

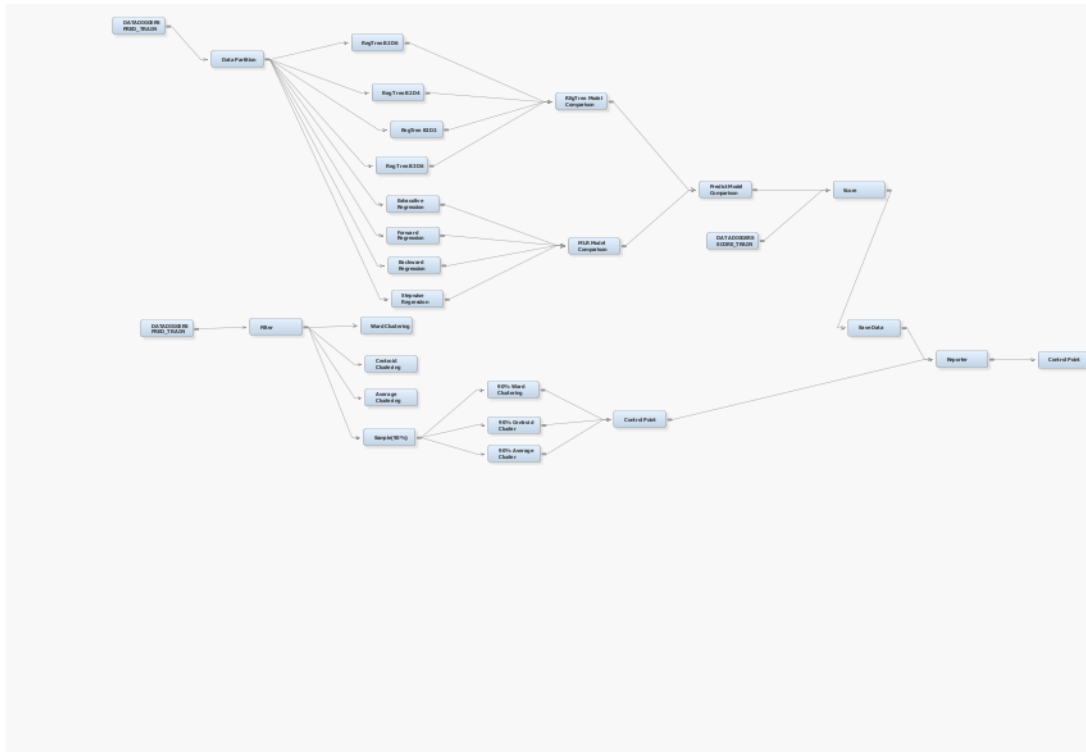
SAS Enterprise Miner Report

```
User      = sboda
Date      = 19:53:54 December 13
Project   = data diggers
Diagram   = BS.Predictive Analysis
```

```
Start Node = Report
Node label = Reporter
Nodes      = PATH
Showall    = N
```

Format = PDF
Style = LISTING

SAS Enterprise Miner Report Process Flow Diagram



SAS Enterprise Miner Report

Node=DATADIGGERSPRED_TRAIN
Summary

Node id = Ids3
Node label = DATADIGGERSPRED_TRAIN
Meta path = Ids3
Notes =

Node=DATADIGGERSPRED_TRAIN
Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|------------------------------|--------------------------|---------|----------------------|----------------------|---------|-------------------|-----------------------|---------|
| Component | DataSource | | DsCreatedBy | sboda | | NBytes | 25560064 | . |
| ApplyIntervalLevellowerLimit | Y | | DsId | datadiggerspredtrain | | NCols | 8 | . |
| ApplyMaxClassLevels | Y | | DsModifiedBy | sboda | | NObs | 318339 | . |
| ApplyMaxPercentMissing | Y | | DsModifyDate | 2049725118.4 | | NewTable | | |
| CMeta | WORK.M2P_WPA5 | | DsSampleName | | | NewVariableRole | REJECT | |
| ComputeStatistics | N | | DsSampleSize | | | OutputType | VIEW | |
| DBPassThrough | Y | | DsSampleSizeType | | | Role | RAW | TRAIN |
| Data | BS.DATADIGGERSPRED_TRAIN | | DsScope | LOCAL | | Sample | D | |
| DataSelection | DATASOURCE | | IdentifyEmptyColumns | Y | | SampleSizeObs | 10000 | |
| DataSource | datadiggerspredtrain | | IntervalLowerLimit | 20 | | SampleSizePercent | 20 | |
| DataSourceRole | RAW | | Library | BS | | SampleSizeType | PERCENT | |
| Description | | | MaxClassLevels | 20 | | Scope | LOCAL | |
| DropMapVariables | Y | | MaxPercentMissing | 50 | | Segment | | |
| DsCreateDate | 2049725118.3 | | MetaAdvisor | BASIC | | Table | DATADIGGERSPRED_TRAIN | |

Node=DATADIGGERSPRED_TRAIN
Data Attributes

| Attribute | Value | Attribute | Value | Attribute | Value |
|------------|-----------------------|----------------|--------------------|--------------|----------|
| Data Name | DATADIGGERSPRED_TRAIN | Date Created | 13Dec2024:16:04:37 | Data Size | 25560064 |
| Data Type | DATA | Date Modified | 13Dec2024:16:04:37 | Role | RAW |
| Data Label | | Number Rows | 318339 | Segment | |
| Engine | BASE | Number Columns | 8 | Data Library | BS |

Node=DATADIGGERSPRED_TRAIN
Variables List

| Name | Label | Role | Level | Type | Length | Format | Creator |
|-------------|--------------------|----------|----------|------|--------|--------------|---------|
| Country | Country | INPUT | NOMINAL | C | 20 | \$20. | |
| CustomerID | CustomerID | ID | INTERVAL | N | 8 | BEST. | |
| InvoiceDate | InvoiceDate | TIMEID | INTERVAL | N | 8 | DATETIME16.0 | |
| InvoiceNo | InvoiceNo | ID | INTERVAL | N | 8 | BEST. | |
| Quantity | Quantity | TARGET | INTERVAL | N | 8 | BEST. | |
| StockCode | StockCode | ID | NOMINAL | C | 12 | \$12. | |
| UnitPrice | UnitPrice | INPUT | INTERVAL | N | 8 | BEST. | |
| _dataobs_ | Observation Number | REJECTED | INTERVAL | N | 8 | | |

SAS Enterprise Miner Report

Node=Filter
Summary

Node id = Filter
Node label = Filter
Meta path = Ids3 => Filter
Notes =

Node=Filter
Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|------------------------|----------|---------|---------------------|-------|---------|------------------|-------|---------|
| Component | Filter | | KeepMissingInterval | Y | | PercentsCutoff | 0.5 | |
| ClassFilterMethod | MINPCT | | MADSCutoff | 9 | | PublishScoreCode | Y | |
| CreateDistributionData | Y | N | MaxValues | 25 | | SpacingsCutoff | 9 | |
| ExportTable | FILTERED | | MinFreq | 1 | | StddevCutoff | 3 | |
| IntervalFilterMethod | STDDEV | | MinPercent | 0.01 | | TabletoFilter | TRAIN | |
| KeepMissingClass | Y | | NormalizeClassValue | Y | | UpdateClassLevel | N | |

Node=Filter
Variable Summary

| Role | Level | Frequency Count | Name |
|----------|----------|--------------------|-------------|
| TIMEID | INTERVAL | 1 | InvoiceDate |
| TARGET | INTERVAL | 1 | Quantity |
| REJECTED | INTERVAL | 1 | _dataobs_ |
| INPUT | INTERVAL | 1 | UnitPrice |
| INPUT | NOMINAL | 1 | Country |

Node=Filter
Excluded Class Values

Node=Filter
Limits for Interval Variables

| Variable | Role | Minimum | Maximum | Filter Method | Keep Missing Values | Label |
|-----------|-------|----------|---------|------------------|---------------------------|-----------|
| UnitPrice | INPUT | -59.9148 | 66.1093 | STDDEV | Y | UnitPrice |

SAS Enterprise Miner Report

Node=Sample(90%)
Summary

Node id = Smpl
Node label = Sample(90%)
Meta path = Ids3 => Filter => Smpl
Notes =

Node=Sample(90%)
Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|-------------------|--------|---------|-----------------------|---------|---------|-------------------|--------------|---------|
| Component | Sample | | IgnoreSmallStrata | N | | OutputType | DATA | |
| AdjustFreq | N | | IntervalDistribution | Y | | Pvalue | 0.01 | |
| Alpha | 0.01 | | LevelProportion | 100 | | RandomSeed | 12345 | |
| ClassDistribution | Y | | LevelSampleProportion | 50 | | SizeObs | . | |
| ClusterMethod | RANDOM | | LevelSelection | EVENT | | SizePercent | 10 | |
| FreqCount | N | | Method | DEFAULT | | SizeType | PERCENT | |
| FreqMiss | N | | MinStrataSize | 5 | | StratifyCriterion | PROPORTIONAL | |

Node=Sample(90%)
Variable Summary

| Role | Level | Frequency Count | Name |
|----------|----------|--------------------|----------------------|
| TIMEID | INTERVAL | 1 | InvoiceDate |
| TARGET | INTERVAL | 1 | Quantity |
| REJECTED | INTERVAL | 1 | _dataobs_ |
| INPUT | INTERVAL | 1 | UnitPrice |
| INPUT | NOMINAL | 1 | Country |
| ID | INTERVAL | 2 | CustomerID InvoiceNo |
| ID | NOMINAL | 1 | StockCode |

SAS Enterprise Miner Report

Node=90% Average Cluster
Summary

Node id = Clus5
Node label = 90% Average Cluster
Meta path = Ids3 => Filter => Smpl => Clus5
Notes =

Node=90% Average Cluster
Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|-----------------|------------------|---------|------------------|---------|---------|---------------------|---------|-----------|
| Component | Cluster | | FinalMaxNum | 20 | | MissingNominal | DEFAULT | |
| AutomaticMaxNum | 50 | | HideVariable | Y | | MissingOrdinal | DEFAULT | |
| AutomaticMethod | AVERAGE | WARD | ImputationMethod | NONE | | NominalEncoding | GLM | |
| AutomaticMinNum | 2 | | Initial | DEFAULT | | NumberClusterMethod | USER | AUTOMATIC |
| Bins | 100 | | Learn | . | | OrdinalEncoding | RANK | |
| CCCCutOff | 3 | | LearnFinal | 0.02 | | Radius | 0 | |
| ClusterGraphs | Y | | LearnInitial | 0.5 | | Stdize | STD | |
| Clusvar | _SEGMENT_ | | LearnSteps | 1000 | | Summary | N | |
| ClusvarLabel | Segment Variable | | MaxC | 6 | 10 | TrainDefaults | Y | |
| ClusvarRole | SEGMENT | | MaxIter | 10 | | TreeProfile | Y | |
| DistancePlot | Y | | MaxSteps | 1200 | | XConv | 0.0001 | |
| Drift | N | | MissingInterval | DEFAULT | | | | |

Node=90% Average Cluster
Variable Summary

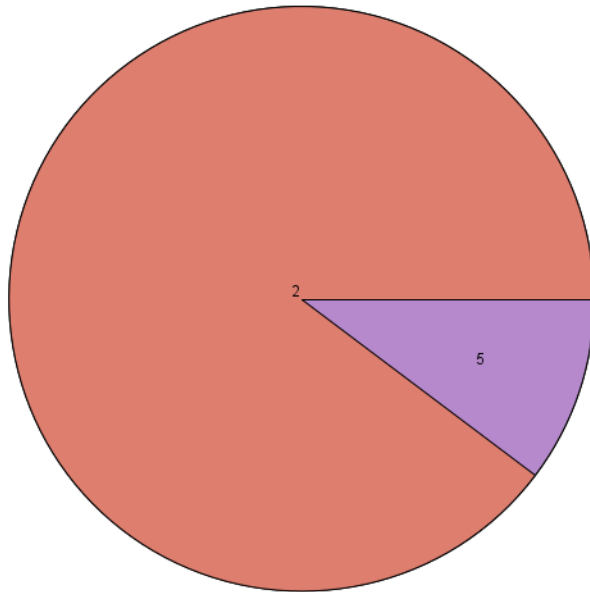
| Role | Level | Frequency Count | Name |
|-------|----------|--------------------|--------------------------------|
| INPUT | INTERVAL | 1 | UnitPrice |
| INPUT | NOMINAL | 1 | Country |
| ID | INTERVAL | 3 | CustomerID InvoiceNo _dataobs_ |
| ID | NOMINAL | 1 | StockCode |

Node=90% Average Cluster
Mean Statistics

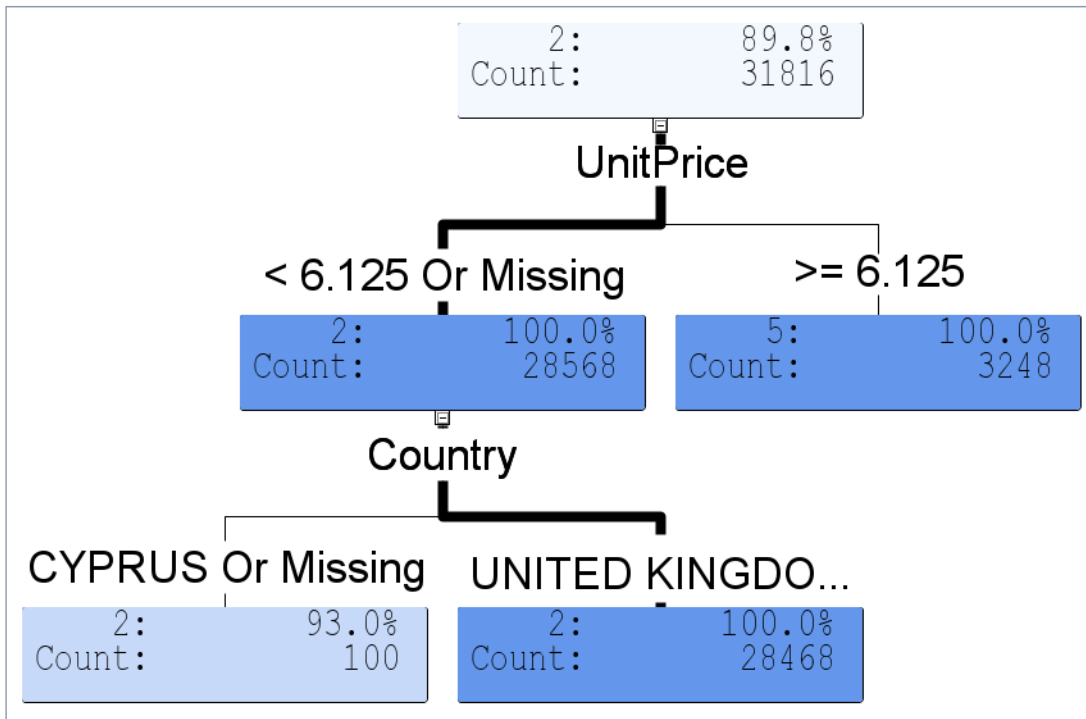
| Variable | Segment 1 | Segment 2 | Segment 3 | Segment 4 | Segment 5 | Segment 6 |
|--|--------------|-----------|--------------|--------------|--------------|--------------|
| Clustering Criterion | 0.1865 | 0.19 | 0.1865 | 0.1865 | 0.19 | 0.1865 |
| Maximum Relative Change in Cluster Seeds | 0.0002 | 0.00 | 0.0002 | 0.0002 | 0.00 | 0.0002 |
| Improvement in Clustering Criterion | . | . | . | . | . | . |
| Frequency of Cluster | 1.0000 | 28561.00 | 2.0000 | 1.0000 | 3248.00 | 3.0000 |
| Root-Mean-Square Standard Deviation | . | 0.16 | 0.0450 | . | 0.32 | 0.0675 |
| Maximum Distance from Cluster Seed | 0.0000 | 14.72 | 0.1961 | 0.0000 | 16.46 | 0.4726 |
| Nearest Cluster | 2.0000 | 5.00 | 2.0000 | 2.0000 | 2.00 | 2.0000 |
| Distance to Nearest Cluster | 29.3299 | 2.50 | 20.7409 | 29.3290 | 2.50 | 16.9409 |
| UnitPrice | 0.8500 | 2.04 | 2.3000 | 2.9500 | 10.32 | 3.2167 |
| Country=Australia | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Austria | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Bahrain | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |

| Variable | Segment 1 | Segment 2 | Segment 3 | Segment 4 | Segment 5 | Segment 6 |
|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Country=Belgium | -0.0000 | 0.00 | -0.0000 | -0.0000 | 0.01 | -0.0000 |
| Country=Brazil | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Canada | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Channel Islands | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Cyprus | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Czech Republic | 1.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Denmark | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=EIRE | 0.0000 | 0.02 | 0.0000 | 0.0000 | 0.03 | 0.0000 |
| Country=European Community | 0.0000 | 0.00 | 0.0000 | 1.0000 | 0.00 | 0.0000 |
| Country=Finland | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=France | 0.0000 | 0.02 | 0.0000 | 0.0000 | 0.02 | 0.0000 |
| Country=Germany | 0.0000 | 0.02 | 0.0000 | 0.0000 | 0.03 | 0.0000 |
| Country=Greece | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Iceland | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Israel | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Italy | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Japan | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Lebanon | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Lithuania | 0.0000 | -0.00 | 0.0000 | 0.0000 | -0.00 | 1.0000 |
| Country=Malta | 0.0000 | 0.00 | 0.0000 | 0.0000 | -0.00 | 0.0000 |
| Country=Netherlands | 0.0000 | 0.01 | 0.0000 | 0.0000 | 0.01 | 0.0000 |
| Country=Norway | -0.0000 | 0.00 | -0.0000 | -0.0000 | 0.01 | -0.0000 |
| Country=Poland | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Portugal | -0.0000 | 0.00 | -0.0000 | -0.0000 | 0.00 | -0.0000 |
| Country=RSA | -0.0000 | 0.00 | -0.0000 | -0.0000 | 0.00 | -0.0000 |
| Country=Saudi Arabia | 0.0000 | 0.00 | 1.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Singapore | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Spain | 0.0000 | 0.01 | 0.0000 | 0.0000 | 0.01 | -0.0000 |
| Country=Sweden | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Switzerland | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.01 | -0.0000 |
| Country=USA | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=United Arab Emirates | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=United Kingdom | -0.0000 | 0.89 | -0.0000 | -0.0000 | 0.85 | -0.0000 |
| Country=Unspecified | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |

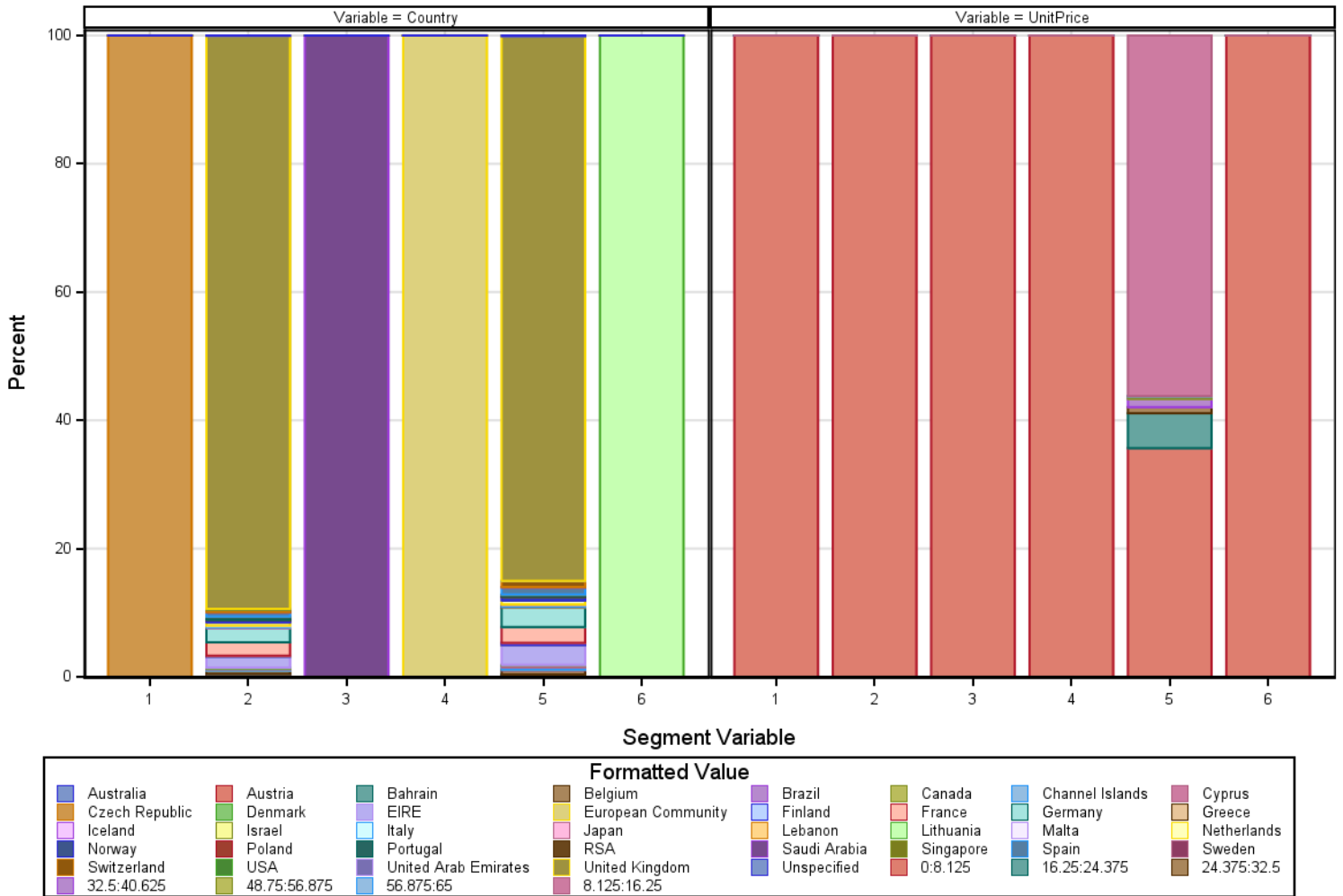
SAS Enterprise Miner Report
Node=90% Average Cluster
Segment Size



SAS Enterprise Miner Report
Node=90% Average Cluster
Tree Diagram



SAS Enterprise Miner Report
Node=90% Average Cluster
Segment Plot



SAS Enterprise Miner Report

Node=90% Centroid Cluster
Summary

Node id = Clus4
Node label = 90% Centroid Cluster
Meta path = Ids3 => Filter => Smpl => Clus4
Notes =

Node=90% Centroid Cluster
Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|-----------------|------------------|---------|------------------|---------|---------|---------------------|---------|-----------|
| Component | Cluster | | FinalMaxNum | 20 | | MissingNominal | DEFAULT | |
| AutomaticMaxNum | 50 | | HideVariable | Y | | MissingOrdinal | DEFAULT | |
| AutomaticMethod | CENTROID | WARD | ImputationMethod | NONE | | NominalEncoding | GLM | |
| AutomaticMinNum | 2 | | Initial | DEFAULT | | NumberClusterMethod | USER | AUTOMATIC |
| Bins | 100 | | Learn | . | | OrdinalEncoding | RANK | |
| CCCCutOff | 3 | | LearnFinal | 0.02 | | Radius | 0 | |
| ClusterGraphs | Y | | LearnInitial | 0.5 | | Stdize | STD | |
| Clusvar | _SEGMENT_ | | LearnSteps | 1000 | | Summary | N | |
| ClusvarLabel | Segment Variable | | MaxC | 6 | 10 | TrainDefaults | Y | |
| ClusvarRole | SEGMENT | | MaxIter | 10 | | TreeProfile | Y | |
| DistancePlot | Y | | MaxSteps | 1200 | | XConv | 0.0001 | |
| Drift | N | | MissingInterval | DEFAULT | | | | |

Node=90% Centroid Cluster
Variable Summary

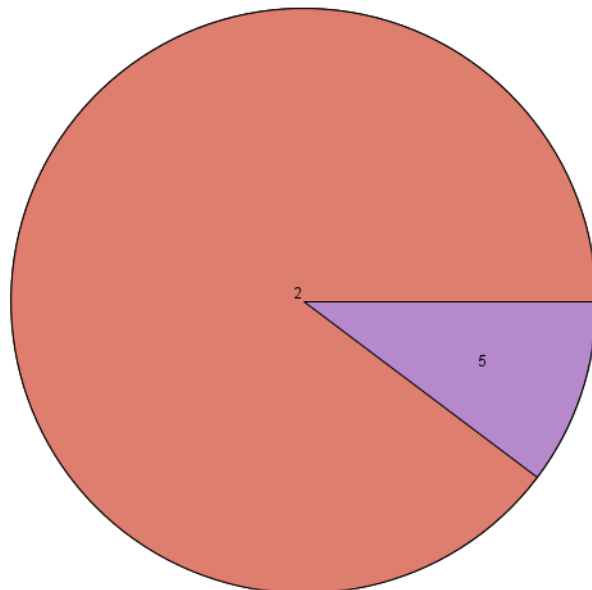
| Role | Level | Frequency Count | Name |
|-------|----------|--------------------|--------------------------------|
| INPUT | INTERVAL | 1 | UnitPrice |
| INPUT | NOMINAL | 1 | Country |
| ID | INTERVAL | 3 | CustomerID InvoiceNo _dataobs_ |
| ID | NOMINAL | 1 | StockCode |

Node=90% Centroid Cluster
Mean Statistics

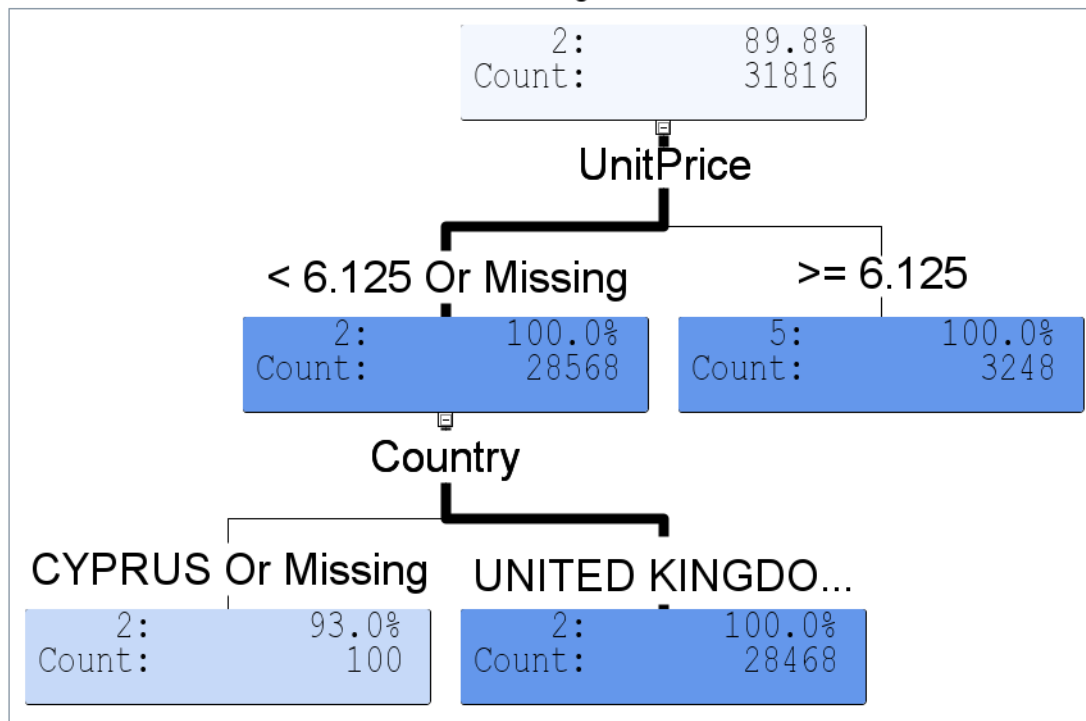
| Variable | Segment 1 | Segment 2 | Segment 3 | Segment 4 | Segment 5 | Segment 6 |
|--|--------------|-----------|--------------|--------------|--------------|--------------|
| Clustering Criterion | 0.1865 | 0.19 | 0.1865 | 0.1865 | 0.19 | 0.1865 |
| Maximum Relative Change in Cluster Seeds | 0.0002 | 0.00 | 0.0002 | 0.0002 | 0.00 | 0.0002 |
| Improvement in Clustering Criterion | . | . | . | . | . | . |
| Frequency of Cluster | 1.0000 | 28561.00 | 2.0000 | 1.0000 | 3248.00 | 3.0000 |
| Root-Mean-Square Standard Deviation | . | 0.16 | 0.0450 | . | 0.32 | 0.0675 |
| Maximum Distance from Cluster Seed | 0.0000 | 14.72 | 0.1961 | 0.0000 | 16.46 | 0.4726 |
| Nearest Cluster | 2.0000 | 5.00 | 2.0000 | 2.0000 | 2.00 | 2.0000 |
| Distance to Nearest Cluster | 29.3299 | 2.50 | 20.7409 | 29.3290 | 2.50 | 16.9409 |
| UnitPrice | 0.8500 | 2.04 | 2.3000 | 2.9500 | 10.32 | 3.2167 |
| Country=Australia | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Austria | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Bahrain | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |

| Variable | Segment 1 | Segment 2 | Segment 3 | Segment 4 | Segment 5 | Segment 6 |
|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Country=Belgium | -0.0000 | 0.00 | -0.0000 | -0.0000 | 0.01 | -0.0000 |
| Country=Brazil | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Canada | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Channel Islands | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Cyprus | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Czech Republic | 1.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Denmark | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=EIRE | 0.0000 | 0.02 | 0.0000 | 0.0000 | 0.03 | 0.0000 |
| Country=European Community | 0.0000 | 0.00 | 0.0000 | 1.0000 | 0.00 | 0.0000 |
| Country=Finland | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=France | 0.0000 | 0.02 | 0.0000 | 0.0000 | 0.02 | 0.0000 |
| Country=Germany | 0.0000 | 0.02 | 0.0000 | 0.0000 | 0.03 | 0.0000 |
| Country=Greece | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Iceland | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Israel | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Italy | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Japan | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Lebanon | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Lithuania | 0.0000 | -0.00 | 0.0000 | 0.0000 | -0.00 | 1.0000 |
| Country=Malta | 0.0000 | 0.00 | 0.0000 | 0.0000 | -0.00 | 0.0000 |
| Country=Netherlands | 0.0000 | 0.01 | 0.0000 | 0.0000 | 0.01 | 0.0000 |
| Country=Norway | -0.0000 | 0.00 | -0.0000 | -0.0000 | 0.01 | -0.0000 |
| Country=Poland | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Portugal | -0.0000 | 0.00 | -0.0000 | -0.0000 | 0.00 | -0.0000 |
| Country=RSA | -0.0000 | 0.00 | -0.0000 | -0.0000 | 0.00 | -0.0000 |
| Country=Saudi Arabia | 0.0000 | 0.00 | 1.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Singapore | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Spain | 0.0000 | 0.01 | 0.0000 | 0.0000 | 0.01 | -0.0000 |
| Country=Sweden | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Switzerland | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.01 | -0.0000 |
| Country=USA | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=United Arab Emirates | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=United Kingdom | -0.0000 | 0.89 | -0.0000 | -0.0000 | 0.85 | -0.0000 |
| Country=Unspecified | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |

