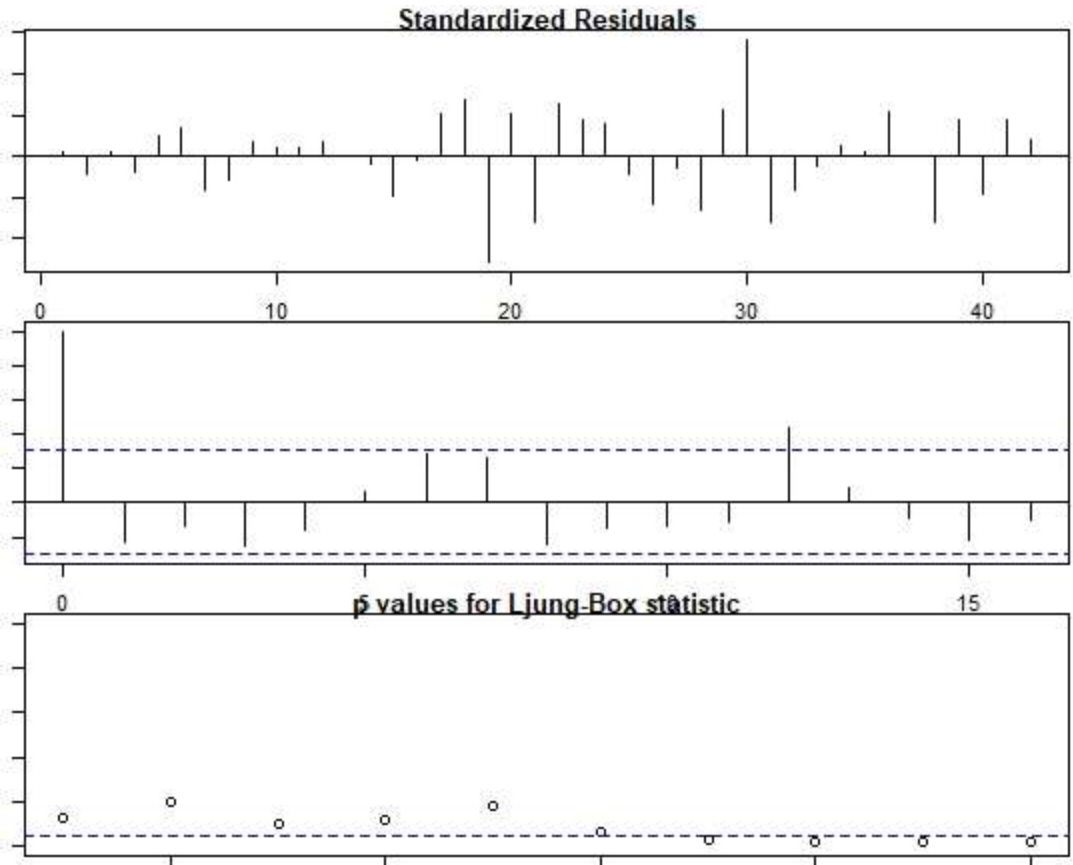
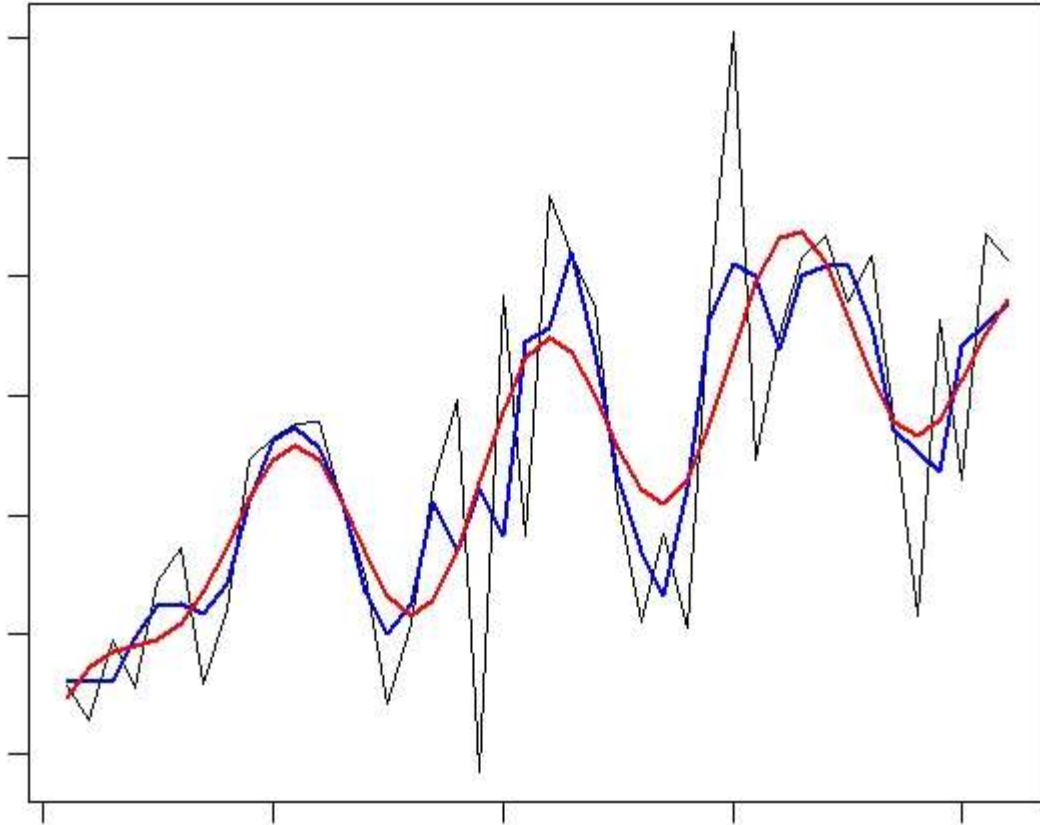
# APAC CONSUMER (Sales)

