

Global Mart Forecasting Case Study

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Background – Global Mart Case Study

Global Mart is an online store super giant having worldwide operations. It takes orders and delivers across the globe and deals with all the major product categories - consumer, corporate & home office. Global Mart wants to forecast the sales and the demand for the next 6 months, that would help them manage the revenue and inventory accordingly.

However, this is to be done only for the 2 most profitable and consistently profitable segments for the company.

Hence, the objectives of the case study are to:

- Identify the 2 most profitable and consistently profitable segments for the company.
- Analyze and forecast the Demand and Sales for these 2 segments.

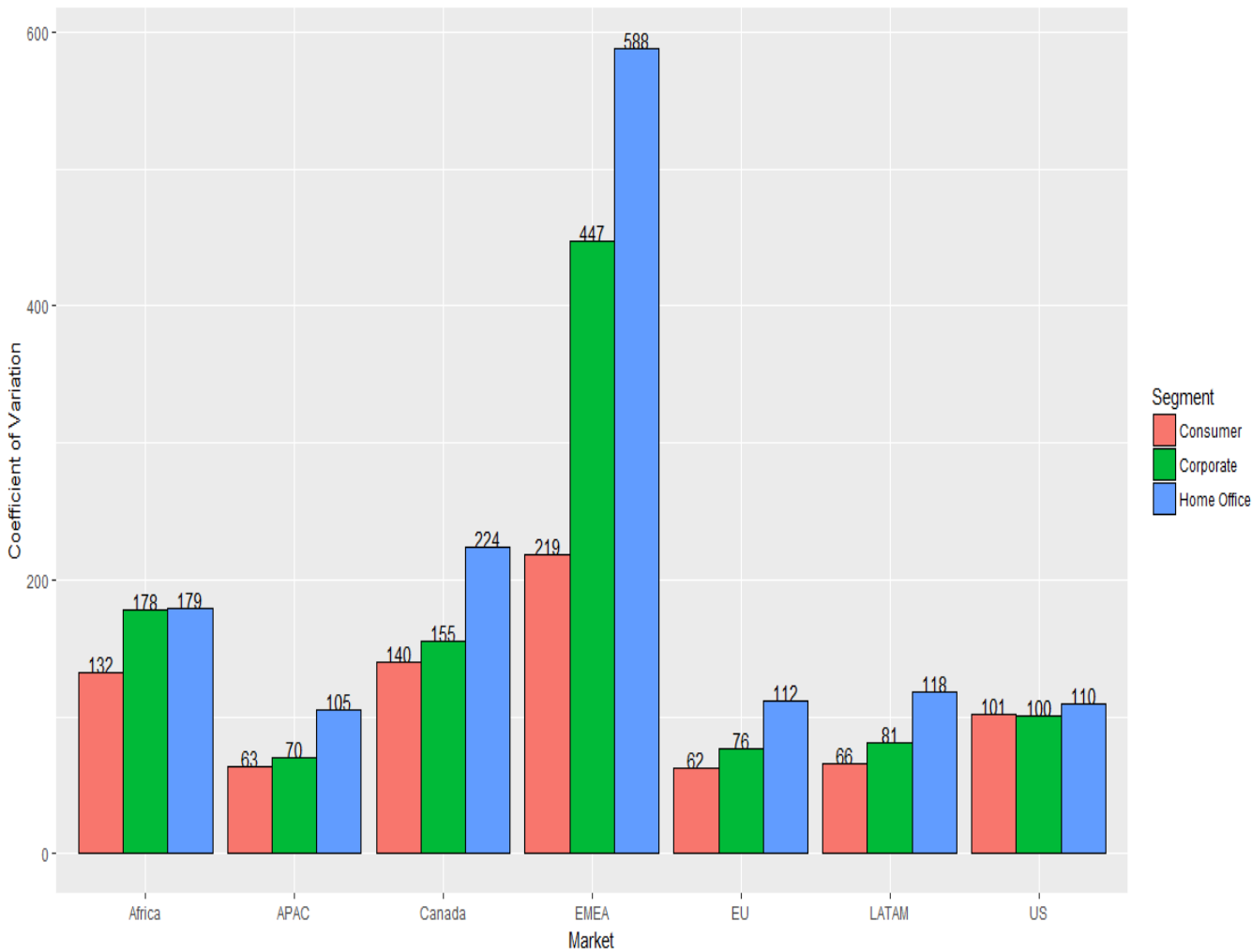
Analysis Approach

- Using Exploratory Data Analysis, identify the top 2 Profitable and consistently profitable segments.
- Using Time Series Analysis, create models and forecast Sales and Demand for these modules for next 6 months.