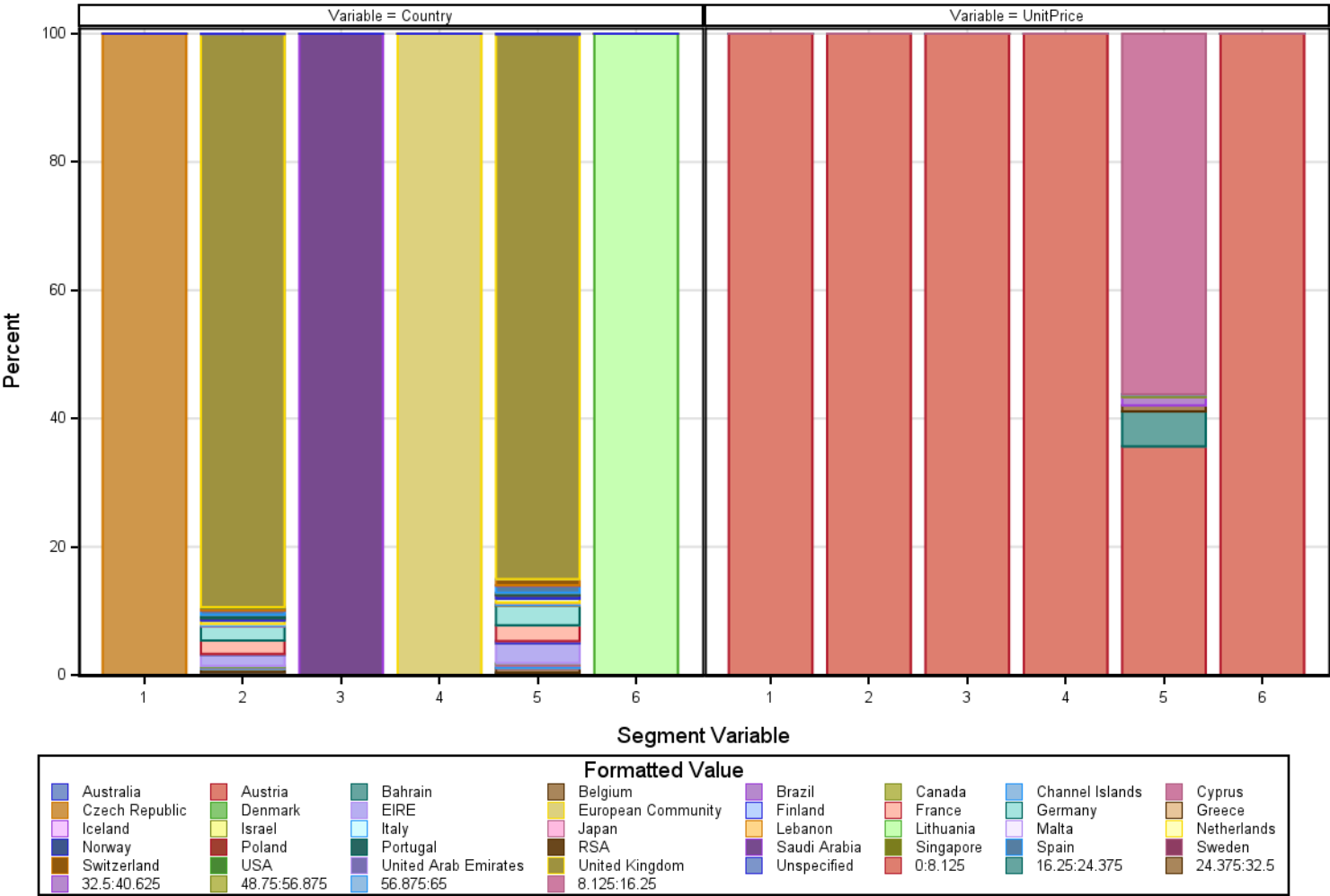
SAS Enterprise Miner Report
Node=90% Centroid Cluster
Segment Size



SAS Enterprise Miner Report
Node=90% Centroid Cluster
Tree Diagram



SAS Enterprise Miner Report
Node=90% Centroid Cluster
Segment Plot



SAS Enterprise Miner Report

Node=90% Ward Clustering Summary

Node id = Clus6
Node label = 90% Ward Clustering
Meta path = Ids3 => Filter => Smpl => Clus6
Notes =

Node=90% Ward Clustering Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|-----------------|------------------|---------|------------------|---------|---------|---------------------|---------|-----------|
| Component | Cluster | | FinalMaxNum | 20 | | MissingNominal | DEFAULT | |
| AutomaticMaxNum | 50 | | HideVariable | Y | | MissingOrdinal | DEFAULT | |
| AutomaticMethod | WARD | | ImputationMethod | NONE | | NominalEncoding | GLM | |
| AutomaticMinNum | 2 | | Initial | DEFAULT | | NumberClusterMethod | USER | AUTOMATIC |
| Bins | 100 | | Learn | . | | OrdinalEncoding | RANK | |
| CCCCutOff | 3 | | LearnFinal | 0.02 | | Radius | 0 | |
| ClusterGraphs | Y | | LearnInitial | 0.5 | | Stdize | STD | |
| Clusvar | _SEGMENT_ | | LearnSteps | 1000 | | Summary | N | |
| ClusvarLabel | Segment Variable | | MaxC | 6 | 10 | TrainDefaults | Y | |
| ClusvarRole | SEGMENT | | MaxIter | 10 | | TreeProfile | Y | |
| DistancePlot | Y | | MaxSteps | 1200 | | XConv | 0.0001 | |
| Drift | N | | MissingInterval | DEFAULT | | | | |

Node=90% Ward Clustering Variable Summary

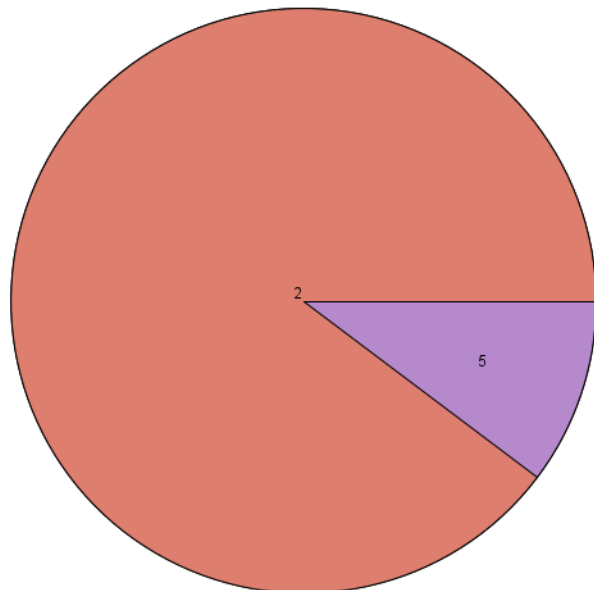
| Role | Level | Frequency Count | Name |
|-------|----------|--------------------|--------------------------------|
| INPUT | INTERVAL | 1 | UnitPrice |
| INPUT | NOMINAL | 1 | Country |
| ID | INTERVAL | 3 | CustomerID InvoiceNo _dataobs_ |
| ID | NOMINAL | 1 | StockCode |

Node=90% Ward Clustering Mean Statistics

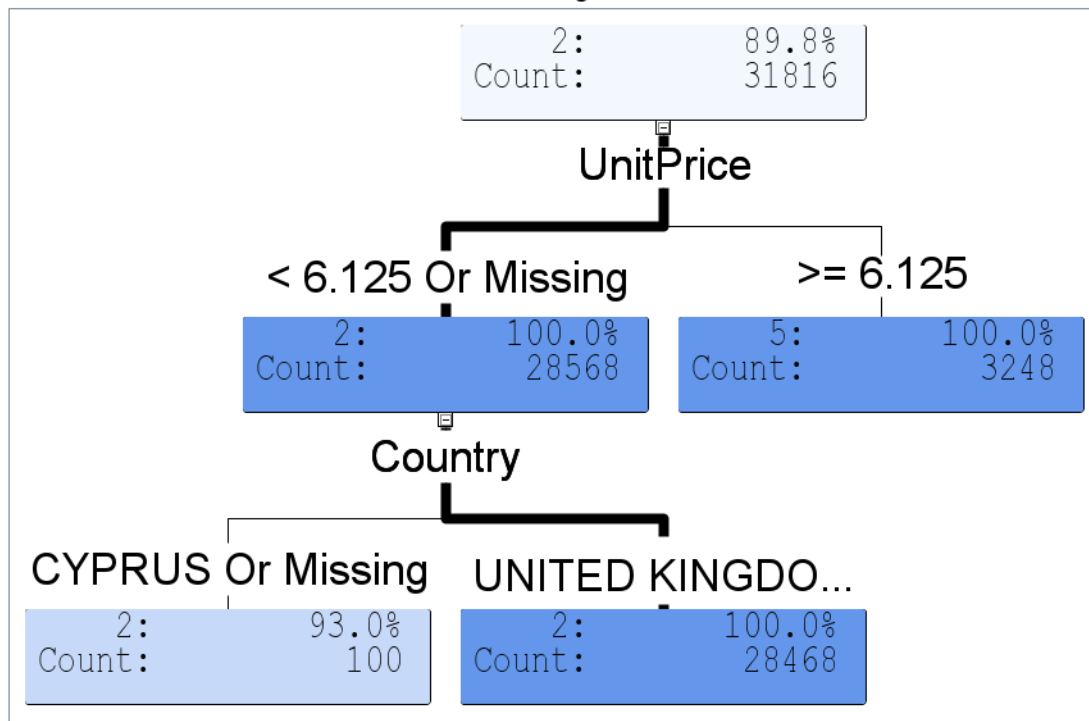
| Variable | Segment 1 | Segment 2 | Segment 3 | Segment 4 | Segment 5 | Segment 6 |
|--|--------------|-----------|--------------|--------------|--------------|--------------|
| Clustering Criterion | 0.1865 | 0.19 | 0.1865 | 0.1865 | 0.19 | 0.1865 |
| Maximum Relative Change in Cluster Seeds | 0.0002 | 0.00 | 0.0002 | 0.0002 | 0.00 | 0.0002 |
| Improvement in Clustering Criterion | . | . | . | . | . | . |
| Frequency of Cluster | 1.0000 | 28561.00 | 2.0000 | 1.0000 | 3248.00 | 3.0000 |
| Root-Mean-Square Standard Deviation | . | 0.16 | 0.0450 | . | 0.32 | 0.0675 |
| Maximum Distance from Cluster Seed | 0.0000 | 14.72 | 0.1961 | 0.0000 | 16.46 | 0.4726 |
| Nearest Cluster | 2.0000 | 5.00 | 2.0000 | 2.0000 | 2.00 | 2.0000 |
| Distance to Nearest Cluster | 29.3299 | 2.50 | 20.7409 | 29.3290 | 2.50 | 16.9409 |
| UnitPrice | 0.8500 | 2.04 | 2.3000 | 2.9500 | 10.32 | 3.2167 |
| Country=Australia | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Austria | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Bahrain | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |

| Variable | Segment 1 | Segment 2 | Segment 3 | Segment 4 | Segment 5 | Segment 6 |
|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Country=Belgium | -0.0000 | 0.00 | -0.0000 | -0.0000 | 0.01 | -0.0000 |
| Country=Brazil | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Canada | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Channel Islands | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Cyprus | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Czech Republic | 1.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Denmark | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=EIRE | 0.0000 | 0.02 | 0.0000 | 0.0000 | 0.03 | 0.0000 |
| Country=European Community | 0.0000 | 0.00 | 0.0000 | 1.0000 | 0.00 | 0.0000 |
| Country=Finland | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=France | 0.0000 | 0.02 | 0.0000 | 0.0000 | 0.02 | 0.0000 |
| Country=Germany | 0.0000 | 0.02 | 0.0000 | 0.0000 | 0.03 | 0.0000 |
| Country=Greece | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Iceland | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Israel | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Italy | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Japan | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Lebanon | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Lithuania | 0.0000 | -0.00 | 0.0000 | 0.0000 | -0.00 | 1.0000 |
| Country=Malta | 0.0000 | 0.00 | 0.0000 | 0.0000 | -0.00 | 0.0000 |
| Country=Netherlands | 0.0000 | 0.01 | 0.0000 | 0.0000 | 0.01 | 0.0000 |
| Country=Norway | -0.0000 | 0.00 | -0.0000 | -0.0000 | 0.01 | -0.0000 |
| Country=Poland | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Portugal | -0.0000 | 0.00 | -0.0000 | -0.0000 | 0.00 | -0.0000 |
| Country=RSA | -0.0000 | 0.00 | -0.0000 | -0.0000 | 0.00 | -0.0000 |
| Country=Saudi Arabia | 0.0000 | 0.00 | 1.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Singapore | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Spain | 0.0000 | 0.01 | 0.0000 | 0.0000 | 0.01 | -0.0000 |
| Country=Sweden | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=Switzerland | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.01 | -0.0000 |
| Country=USA | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=United Arab Emirates | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |
| Country=United Kingdom | -0.0000 | 0.89 | -0.0000 | -0.0000 | 0.85 | -0.0000 |
| Country=Unspecified | 0.0000 | 0.00 | 0.0000 | 0.0000 | 0.00 | 0.0000 |

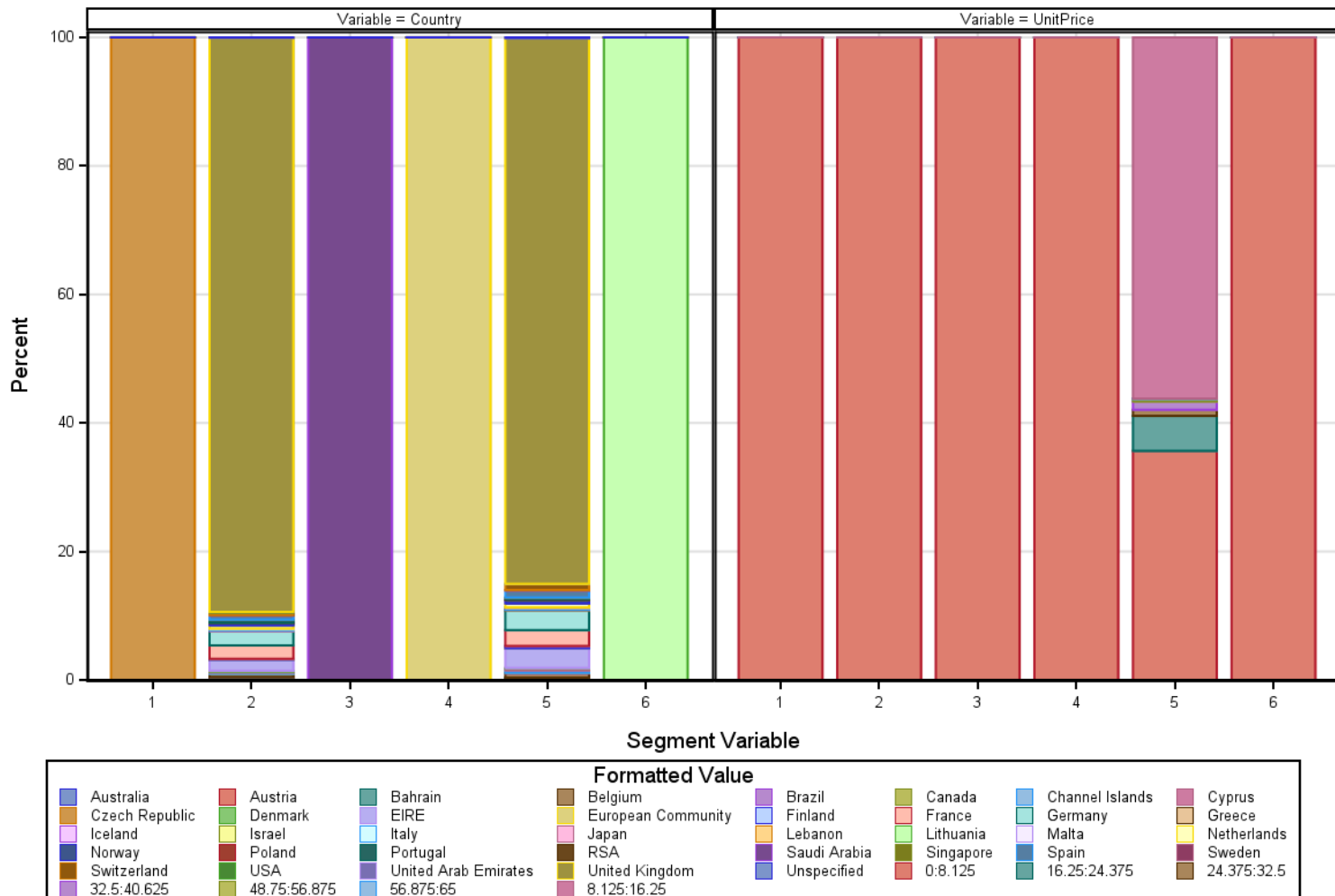
SAS Enterprise Miner Report
Node=90% Ward Clustering
Segment Size



SAS Enterprise Miner Report
Node=90% Ward Clustering
Tree Diagram



SAS Enterprise Miner Report
Node=90% Ward Clustering
Segment Plot



SAS Enterprise Miner Report

Node=DATADIGGERSPRED_TRAIN
Summary

Node id = Ids
Node label = DATADIGGERSPRED_TRAIN
Meta path = Ids
Notes =

Node=DATADIGGERSPRED_TRAIN
Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|------------------------------|--------------------------|---------|----------------------|----------------------|---------|-------------------|-----------------------|---------|
| Component | DataSource | | DsCreatedBy | sboda | | NBytes | 25560064 | . |
| ApplyIntervalLevellowerLimit | Y | | DsId | datadiggerspredtrain | | NCols | 8 | . |
| ApplyMaxClassLevels | Y | | DsModifiedBy | sboda | | NObs | 318339 | . |
| ApplyMaxPercentMissing | Y | | DsModifyDate | 2049725118.4 | | NewTable | | |
| CMeta | WORK.M2ZULWCD | | DsSampleName | | | NewVariableRole | REJECT | |
| ComputeStatistics | N | | DsSampleSize | | | OutputType | VIEW | |
| DBPassThrough | Y | | DsSampleSizeType | | | Role | RAW | TRAIN |
| Data | BS.DATADIGGERSPRED_TRAIN | | DsScope | LOCAL | | Sample | D | |
| DataSelection | DATASOURCE | | IdentifyEmptyColumns | Y | | SampleSizeObs | 10000 | |
| DataSource | datadiggerspredtrain | | IntervalLowerLimit | 20 | | SampleSizePercent | 20 | |
| DataSourceRole | RAW | | Library | BS | | SampleSizeType | PERCENT | |
| Description | | | MaxClassLevels | 20 | | Scope | LOCAL | |
| DropMapVariables | Y | | MaxPercentMissing | 50 | | Segment | | |
| DsCreateDate | 2049725118.3 | | MetaAdvisor | BASIC | | Table | DATADIGGERSPRED_TRAIN | |

Node=DATADIGGERSPRED_TRAIN
Data Attributes

| Attribute | Value | Attribute | Value | Attribute | Value |
|------------|-----------------------|----------------|--------------------|--------------|----------|
| Data Name | DATADIGGERSPRED_TRAIN | Date Created | 13Dec2024:16:04:37 | Data Size | 25560064 |
| Data Type | DATA | Date Modified | 13Dec2024:16:04:37 | Role | RAW |
| Data Label | | Number Rows | 318339 | Segment | |
| Engine | BASE | Number Columns | 8 | Data Library | BS |

Node=DATADIGGERSPRED_TRAIN
Variables List

| Name | Label | Role | Level | Type | Length | Format | Creator |
|-------------|--------------------|----------|----------|------|--------|--------------|---------|
| Country | Country | INPUT | NOMINAL | C | 20 | \$20. | |
| CustomerID | CustomerID | ID | INTERVAL | N | 8 | BEST. | |
| InvoiceDate | InvoiceDate | TIMEID | INTERVAL | N | 8 | DATETIME16.0 | |
| InvoiceNo | InvoiceNo | ID | INTERVAL | N | 8 | BEST. | |
| Quantity | Quantity | TARGET | INTERVAL | N | 8 | BEST. | |
| StockCode | StockCode | ID | NOMINAL | C | 12 | \$12. | |
| UnitPrice | UnitPrice | INPUT | INTERVAL | N | 8 | BEST. | |
| _dataobs_ | Observation Number | REJECTED | INTERVAL | N | 8 | | |

SAS Enterprise Miner Report

Node=Data Partition Summary

Node id = Part
Node label = Data Partition
Meta path = Ids => Part
Notes =

Node=Data Partition Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|----------------------|-----------|---------|------------|---------|---------|-------------|-------|---------|
| Component | Partition | | Method | DEFAULT | | TestPct | 30 | |
| ClassDistribution | Y | | OutputType | DATA | | TrainPct | 40 | |
| IntervalDistribution | Y | | RandomSeed | 12345 | | ValidatePct | 30 | |

Node=Data Partition Variable Summary

| Role | Level | Frequency Count | Name |
|----------|----------|--------------------|----------------------|
| TIMEID | INTERVAL | 1 | InvoiceDate |
| TARGET | INTERVAL | 1 | Quantity |
| REJECTED | INTERVAL | 1 | _dataobs_ |
| INPUT | INTERVAL | 1 | UnitPrice |
| INPUT | NOMINAL | 1 | Country |
| ID | INTERVAL | 2 | CustomerID InvoiceNo |
| ID | NOMINAL | 1 | StockCode |

SAS Enterprise Miner Report

Node=Stepwise Regression Summary

Node id = Reg4
Node label = Stepwise Regression
Meta path = Ids => Part => Reg4
Notes =

Node=Stepwise Regression Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|------------------|--------------|--------------|-----------------------|-----------|---------|--------------------|---------|---------|
| Component | Regression | | Force | 0 | | PolynomialDegree | 2 | |
| AbsConvValue | -1.34078E154 | -7.237006E75 | GConvTimes | 1 | | PrintDesignMatrix | N | |
| AbsFTime | 1 | | GConvValue | 1E-6 | | Rule | NONE | |
| AbsFValue | 0 | | Hierarchy | CLASS | | SASSPDS | N | |
| AbsGTime | 1 | | InputCoding | DEVIATION | | SelectionCriterion | DEFAULT | |
| AbsGValue | 0.00001 | | Interactions | | | SelectionDefault | Y | |
| AbsXTime | 1 | | LinkFunction | LOGIT | | Sequential | N | |
| AbsXValue | 1E-8 | | MainEffect | Y | | Simple | N | |
| CIParam | N | | MaxCPUTime | 1 HOUR | | SIEntry | 0.05 | |
| ConvDefaults | Y | | MaxFunctionCalls | . | | SISlay | 0.05 | |
| CorB | N | | MaxIterations | . | | Start | 0 | |
| CovB | N | | MaxStep | . | | StepOutput | N | |
| Covout | N | | MinResourceUse | N | | Stop | 0 | |
| Details | N | | ModelDefaults | Y | | SuppressIntercept | N | |
| Error | LOGISTIC | | ModelSelection | STEPWISE | NONE | SuppressOutput | N | |
| ExcludedVariable | REJECT | | OptimizationTechnique | DEFAULT | | Terms | N | |
| FConvTimes | 1 | | Performance | N | | TwoFactor | N | |
| FConvValue | 0 | | Polynomial | N | | | | |

Node=Stepwise Regression Variable Summary

| Role | Level | Frequency Count | Name |
|--------|----------|-----------------|-----------|
| TARGET | INTERVAL | 1 | Quantity |
| INPUT | INTERVAL | 1 | UnitPrice |
| INPUT | NOMINAL | 1 | Country |

Node=Stepwise Regression Model Fit Statistics

Target=Quantity Target Label=Quantity

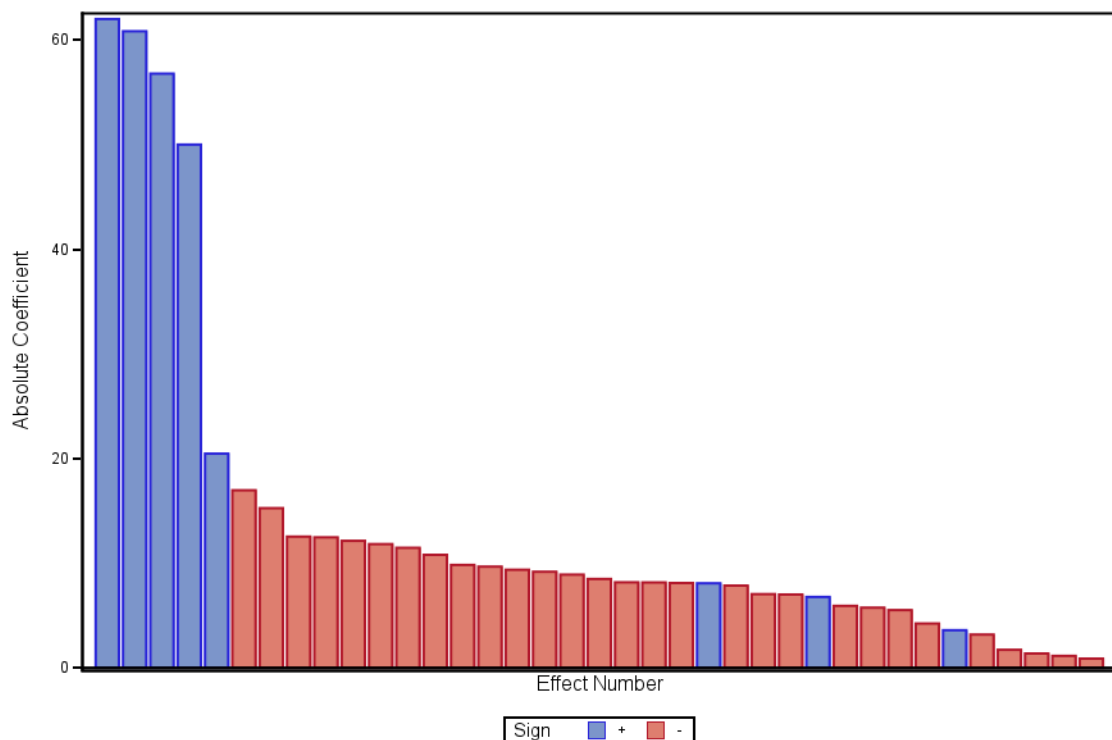
| Label of Statistic | Train | Validation | Test |
|--------------------------------|------------|------------|---------|
| Akaike's Information Criterion | 1385750.96 | . | . |
| Average Squared Error | 53212.68 | 1536.02 | 3295.83 |
| Average Error Function | 53212.68 | 1536.02 | 3295.83 |
| Degrees of Freedom for Error | 127299.00 | . | . |
| Model Degrees of Freedom | 37.00 | . | . |
| Total Degrees of Freedom | 127336.00 | . | . |

Target=Quantity Target Label=Quantity

| Label of Statistic | Train | Validation | Test |
|--------------------------------|---------------|--------------|--------------|
| Divisor for ASE | 127336.00 | 95502.00 | 95501.00 |
| Error Function | 6775889255.84 | 146693301.07 | 314754781.43 |
| Final Prediction Error | 53243.61 | . | . |
| Maximum Absolute Error | 80982.70 | 3101.70 | 12527.70 |
| Mean Square Error | 53228.14 | 1536.02 | 3295.83 |
| Sum of Frequencies | 127336.00 | 95502.00 | 95501.00 |
| Number of Estimate Weights | 37.00 | . | . |
| Root Average Sum of Squares | 230.68 | 39.19 | 57.41 |
| Root Final Prediction Error | 230.75 | . | . |
| Root Mean Squared Error | 230.71 | 39.19 | 57.41 |
| Schwarz's Bayesian Criterion | 1386111.88 | . | . |
| Sum of Squared Errors | 6775889255.84 | 146693301.07 | 314754781.43 |
| Sum of Case Weights Times Freq | 127336.00 | 95502.00 | 95501.00 |