## DECOMPOSITION CHART



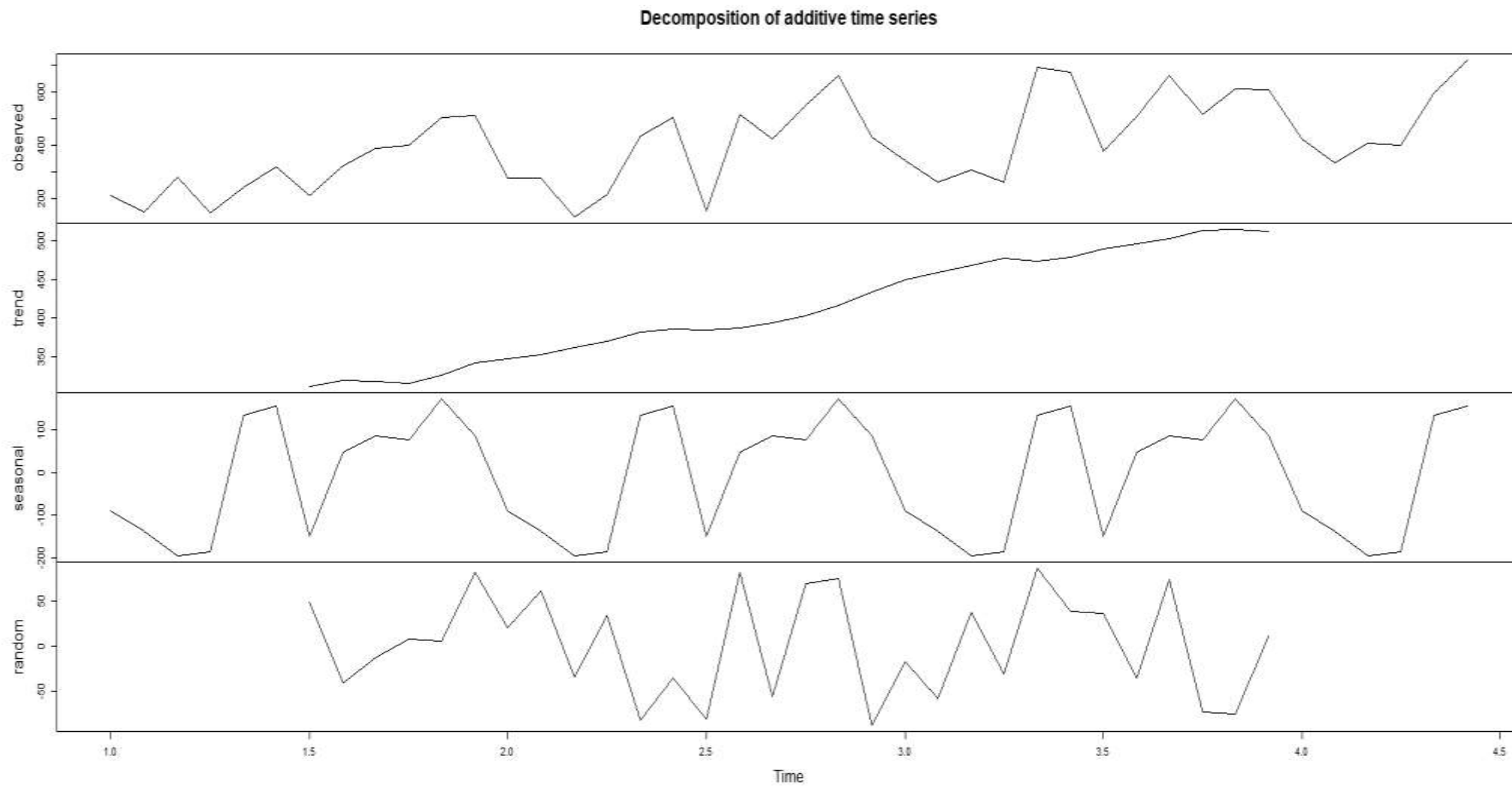
# APAC CONSUMER (Sales)