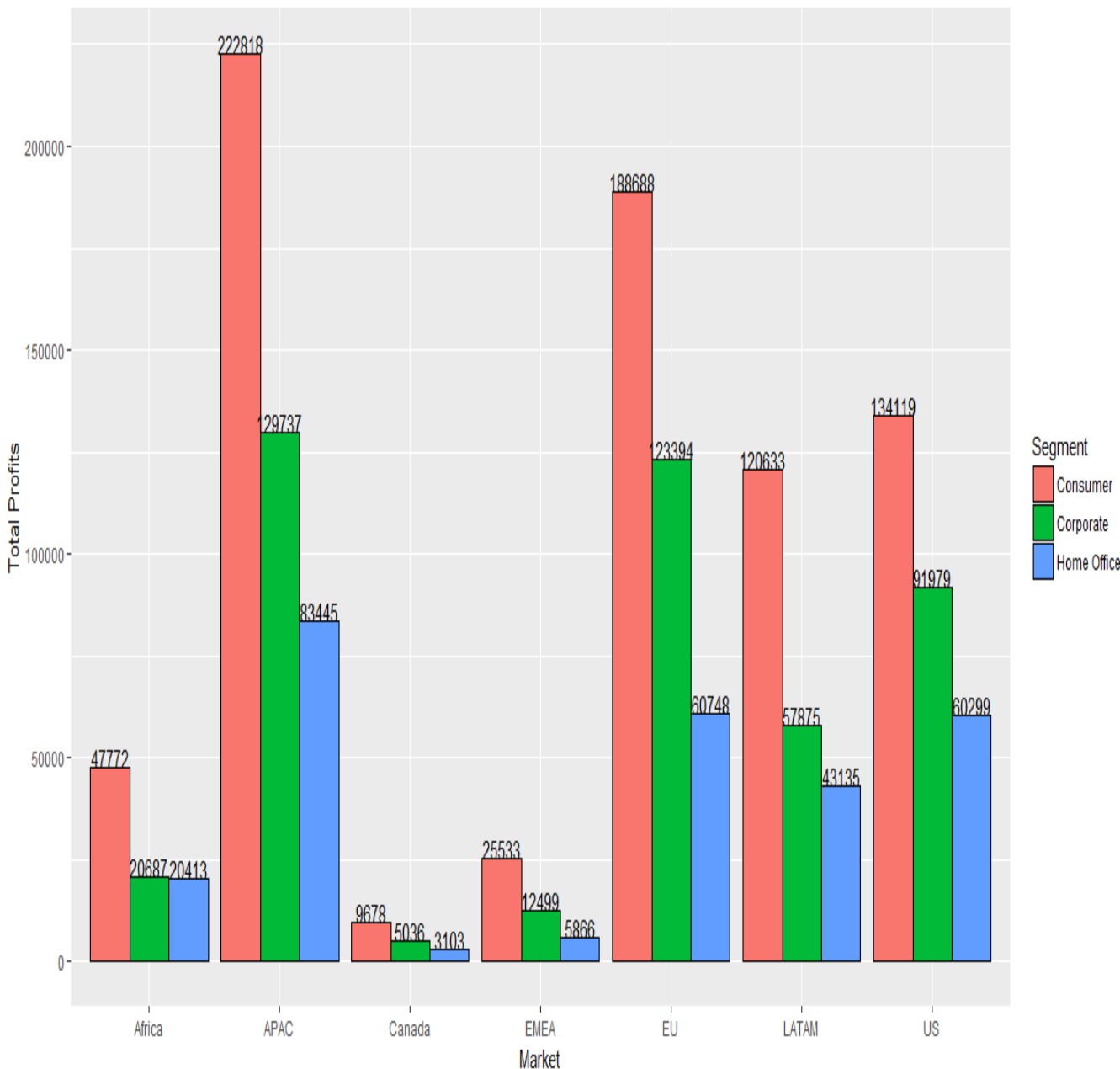
Data Understanding

- The data received for the analysis from Global Mart consists of transaction level data of worldwide operations from Jan, 2011 to Dec, 2014.
- There are altogether 51290 records of transaction level data across 7 different markets and 3 consumer categories.
- There are 24 attributes related to each transaction.

Top Segments Identification



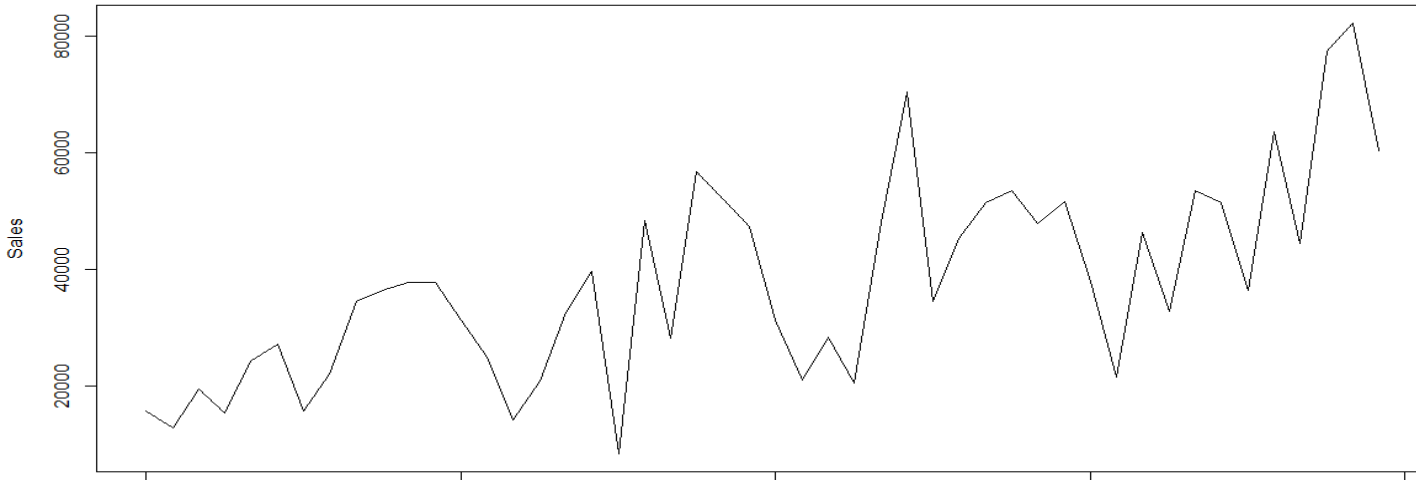
The 2 segments with the lowest Coefficient of variation are EU, Consumer and APAC, Consumer.



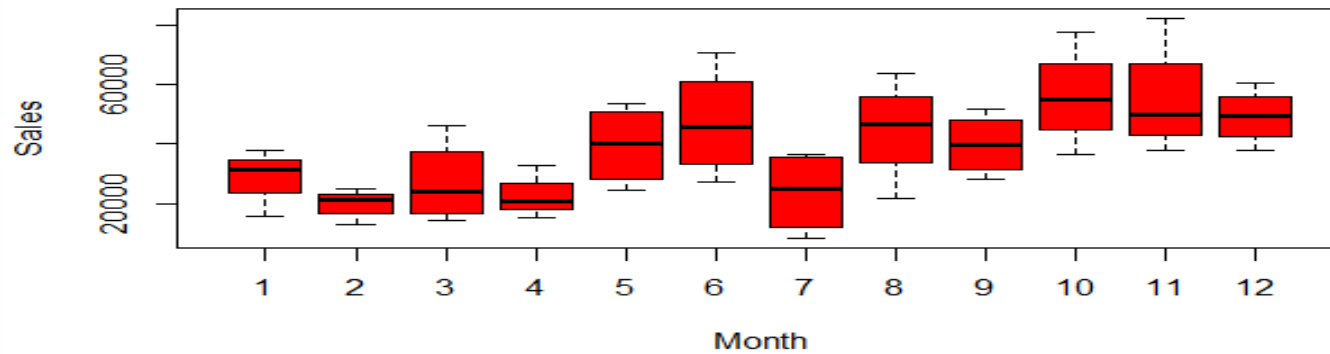
- Top 2 Segments based on Total Profits are also APAC, Consumer and EU, Consumer. Hence, APAC, Consumer and EU, Consumer are identified as 2 most profitable and consistently profitable segments.