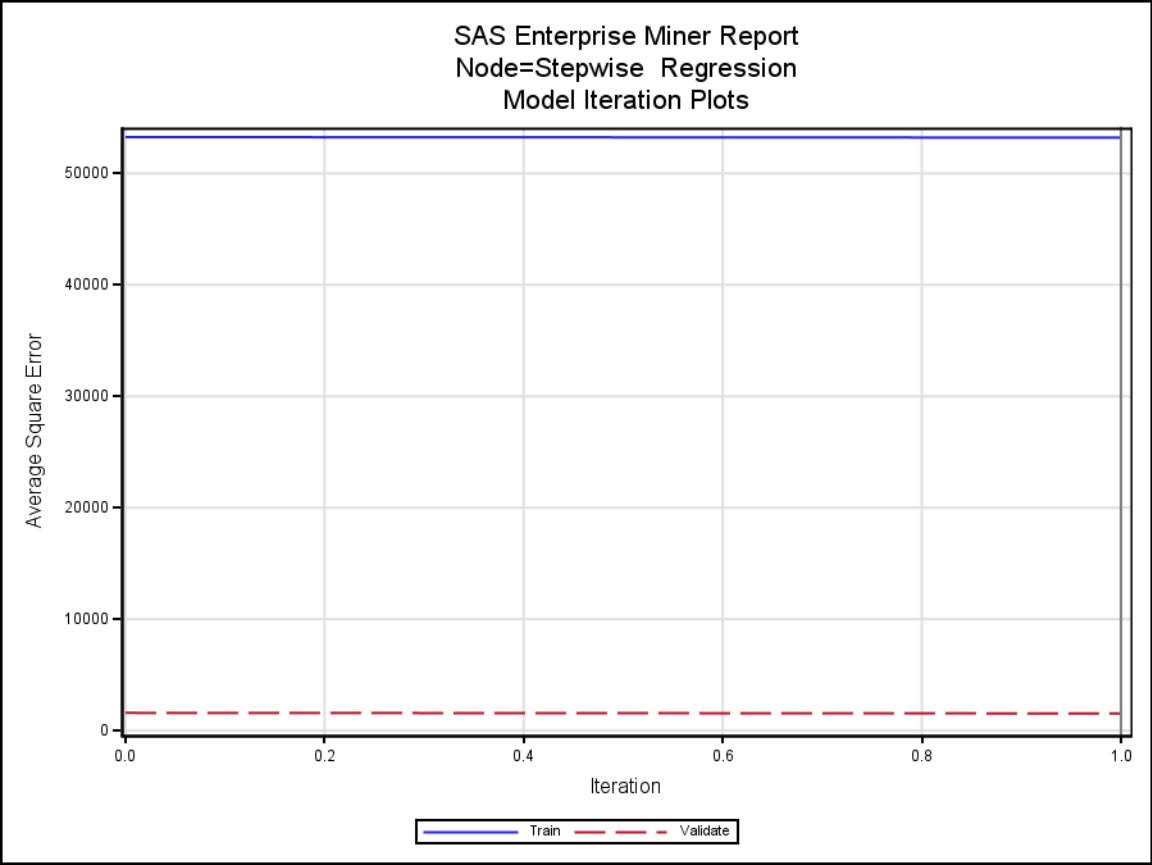
SAS Enterprise Miner Report

Node=Stepwise Regression
Regression Model Effects

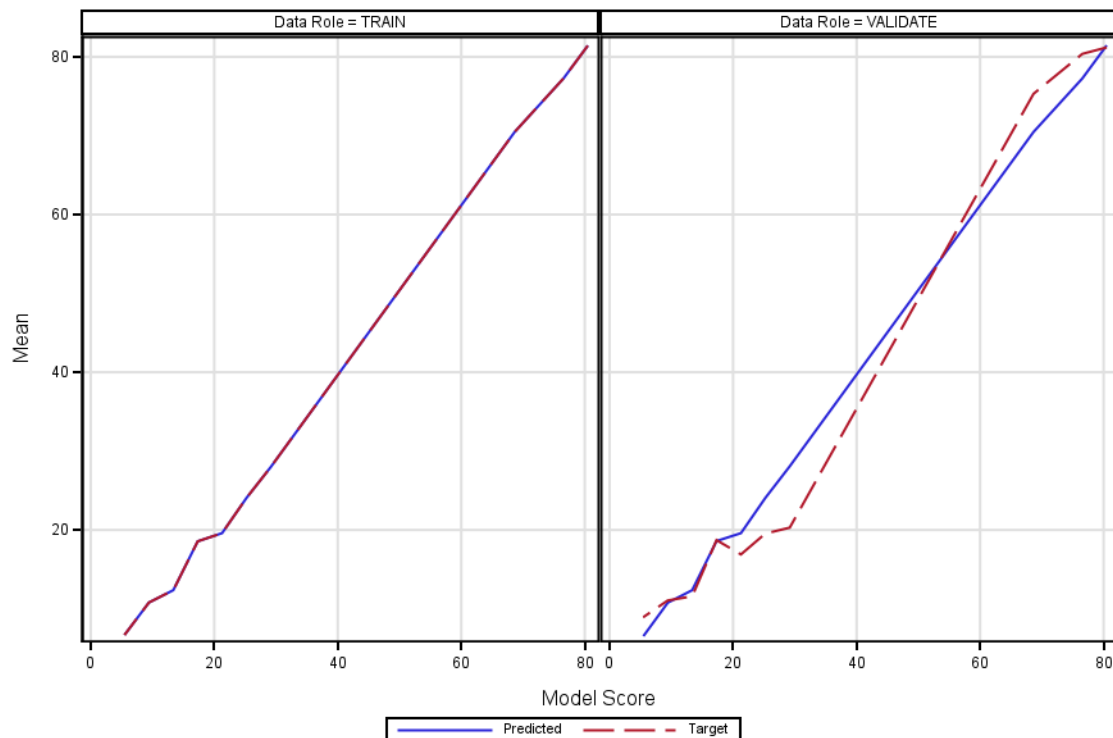


| Effect Number | Variable | Level | Coefficient | T-value | P Value | Effect Number | Variable | Level | Coefficient | T-value | P Value |
|---------------|-----------|--------------------|-------------|----------|---------|---------------|----------|----------------------|-------------|----------|---------|
| 1 | Country | JAPAN | 62.0130 | 2.48897 | 0.01281 | 20 | Country | UNITED_KINGDOM | -8.16437 | -1.16586 | 0.24367 |
| 2 | Country | NETHERLANDS | 60.8422 | 5.69873 | 0.00000 | 21 | Country | UNITED_ARAB_EMIRATES | -8.15178 | -0.14421 | 0.88534 |
| 3 | Country | SWEDEN | 56.7923 | 2.91395 | 0.00357 | 22 | Country | CHANNEL_ISLANDS | -8.09775 | -0.51297 | 0.60797 |
| 4 | Country | AUSTRALIA | 50.0098 | 3.66895 | 0.00024 | 23 | Country | SINGAPORE | 8.07303 | 0.28541 | 0.77533 |
| 5 | Intercept | | 20.4643 | 2.93561 | 0.00333 | 24 | Country | ICELAND | -7.85025 | -0.25715 | 0.79706 |
| 6 | Country | BAHRAIN | -16.9643 | -0.15091 | 0.88005 | 25 | Country | GERMANY | -7.03533 | -0.86949 | 0.38458 |
| 7 | Country | RSA | -15.2538 | -0.29363 | 0.76904 | 26 | Country | FRANCE | -6.99737 | -0.85287 | 0.39373 |
| 8 | Country | MALTA | -12.5332 | -0.29666 | 0.76672 | 27 | Country | CANADA | 6.76489 | 0.20419 | 0.83820 |
| 9 | Country | SAUDI_ARABIA | -12.4643 | -0.14647 | 0.88355 | 28 | Country | ISRAEL | -5.91204 | -0.20901 | 0.83444 |
| 10 | Country | LEBANON | -12.1309 | -0.22740 | 0.82011 | 29 | Country | CYPRUS | -5.74151 | -0.33268 | 0.73938 |
| 11 | Country | EUROPEAN_COMMUNITY | -11.8172 | -0.21538 | 0.82947 | 30 | Country | USA | -5.51043 | -0.19206 | 0.84770 |

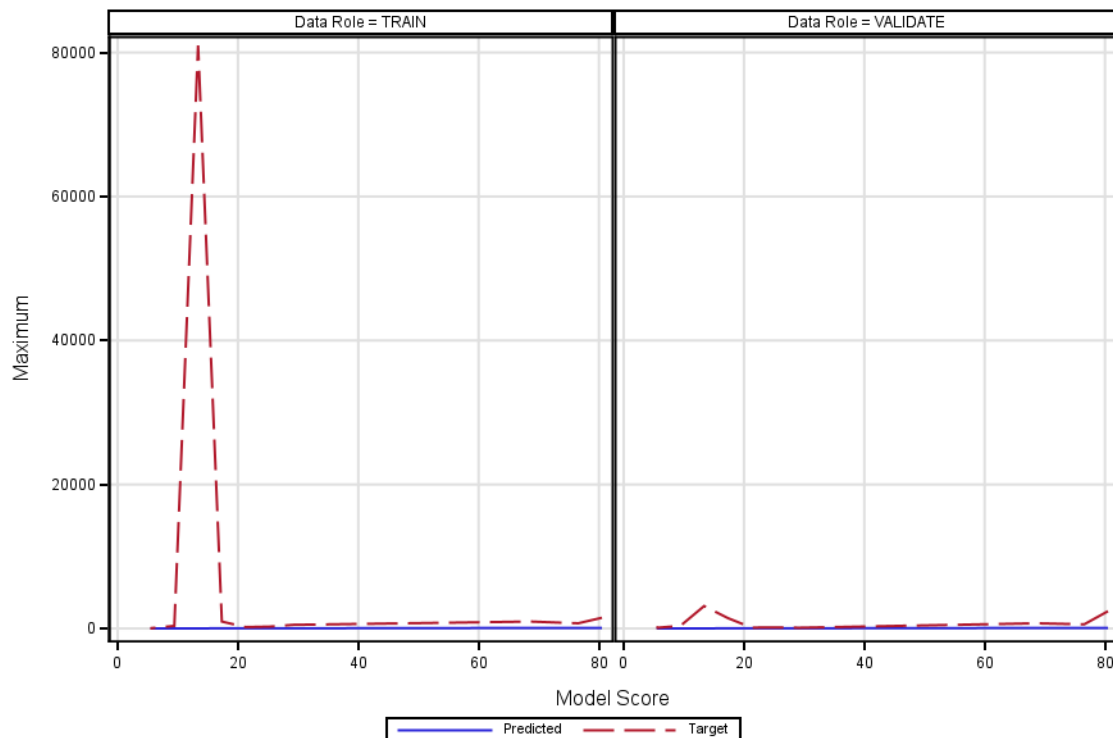
| Effect Number | Variable | Level | Coefficient | T-value | P Value | Effect Number | Variable | Level | Coefficient | T-value | P Value |
|---------------|----------|----------|-------------|----------|---------|---------------|----------|----------------|-------------|----------|---------|
| 12 | Country | BRAZIL | -11.4643 | -0.15261 | 0.87871 | 31 | Country | FINLAND | -4.22707 | -0.25137 | 0.80153 |
| 13 | Country | GREECE | -10.7908 | -0.32894 | 0.74220 | 32 | Country | DENMARK | 3.58835 | 0.16206 | 0.87126 |
| 14 | Country | SPAIN | -9.8243 | -0.92561 | 0.35465 | 33 | Country | SWITZERLAND | -3.17007 | -0.27611 | 0.78247 |
| 15 | Country | PORTUGAL | -9.6634 | -0.77832 | 0.43638 | 34 | Country | LITHUANIA | -1.71428 | -0.02153 | 0.98283 |
| 16 | Country | POLAND | -9.3669 | -0.42136 | 0.67349 | 35 | Country | EIRE | -1.35948 | -0.16161 | 0.87162 |
| 17 | Country | BELGIUM | -9.1734 | -0.82087 | 0.41172 | 36 | Country | CZECH_REPUBLIC | -1.13095 | -0.01231 | 0.99018 |
| 18 | Country | ITALY | -8.9023 | -0.55568 | 0.57843 | 37 | Country | NORWAY | -0.87008 | -0.06238 | 0.95026 |
| 19 | Country | AUSTRIA | -8.4851 | -0.42518 | 0.67070 | . | | | . | . | . |



SAS Enterprise Miner Report
Node=Stepwise Regression
Score Distributions where TARGET='Quantity'



SAS Enterprise Miner Report
Node=Stepwise Regression
Score Distributions where TARGET='Quantity'



Node=Stepwise Regression
Score Distributions

Target Variable=Quantity Data Role=TRAIN

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 78.528 - 82.477 | 81.4266 | 82.4773 | 81.3065 | 81.4266 | 1488 | 1 |
| 74.580 - 78.528 | 77.2566 | 77.2566 | 77.2566 | 77.2566 | 720 | 1 |
| 66.682 - 70.631 | 70.4741 | 70.4741 | 70.4741 | 70.4741 | 960 | 1 |
| 27.193 - 31.142 | 27.9913 | 28.5373 | 27.2292 | 27.9913 | 504 | 1 |
| 23.244 - 27.193 | 24.0526 | 24.0526 | 24.0526 | 24.0526 | 256 | 1 |
| 19.295 - 23.244 | 19.5897 | 19.5942 | 19.3333 | 19.5897 | 192 | 1 |
| 15.347 - 19.295 | 18.5515 | 19.1048 | 16.2372 | 18.5515 | 960 | 1 |
| 11.398 - 15.347 | 12.3593 | 14.9538 | 11.5620 | 12.3593 | 80995 | 1 |
| 7.449 - 11.398 | 10.7894 | 11.2909 | 7.9310 | 10.7894 | 360 | 1 |
| 3.500 - 7.449 | 6.6847 | 7.1477 | 3.5000 | 6.6847 | 36 | 1 |

Target Variable=Quantity Data Role=VALIDATE

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 78.528 - 82.477 | 81.4567 | 82.4773 | 81.3065 | 81.1941 | 2400 | 1 |
| 74.580 - 78.528 | 77.2566 | 77.2566 | 77.2566 | 80.3750 | 576 | 1 |
| 66.682 - 70.631 | 70.4741 | 70.4741 | 70.4741 | 75.3136 | 720 | 1 |
| 27.193 - 31.142 | 28.0616 | 28.5373 | 27.2292 | 20.2841 | 100 | 1 |
| 23.244 - 27.193 | 24.0526 | 24.0526 | 24.0526 | 19.5385 | 144 | 1 |
| 19.295 - 23.244 | 19.5875 | 19.5942 | 19.3333 | 16.8905 | 120 | 1 |
| 15.347 - 19.295 | 18.5897 | 19.1048 | 16.2372 | 18.7027 | 1440 | 1 |
| 11.398 - 15.347 | 12.3568 | 14.9538 | 11.5620 | 11.5731 | 3114 | 1 |
| 7.449 - 11.398 | 10.7649 | 11.2909 | 7.9310 | 11.0547 | 360 | 1 |
| 3.500 - 7.449 | 6.5274 | 7.1477 | 3.5000 | 8.9429 | 96 | 1 |

SAS Enterprise Miner Report

Node=Backward Regression
Summary

Node id = Reg2
Node label = Backward Regression
Meta path = Ids => Part => Reg2
Notes =

Node=Backward Regression
Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|------------------|--------------|--------------|-----------------------|-----------|---------|--------------------|---------|---------|
| Component | Regression | | Force | 0 | | PolynomialDegree | 2 | |
| AbsConvValue | -1.34078E154 | -7.237006E75 | GConvTimes | 1 | | PrintDesignMatrix | N | |
| AbsFTime | 1 | | GConvValue | 1E-6 | | Rule | NONE | |
| AbsFValue | 0 | | Hierarchy | CLASS | | SASSPDS | N | |
| AbsGTime | 1 | | InputCoding | DEVIATION | | SelectionCriterion | DEFAULT | |
| AbsGValue | 0.00001 | | Interactions | | | SelectionDefault | Y | |
| AbsXTime | 1 | | LinkFunction | LOGIT | | Sequential | N | |
| AbsXValue | 1E-8 | | MainEffect | Y | | Simple | N | |
| CIParam | N | | MaxCPUTime | 1 HOUR | | SIEntry | 0.05 | |
| ConvDefaults | Y | | MaxFunctionCalls | . | | SIStay | 0.05 | |
| CorB | N | | MaxIterations | . | | Start | 0 | |
| CovB | N | | MaxStep | . | | StepOutput | N | |
| Covout | N | | MinResourceUse | N | | Stop | 0 | |
| Details | N | | ModelDefaults | Y | | SuppressIntercept | N | |
| Error | LOGISTIC | | ModelSelection | BACKWARD | NONE | SuppressOutput | N | |
| ExcludedVariable | REJECT | | OptimizationTechnique | DEFAULT | | Terms | N | |
| FConvTimes | 1 | | Performance | N | | TwoFactor | N | |
| FConvValue | 0 | | Polynomial | N | | | | |

Node=Backward Regression
Variable Summary

| Role | Level | Frequency Count | Name |
|--------|----------|-----------------|-----------|
| TARGET | INTERVAL | 1 | Quantity |
| INPUT | INTERVAL | 1 | UnitPrice |
| INPUT | NOMINAL | 1 | Country |

Node=Backward Regression
Model Fit Statistics

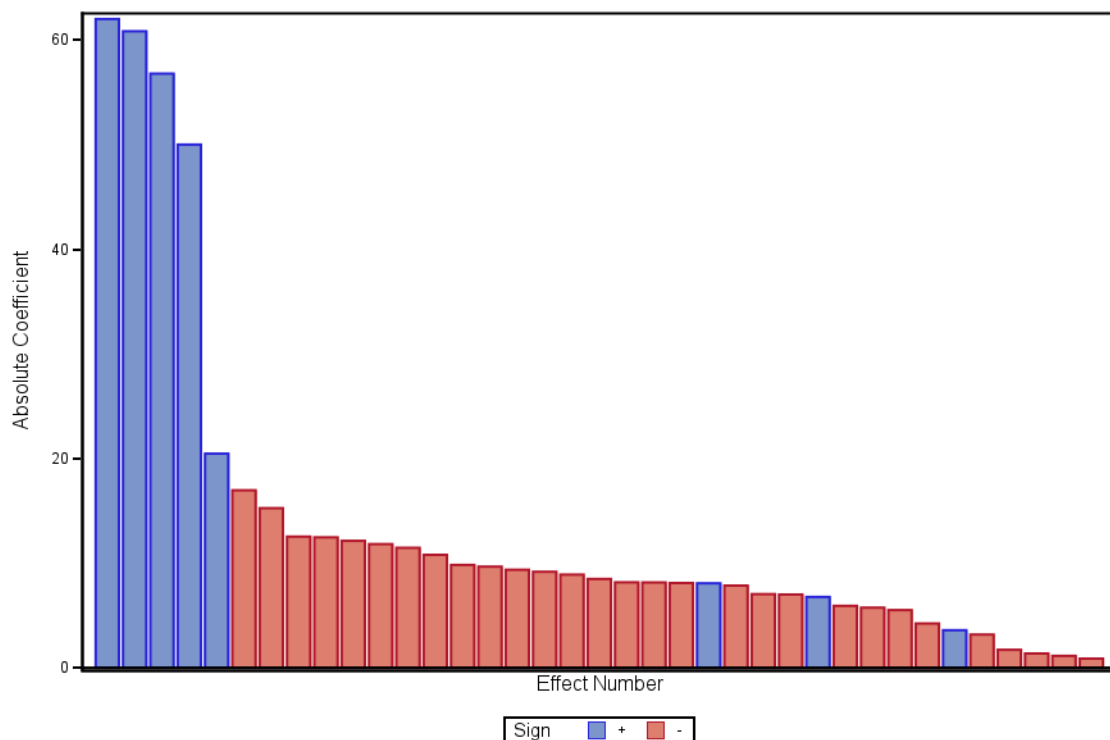
Target=Quantity Target Label=Quantity

| Label of Statistic | Train | Validation | Test |
|--------------------------------|------------|------------|---------|
| Akaike's Information Criterion | 1385750.96 | . | . |
| Average Squared Error | 53212.68 | 1536.02 | 3295.83 |
| Average Error Function | 53212.68 | 1536.02 | 3295.83 |
| Degrees of Freedom for Error | 127299.00 | . | . |
| Model Degrees of Freedom | 37.00 | . | . |
| Total Degrees of Freedom | 127336.00 | . | . |

Target=Quantity Target Label=Quantity

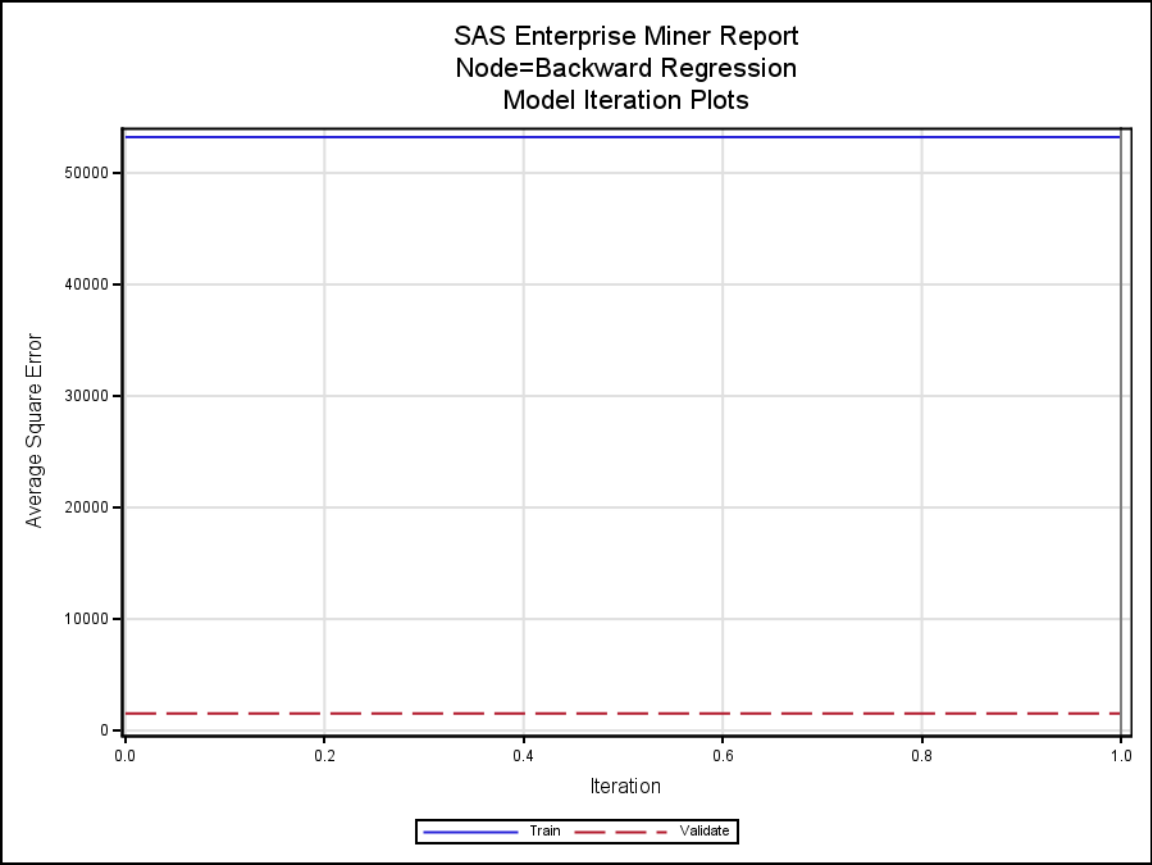
| Label of Statistic | Train | Validation | Test |
|--------------------------------|---------------|--------------|--------------|
| Divisor for ASE | 127336.00 | 95502.00 | 95501.00 |
| Error Function | 6775889255.84 | 146693301.07 | 314754781.43 |
| Final Prediction Error | 53243.61 | . | . |
| Maximum Absolute Error | 80982.70 | 3101.70 | 12527.70 |
| Mean Square Error | 53228.14 | 1536.02 | 3295.83 |
| Sum of Frequencies | 127336.00 | 95502.00 | 95501.00 |
| Number of Estimate Weights | 37.00 | . | . |
| Root Average Sum of Squares | 230.68 | 39.19 | 57.41 |
| Root Final Prediction Error | 230.75 | . | . |
| Root Mean Squared Error | 230.71 | 39.19 | 57.41 |
| Schwarz's Bayesian Criterion | 1386111.88 | . | . |
| Sum of Squared Errors | 6775889255.84 | 146693301.07 | 314754781.43 |
| Sum of Case Weights Times Freq | 127336.00 | 95502.00 | 95501.00 |

SAS Enterprise Miner Report

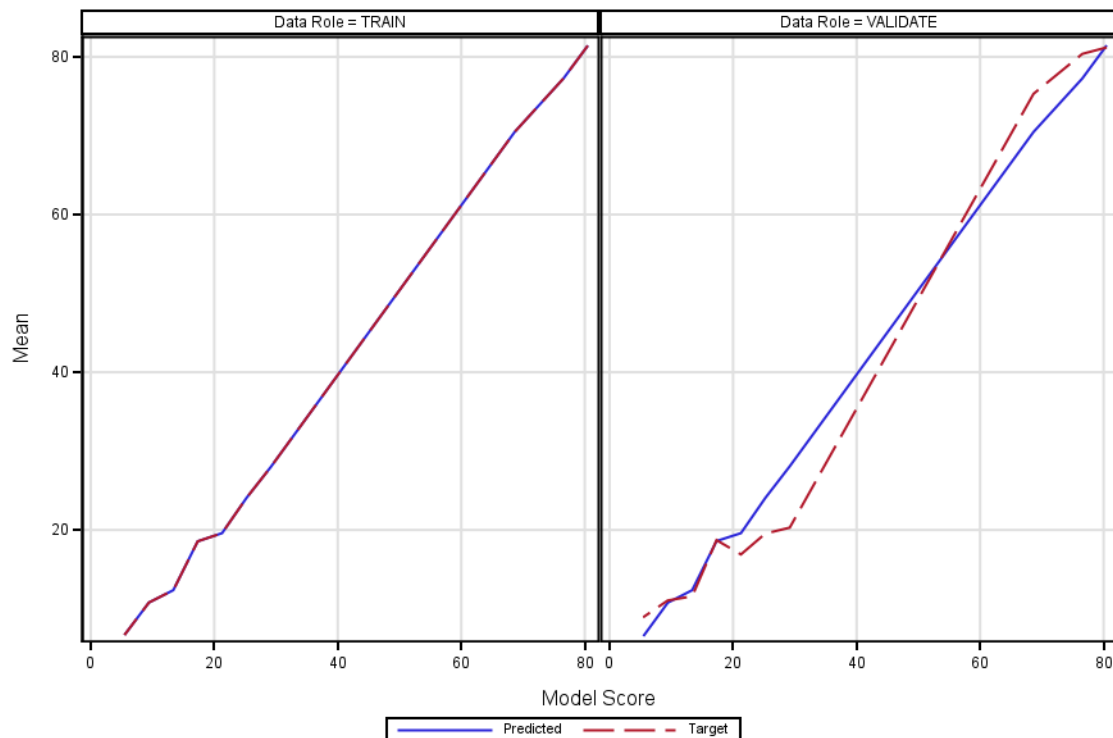
Node=Backward Regression
Regression Model Effects

| Effect Number | Variable | Level | Coefficient | T-value | P Value | Effect Number | Variable | Level | Coefficient | T-value | P Value |
|---------------|-----------|--------------------|-------------|----------|---------|---------------|----------|----------------------|-------------|----------|---------|
| 1 | Country | JAPAN | 62.0130 | 2.48897 | 0.01281 | 20 | Country | UNITED_KINGDOM | -8.16437 | -1.16586 | 0.24367 |
| 2 | Country | NETHERLANDS | 60.8422 | 5.69873 | 0.00000 | 21 | Country | UNITED_ARAB_EMIRATES | -8.15178 | -0.14421 | 0.88534 |
| 3 | Country | SWEDEN | 56.7923 | 2.91395 | 0.00357 | 22 | Country | CHANNEL_ISLANDS | -8.09775 | -0.51297 | 0.60797 |
| 4 | Country | AUSTRALIA | 50.0098 | 3.66895 | 0.00024 | 23 | Country | SINGAPORE | 8.07303 | 0.28541 | 0.77533 |
| 5 | Intercept | | 20.4643 | 2.93561 | 0.00333 | 24 | Country | ICELAND | -7.85025 | -0.25715 | 0.79706 |
| 6 | Country | BAHRAIN | -16.9643 | -0.15091 | 0.88005 | 25 | Country | GERMANY | -7.03533 | -0.86949 | 0.38458 |
| 7 | Country | RSA | -15.2538 | -0.29363 | 0.76904 | 26 | Country | FRANCE | -6.99737 | -0.85287 | 0.39373 |
| 8 | Country | MALTA | -12.5332 | -0.29666 | 0.76672 | 27 | Country | CANADA | 6.76489 | 0.20419 | 0.83820 |
| 9 | Country | SAUDI_ARABIA | -12.4643 | -0.14647 | 0.88355 | 28 | Country | ISRAEL | -5.91204 | -0.20901 | 0.83444 |
| 10 | Country | LEBANON | -12.1309 | -0.22740 | 0.82011 | 29 | Country | CYPRUS | -5.74151 | -0.33268 | 0.73938 |
| 11 | Country | EUROPEAN_COMMUNITY | -11.8172 | -0.21538 | 0.82947 | 30 | Country | USA | -5.51043 | -0.19206 | 0.84770 |

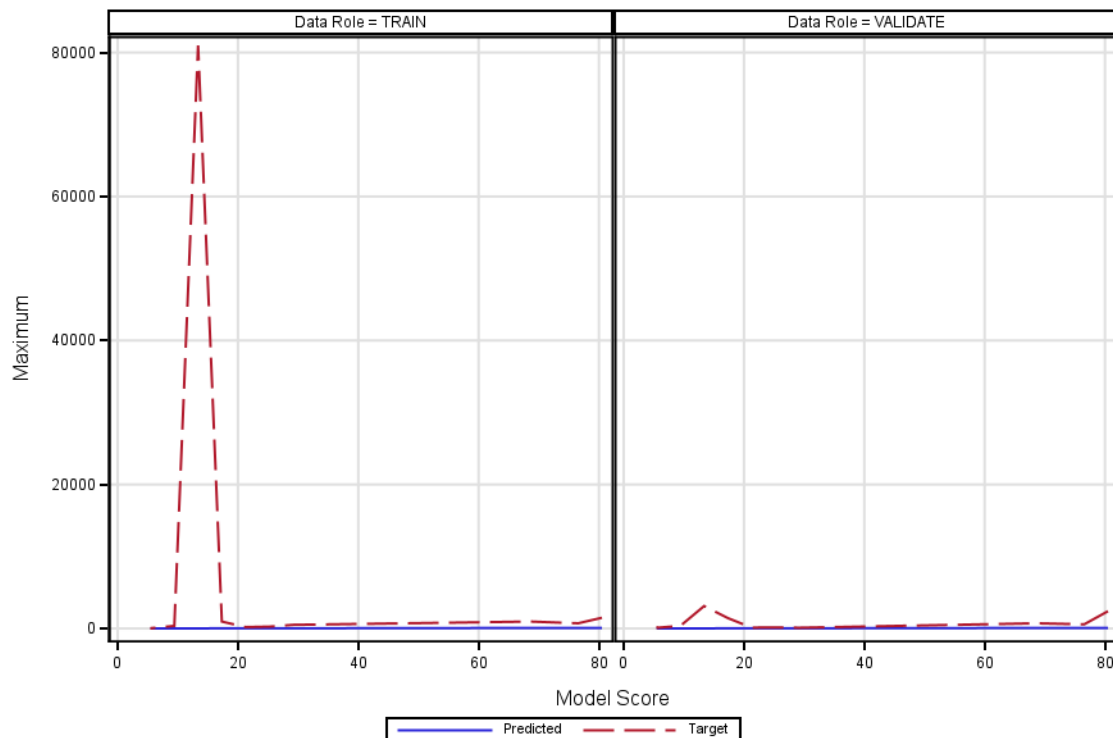
| Effect Number | Variable | Level | Coefficient | T-value | P Value | Effect Number | Variable | Level | Coefficient | T-value | P Value |
|---------------|----------|----------|-------------|----------|---------|---------------|----------|----------------|-------------|----------|---------|
| 12 | Country | BRAZIL | -11.4643 | -0.15261 | 0.87871 | 31 | Country | FINLAND | -4.22707 | -0.25137 | 0.80153 |
| 13 | Country | GREECE | -10.7908 | -0.32894 | 0.74220 | 32 | Country | DENMARK | 3.58835 | 0.16206 | 0.87126 |
| 14 | Country | SPAIN | -9.8243 | -0.92561 | 0.35465 | 33 | Country | SWITZERLAND | -3.17007 | -0.27611 | 0.78247 |
| 15 | Country | PORTUGAL | -9.6634 | -0.77832 | 0.43638 | 34 | Country | LITHUANIA | -1.71428 | -0.02153 | 0.98283 |
| 16 | Country | POLAND | -9.3669 | -0.42136 | 0.67349 | 35 | Country | EIRE | -1.35948 | -0.16161 | 0.87162 |
| 17 | Country | BELGIUM | -9.1734 | -0.82087 | 0.41172 | 36 | Country | CZECH_REPUBLIC | -1.13095 | -0.01231 | 0.99018 |
| 18 | Country | ITALY | -8.9023 | -0.55568 | 0.57843 | 37 | Country | NORWAY | -0.87008 | -0.06238 | 0.95026 |
| 19 | Country | AUSTRIA | -8.4851 | -0.42518 | 0.67070 | . | | | . | . | . |



SAS Enterprise Miner Report
Node=Backward Regression
Score Distributions where TARGET='Quantity'



SAS Enterprise Miner Report
Node=Backward Regression
Score Distributions where TARGET='Quantity'



Node=Backward Regression
Score Distributions

Target Variable=Quantity Data Role=TRAIN

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 78.528 - 82.477 | 81.4266 | 82.4773 | 81.3065 | 81.4266 | 1488 | 1 |
| 74.580 - 78.528 | 77.2566 | 77.2566 | 77.2566 | 77.2566 | 720 | 1 |
| 66.682 - 70.631 | 70.4741 | 70.4741 | 70.4741 | 70.4741 | 960 | 1 |
| 27.193 - 31.142 | 27.9913 | 28.5373 | 27.2292 | 27.9913 | 504 | 1 |
| 23.244 - 27.193 | 24.0526 | 24.0526 | 24.0526 | 24.0526 | 256 | 1 |
| 19.295 - 23.244 | 19.5897 | 19.5942 | 19.3333 | 19.5897 | 192 | 1 |
| 15.347 - 19.295 | 18.5515 | 19.1048 | 16.2372 | 18.5515 | 960 | 1 |
| 11.398 - 15.347 | 12.3593 | 14.9538 | 11.5620 | 12.3593 | 80995 | 1 |
| 7.449 - 11.398 | 10.7894 | 11.2909 | 7.9310 | 10.7894 | 360 | 1 |
| 3.500 - 7.449 | 6.6847 | 7.1477 | 3.5000 | 6.6847 | 36 | 1 |