## CURVE FITTING & RESIDUE ANALYSIS



# APAC CONSUMER (Quantity)

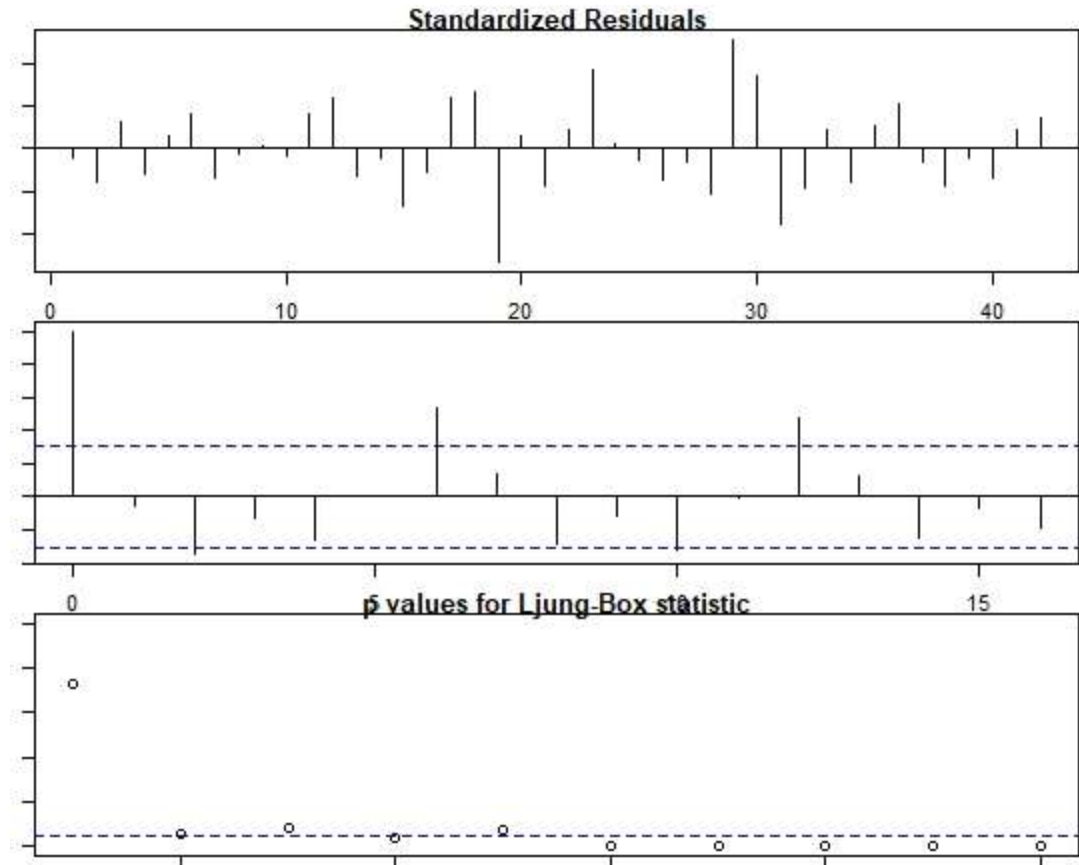
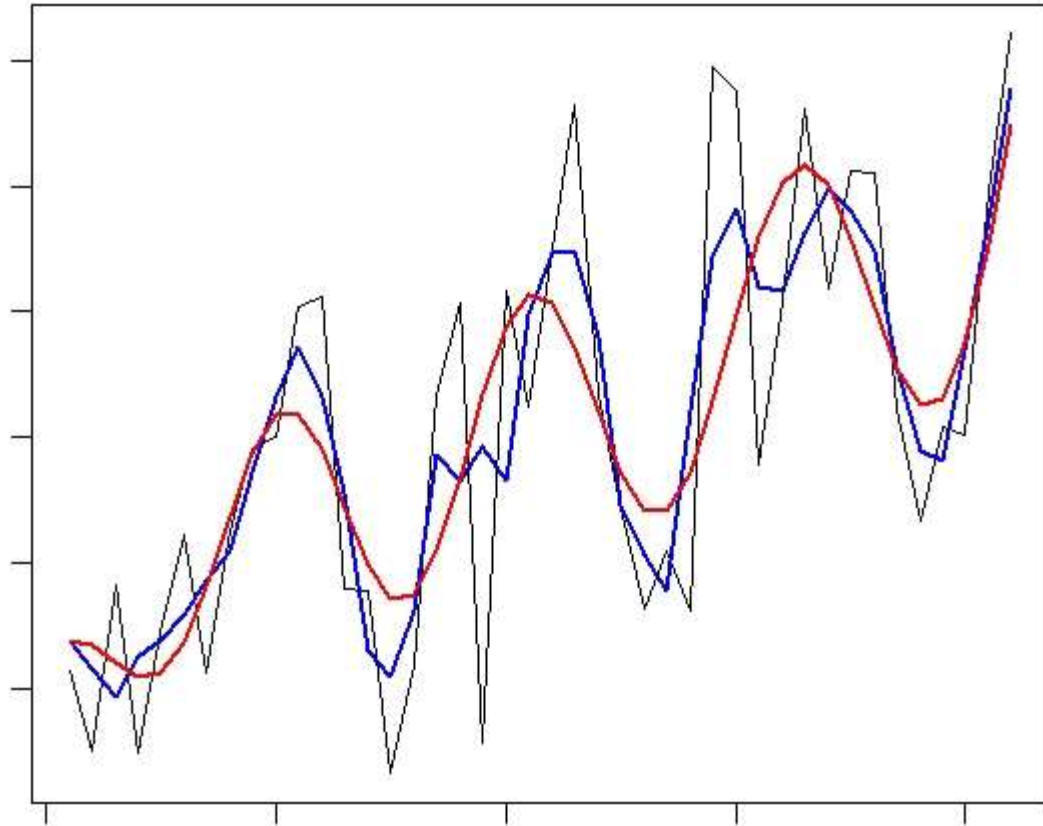
## DECOMPOSITION CHART