APAC, Consumer Sales Data

APAC, Consumer

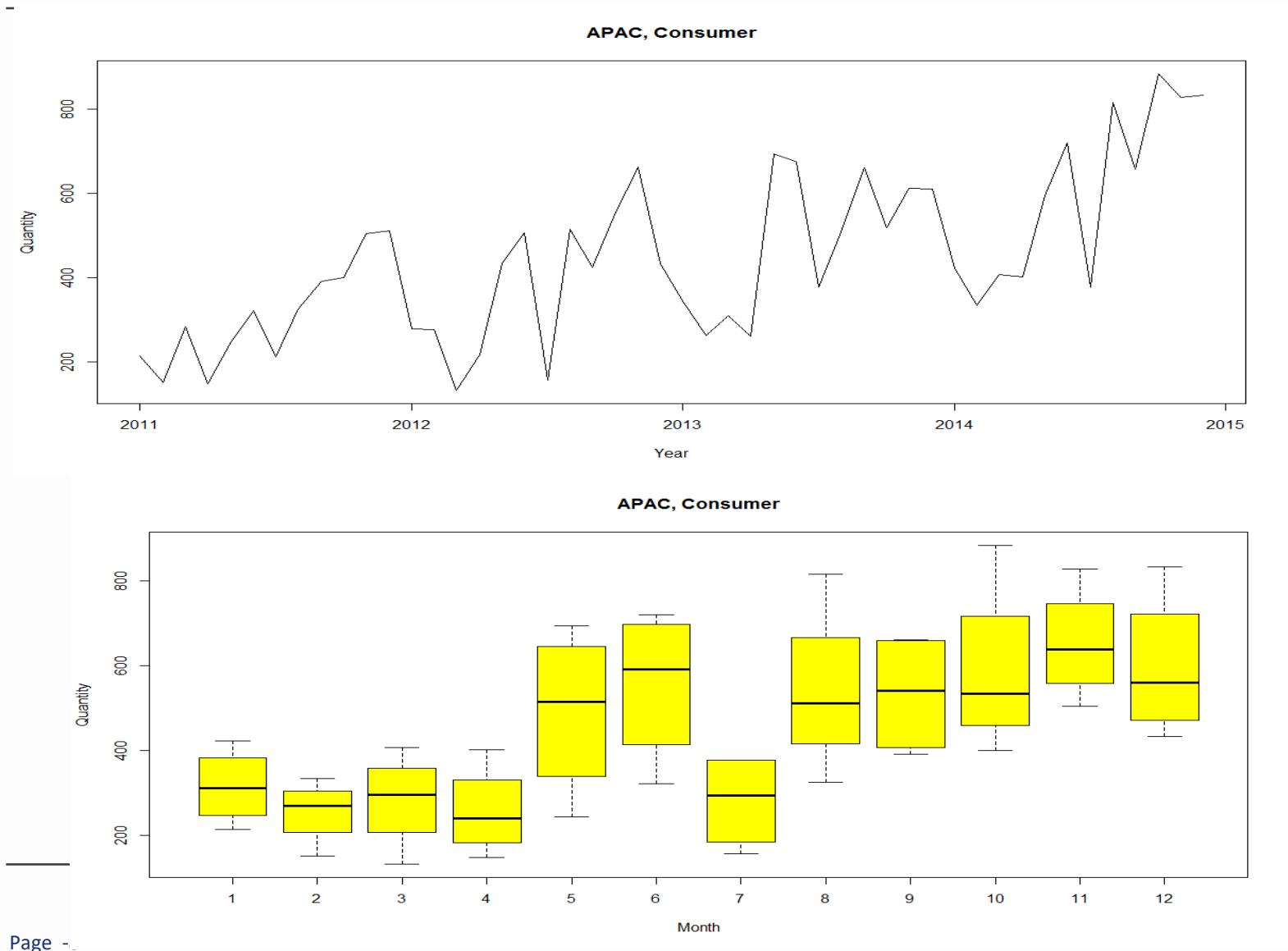


APAC, Consumer



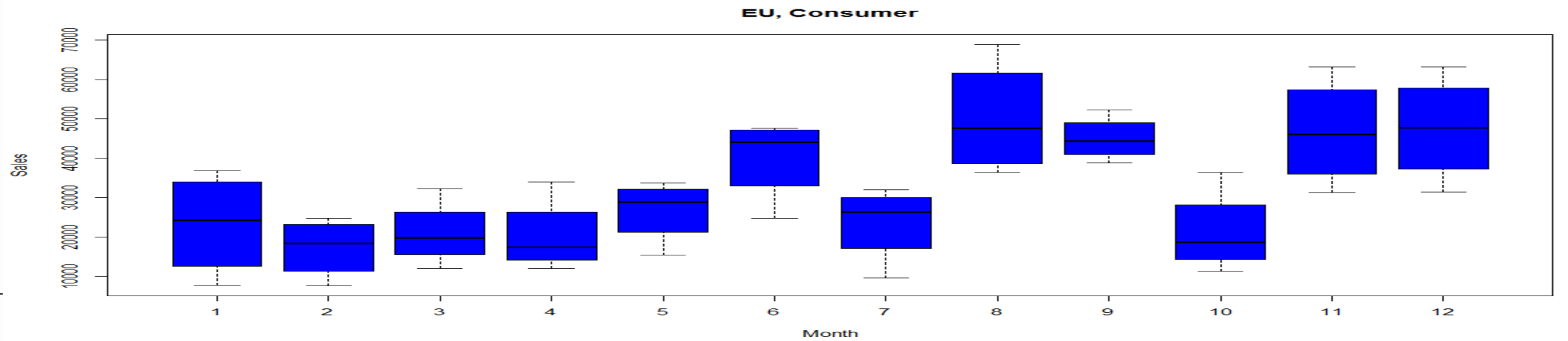
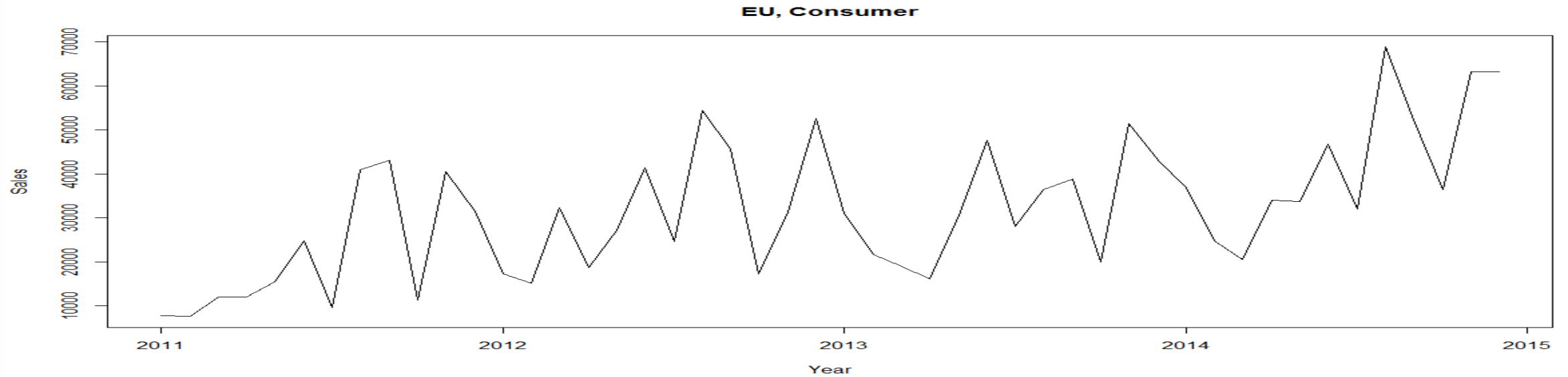
- As can be seen from the plots, there