Target Variable=Quantity Data Role=VALIDATE

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 78.528 - 82.477 | 81.4567 | 82.4773 | 81.3065 | 81.1941 | 2400 | 1 |
| 74.580 - 78.528 | 77.2566 | 77.2566 | 77.2566 | 80.3750 | 576 | 1 |
| 66.682 - 70.631 | 70.4741 | 70.4741 | 70.4741 | 75.3136 | 720 | 1 |
| 27.193 - 31.142 | 28.0616 | 28.5373 | 27.2292 | 20.2841 | 100 | 1 |
| 23.244 - 27.193 | 24.0526 | 24.0526 | 24.0526 | 19.5385 | 144 | 1 |
| 19.295 - 23.244 | 19.5875 | 19.5942 | 19.3333 | 16.8905 | 120 | 1 |
| 15.347 - 19.295 | 18.5897 | 19.1048 | 16.2372 | 18.7027 | 1440 | 1 |
| 11.398 - 15.347 | 12.3568 | 14.9538 | 11.5620 | 11.5731 | 3114 | 1 |
| 7.449 - 11.398 | 10.7649 | 11.2909 | 7.9310 | 11.0547 | 360 | 1 |
| 3.500 - 7.449 | 6.5274 | 7.1477 | 3.5000 | 8.9429 | 96 | 1 |

SAS Enterprise Miner Report

Node=Forward Regression Summary

Node id = Reg3
Node label = Forward Regression
Meta path = Ids => Part => Reg3
Notes =

Node=Forward Regression Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|------------------|--------------|--------------|-----------------------|-----------|---------|--------------------|---------|---------|
| Component | Regression | | Force | 0 | | PolynomialDegree | 2 | |
| AbsConvValue | -1.34078E154 | -7.237006E75 | GConvTimes | 1 | | PrintDesignMatrix | N | |
| AbsFTime | 1 | | GConvValue | 1E-6 | | Rule | NONE | |
| AbsFValue | 0 | | Hierarchy | CLASS | | SASSPDS | N | |
| AbsGTime | 1 | | InputCoding | DEVIATION | | SelectionCriterion | DEFAULT | |
| AbsGValue | 0.00001 | | Interactions | | | SelectionDefault | Y | |
| AbsXTime | 1 | | LinkFunction | LOGIT | | Sequential | N | |
| AbsXValue | 1E-8 | | MainEffect | Y | | Simple | N | |
| CIParam | N | | MaxCPUTime | 1 HOUR | | SIEntry | 0.05 | |
| ConvDefaults | Y | | MaxFunctionCalls | . | | SISlay | 0.05 | |
| CorB | N | | MaxIterations | . | | Start | 0 | |
| CovB | N | | MaxStep | . | | StepOutput | N | |
| Covout | N | | MinResourceUse | N | | Stop | 0 | |
| Details | N | | ModelDefaults | Y | | SuppressIntercept | N | |
| Error | LOGISTIC | | ModelSelection | FORWARD | NONE | SuppressOutput | N | |
| ExcludedVariable | REJECT | | OptimizationTechnique | DEFAULT | | Terms | N | |
| FConvTimes | 1 | | Performance | N | | TwoFactor | N | |
| FConvValue | 0 | | Polynomial | N | | | | |

Node=Forward Regression Variable Summary

| Role | Level | Frequency Count | Name |
|--------|----------|--------------------|-----------|
| TARGET | INTERVAL | 1 | Quantity |
| INPUT | INTERVAL | 1 | UnitPrice |
| INPUT | NOMINAL | 1 | Country |

Node=Forward Regression Model Fit Statistics

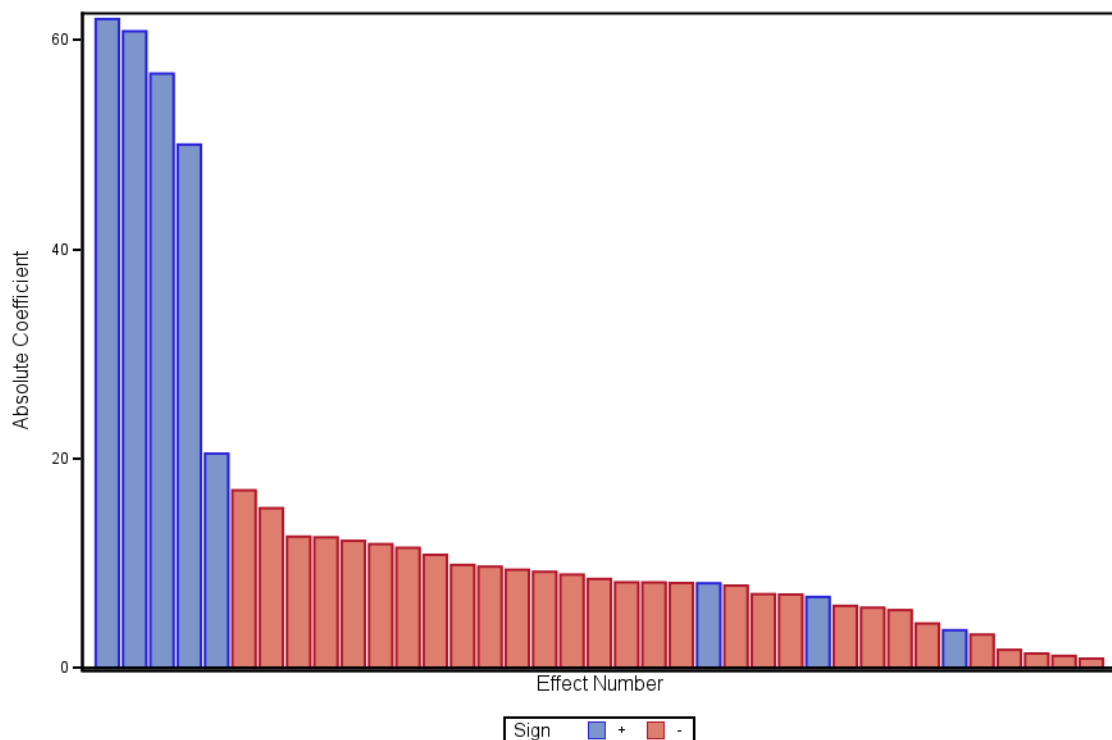
Target=Quantity Target Label=Quantity

| Label of Statistic | Train | Validation | Test |
|--------------------------------|------------|------------|---------|
| Akaike's Information Criterion | 1385750.96 | . | . |
| Average Squared Error | 53212.68 | 1536.02 | 3295.83 |
| Average Error Function | 53212.68 | 1536.02 | 3295.83 |
| Degrees of Freedom for Error | 127299.00 | . | . |
| Model Degrees of Freedom | 37.00 | . | . |
| Total Degrees of Freedom | 127336.00 | . | . |

Target=Quantity Target Label=Quantity

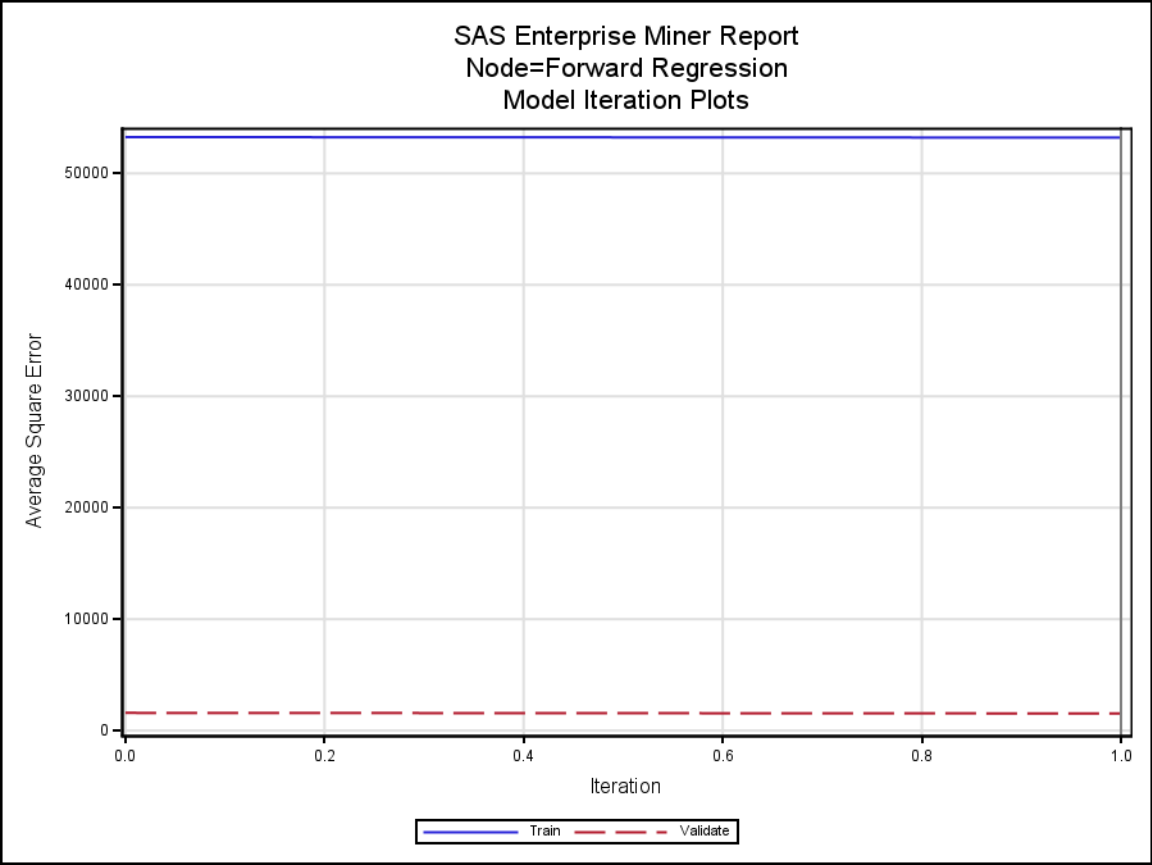
| Label of Statistic | Train | Validation | Test |
|--------------------------------|---------------|--------------|--------------|
| Divisor for ASE | 127336.00 | 95502.00 | 95501.00 |
| Error Function | 6775889255.84 | 146693301.07 | 314754781.43 |
| Final Prediction Error | 53243.61 | . | . |
| Maximum Absolute Error | 80982.70 | 3101.70 | 12527.70 |
| Mean Square Error | 53228.14 | 1536.02 | 3295.83 |
| Sum of Frequencies | 127336.00 | 95502.00 | 95501.00 |
| Number of Estimate Weights | 37.00 | . | . |
| Root Average Sum of Squares | 230.68 | 39.19 | 57.41 |
| Root Final Prediction Error | 230.75 | . | . |
| Root Mean Squared Error | 230.71 | 39.19 | 57.41 |
| Schwarz's Bayesian Criterion | 1386111.88 | . | . |
| Sum of Squared Errors | 6775889255.84 | 146693301.07 | 314754781.43 |
| Sum of Case Weights Times Freq | 127336.00 | 95502.00 | 95501.00 |

SAS Enterprise Miner Report

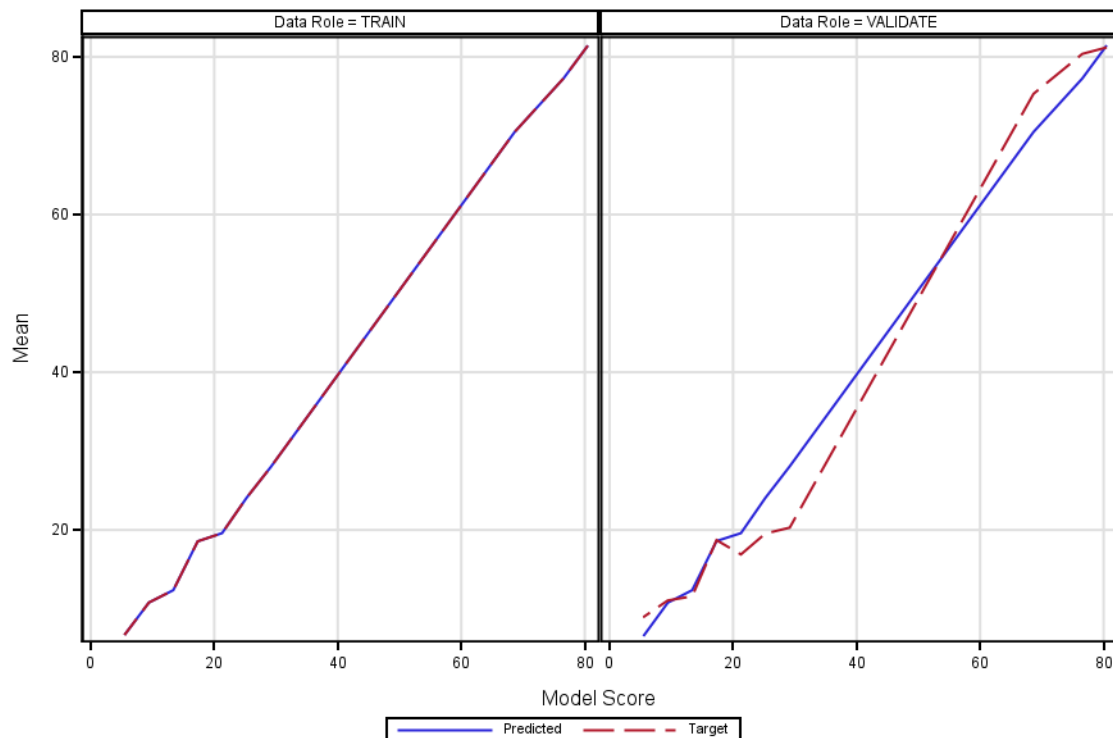
Node=Forward Regression
Regression Model Effects

| Effect Number | Variable | Level | Coefficient | T-value | P Value | Effect Number | Variable | Level | Coefficient | T-value | P Value |
|---------------|-----------|--------------------|-------------|----------|---------|---------------|----------|----------------------|-------------|----------|---------|
| 1 | Country | JAPAN | 62.0130 | 2.48897 | 0.01281 | 20 | Country | UNITED_KINGDOM | -8.16437 | -1.16586 | 0.24367 |
| 2 | Country | NETHERLANDS | 60.8422 | 5.69873 | 0.00000 | 21 | Country | UNITED_ARAB_EMIRATES | -8.15178 | -0.14421 | 0.88534 |
| 3 | Country | SWEDEN | 56.7923 | 2.91395 | 0.00357 | 22 | Country | CHANNEL_ISLANDS | -8.09775 | -0.51297 | 0.60797 |
| 4 | Country | AUSTRALIA | 50.0098 | 3.66895 | 0.00024 | 23 | Country | SINGAPORE | 8.07303 | 0.28541 | 0.77533 |
| 5 | Intercept | | 20.4643 | 2.93561 | 0.00333 | 24 | Country | ICELAND | -7.85025 | -0.25715 | 0.79706 |
| 6 | Country | BAHRAIN | -16.9643 | -0.15091 | 0.88005 | 25 | Country | GERMANY | -7.03533 | -0.86949 | 0.38458 |
| 7 | Country | RSA | -15.2538 | -0.29363 | 0.76904 | 26 | Country | FRANCE | -6.99737 | -0.85287 | 0.39373 |
| 8 | Country | MALTA | -12.5332 | -0.29666 | 0.76672 | 27 | Country | CANADA | 6.76489 | 0.20419 | 0.83820 |
| 9 | Country | SAUDI_ARABIA | -12.4643 | -0.14647 | 0.88355 | 28 | Country | ISRAEL | -5.91204 | -0.20901 | 0.83444 |
| 10 | Country | LEBANON | -12.1309 | -0.22740 | 0.82011 | 29 | Country | CYPRUS | -5.74151 | -0.33268 | 0.73938 |
| 11 | Country | EUROPEAN_COMMUNITY | -11.8172 | -0.21538 | 0.82947 | 30 | Country | USA | -5.51043 | -0.19206 | 0.84770 |

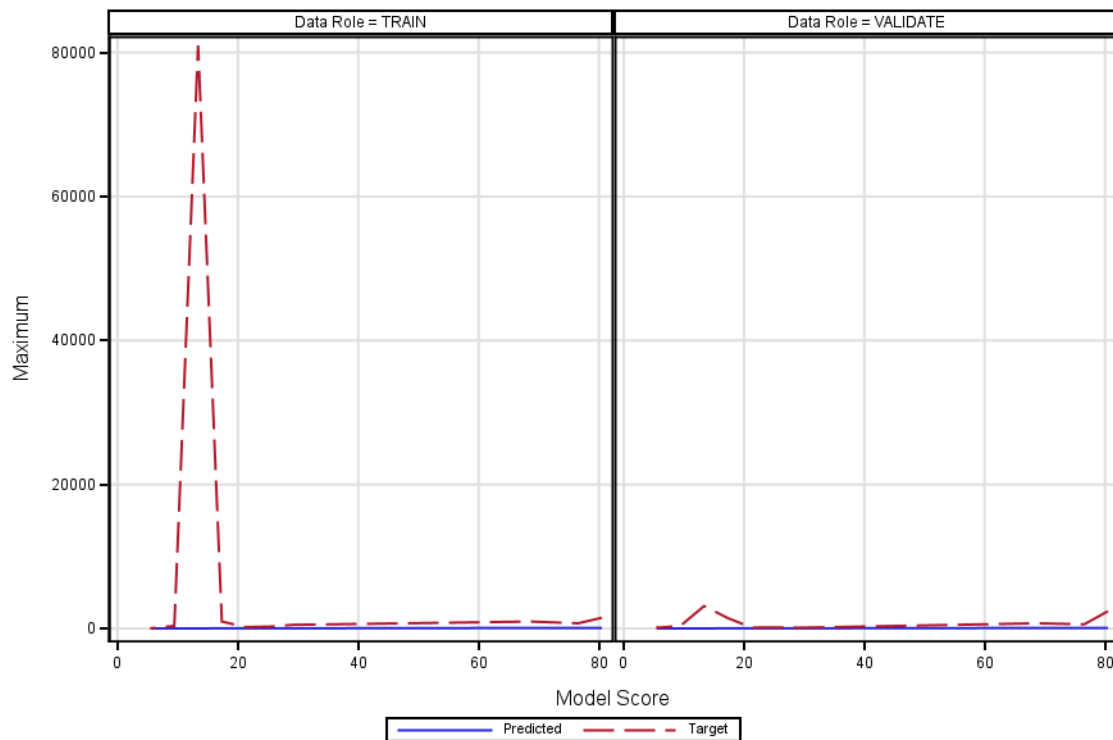
| Effect Number | Variable | Level | Coefficient | T-value | P Value | Effect Number | Variable | Level | Coefficient | T-value | P Value |
|---------------|----------|----------|-------------|----------|---------|---------------|----------|----------------|-------------|----------|---------|
| 12 | Country | BRAZIL | -11.4643 | -0.15261 | 0.87871 | 31 | Country | FINLAND | -4.22707 | -0.25137 | 0.80153 |
| 13 | Country | GREECE | -10.7908 | -0.32894 | 0.74220 | 32 | Country | DENMARK | 3.58835 | 0.16206 | 0.87126 |
| 14 | Country | SPAIN | -9.8243 | -0.92561 | 0.35465 | 33 | Country | SWITZERLAND | -3.17007 | -0.27611 | 0.78247 |
| 15 | Country | PORTUGAL | -9.6634 | -0.77832 | 0.43638 | 34 | Country | LITHUANIA | -1.71428 | -0.02153 | 0.98283 |
| 16 | Country | POLAND | -9.3669 | -0.42136 | 0.67349 | 35 | Country | EIRE | -1.35948 | -0.16161 | 0.87162 |
| 17 | Country | BELGIUM | -9.1734 | -0.82087 | 0.41172 | 36 | Country | CZECH_REPUBLIC | -1.13095 | -0.01231 | 0.99018 |
| 18 | Country | ITALY | -8.9023 | -0.55568 | 0.57843 | 37 | Country | NORWAY | -0.87008 | -0.06238 | 0.95026 |
| 19 | Country | AUSTRIA | -8.4851 | -0.42518 | 0.67070 | . | | | . | . | . |



SAS Enterprise Miner Report
Node=Forward Regression
Score Distributions where TARGET='Quantity'



SAS Enterprise Miner Report
Node=Forward Regression
Score Distributions where TARGET='Quantity'



Node=Forward Regression
Score Distributions

Target Variable=Quantity Data Role=TRAIN

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 78.528 - 82.477 | 81.4266 | 82.4773 | 81.3065 | 81.4266 | 1488 | 1 |
| 74.580 - 78.528 | 77.2566 | 77.2566 | 77.2566 | 77.2566 | 720 | 1 |
| 66.682 - 70.631 | 70.4741 | 70.4741 | 70.4741 | 70.4741 | 960 | 1 |
| 27.193 - 31.142 | 27.9913 | 28.5373 | 27.2292 | 27.9913 | 504 | 1 |
| 23.244 - 27.193 | 24.0526 | 24.0526 | 24.0526 | 24.0526 | 256 | 1 |
| 19.295 - 23.244 | 19.5897 | 19.5942 | 19.3333 | 19.5897 | 192 | 1 |
| 15.347 - 19.295 | 18.5515 | 19.1048 | 16.2372 | 18.5515 | 960 | 1 |
| 11.398 - 15.347 | 12.3593 | 14.9538 | 11.5620 | 12.3593 | 80995 | 1 |
| 7.449 - 11.398 | 10.7894 | 11.2909 | 7.9310 | 10.7894 | 360 | 1 |
| 3.500 - 7.449 | 6.6847 | 7.1477 | 3.5000 | 6.6847 | 36 | 1 |

Target Variable=Quantity Data Role=VALIDATE

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 78.528 - 82.477 | 81.4567 | 82.4773 | 81.3065 | 81.1941 | 2400 | 1 |
| 74.580 - 78.528 | 77.2566 | 77.2566 | 77.2566 | 80.3750 | 576 | 1 |
| 66.682 - 70.631 | 70.4741 | 70.4741 | 70.4741 | 75.3136 | 720 | 1 |
| 27.193 - 31.142 | 28.0616 | 28.5373 | 27.2292 | 20.2841 | 100 | 1 |
| 23.244 - 27.193 | 24.0526 | 24.0526 | 24.0526 | 19.5385 | 144 | 1 |
| 19.295 - 23.244 | 19.5875 | 19.5942 | 19.3333 | 16.8905 | 120 | 1 |
| 15.347 - 19.295 | 18.5897 | 19.1048 | 16.2372 | 18.7027 | 1440 | 1 |
| 11.398 - 15.347 | 12.3568 | 14.9538 | 11.5620 | 11.5731 | 3114 | 1 |
| 7.449 - 11.398 | 10.7649 | 11.2909 | 7.9310 | 11.0547 | 360 | 1 |
| 3.500 - 7.449 | 6.5274 | 7.1477 | 3.5000 | 8.9429 | 96 | 1 |

SAS Enterprise Miner Report

Node=Exhaustive Regression Summary

Node id = Reg
Node label = Exhaustive Regression
Meta path = Ids => Part => Reg
Notes =

Node=Exhaustive Regression Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|------------------|--------------|--------------|-----------------------|-----------|---------|--------------------|---------|---------|
| Component | Regression | | Force | 0 | | PolynomialDegree | 2 | |
| AbsConvValue | -1.34078E154 | -7.237006E75 | GConvTimes | 1 | | PrintDesignMatrix | N | |
| AbsFTime | 1 | | GConvValue | 1E-6 | | Rule | NONE | |
| AbsFValue | 0 | | Hierarchy | CLASS | | SASSPDS | N | |
| AbsGTime | 1 | | InputCoding | DEVIATION | | SelectionCriterion | DEFAULT | |
| AbsGValue | 0.00001 | | Interactions | | | SelectionDefault | Y | |
| AbsXTime | 1 | | LinkFunction | LOGIT | | Sequential | N | |
| AbsXValue | 1E-8 | | MainEffect | Y | | Simple | N | |
| CIParam | N | | MaxCPUTime | 1 HOUR | | SIEntry | 0.05 | |
| ConvDefaults | Y | | MaxFunctionCalls | . | | SISlay | 0.05 | |
| CorB | N | | MaxIterations | . | | Start | 0 | |
| CovB | N | | MaxStep | . | | StepOutput | N | |
| Covout | N | | MinResourceUse | N | | Stop | 0 | |
| Details | N | | ModelDefaults | Y | | SuppressIntercept | N | |
| Error | LOGISTIC | | ModelSelection | NONE | | SuppressOutput | N | |
| ExcludedVariable | REJECT | | OptimizationTechnique | DEFAULT | | Terms | N | |
| FConvTimes | 1 | | Performance | N | | TwoFactor | N | |
| FConvValue | 0 | | Polynomial | N | | | | |

Node=Exhaustive Regression Variable Summary

| Role | Level | Frequency Count | Name |
|--------|----------|--------------------|-----------|
| TARGET | INTERVAL | 1 | Quantity |
| INPUT | INTERVAL | 1 | UnitPrice |
| INPUT | NOMINAL | 1 | Country |

Node=Exhaustive Regression Model Fit Statistics

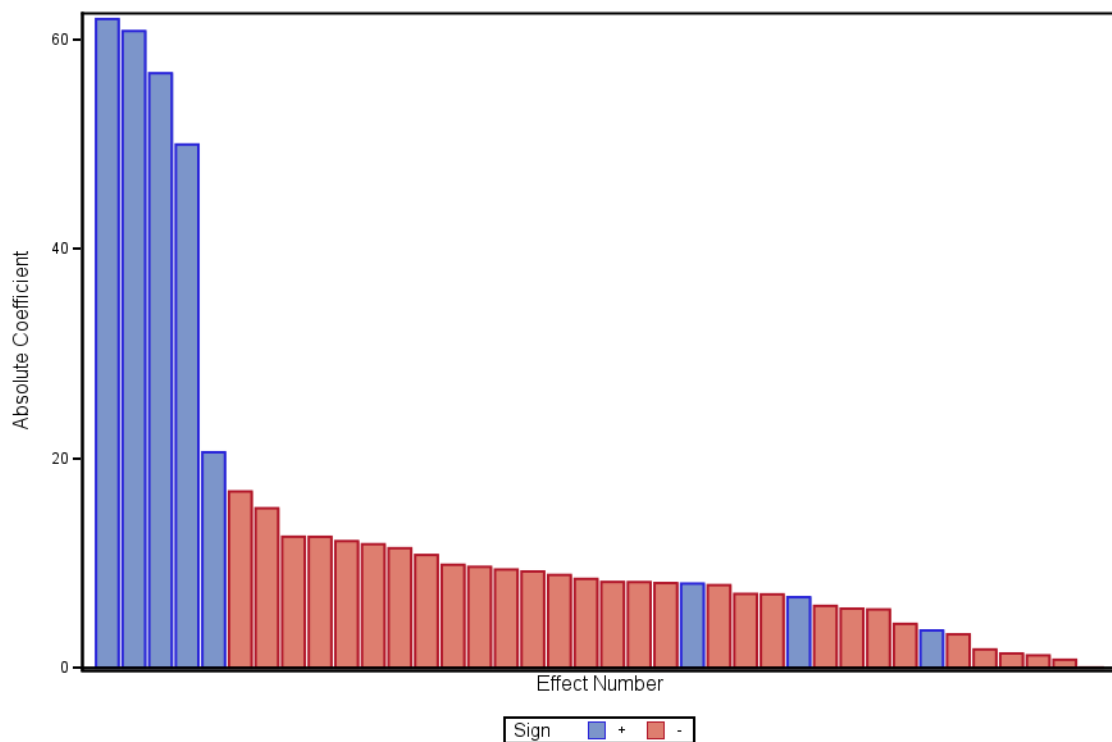
Target=Quantity Target Label=Quantity

| Label of Statistic | Train | Validation | Test |
|--------------------------------|------------|------------|---------|
| Akaike's Information Criterion | 1385751.77 | . | . |
| Average Squared Error | 53212.18 | 1535.19 | 3295.13 |
| Average Error Function | 53212.18 | 1535.19 | 3295.13 |
| Degrees of Freedom for Error | 127298.00 | . | . |
| Model Degrees of Freedom | 38.00 | . | . |
| Total Degrees of Freedom | 127336.00 | . | . |

Target=Quantity Target Label=Quantity

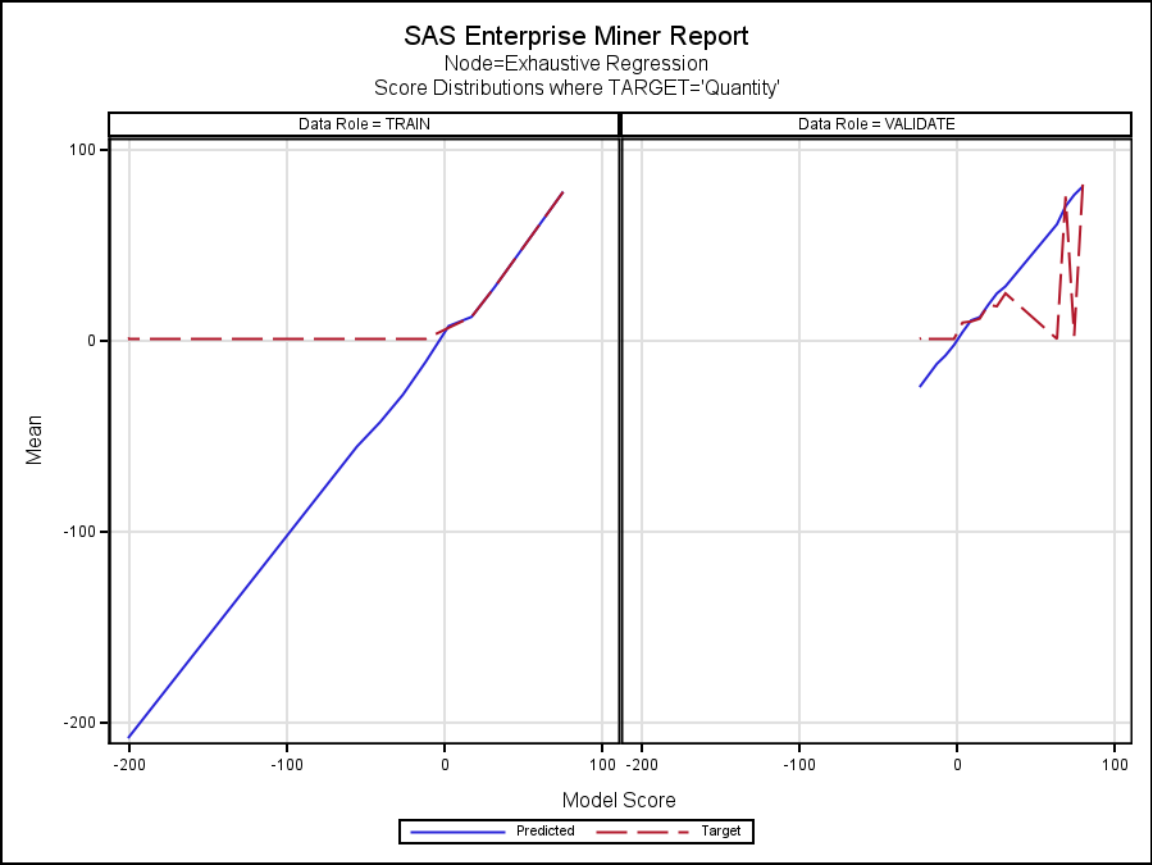
| Label of Statistic | Train | Validation | Test |
|--------------------------------|---------------|--------------|--------------|
| Divisor for ASE | 127336.00 | 95502.00 | 95501.00 |
| Error Function | 6775826043.72 | 146614086.20 | 314688608.15 |
| Final Prediction Error | 53243.95 | . | . |
| Maximum Absolute Error | 80982.67 | 3101.68 | 12527.62 |
| Mean Square Error | 53228.06 | 1535.19 | 3295.13 |
| Sum of Frequencies | 127336.00 | 95502.00 | 95501.00 |
| Number of Estimate Weights | 38.00 | . | . |
| Root Average Sum of Squares | 230.68 | 39.18 | 57.40 |
| Root Final Prediction Error | 230.75 | . | . |
| Root Mean Squared Error | 230.71 | 39.18 | 57.40 |
| Schwarz's Bayesian Criterion | 1386122.45 | . | . |
| Sum of Squared Errors | 6775826043.72 | 146614086.20 | 314688608.15 |
| Sum of Case Weights Times Freq | 127336.00 | 95502.00 | 95501.00 |