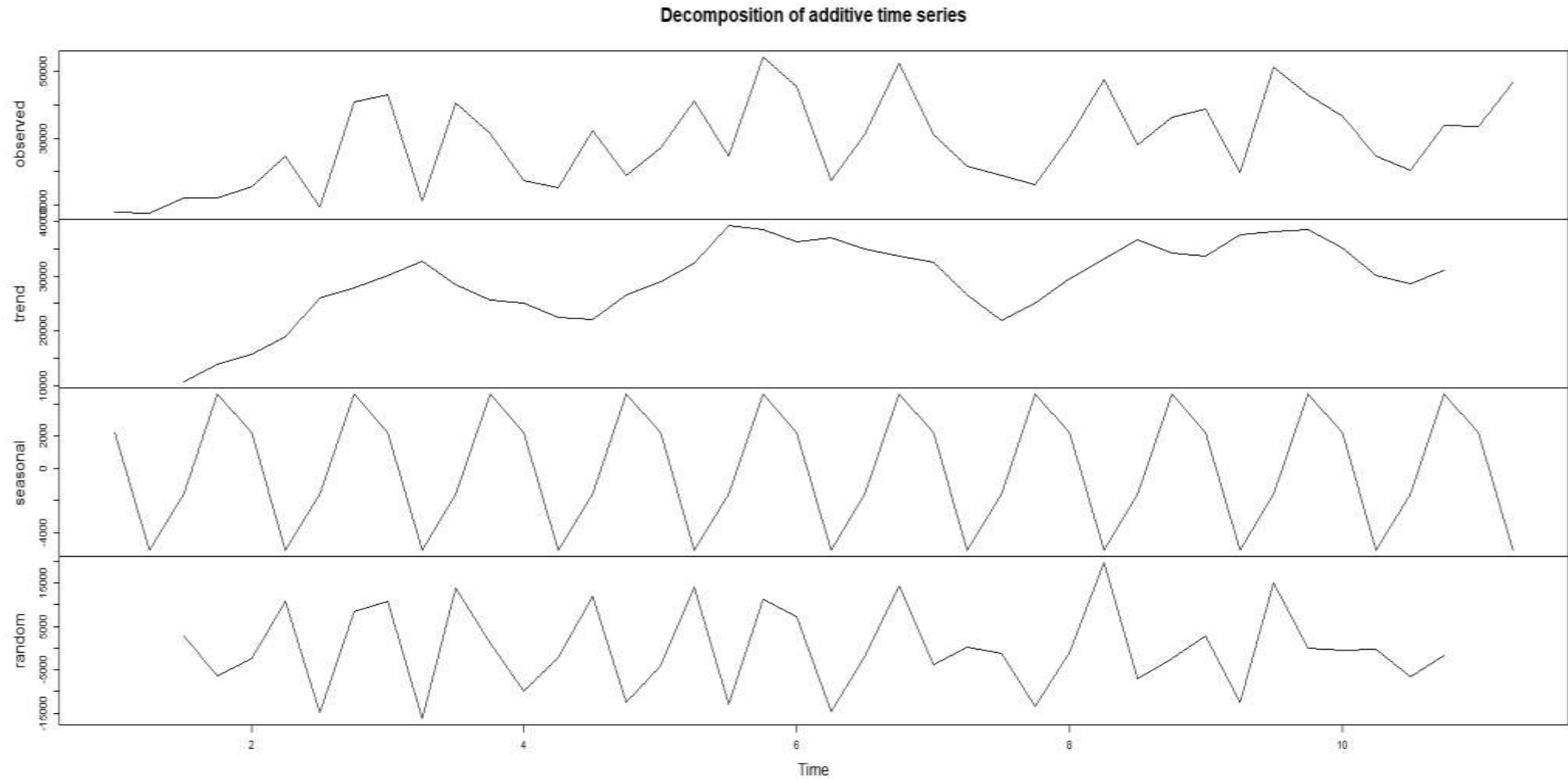
# APAC CONSUMER (Quantity)

## CURVE FITTING & RESIDUE ANALYSIS



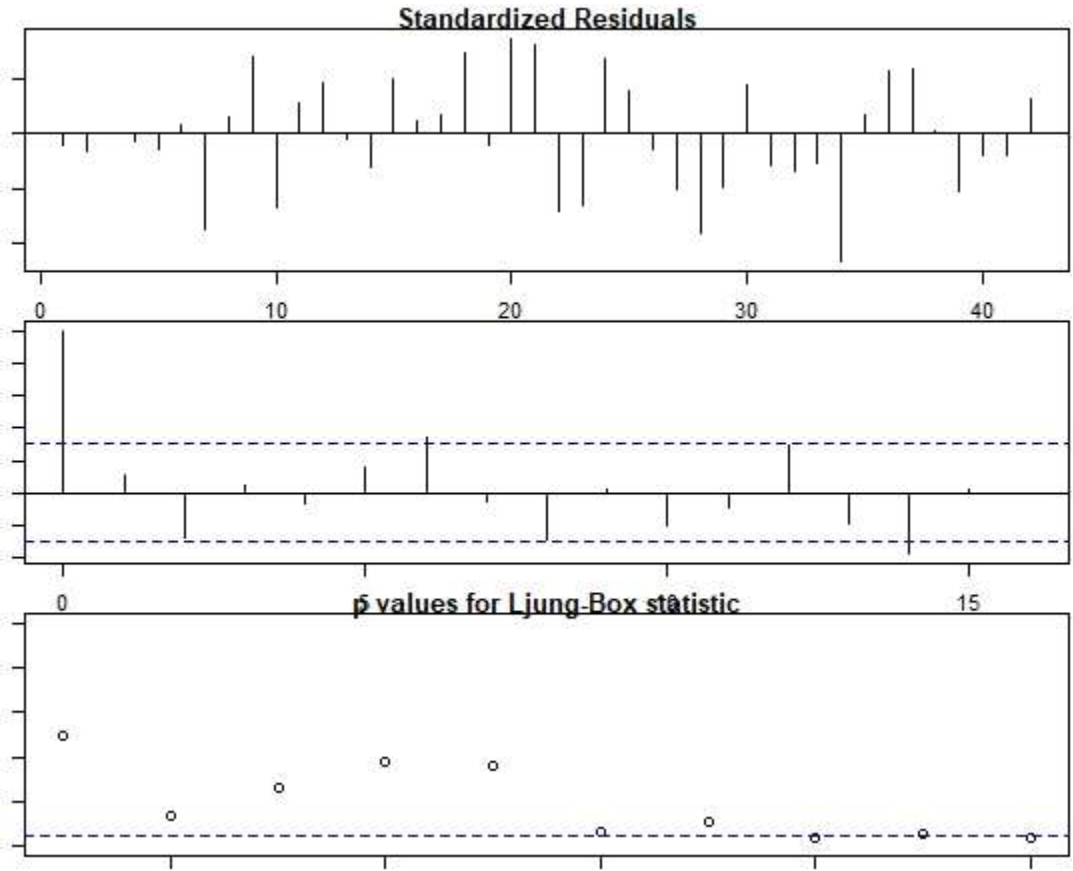
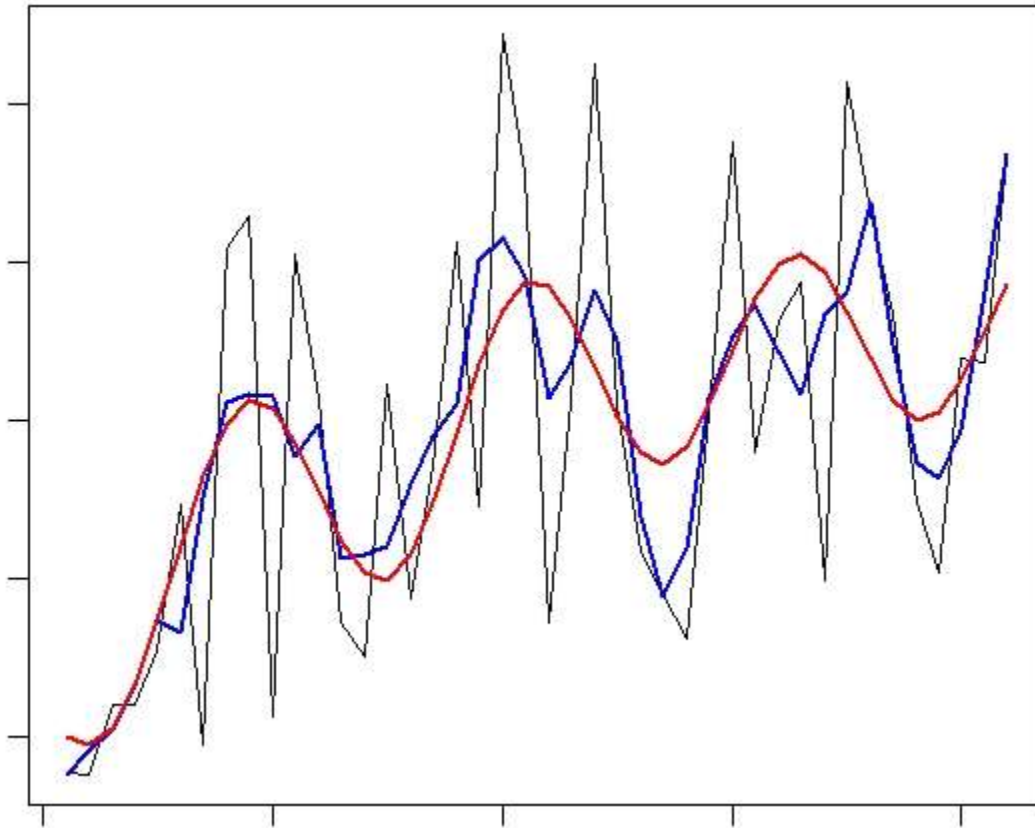
# EU CONSUMER (Sales)