is both trend seasonality in the data.

APAC, Consumer Quantity Data



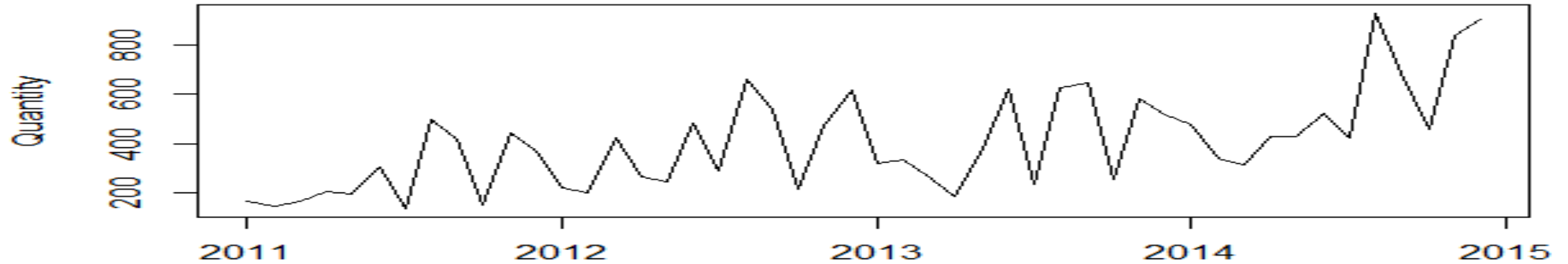
Again, there is both trend seasonality in the data. Similar Pattern is observed in the next 2 datasets.

