

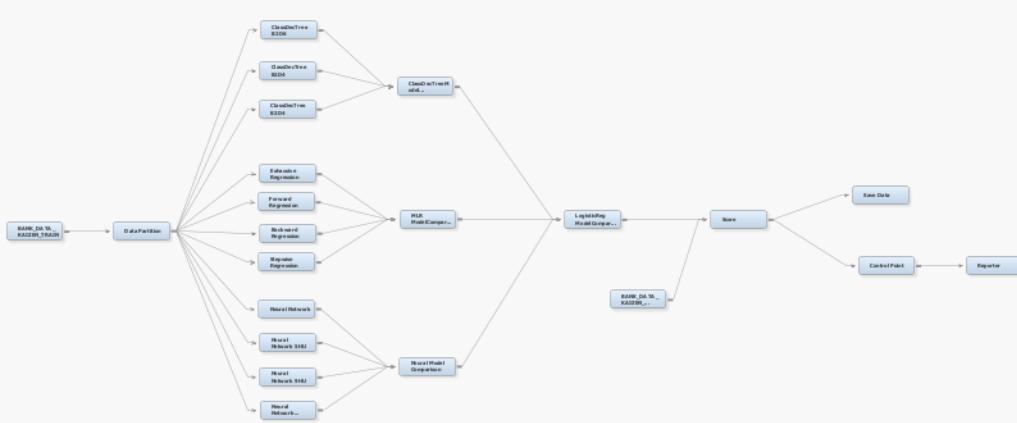
## SAS Enterprise Miner Report

User = szebu2  
 Date = 13:27:48 July 19  
 Project = Kaizen.DM Project  
 Diagram = PredictiveModel.SZ

Start Node = Report  
 Node label = Reporter  
 Nodes = ALL  
 Showall = N

Format = PDF  
 Style = JOURNAL

**SAS Enterprise Miner Report**  
**Process Flow Diagram**



## 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		Name
		Count		
TARGET	NOMINAL	1	y	
REJECTED	INTERVAL	1	duration	
INPUT	INTERVAL	9	age campaign cons_conf_idx cons_price_idx emp_var_rate euribor3m nr_employed pdays previous	
INPUT	NOMINAL	10	contact day_of_week default education housing job loan marital month poutcome	

## SAS Enterprise Miner Report

### Node=ClassDecTree B3D4 Summary

Node id = Tree3  
 Node label = ClassDecTree B3D4  
 Meta path = Ids => Part => Tree3  
 Notes =

### Node=ClassDecTree B3D4 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	
CVNIter	10		Maxdepth	4	6	SampleSeed	12345	
CVRepeat	1		MinCatSize	5		SampleSize	10000	
CVSeed	12345		MissingValue	USEINSEARCH		ShowNodeld	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	
InitColorBy	AVG		Performance	DISK		UseVarOnce	N	
IntervalCriterion	PROBF		Precision	4		VarSelection	Y	

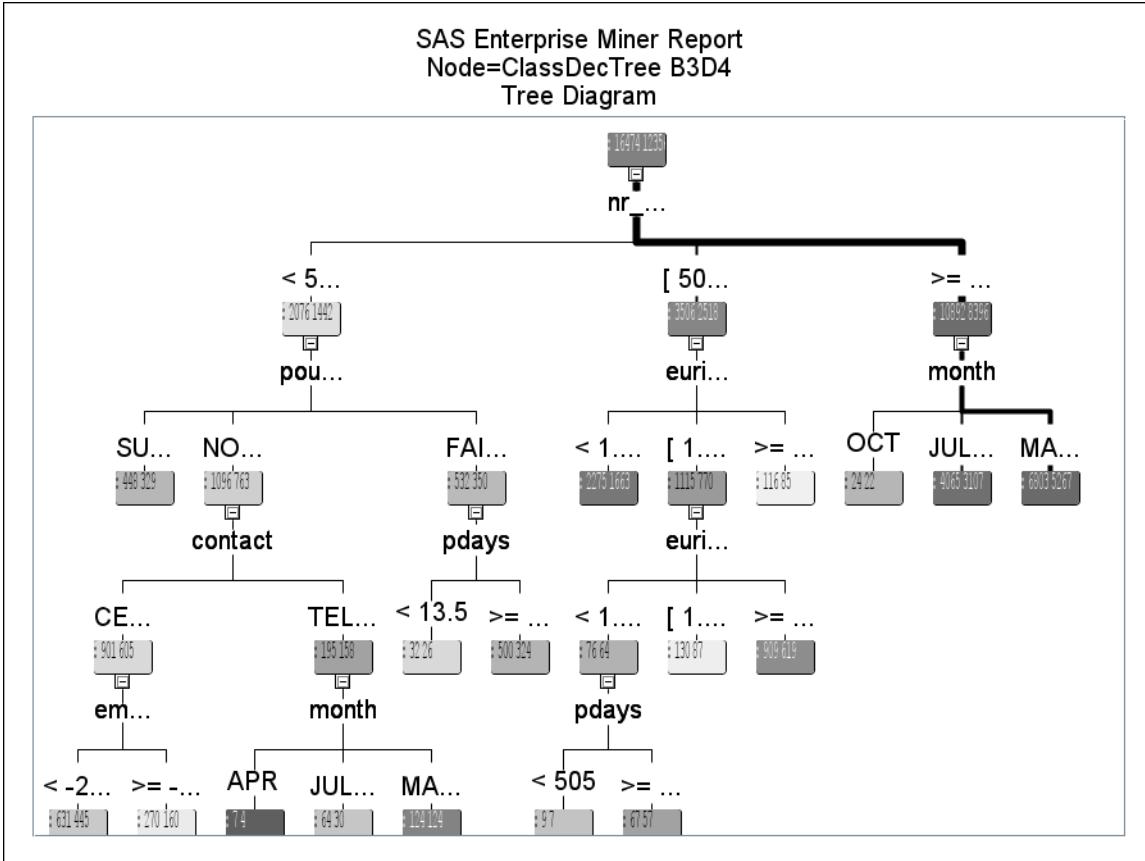
### Node=ClassDecTree B3D4 Variable Summary

Role	Level	Frequency		Name
		Count		
TARGET	NOMINAL	1	y	
INPUT	INTERVAL	9	age campaign cons_conf_idx cons_price_idx emp_var_rate euribor3m nr_employed pdays previous	
INPUT	NOMINAL	10	contact day_of_week default education housing job marital month poutcome	
ID	INTERVAL	1	_dataobs_	

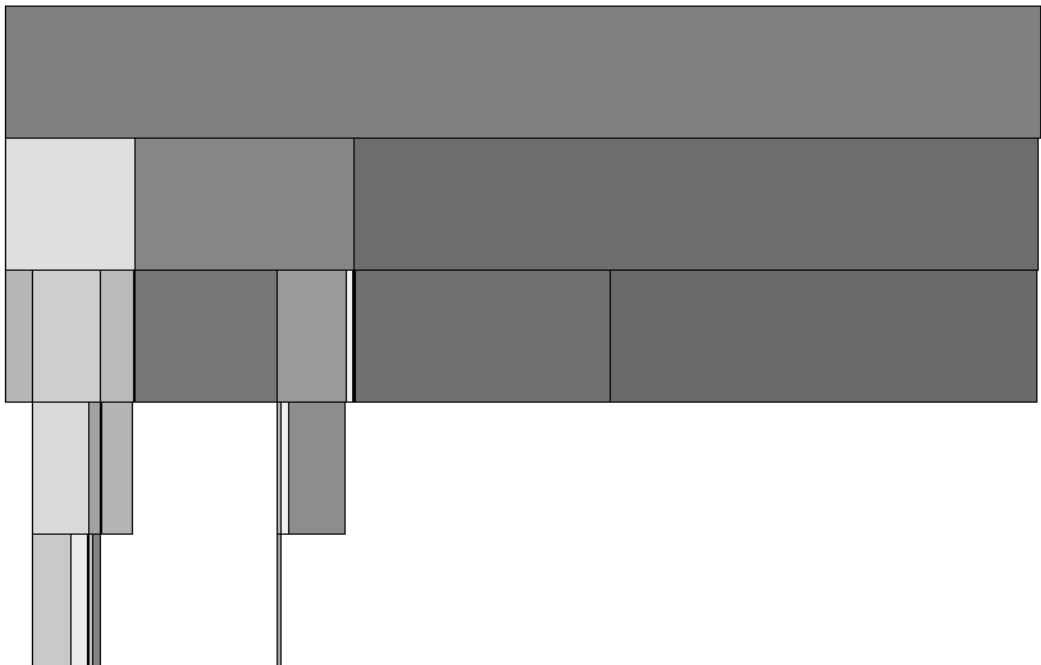
### Node=ClassDecTree B3D4 Model Fit Statistics

Target=y Target Label=y

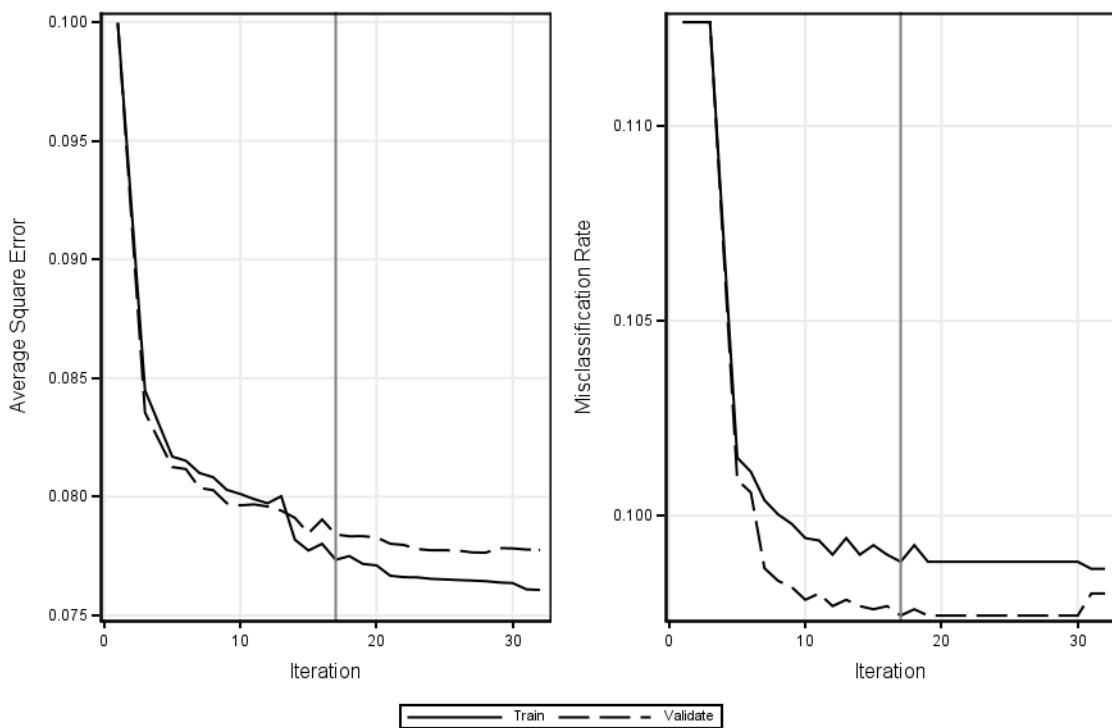
Label of Statistic	Train	Validation	Test
Sum of Frequencies	16474.00	12356.00	12358.00
Misclassification Rate	0.10	0.10	0.10
Maximum Absolute Error	0.96	1.00	0.96
Sum of Squared Errors	2548.52	1937.80	1911.35
Average Squared Error	0.08	0.08	0.08
Root Average Squared Error	0.28	0.28	0.28
Divisor for ASE	32948.00	24712.00	24716.00
Total Degrees of Freedom	16474.00	.	.



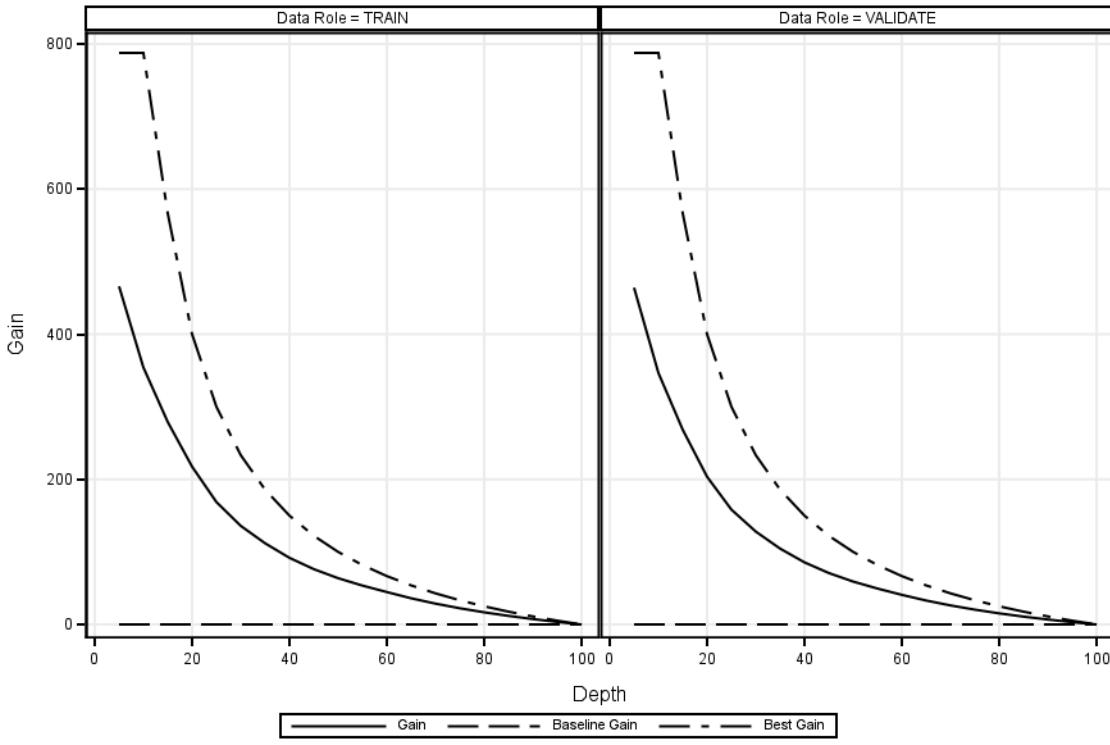
SAS Enterprise Miner Report  
Node=ClassDecTree B3D4  
Treemap



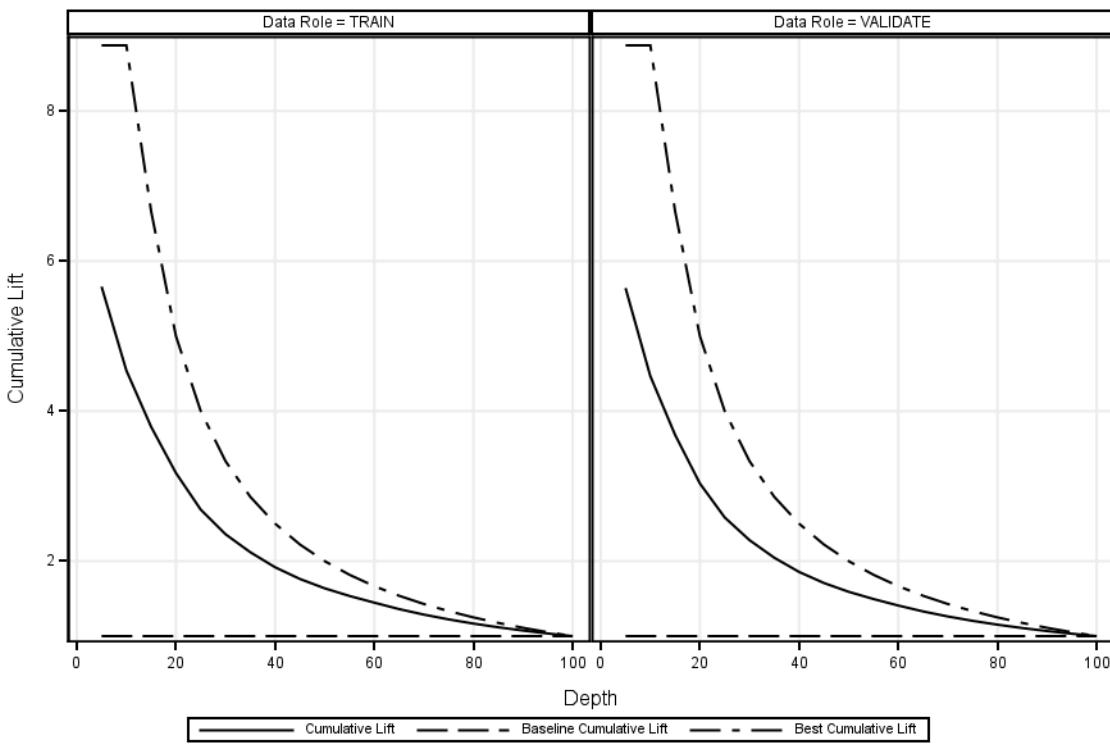
SAS Enterprise Miner Report  
Node=ClassDecTree B3D4  
Model Iteration Plots



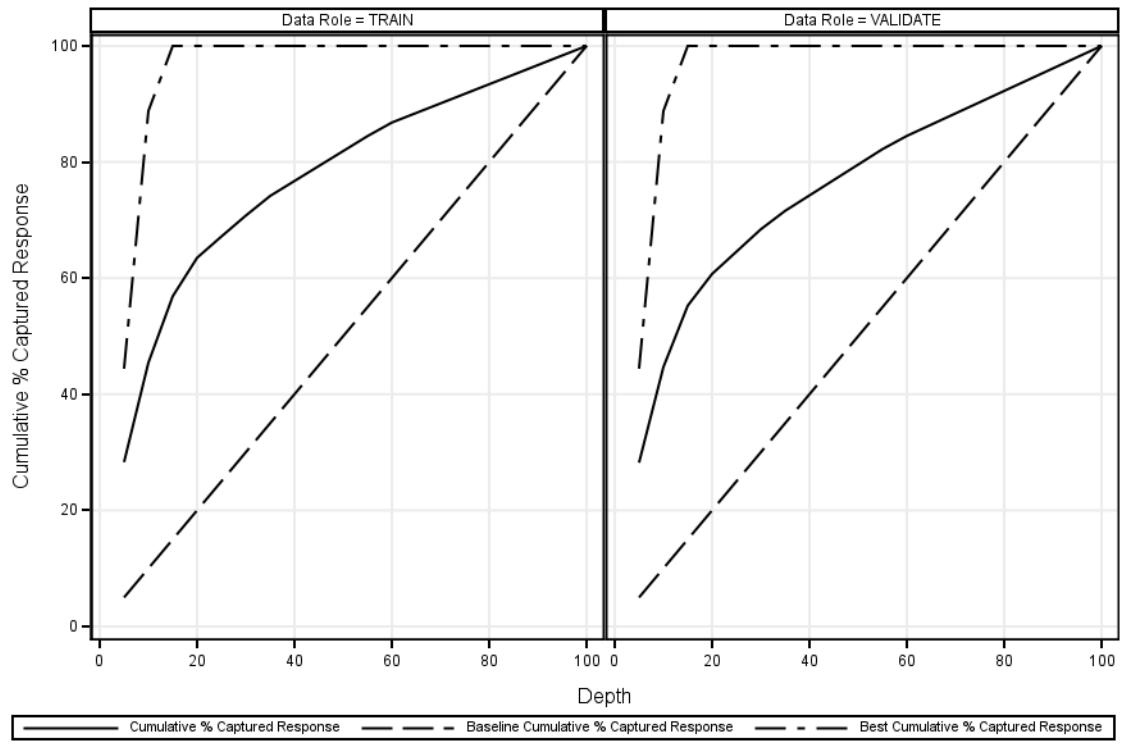
**SAS Enterprise Miner Report**  
 Node=ClassDecTree B3D4  
 Model Assessment Scores where TARGET='y'



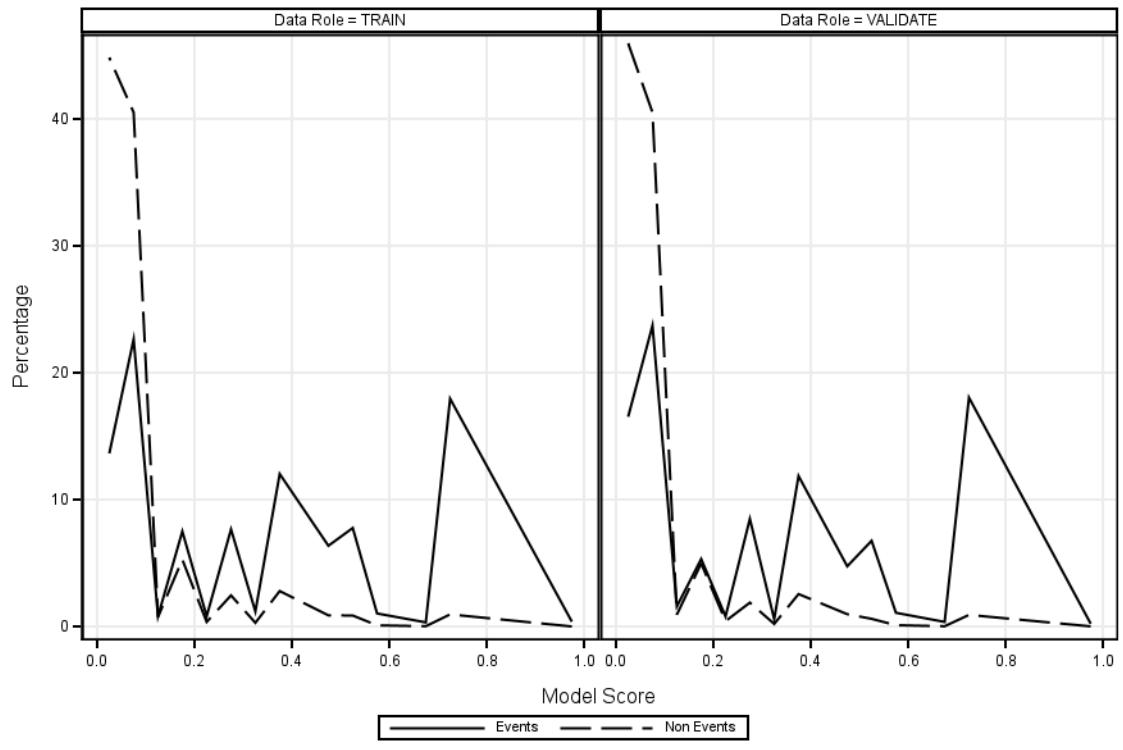
**SAS Enterprise Miner Report**  
 Node=ClassDecTree B3D4  
 Model Assessment Scores where TARGET='y'



**SAS Enterprise Miner Report**  
 Node=ClassDecTree B3D4  
 Model Assessment Scores where TARGET='y'



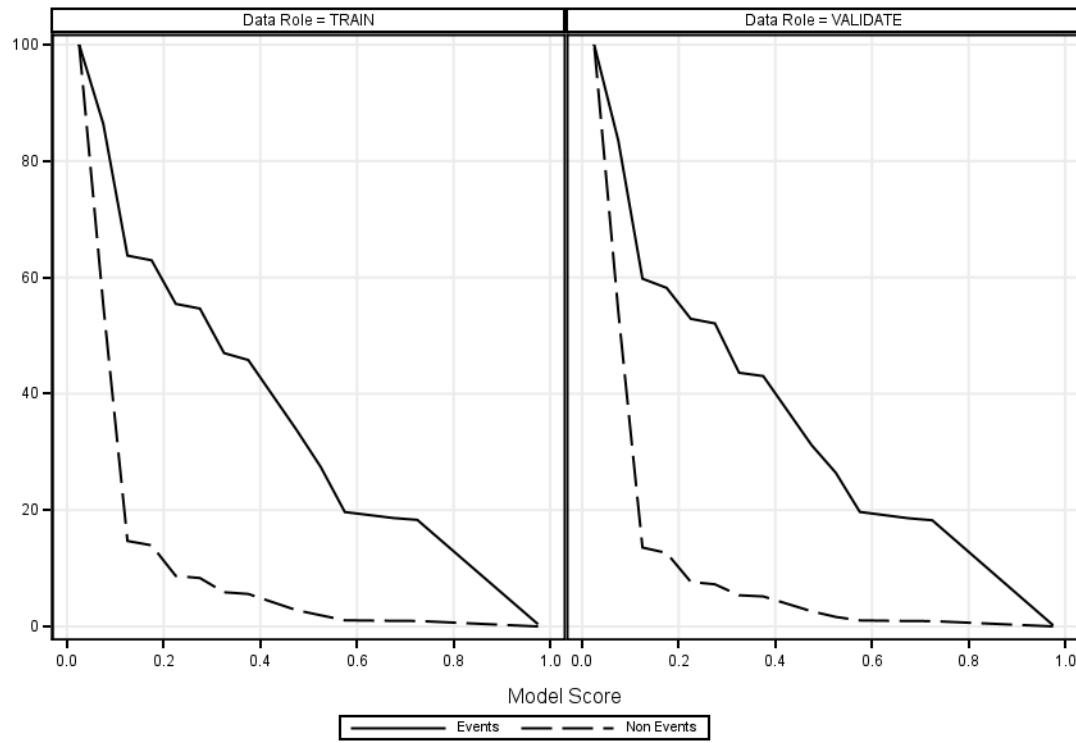
**SAS Enterprise Miner Report**  
 Node=ClassDecTree B3D4  
 Score Distributions where TARGET='y'



### SAS Enterprise Miner Report

Node=ClassDecTree B3D4

Score Distributions where TARGET='y'



### Node=ClassDecTree B3D4

#### Score Distributions

Target Variable=y Data Role=TRAIN

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.95-1.00	7	0.3772	0.0000	0.377	0.000
0.70-0.75	333	17.9418	0.9509	18.319	0.951
0.65-0.70	6	0.3233	0.0205	18.642	0.971
0.55-0.60	19	1.0237	0.0889	19.666	1.060
0.50-0.55	144	7.7586	0.8620	27.425	1.922
0.45-0.50	118	6.3578	0.8756	33.782	2.798
0.35-0.40	223	12.0151	2.7911	45.797	5.589
0.30-0.35	22	1.1853	0.2873	46.983	5.876
0.25-0.30	142	7.6509	2.4490	54.634	8.325
0.20-0.25	15	0.8082	0.3557	55.442	8.681
0.15-0.20	139	7.4892	5.2675	62.931	13.949
0.10-0.15	15	0.8082	0.7457	63.739	14.694
0.05-0.10	420	22.6293	40.4980	86.369	55.192
0.00-0.05	253	13.6315	44.8078	100.000	100.000

Target Variable=y Data Role=VALIDATE

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.95-1.00	3	0.2155	0.0091	0.216	0.009
0.70-0.75	251	18.0316	0.9121	18.247	0.921
0.65-0.70	5	0.3592	0.0182	18.606	0.939
0.55-0.60	15	1.0776	0.1003	19.684	1.040
0.50-0.55	94	6.7529	0.6020	26.437	1.642
0.45-0.50	66	4.7414	0.9668	31.178	2.609
0.35-0.40	165	11.8534	2.5538	43.032	5.162
0.30-0.35	8	0.5747	0.2007	43.606	5.363
0.25-0.30	118	8.4770	1.8789	52.083	7.242
0.20-0.25	11	0.7902	0.4196	52.874	7.661
0.15-0.20	74	5.3161	4.9708	58.190	12.632
0.10-0.15	22	1.5805	0.9303	59.770	13.563
0.05-0.10	330	23.7069	40.4962	83.477	54.059
0.00-0.05	230	16.5230	45.9413	100.000	100.000

## SAS Enterprise Miner Report

### Node=ClassDecTree B2D4 Summary

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

### Node=ClassDecTree 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	
CVNIter	10		Maxdepth	4	6	SampleSeed	12345	
CVRepeat	1		MinCatSize	5		SampleSize	10000	
CVSeed	12345		MissingValue	USEINSEARCH		ShowNodeld	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	
InitColorBy	AVG		Performance	DISK		UseVarOnce	N	
IntervalCriterion	PROBF		Precision	4		VarSelection	Y	

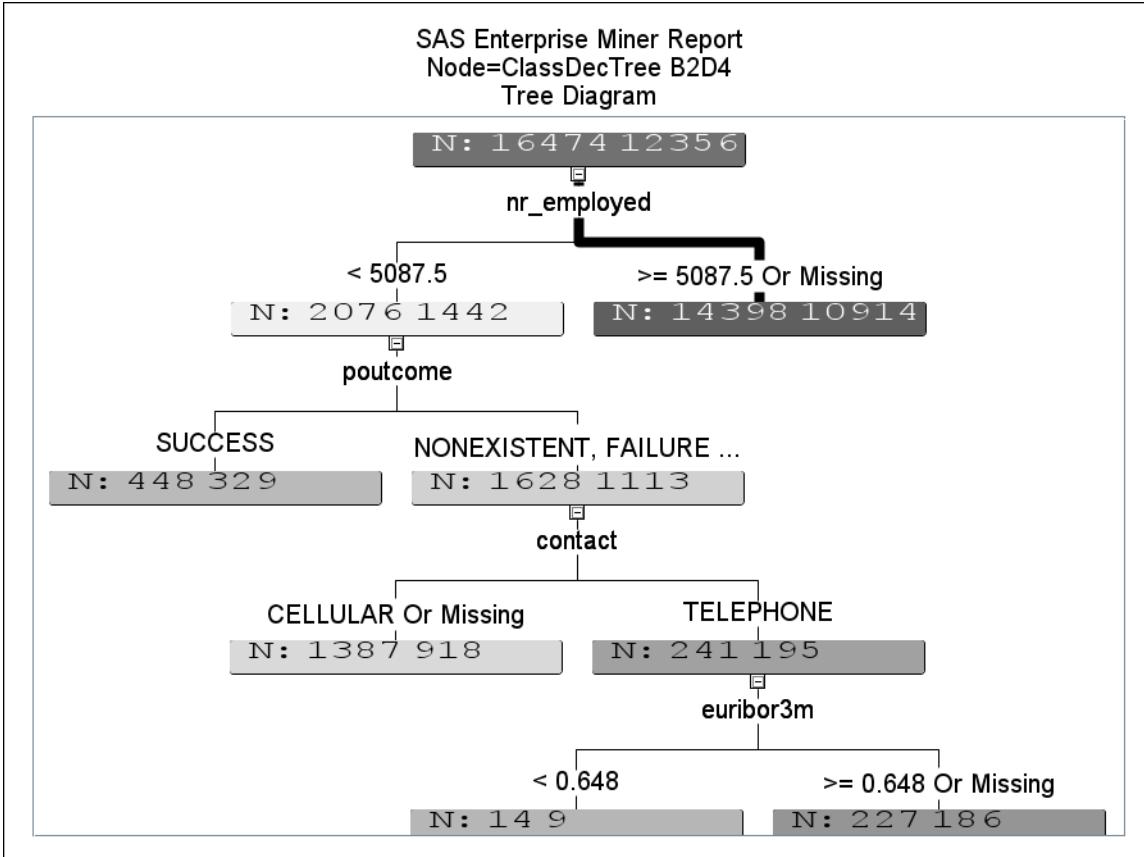
### Node=ClassDecTree B2D4 Variable Summary

Role	Level	Frequency		Name
		Count		
TARGET	NOMINAL	1	y	
INPUT	INTERVAL	9	age campaign cons_conf_idx cons_price_idx emp_var_rate euribor3m nr_employed pdays previous	
INPUT	NOMINAL	10	contact day_of_week default education housing job marital month poutcome	
ID	INTERVAL	1	_dataobs_	

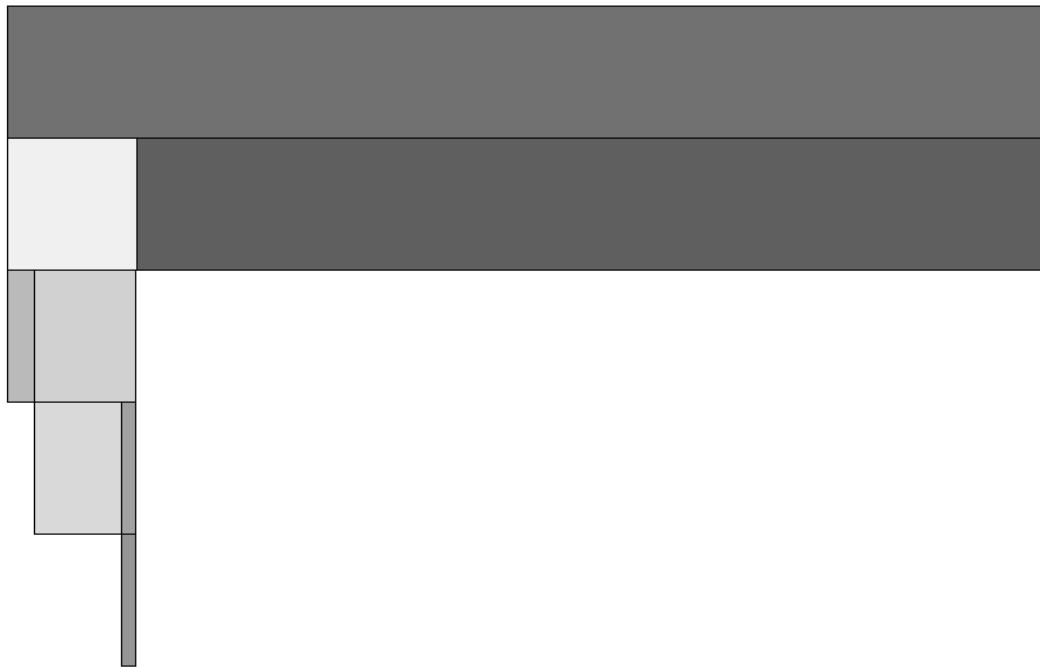
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Target=y Target Label=y

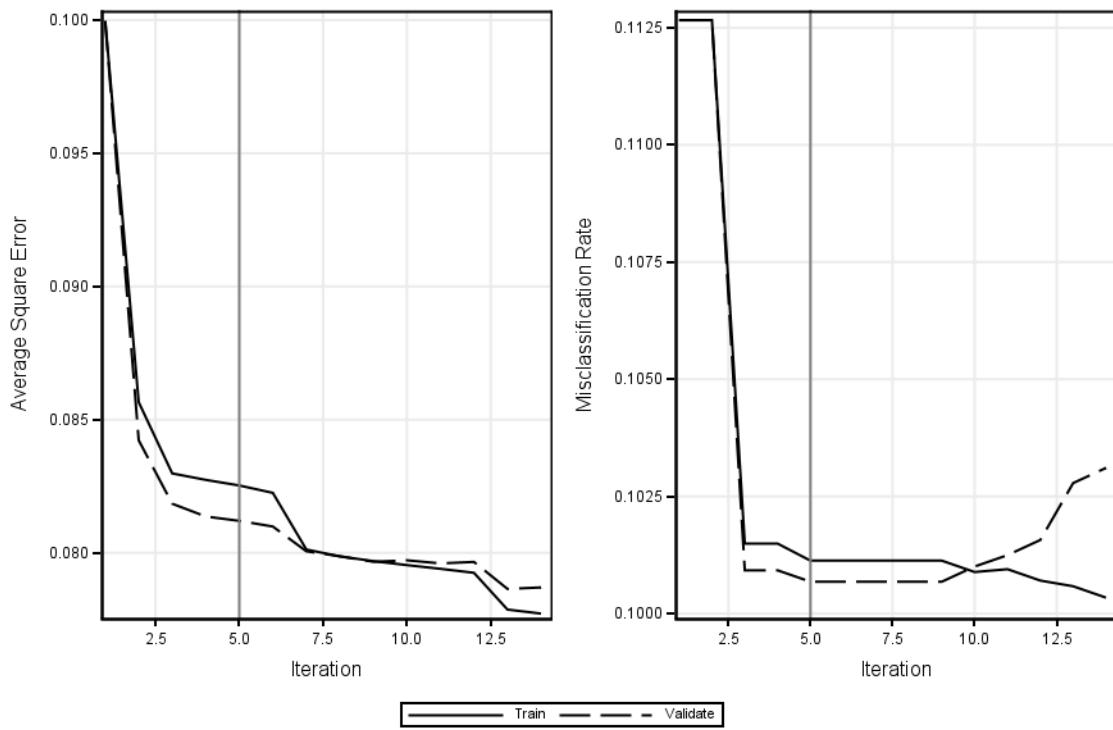
Label of Statistic	Train	Validation	Test
Sum of Frequencies	16474.00	12356.00	12358.00
Misclassification Rate	0.10	0.10	0.10
Maximum Absolute Error	0.93	0.93	0.93
Sum of Squared Errors	2719.19	2006.67	2009.00
Average Squared Error	0.08	0.08	0.08
Root Average Squared Error	0.29	0.28	0.29
Divisor for ASE	32948.00	24712.00	24716.00
Total Degrees of Freedom	16474.00	.	.