## DECOMPOSITION CHART



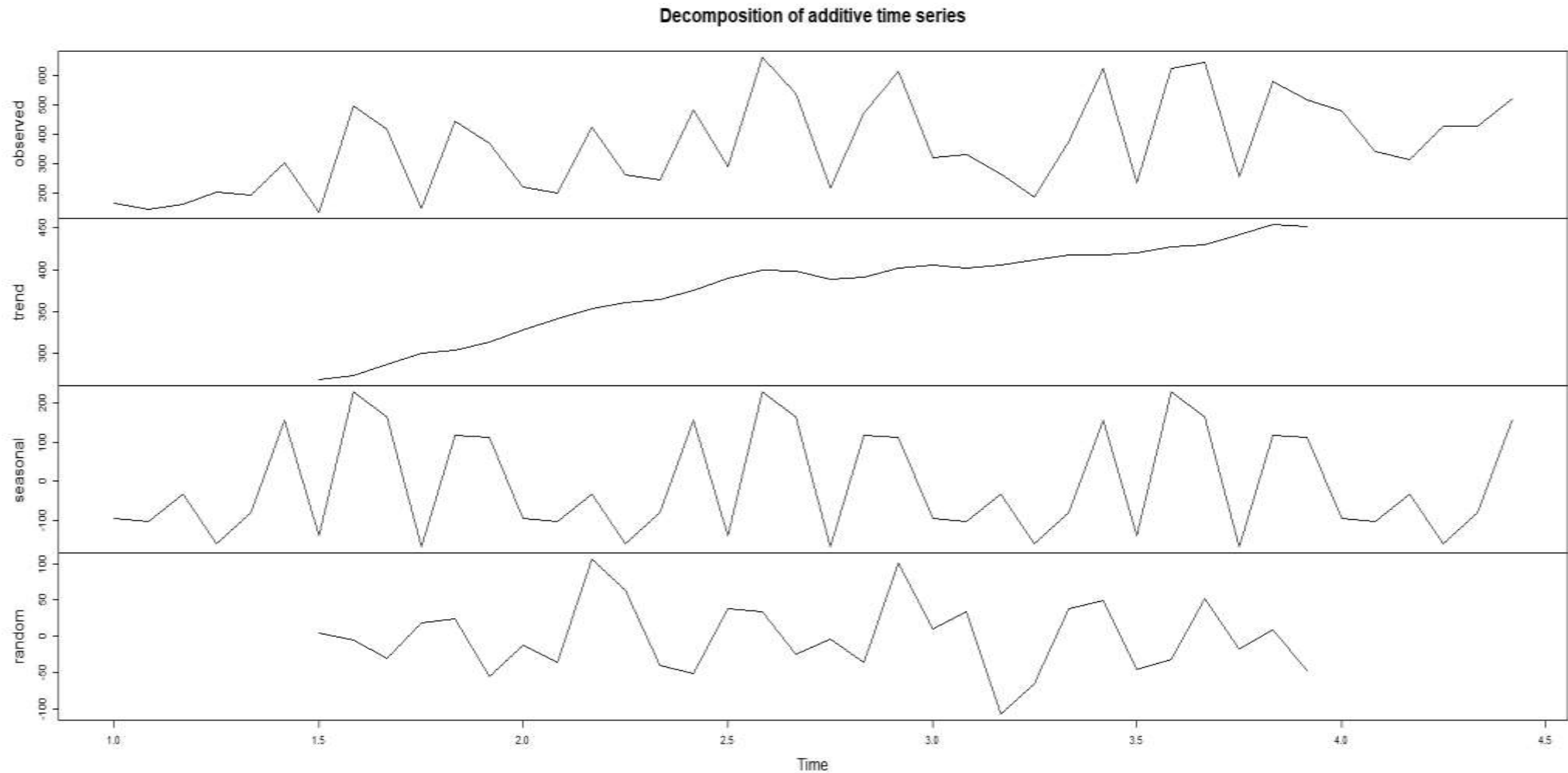
# EU CONSUMER (Sales)