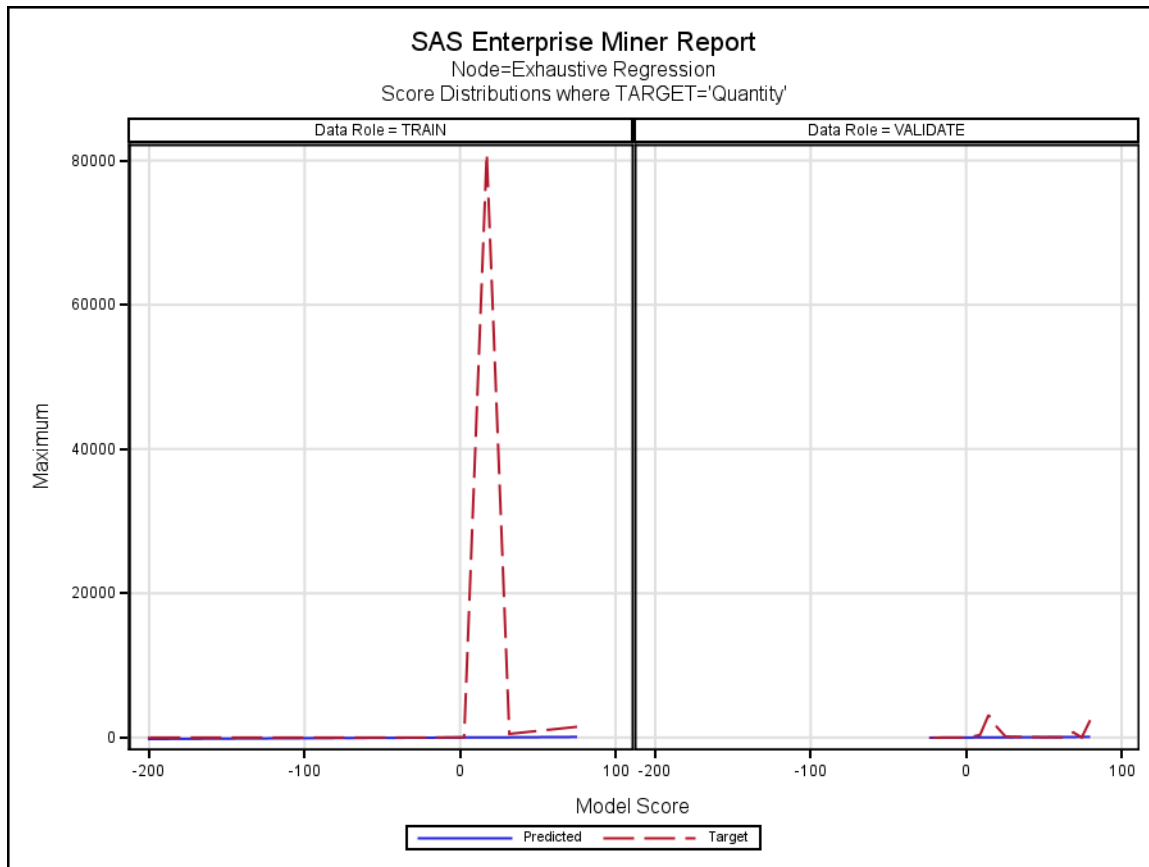
SAS Enterprise Miner Report

Node=Exhaustive Regression
Regression Model Effects

| Effect Number | Variable | Level | Coefficient | T-value | P Value | Effect Number | Variable | Level | Coefficient | T-value | P Value |
|---------------|-----------|--------------------|-------------|----------|---------|---------------|----------|----------------------|-------------|----------|---------|
| 1 | Country | JAPAN | 61.9550 | 2.48663 | 0.01290 | 20 | Country | UNITED_KINGDOM | -8.19427 | -1.17012 | 0.24195 |
| 2 | Country | NETHERLANDS | 60.8066 | 5.69537 | 0.00000 | 21 | Country | UNITED_ARAB_EMIRATES | -8.17949 | -0.14470 | 0.88495 |
| 3 | Country | SWEDEN | 56.7776 | 2.91320 | 0.00358 | 22 | Country | CHANNEL_ISLANDS | -8.08612 | -0.51224 | 0.60849 |
| 4 | Country | AUSTRALIA | 49.9711 | 3.66610 | 0.00025 | 23 | Country | SINGAPORE | 8.03627 | 0.28411 | 0.77633 |
| 5 | Intercept | | 20.5757 | 2.95127 | 0.00317 | 24 | Country | ICELAND | -7.89012 | -0.25846 | 0.79605 |
| 6 | Country | BAHRAIN | -16.8347 | -0.14976 | 0.88095 | 25 | Country | GERMANY | -7.05036 | -0.87135 | 0.38356 |
| 7 | Country | RSA | -15.2333 | -0.29324 | 0.76934 | 26 | Country | FRANCE | -7.00847 | -0.85422 | 0.39298 |
| 8 | Country | MALTA | -12.5127 | -0.29618 | 0.76709 | 27 | Country | CANADA | 6.73789 | 0.20338 | 0.83884 |
| 9 | Country | SAUDI_ARABIA | -12.5018 | -0.14691 | 0.88320 | 28 | Country | ISRAEL | -5.90491 | -0.20876 | 0.83464 |
| 10 | Country | LEBANON | -12.0923 | -0.22667 | 0.82068 | 29 | Country | CYPRUS | -5.64315 | -0.32697 | 0.74369 |
| 11 | Country | EUROPEAN_COMMUNITY | -11.7966 | -0.21500 | 0.82977 | 30 | Country | USA | -5.56792 | -0.19406 | 0.84613 |

| Effect Number | Variable | Level | Coefficient | T-value | P Value | Effect Number | Variable | Level | Coefficient | T-value | P Value |
|---------------|----------|----------|-------------|----------|---------|---------------|-----------|----------------|-------------|----------|---------|
| 12 | Country | BRAZIL | -11.4173 | -0.15199 | 0.87920 | 31 | Country | FINLAND | -4.18771 | -0.24903 | 0.80334 |
| 13 | Country | GREECE | -10.7710 | -0.32834 | 0.74266 | 32 | Country | DENMARK | 3.55813 | 0.16070 | 0.87233 |
| 14 | Country | SPAIN | -9.8323 | -0.92636 | 0.35426 | 33 | Country | SWITZERLAND | -3.18826 | -0.27769 | 0.78125 |
| 15 | Country | PORTUGAL | -9.6359 | -0.77610 | 0.43769 | 34 | Country | LITHUANIA | -1.74815 | -0.02195 | 0.98249 |
| 16 | Country | POLAND | -9.3795 | -0.42193 | 0.67308 | 35 | Country | EIRE | -1.36037 | -0.16171 | 0.87153 |
| 17 | Country | BELGIUM | -9.1915 | -0.82249 | 0.41080 | 36 | Country | CZECH_REPUBLIC | -1.18032 | -0.01285 | 0.98975 |
| 18 | Country | ITALY | -8.8627 | -0.55321 | 0.58012 | 37 | Country | NORWAY | -0.76367 | -0.05475 | 0.95634 |
| 19 | Country | AUSTRIA | -8.4851 | -0.42518 | 0.67070 | 38 | UnitPrice | | -0.02708 | -1.08976 | 0.27582 |





Node=Exhaustive Regression Score Distributions

Target Variable=Quantity Data Role=TRAIN

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 67.993 - 82.525 | 78.047 | 82.525 | 70.202 | 78.0472 | 1488 | 1 |
| 24.398 - 38.929 | 27.991 | 28.606 | 26.968 | 27.9913 | 504 | 1 |
| 9.866 - 24.398 | 12.525 | 24.128 | 9.939 | 12.5242 | 80995 | 1 |
| -4.666 - 9.866 | 7.727 | 9.793 | -4.162 | 6.8275 | 48 | 1 |
| -19.198 - -4.666 | -10.942 | -5.206 | -17.202 | 1.0000 | 1 | 1 |
| -33.730 - -19.198 | -28.246 | -28.246 | -28.246 | 1.0000 | 1 | 1 |
| -48.262 - -33.730 | -42.672 | -42.672 | -42.672 | 1.0000 | 1 | 1 |
| -62.793 - -48.262 | -55.315 | -55.315 | -55.315 | 1.0000 | 1 | 1 |
| -208.112 - -193.580 | -208.112 | -208.112 | -208.112 | 1.0000 | 1 | 1 |

Target Variable=Quantity Data Role=VALIDATE

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 77.073 - 82.523 | 80.8725 | 82.5228 | 77.0838 | 81.9179 | 2400 | 1 |
| 71.623 - 77.073 | 76.4294 | 76.9484 | 76.2701 | 2.5000 | 8 | 1 |
| 66.174 - 71.623 | 70.4754 | 70.5400 | 70.1420 | 75.5734 | 720 | 1 |
| 60.724 - 66.174 | 61.0693 | 61.0693 | 61.0693 | 1.0000 | 1 | 1 |
| 28.026 - 33.476 | 28.5263 | 28.6068 | 28.3818 | 24.8679 | 100 | 4 |
| 22.576 - 28.026 | 24.8169 | 27.3057 | 23.6464 | 18.1014 | 144 | 1 |
| 17.127 - 22.576 | 18.8789 | 22.1321 | 17.1572 | 18.7957 | 1440 | 1 |
| 11.677 - 17.127 | 12.3725 | 17.1180 | 11.6791 | 11.6002 | 3114 | 1 |
| 6.227 - 11.677 | 10.7224 | 11.6737 | 6.7399 | 10.1246 | 360 | 1 |
| 0.778 - 6.227 | 4.5588 | 5.6118 | 2.0424 | 9.5385 | 96 | 1 |
| -4.672 - 0.778 | -2.2431 | 0.1576 | -4.1625 | 1.0000 | 1 | 1 |

Target Variable=Quantity Data Role=VALIDATE

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| -10.122 - -4.672 | -7.7547 | -7.7547 | -7.7547 | 1.0000 | 1 | 1 |
| -15.571 - -10.122 | -12.1211 | -12.0320 | -12.2102 | 1.0000 | 1 | 1 |
| -26.471 - -21.021 | -24.2403 | -22.0099 | -26.4707 | 1.0000 | 1 | 1 |

SAS Enterprise Miner Report

Node=Reg Tree B3D6 Summary

Node id = Tree4
Node label = Reg Tree B3D6
Meta path = Ids => Part => Tree4
Notes =

Node=Reg Tree B3D6 Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|-------------------|----------------|---------|------------------|-------------|---------|-------------------|------------|---------|
| Component | DecisionTree | | Kass | Y | | Pred | N | |
| AVG | Y | | KassApply | BEFORE | | Predict | Y | |
| AssessMeasure | PROFIT/LOSS | | LeafSize | 5 | | ProfitLoss | NONE | |
| AssessPercentage | 0.25 | | Leafid | Y | | RASE | N | |
| CV | N | | Maxbranch | 3 | 2 | SampleMethod | RANDOM | |
| CVNlter | 10 | | Maxdepth | 6 | | SampleSeed | 12345 | |
| CVRepeat | 1 | | MinCatSize | 5 | | SampleSize | 10000 | |
| CVSeed | 12345 | | MissingValue | USEINSEARCH | | ShowNodeId | Y | |
| ClassColorBy | PERCENTCORRECT | | NSubtree | 1 | | ShowValid | Y | |
| Count | Y | | NodeRole | SEGMENT | | SigLevel | 0.2 | |
| CreateSample | DEFAULT | | NodeSample | 20000 | | SplitPrecision | 4 | |
| Criterion | DEFAULT | | NominalCriterion | PROBCHISQ | | Splitsize | . | |
| Depth | Y | | Nrules | 5 | | Subtree | ASSESSMENT | |
| Dummy | N | | Nsurrs | 0 | | Target | ALL | |
| Exhaustive | 5000 | | NumInputs | 1 | | ToolType | MODEL | |
| Freeze | N | | NumSingleImp | 5 | | TrainMode | BATCH | |
| ImportModel | N | | ObsImportance | N | | UseDecision | N | |
| ImportedTreeData | | | OrdinalCriterion | ENTROPY | | UseMultipleTarget | N | |
| Inputs | N | | PercentCorrect | N | | UsePriors | N | |
| IntColorBy | AVG | | Performance | DISK | | UseVarOnce | N | |
| IntervalCriterion | PROBF | | Precision | 4 | | VarSelection | Y | |

Node=Reg Tree B3D6 Variable Summary

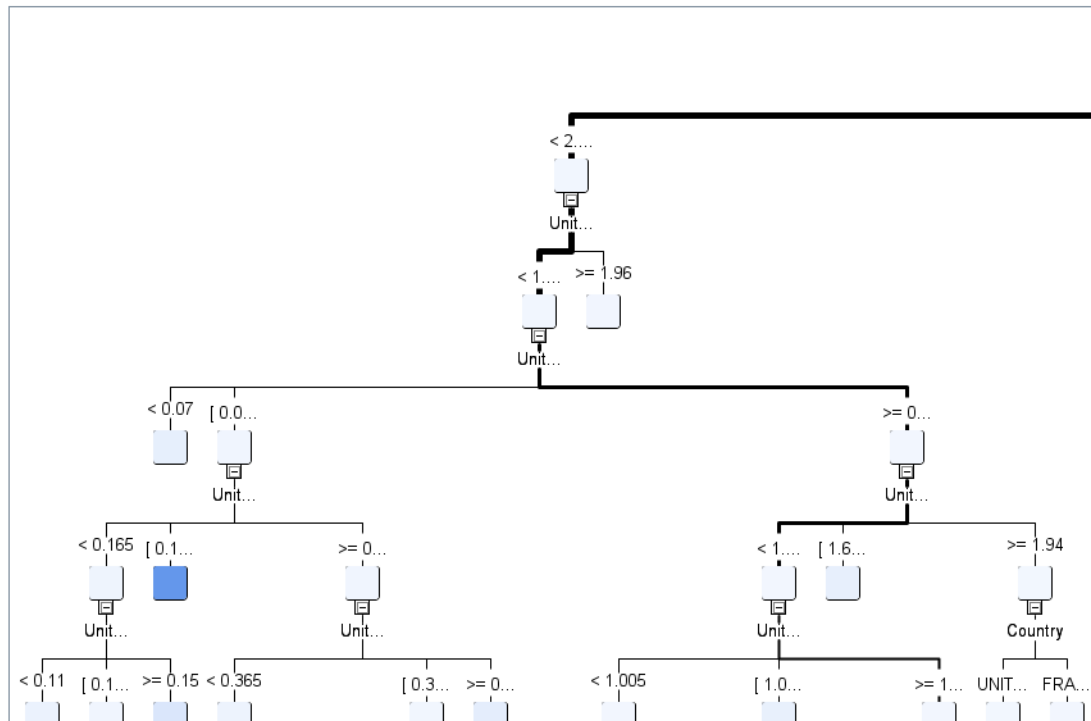
| Role | Level | Frequency Count | Name |
|--------|----------|-----------------|--------------------------------|
| TIMEID | INTERVAL | 1 | InvoiceDate |
| TARGET | INTERVAL | 1 | Quantity |
| INPUT | INTERVAL | 1 | UnitPrice |
| INPUT | NOMINAL | 1 | Country |
| ID | INTERVAL | 3 | CustomerID InvoiceNo _dataobs_ |
| ID | NOMINAL | 1 | StockCode |

Node=Reg Tree B3D6 Model Fit Statistics

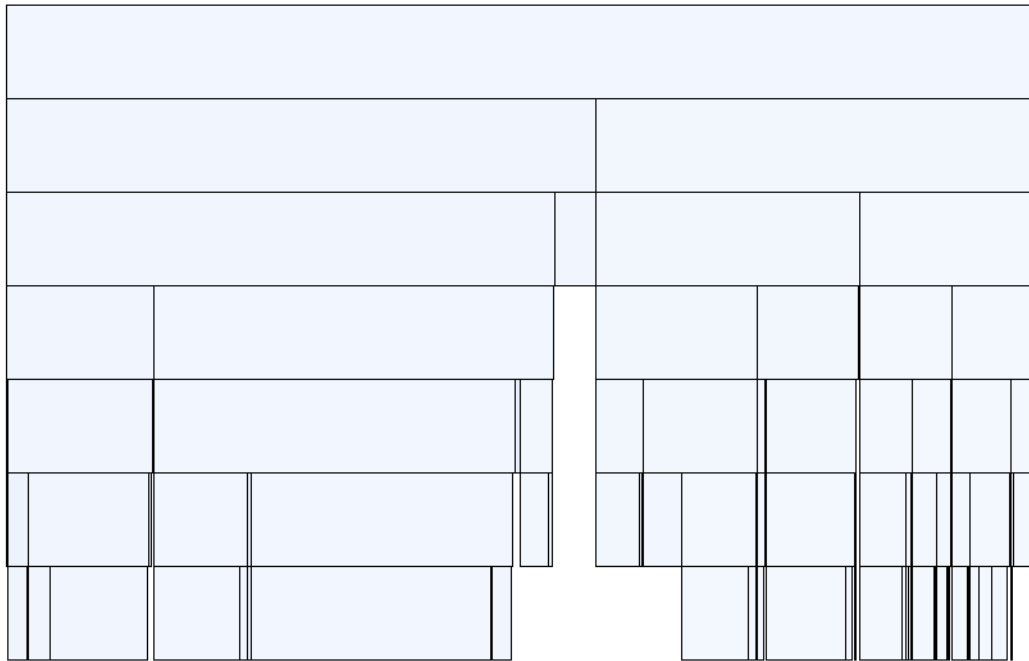
Target=Quantity Target Label=Quantity

| Label of Statistic | Train | Validation | Test |
|----------------------------|---------------|--------------|--------------|
| Sum of Frequencies | 127336.00 | 95502.00 | 95501.00 |
| Maximum Absolute Error | 80970.97 | 3106.99 | 12427.55 |
| Sum of Squared Errors | 6726642064.31 | 125544233.50 | 286005847.35 |
| Average Squared Error | 52825.93 | 1314.57 | 2994.79 |
| Root Average Squared Error | 229.84 | 36.26 | 54.72 |
| Divisor for ASE | 127336.00 | 95502.00 | 95501.00 |
| Total Degrees of Freedom | 127336.00 | . | . |

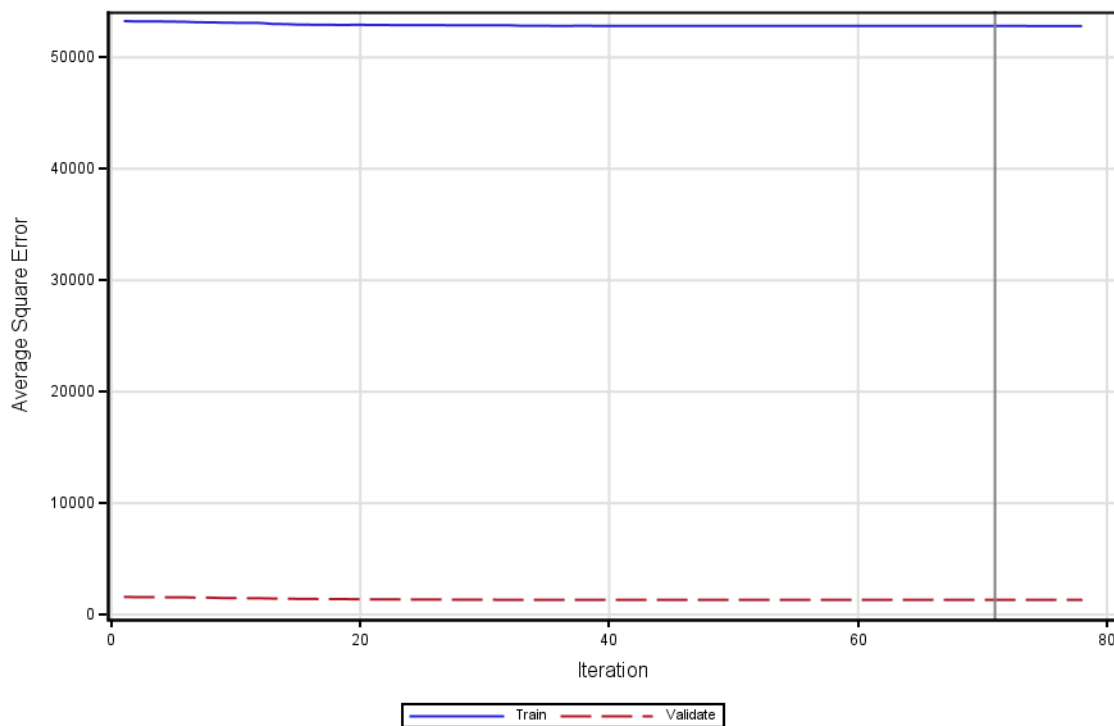
SAS Enterprise Miner Report
Node=Reg Tree B3D6
Tree Diagram

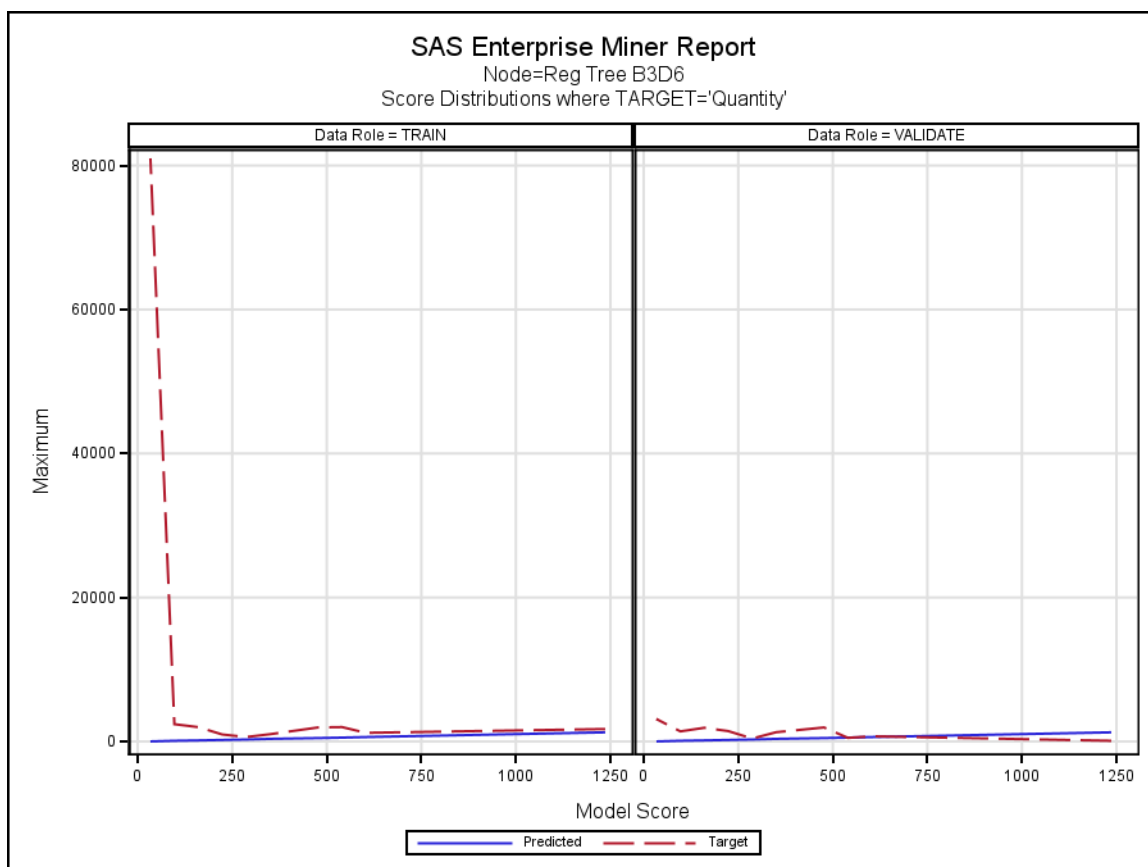
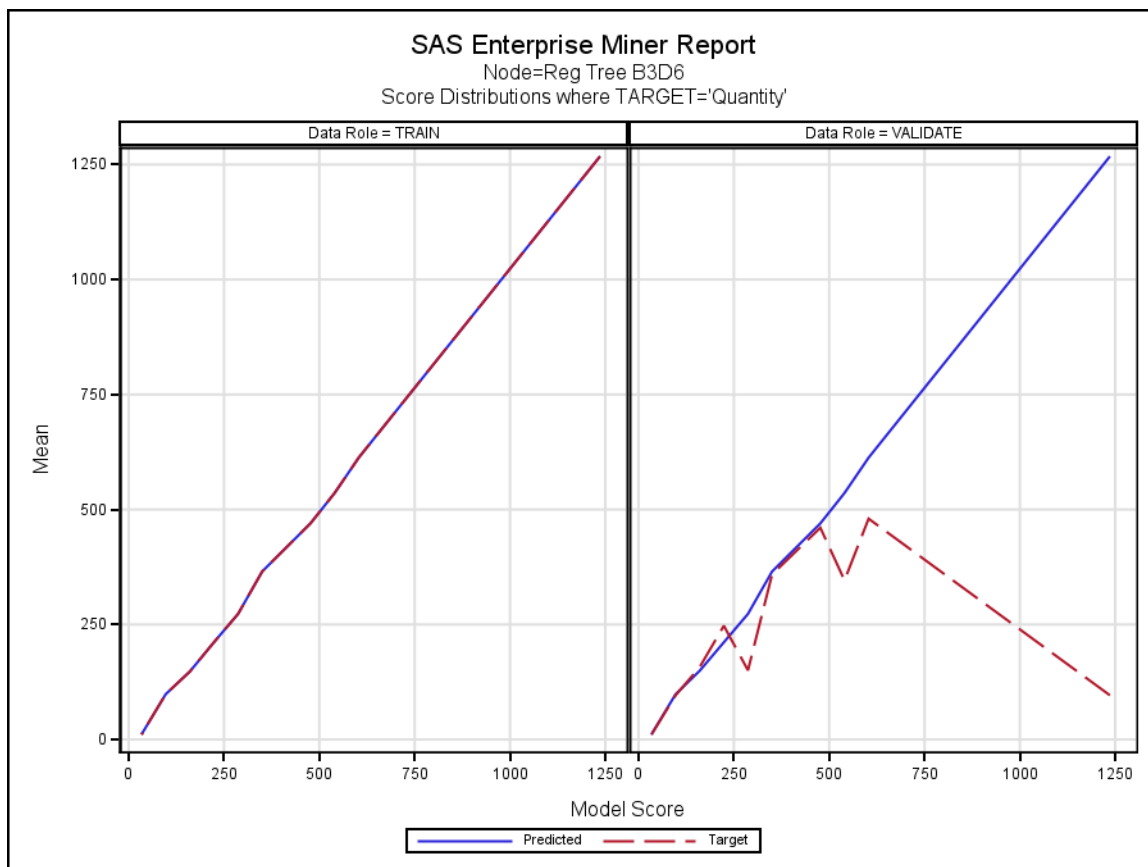


SAS Enterprise Miner Report
Node=Reg Tree B3D6
Treemap



SAS Enterprise Miner Report
Node=Reg Tree B3D6
Model Iteration Plots





Node=Reg Tree B3D6
Score Distributions

Target Variable=Quantity Data Role=TRAIN

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 1204.517 - 1267.800 | 1267.80 | 1267.80 | 1267.80 | 1267.80 | 1728 | 291 |
| 571.692 - 634.974 | 612.71 | 612.71 | 612.71 | 612.71 | 1200 | 240 |
| 508.409 - 571.692 | 535.78 | 535.78 | 535.78 | 535.78 | 2000 | 1 |
| 445.127 - 508.409 | 469.78 | 469.78 | 469.78 | 469.78 | 1944 | 120 |
| 318.562 - 381.844 | 365.23 | 365.23 | 365.23 | 365.23 | 1010 | 8 |
| 255.279 - 318.562 | 273.00 | 273.00 | 273.00 | 273.00 | 620 | 48 |
| 191.997 - 255.279 | 211.37 | 223.22 | 205.44 | 211.37 | 972 | 5 |
| 128.714 - 191.997 | 147.60 | 191.86 | 135.71 | 147.60 | 1992 | 1 |
| 65.431 - 128.714 | 98.40 | 120.86 | 74.23 | 98.40 | 2400 | 1 |
| 2.149 - 65.431 | 11.11 | 61.52 | 2.15 | 11.11 | 80995 | 1 |

Target Variable=Quantity Data Role=VALIDATE

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 1204.517 - 1267.800 | 1267.80 | 1267.80 | 1267.80 | 96.000 | 96 | 96 |
| 571.692 - 634.974 | 612.71 | 612.71 | 612.71 | 480.000 | 720 | 240 |
| 508.409 - 571.692 | 535.78 | 535.78 | 535.78 | 346.000 | 500 | 20 |
| 445.127 - 508.409 | 469.78 | 469.78 | 469.78 | 460.333 | 1944 | 18 |
| 318.562 - 381.844 | 365.23 | 365.23 | 365.23 | 358.800 | 1284 | 12 |
| 255.279 - 318.562 | 273.00 | 273.00 | 273.00 | 150.333 | 408 | 18 |
| 191.997 - 255.279 | 211.23 | 223.22 | 205.44 | 247.256 | 1440 | 2 |
| 128.714 - 191.997 | 149.34 | 191.86 | 135.71 | 157.358 | 1900 | 1 |
| 65.431 - 128.714 | 98.28 | 120.86 | 74.23 | 95.870 | 1400 | 1 |
| 2.149 - 65.431 | 11.07 | 61.52 | 2.15 | 10.525 | 3114 | 1 |

SAS Enterprise Miner Report

Node=RegTree B2D2 Summary

Node id = Tree3
Node label = RegTree B2D2
Meta path = Ids => Part => Tree3
Notes =