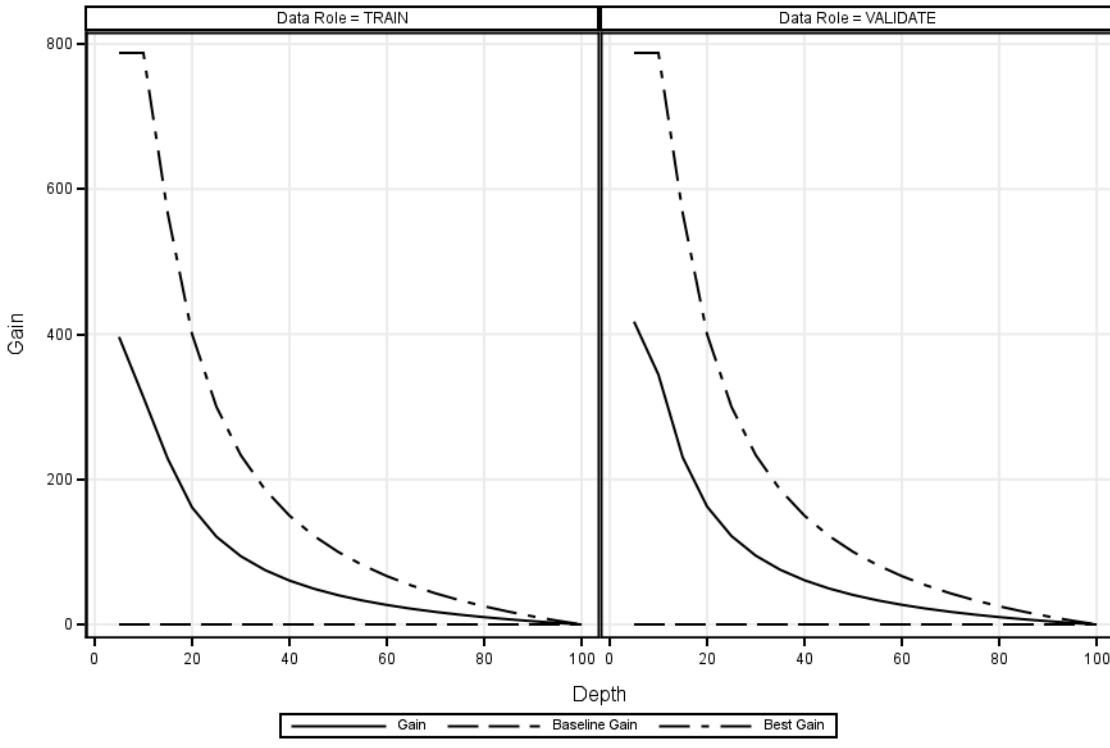
SAS Enterprise Miner Report  
Node=ClassDecTree B2D4  
Treemap



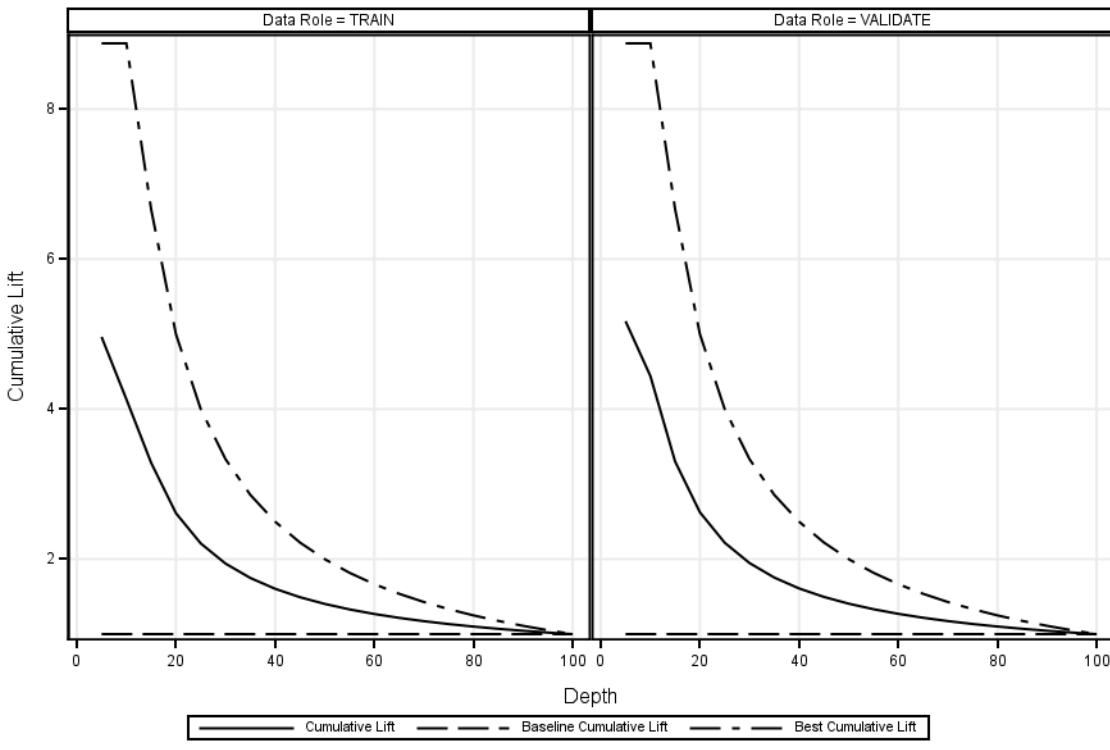
SAS Enterprise Miner Report  
Node=ClassDecTree B2D4  
Model Iteration Plots



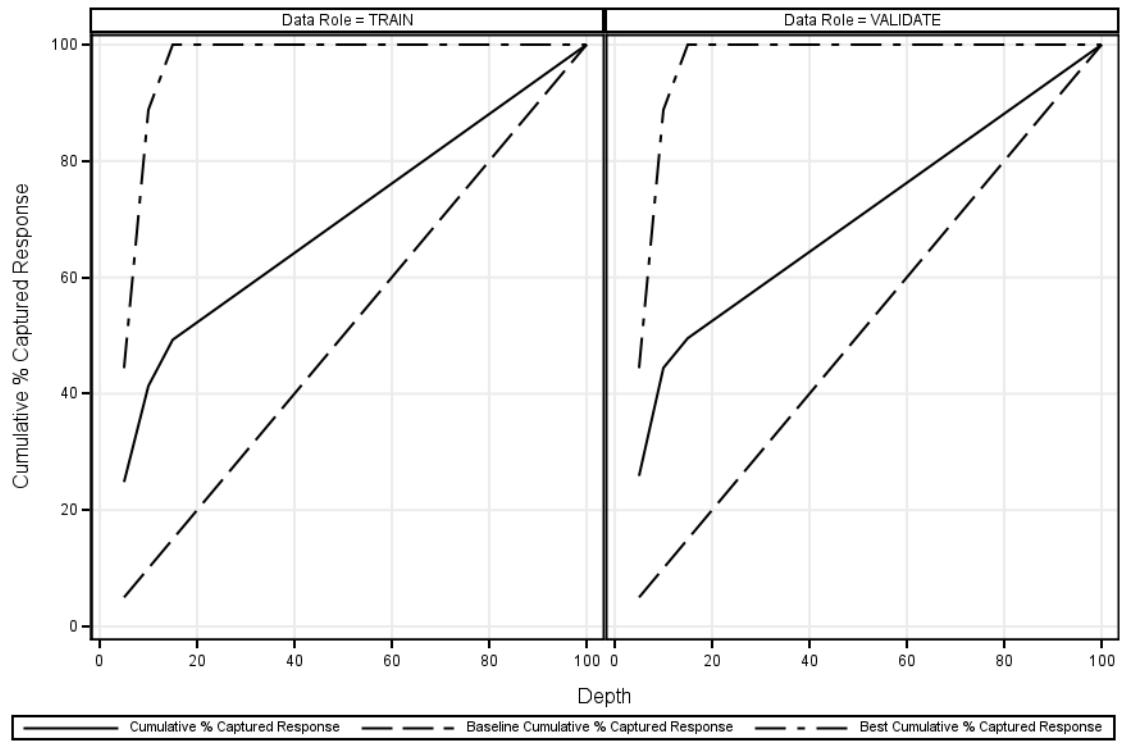
**SAS Enterprise Miner Report**  
 Node=ClassDecTree B2D4  
 Model Assessment Scores where TARGET='y'



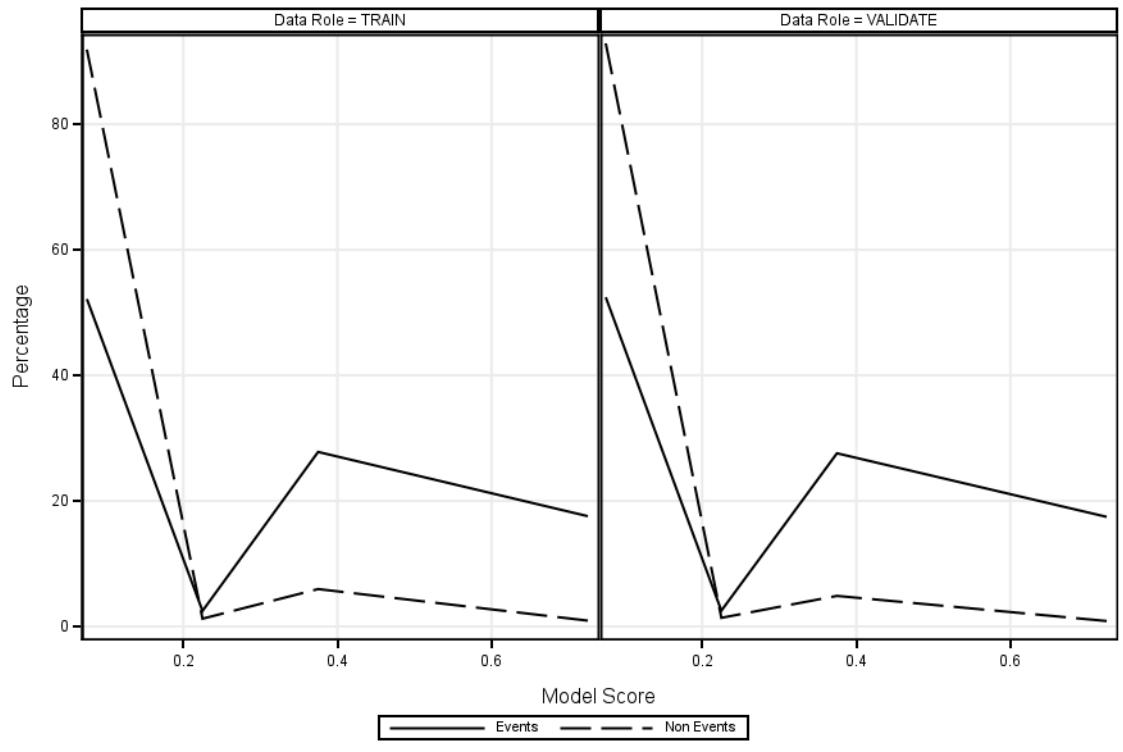
**SAS Enterprise Miner Report**  
 Node=ClassDecTree B2D4  
 Model Assessment Scores where TARGET='y'



**SAS Enterprise Miner Report**  
 Node=ClassDecTree B2D4  
 Model Assessment Scores where TARGET='y'



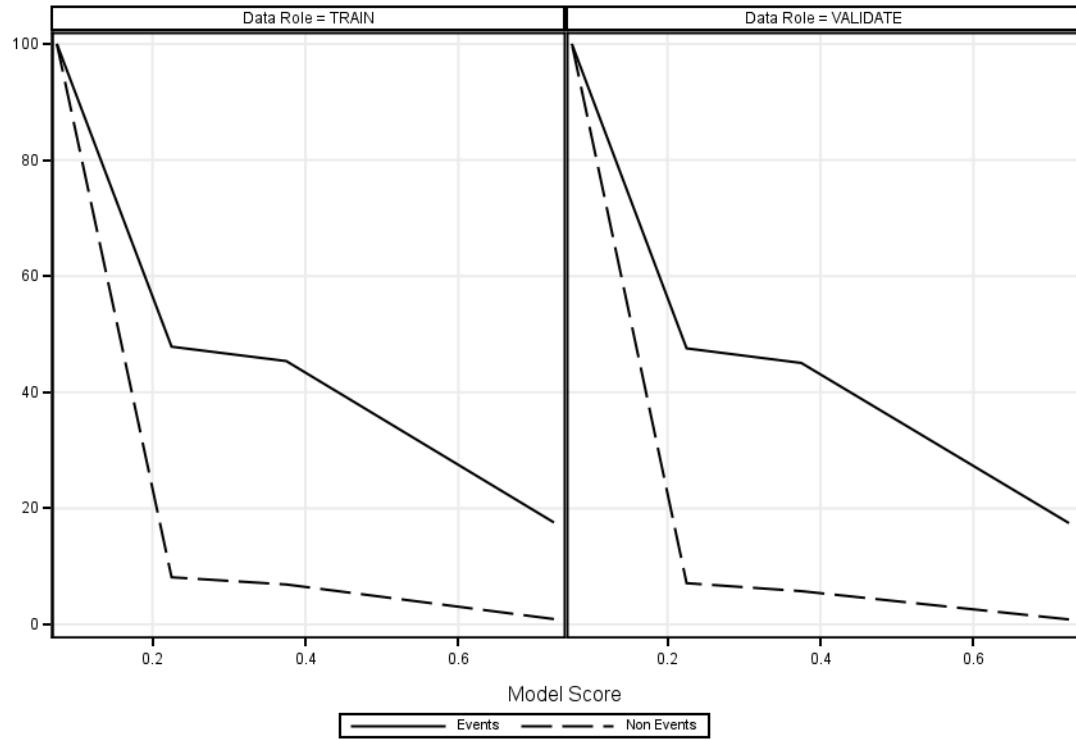
**SAS Enterprise Miner Report**  
 Node=ClassDecTree B2D4  
 Score Distributions where TARGET='y'



### SAS Enterprise Miner Report

Node=ClassDecTree B2D4

Score Distributions where TARGET='y'



#### Node=ClassDecTree B2D4

#### Score Distributions

Target Variable=y Data Role=TRAIN

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.70-0.75	326	17.5647	0.9304	17.565	0.930
0.35-0.40	516	27.8017	5.9584	45.366	6.889
0.20-0.25	46	2.4784	1.2382	47.845	8.127
0.05-0.10	968	52.1552	91.8730	100.000	100.000

Target Variable=y Data Role=VALIDATE

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.70-0.75	243	17.4569	0.8665	17.457	0.866
0.35-0.40	384	27.5862	4.8705	45.043	5.737
0.20-0.25	35	2.5144	1.3772	47.557	7.114
0.05-0.10	730	52.4425	92.8858	100.000	100.000

## SAS Enterprise Miner Report

### Node=ClassDecTree B2D6 Summary

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

### Node=ClassDecTree 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	
CVNIter	10		Maxdepth	6		SampleSeed	12345	
CVRepeat	1		MinCatSize	5		SampleSize	10000	
CVSeed	12345		MissingValue	USEINSEARCH		ShowNodeld	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	
InitColorBy	AVG		Performance	DISK		UseVarOnce	N	
IntervalCriterion	PROBF		Precision	4		VarSelection	Y	

### Node=ClassDecTree B2D6 Variable Summary

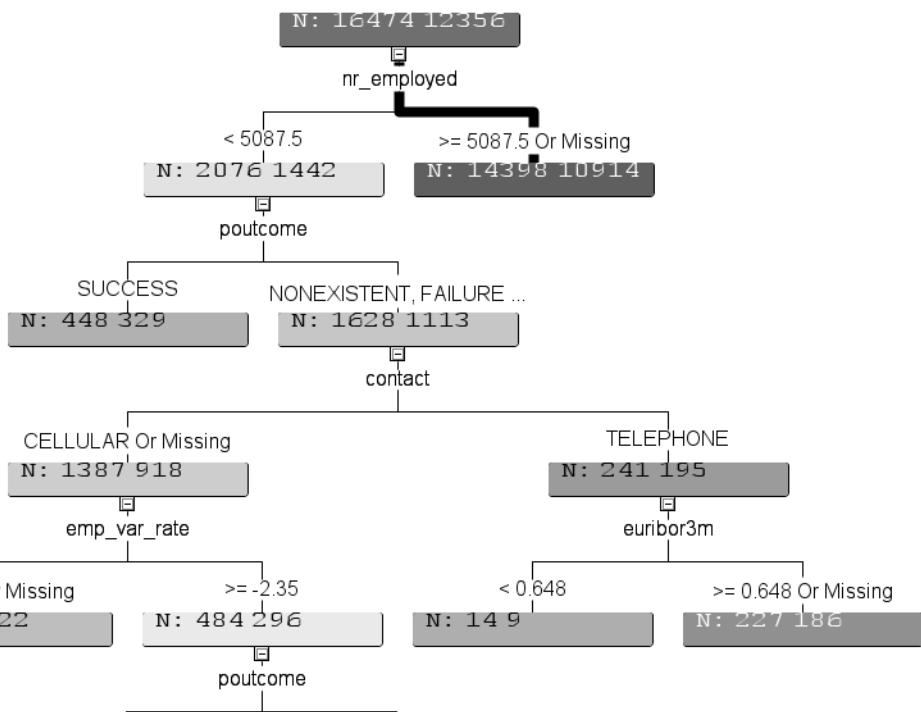
Role	Level	Frequency		Name
		Count		
TARGET	NOMINAL	1	y	
INPUT	INTERVAL	9	age campaign cons_conf_idx cons_price_idx emp_var_rate euribor3m nr_employed pdays previous	
INPUT	NOMINAL	10	contact day_of_week default education housing job marital month poutcome	
ID	INTERVAL	1	_dataobs_	

### Node=ClassDecTree B2D6 Model Fit Statistics

Target=y Target Label=y

Label of Statistic	Train	Validation	Test
Sum of Frequencies	16474.00	12356.00	12358.00
Misclassification Rate	0.10	0.10	0.10
Maximum Absolute Error	0.93	0.93	0.93
Sum of Squared Errors	2701.66	1996.26	1999.26
Average Squared Error	0.08	0.08	0.08
Root Average Squared Error	0.29	0.28	0.28
Divisor for ASE	32948.00	24712.00	24716.00
Total Degrees of Freedom	16474.00	.	.

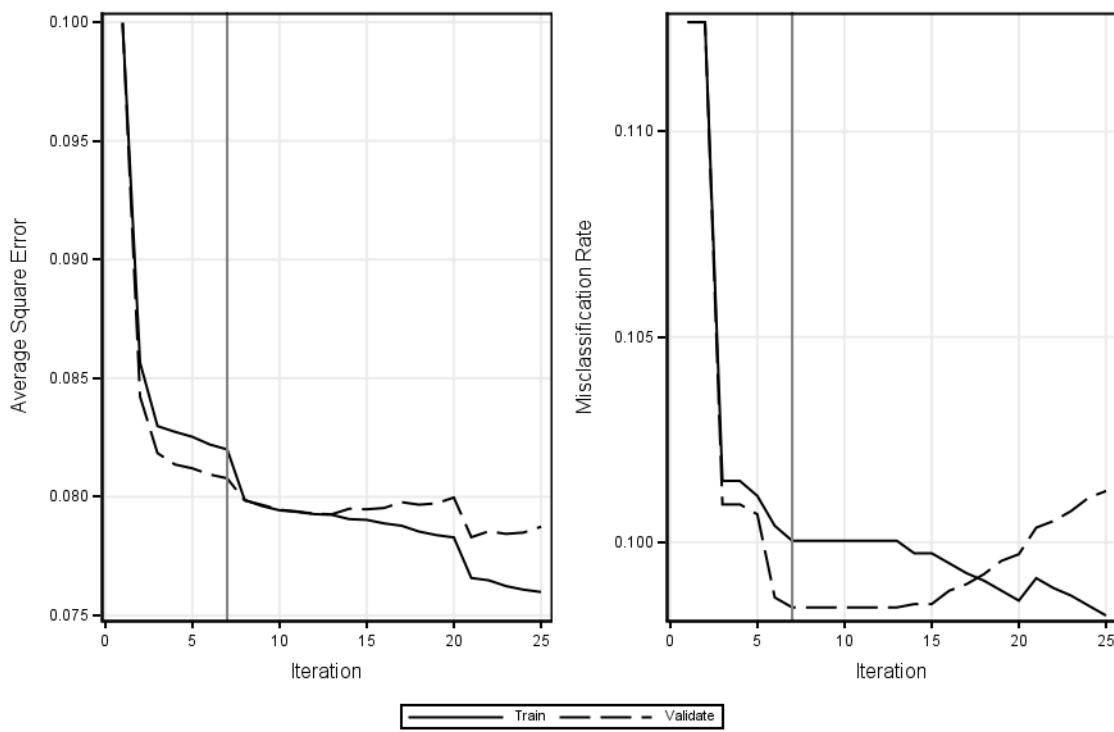
**SAS Enterprise Miner Report**  
**Node=ClassDecTree B2D6**  
**Tree Diagram**



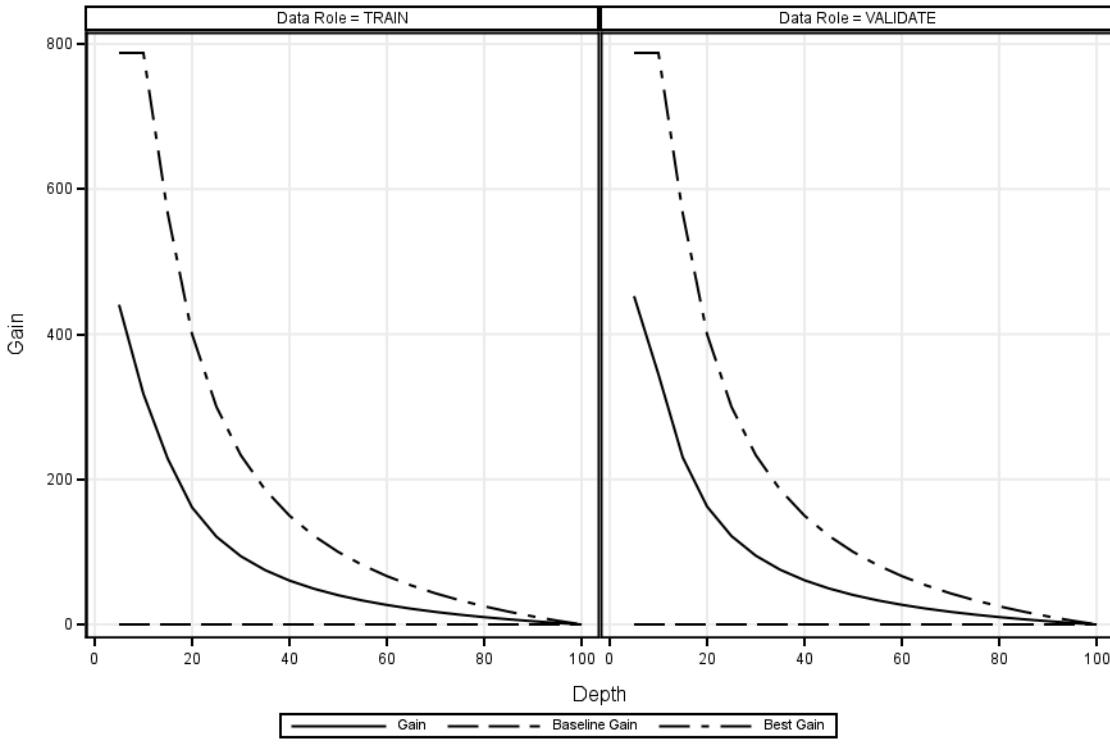
SAS Enterprise Miner Report  
Node=ClassDecTree B2D6  
Treemap



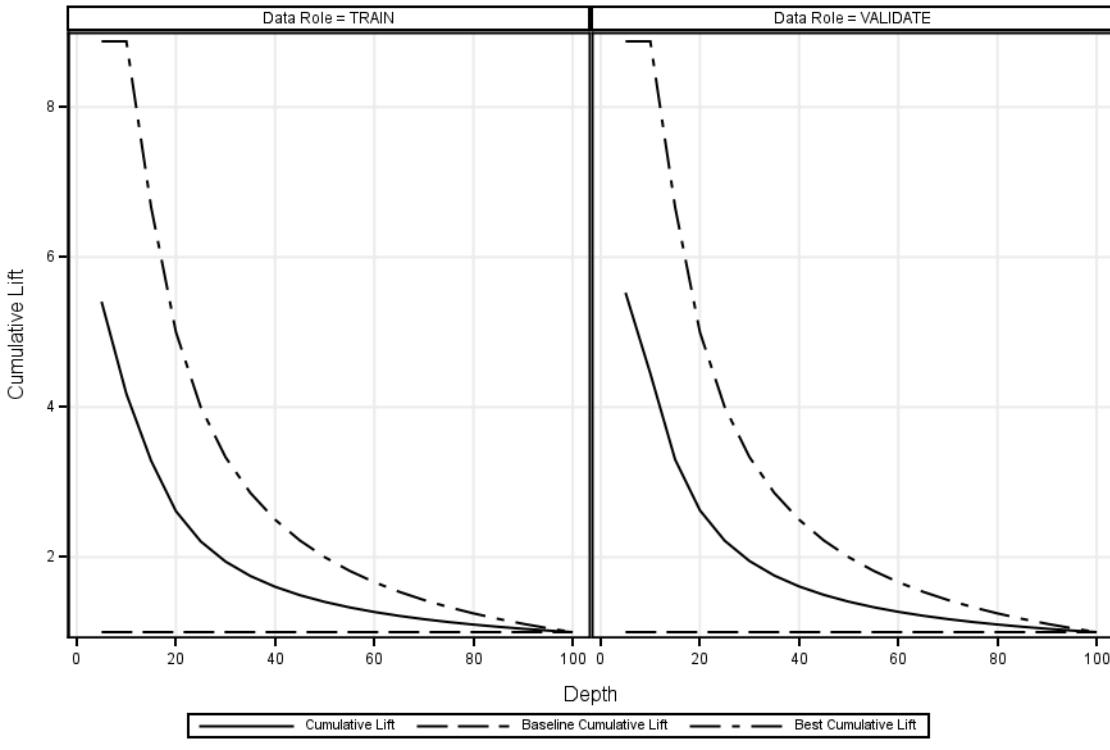
SAS Enterprise Miner Report  
Node=ClassDecTree B2D6  
Model Iteration Plots



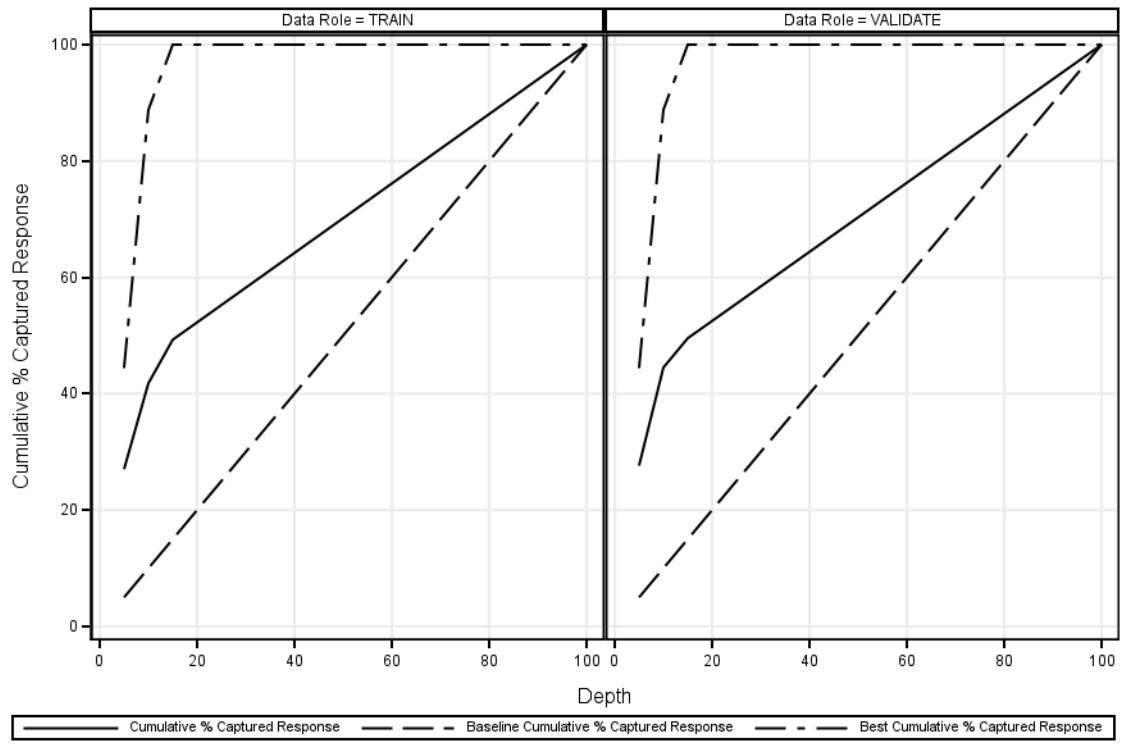
**SAS Enterprise Miner Report**  
 Node=ClassDecTree B2D6  
 Model Assessment Scores where TARGET='y'



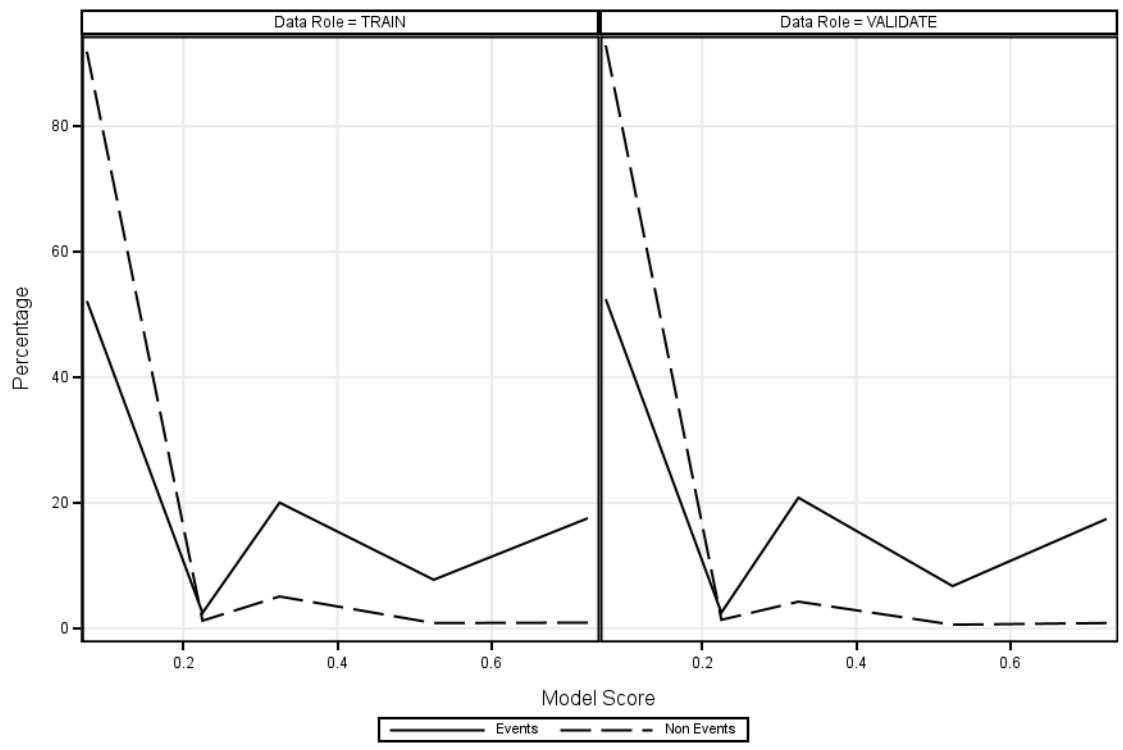
**SAS Enterprise Miner Report**  
 Node=ClassDecTree B2D6  
 Model Assessment Scores where TARGET='y'



**SAS Enterprise Miner Report**  
 Node=ClassDecTree B2D6  
 Model Assessment Scores where TARGET='y'



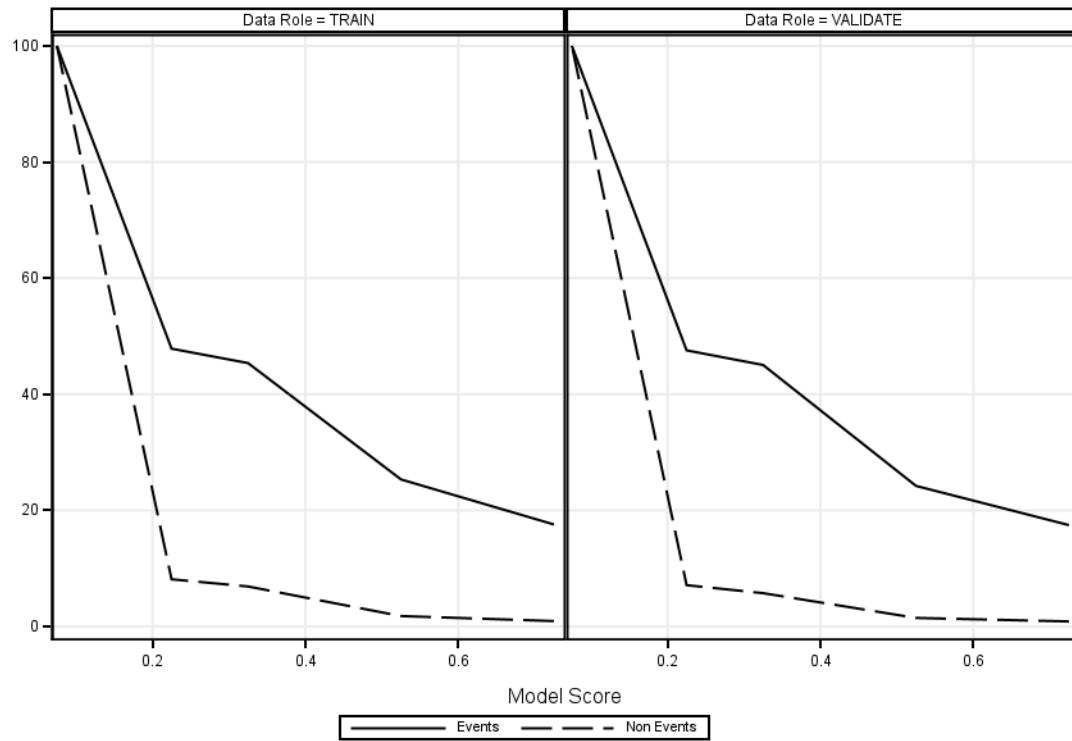
**SAS Enterprise Miner Report**  
 Node=ClassDecTree B2D6  
 Score Distributions where TARGET='y'