EU, Consumer Sales Data

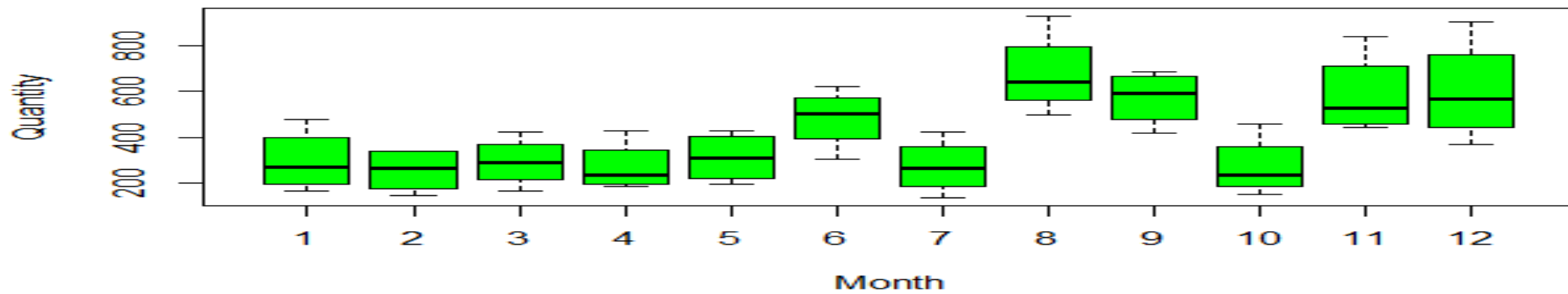


EU, Consumer Quantity Data

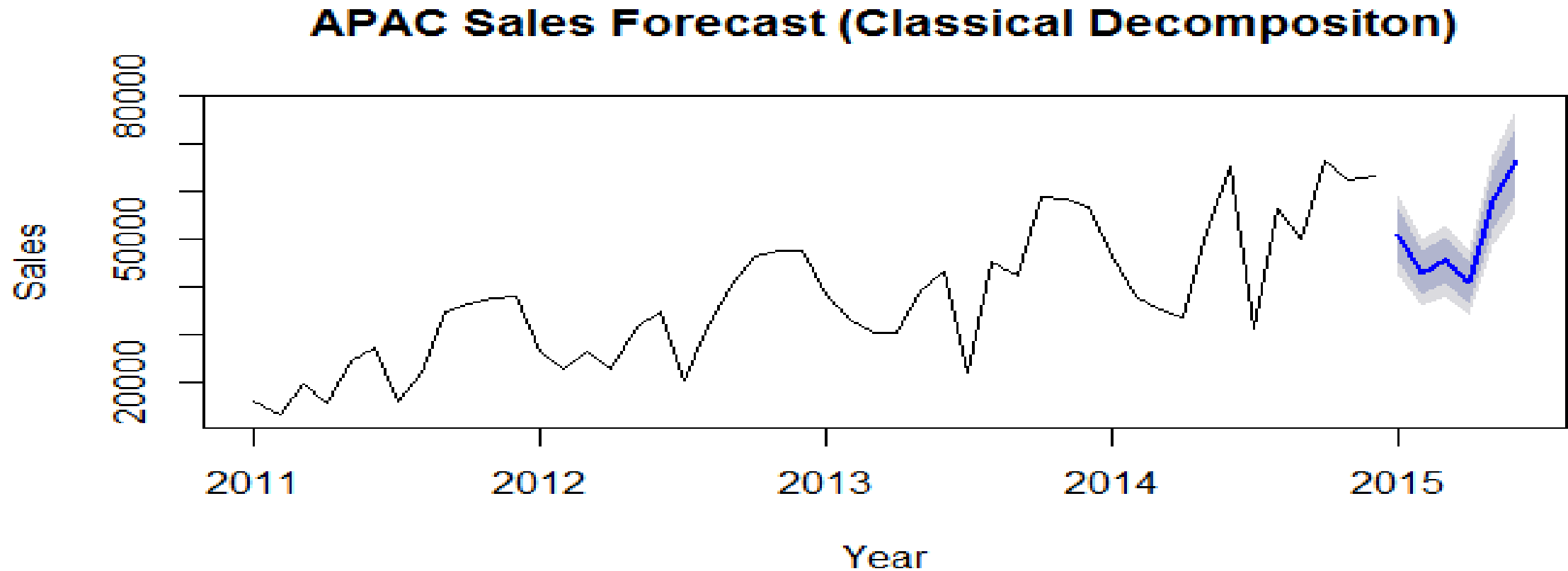
EU, Consumer



EU, Consumer

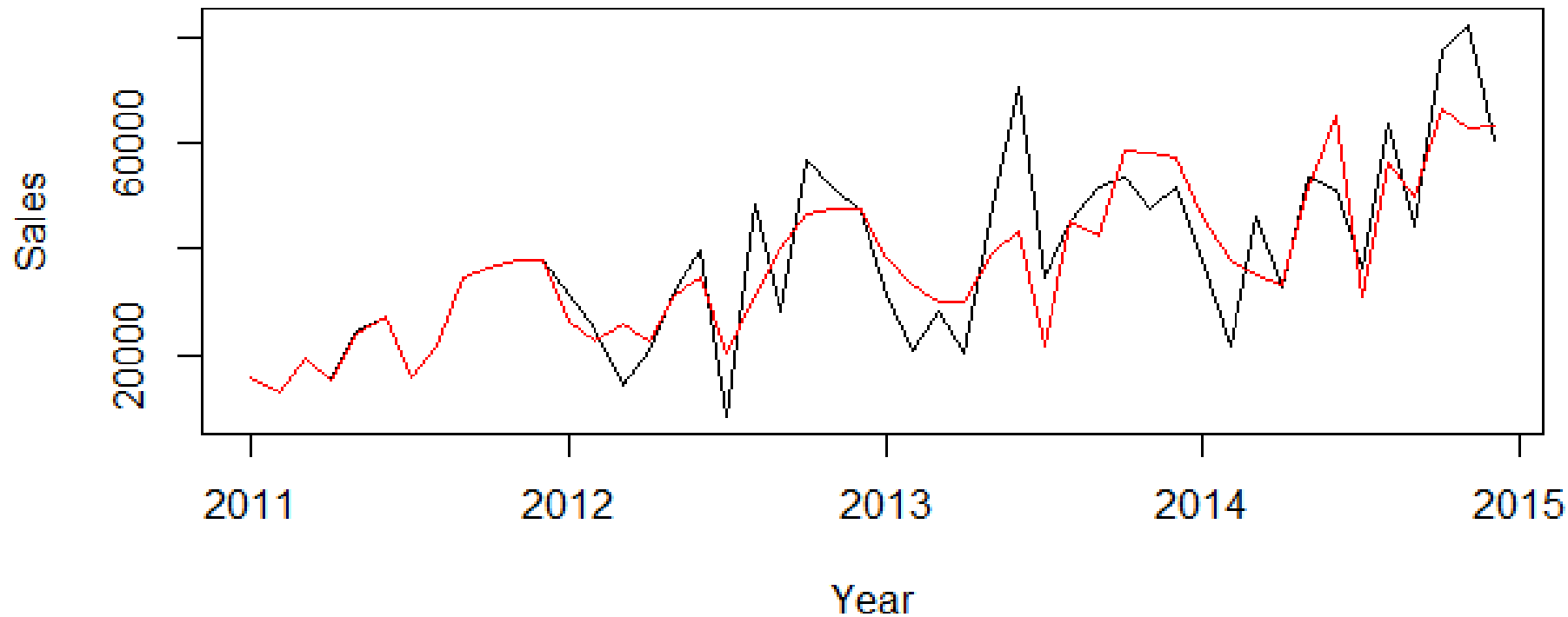


APAC, Consumer Segment Sales Forecast using Classical Decomposition