## CURVE FITTING & RESIDUE ANALYSIS



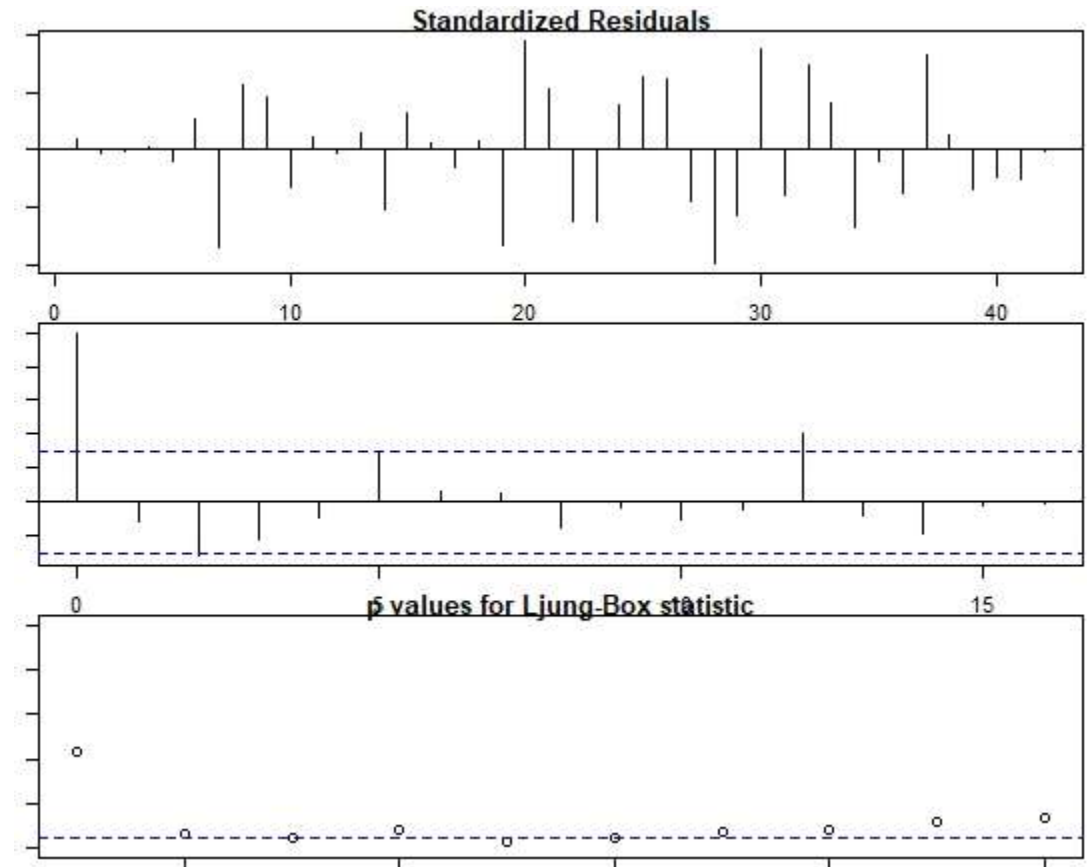
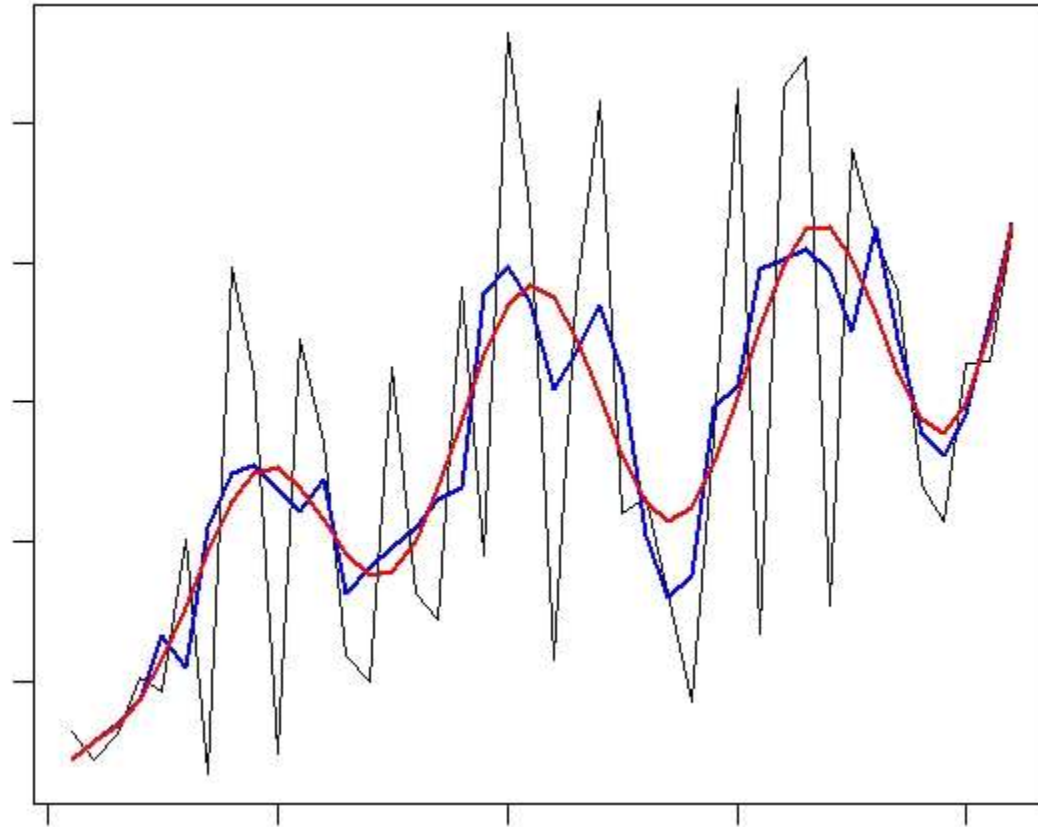
# EU CONSUMER (Quantity)