### SAS Enterprise Miner Report

Node=ClassDecTree B2D6

Score Distributions where TARGET='y'



#### Node=ClassDecTree B2D6

#### Score Distributions

Target Variable=y Data Role=TRAIN

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.70-0.75	326	17.5647	0.9304	17.565	0.930
0.50-0.55	144	7.7586	0.8620	25.323	1.792
0.30-0.35	372	20.0431	5.0965	45.366	6.889
0.20-0.25	46	2.4784	1.2382	47.845	8.127
0.05-0.10	968	52.1552	91.8730	100.000	100.000

Target Variable=y Data Role=VALIDATE

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.70-0.75	243	17.4569	0.8665	17.457	0.866
0.50-0.55	94	6.7529	0.6020	24.210	1.468
0.30-0.35	290	20.8333	4.2685	45.043	5.737
0.20-0.25	35	2.5144	1.3772	47.557	7.114
0.05-0.10	730	52.4425	92.8858	100.000	100.000

## 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	.		SISStay	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	NOMINAL	1	y
INPUT	INTERVAL	9	age campaign cons_conf_idx cons_price_idx emp_var_rate euribor3m nr_employed pdays previous
INPUT	NOMINAL	10	contact day_of_week default education housing job marital month poutcome

### Node=Exhaustive Regression Model Fit Statistics

Target=y Target Label=y

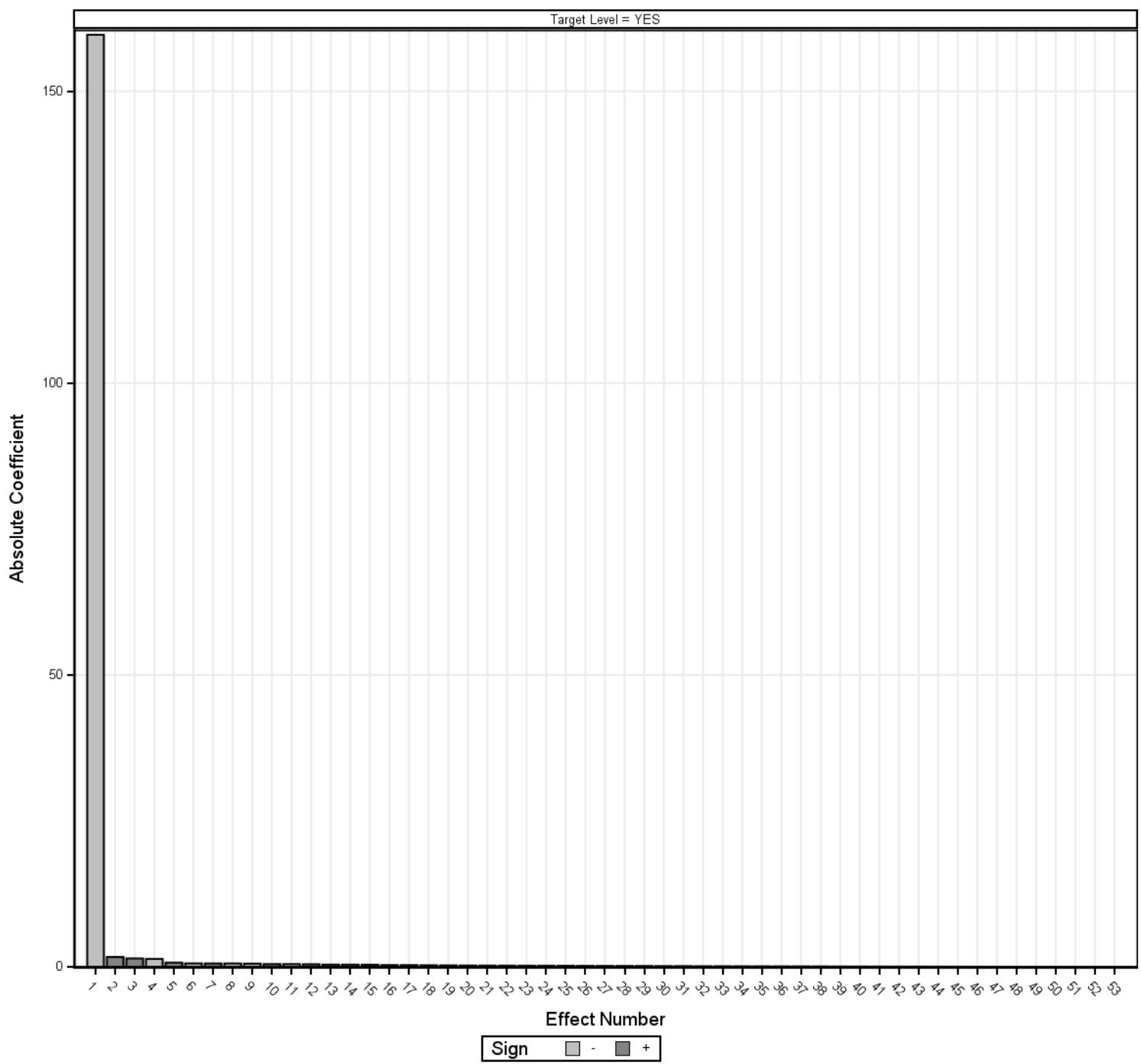
Label of Statistic	Train	Validation	Test
Akaike's Information Criterion	9106.73	.	.
Average Squared Error	0.08	0.08	0.08
Average Error Function	0.27	0.28	0.28
Degrees of Freedom for Error	16423.00	.	.
Model Degrees of Freedom	51.00	.	.
Total Degrees of Freedom	16474.00	.	.

Target=y Target Label=y

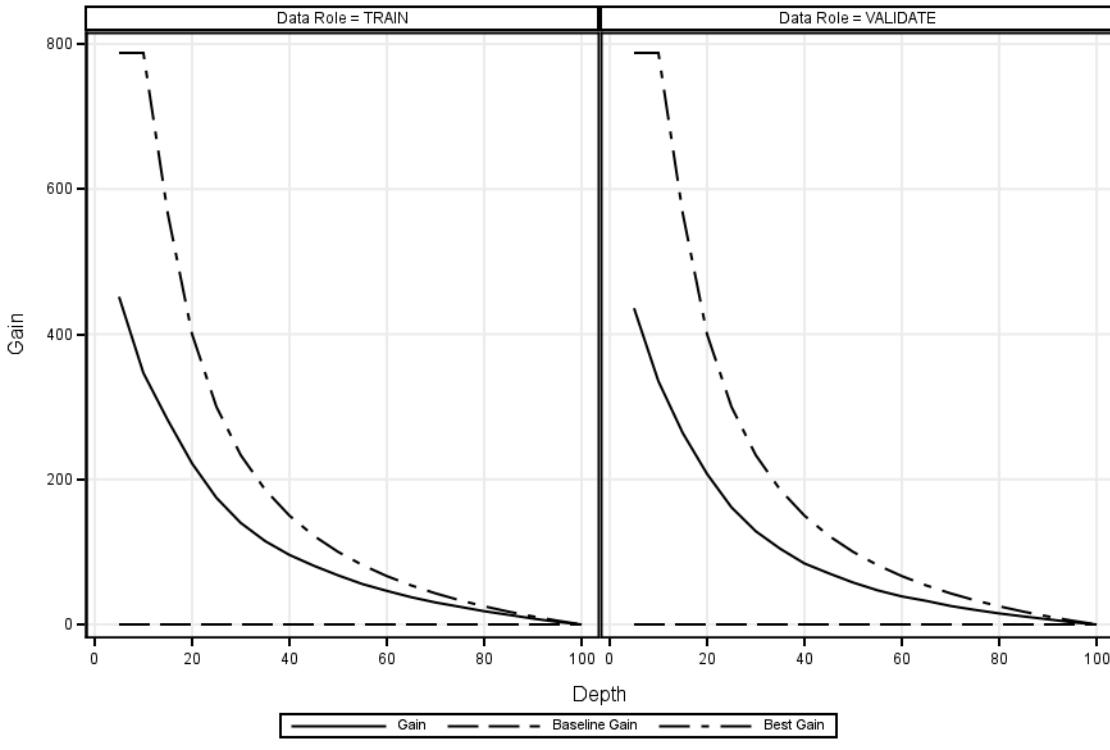
Label of Statistic	Train	Validation	Test
Divisor for ASE	32948.00	24712.00	24716.00
Error Function	9004.73	6989.43	6852.48
Final Prediction Error	0.08	.	.
Maximum Absolute Error	0.99	0.98	0.99
Mean Square Error	0.08	0.08	0.08
Sum of Frequencies	16474.00	12356.00	12358.00
Number of Estimate Weights	51.00	.	.
Root Average Sum of Squares	0.28	0.28	0.28
Root Final Prediction Error	0.28	.	.
Root Mean Squared Error	0.28	0.28	0.28
Schwarz's Bayesian Criterion	9499.91	.	.
Sum of Squared Errors	2557.43	1965.68	1936.71
Sum of Case Weights Times Freq	32948.00	24712.00	24716.00
Misclassification Rate	0.10	0.10	0.10

SAS Enterprise Miner Report  
Node=Exhaustive Regression  
Regression Model Effects

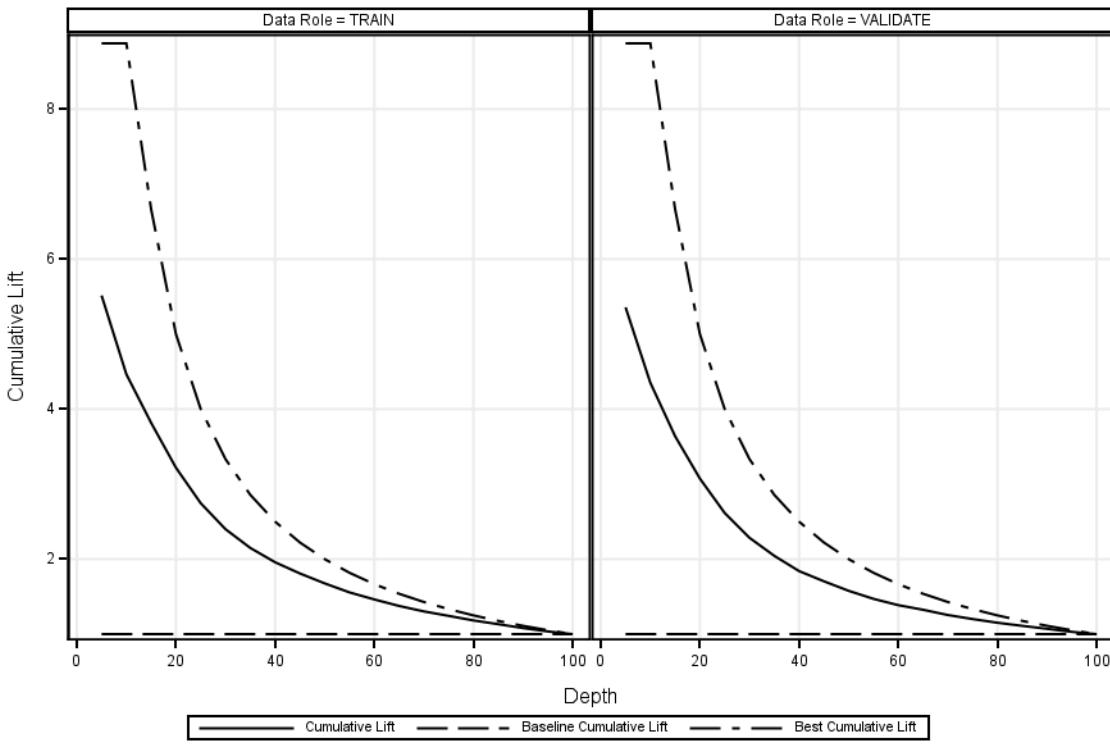
Target Level = YES



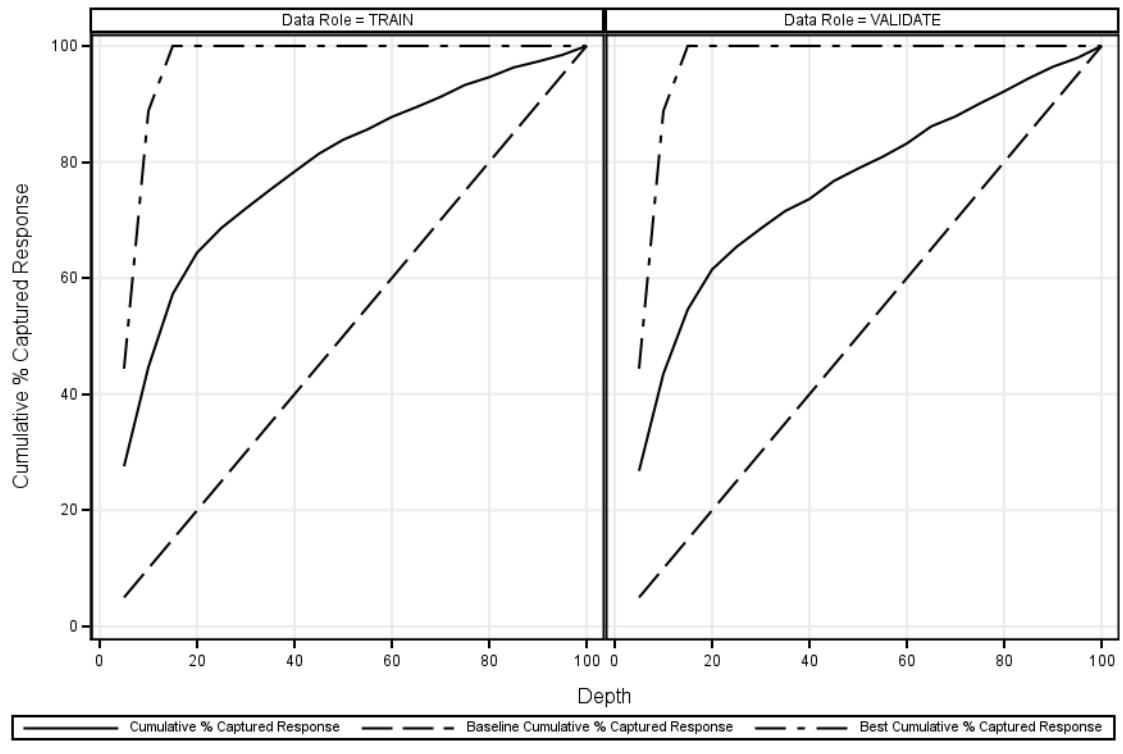
**SAS Enterprise Miner Report**  
 Node=Exhaustive Regression  
 Model Assessment Scores where TARGET='y'



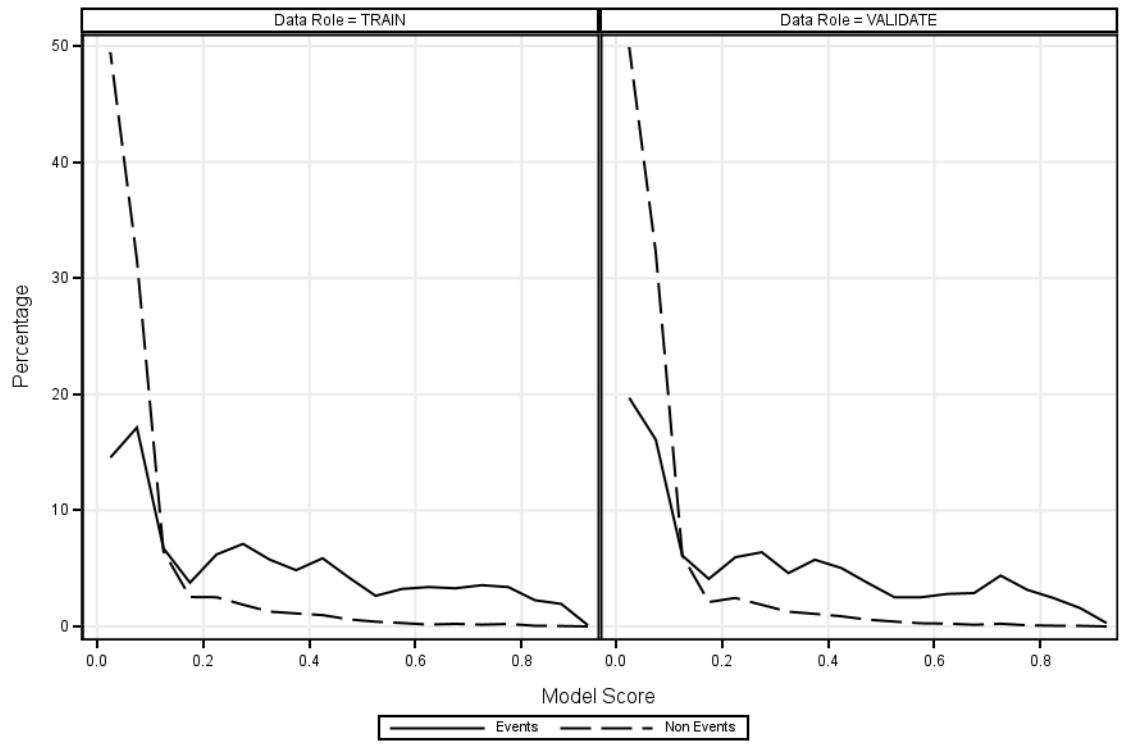
**SAS Enterprise Miner Report**  
 Node=Exhaustive Regression  
 Model Assessment Scores where TARGET='y'



**SAS Enterprise Miner Report**  
 Node=Exhaustive Regression  
 Model Assessment Scores where TARGET='y'

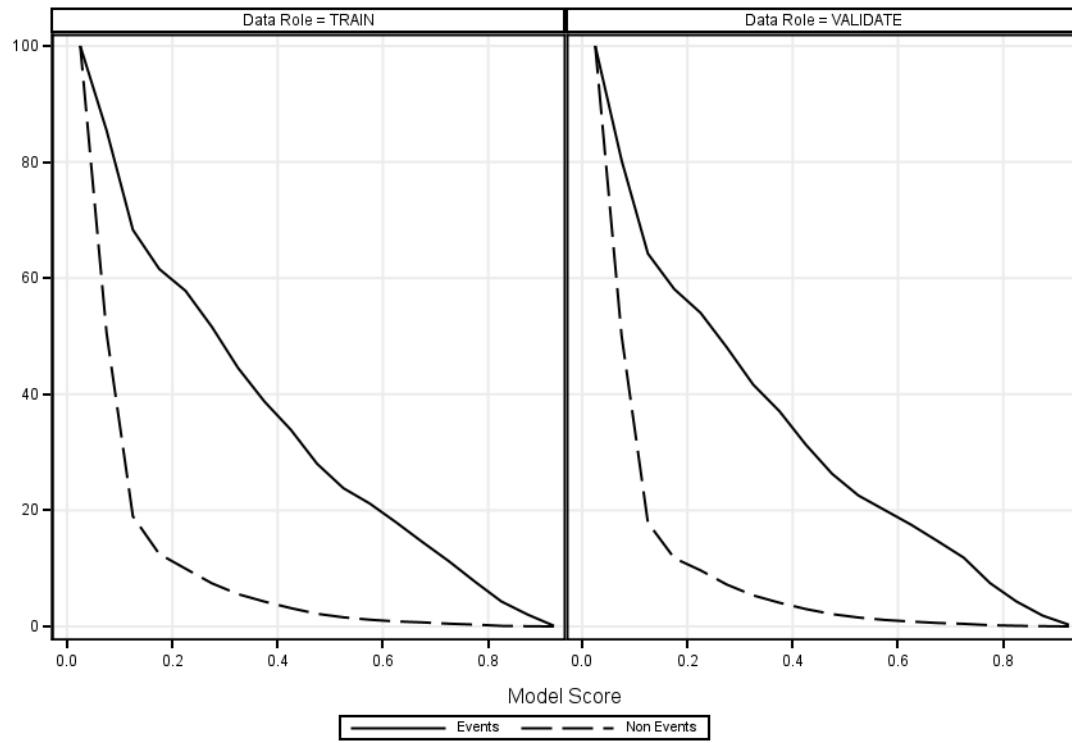


**SAS Enterprise Miner Report**  
 Node=Exhaustive Regression  
 Score Distributions where TARGET='y'



### SAS Enterprise Miner Report

Node=Exhaustive Regression  
Score Distributions where TARGET='y'



#### Node=Exhaustive Regression

#### Score Distributions

Target Variable=y Data Role=TRAIN

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.90-0.95	2	0.1078	0.0000	0.108	0.000
0.85-0.90	36	1.9397	0.0410	2.047	0.041
0.80-0.85	42	2.2629	0.0616	4.310	0.103
0.75-0.80	63	3.3944	0.2189	7.705	0.322
0.70-0.75	66	3.5560	0.1573	11.261	0.479
0.65-0.70	61	3.2866	0.2257	14.547	0.705
0.60-0.65	63	3.3944	0.1642	17.942	0.869
0.55-0.60	60	3.2328	0.2942	21.175	1.163
0.50-0.55	49	2.6401	0.4105	23.815	1.573
0.45-0.50	78	4.2026	0.6088	28.017	2.182
0.40-0.45	109	5.8728	0.9782	33.890	3.160
0.35-0.40	90	4.8491	1.1219	38.739	4.282
0.30-0.35	107	5.7651	1.2792	44.504	5.562
0.25-0.30	132	7.1121	1.8744	51.616	7.436
0.20-0.25	115	6.1961	2.5174	57.813	9.953
0.15-0.20	70	3.7716	2.5380	61.584	12.491
0.10-0.15	125	6.7349	6.4852	68.319	18.977
0.05-0.10	318	17.1336	31.5775	85.453	50.554
0.00-0.05	270	14.5474	49.4459	100.000	100.000

Target Variable=y Data Role=VALIDATE

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.90-0.95	4	0.2874	0.0000	0.287	0.000
0.85-0.90	22	1.5805	0.0547	1.868	0.055
0.80-0.85	34	2.4425	0.0638	4.310	0.119
0.75-0.80	44	3.1609	0.1003	7.471	0.219
0.70-0.75	61	4.3822	0.2371	11.853	0.456
0.65-0.70	40	2.8736	0.1459	14.727	0.602
0.60-0.65	39	2.8017	0.2463	17.529	0.848
0.55-0.60	35	2.5144	0.2736	20.043	1.122
0.50-0.55	35	2.5144	0.4196	22.557	1.541
0.45-0.50	52	3.7356	0.5837	26.293	2.125
0.40-0.45	70	5.0287	0.8756	31.322	3.001
0.35-0.40	80	5.7471	1.0854	37.069	4.086
0.30-0.35	64	4.5977	1.2678	41.667	5.354
0.25-0.30	89	6.3937	1.8606	48.060	7.215
0.20-0.25	83	5.9626	2.4535	54.023	9.668
0.15-0.20	57	4.0948	2.1069	58.118	11.775
0.10-0.15	85	6.1063	6.1109	64.224	17.886
0.05-0.10	224	16.0920	32.2236	80.316	50.109
0.00-0.05	274	19.6839	49.8906	100.000	100.000

## SAS Enterprise Miner Report

### Node=Forward Regression Summary

Node id = Reg2  
 Node label = Forward Regression  
 Meta path = Ids => Part => Reg2  
 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	.		SISStay	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		Name
		Count		
TARGET	NOMINAL	1	y	
INPUT	INTERVAL	9	age campaign cons_conf_idx cons_price_idx emp_var_rate euribor3m nr_employed pdays previous	
INPUT	NOMINAL	10	contact day_of_week default education housing job marital month poutcome	

### Node=Forward Regression Model Fit Statistics

Target=y Target Label=y

Label of Statistic	Train	Validation	Test
Akaike's Information Criterion	9131.45	.	.
Average Squared Error	0.08	0.08	0.08
Average Error Function	0.27	0.28	0.28
Degrees of Freedom for Error	16438.00	.	.
Model Degrees of Freedom	36.00	.	.
Total Degrees of Freedom	16474.00	.	.

Target=y Target Label=y

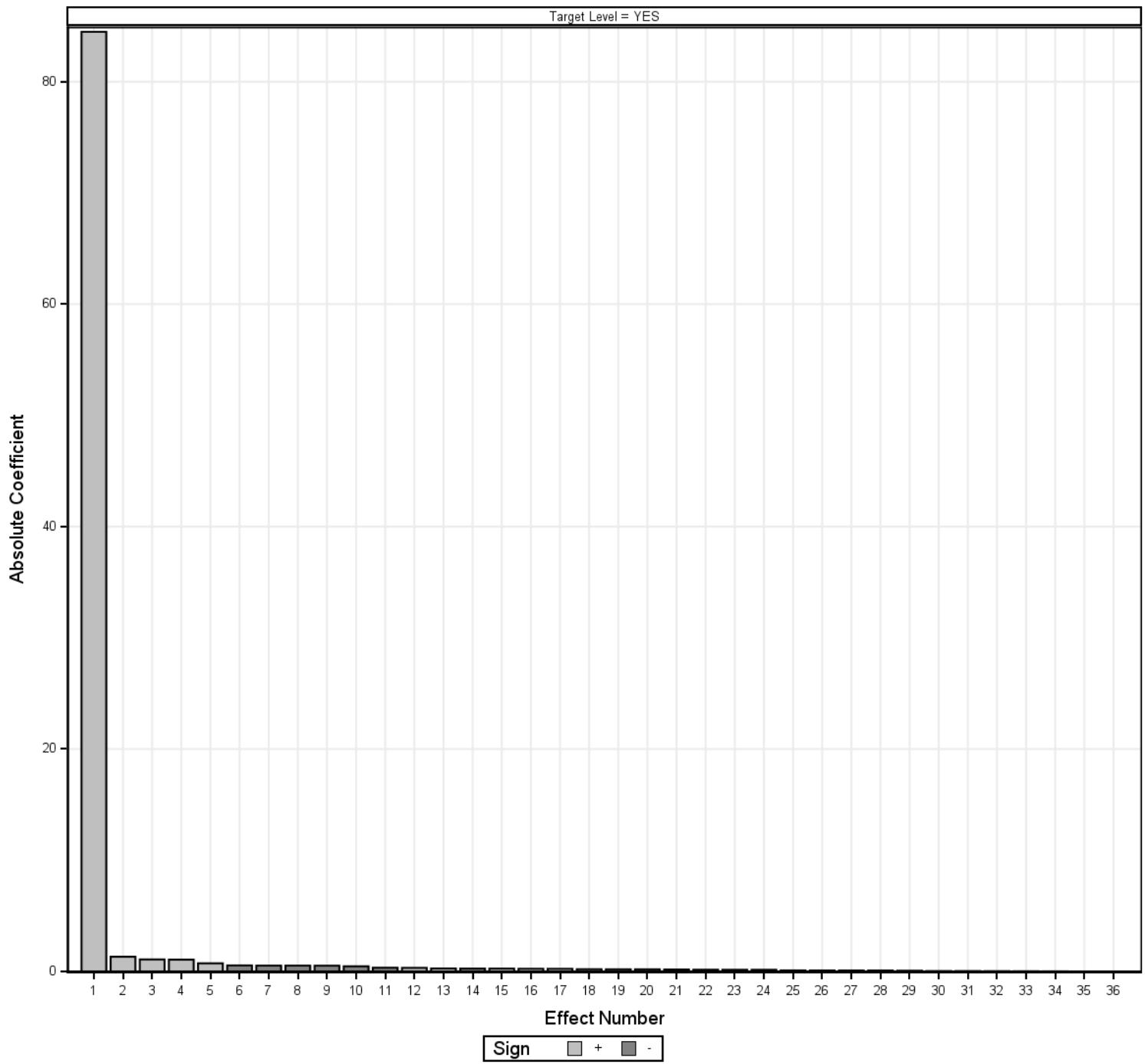
Label of Statistic	Train	Validation	Test
Divisor for ASE	32948.00	24712.00	24716.00
Error Function	9059.45	6993.40	6837.94
Final Prediction Error	0.08	.	.
Maximum Absolute Error	0.98	0.98	0.98
Mean Square Error	0.08	0.08	0.08
Sum of Frequencies	16474.00	12356.00	12358.00
Number of Estimate Weights	36.00	.	.
Root Average Sum of Squares	0.28	0.28	0.28
Root Final Prediction Error	0.28	.	.
Root Mean Squared Error	0.28	0.28	0.28
Schwarz's Bayesian Criterion	9409.00	.	.
Sum of Squared Errors	2570.17	1971.42	1932.82
Sum of Case Weights Times Freq	32948.00	24712.00	24716.00
Misclassification Rate	0.10	0.10	0.10