APAC, Consumer Sales Forecasting Model Fit

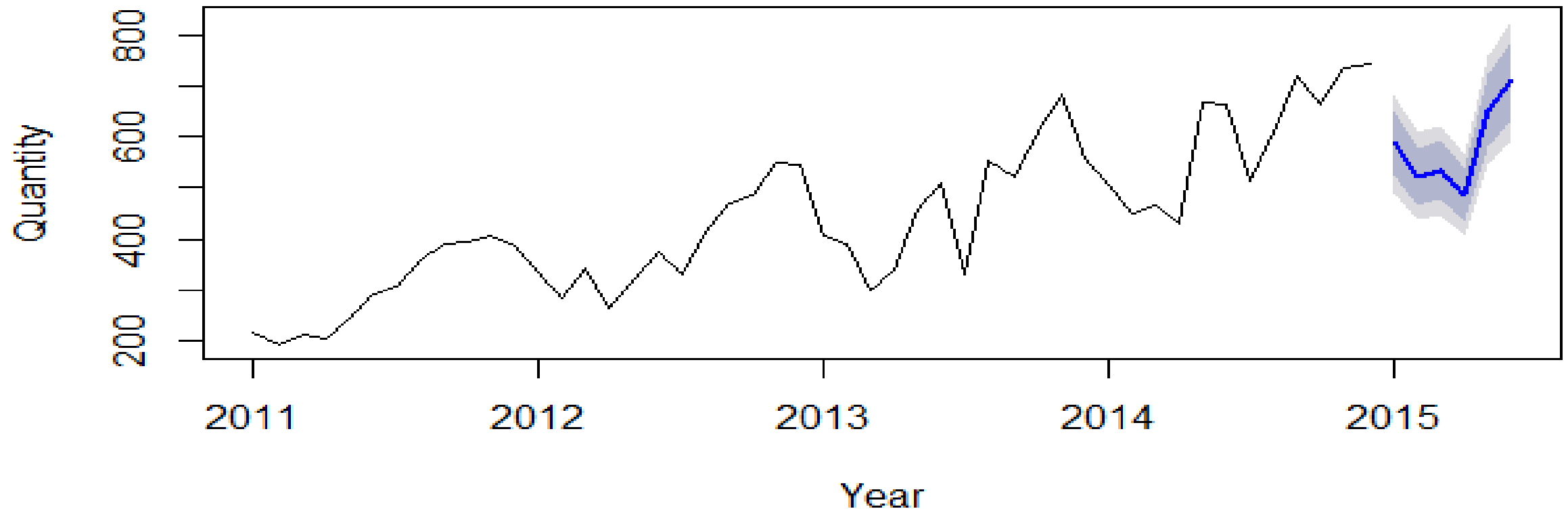
APAC, Consumer Sales



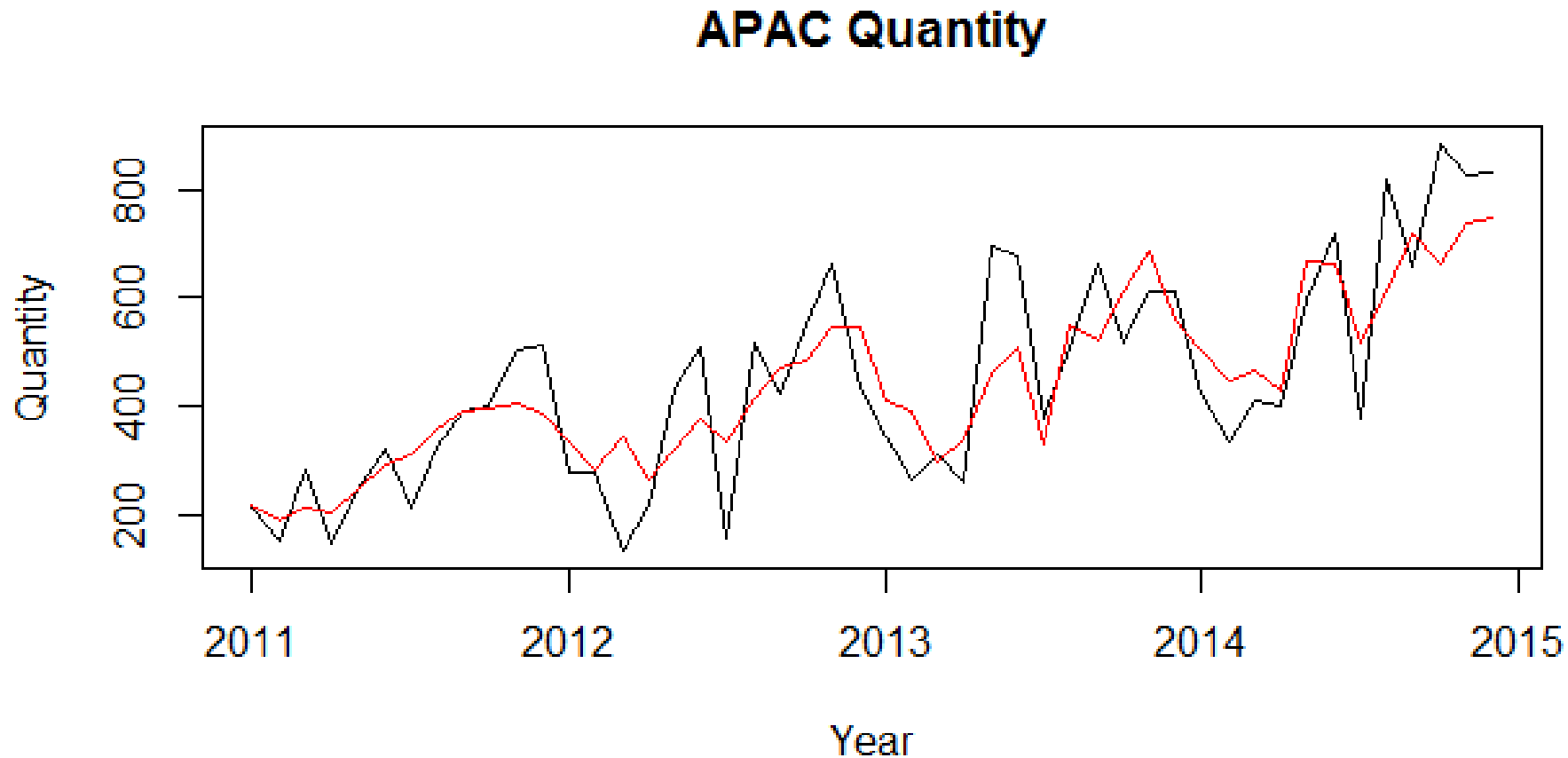
Black line -> Actual
Red Line -> Model

APAC, Consumer Segment Quantity Forecast using Classical Decomposition

APAC Quantity Forecast (Classical Decomposition)