Node=RegTree B2D2 Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|-------------------|----------------|---------|------------------|-------------|---------|-------------------|------------|---------|
| Component | DecisionTree | | Kass | Y | | Pred | N | |
| AVG | Y | | KassApply | BEFORE | | Predict | Y | |
| AssessMeasure | PROFIT/LOSS | | LeafSize | 5 | | ProfitLoss | NONE | |
| AssessPercentage | 0.25 | | Leafid | Y | | RASE | N | |
| CV | N | | Maxbranch | 2 | | SampleMethod | RANDOM | |
| CVNlter | 10 | | Maxdepth | 2 | 6 | SampleSeed | 12345 | |
| CVRepeat | 1 | | MinCatSize | 5 | | SampleSize | 10000 | |
| CVSeed | 12345 | | MissingValue | USEINSEARCH | | ShowNodeId | Y | |
| ClassColorBy | PERCENTCORRECT | | NSubtree | 1 | | ShowValid | Y | |
| Count | Y | | NodeRole | SEGMENT | | SigLevel | 0.2 | |
| CreateSample | DEFAULT | | NodeSample | 20000 | | SplitPrecision | 4 | |
| Criterion | DEFAULT | | NominalCriterion | PROBCHISQ | | Splitsize | . | |
| Depth | Y | | Nrules | 5 | | Subtree | ASSESSMENT | |
| Dummy | N | | Nsurrs | 0 | | Target | ALL | |
| Exhaustive | 5000 | | NumInputs | 1 | | ToolType | MODEL | |
| Freeze | N | | NumSingleImp | 5 | | TrainMode | BATCH | |
| ImportModel | N | | ObsImportance | N | | UseDecision | N | |
| ImportedTreeData | | | OrdinalCriterion | ENTROPY | | UseMultipleTarget | N | |
| Inputs | N | | PercentCorrect | N | | UsePriors | N | |
| IntColorBy | AVG | | Performance | DISK | | UseVarOnce | N | |
| IntervalCriterion | PROBF | | Precision | 4 | | VarSelection | Y | |

Node=RegTree B2D2 Variable Summary

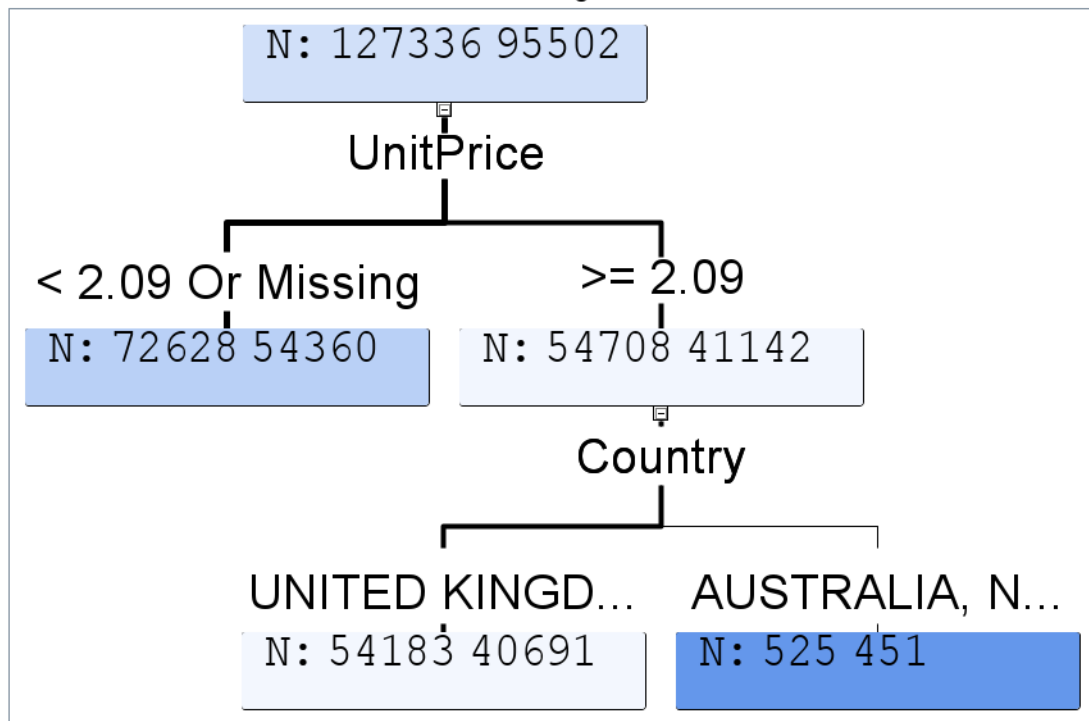
| Role | Level | Frequency Count | Name |
|--------|----------|--------------------|--------------------------------|
| TIMEID | INTERVAL | 1 | InvoiceDate |
| TARGET | INTERVAL | 1 | Quantity |
| INPUT | INTERVAL | 1 | UnitPrice |
| INPUT | NOMINAL | 1 | Country |
| ID | INTERVAL | 3 | CustomerID InvoiceNo _dataobs_ |
| ID | NOMINAL | 1 | StockCode |

Node=RegTree B2D2 Model Fit Statistics

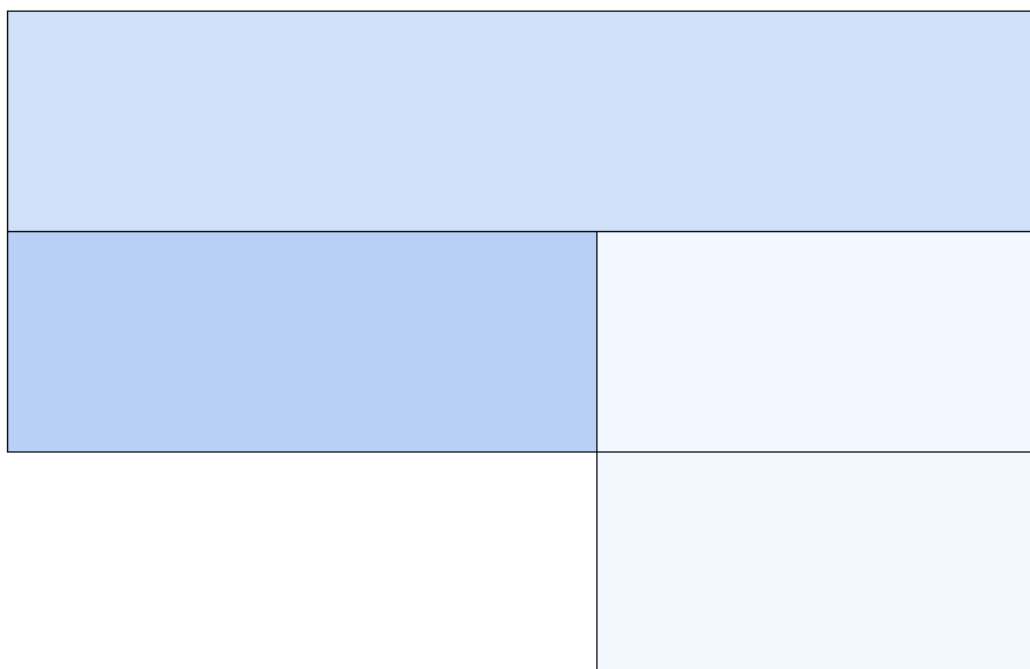
Target=Quantity Target Label=Quantity

| Label of Statistic | Train | Validation | Test |
|----------------------------|---------------|--------------|--------------|
| Sum of Frequencies | 127336.00 | 95502.00 | 95501.00 |
| Maximum Absolute Error | 80976.73 | 3107.74 | 12521.73 |
| Sum of Squared Errors | 6777215930.95 | 148979033.87 | 317235003.09 |
| Average Squared Error | 53223.09 | 1559.96 | 3321.80 |
| Root Average Squared Error | 230.70 | 39.50 | 57.64 |
| Divisor for ASE | 127336.00 | 95502.00 | 95501.00 |
| Total Degrees of Freedom | 127336.00 | . | . |

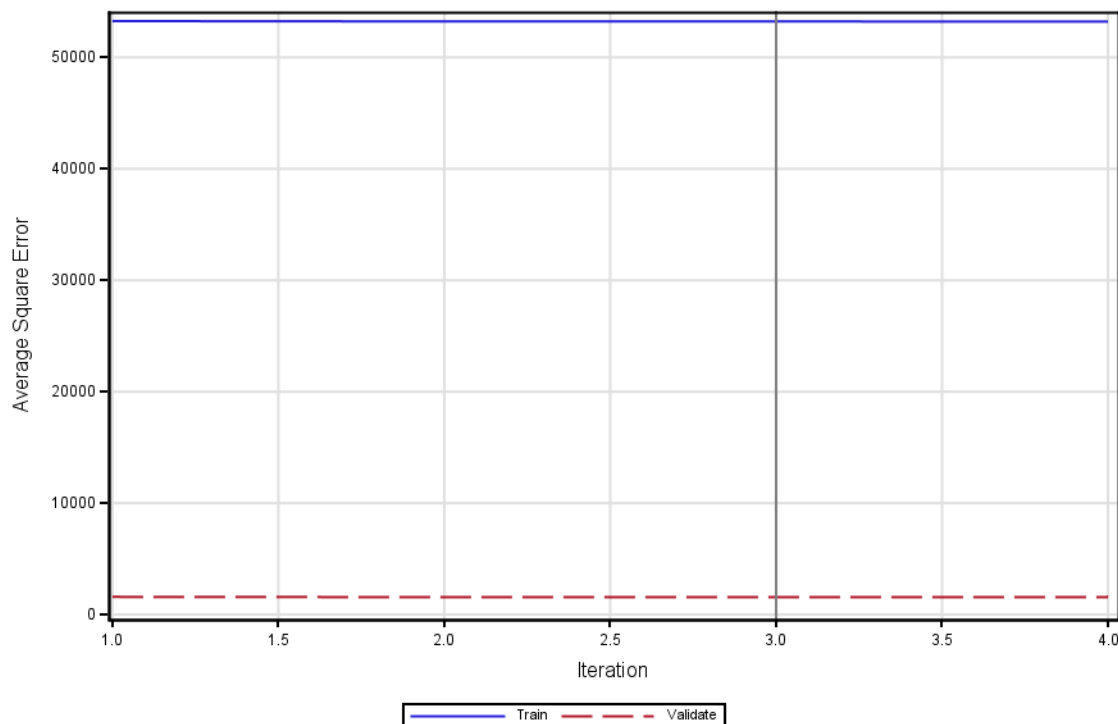
SAS Enterprise Miner Report
Node=RegTree B2D2
Tree Diagram



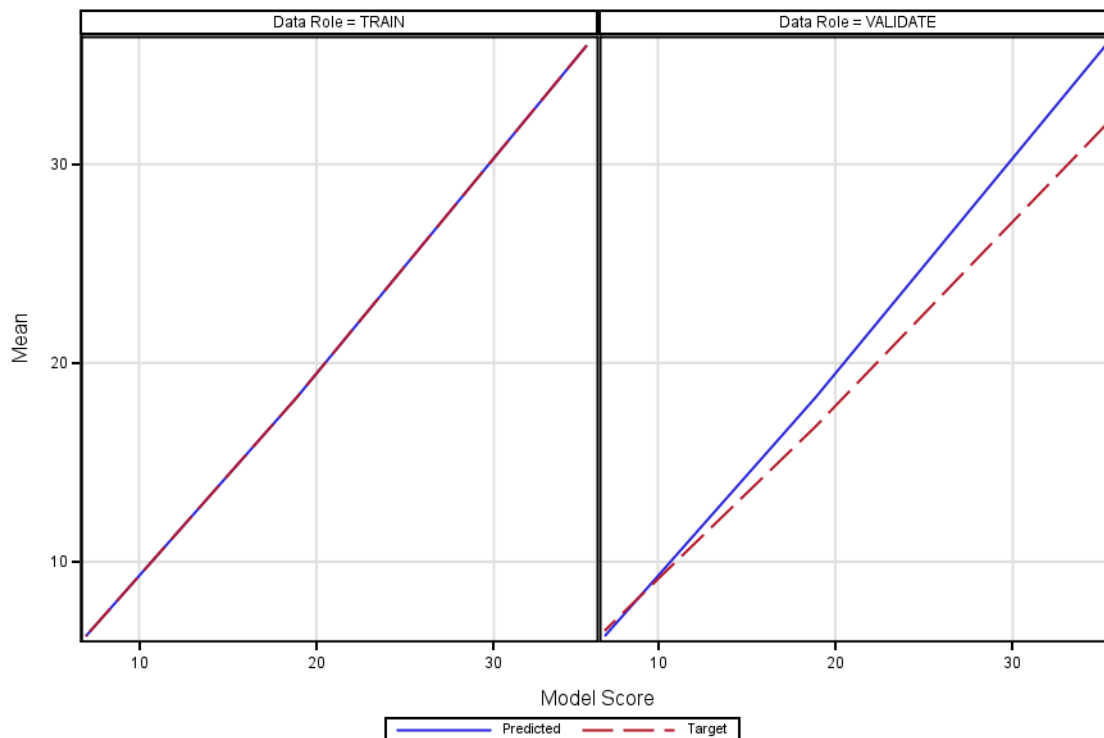
SAS Enterprise Miner Report
Node=RegTree B2D2
Treemap



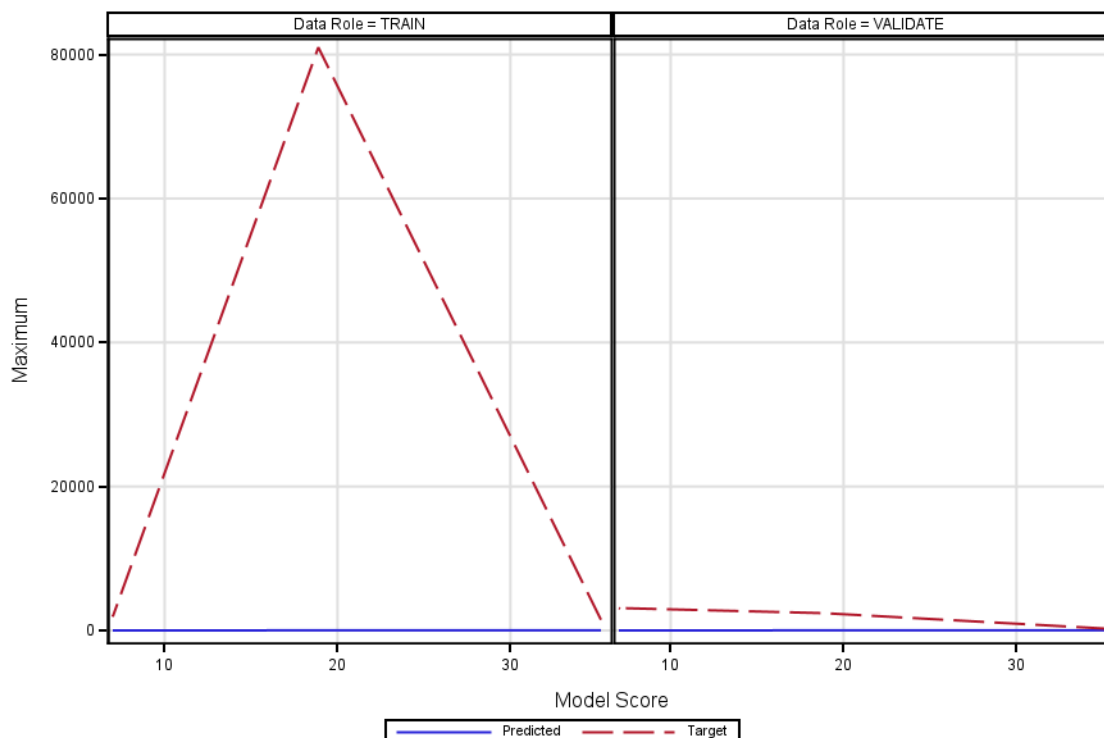
SAS Enterprise Miner Report
Node=RegTree B2D2
Model Iteration Plots



SAS Enterprise Miner Report
Node=RegTree B2D2
Score Distributions where TARGET='Quantity'



SAS Enterprise Miner Report
Node=RegTree B2D2
Score Distributions where TARGET='Quantity'



Node=RegTree B2D2
Score Distributions

Target Variable=Quantity Data Role=TRAIN

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 34.495 - 35.981 | 35.9810 | 35.9810 | 35.9810 | 35.9810 | 1488 | 1 |
| 18.148 - 19.634 | 18.2721 | 18.2721 | 18.2721 | 18.2721 | 80995 | 1 |
| 6.259 - 7.745 | 6.2587 | 6.2587 | 6.2587 | 6.2587 | 1930 | 1 |

Target Variable=Quantity Data Role=VALIDATE

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 34.495 - 35.981 | 35.9810 | 35.9810 | 35.9810 | 31.9690 | 250 | 1 |
| 18.148 - 19.634 | 18.2721 | 18.2721 | 18.2721 | 16.8110 | 2400 | 1 |
| 6.259 - 7.745 | 6.2587 | 6.2587 | 6.2587 | 6.5397 | 3114 | 1 |

SAS Enterprise Miner Report

Node=Reg Tree B2D4 Summary

Node id = Tree2
Node label = Reg Tree B2D4
Meta path = Ids => Part => Tree2
Notes =

Node=Reg Tree B2D4 Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|-------------------|----------------|---------|------------------|-------------|---------|-------------------|------------|---------|
| Component | DecisionTree | | Kass | Y | | Pred | N | |
| AVG | Y | | KassApply | BEFORE | | Predict | Y | |
| AssessMeasure | PROFIT/LOSS | | LeafSize | 5 | | ProfitLoss | NONE | |
| AssessPercentage | 0.25 | | Leafid | Y | | RASE | N | |
| CV | N | | Maxbranch | 2 | | SampleMethod | RANDOM | |
| CVNlter | 10 | | Maxdepth | 4 | 6 | SampleSeed | 12345 | |
| CVRepeat | 1 | | MinCatSize | 5 | | SampleSize | 10000 | |
| CVSeed | 12345 | | MissingValue | USEINSEARCH | | ShowNodeid | Y | |
| ClassColorBy | PERCENTCORRECT | | NSubtree | 1 | | ShowValid | Y | |
| Count | Y | | NodeRole | SEGMENT | | SigLevel | 0.2 | |
| CreateSample | DEFAULT | | NodeSample | 20000 | | SplitPrecision | 4 | |
| Criterion | DEFAULT | | NominalCriterion | PROBCHISQ | | Splitsize | . | |
| Depth | Y | | Nrules | 5 | | Subtree | ASSESSMENT | |
| Dummy | N | | Nsurrs | 0 | | Target | ALL | |
| Exhaustive | 5000 | | NumInputs | 1 | | ToolType | MODEL | |
| Freeze | N | | NumSingleImp | 5 | | TrainMode | BATCH | |
| ImportModel | N | | ObsImportance | N | | UseDecision | N | |
| ImportedTreeData | | | OrdinalCriterion | ENTROPY | | UseMultipleTarget | N | |
| Inputs | N | | PercentCorrect | N | | UsePriors | N | |
| IntColorBy | AVG | | Performance | DISK | | UseVarOnce | N | |
| IntervalCriterion | PROBF | | Precision | 4 | | VarSelection | Y | |

Node=Reg Tree B2D4 Variable Summary

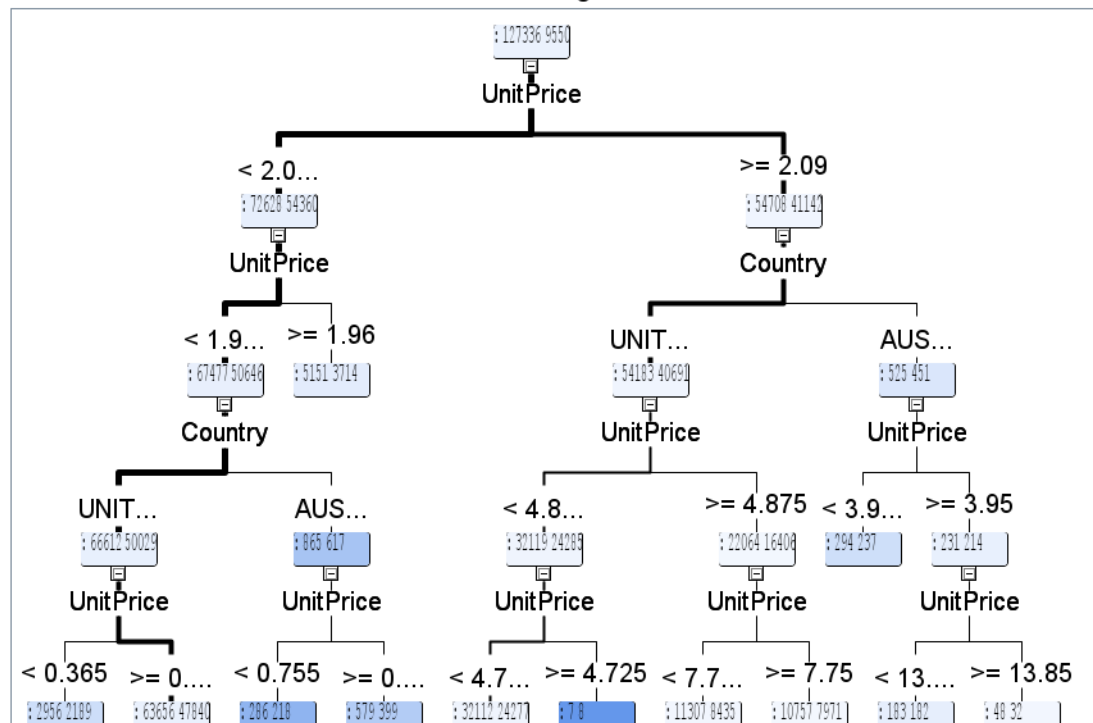
| Role | Level | Frequency Count | Name |
|--------|----------|--------------------|--------------------------------|
| TIMEID | INTERVAL | 1 | InvoiceDate |
| TARGET | INTERVAL | 1 | Quantity |
| INPUT | INTERVAL | 1 | UnitPrice |
| INPUT | NOMINAL | 1 | Country |
| ID | INTERVAL | 3 | CustomerID InvoiceNo _dataobs_ |
| ID | NOMINAL | 1 | StockCode |

Node=Reg Tree B2D4 Model Fit Statistics

Target=Quantity Target Label=Quantity

| Label of Statistic | Train | Validation | Test |
|----------------------------|---------------|--------------|--------------|
| Sum of Frequencies | 127336.00 | 95502.00 | 95501.00 |
| Maximum Absolute Error | 80970.97 | 3106.16 | 12487.86 |
| Sum of Squared Errors | 6765733508.48 | 141074482.15 | 308039413.70 |
| Average Squared Error | 53132.92 | 1477.19 | 3225.51 |
| Root Average Squared Error | 230.51 | 38.43 | 56.79 |
| Divisor for ASE | 127336.00 | 95502.00 | 95501.00 |
| Total Degrees of Freedom | 127336.00 | . | . |

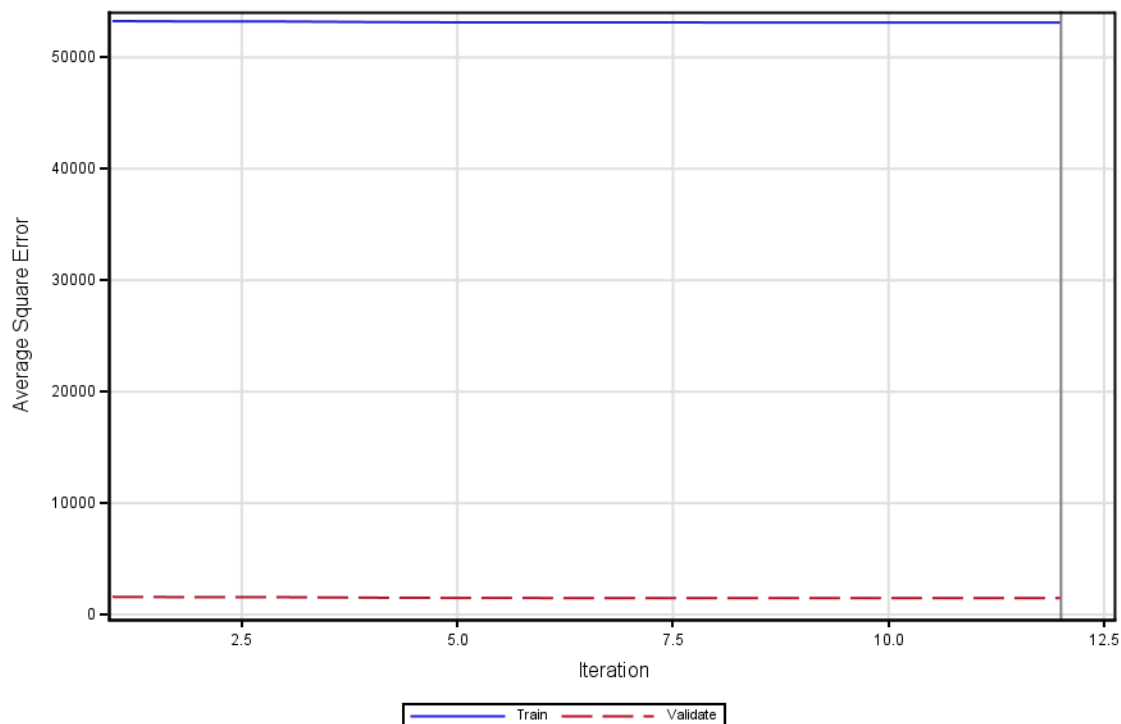
SAS Enterprise Miner Report
Node=Reg Tree B2D4
Tree Diagram

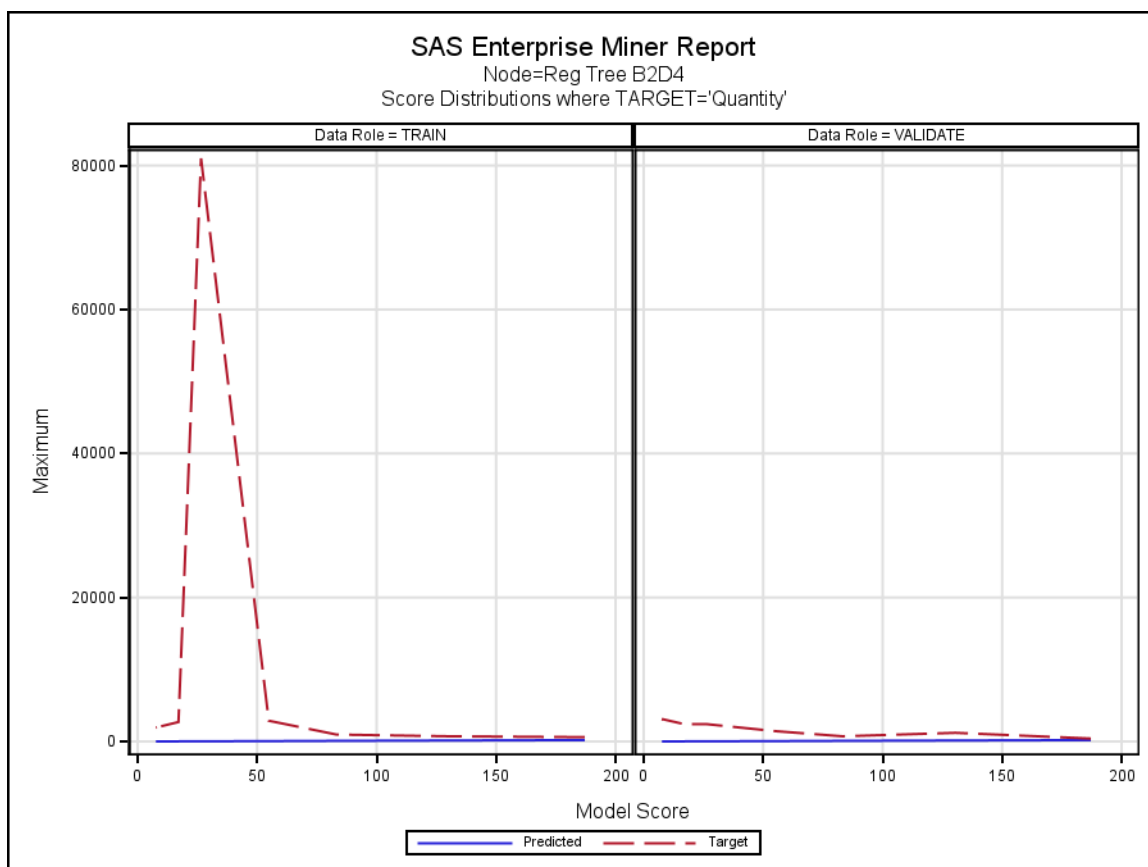
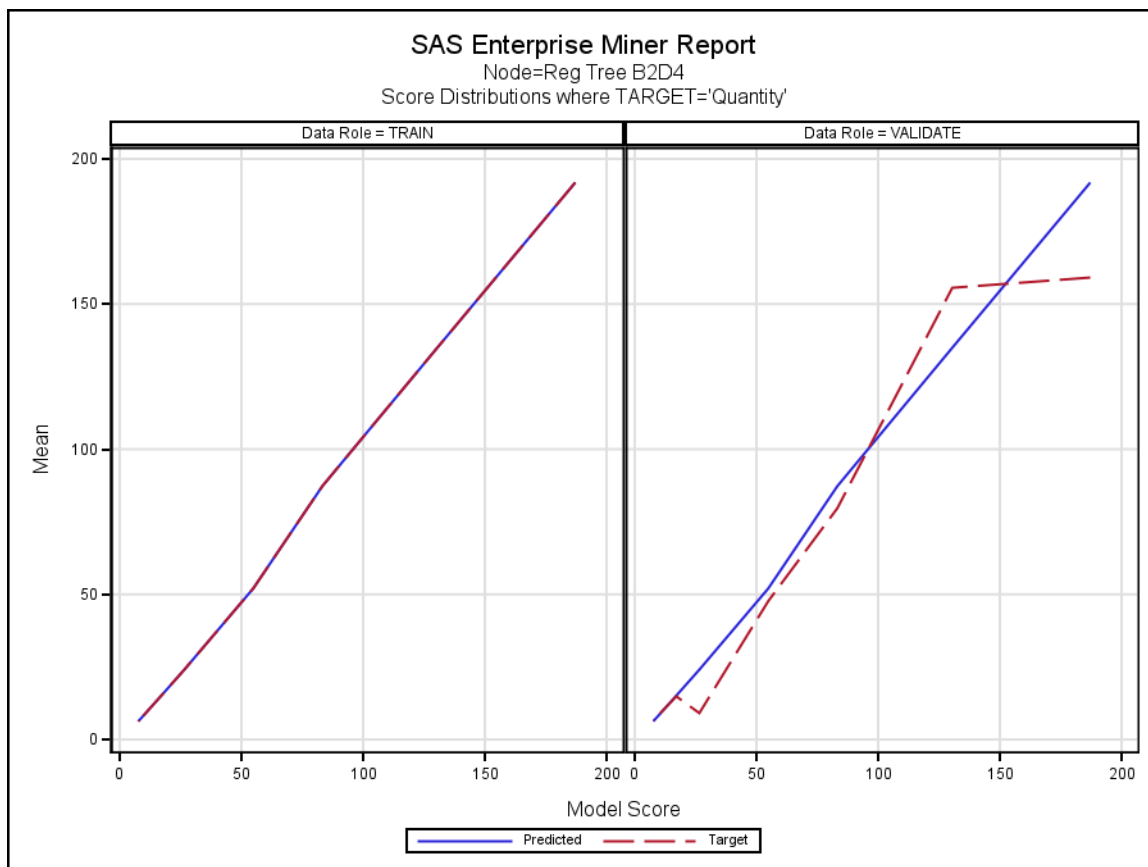