**SAS Enterprise Miner Report**

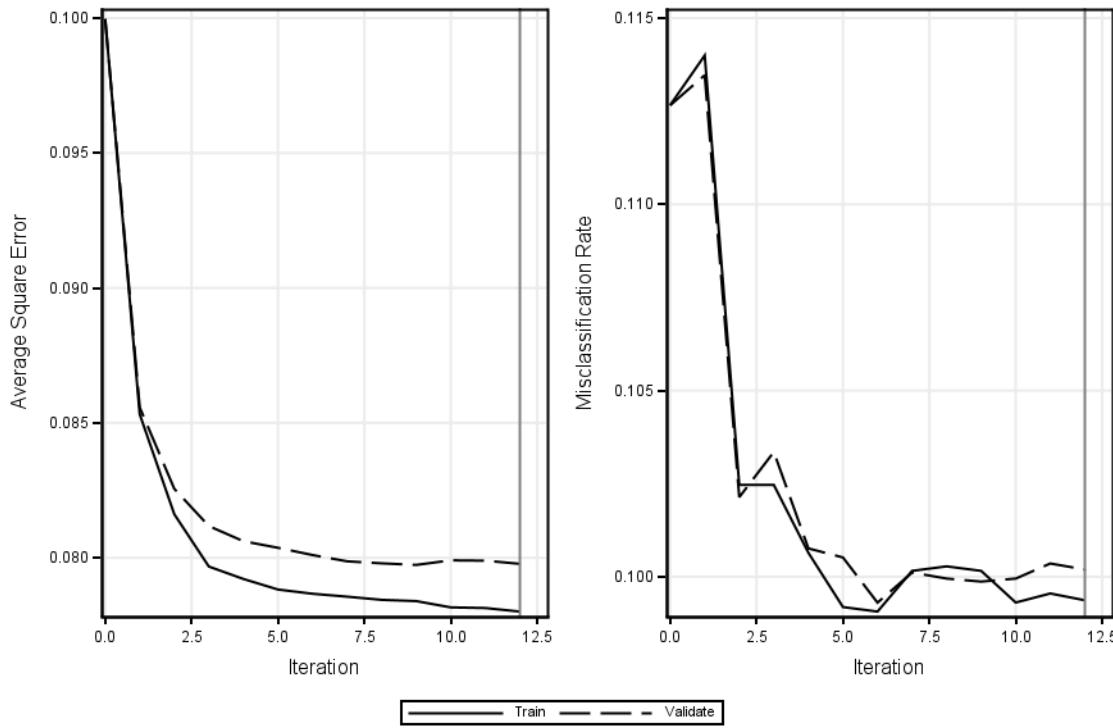
Node=Forward Regression

Regression Model Effects

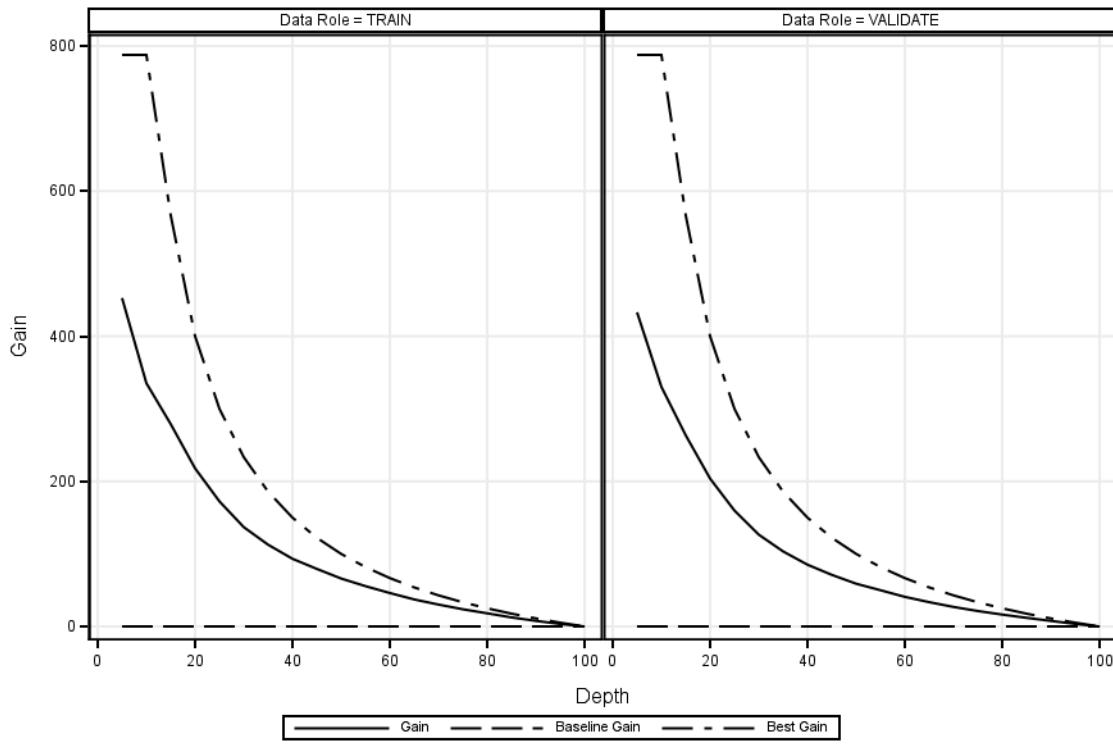
Target Level = YES

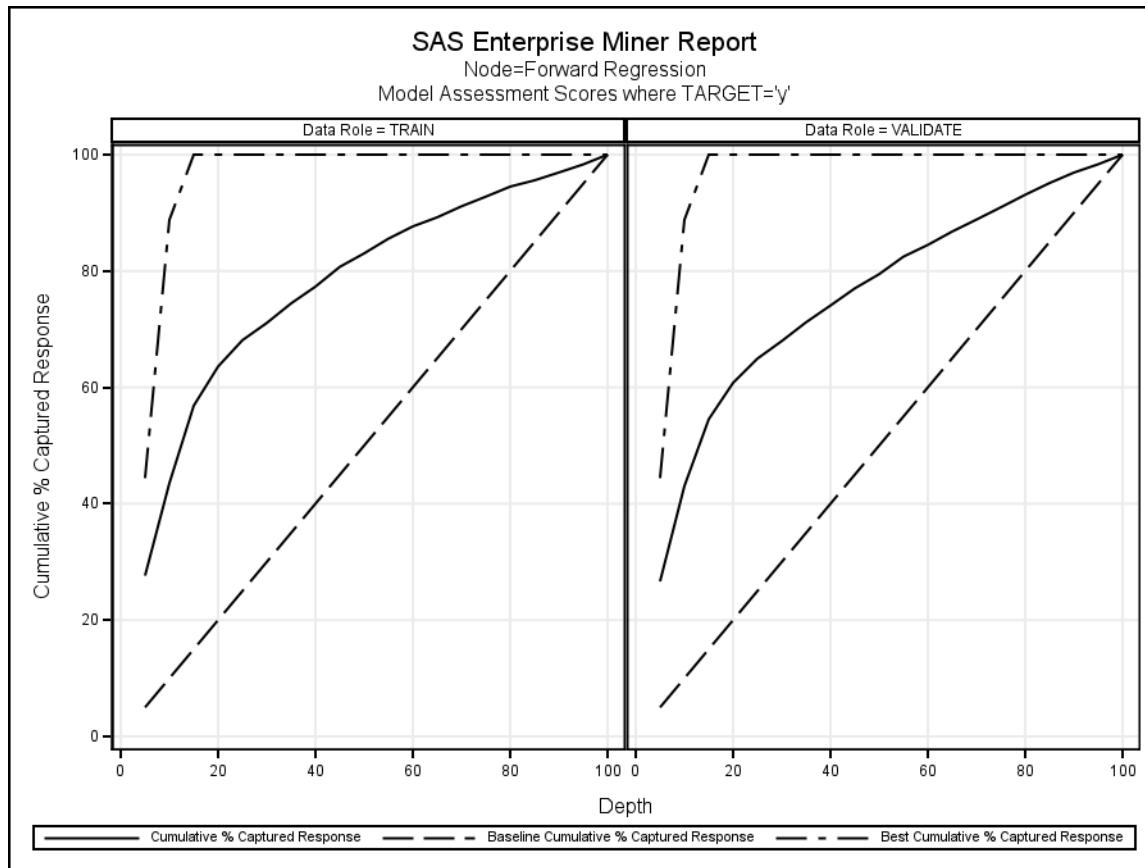
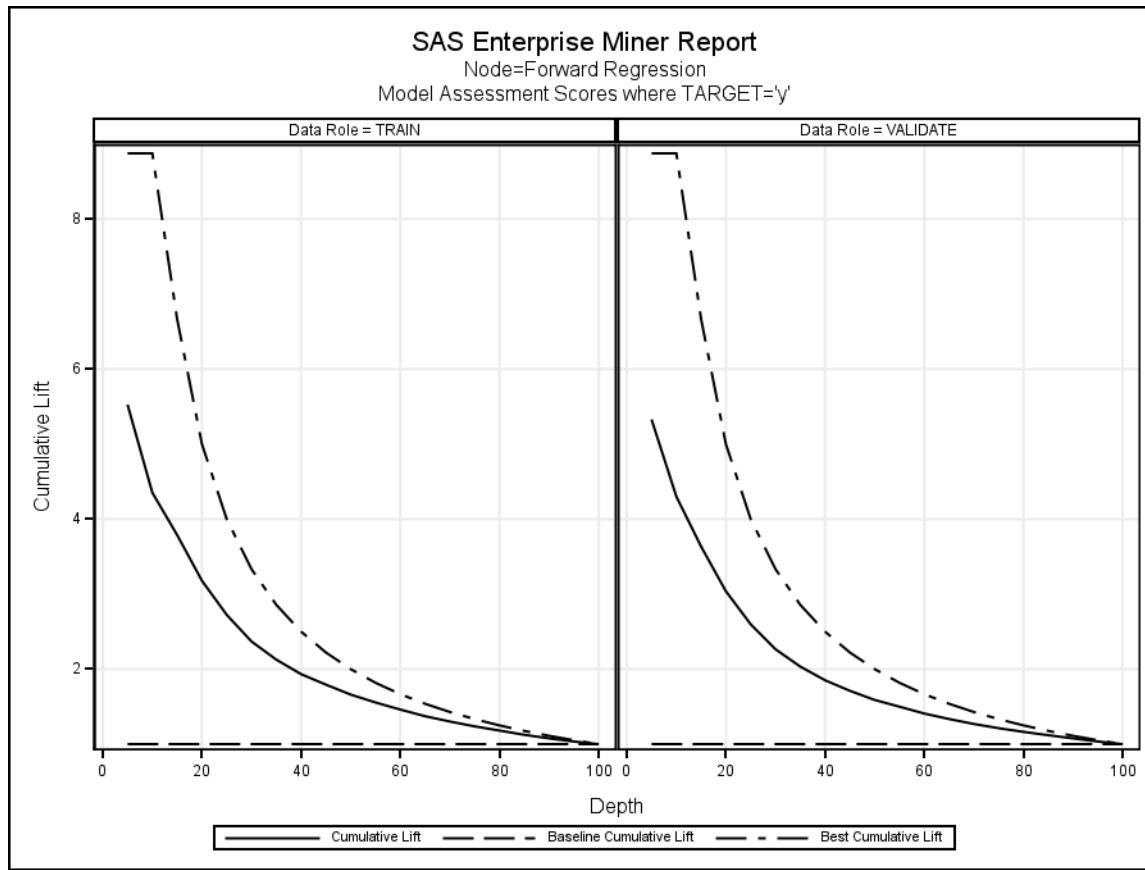


SAS Enterprise Miner Report  
Node=Forward Regression  
Model Iteration Plots



SAS Enterprise Miner Report  
Node=Forward Regression  
Model Assessment Scores where TARGET='y'

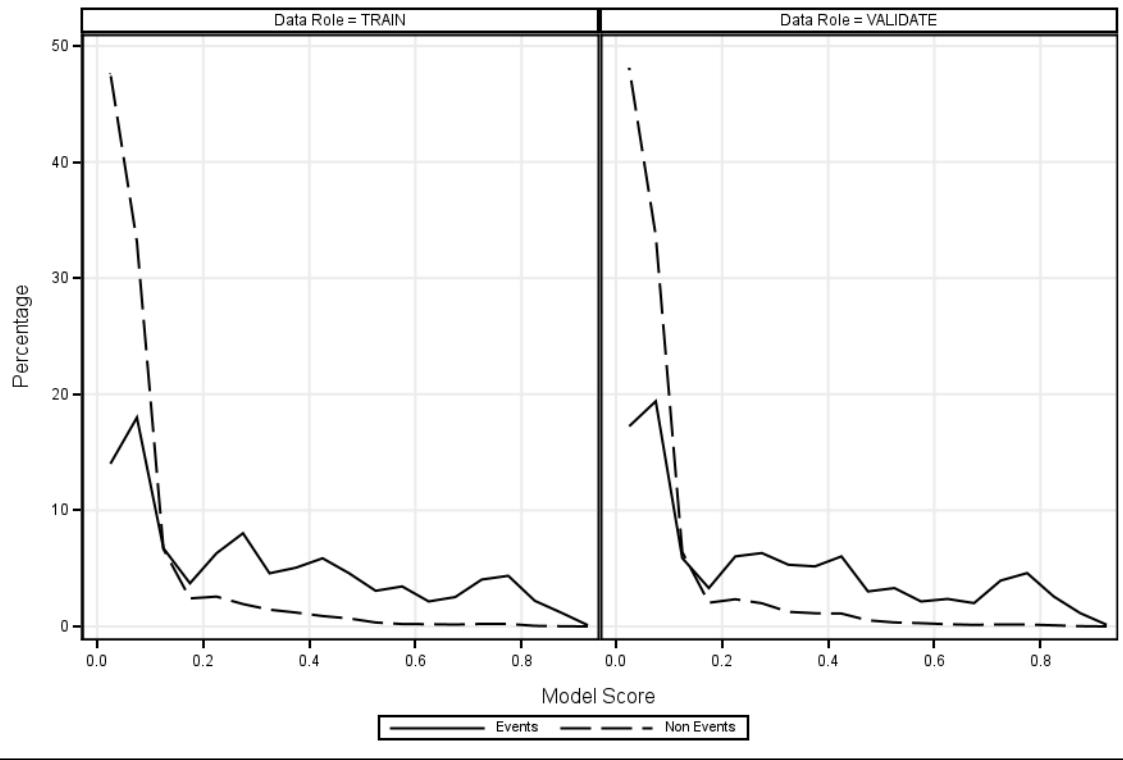




### SAS Enterprise Miner Report

Node=Forward Regression

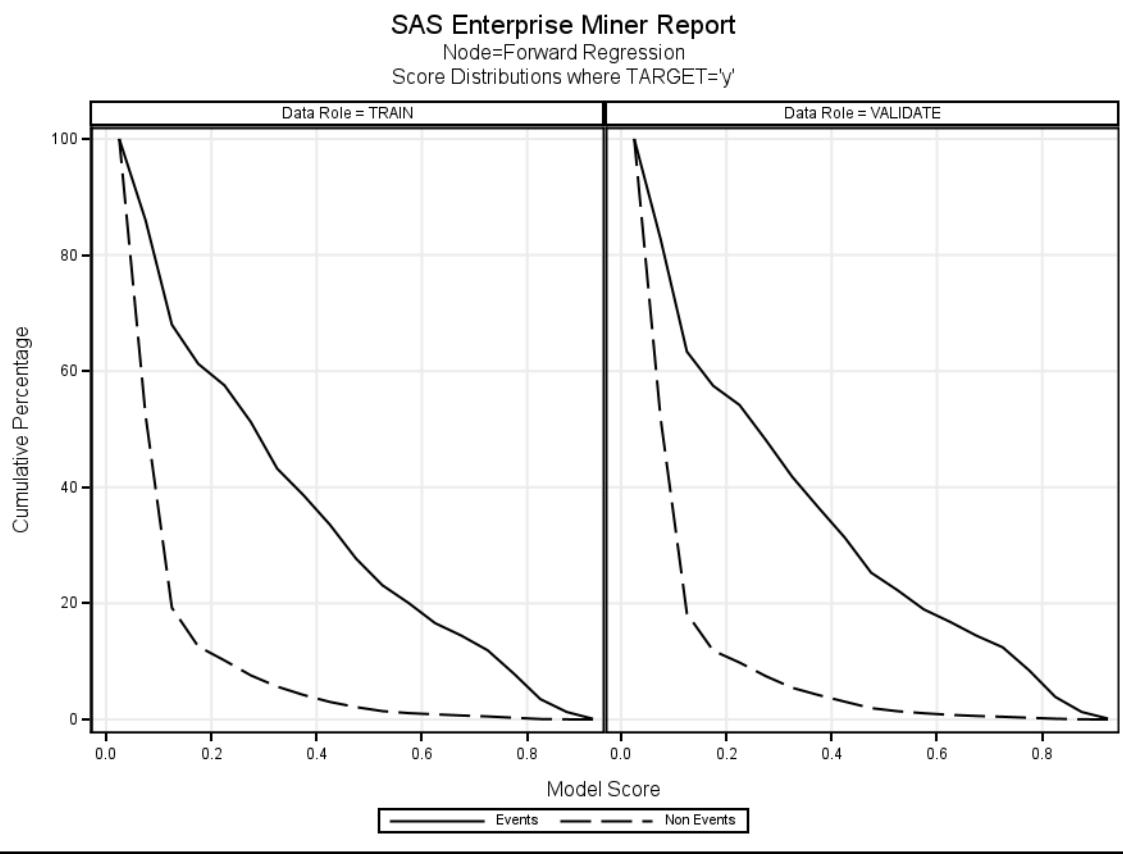
Score Distributions where TARGET='y'



### SAS Enterprise Miner Report

Node=Forward Regression

Score Distributions where TARGET='y'



**Node=Forward Regression  
Score Distributions**

Target Variable=y Data Role=TRAIN

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.90-0.95	2	0.1078	0.0000	0.108	0.000
0.85-0.90	22	1.1853	0.0205	1.293	0.021
0.80-0.85	41	2.2091	0.0547	3.502	0.075
0.75-0.80	81	4.3642	0.2189	7.866	0.294
0.70-0.75	75	4.0409	0.2257	11.907	0.520
0.65-0.70	47	2.5323	0.1642	14.440	0.684
0.60-0.65	40	2.1552	0.1984	16.595	0.882
0.55-0.60	64	3.4483	0.2121	20.043	1.095
0.50-0.55	57	3.0711	0.3420	23.114	1.437
0.45-0.50	85	4.5797	0.6909	27.694	2.128
0.40-0.45	109	5.8728	0.8962	33.567	3.024
0.35-0.40	94	5.0647	1.1972	38.631	4.221
0.30-0.35	85	4.5797	1.4434	43.211	5.664
0.25-0.30	149	8.0280	1.9291	51.239	7.593
0.20-0.25	117	6.3039	2.5722	57.543	10.166
0.15-0.20	69	3.7177	2.4148	61.261	12.580
0.10-0.15	125	6.7349	6.6630	67.996	19.243
0.05-0.10	334	17.9957	33.1235	85.991	52.367
0.00-0.05	260	14.0086	47.6331	100.000	100.000

Target Variable=y Data Role=VALIDATE

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.90-0.95	2	0.1437	0.0000	0.144	0.000
0.85-0.90	16	1.1494	0.0274	1.293	0.027
0.80-0.85	36	2.5862	0.1003	3.879	0.128
0.75-0.80	64	4.5977	0.1642	8.477	0.292
0.70-0.75	55	3.9511	0.1733	12.428	0.465
0.65-0.70	28	2.0115	0.1368	14.440	0.602
0.60-0.65	33	2.3707	0.1915	16.810	0.794
0.55-0.60	30	2.1552	0.2827	18.966	1.076
0.50-0.55	46	3.3046	0.3466	22.270	1.423
0.45-0.50	42	3.0172	0.5290	25.287	1.952
0.40-0.45	84	6.0345	1.1127	31.322	3.065
0.35-0.40	72	5.1724	1.1401	36.494	4.205
0.30-0.35	74	5.3161	1.2587	41.810	5.463
0.25-0.30	88	6.3218	1.9974	48.132	7.461
0.20-0.25	84	6.0345	2.3440	54.167	9.805
0.15-0.20	46	3.3046	2.0430	57.471	11.848
0.10-0.15	82	5.8908	6.4028	63.362	18.251
0.05-0.10	270	19.3966	33.6556	82.759	51.906
0.00-0.05	240	17.2414	48.0938	100.000	100.000

## SAS Enterprise Miner Report

### Node=Backward Regression Summary

Node id = Reg3  
 Node label = Backward Regression  
 Meta path = Ids => Part => Reg3  
 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	.		SISStay	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	NOMINAL	1	y
INPUT	INTERVAL	9	age campaign cons_conf_idx cons_price_idx emp_var_rate euribor3m nr_employed pdays previous
INPUT	NOMINAL	10	contact day_of_week default education housing job marital month poutcome

### Node=Backward Regression Model Fit Statistics

#### Target=y Target Label=y

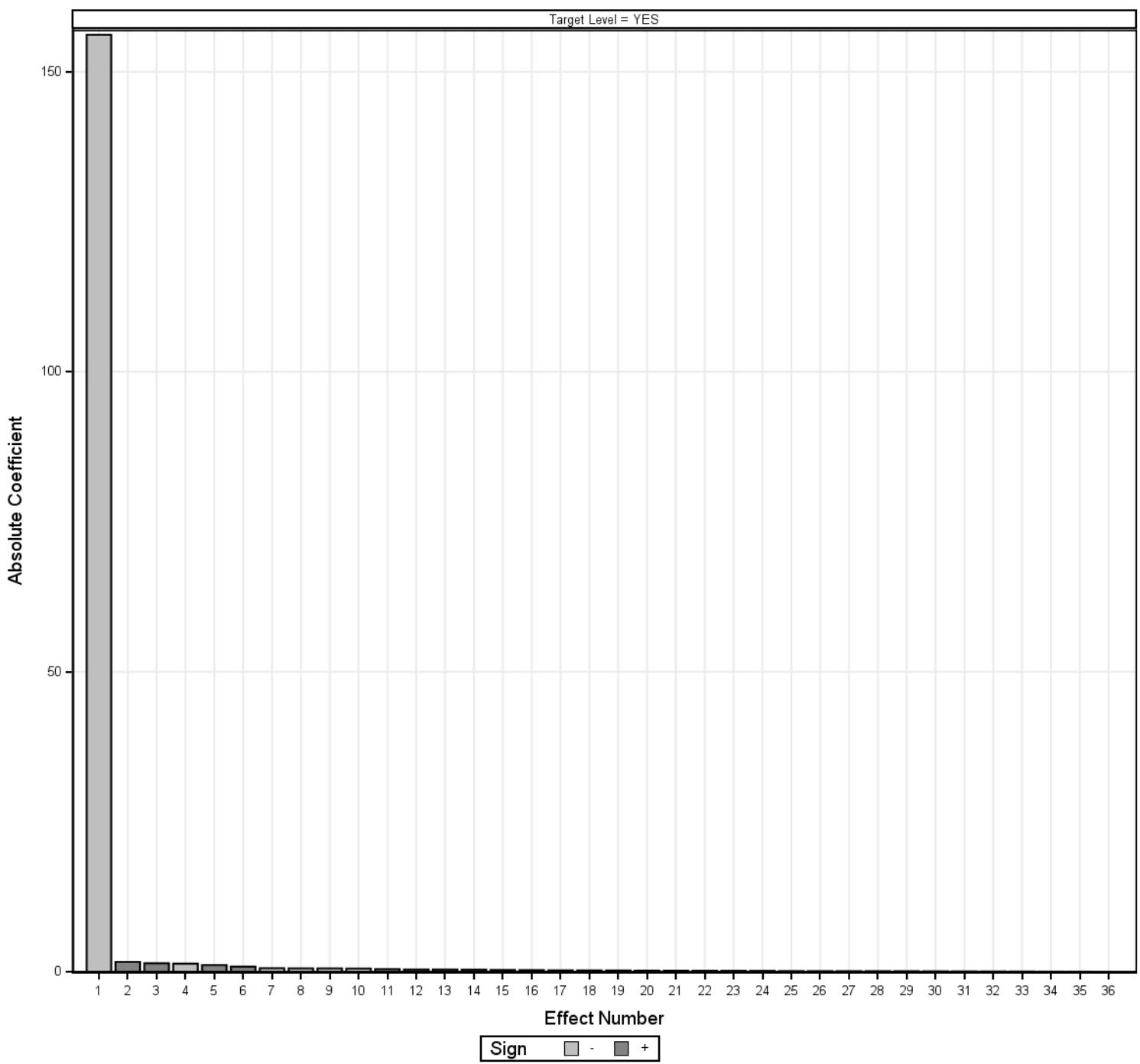
Label of Statistic	Train	Validation	Test
Akaike's Information Criterion	9098.38	.	.
Average Squared Error	0.08	0.08	0.08
Average Error Function	0.27	0.28	0.28
Degrees of Freedom for Error	16438.00	.	.
Model Degrees of Freedom	36.00	.	.
Total Degrees of Freedom	16474.00	.	.

Target=y Target Label=y

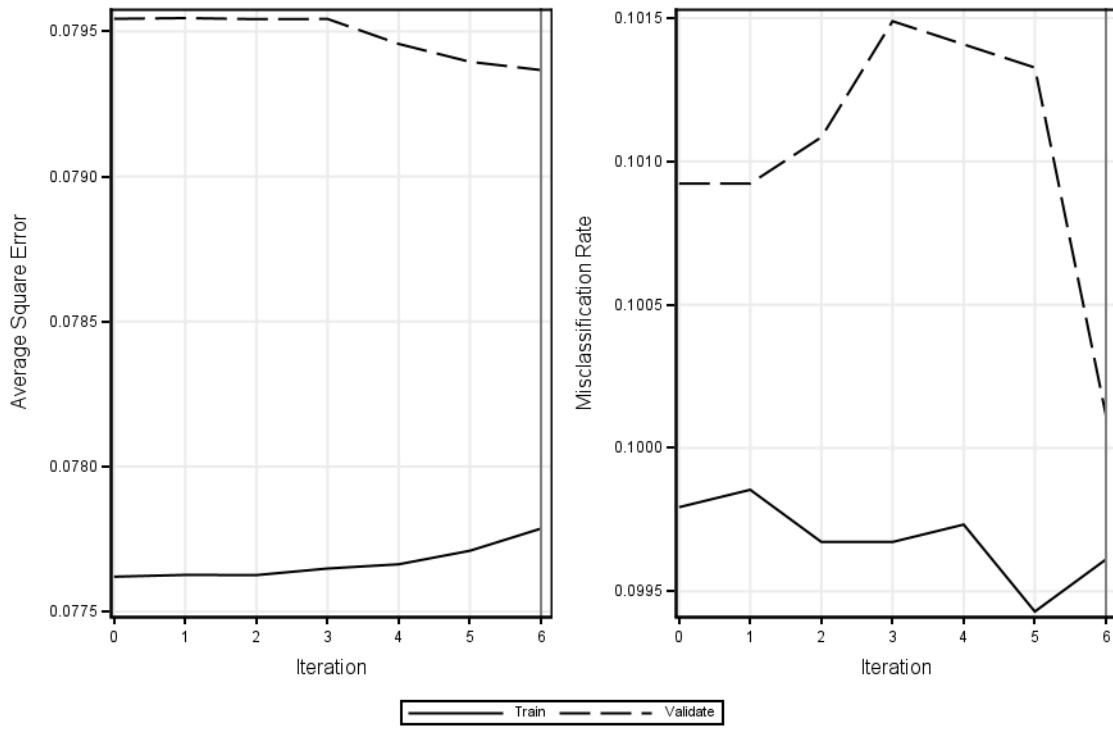
Label of Statistic	Train	Validation	Test
Divisor for ASE	32948.00	24712.00	24716.00
Error Function	9026.38	6967.37	6816.46
Final Prediction Error	0.08	.	.
Maximum Absolute Error	0.98	0.98	0.99
Mean Square Error	0.08	0.08	0.08
Sum of Frequencies	16474.00	12356.00	12358.00
Number of Estimate Weights	36.00	.	.
Root Average Sum of Squares	0.28	0.28	0.28
Root Final Prediction Error	0.28	.	.
Root Mean Squared Error	0.28	0.28	0.28
Schwarz's Bayesian Criterion	9375.93	.	.
Sum of Squared Errors	2562.90	1961.31	1926.34
Sum of Case Weights Times Freq	32948.00	24712.00	24716.00
Misclassification Rate	0.10	0.10	0.10

SAS Enterprise Miner Report  
Node=Backward Regression  
Regression Model Effects

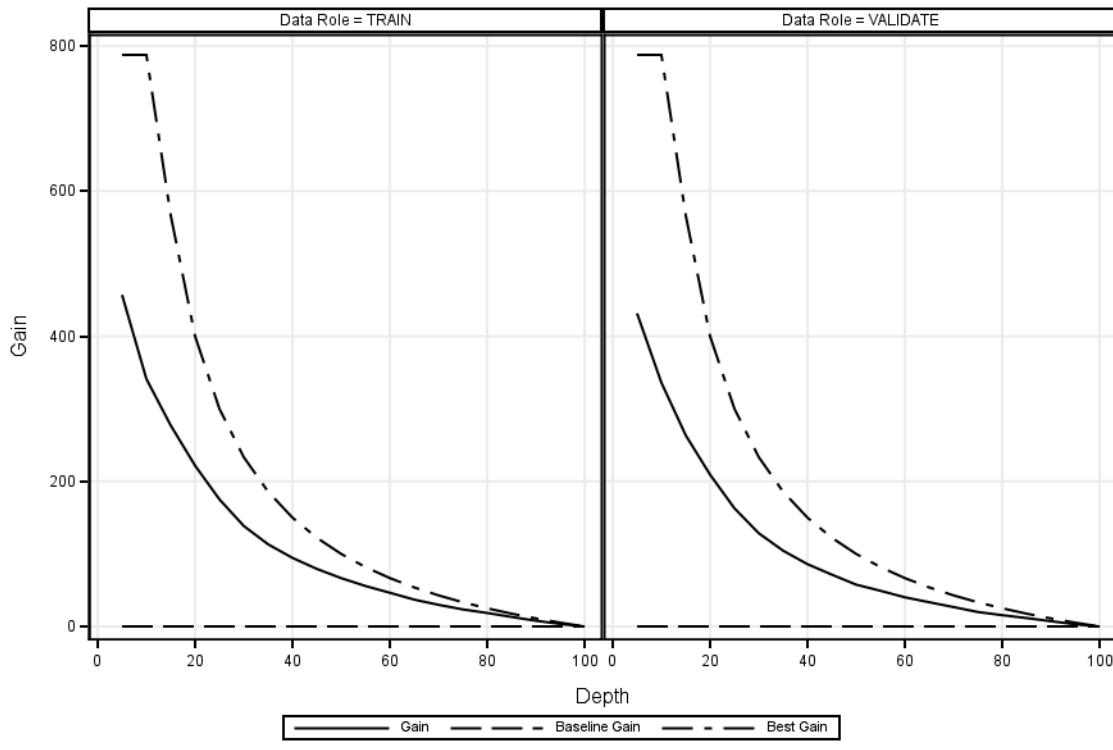
Target Level = YES



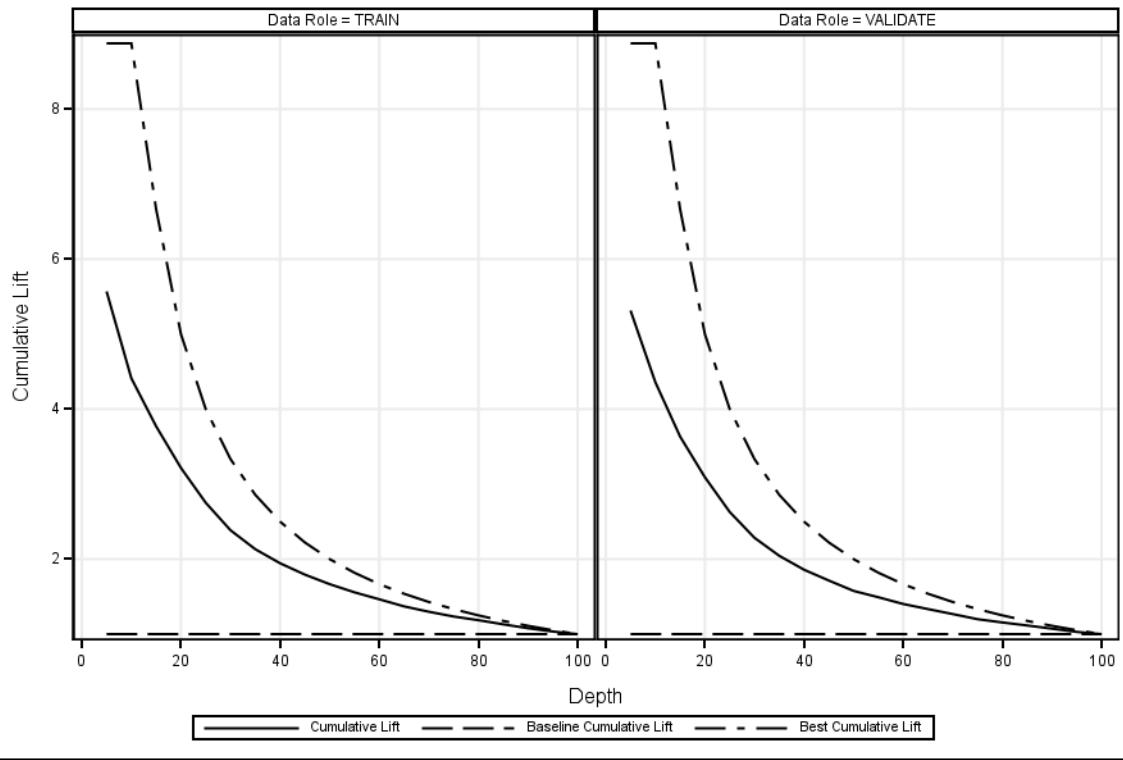
SAS Enterprise Miner Report  
Node=Backward Regression  
Model Iteration Plots



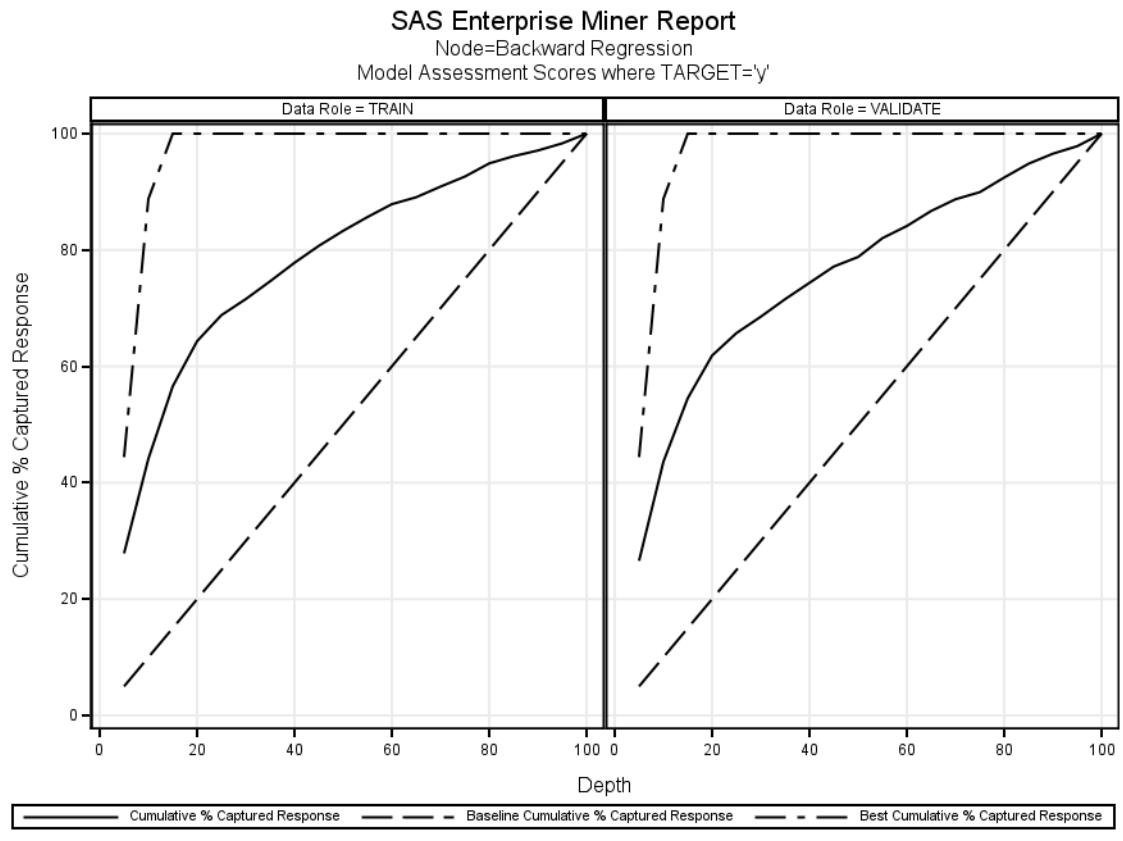
SAS Enterprise Miner Report  
Node=Backward Regression  
Model Assessment Scores where TARGET='y'



**SAS Enterprise Miner Report**  
 Node=Backward Regression  
 Model Assessment Scores where TARGET='y'



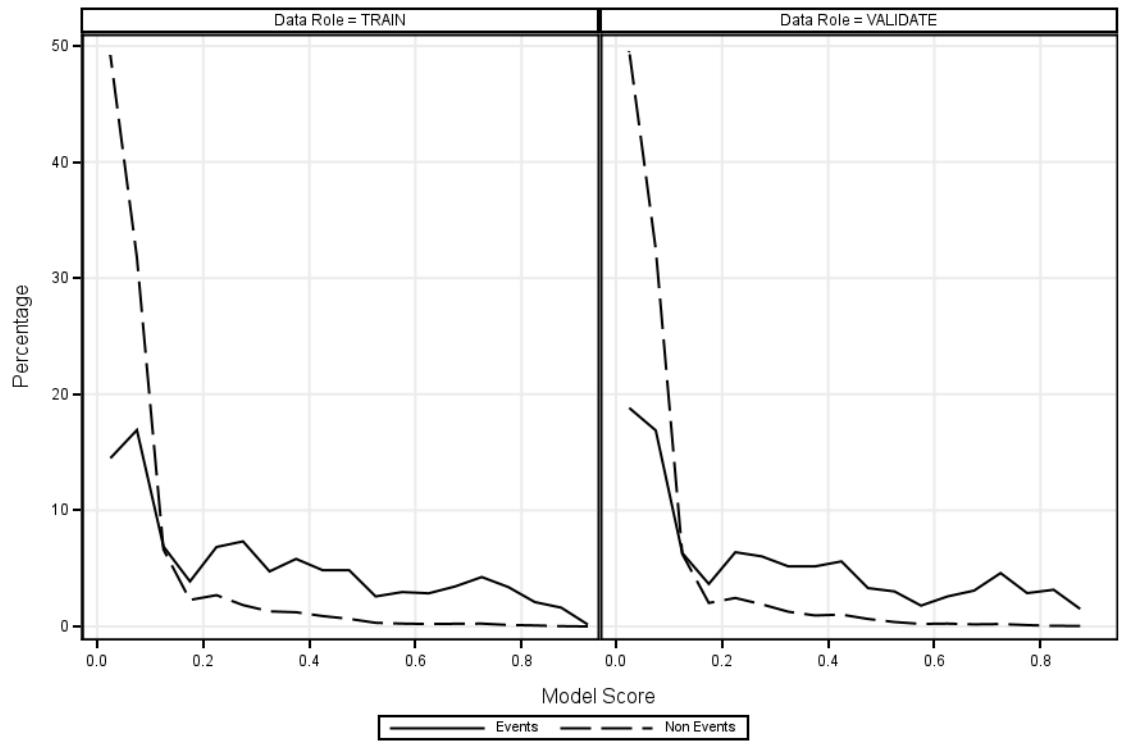
**SAS Enterprise Miner Report**  
 Node=Backward Regression  
 Model Assessment Scores where TARGET='y'