## DECOMPOSITION CHART

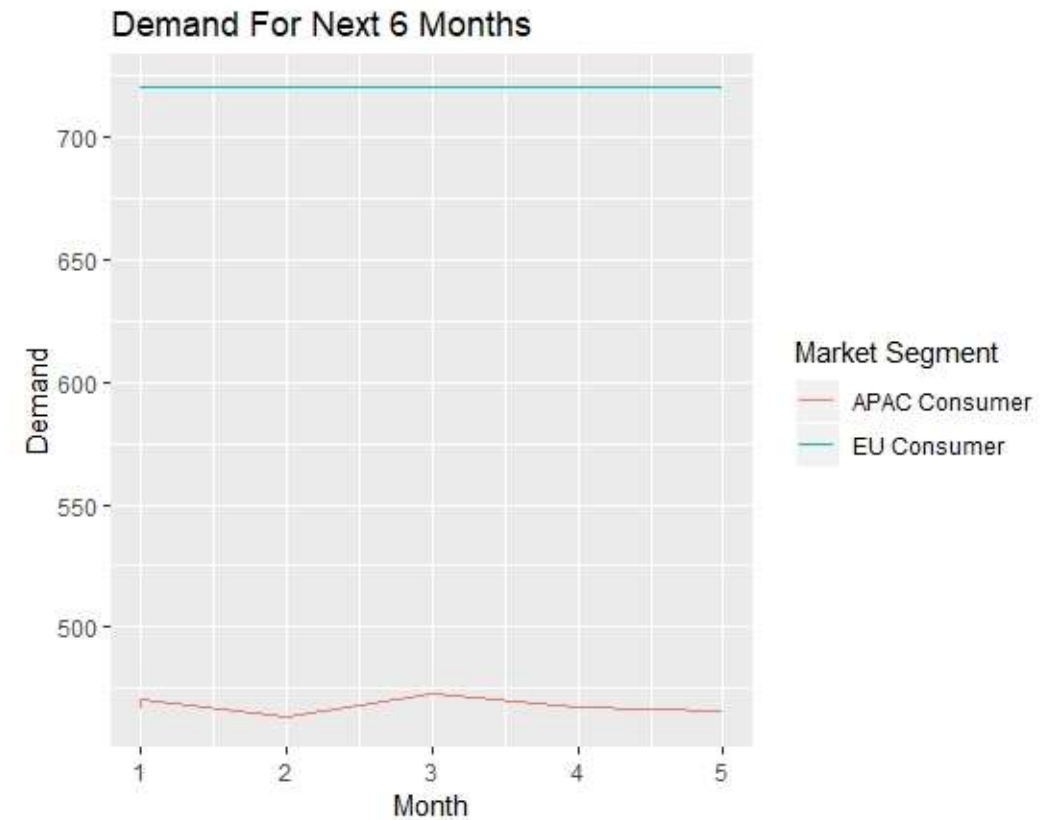
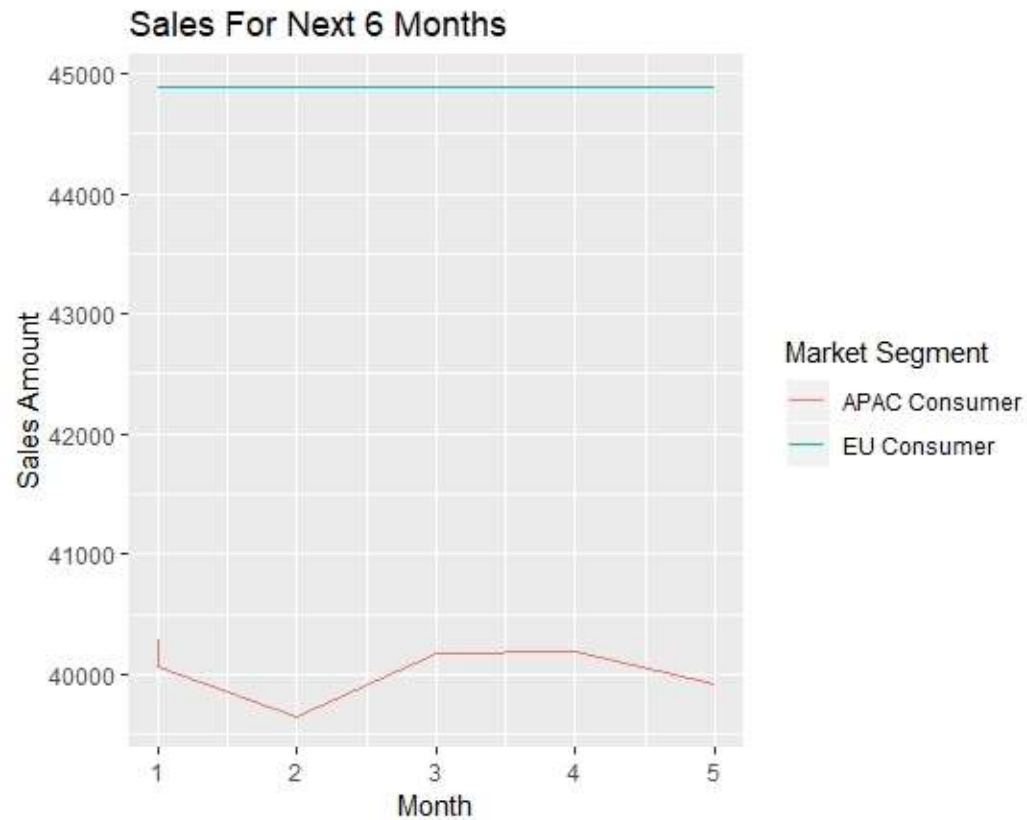