SAS Enterprise Miner Report
Node=Reg Tree B2D4
Treemap



SAS Enterprise Miner Report
Node=Reg Tree B2D4
Model Iteration Plots





Node=Reg Tree B2D4
Score Distributions

Target Variable=Quantity Data Role=TRAIN

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 182.410 - 191.857 | 191.857 | 191.857 | 191.857 | 191.857 | 600 | 12 |
| 125.728 - 135.175 | 134.944 | 134.944 | 134.944 | 134.944 | 720 | 1 |
| 78.493 - 87.940 | 87.238 | 87.238 | 87.238 | 87.238 | 960 | 1 |
| 50.152 - 59.599 | 52.042 | 52.136 | 51.095 | 52.042 | 2880 | 1 |
| 21.811 - 31.258 | 24.031 | 24.031 | 24.031 | 24.031 | 80995 | 1 |
| 12.364 - 21.811 | 15.096 | 19.984 | 15.082 | 15.096 | 2700 | 1 |
| 2.917 - 12.364 | 6.233 | 7.842 | 2.917 | 6.233 | 1930 | 1 |

Target Variable=Quantity Data Role=VALIDATE

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 182.410 - 191.857 | 191.857 | 191.857 | 191.857 | 159.125 | 408 | 1 |
| 125.728 - 135.175 | 134.944 | 134.944 | 134.944 | 155.596 | 1200 | 1 |
| 78.493 - 87.940 | 87.238 | 87.238 | 87.238 | 79.634 | 720 | 1 |
| 50.152 - 59.599 | 52.035 | 52.136 | 51.095 | 47.678 | 1440 | 1 |
| 21.811 - 31.258 | 24.031 | 24.031 | 24.031 | 9.072 | 2400 | 1 |
| 12.364 - 21.811 | 15.101 | 19.984 | 15.082 | 14.849 | 2400 | 1 |
| 2.917 - 12.364 | 6.250 | 7.842 | 2.917 | 6.508 | 3114 | 1 |

SAS Enterprise Miner Report

Node=RegTree B2D6 Summary

Node id = Tree
Node label = RegTree B2D6
Meta path = Ids => Part => Tree
Notes =

Node=RegTree B2D6 Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|-------------------|----------------|---------|------------------|-------------|---------|-------------------|------------|---------|
| Component | DecisionTree | | Kass | Y | | Pred | N | |
| AVG | Y | | KassApply | BEFORE | | Predict | Y | |
| AssessMeasure | PROFIT/LOSS | | LeafSize | 5 | | ProfitLoss | NONE | |
| AssessPercentage | 0.25 | | Leafid | Y | | RASE | N | |
| CV | N | | Maxbranch | 2 | | SampleMethod | RANDOM | |
| CVNlter | 10 | | Maxdepth | 6 | | SampleSeed | 12345 | |
| CVRepeat | 1 | | MinCatSize | 5 | | SampleSize | 10000 | |
| CVSeed | 12345 | | MissingValue | USEINSEARCH | | ShowNodeId | Y | |
| ClassColorBy | PERCENTCORRECT | | NSubtree | 1 | | ShowValid | Y | |
| Count | Y | | NodeRole | SEGMENT | | SigLevel | 0.2 | |
| CreateSample | DEFAULT | | NodeSample | 20000 | | SplitPrecision | 4 | |
| Criterion | DEFAULT | | NominalCriterion | PROBCHISQ | | Splitsize | . | |
| Depth | Y | | Nrules | 5 | | Subtree | ASSESSMENT | |
| Dummy | N | | Nsurrs | 0 | | Target | ALL | |
| Exhaustive | 5000 | | NumInputs | 1 | | ToolType | MODEL | |
| Freeze | N | | NumSingleImp | 5 | | TrainMode | BATCH | |
| ImportModel | N | | ObsImportance | N | | UseDecision | N | |
| ImportedTreeData | | | OrdinalCriterion | ENTROPY | | UseMultipleTarget | N | |
| Inputs | N | | PercentCorrect | N | | UsePriors | N | |
| IntColorBy | AVG | | Performance | DISK | | UseVarOnce | N | |
| IntervalCriterion | PROBF | | Precision | 4 | | VarSelection | Y | |

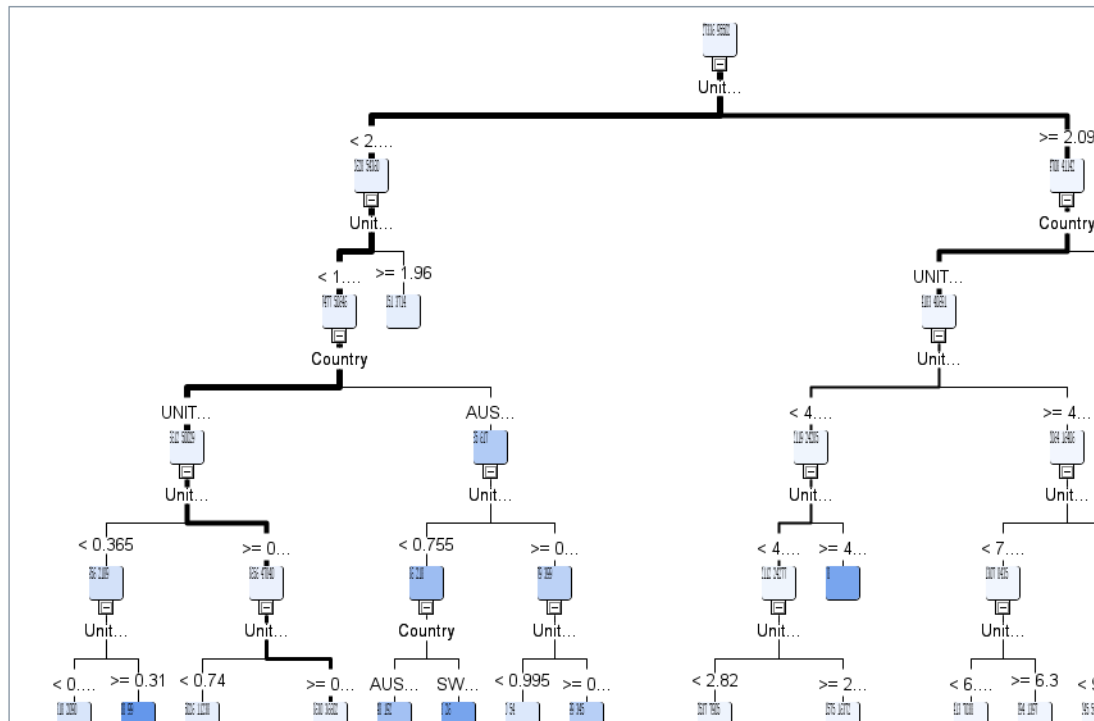
Node=RegTree B2D6 Variable Summary

| Role | Level | Frequency Count | Name |
|--------|----------|--------------------|--------------------------------|
| TIMEID | INTERVAL | 1 | InvoiceDate |
| TARGET | INTERVAL | 1 | Quantity |
| INPUT | INTERVAL | 1 | UnitPrice |
| INPUT | NOMINAL | 1 | Country |
| ID | INTERVAL | 3 | CustomerID InvoiceNo _dataobs_ |
| ID | NOMINAL | 1 | StockCode |

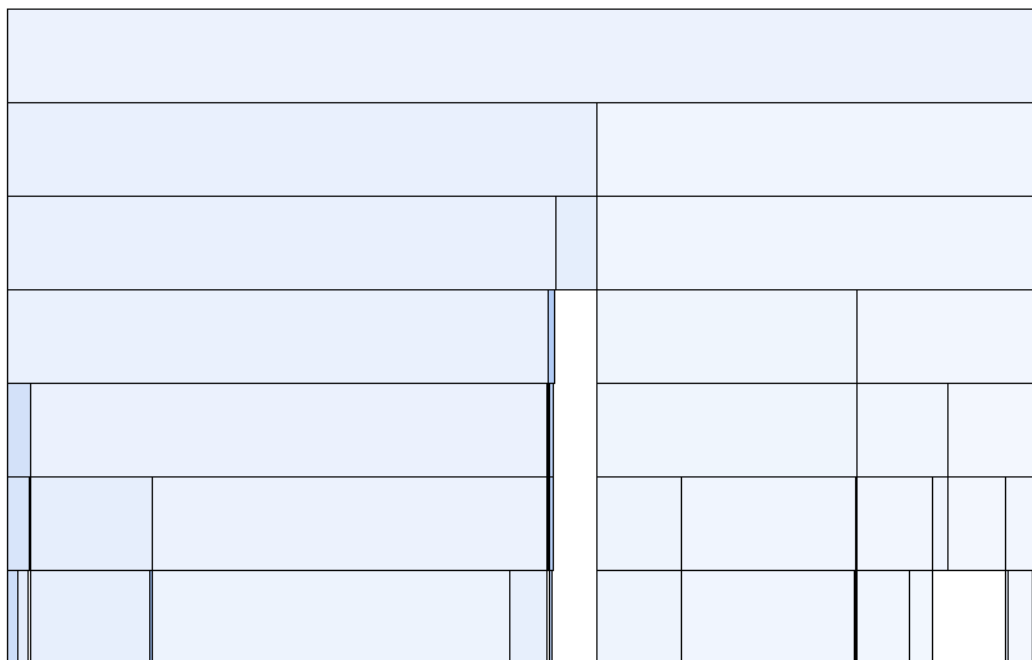
Node=RegTree B2D6 Model Fit Statistics

| Label of Statistic | Train | Validation | Test |
|----------------------------|---------------|--------------|--------------|
| Sum of Frequencies | 127336.00 | 95502.00 | 95501.00 |
| Maximum Absolute Error | 80970.97 | 3104.38 | 12479.84 |
| Sum of Squared Errors | 6754248251.83 | 133545825.85 | 300258400.80 |
| Average Squared Error | 53042.72 | 1398.36 | 3144.03 |
| Root Average Squared Error | 230.31 | 37.39 | 56.07 |
| Divisor for ASE | 127336.00 | 95502.00 | 95501.00 |
| Total Degrees of Freedom | 127336.00 | . | . |

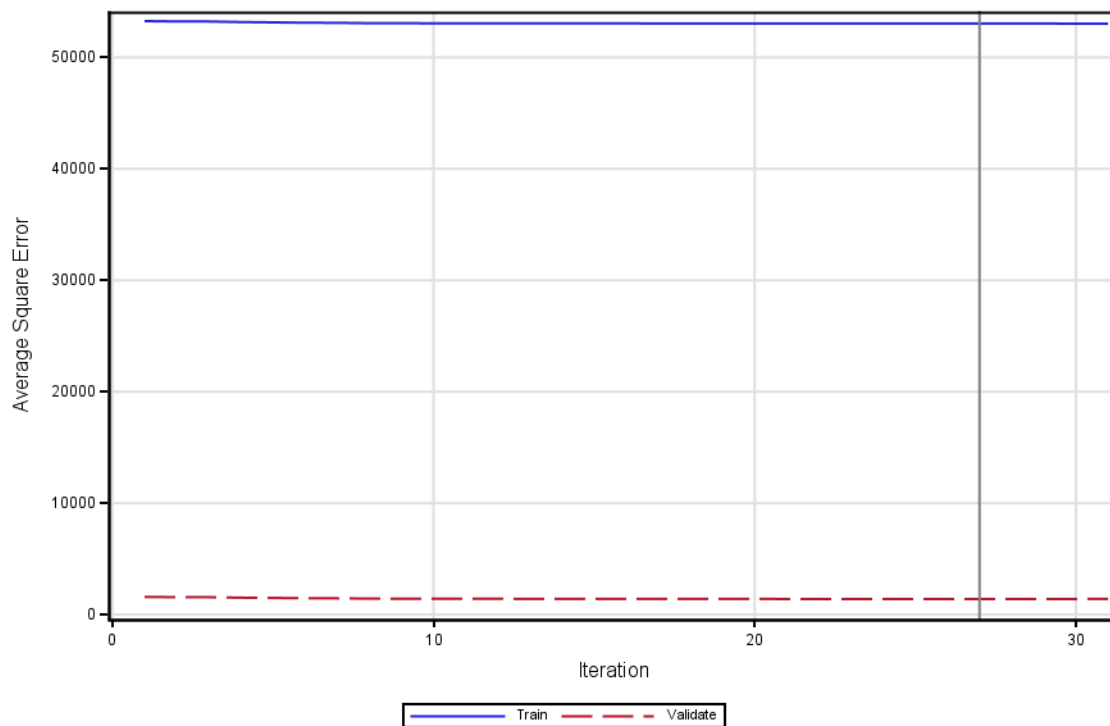
SAS Enterprise Miner Report
Node=RegTree B2D6
Tree Diagram

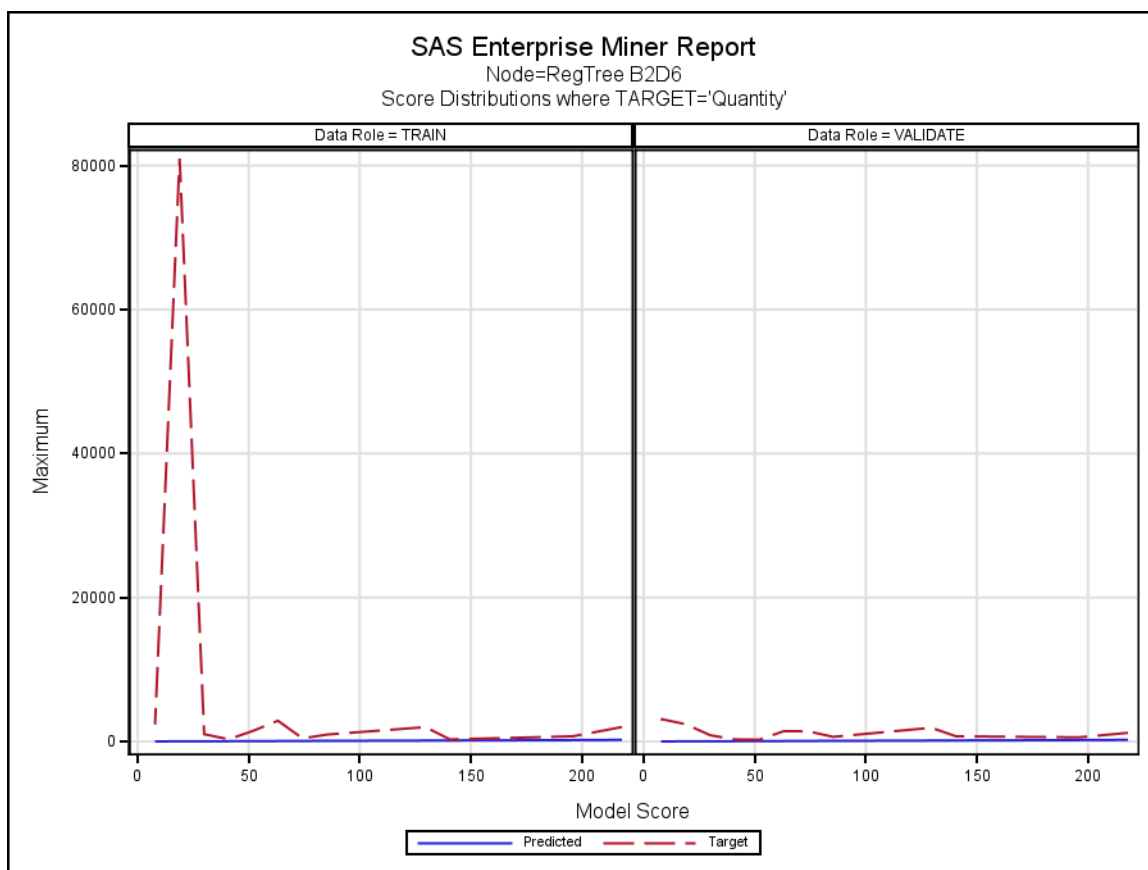
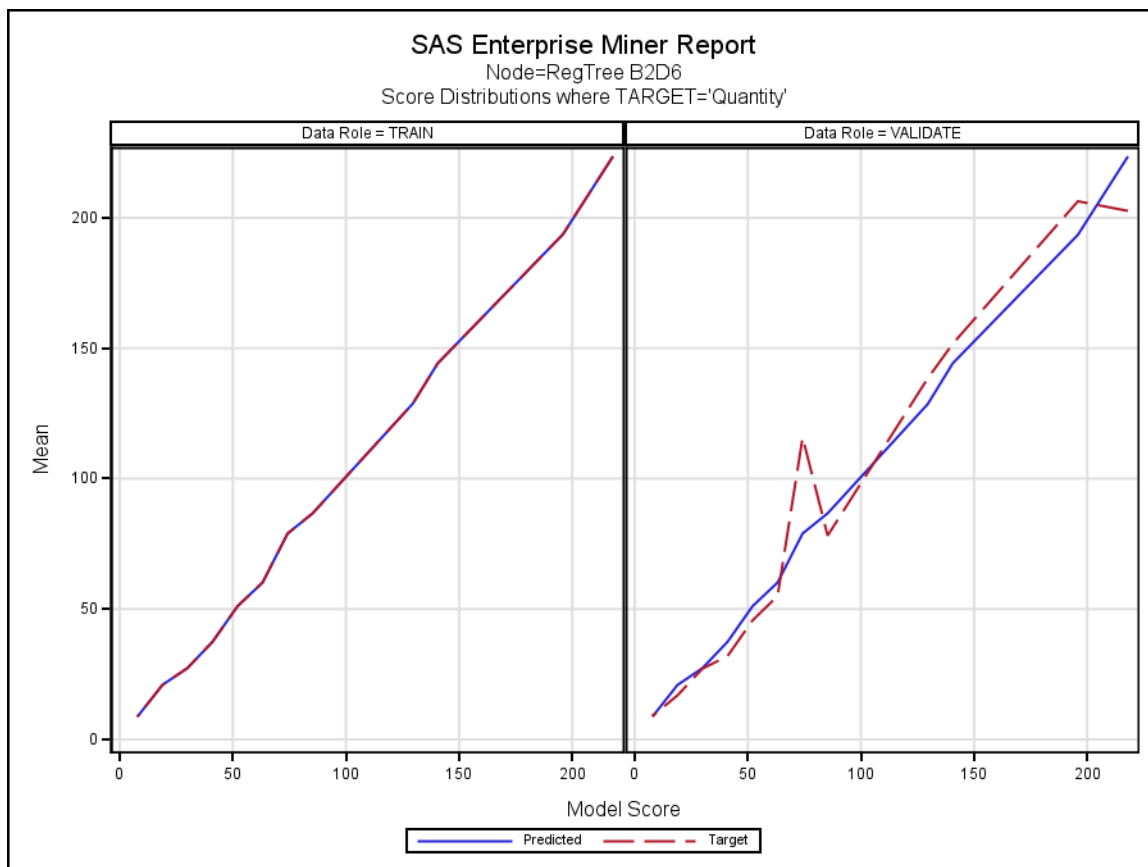


SAS Enterprise Miner Report
Node=RegTree B2D6
Treemap



SAS Enterprise Miner Report
Node=RegTree B2D6
Model Iteration Plots





Node=RegTree B2D6
Score Distributions

Target Variable=Quantity Data Role=TRAIN

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 212.481 - 223.543 | 223.543 | 223.543 | 223.543 | 223.543 | 2000 | 1 |
| 190.357 - 201.419 | 193.644 | 193.974 | 191.857 | 193.644 | 720 | 12 |
| 135.047 - 146.109 | 144.216 | 144.216 | 144.216 | 144.216 | 288 | 36 |
| 123.985 - 135.047 | 128.723 | 130.807 | 125.899 | 128.723 | 1992 | 1 |
| 79.737 - 90.799 | 86.692 | 86.692 | 86.692 | 86.692 | 960 | 1 |
| 68.675 - 79.737 | 78.950 | 78.950 | 78.950 | 78.950 | 428 | 2 |
| 57.613 - 68.675 | 60.163 | 60.163 | 60.163 | 60.163 | 2880 | 1 |
| 46.551 - 57.613 | 51.095 | 51.095 | 51.095 | 51.095 | 1488 | 1 |
| 35.489 - 46.551 | 37.438 | 37.438 | 37.438 | 37.438 | 300 | 1 |
| 24.427 - 35.489 | 27.369 | 27.369 | 27.369 | 27.369 | 1008 | 1 |
| 13.365 - 24.427 | 20.911 | 24.031 | 19.984 | 20.911 | 80995 | 1 |
| 2.303 - 13.365 | 8.737 | 12.109 | 2.303 | 8.737 | 2400 | 1 |

Target Variable=Quantity Data Role=VALIDATE

| Range for Predicted | Mean Predicted | Max Predicted | Min Predicted | Mean Target | Max Target | Min Target |
|---------------------|----------------|---------------|---------------|-------------|------------|------------|
| 212.481 - 223.543 | 223.543 | 223.543 | 223.543 | 202.626 | 1200 | 1 |
| 190.357 - 201.419 | 193.476 | 193.974 | 191.857 | 206.324 | 576 | 1 |
| 135.047 - 146.109 | 144.216 | 144.216 | 144.216 | 151.714 | 720 | 36 |
| 123.985 - 135.047 | 128.579 | 130.807 | 125.899 | 138.449 | 1900 | 1 |
| 79.737 - 90.799 | 86.692 | 86.692 | 86.692 | 78.142 | 640 | 1 |
| 68.675 - 79.737 | 78.950 | 78.950 | 78.950 | 115.767 | 1404 | 6 |
| 57.613 - 68.675 | 60.163 | 60.163 | 60.163 | 54.987 | 1440 | 1 |
| 46.551 - 57.613 | 51.095 | 51.095 | 51.095 | 45.641 | 250 | 1 |
| 35.489 - 46.551 | 37.438 | 37.438 | 37.438 | 31.944 | 288 | 1 |
| 24.427 - 35.489 | 27.369 | 27.369 | 27.369 | 27.163 | 864 | 1 |
| 13.365 - 24.427 | 20.883 | 24.031 | 19.984 | 16.891 | 2400 | 1 |
| 2.303 - 13.365 | 8.744 | 12.109 | 2.303 | 8.994 | 3114 | 1 |

SAS Enterprise Miner Report

Node=MLR Model Comparison Summary

Node id = MdlComp2
 Node label = MLR Model Comparison
 Meta path = Ids => Part => Reg => MdlComp2
 Notes =

Node=MLR Model Comparison Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|-----------------------------|------------------------------|---------|------------------------|---------|---------|----------------------|----------|---------|
| Component | ModelCompare | | NumberOfReportedLevels | 1E-6 | | SelectionData | DEFAULT | |
| AssessAllTargetLevels | N | | NumberOfBins | 20 | | SelectionDepth | 10 | |
| DecileBin | 20 | | ProfitEpsilon | 1E-6 | | SelectionTable | TRAIN | TABLE |
| HPCriteria | DEFAULT | | RecomputeAssess | N | | StatisticUsed | _VASE_ | |
| LiftEpsilon | 1E-6 | | RocChart | Y | | TargetLabel | Quantity | |
| ModelCriteria | Valid: Average Squared Error | | RocEpsilon | 0.01 | | TargetName | Quantity | |
| ModelDescription | Exhaustive Regression | | RoiEpsilon | 1E-6 | | classViyaCriteria | DEFAULT | |
| ModelId | Reg | | ScoreDistBin | 20 | | intervalViyaCriteria | DEFAULT | |
| NormalizeReportingVariables | Y | | SelectionCriteria | DEFAULT | | | | |

Node=MLR Model Comparison Variable Summary

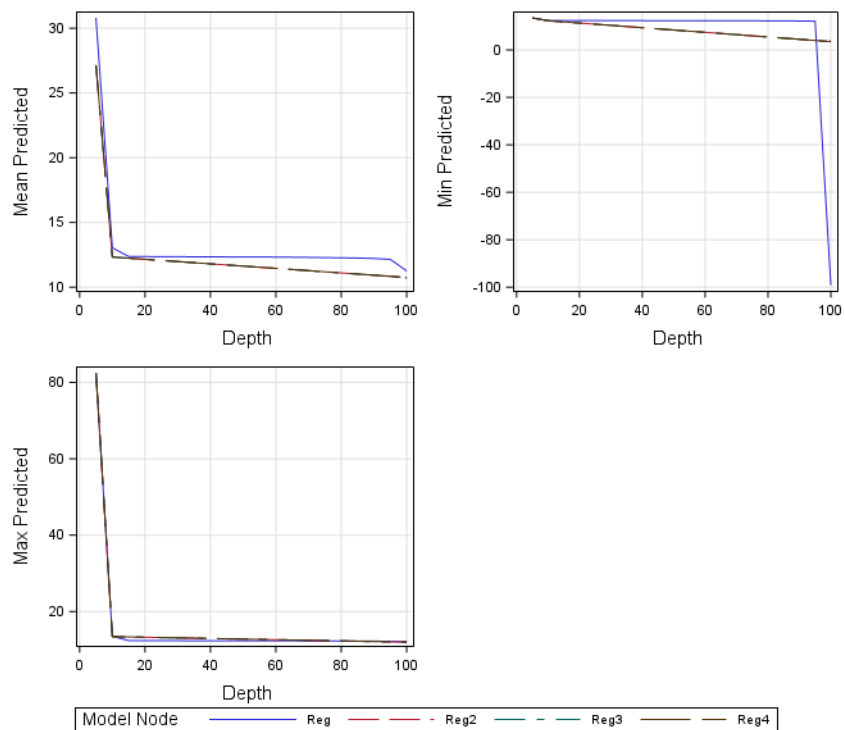
| Role | Level | Frequency Count | Name |
|--------|----------|--------------------|----------|
| TARGET | INTERVAL | 1 | Quantity |

Node=MLR Model Comparison Fit Statistics Table

| Selected Model | Predecessor Node | Model Node | Model Description | Target Variable | Target Label | Selection Criterion: Valid: Average Squared Error | Train: Average Squared Error |
|-------------------|---------------------|---------------|-----------------------|--------------------|-----------------|--|---------------------------------------|
| Y | Reg | Reg | Exhaustive Regression | Quantity | Quantity | 1535.19 | 53212.18 |
| | Reg2 | Reg2 | Backward Regression | Quantity | Quantity | 1536.02 | 53212.68 |
| | Reg3 | Reg3 | Forward Regression | Quantity | Quantity | 1536.02 | 53212.68 |
| | Reg4 | Reg4 | Stepwise Regression | Quantity | Quantity | 1536.02 | 53212.68 |

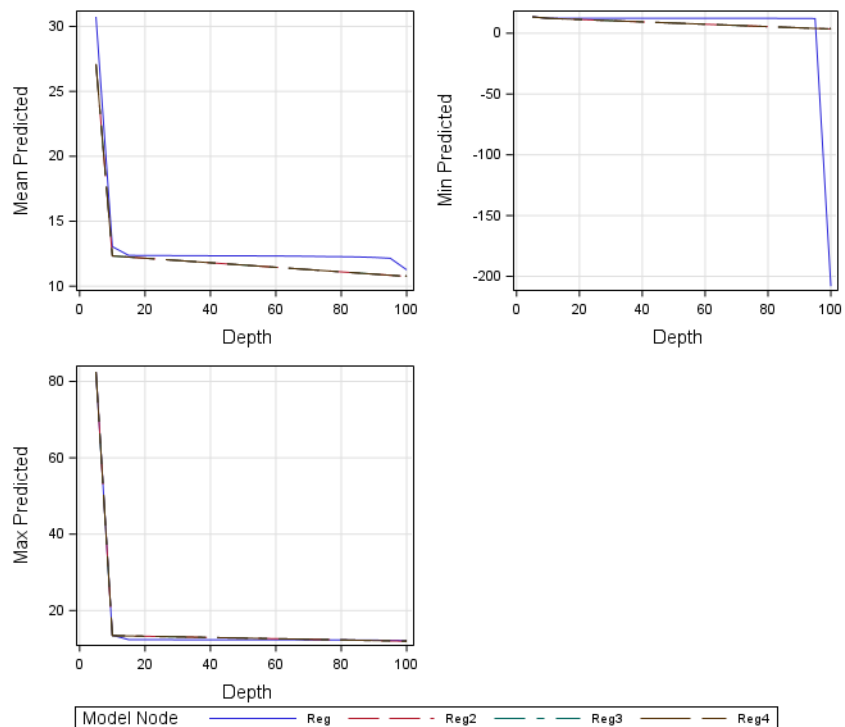
SAS Enterprise Miner Report

Node=MLR Model Comparison
Multiple Model Assessment Scores where DataRole=TEST
TARGET='Quantity'



SAS Enterprise Miner Report

Node=MLR Model Comparison
Multiple Model Assessment Scores where DataRole=TRAIN
TARGET='Quantity'

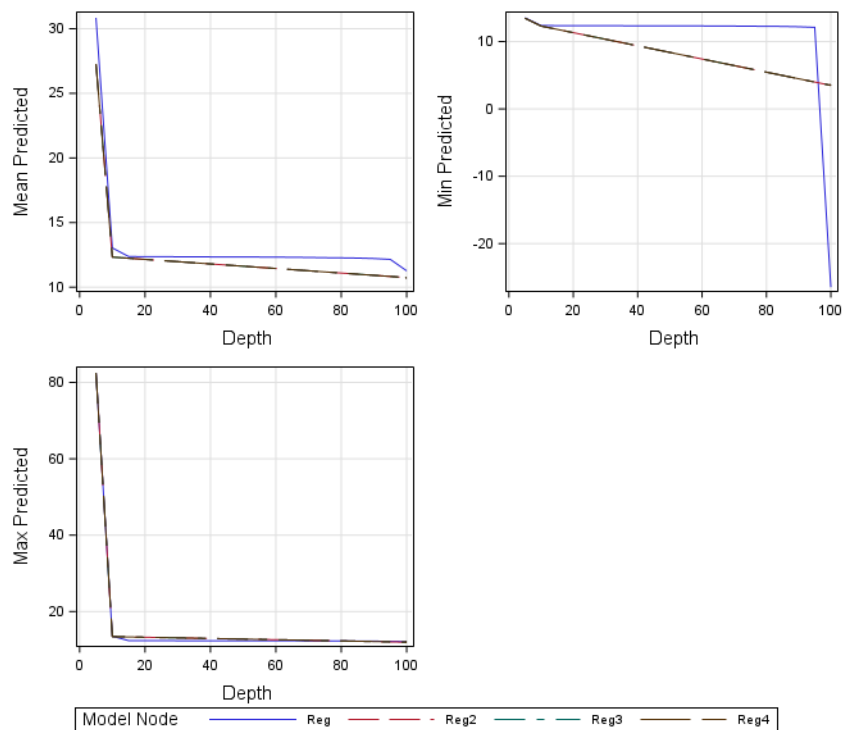


SAS Enterprise Miner Report

Node=MLR Model Comparison

Multiple Model Assessment Scores where DataRole=VALIDATE

TARGET='Quantity'



SAS Enterprise Miner Report

Node=REgTree Model Comparison
Summary

Node id = MdlComp
Node label = REgTree Model Comparison
Meta path = Ids => Part => Tree4 => MdlComp
Notes =