### SAS Enterprise Miner Report

Node=Backward Regression

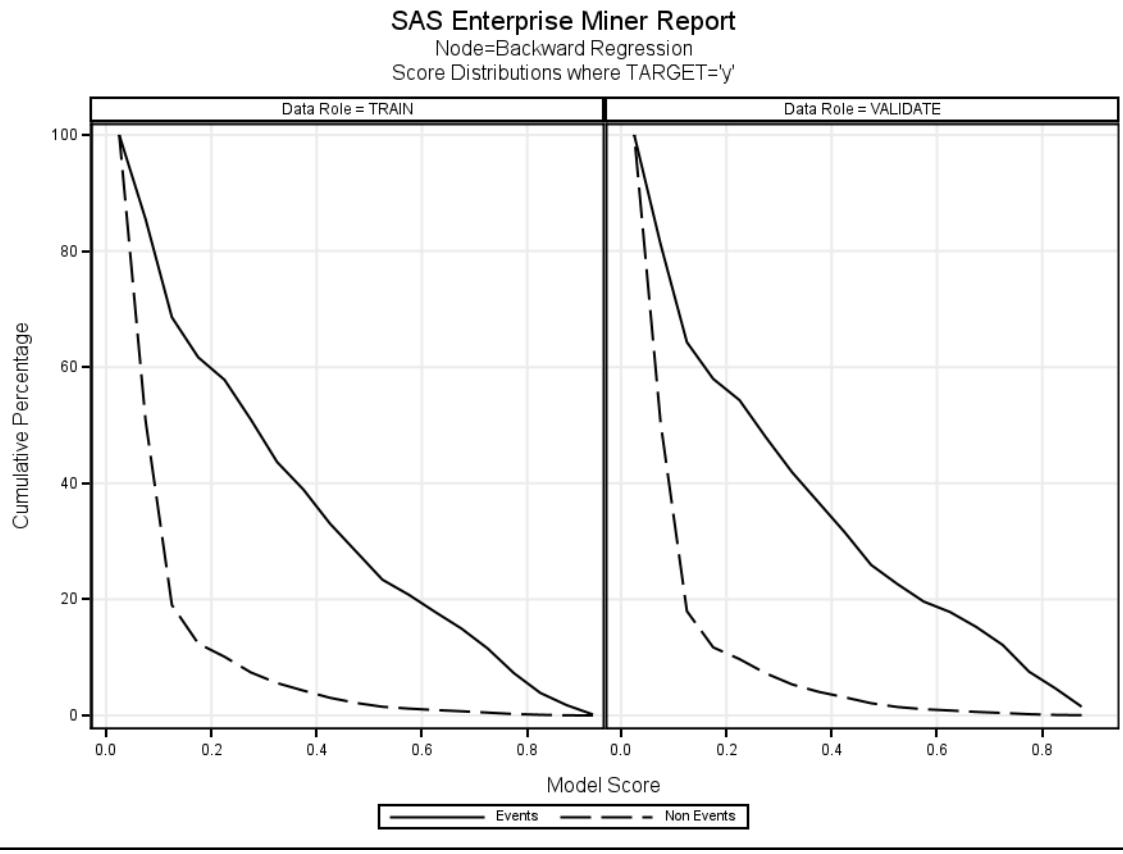
Score Distributions where TARGET='y'



### SAS Enterprise Miner Report

Node=Backward Regression

Score Distributions where TARGET='y'



**Node=Backward Regression**  
**Score Distributions**

Target Variable=y Data Role=TRAIN

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.90-0.95	3	0.1616	0.0000	0.162	0.000
0.85-0.90	30	1.6164	0.0274	1.778	0.027
0.80-0.85	39	2.1013	0.0889	3.879	0.116
0.75-0.80	63	3.3944	0.1300	7.274	0.246
0.70-0.75	79	4.2565	0.2463	11.530	0.493
0.65-0.70	64	3.4483	0.2326	14.978	0.725
0.60-0.65	53	2.8556	0.2121	17.834	0.937
0.55-0.60	55	2.9634	0.2463	20.797	1.183
0.50-0.55	48	2.5862	0.3147	23.384	1.498
0.45-0.50	90	4.8491	0.6567	28.233	2.155
0.40-0.45	90	4.8491	0.8962	33.082	3.051
0.35-0.40	108	5.8190	1.2245	38.901	4.276
0.30-0.35	88	4.7414	1.2998	43.642	5.575
0.25-0.30	136	7.3276	1.8402	50.970	7.416
0.20-0.25	127	6.8427	2.6953	57.813	10.111
0.15-0.20	72	3.8793	2.2849	61.692	12.396
0.10-0.15	128	6.8966	6.6357	68.588	19.031
0.05-0.10	314	16.9181	31.7691	85.506	50.800
0.00-0.05	269	14.4935	49.1996	100.000	100.000

Target Variable=y Data Role=VALIDATE

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.85-0.90	21	1.5086	0.0456	1.509	0.046
0.80-0.85	44	3.1609	0.0547	4.670	0.100
0.75-0.80	40	2.8736	0.1186	7.543	0.219
0.70-0.75	64	4.5977	0.2098	12.141	0.429
0.65-0.70	43	3.0891	0.1824	15.230	0.611
0.60-0.65	36	2.5862	0.2463	17.816	0.857
0.55-0.60	25	1.7960	0.2189	19.612	1.076
0.50-0.55	42	3.0172	0.3831	22.629	1.459
0.45-0.50	46	3.3046	0.6476	25.934	2.107
0.40-0.45	78	5.6034	1.0215	31.537	3.128
0.35-0.40	72	5.1724	0.9486	36.710	4.077
0.30-0.35	72	5.1724	1.2678	41.882	5.345
0.25-0.30	84	6.0345	1.9062	47.917	7.251
0.20-0.25	89	6.3937	2.4535	54.310	9.704
0.15-0.20	51	3.6638	2.0248	57.974	11.729
0.10-0.15	88	6.3218	6.2386	64.296	17.968
0.05-0.10	235	16.8822	32.4790	81.178	50.447
0.00-0.05	262	18.8218	49.5531	100.000	100.000

## 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	.		SISStay	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	NOMINAL	1	y
INPUT	INTERVAL	9	age campaign cons_conf_idx cons_price_idx emp_var_rate euribor3m nr_employed pdays previous
INPUT	NOMINAL	10	contact day_of_week default education housing job marital month poutcome

### Node=Stepwise Regression Model Fit Statistics

Target=y Target Label=y

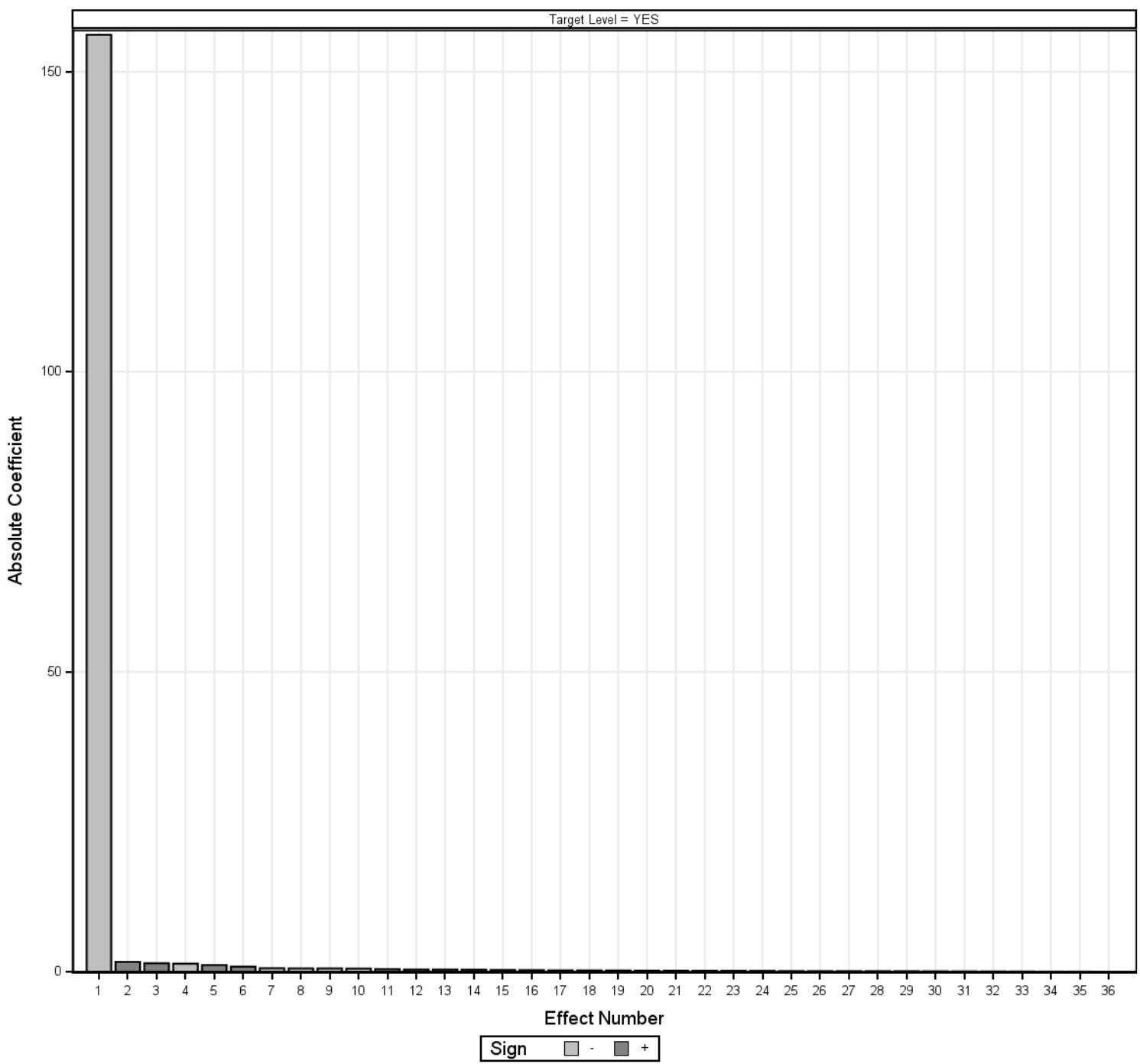
Label of Statistic	Train	Validation	Test
Akaike's Information Criterion	9098.38	.	.
Average Squared Error	0.08	0.08	0.08
Average Error Function	0.27	0.28	0.28
Degrees of Freedom for Error	16438.00	.	.
Model Degrees of Freedom	36.00	.	.
Total Degrees of Freedom	16474.00	.	.

Target=y Target Label=y

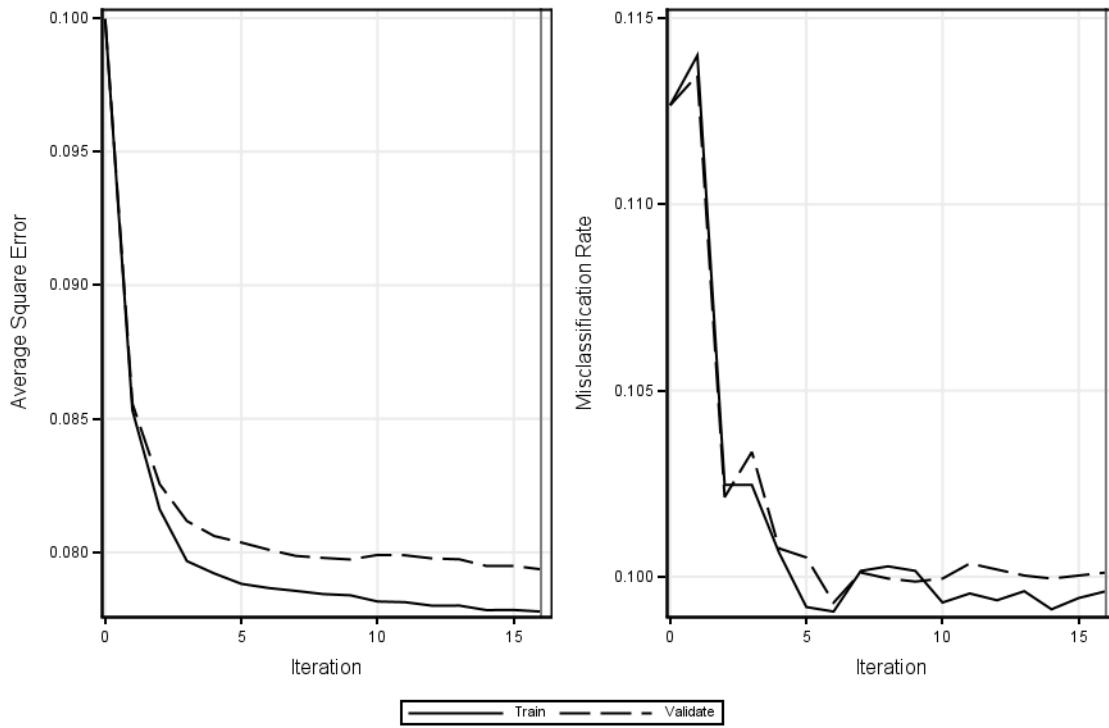
Label of Statistic	Train	Validation	Test
Divisor for ASE	32948.00	24712.00	24716.00
Error Function	9026.38	6967.37	6816.46
Final Prediction Error	0.08	.	.
Maximum Absolute Error	0.98	0.98	0.99
Mean Square Error	0.08	0.08	0.08
Sum of Frequencies	16474.00	12356.00	12358.00
Number of Estimate Weights	36.00	.	.
Root Average Sum of Squares	0.28	0.28	0.28
Root Final Prediction Error	0.28	.	.
Root Mean Squared Error	0.28	0.28	0.28
Schwarz's Bayesian Criterion	9375.93	.	.
Sum of Squared Errors	2562.90	1961.31	1926.34
Sum of Case Weights Times Freq	32948.00	24712.00	24716.00
Misclassification Rate	0.10	0.10	0.10

SAS Enterprise Miner Report  
Node=Stepwise Regression  
Regression Model Effects

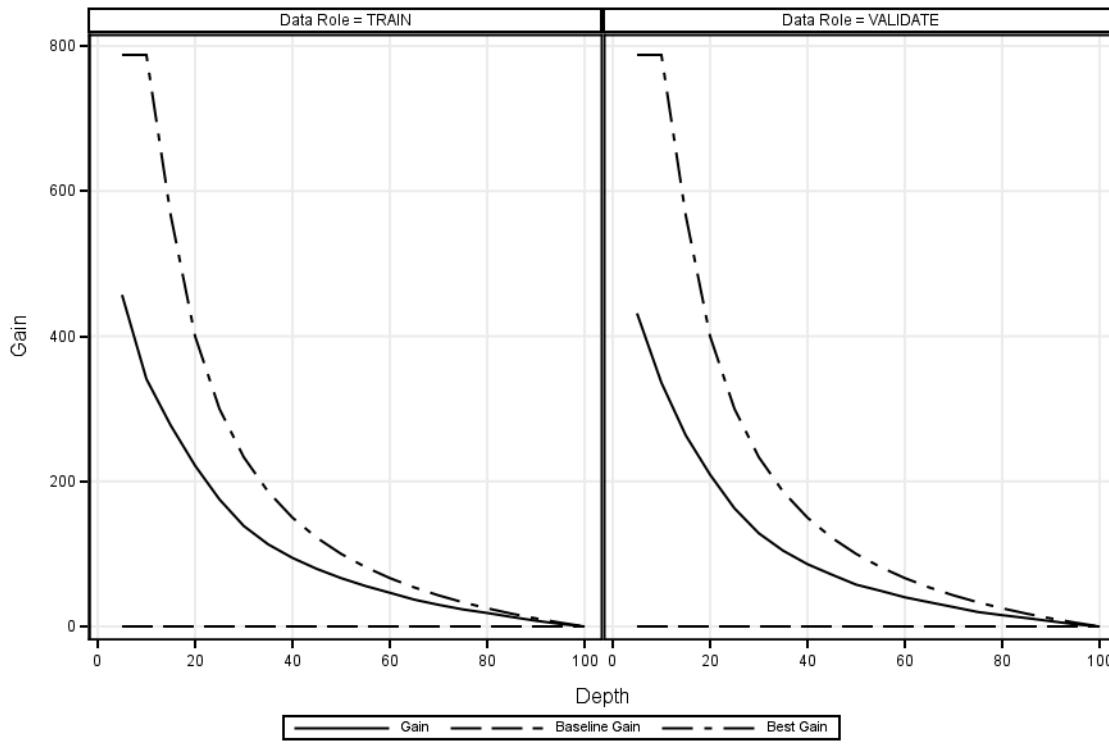
Target Level = YES



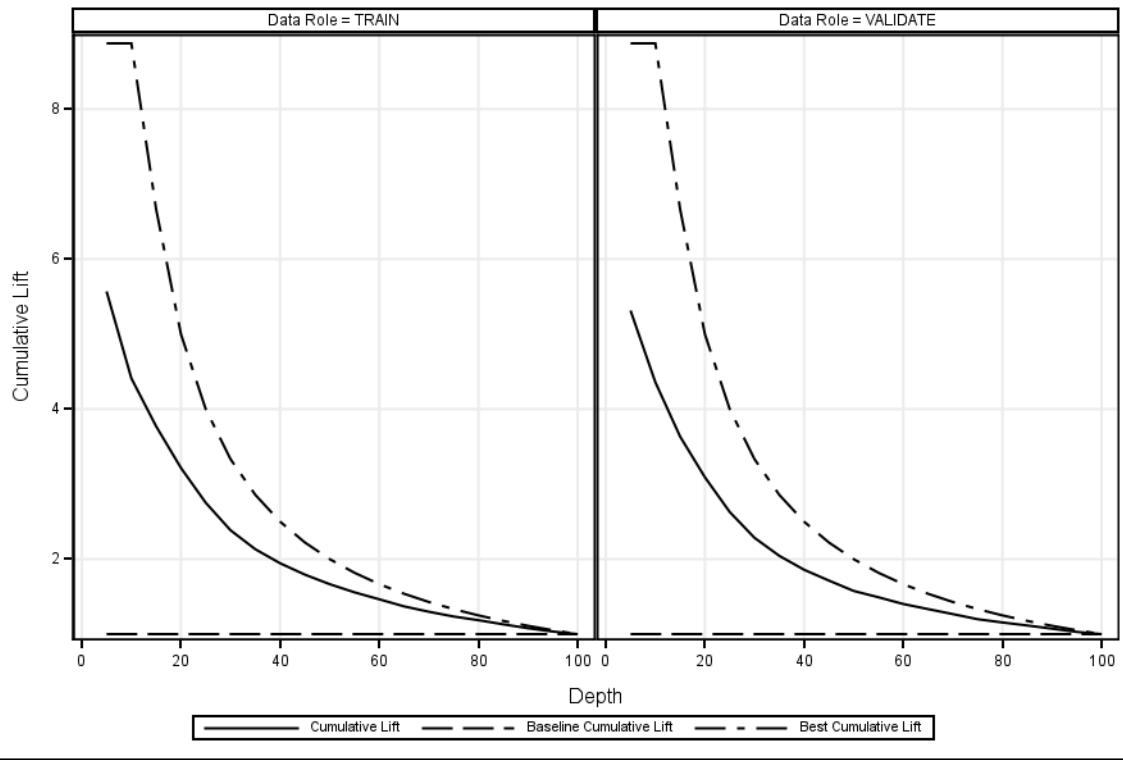
SAS Enterprise Miner Report  
Node=Stepwise Regression  
Model Iteration Plots



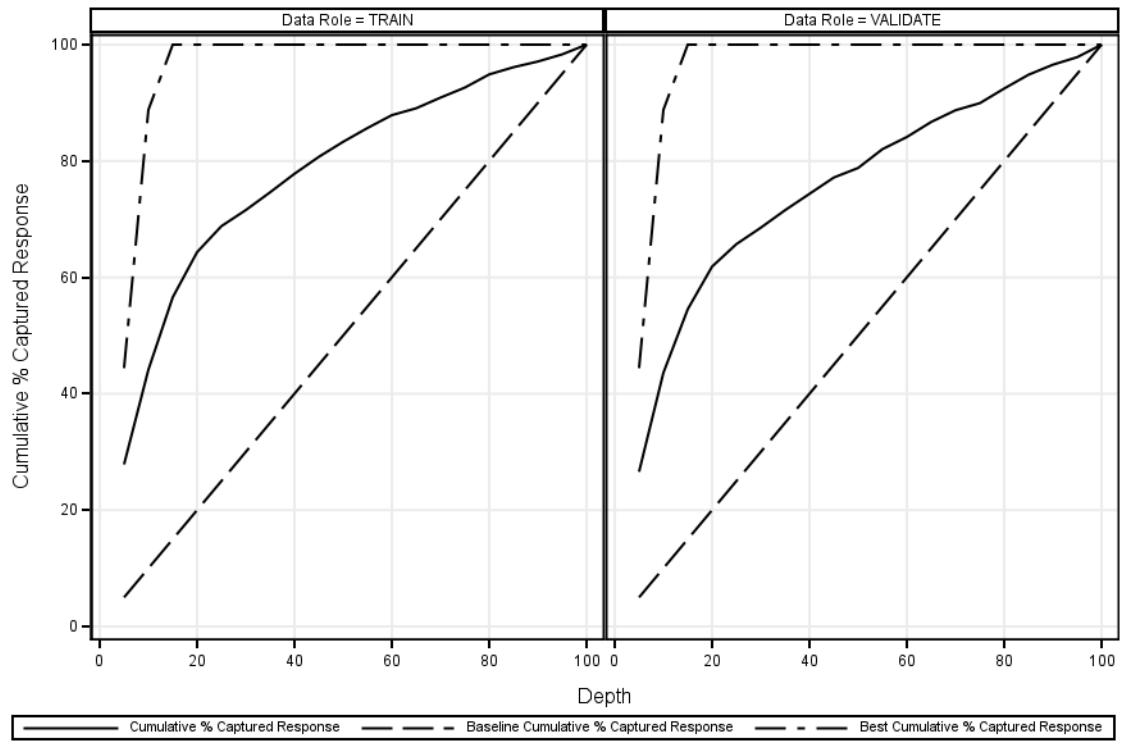
SAS Enterprise Miner Report  
Node=Stepwise Regression  
Model Assessment Scores where TARGET='y'



**SAS Enterprise Miner Report**  
 Node=Stepwise Regression  
 Model Assessment Scores where TARGET='y'



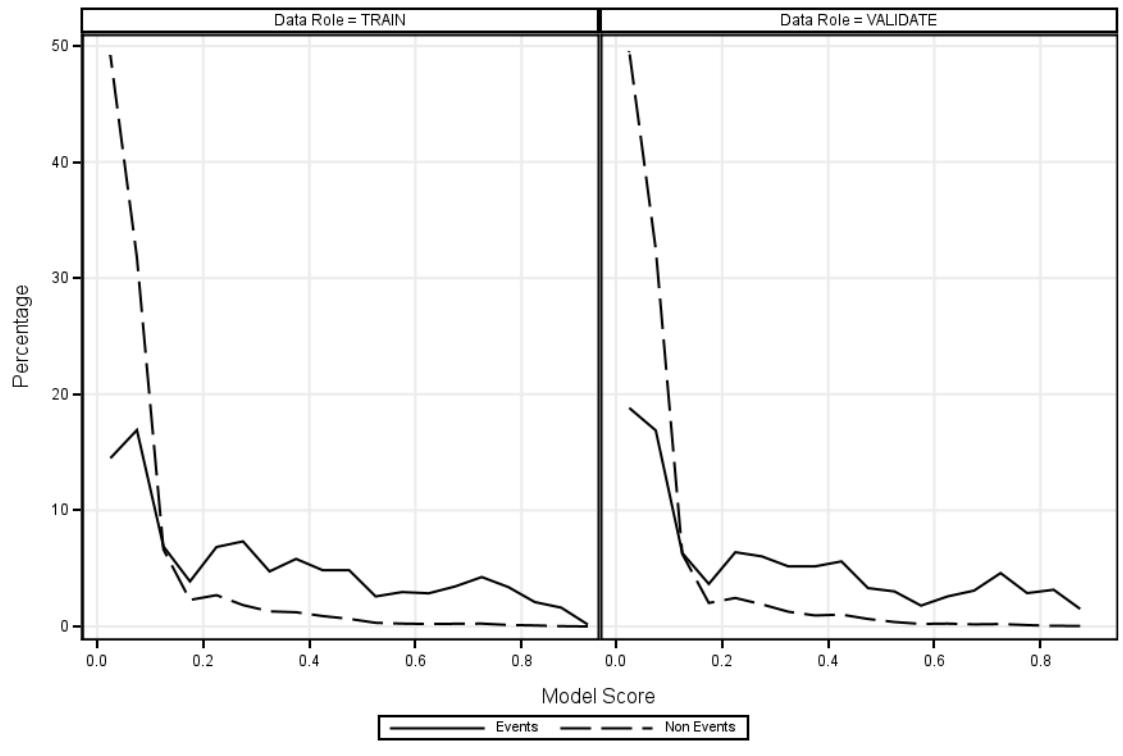
**SAS Enterprise Miner Report**  
 Node=Stepwise Regression  
 Model Assessment Scores where TARGET='y'



### SAS Enterprise Miner Report

Node=Stepwise Regression

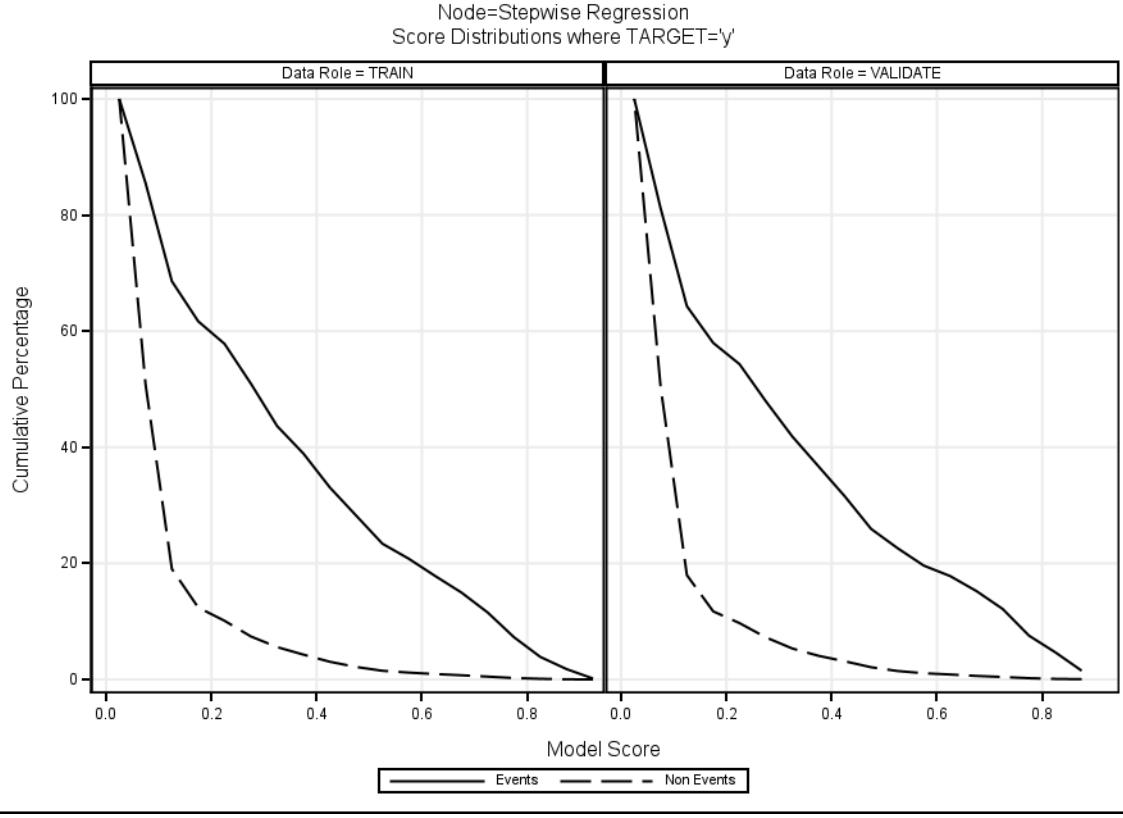
Score Distributions where TARGET='y'



### SAS Enterprise Miner Report

Node=Stepwise Regression

Score Distributions where TARGET='y'



**Node=Stepwise Regression**  
**Score Distributions**

Target Variable=y Data Role=TRAIN

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.90-0.95	3	0.1616	0.0000	0.162	0.000
0.85-0.90	30	1.6164	0.0274	1.778	0.027
0.80-0.85	39	2.1013	0.0889	3.879	0.116
0.75-0.80	63	3.3944	0.1300	7.274	0.246
0.70-0.75	79	4.2565	0.2463	11.530	0.493
0.65-0.70	64	3.4483	0.2326	14.978	0.725
0.60-0.65	53	2.8556	0.2121	17.834	0.937
0.55-0.60	55	2.9634	0.2463	20.797	1.183
0.50-0.55	48	2.5862	0.3147	23.384	1.498
0.45-0.50	90	4.8491	0.6567	28.233	2.155
0.40-0.45	90	4.8491	0.8962	33.082	3.051
0.35-0.40	108	5.8190	1.2245	38.901	4.276
0.30-0.35	88	4.7414	1.2998	43.642	5.575
0.25-0.30	136	7.3276	1.8402	50.970	7.416
0.20-0.25	127	6.8427	2.6953	57.813	10.111
0.15-0.20	72	3.8793	2.2849	61.692	12.396
0.10-0.15	128	6.8966	6.6357	68.588	19.031
0.05-0.10	314	16.9181	31.7691	85.506	50.800
0.00-0.05	269	14.4935	49.1996	100.000	100.000

Target Variable=y Data Role=VALIDATE

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.85-0.90	21	1.5086	0.0456	1.509	0.046
0.80-0.85	44	3.1609	0.0547	4.670	0.100
0.75-0.80	40	2.8736	0.1186	7.543	0.219
0.70-0.75	64	4.5977	0.2098	12.141	0.429
0.65-0.70	43	3.0891	0.1824	15.230	0.611
0.60-0.65	36	2.5862	0.2463	17.816	0.857
0.55-0.60	25	1.7960	0.2189	19.612	1.076
0.50-0.55	42	3.0172	0.3831	22.629	1.459
0.45-0.50	46	3.3046	0.6476	25.934	2.107
0.40-0.45	78	5.6034	1.0215	31.537	3.128
0.35-0.40	72	5.1724	0.9486	36.710	4.077
0.30-0.35	72	5.1724	1.2678	41.882	5.345
0.25-0.30	84	6.0345	1.9062	47.917	7.251
0.20-0.25	89	6.3937	2.4535	54.310	9.704
0.15-0.20	51	3.6638	2.0248	57.974	11.729
0.10-0.15	88	6.3218	6.2386	64.296	17.968
0.05-0.10	235	16.8822	32.4790	81.178	50.447
0.00-0.05	262	18.8218	49.5531	100.000	100.000

## SAS Enterprise Miner Report

### Node=Neural Network Summary

Node id = Neural  
 Node label = Neural Network  
 Meta path = Ids => Part => Neural  
 Notes =

### Node=Neural Network Properties

Property	Value	Default	Property	Value	Default	Property	Value	Default
Component	NeuralNetwork		Hidden	3		Prelim	Y	
AbsConvValue	-1.34078E154	-7.237006E75	HiddenActivation	DEFAULT		PrelimMaxTime	1 HOUR	
AbsFTime	1		HiddenBias	Y		PrelimMaxiter	10	
AbsFValue	0		HiddenCombFunction	DEFAULT		PrelimOutest		
AbsGTime	1		HiddenUnits	N		PreliminaryRuns	5	
AbsGValue	0.00001		InitialDs			RandDist	NORMAL	
AbsXTime	1		InitialSeed	12345		RandLoc	0	
AbsXValue	1E-8		InputStandardization	STD		RandScale	0.1	
Accelerate	1.2		Learn	0.1		Residuals	Y	
AddHidden	Y		MaxLearn	50		Standardizations	N	
CodefileNoRes			MaxMomentum	1.75		SuppressOutput	N	
CodefileRes			Maxiter	50		TargetActivation	DEFAULT	
ConvDefaults	Y		Maxtime	4 HOURS		TargetBias	Y	
Decelerate	0.5		MinLearn	0.00001		TargetCombFunction	DEFAULT	
DirectConnection	N		ModelSelectionCriterion	PROFIT/LOSS		TargetError	DEFAULT	
FConvTime	1		Momentum	0		Tilt	0	
FConvValue	0		NetworkArchitecture	MLP		TrainCode		
GConvTime	1		Outest			TrainingTechnique	DEFAULT	
GConvValue	1E-6		Outfit			UseEstimates	N	

### Node=Neural Network Variable Summary

Role	Level	Frequency		Name
		Count	Name	
TARGET	NOMINAL	1	y	
INPUT	INTERVAL	9	age campaign cons_conf_idx cons_price_idx emp_var_rate euribor3m nr_employed pdays previous	
INPUT	NOMINAL	10	contact day_of_week default education housing job loan marital month poutcome	

### Node=Neural Network Model Fit Statistics

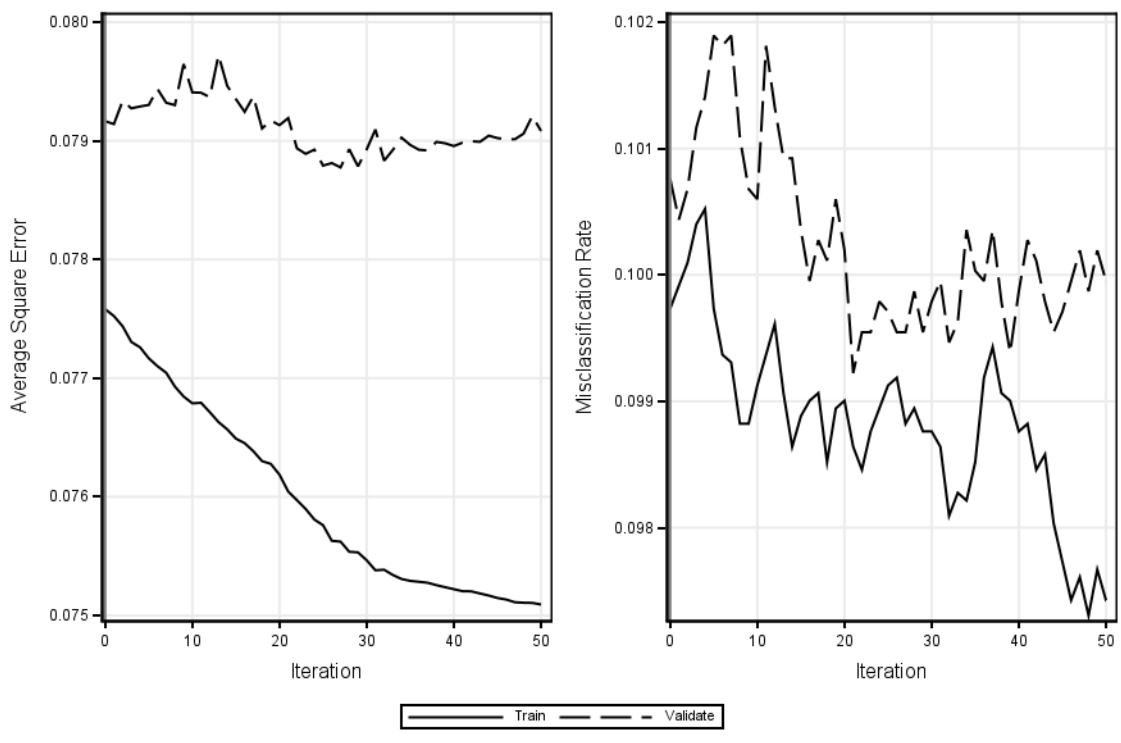
Target=y Target Label=y

Label of Statistic	Train	Validation	Test
Total Degrees of Freedom	16474.00	.	.
Degrees of Freedom for Error	16311.00	.	.
Model Degrees of Freedom	163.00	.	.
Number of Estimated Weights	163.00	.	.
Akaike's Information Criterion	9321.72	.	.