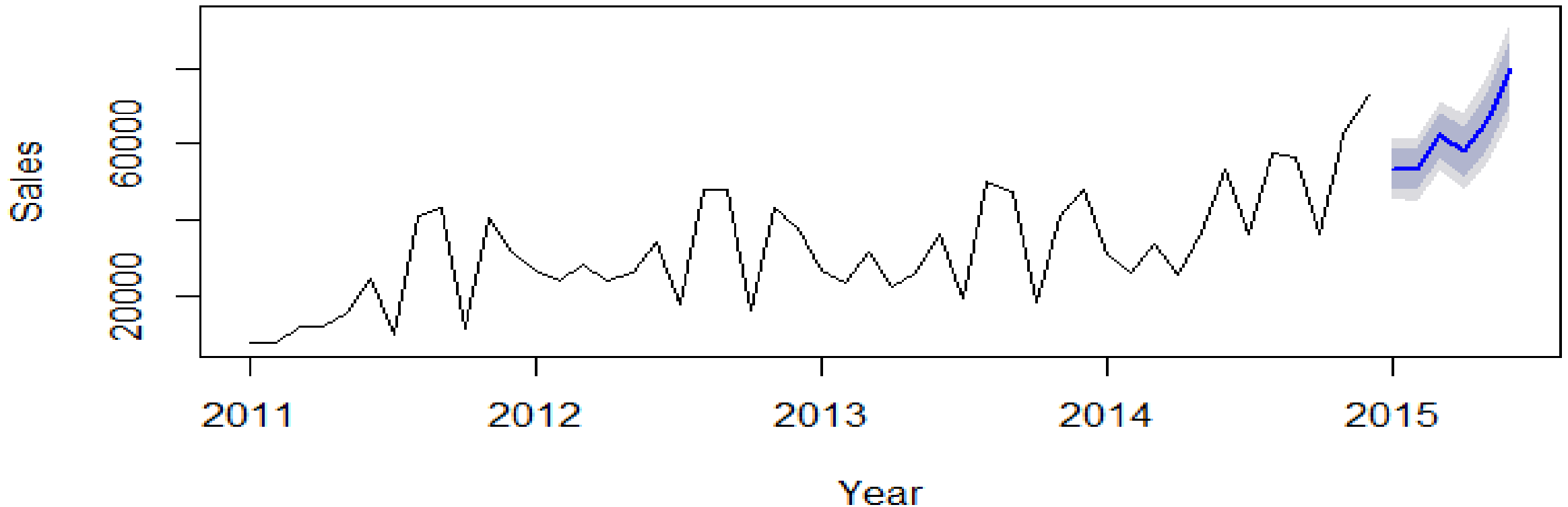
APAC, Consumer Quantity Forecasting Model Fit



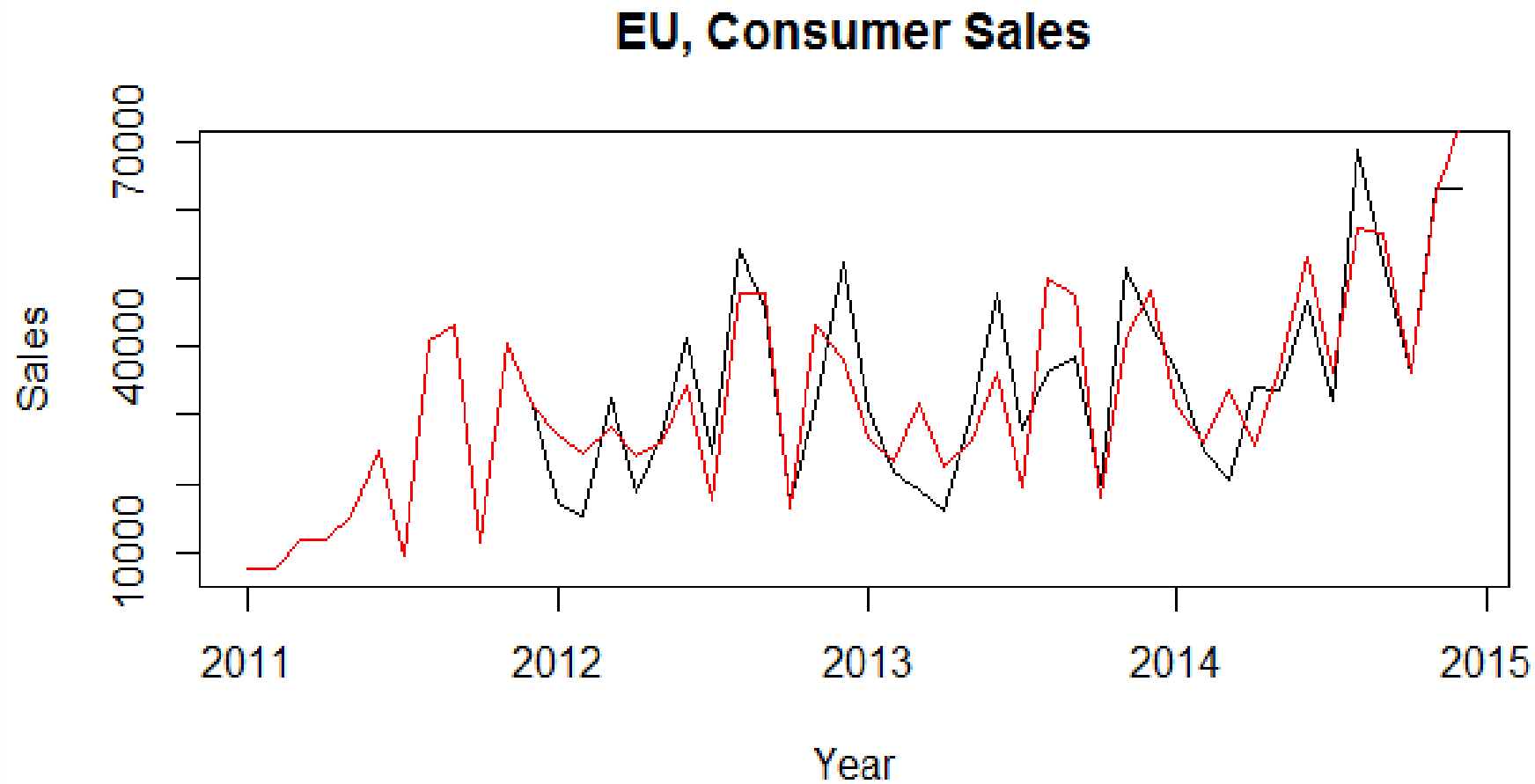
Black line -> Actual
Red Line -> Model

EU, Consumer Segment Sales Forecast using Classical Decomposition

EU, Consumer Sales Forecast (Classical Decomposition)