Node=REgTree Model Comparison
Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|-----------------------------|------------------------------|---------|------------------------|---------|---------|----------------------|----------|---------|
| Component | ModelCompare | | NumberOfReportedLevels | 1E-6 | | SelectionData | DEFAULT | |
| AssessAllTargetLevels | N | | NumberofBins | 20 | | SelectionDepth | 10 | |
| DecileBin | 20 | | ProfitEpsilon | 1E-6 | | SelectionTable | TRAIN | TABLE |
| HPCriteria | DEFAULT | | RecomputeAssess | N | | StatisticUsed | _VASE_ | |
| LiftEpsilon | 1E-6 | | RocChart | Y | | TargetLabel | Quantity | |
| ModelCriteria | Valid: Average Squared Error | | RocEpsilon | 0.01 | | TargetName | Quantity | |
| ModelDescription | Reg Tree B3D6 | | RoiEpsilon | 1E-6 | | classViyaCriteria | DEFAULT | |
| ModelId | Tree4 | | ScoreDistBin | 20 | | intervalViyaCriteria | DEFAULT | |
| NormalizeReportingVariables | Y | | SelectionCriteria | DEFAULT | | | | |

Node=REgTree Model Comparison
Variable Summary

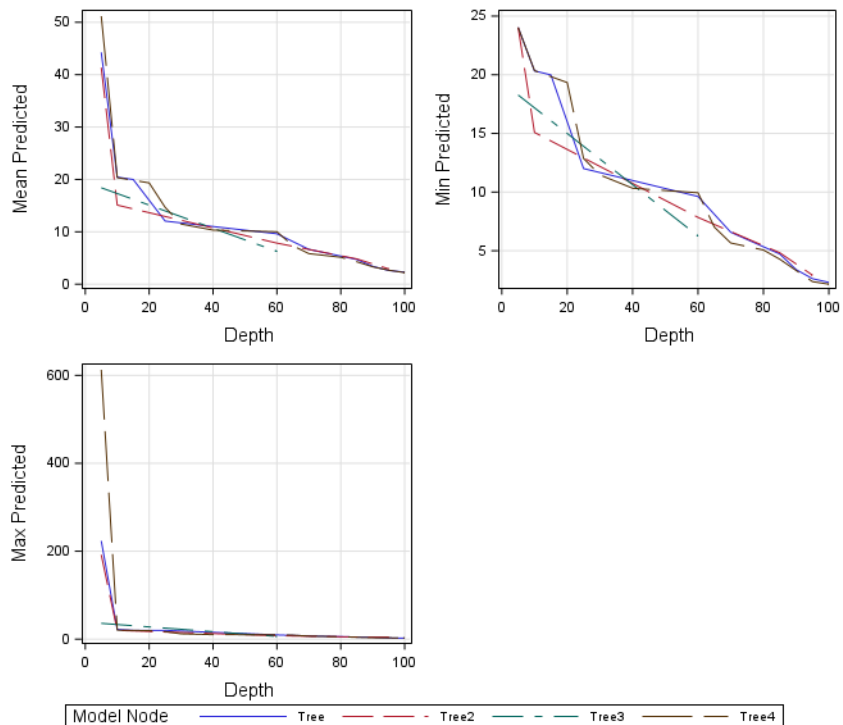
| Role | Level | Frequency Count | Name |
|--------|----------|--------------------|----------|
| TARGET | INTERVAL | 1 | Quantity |

Node=REgTree Model Comparison
Fit Statistics Table

| Selected Model | Predecessor Node | Model Node | Model Description | Target Variable | Target Label | Selection Criterion: Valid: Average Squared Error | Train: Average Squared Error |
|-------------------|---------------------|---------------|----------------------|--------------------|-----------------|--|---------------------------------------|
| Y | Tree4 | Tree4 | Reg Tree B3D6 | Quantity | Quantity | 1314.57 | 52825.93 |
| | Tree | Tree | RegTree B2D6 | Quantity | Quantity | 1398.36 | 53042.72 |
| | Tree2 | Tree2 | Reg Tree B2D4 | Quantity | Quantity | 1477.19 | 53132.92 |
| | Tree3 | Tree3 | RegTree B2D2 | Quantity | Quantity | 1559.96 | 53223.09 |

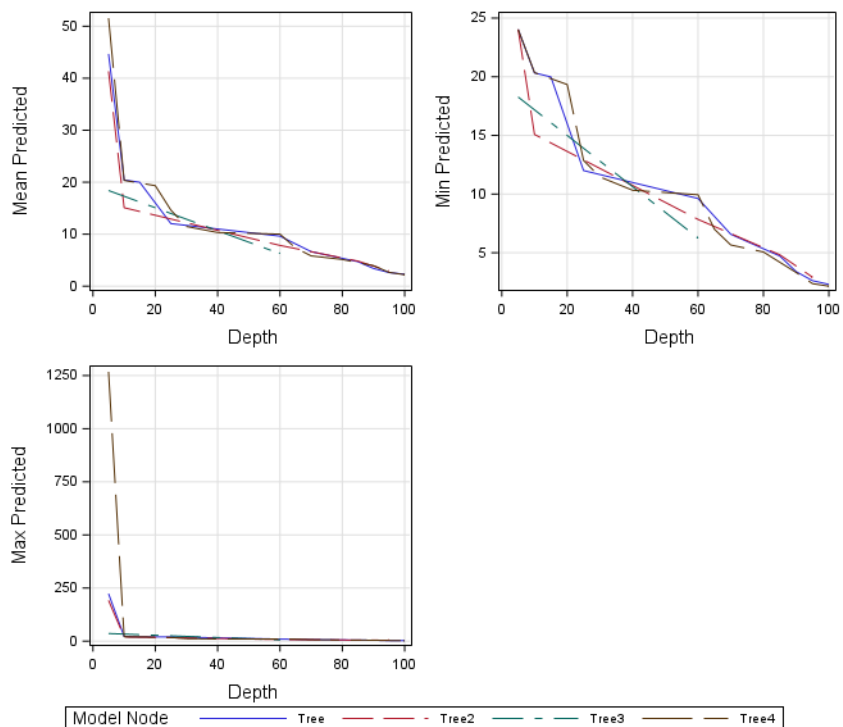
SAS Enterprise Miner Report

Node=REgTree Model Comparison
Multiple Model Assessment Scores where DataRole=TEST
TARGET='Quantity'



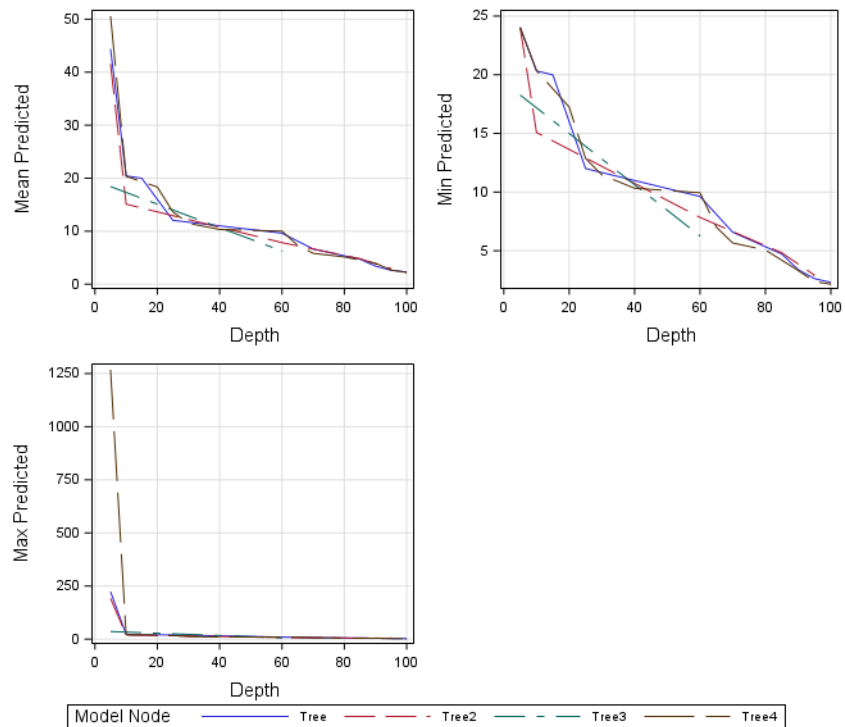
SAS Enterprise Miner Report

Node=REgTree Model Comparison
Multiple Model Assessment Scores where DataRole=TRAIN
TARGET='Quantity'



SAS Enterprise Miner Report

Node=REgTree Model Comparison
Multiple Model Assessment Scores where DataRole=VALIDATE
TARGET='Quantity'



SAS Enterprise Miner Report

Node=DATADIGGERSSCORE_TRAIN Summary

Node id = Ids2
Node label = DATADIGGERSSCORE_TRAIN
Meta path = Ids2
Notes =

Node=DATADIGGERSSCORE_TRAIN Properties

| Property | Value | Default | Property | Value | Default |
|------------------------------|---------------------------|---------|----------------------|----------------------|---------|
| Component | DataSource | | DsCreatedBy | sboda | |
| ApplyIntervalLevelLowerLimit | Y | | DsId | datadiggersscortrain | |
| ApplyMaxClassLevels | Y | | DsModifiedBy | sboda | |
| ApplyMaxPercentMissing | Y | | DsModifyDate | 2049725167.6 | |
| CMeta | WORK.M389CTG7 | | DsSampleName | | |
| ComputeStatistics | N | | DsSampleSize | | |
| DBPassThrough | Y | | DsSampleSizeType | | |
| Data | BS.DATADIGGERSSCORE_TRAIN | | DsScope | LOCAL | |
| DataSelection | DATASOURCE | | IdentifyEmptyColumns | Y | |
| DataSource | datadiggersscortrain | | IntervalLowerLimit | 20 | |
| DataSourceRole | RAW | | Library | BS | |
| Description | | | MaxClassLevels | 20 | |
| DropMapVariables | Y | | MaxPercentMissing | 50 | |
| DsCreateDate | 2049725167.5 | | MetaAdvisor | BASIC | |

| Property | Value | Default |
|-------------------|------------------------|---------|
| NBytes | 6423552 | . |
| NCols | 8 | . |
| NObs | 79585 | . |
| NewTable | | |
| NewVariableRole | REJECT | |
| OutputType | VIEW | |
| Role | SCORE | TRAIN |
| Sample | D | |
| SampleSizeObs | 10000 | |
| SampleSizePercent | 20 | |
| SampleSizeType | PERCENT | |
| Scope | LOCAL | |
| Segment | | |
| Table | DATADIGGERSSCORE_TRAIN | |

Node=DATADIGGERSSCORE_TRAIN Data Attributes

| Attribute | Value | Attribute | Value | Attribute | Value |
|------------|------------------------|----------------|--------------------|--------------|---------|
| Data Name | DATADIGGERSSCORE_TRAIN | Date Created | 13Dec2024:16:04:27 | Data Size | 6423552 |
| Data Type | DATA | Date Modified | 13Dec2024:16:04:27 | Role | RAW |
| Data Label | | Number Rows | 79585 | Segment | |
| Engine | BASE | Number Columns | 8 | Data Library | BS |

Node=DATADIGGERSSCORE_TRAIN
Variables List

| Name | Label | Role | Level | Type | Length | Format | Creator |
|-------------|--------------------|--------|----------|------|--------|--------------|---------|
| Country | Country | INPUT | NOMINAL | C | 20 | \$20. | |
| CustomerID | CustomerID | INPUT | INTERVAL | N | 8 | BEST. | |
| InvoiceDate | InvoiceDate | TIMEID | INTERVAL | N | 8 | DATETIME16.0 | |
| InvoiceNo | InvoiceNo | INPUT | INTERVAL | N | 8 | BEST. | |
| Quantity | Quantity | INPUT | INTERVAL | N | 8 | BEST. | |
| StockCode | StockCode | INPUT | NOMINAL | C | 12 | \$12. | |
| UnitPrice | UnitPrice | INPUT | INTERVAL | N | 8 | BEST. | |
| _dataobs_ | Observation Number | INPUT | INTERVAL | N | 8 | | |

SAS Enterprise Miner Report

Node=Predict Model Comparison Summary

Node id = MdlComp3
 Node label = Predict Model Comparison
 Meta path = Ids => Part => Tree4 => MdlComp => MdlComp3
 Notes =

Node=Predict Model Comparison Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|-----------------------------|------------------------------|---------|------------------------|---------|---------|----------------------|----------|---------|
| Component | ModelCompare | | NumberOfReportedLevels | 1E-6 | | SelectionData | DEFAULT | |
| AssessAllTargetLevels | N | | NumberOfBins | 20 | | SelectionDepth | 10 | |
| DecileBin | 20 | | ProfitEpsilon | 1E-6 | | SelectionTable | TRAIN | TABLE |
| HPCriteria | DEFAULT | | RecomputeAssess | N | | StatisticUsed | _VASE_ | |
| LiftEpsilon | 1E-6 | | RocChart | Y | | TargetLabel | Quantity | |
| ModelCriteria | Valid: Average Squared Error | | RocEpsilon | 0.01 | | TargetName | Quantity | |
| ModelDescription | Reg Tree B3D6 | | RoiEpsilon | 1E-6 | | classViyaCriteria | DEFAULT | |
| ModelId | Tree4 | | ScoreDistBin | 20 | | intervalViyaCriteria | DEFAULT | |
| NormalizeReportingVariables | Y | | SelectionCriteria | DEFAULT | | | | |

Node=Predict Model Comparison Variable Summary

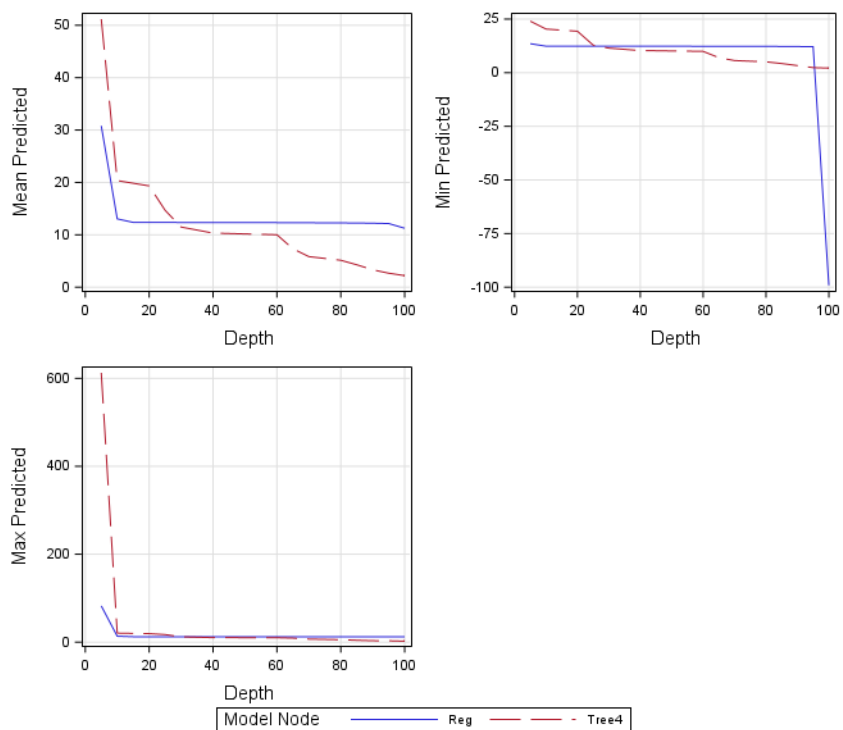
| Role | Level | Frequency Count | Name |
|--------|----------|--------------------|----------|
| TARGET | INTERVAL | 1 | Quantity |

Node=Predict Model Comparison Fit Statistics Table

| Selected Model | Predecessor Node | Model Node | Model Description | Target Variable | Target Label | Selection Criterion: Valid: Average Squared Error | Train: Average Squared Error |
|-------------------|---------------------|---------------|-----------------------|--------------------|-----------------|--|---------------------------------------|
| Y | MdlComp | Tree4 | Reg Tree B3D6 | Quantity | Quantity | 1314.57 | 52825.93 |
| | MdlComp2 | Reg | Exhaustive Regression | Quantity | Quantity | 1535.19 | 53212.18 |

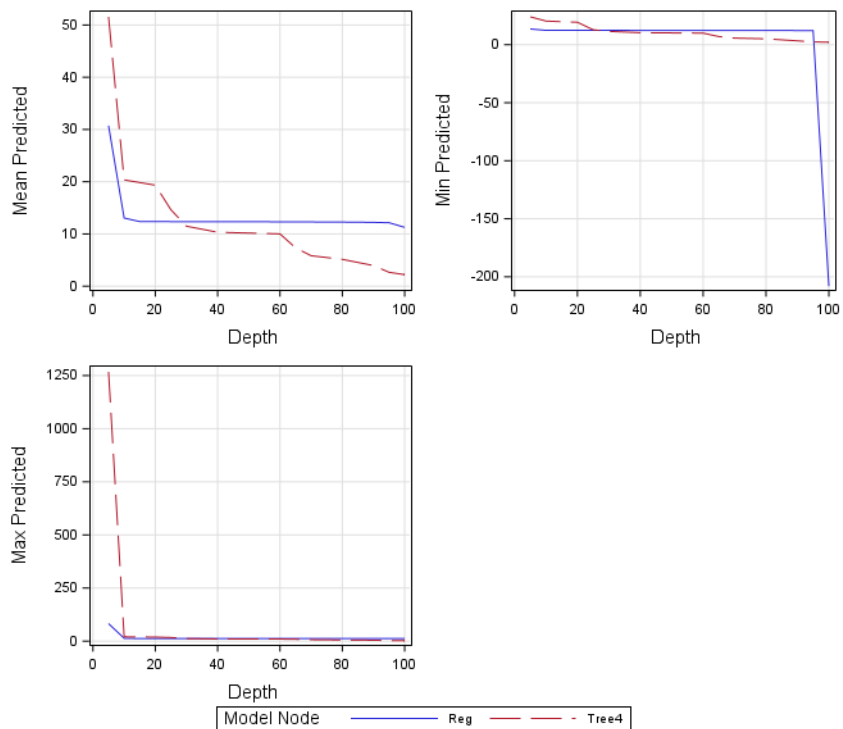
SAS Enterprise Miner Report

Node=Predict Model Comparison
Multiple Model Assessment Scores where DataRole=TEST
TARGET='Quantity'



SAS Enterprise Miner Report

Node=Predict Model Comparison
Multiple Model Assessment Scores where DataRole=TRAIN
TARGET='Quantity'

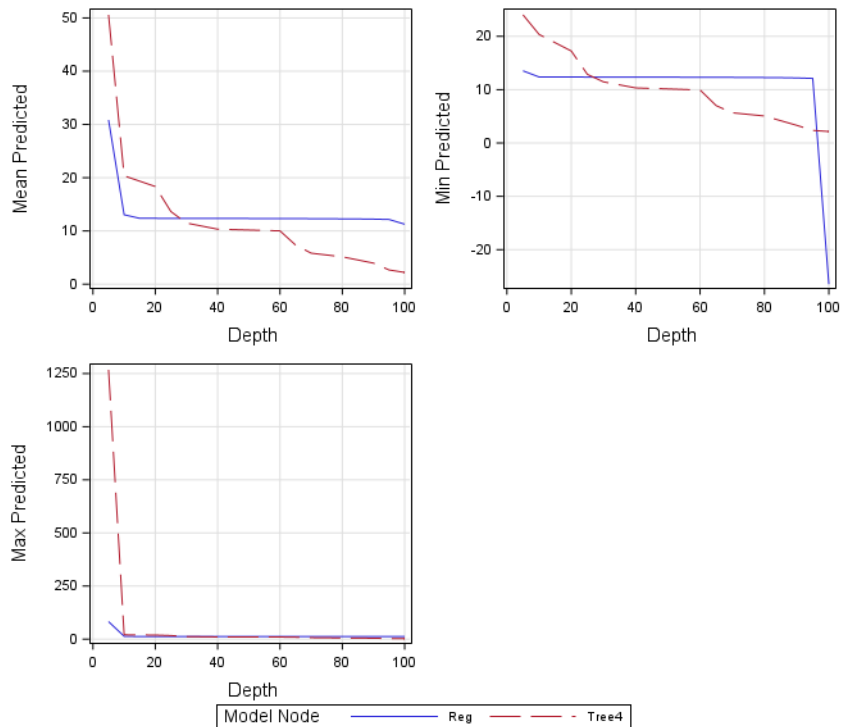


SAS Enterprise Miner Report

Node=Predict Model Comparison

Multiple Model Assessment Scores where DataRole=VALIDATE

TARGET='Quantity'



SAS Enterprise Miner Report

Node=Score
Summary

Node id = Score
Node label = Score
Meta path = Ids => Part => Tree4 => MdlComp => MdlComp3 => Score
Notes =

Node=Score
Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|--------------------|-------|---------|---------------|-------|---------|----------------|---------|---------|
| Component | Score | | HideInput | Y | | JScore | N | |
| CScore | N | | HideOther | Y | | OptimizedCode | Y | |
| FixedOutputNames | Y | | HidePredict | Y | | OutputType | VIEW | |
| GraphReports | Y | | HideRejected | Y | | PackageName | DEFAULT | |
| HideAssess | Y | | HideResidual | Y | | PreferenceName | | |
| HideClassification | Y | | HideTarget | Y | | ScoreTest | N | |
| HideFreq | Y | | HideVariables | N | | ScoreValidate | N | |

Node=Score
Variable Summary

| Role | Level | Frequency Count | Name |
|---------|----------|-----------------|----------|
| TARGET | INTERVAL | 1 | Quantity |
| SEGMENT | NOMINAL | 1 | _NODE_ |

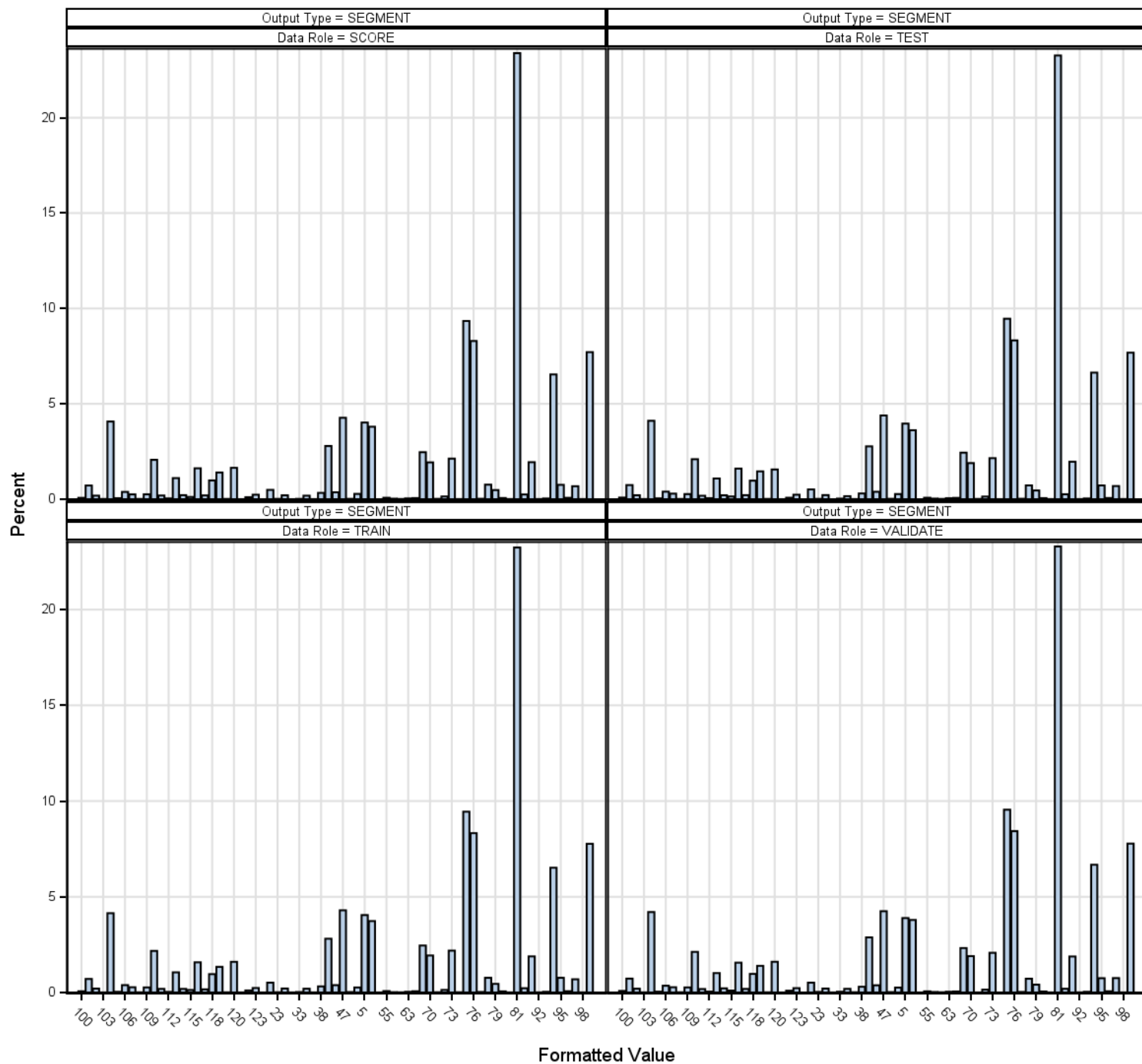
Node=Score
Output Variables

| Variable Name | Creator | Variable Label | Function | Type |
|---------------|---------|-------------------------|-----------|------|
| EM_PREDICTION | Score | Prediction for Quantity | PREDICT | N |
| EM_SEGMENT | Score | Node | TRANSFORM | N |
| P_Quantity | Tree4 | Predicted: Quantity | PREDICT | N |
| V_Quantity | Tree4 | Validated: Quantity | PREDICT | N |
| _NODE_ | Tree4 | Node | TRANSFORM | N |
| _WARN_ | Tree4 | Warnings | ASSESS | C |

SAS Enterprise Miner Report

Node=Score

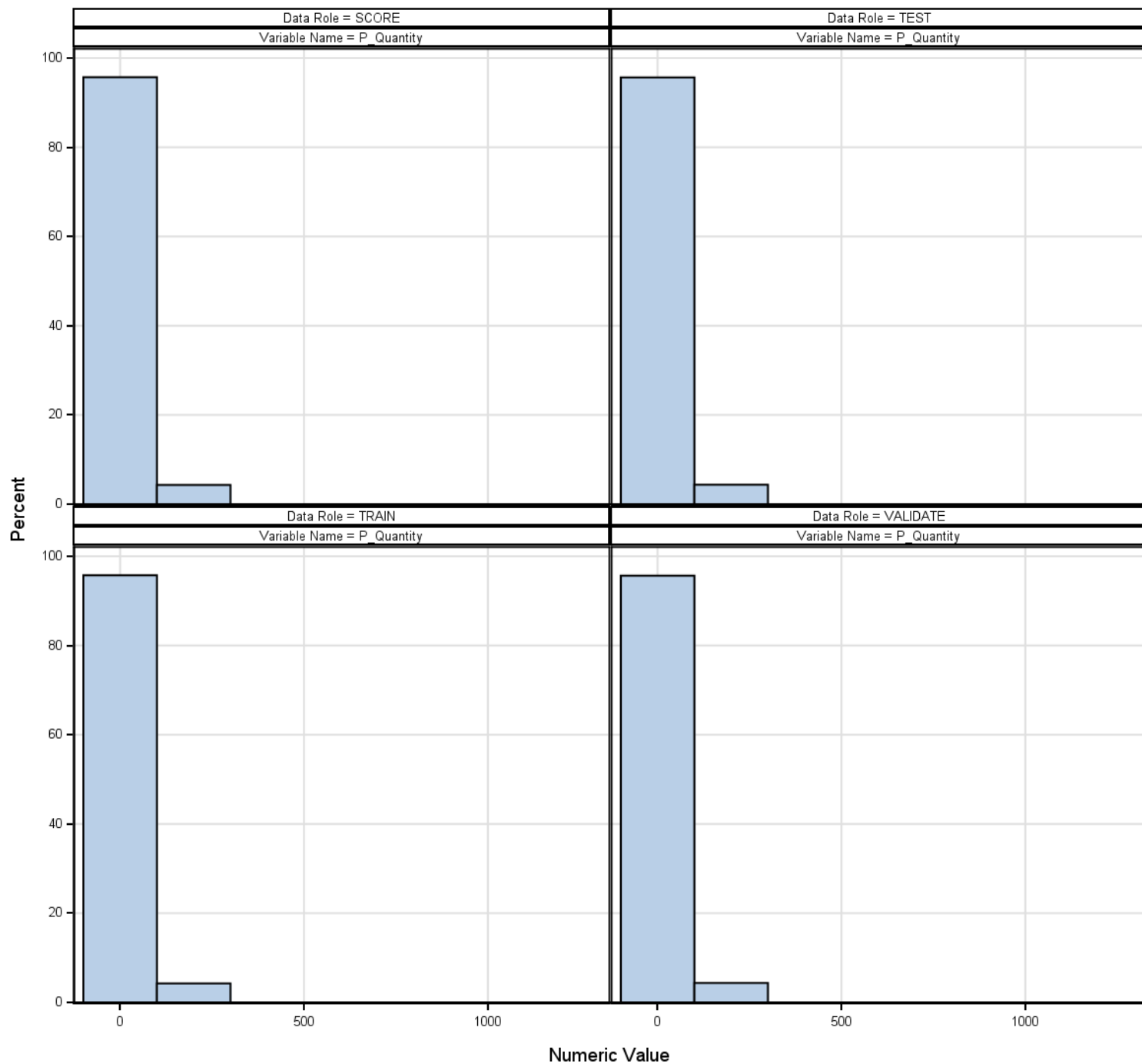
Bar Chart



SAS Enterprise Miner Report

Node=Score

Histogram



SAS Enterprise Miner Report

Node=Save Data Summary

Node id = EMSSave
 Node label = Save Data
 Meta path = Ids => Part => Tree4 => MdlComp => MdlComp3 => Score => EMSSave
 Notes =

Node=Save Data Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|-------------------|---|---------|----------|-------------------|---------|-------------|-------|----------|
| Component | EMSSave | | Name | Prediction.Scored | | Train | Y | |
| AllObs | Y | | OutObs | 1000 | | Transaction | Y | |
| AllRoles | Y | | Replace | Y | | Type | XLSX | SAS7DBAT |
| DirectorySelector | \\uisnutvdiprof1a\redirected\$\sboda\Documents\data diggers | | Score | Y | | Validate | Y | |
| Lib | | | Test | Y | | | | |

Node=Save Data Variable Summary

| Role | Level | Frequency Count | Name |
|-------|----------|--------------------|-----------|
| INPUT | INTERVAL | 1 | UnitPrice |
| INPUT | NOMINAL | 1 | Country |

Node=Save Data Data

| Output Location | Total Observations | Saved Observations | Number of Variables |
|---|-----------------------|-----------------------|---------------------------|
| \\uisnutvdiprof1a\redirected\$\sboda\Documents\data diggers\Prediction.Scored_TRAIN.xlsx | 127336 | MAX | 17 |
| \\uisnutvdiprof1a\redirected\$\sboda\Documents\data diggers\Prediction.Scored_VALIDATE.xlsx | 95502 | MAX | 17 |
| \\uisnutvdiprof1a\redirected\$\sboda\Documents\data diggers\Prediction.Scored_TEST.xlsx | 95501 | MAX | 17 |
| \\uisnutvdiprof1a\redirected\$\sboda\Documents\data diggers\Prediction.Scored_SCORE.xlsx | 79585 | MAX | 14 |

End of Report