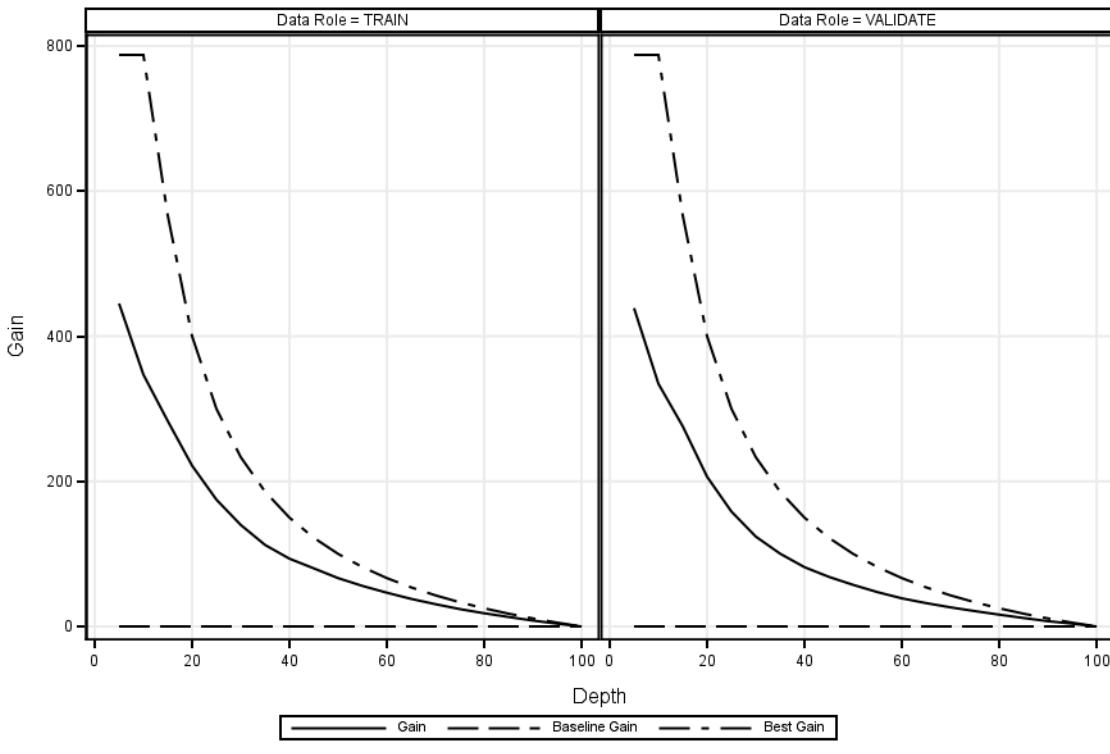
Target=y Target Label=y

Label of Statistic	Train	Validation	Test
Schwarz's Bayesian Criterion	10578.37	.	.
Average Squared Error	0.08	0.08	0.08
Maximum Absolute Error	0.98	0.98	0.98
Divisor for ASE	32948.00	24712.00	24716.00
Sum of Frequencies	16474.00	12356.00	12358.00
Root Average Squared Error	0.28	0.28	0.28
Sum of Squared Errors	2556.16	1956.32	1945.29
Sum of Case Weights Times Freq	32948.00	24712.00	24716.00
Final Prediction Error	0.08	.	.
Mean Squared Error	0.08	0.08	0.08
Root Final Prediction Error	0.28	.	.
Root Mean Squared Error	0.28	0.28	0.28
Average Error Function	0.27	0.28	0.28
Error Function	8995.72	6948.99	6885.60
Misclassification Rate	0.10	0.10	0.10
Number of Wrong Classifications	1643.00	1245.00	1237.00

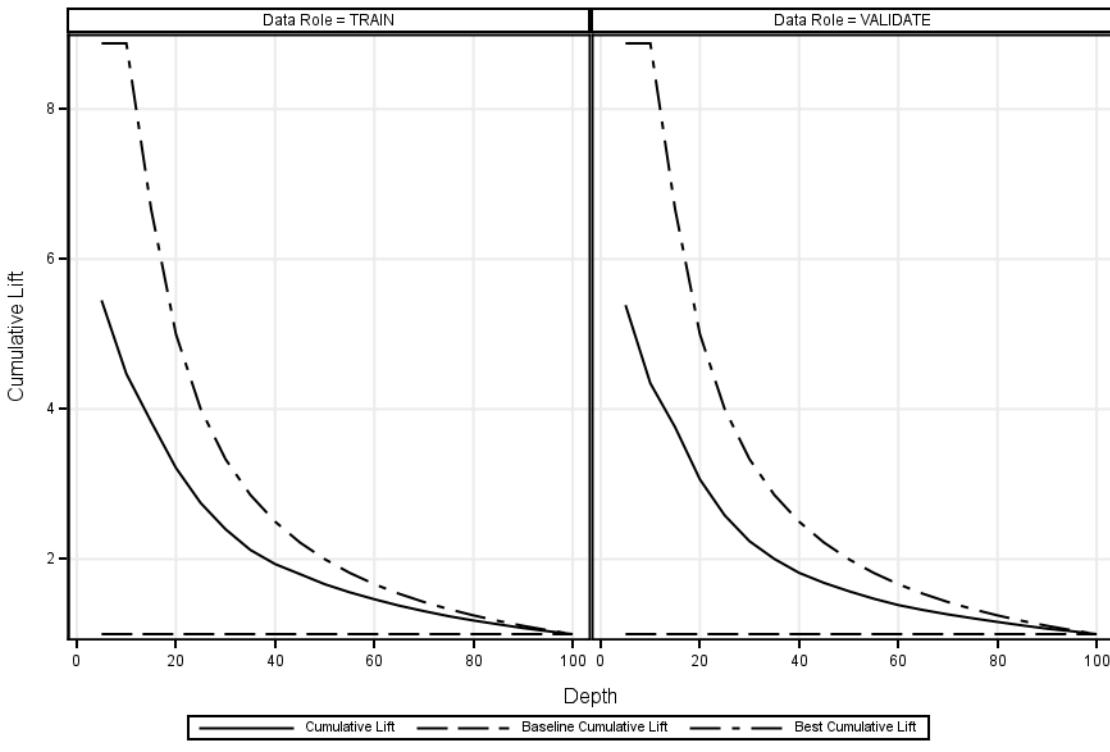
SAS Enterprise Miner Report  
Node=Neural Network  
Model Iteration Plots



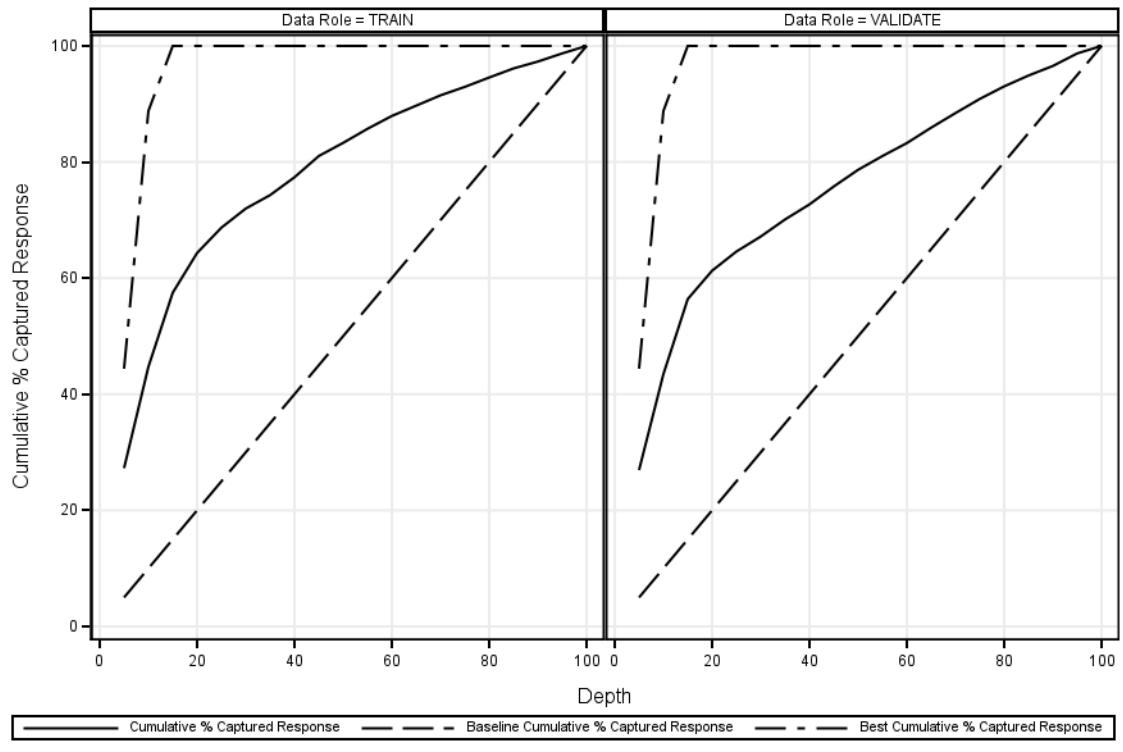
**SAS Enterprise Miner Report**  
 Node=Neural Network  
 Model Assessment Scores where TARGET='y'



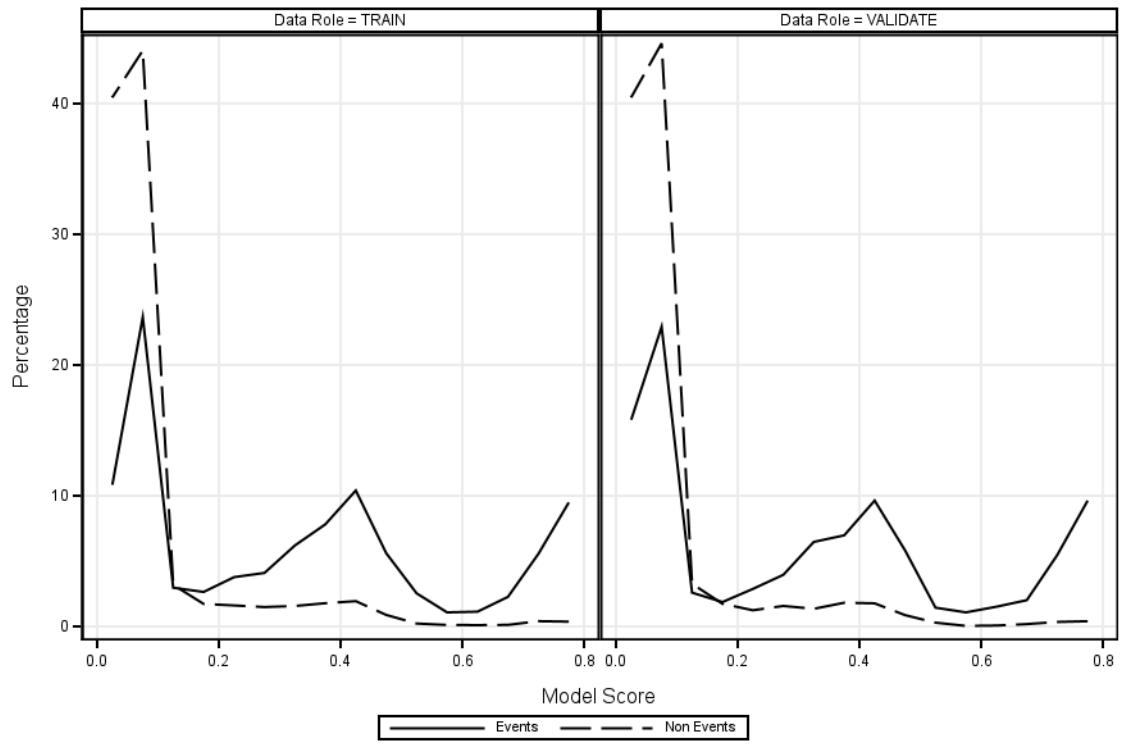
**SAS Enterprise Miner Report**  
 Node=Neural Network  
 Model Assessment Scores where TARGET='y'



**SAS Enterprise Miner Report**  
 Node=Neural Network  
 Model Assessment Scores where TARGET='y'



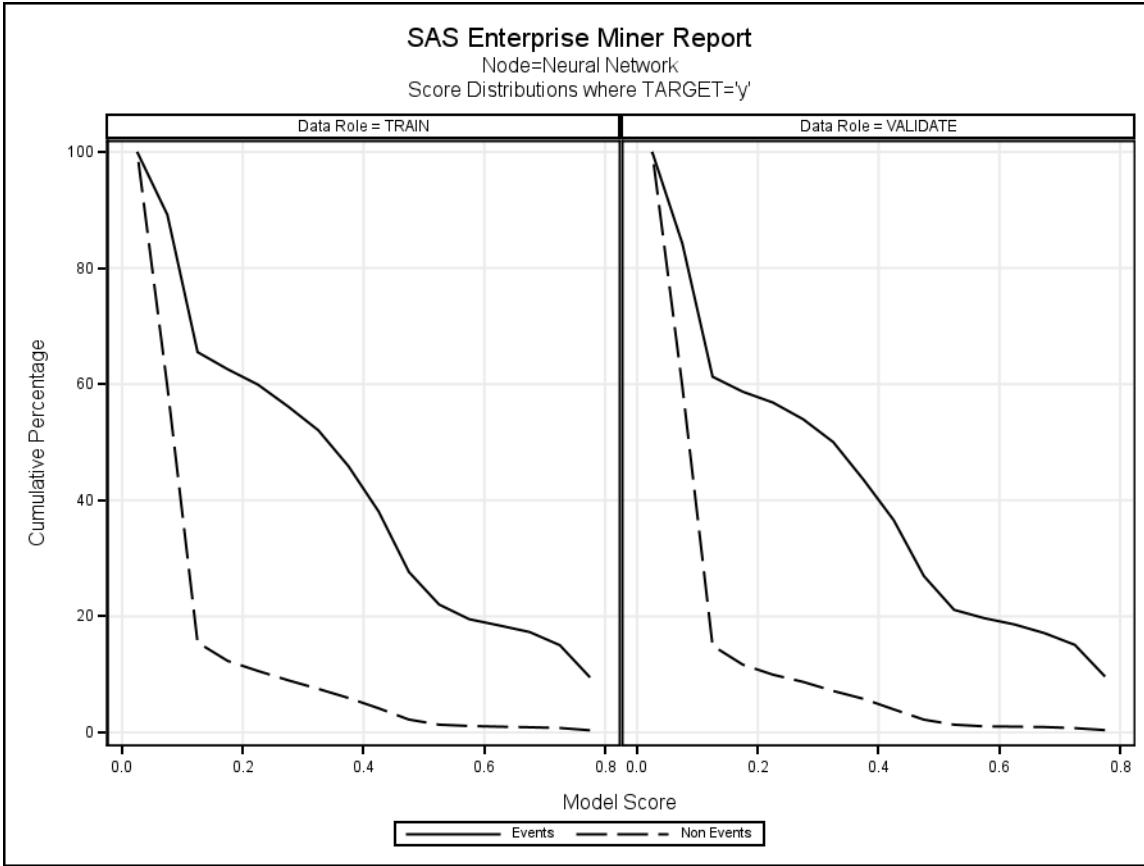
**SAS Enterprise Miner Report**  
 Node=Neural Network  
 Score Distributions where TARGET='y'



### SAS Enterprise Miner Report

Node=Neural Network

Score Distributions where TARGET='y'



### Node=Neural Network

#### Score Distributions

Target Variable=y Data Role=TRAIN

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.75-0.80	176	9.4828	0.3694	9.483	0.369
0.70-0.75	103	5.5496	0.4036	15.032	0.773
0.65-0.70	42	2.2629	0.1231	17.295	0.896
0.60-0.65	21	1.1315	0.1026	18.427	0.999
0.55-0.60	20	1.0776	0.1163	19.504	1.115
0.50-0.55	47	2.5323	0.2257	22.037	1.341
0.45-0.50	104	5.6034	0.8825	27.640	2.223
0.40-0.45	193	10.3987	1.9360	38.039	4.159
0.35-0.40	145	7.8125	1.7786	45.851	5.938
0.30-0.35	115	6.1961	1.5666	52.047	7.504
0.25-0.30	76	4.0948	1.4845	56.142	8.989
0.20-0.25	70	3.7716	1.6076	59.914	10.597
0.15-0.20	49	2.6401	1.7239	62.554	12.320
0.10-0.15	55	2.9634	3.1810	65.517	15.501
0.05-0.10	439	23.6530	44.0416	89.170	59.543
0.00-0.05	201	10.8297	40.4570	100.000	100.000

Target Variable=y Data Role=VALIDATE

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.75-0.80	134	9.6264	0.4013	9.626	0.401
0.70-0.75	76	5.4598	0.3466	15.086	0.748
0.65-0.70	28	2.0115	0.1824	17.098	0.930
0.60-0.65	21	1.5086	0.0730	18.606	1.003
0.55-0.60	15	1.0776	0.0456	19.684	1.049
0.50-0.55	20	1.4368	0.2919	21.121	1.341
0.45-0.50	81	5.8190	0.8665	26.940	2.207
0.40-0.45	134	9.6264	1.7694	36.566	3.977
0.35-0.40	97	6.9684	1.8150	43.534	5.792
0.30-0.35	90	6.4655	1.3499	50.000	7.142
0.25-0.30	55	3.9511	1.5688	53.951	8.710
0.20-0.25	40	2.8736	1.2404	56.825	9.951
0.15-0.20	26	1.8678	1.7329	58.693	11.684
0.10-0.15	36	2.5862	3.2652	61.279	14.949
0.05-0.10	319	22.9167	44.5914	84.195	59.540
0.00-0.05	220	15.8046	40.4597	100.000	100.000

## SAS Enterprise Miner Report

### Node=Neural Network 5HU Summary

Node id = Neural2  
 Node label = Neural Network 5HU  
 Meta path = Ids => Part => Neural2  
 Notes =

### Node=Neural Network 5HU Properties

Property	Value	Default	Property	Value	Default	Property	Value	Default
Component	NeuralNetwork		Hidden	5	3	Prelim	Y	
AbsConvValue	-1.34078E154	-7.237006E75	HiddenActivation	DEFAULT		PrelimMaxTime	1 HOUR	
AbsFTime	1		HiddenBias	Y		PrelimMaxiter	10	
AbsFValue	0		HiddenCombFunction	DEFAULT		PrelimOutest		
AbsGTime	1		HiddenUnits	N		PreliminaryRuns	5	
AbsGValue	0.00001		InitialDs			RandDist	NORMAL	
AbsXTime	1		InitialSeed	12345		RandLoc	0	
AbsXValue	1E-8		InputStandardization	STD		RandScale	0.1	
Accelerate	1.2		Learn	0.1		Residuals	Y	
AddHidden	Y		MaxLearn	50		Standardizations	N	
CodefileNoRes			MaxMomentum	1.75		SuppressOutput	N	
CodefileRes			Maxiter	50		TargetActivation	DEFAULT	
ConvDefaults	Y		Maxtime	4 HOURS		TargetBias	Y	
Decelerate	0.5		MinLearn	0.00001		TargetCombFunction	DEFAULT	
DirectConnection	N		ModelSelectionCriterion	PROFIT/LOSS		TargetError	DEFAULT	
FConvTime	1		Momentum	0		Tilt	0	
FConvValue	0		NetworkArchitecture	MLP		TrainCode		
GConvTime	1		Outest			TrainingTechnique	DEFAULT	
GConvValue	1E-6		Outfit			UseEstimates	N	

### Node=Neural Network 5HU Variable Summary

Role	Level	Frequency		Name
		Count	Name	
TARGET	NOMINAL	1	y	
INPUT	INTERVAL	9	age campaign cons_conf_idx cons_price_idx emp_var_rate euribor3m nr_employed pdays previous	
INPUT	NOMINAL	10	contact day_of_week default education housing job loan marital month poutcome	

### Node=Neural Network 5HU Model Fit Statistics

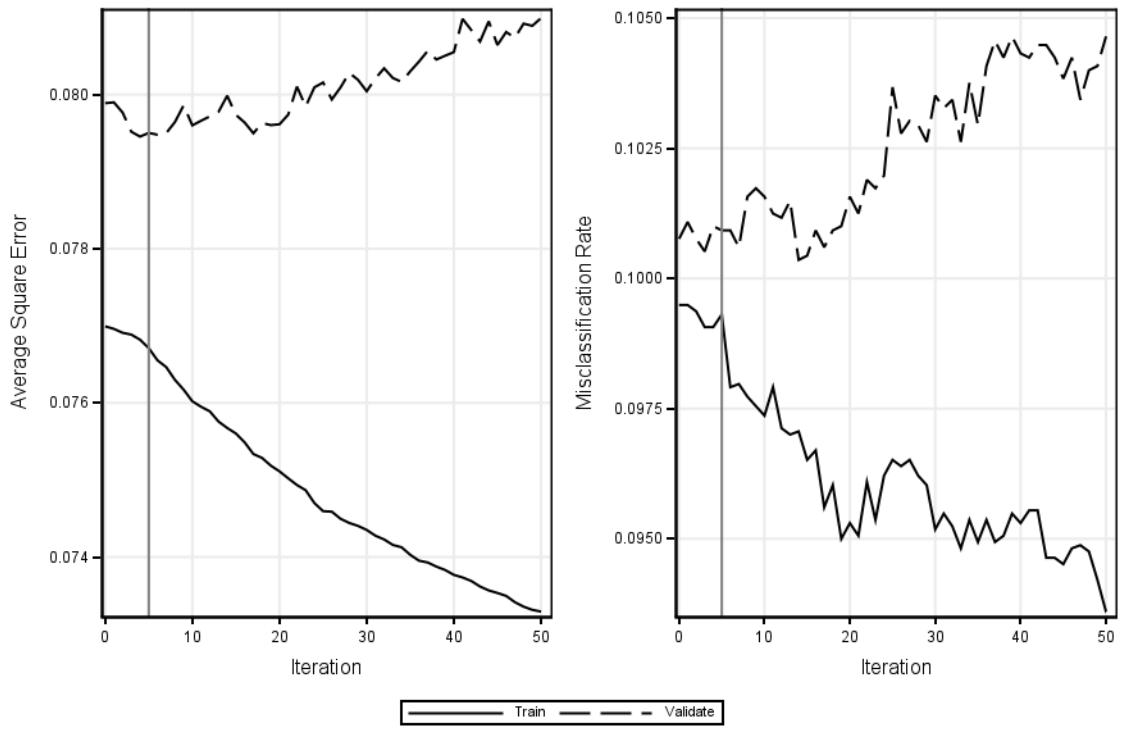
Target=y Target Label=y

Label of Statistic	Train	Validation	Test
Total Degrees of Freedom	16474.00	.	.
Degrees of Freedom for Error	16203.00	.	.
Model Degrees of Freedom	271.00	.	.
Number of Estimated Weights	271.00	.	.
Akaike's Information Criterion	9441.63	.	.

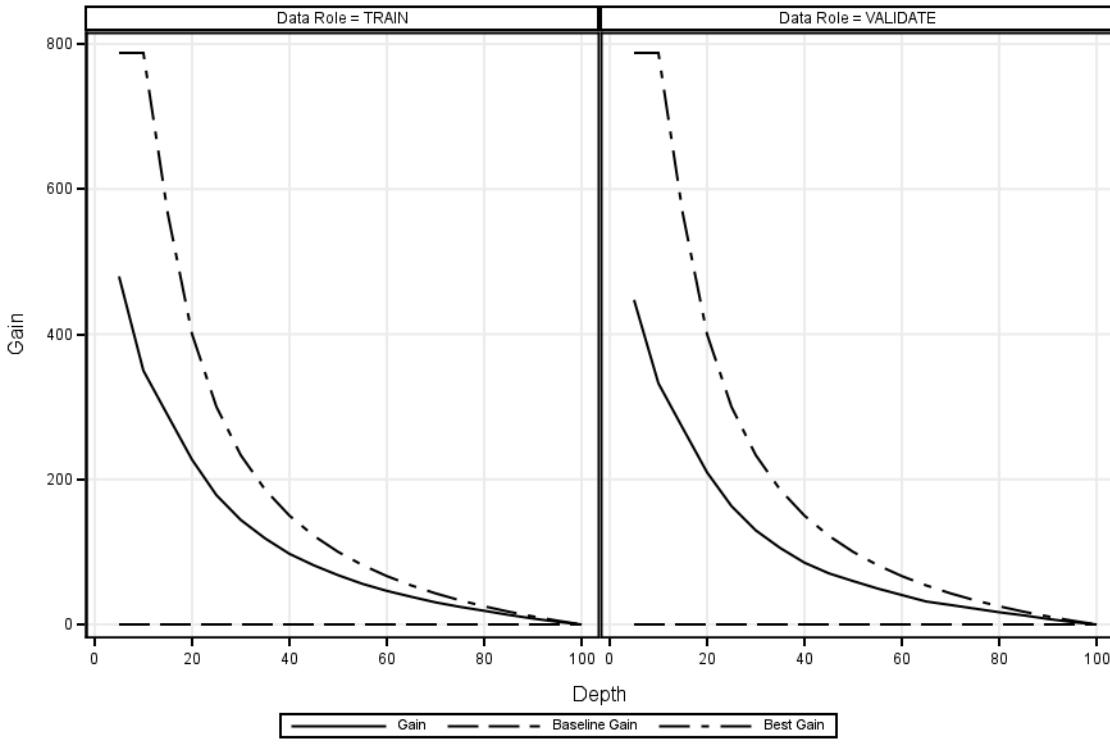
Target=y Target Label=y

Label of Statistic	Train	Validation	Test
Schwarz's Bayesian Criterion	11530.91		
Average Squared Error	0.08	0.08	0.08
Maximum Absolute Error	0.98	0.98	0.98
Divisor for ASE	32948.00	24712.00	24716.00
Sum of Frequencies	16474.00	12356.00	12358.00
Root Average Squared Error	0.28	0.28	0.28
Sum of Squared Errors	2527.44	1964.66	1934.31
Sum of Case Weights Times Freq	32948.00	24712.00	24716.00
Final Prediction Error	0.08		
Mean Squared Error	0.08	0.08	0.08
Root Final Prediction Error	0.28		
Root Mean Squared Error	0.28	0.28	0.28
Average Error Function	0.27	0.28	0.28
Error Function	8899.63	6964.14	6855.61
Misclassification Rate	0.10	0.10	0.10
Number of Wrong Classifications	1636.00	1247.00	1225.00

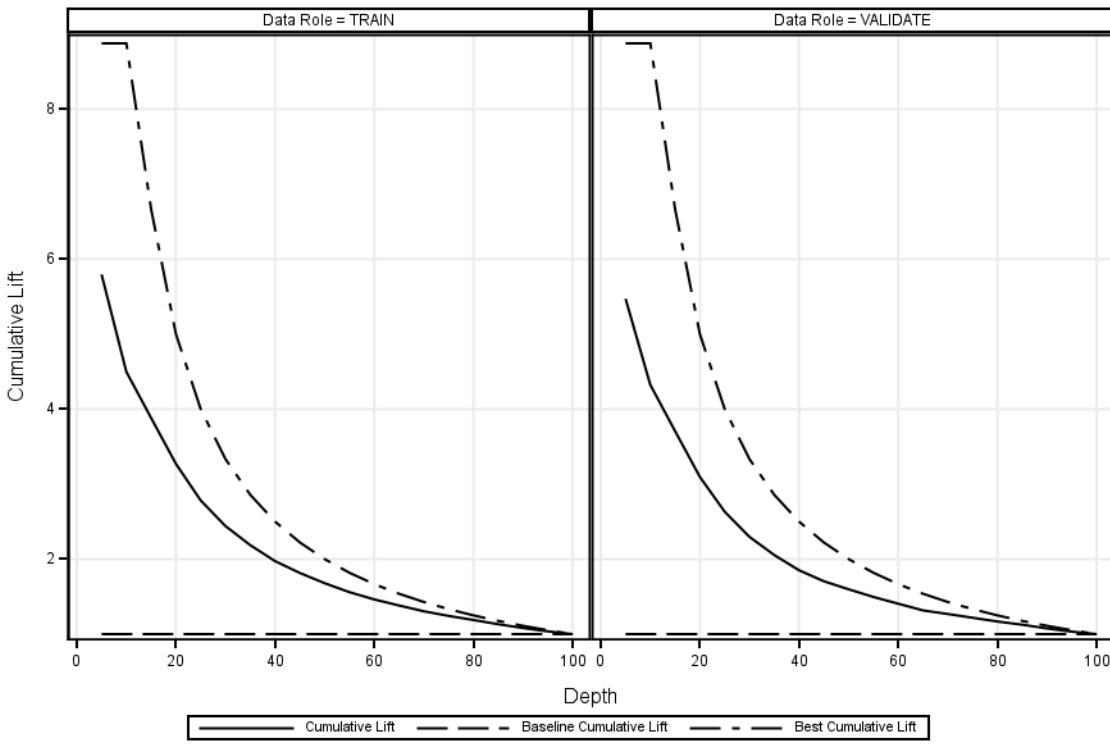
SAS Enterprise Miner Report  
Node=Neural Network 5HU  
Model Iteration Plots



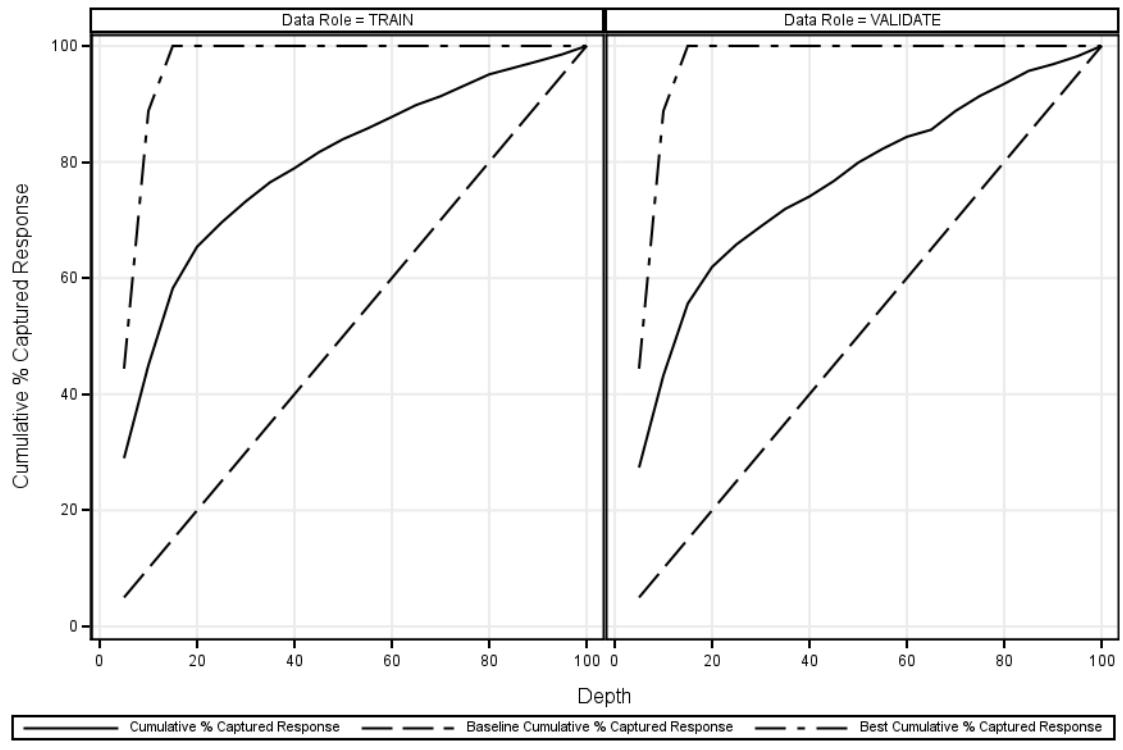
**SAS Enterprise Miner Report**  
 Node=Neural Network 5HU  
 Model Assessment Scores where TARGET='y'



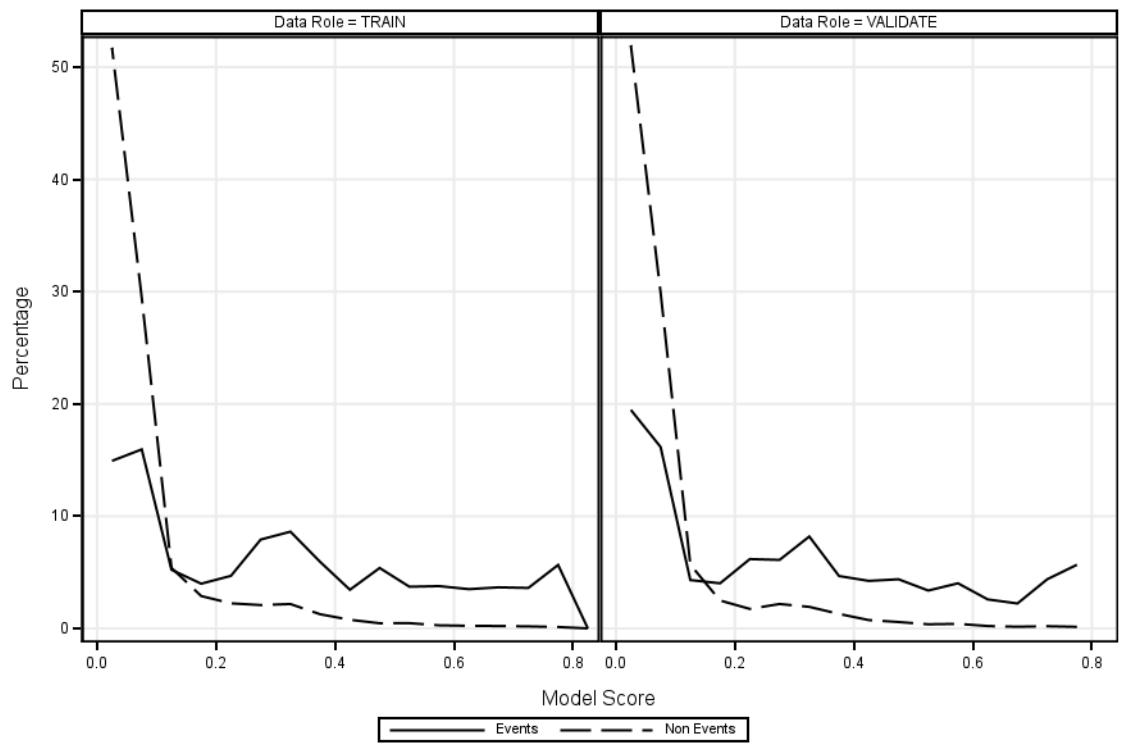
**SAS Enterprise Miner Report**  
 Node=Neural Network 5HU  
 Model Assessment Scores where TARGET='y'