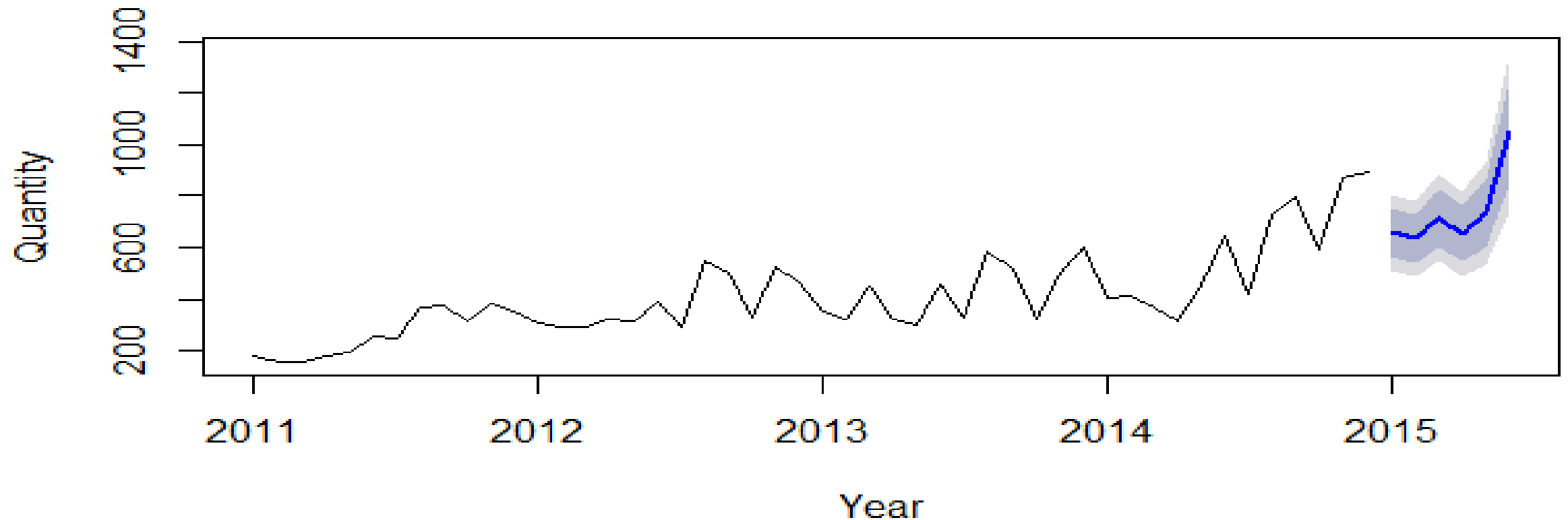
EU, Consumer Sales Forecasting Model Fit



Black line -> Actual
Red Line -> Model

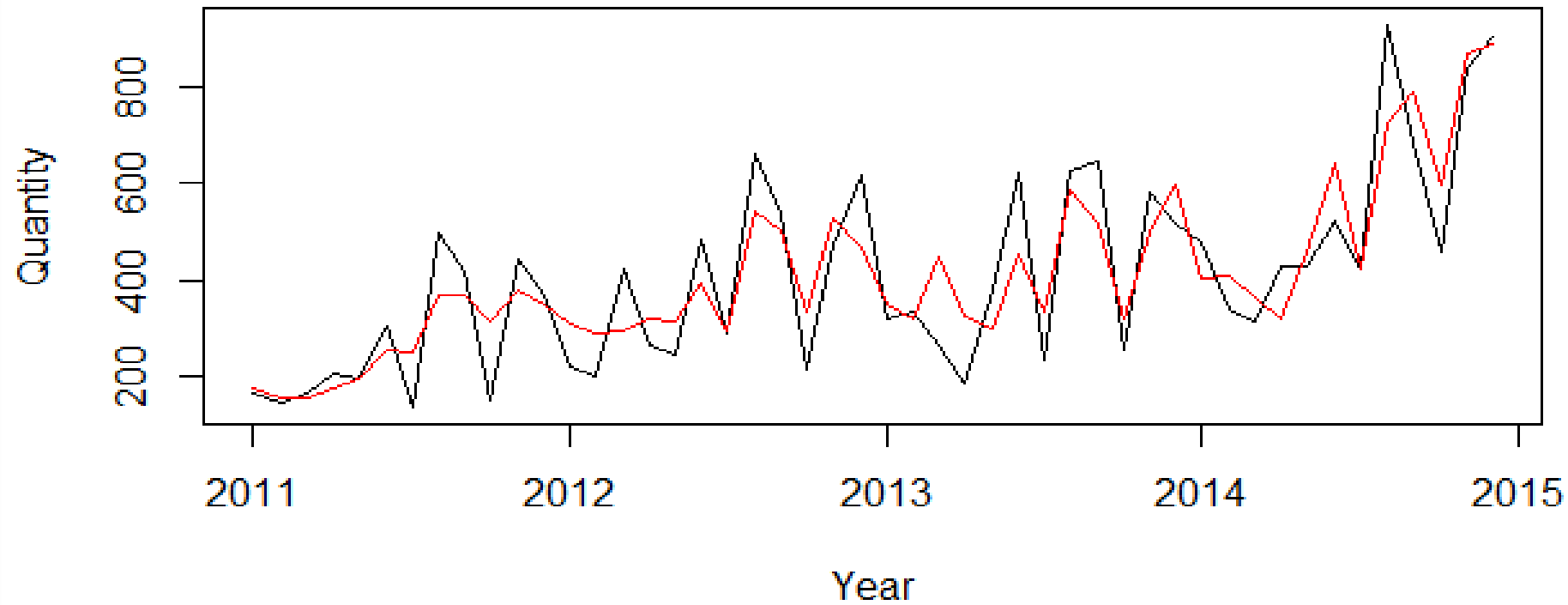
EU, Consumer Segment Quantity Forecast using Classical Decomposition

EU, Consumer Quantity Forecast (Classical Decompositon)



EU, Consumer Quantity Forecasting Model Fit

EU, Consumer Quantity



Black line -> Actual
Red Line -> Model