# EU CONSUMER (Quantity)

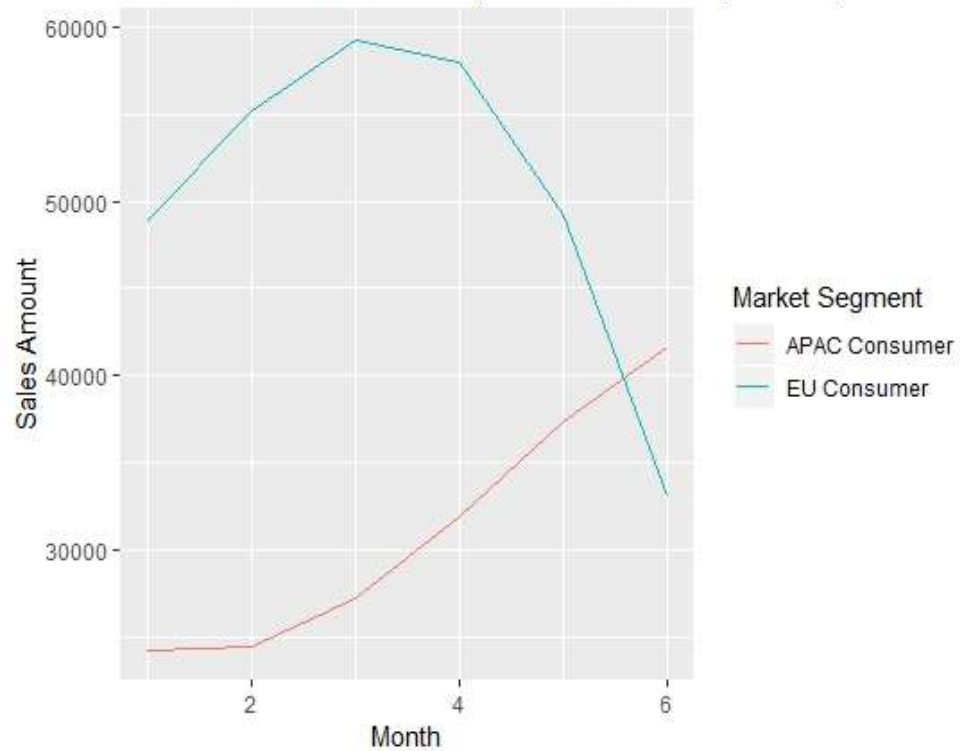
## CURVE FITTING & RESIDUE ANALYSIS



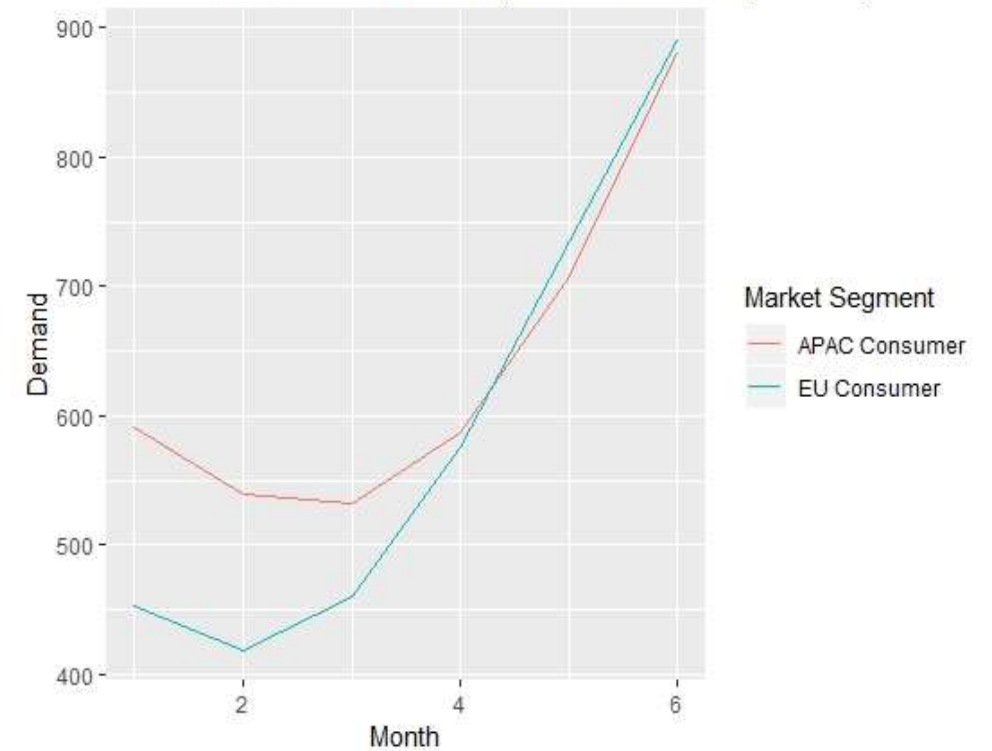
# SALES AND DEMAND FOR NEXT 6 MONTHS



Sales For Next 6 Months(Classical Decomposition)



Demand For Next 6 Months(Classical Decomposition)



- The two most profitable & consistent Market-Segments are
  1. APAC Consumer
  2. EU Consumer
- Sales across both Market-Segments have shown seasonal behaviour.
- Quantity sold across both Market-Segments have shown a linear increase in the Trend component.
- Auto ARIMA method has proven to be better than Classical Decomposition technique for APAC Consumer and EU Consumer for both Sales & Quantity.
- So, it is recommended to invest more in EU and APAC Consumer Market-Segments as sales are expected to grow and sufficient inventory arrangement needs to be done.