**SAS Enterprise Miner Report**  
 Node=Neural Network 5HU  
 Model Assessment Scores where TARGET='y'



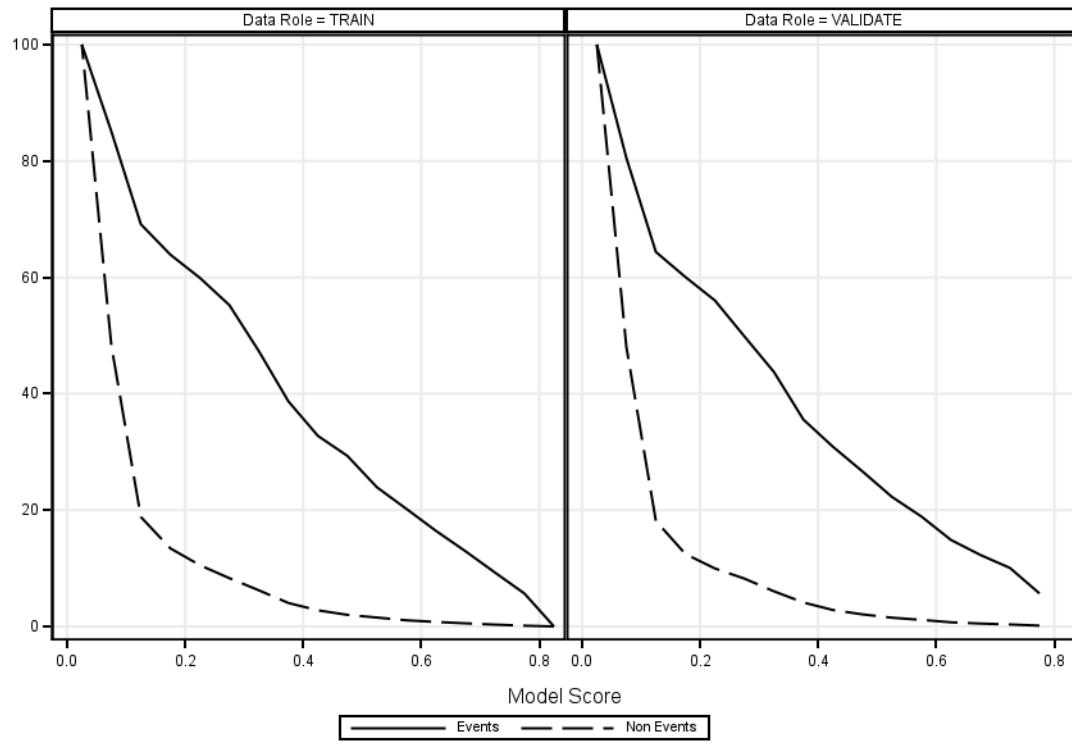
**SAS Enterprise Miner Report**  
 Node=Neural Network 5HU  
 Score Distributions where TARGET='y'



### SAS Enterprise Miner Report

Node=Neural Network 5HU

Score Distributions where TARGET='y'



#### Node=Neural Network 5HU

#### Score Distributions

Target Variable=y Data Role=TRAIN

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.80-0.85	0	0.0000	0.0068	0.000	0.007
0.75-0.80	105	5.6573	0.1300	5.657	0.137
0.70-0.75	67	3.6099	0.1847	9.267	0.322
0.65-0.70	68	3.6638	0.2189	12.931	0.540
0.60-0.65	65	3.5022	0.2394	16.433	0.780
0.55-0.60	70	3.7716	0.2805	20.205	1.060
0.50-0.55	69	3.7177	0.4720	23.922	1.532
0.45-0.50	100	5.3879	0.4652	29.310	1.998
0.40-0.45	64	3.4483	0.7730	32.759	2.771
0.35-0.40	110	5.9267	1.2656	38.685	4.036
0.30-0.35	160	8.6207	2.1754	47.306	6.212
0.25-0.30	147	7.9203	2.0865	55.226	8.298
0.20-0.25	87	4.6875	2.2370	59.914	10.535
0.15-0.20	74	3.9871	2.8869	63.901	13.422
0.10-0.15	97	5.2263	5.3975	69.127	18.819
0.05-0.10	296	15.9483	29.4637	85.075	48.283
0.00-0.05	277	14.9246	51.7171	100.000	100.000

Target Variable=y Data Role=VALIDATE

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.75-0.80	79	5.6753	0.1459	5.675	0.146
0.70-0.75	61	4.3822	0.2007	10.057	0.347
0.65-0.70	31	2.2270	0.1551	12.284	0.502
0.60-0.65	36	2.5862	0.2189	14.871	0.721
0.55-0.60	56	4.0230	0.4104	18.894	1.131
0.50-0.55	47	3.3764	0.3740	22.270	1.505
0.45-0.50	61	4.3822	0.5746	26.652	2.080
0.40-0.45	59	4.2385	0.7479	30.891	2.827
0.35-0.40	65	4.6695	1.2951	35.560	4.123
0.30-0.35	114	8.1897	1.9245	43.750	6.047
0.25-0.30	85	6.1063	2.1799	49.856	8.227
0.20-0.25	86	6.1782	1.7421	56.034	9.969
0.15-0.20	56	4.0230	2.4900	60.057	12.459
0.10-0.15	60	4.3103	5.6822	64.368	18.141
0.05-0.10	225	16.1638	29.9252	80.532	48.066
0.00-0.05	271	19.4684	51.9336	100.000	100.000

## SAS Enterprise Miner Report

### Node=Neural Network 9HU Summary

Node id = Neural3  
 Node label = Neural Network 9HU  
 Meta path = Ids => Part => Neural3  
 Notes =

### Node=Neural Network 9HU Properties

Property	Value	Default	Property	Value	Default	Property	Value	Default
Component	NeuralNetwork		Hidden	9	3	Prelim	Y	
AbsConvValue	-1.34078E154	-7.237006E75	HiddenActivation	DEFAULT		PrelimMaxTime	1 HOUR	
AbsFTime	1		HiddenBias	Y		PrelimMaxiter	10	
AbsFValue	0		HiddenCombFunction	DEFAULT		PrelimOutest		
AbsGTime	1		HiddenUnits	N		PreliminaryRuns	5	
AbsGValue	0.00001		InitialDs			RandDist	NORMAL	
AbsXTime	1		InitialSeed	12345		RandLoc	0	
AbsXValue	1E-8		InputStandardization	STD		RandScale	0.1	
Accelerate	1.2		Learn	0.1		Residuals	Y	
AddHidden	Y		MaxLearn	50		Standardizations	N	
CodefileNoRes			MaxMomentum	1.75		SuppressOutput	N	
CodefileRes			Maxiter	50		TargetActivation	DEFAULT	
ConvDefaults	Y		Maxtime	4 HOURS		TargetBias	Y	
Decelerate	0.5		MinLearn	0.00001		TargetCombFunction	DEFAULT	
DirectConnection	N		ModelSelectionCriterion	PROFIT/LOSS		TargetError	DEFAULT	
FConvTime	1		Momentum	0		Tilt	0	
FConvValue	0		NetworkArchitecture	MLP		TrainCode		
GConvTime	1		Outest			TrainingTechnique	DEFAULT	
GConvValue	1E-6		Outfit			UseEstimates	N	

### Node=Neural Network 9HU Variable Summary

Role	Level	Frequency		Name
		Count	Name	
TARGET	NOMINAL	1	y	
INPUT	INTERVAL	9	age campaign cons_conf_idx cons_price_idx emp_var_rate euribor3m nr_employed pdays previous	
INPUT	NOMINAL	10	contact day_of_week default education housing job loan marital month poutcome	

### Node=Neural Network 9HU Model Fit Statistics

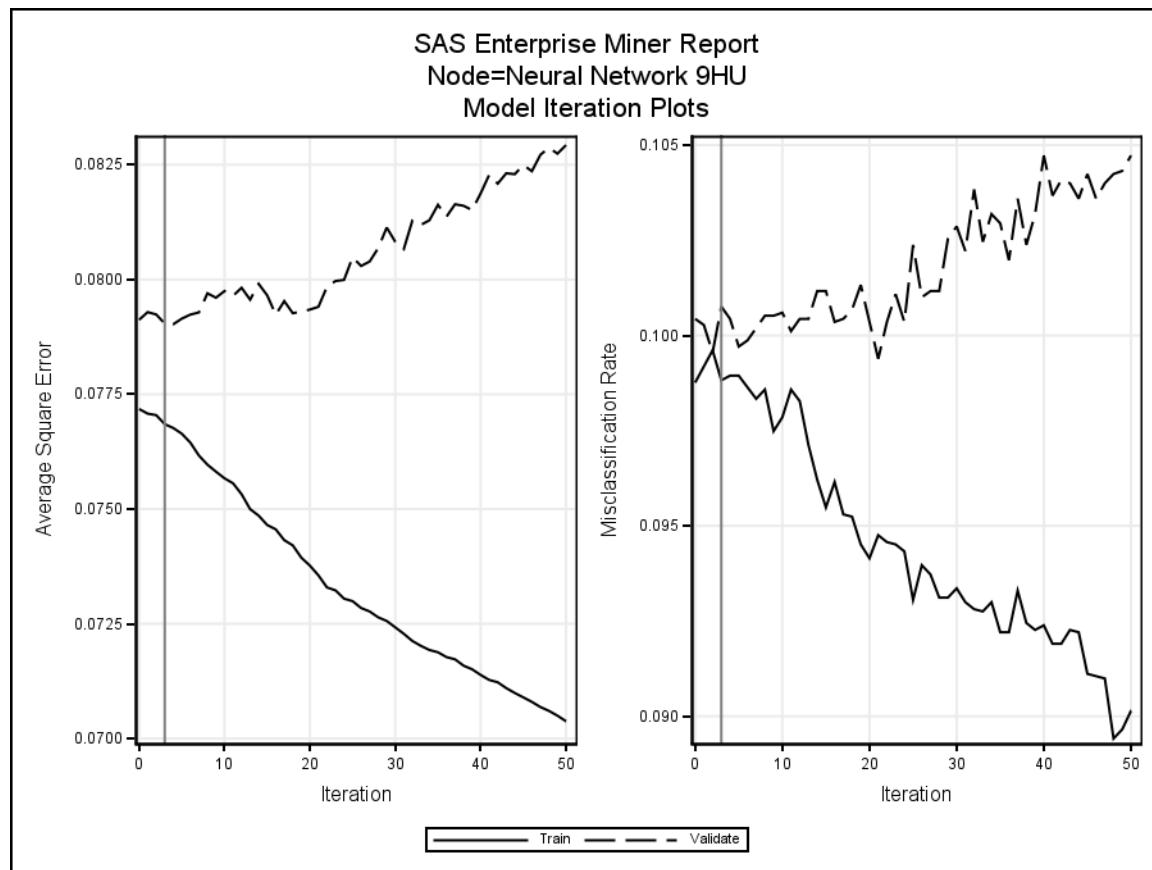
Target=y Target Label=y

Label of Statistic	Train	Validation	Test
Total Degrees of Freedom	16474.00	.	.
Degrees of Freedom for Error	15987.00	.	.
Model Degrees of Freedom	487.00	.	.
Number of Estimated Weights	487.00	.	.
Akaike's Information Criterion	9882.26	.	.

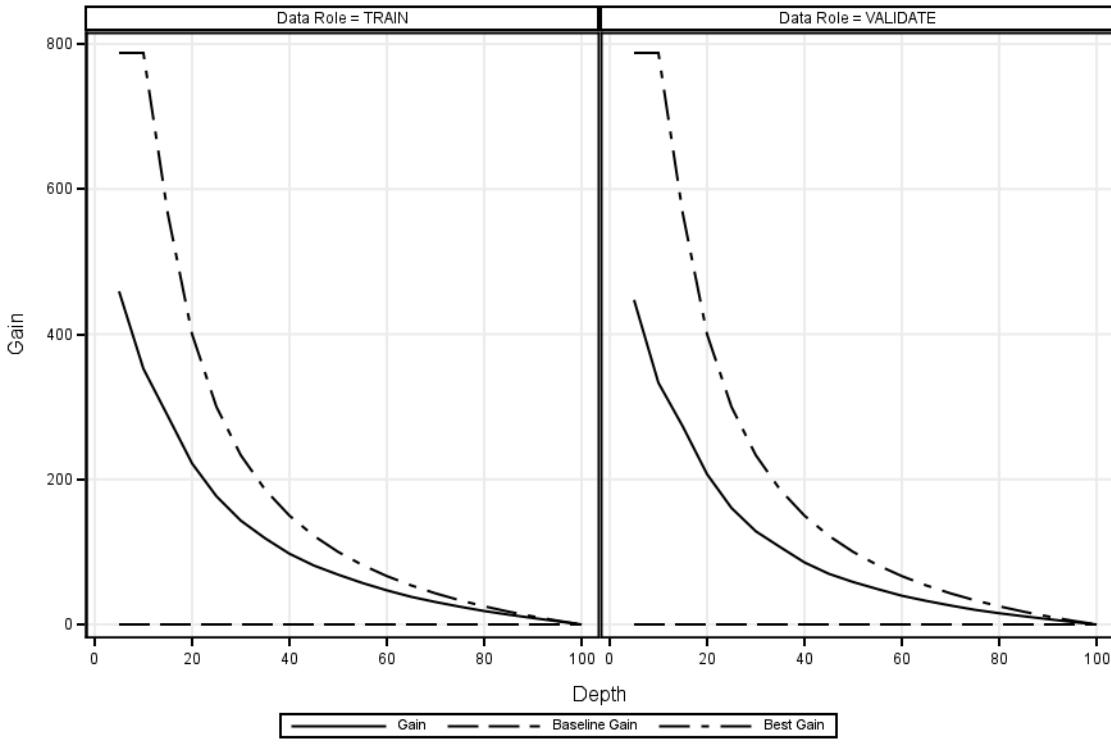
Target=y Target Label=y

Label of Statistic	Train	Validation	Test
Schwarz's Bayesian Criterion	13636.81		
Average Squared Error	0.08	0.08	0.08
Maximum Absolute Error	0.98	0.98	0.99
Divisor for ASE	32948.00	24712.00	24716.00
Sum of Frequencies	16474.00	12356.00	12358.00
Root Average Squared Error	0.28	0.28	0.28
Sum of Squared Errors	2532.04	1953.24	1943.13
Sum of Case Weights Times Freq	32948.00	24712.00	24716.00
Final Prediction Error	0.08		
Mean Squared Error	0.08	0.08	0.08
Root Final Prediction Error	0.29		
Root Mean Squared Error	0.28	0.28	0.28
Average Error Function	0.27	0.28	0.28
Error Function	8908.26	6938.32	6889.08
Misclassification Rate	0.10	0.10	0.10
Number of Wrong Classifications	1628.00	1245.00	1230.00

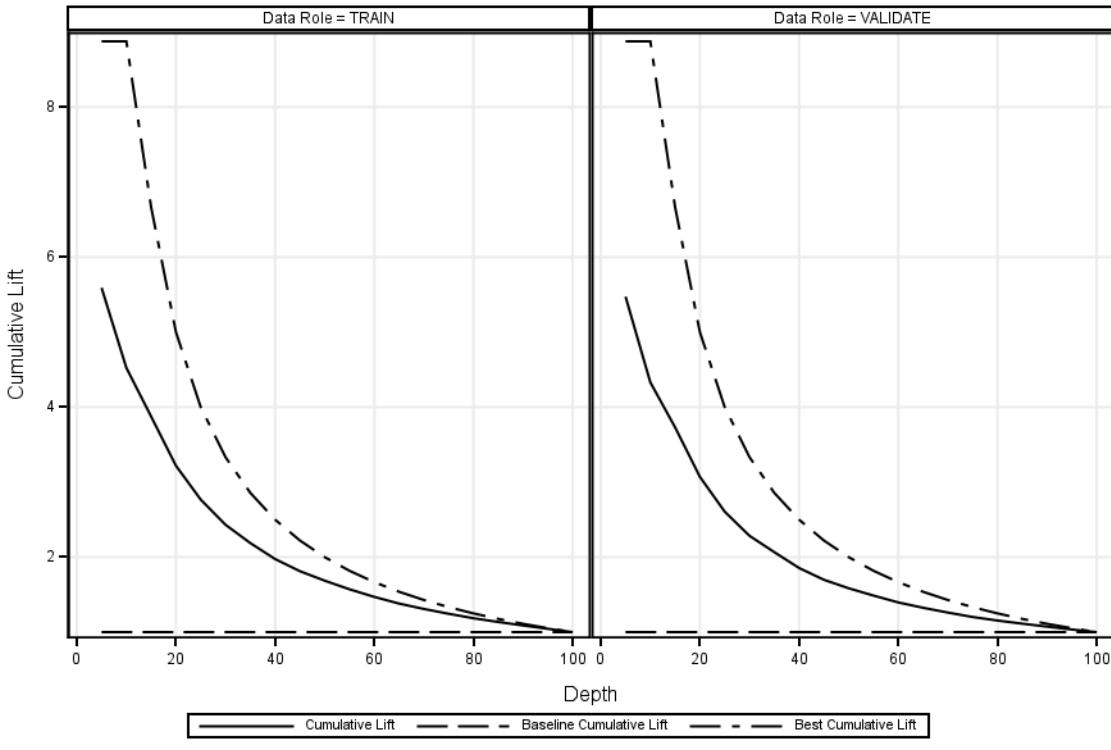
SAS Enterprise Miner Report  
Node=Neural Network 9HU  
Model Iteration Plots



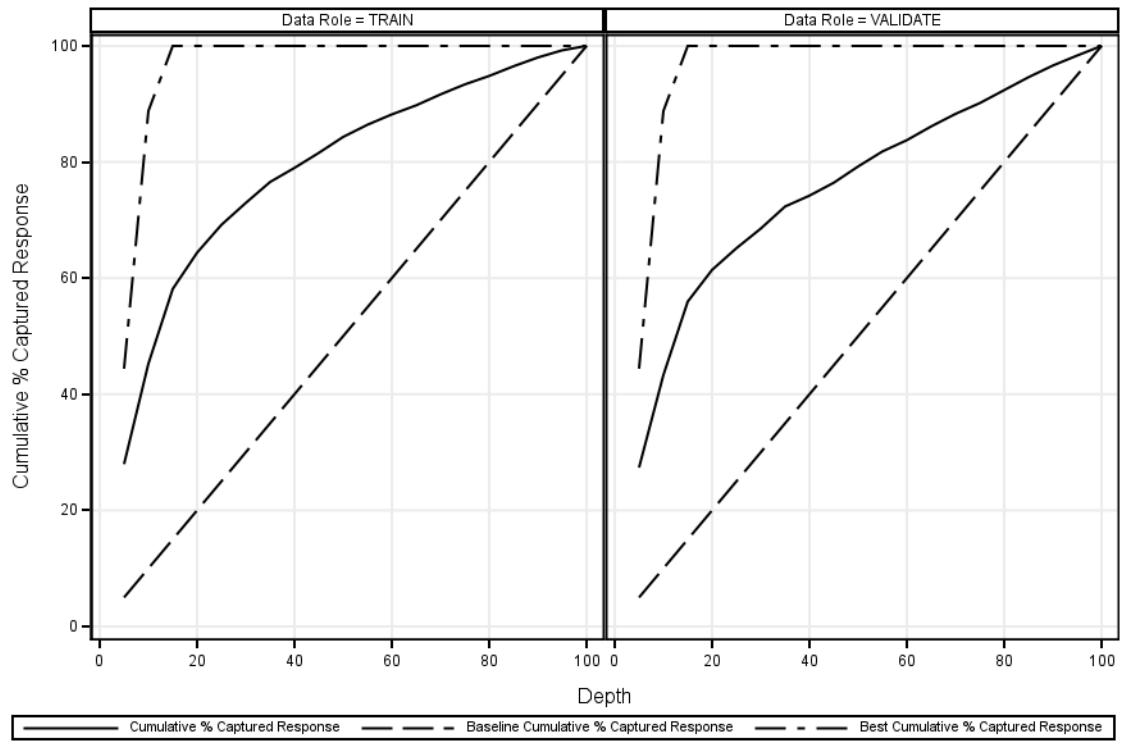
**SAS Enterprise Miner Report**  
 Node=Neural Network 9HU  
 Model Assessment Scores where TARGET='y'



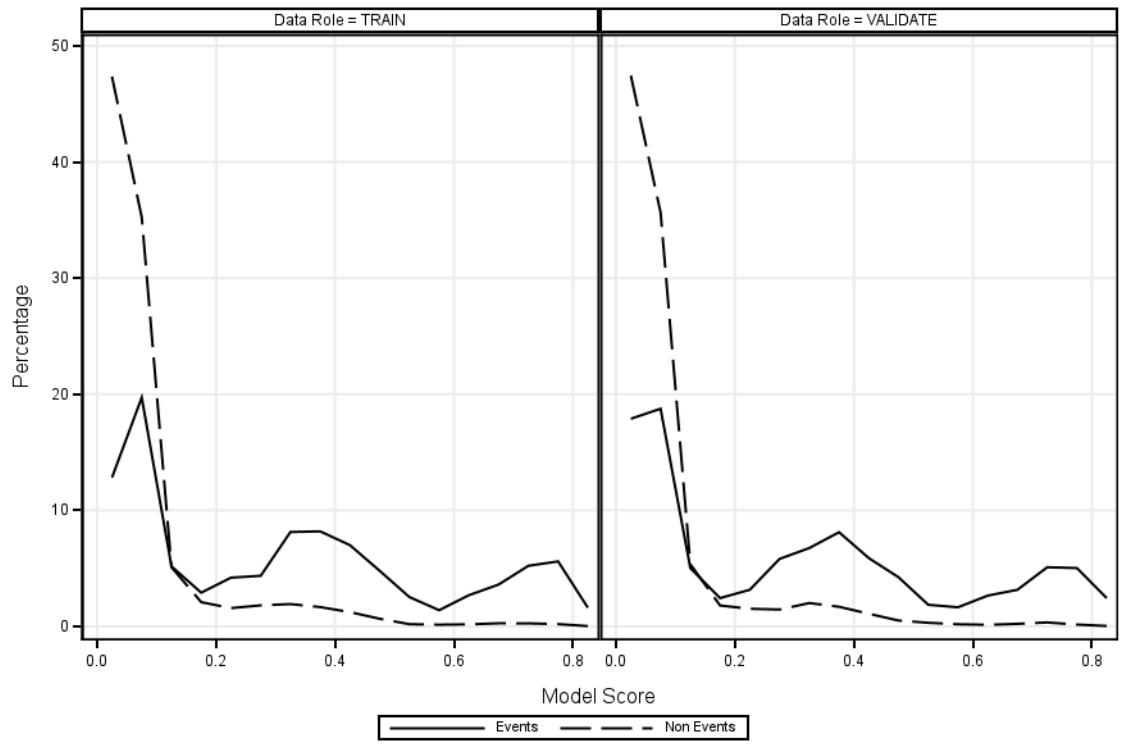
**SAS Enterprise Miner Report**  
 Node=Neural Network 9HU  
 Model Assessment Scores where TARGET='y'



**SAS Enterprise Miner Report**  
 Node=Neural Network 9HU  
 Model Assessment Scores where TARGET='y'



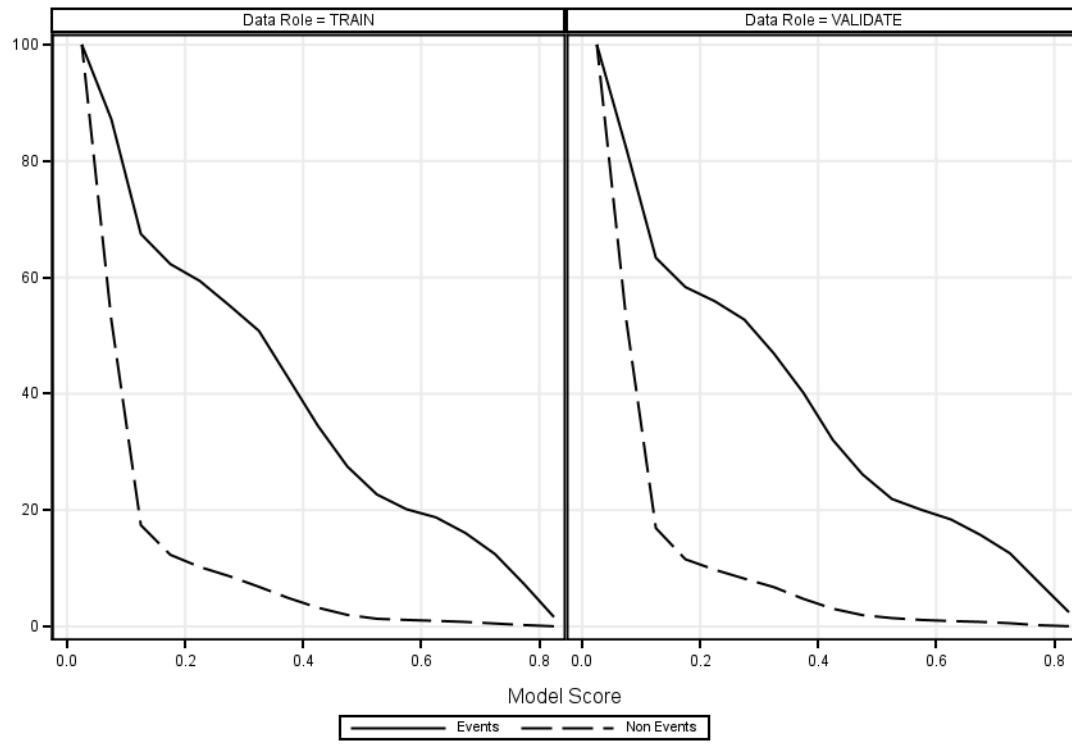
**SAS Enterprise Miner Report**  
 Node=Neural Network 9HU  
 Score Distributions where TARGET='y'



### SAS Enterprise Miner Report

Node=Neural Network 9HU

Score Distributions where TARGET='y'



### Node=Neural Network 9HU

#### Score Distributions

Target Variable=y Data Role=TRAIN

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.80-0.85	30	1.6164	0.0342	1.616	0.034
0.75-0.80	104	5.6034	0.2052	7.220	0.239
0.70-0.75	97	5.2263	0.2668	12.446	0.506
0.65-0.70	67	3.6099	0.2736	16.056	0.780
0.60-0.65	50	2.6940	0.1847	18.750	0.965
0.55-0.60	26	1.4009	0.1573	20.151	1.122
0.50-0.55	47	2.5323	0.1984	22.683	1.320
0.45-0.50	89	4.7953	0.6636	27.478	1.984
0.40-0.45	130	7.0043	1.2382	34.483	3.222
0.35-0.40	152	8.1897	1.6692	42.672	4.891
0.30-0.35	151	8.1358	1.9291	50.808	6.820
0.25-0.30	81	4.3642	1.8197	55.172	8.640
0.20-0.25	78	4.2026	1.5802	59.375	10.220
0.15-0.20	54	2.9095	2.0933	62.284	12.314
0.10-0.15	96	5.1724	5.1033	67.457	17.417
0.05-0.10	366	19.7198	35.2442	87.177	52.661
0.00-0.05	238	12.8233	47.3389	100.000	100.000

Target Variable=y Data Role=VALIDATE

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.80-0.85	34	2.4425	0.0456	2.443	0.046
0.75-0.80	70	5.0287	0.1642	7.471	0.210
0.70-0.75	71	5.1006	0.3466	12.572	0.556
0.65-0.70	44	3.1609	0.2280	15.733	0.784
0.60-0.65	37	2.6580	0.1459	18.391	0.930
0.55-0.60	23	1.6523	0.1915	20.043	1.122
0.50-0.55	26	1.8678	0.3192	21.911	1.441
0.45-0.50	59	4.2385	0.5108	26.149	1.952
0.40-0.45	82	5.8908	1.0945	32.040	3.046
0.35-0.40	113	8.1178	1.6965	40.158	4.743
0.30-0.35	94	6.7529	2.0157	46.911	6.758
0.25-0.30	81	5.8190	1.4593	52.730	8.218
0.20-0.25	44	3.1609	1.5232	55.891	9.741
0.15-0.20	34	2.4425	1.8059	58.333	11.547
0.10-0.15	70	5.0287	5.3630	63.362	16.910
0.05-0.10	261	18.7500	35.6439	82.112	52.554
0.00-0.05	249	17.8879	47.4462	100.000	100.000

## SAS Enterprise Miner Report

### Node=Neural Network BckwdProp Summary

Node id = Neural4  
 Node label = Neural Network BckwdProp  
 Meta path = Ids => Part => Neural4  
 Notes =

### Node=Neural Network BckwdProp Properties

Property	Value	Default	Property	Value	Default	Property	Value	Default
Component	NeuralNetwork		Hidden	3		Prelim	Y	
AbsConvValue	-1.34078E154	-7.237006E75	HiddenActivation	DEFAULT		PrelimMaxTime	1 HOUR	
AbsFTime	1		HiddenBias	Y		PrelimMaxiter	10	
AbsFValue	0		HiddenCombFunction	DEFAULT		PrelimOutest		
AbsGTime	1		HiddenUnits	N		PreliminaryRuns	5	
AbsGValue	1E-5	0.00001	InitialDs			RandDist	NORMAL	
AbsXTime	1		InitialSeed	12345		RandLoc	0	
AbsXValue	1E-8		InputStandardization	STD		RandScale	0.1	
Accelerate	1.2		Learn	0.1		Residuals	Y	
AddHidden	Y		MaxLearn	50		Standardizations	N	
CodefileNoRes			MaxMomentum	1.75		SuppressOutput	N	
CodefileRes			Maxiter	50		TargetActivation	DEFAULT	
ConvDefaults	Y		Maxtime	4 HOURS		TargetBias	Y	
Decelerate	0.5		MinLearn	1E-5	0.00001	TargetCombFunction	DEFAULT	
DirectConnection	N		ModelSelectionCriterion	PROFIT/LOSS		TargetError	DEFAULT	
FConvTime	1		Momentum	0		Tilt	0	
FConvValue	0		NetworkArchitecture	MLP		TrainCode		
GConvTime	1		Outest			TrainingTechnique	BPROP	DEFAULT
GConvValue	1E-6		Outfit			UseEstimates	N	

### Node=Neural Network BckwdProp Variable Summary

Role	Level	Frequency		Name
		Count	Name	
TARGET	NOMINAL	1	y	
INPUT	INTERVAL	9	age campaign cons_conf_idx cons_price_idx emp_var_rate euribor3m nr_employed pdays previous	
INPUT	NOMINAL	10	contact day_of_week default education housing job loan marital month poutcome	

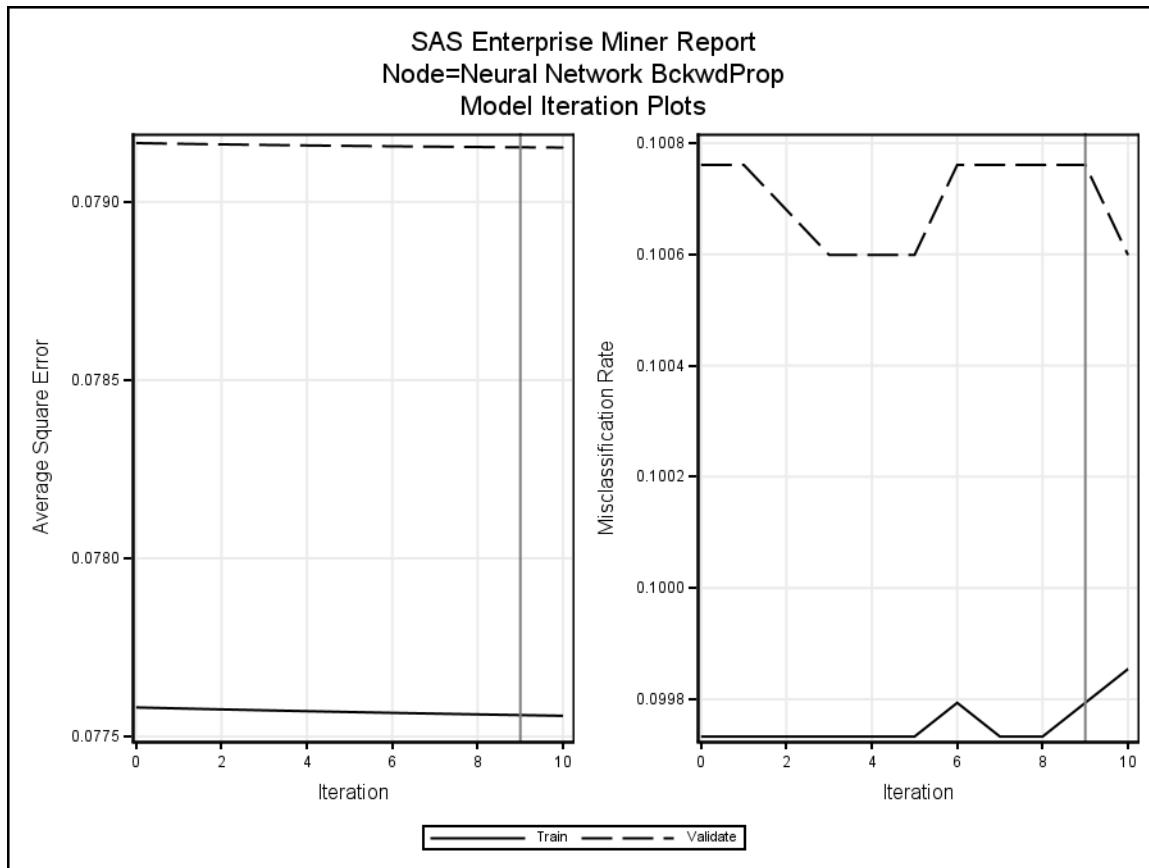
### Node=Neural Network BckwdProp Model Fit Statistics

Target=y Target Label=y

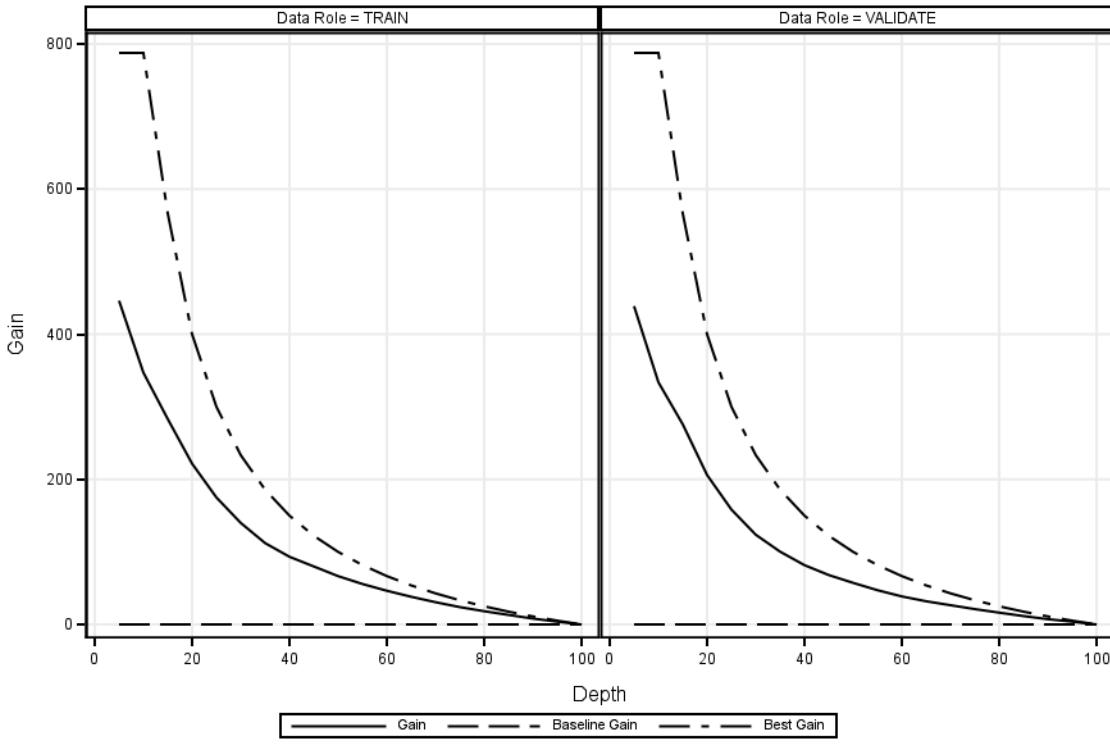
Label of Statistic	Train	Validation	Test
Total Degrees of Freedom	16474.00	.	.
Degrees of Freedom for Error	16311.00	.	.
Model Degrees of Freedom	163.00	.	.
Number of Estimated Weights	163.00	.	.
Akaike's Information Criterion	9319.67	.	.

Target=y Target Label=y

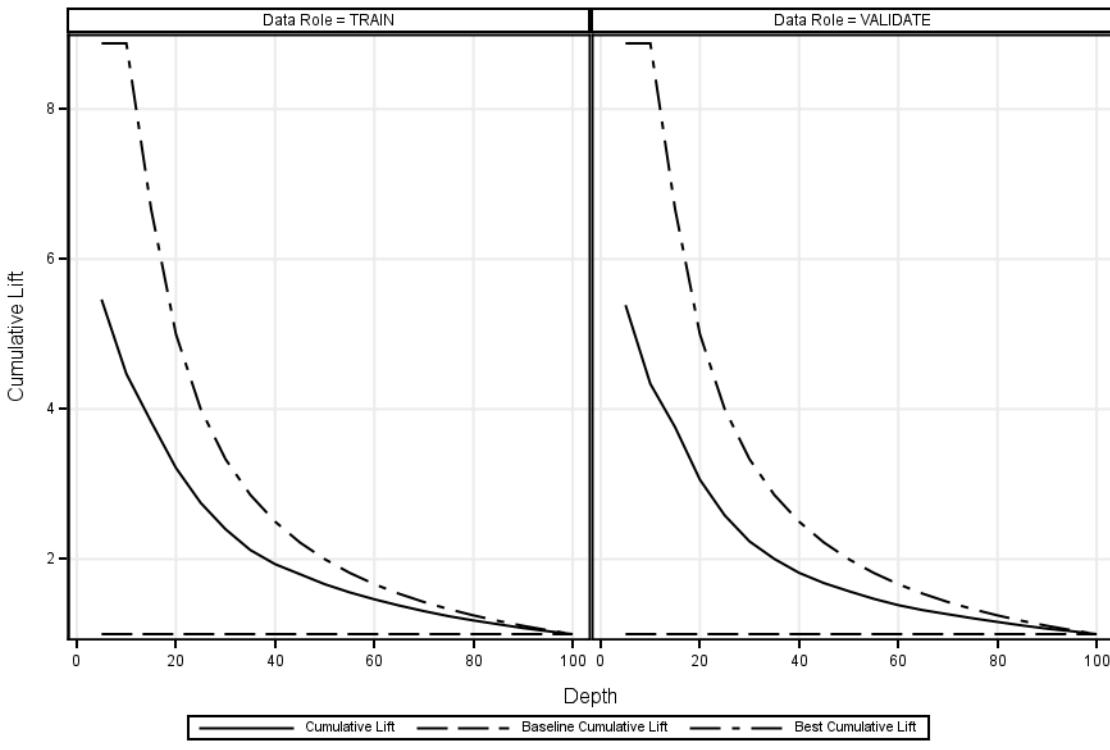
Label of Statistic	Train	Validation	Test
Schwarz's Bayesian Criterion	10576.32	.	.
Average Squared Error	0.08	0.08	0.08
Maximum Absolute Error	0.98	0.98	0.98
Divisor for ASE	32948.00	24712.00	24716.00
Sum of Frequencies	16474.00	12356.00	12358.00
Root Average Squared Error	0.28	0.28	0.28
Sum of Squared Errors	2555.45	1956.03	1944.76
Sum of Case Weights Times Freq	32948.00	24712.00	24716.00
Final Prediction Error	0.08	.	.
Mean Squared Error	0.08	0.08	0.08
Root Final Prediction Error	0.28	.	.
Root Mean Squared Error	0.28	0.28	0.28
Average Error Function	0.27	0.28	0.28
Error Function	8993.67	6948.70	6885.01
Misclassification Rate	0.10	0.10	0.10
Number of Wrong Classifications	1644.00	1245.00	1236.00



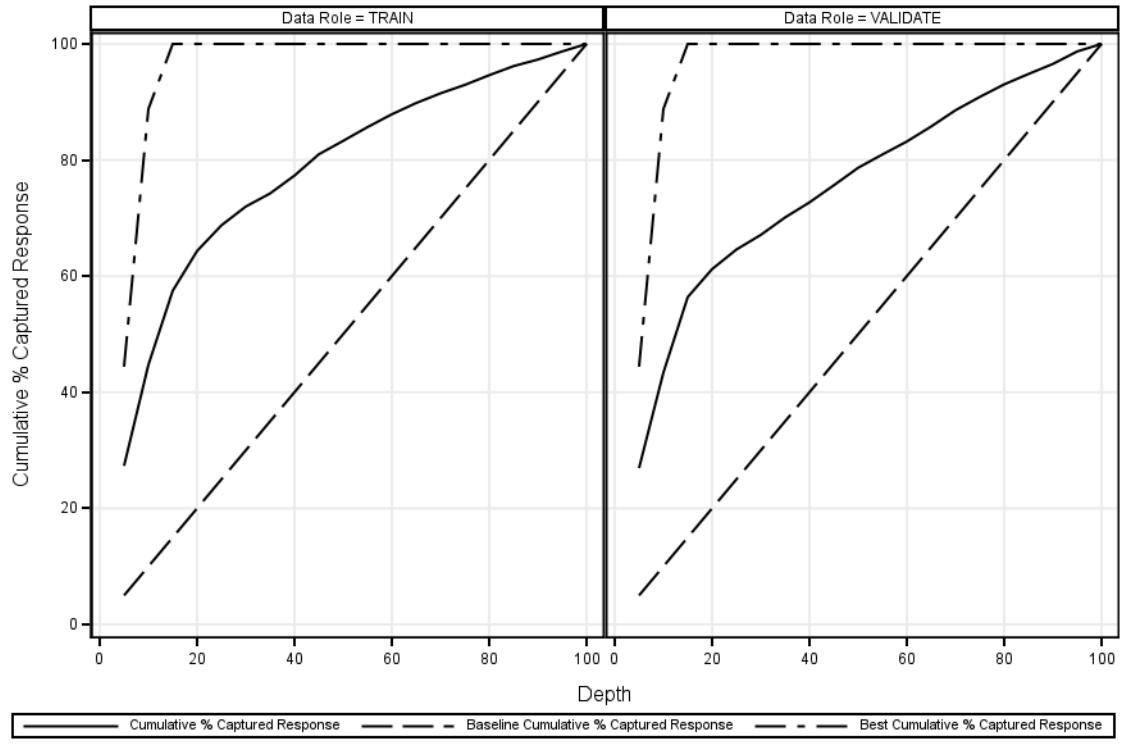
**SAS Enterprise Miner Report**  
 Node=Neural Network BckwdProp  
 Model Assessment Scores where TARGET='y'



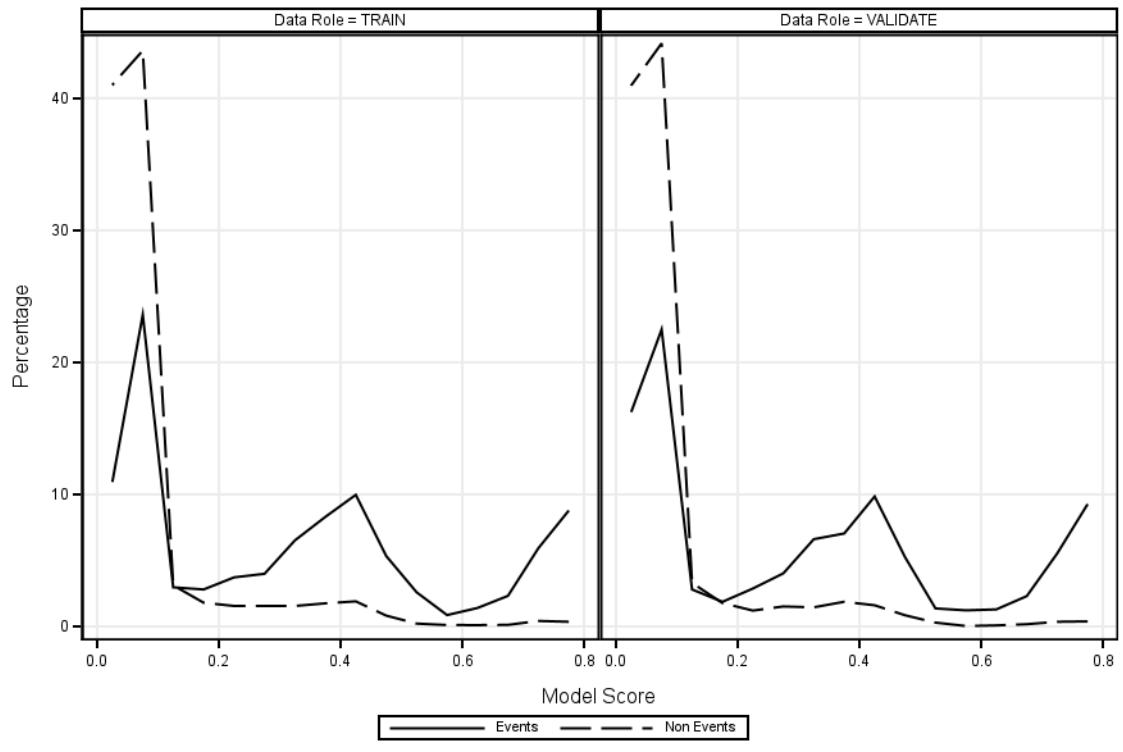
**SAS Enterprise Miner Report**  
 Node=Neural Network BckwdProp  
 Model Assessment Scores where TARGET='y'



**SAS Enterprise Miner Report**  
 Node=Neural Network BckwdProp  
 Model Assessment Scores where TARGET='y'



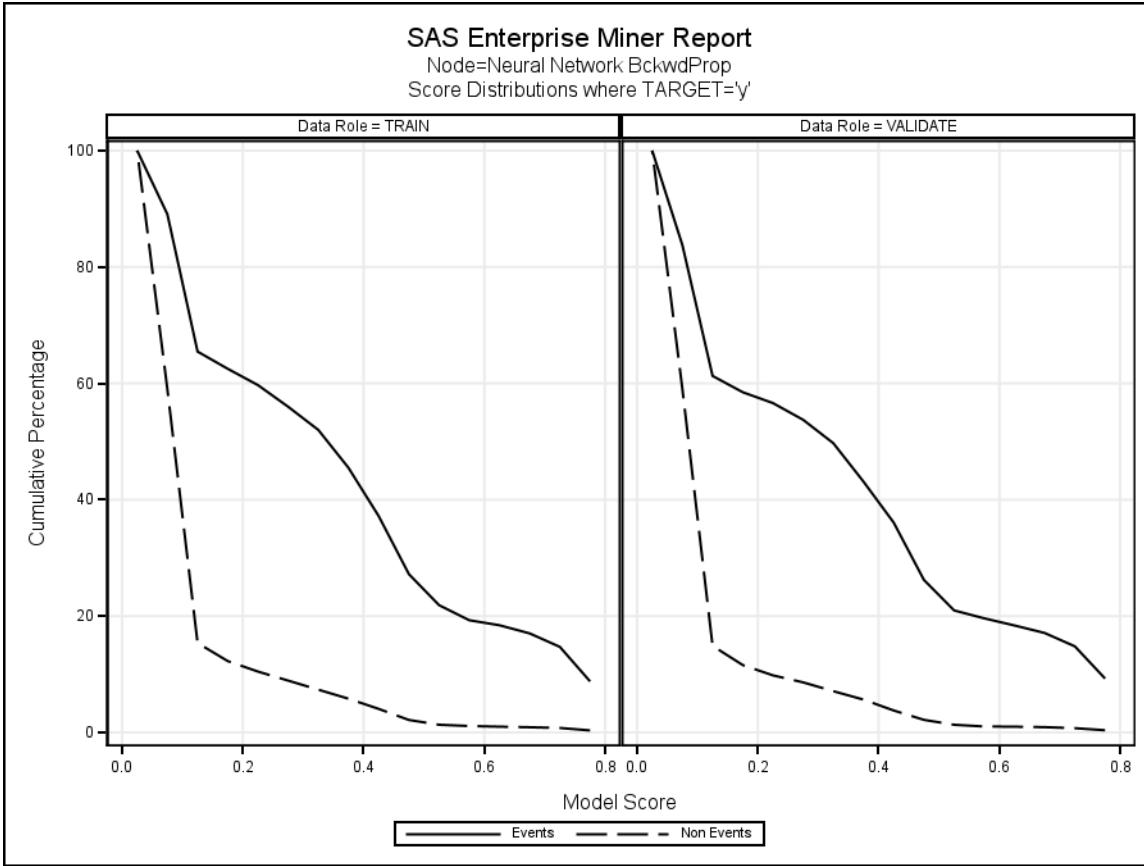
**SAS Enterprise Miner Report**  
 Node=Neural Network BckwdProp  
 Score Distributions where TARGET='y'



### SAS Enterprise Miner Report

Node=Neural Network BckwdProp

Score Distributions where TARGET='y'



#### Node=Neural Network BckwdProp

#### Score Distributions

Target Variable=y Data Role=TRAIN

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.75-0.80	163	8.7823	0.3557	8.782	0.356
0.70-0.75	110	5.9267	0.4173	14.709	0.773
0.65-0.70	43	2.3168	0.1231	17.026	0.896
0.60-0.65	26	1.4009	0.1026	18.427	0.999
0.55-0.60	16	0.8621	0.1095	19.289	1.108
0.50-0.55	48	2.5862	0.2189	21.875	1.327
0.45-0.50	99	5.3341	0.8209	27.209	2.148
0.40-0.45	185	9.9677	1.9018	37.177	4.050
0.35-0.40	154	8.2974	1.7513	45.474	5.801
0.30-0.35	121	6.5194	1.5529	51.994	7.354
0.25-0.30	74	3.9871	1.5597	55.981	8.914
0.20-0.25	69	3.7177	1.5529	59.698	10.467
0.15-0.20	52	2.8017	1.7992	62.500	12.266
0.10-0.15	55	2.9634	3.1126	65.463	15.378
0.05-0.10	438	23.5991	43.6038	89.063	58.982
0.00-0.05	203	10.9375	41.0179	100.000	100.000

Target Variable=y Data Role=VALIDATE

Posterior Probability Range	Number of Events	Percentage of Events	Percentage of Nonevents	Cumulative Percentage of Events	Cumulative Percentage of Nonevents
0.75-0.80	129	9.2672	0.3831	9.267	0.383
0.70-0.75	77	5.5316	0.3557	14.799	0.739
0.65-0.70	32	2.2989	0.1733	17.098	0.912
0.60-0.65	18	1.2931	0.0821	18.391	0.994
0.55-0.60	17	1.2213	0.0365	19.612	1.031
0.50-0.55	19	1.3649	0.2919	20.977	1.323
0.45-0.50	73	5.2443	0.8482	26.221	2.171
0.40-0.45	137	9.8420	1.6053	36.063	3.776
0.35-0.40	98	7.0402	1.8698	43.103	5.646
0.30-0.35	92	6.6092	1.4502	49.713	7.096
0.25-0.30	56	4.0230	1.5140	53.736	8.610
0.20-0.25	40	2.8736	1.2039	56.609	9.814
0.15-0.20	26	1.8678	1.7694	58.477	11.583
0.10-0.15	39	2.8017	3.3017	61.279	14.885
0.05-0.10	313	22.4856	44.1536	83.764	59.039
0.00-0.05	226	16.2356	40.9613	100.000	100.000

## SAS Enterprise Miner Report

### Node=Neural Model Comparison Summary

Node id = MdlComp4  
 Node label = Neural Model Comparison  
 Meta path = Ids => Part => Neural3 => MdlComp4  
 Notes =

### Node=Neural 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	_VMISC_	
LiftEpsilon	1E-6		RocChart	Y		TargetLabel	y	
ModelCriteria	Valid: Misclassification Rate		RocEpsilon	0.01		TargetName	y	
ModelDescription	Neural Network 9HU		RoiEpsilon	1E-6		classViyaCriteria	DEFAULT	
ModelId	Neural3		ScoreDistBin	20		intervalViyaCriteria	DEFAULT	
NormalizeReportingVariables	Y		SelectionCriteria	DEFAULT				

### Node=Neural Model Comparison Variable Summary

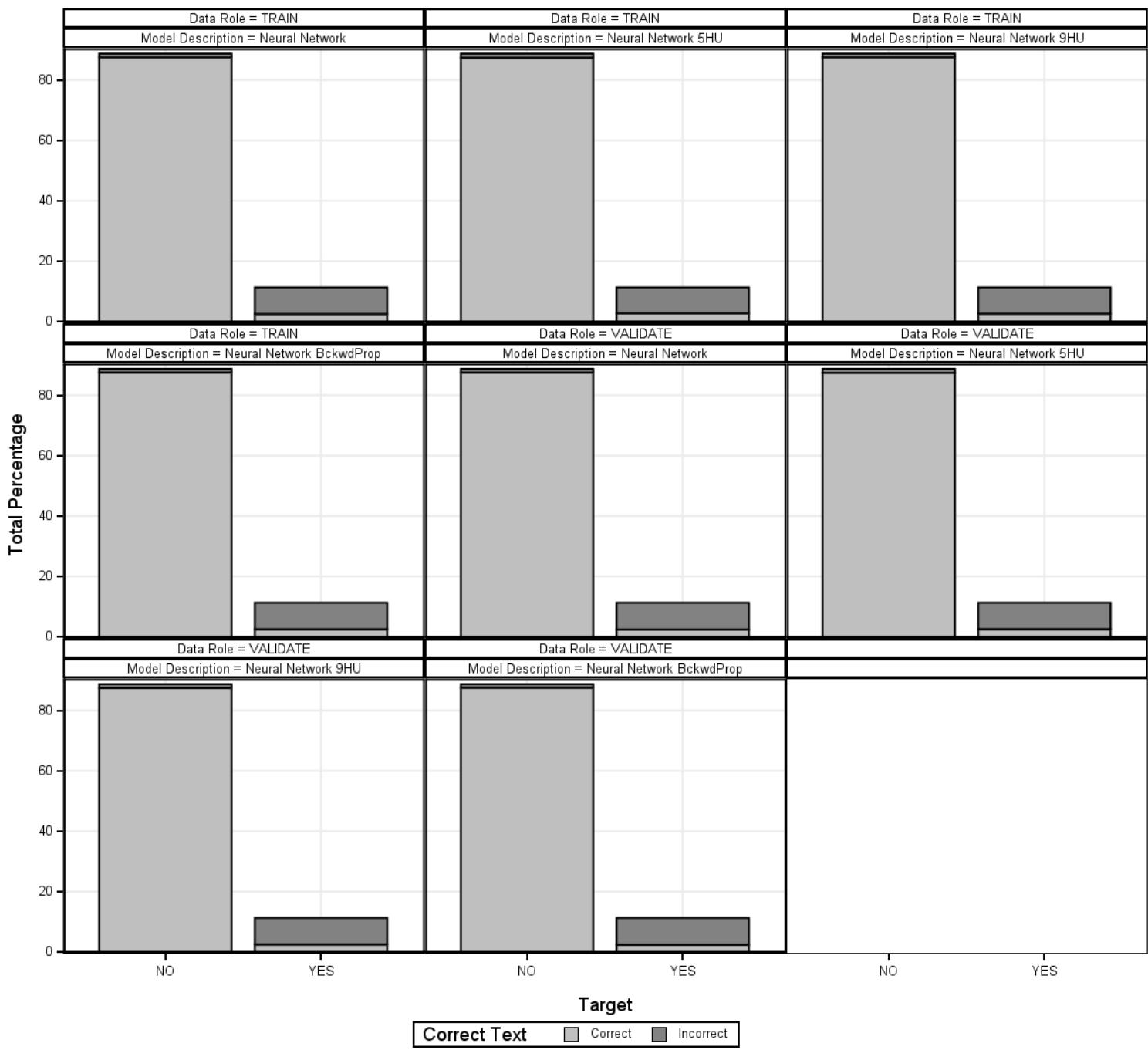
Role	Level	Frequency	
		Count	Name
TARGET	NOMINAL	1	y

### Node=Neural Model Comparison Fit Statistics Table

Selected Model	Predecessor Node	Model Node	Model Description	Target Variable	Target Label	Selection Criterion:	Train: Valid: Average Squared Error	Train: Misclassification Rate	Train: Kolmogorov-Smirnov Statistic
						Valid: Misclassification Rate	Average Squared Error	Misclassification Rate	Kolmogorov-Smirnov Statistic
Y	Neural3	Neural3	Neural Network 9HU	y	y	0.10076	0.076850	0.098822	0.503
	Neural4	Neural4	Neural Network BckwdProp	y	y	0.10076	0.077560	0.099794	0.504
	Neural	Neural	Neural Network	y	y	0.10076	0.077582	0.099733	0.504
	Neural2	Neural2	Neural Network 5HU	y	y	0.10092	0.076710	0.099308	0.513

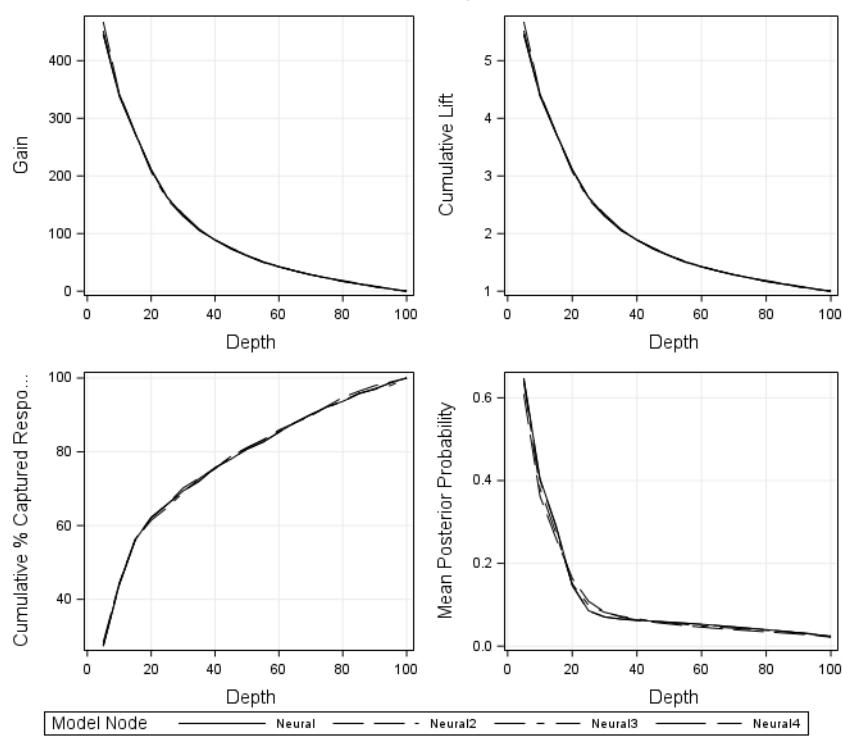
Selected Model	Predecessor Node	Model Node	Model Description	Target Variable	Target Label	Selection Criterion:	Valid: Average Squared Error	Valid: Misclassification Rate	Valid: Kolmogorov-Smirnov Statistic
						Valid: Misclassification Rate	Average Squared Error	Misclassification Rate	Kolmogorov-Smirnov Statistic
Y	Neural3	Neural3	Neural Network 9HU	y	y	0.10076	0.079040	0.10076	0.471
	Neural4	Neural4	Neural Network BckwdProp	y	y	0.10076	0.079153	0.10076	0.472
	Neural	Neural	Neural Network	y	y	0.10076	0.079165	0.10076	0.472
	Neural2	Neural2	Neural Network 5HU	y	y	0.10092	0.079502	0.10092	0.478

**SAS Enterprise Miner Report**  
**Node=Neural Model Comparison**  
**Classification Chart**  
**TARGET='y' and \_TYPE\_='PREDICTION'**



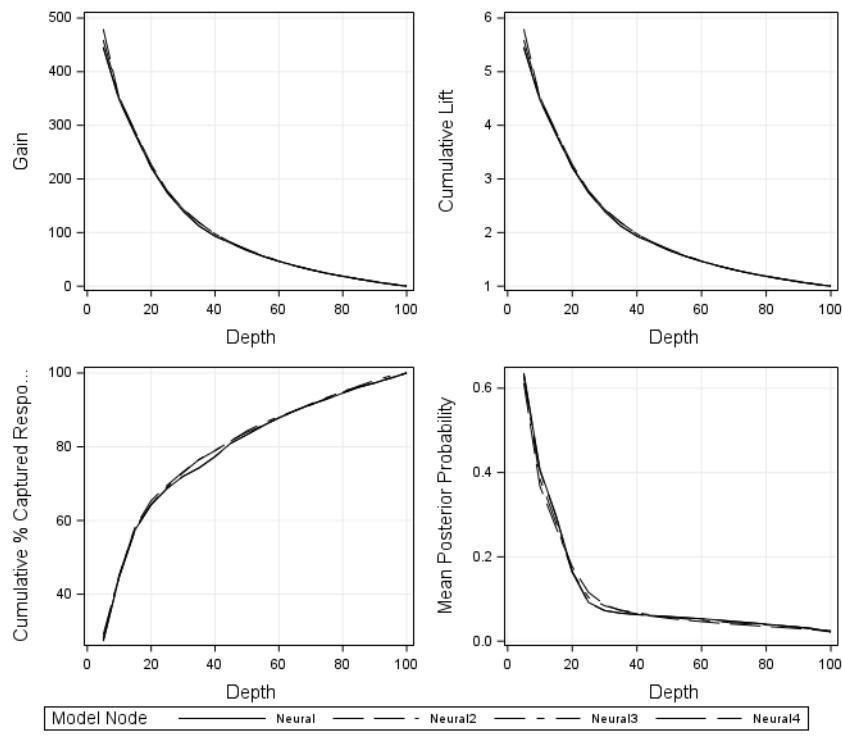
### SAS Enterprise Miner Report

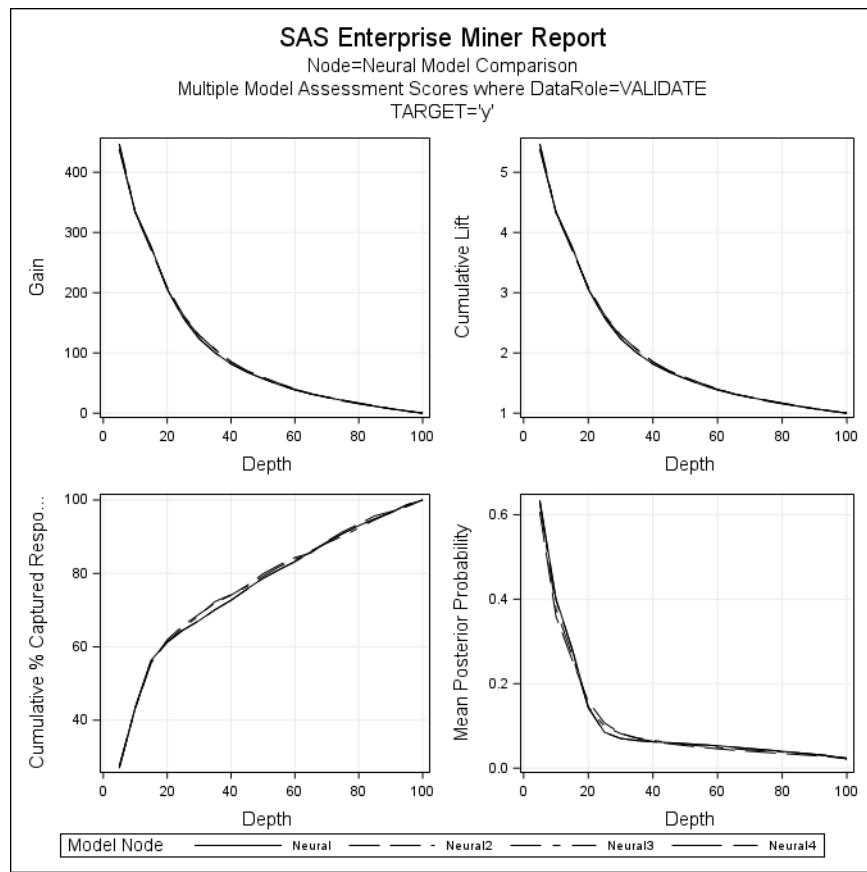
Node=Neural Model Comparison  
 Multiple Model Assessment Scores where DataRole=TEST  
 TARGET='y'



### SAS Enterprise Miner Report

Node=Neural Model Comparison  
 Multiple Model Assessment Scores where DataRole=TRAIN  
 TARGET='y'





## SAS Enterprise Miner Report

### Node=MLR ModelComparison Summary

Node id = MdlComp2  
 Node label = MLR ModelComparison  
 Meta path = Ids => Part => Reg3 => MdlComp2  
 Notes =

### Node=MLR ModelComparison 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	_VMISC_	
LiftEpsilon	1E-6		RocChart	Y		TargetLabel	y	
ModelCriteria	Valid: Misclassification Rate		RocEpsilon	0.01		TargetName	y	
ModelDescription	Backward Regression		RoiEpsilon	1E-6		classViyaCriteria	DEFAULT	
ModelId	Reg3		ScoreDistBin	20		intervalViyaCriteria	DEFAULT	
NormalizeReportingVariables	Y		SelectionCriteria	DEFAULT				

### Node=MLR ModelComparison Variable Summary

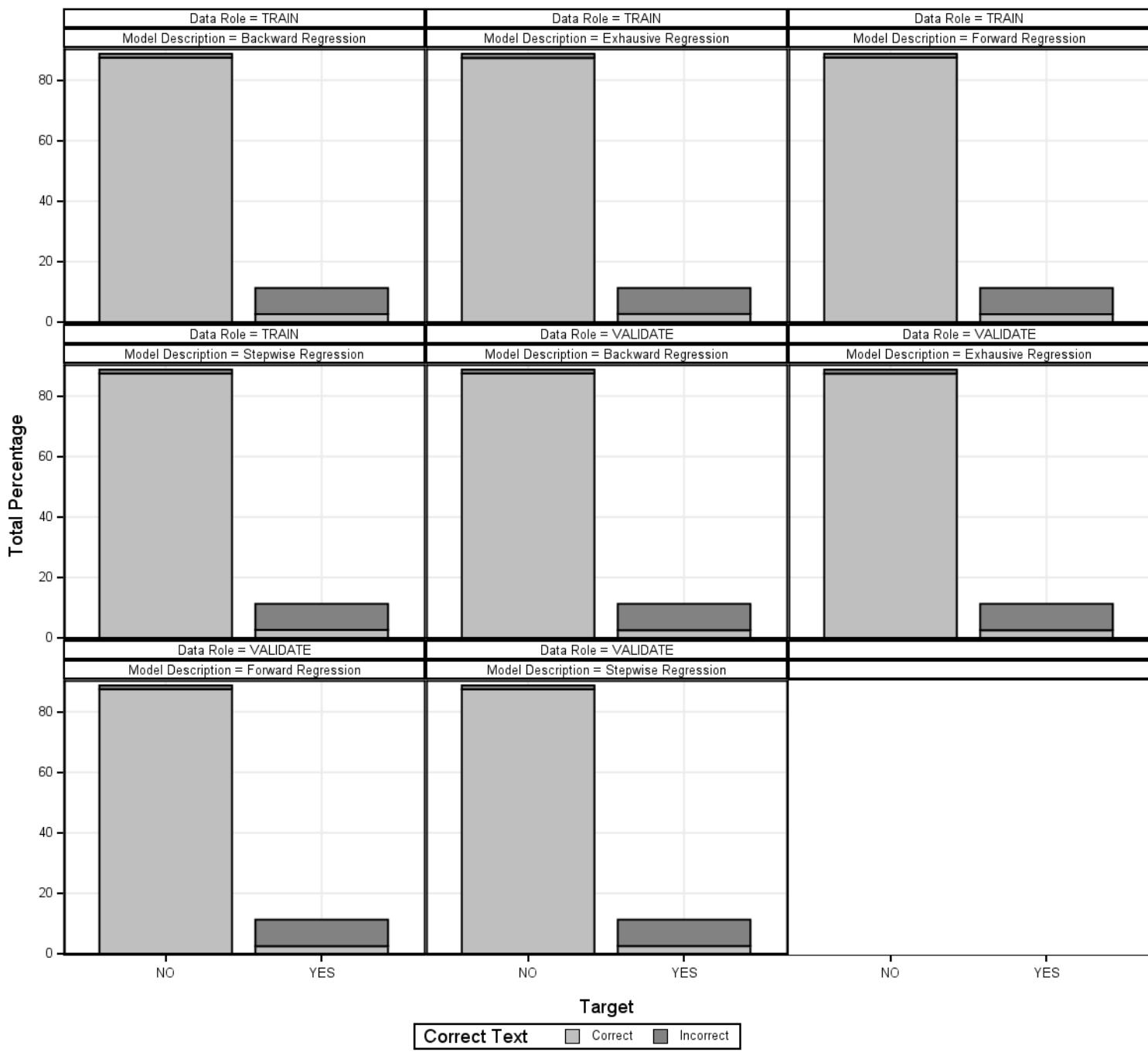
Role	Level	Frequency	
		Count	Name
TARGET	NOMINAL	1	y

### Node=MLR ModelComparison Fit Statistics Table

Selected Model	Predecessor Node	Model Node	Model Description	Target Variable	Target Label	Selection Criterion:	Train: Average Squared Error	Train: Misclassification Rate	Train: Kolmogorov-Smirnov Statistic
						Valid: Misclassification Rate	Valid: Average Squared Error	Valid: Misclassification Rate	Valid: Kolmogorov-Smirnov Statistic
Y	Reg3	Reg3	Backward Regression	y	y	0.10011	0.077786	0.099612	0.500
	Reg4	Reg4	Stepwise Regression	y	y	0.10011	0.077786	0.099612	0.500
	Reg2	Reg2	Forward Regression	y	y	0.10019	0.078007	0.099369	0.493
	Reg	Reg	Exhaustive Regression	y	y	0.10092	0.077620	0.099794	0.500

Selected Model	Predecessor Node	Model Node	Model Description	Target Variable	Target Label	Selection Criterion:	Valid: Average Squared Error	Valid: Misclassification Rate	Valid: Kolmogorov-Smirnov Statistic
						Valid: Misclassification Rate	Valid: Average Squared Error	Valid: Misclassification Rate	Valid: Kolmogorov-Smirnov Statistic
Y	Reg3	Reg3	Backward Regression	y	y	0.10011	0.079367	0.10011	0.472
	Reg4	Reg4	Stepwise Regression	y	y	0.10011	0.079367	0.10011	0.472
	Reg2	Reg2	Forward Regression	y	y	0.10019	0.079776	0.10019	0.462
	Reg	Reg	Exhaustive Regression	y	y	0.10092	0.079544	0.10092	0.468

**SAS Enterprise Miner Report**  
**Node=MLR ModelComparison**  
**Classification Chart**  
**TARGET='y' and \_TYPE\_='PREDICTION'**

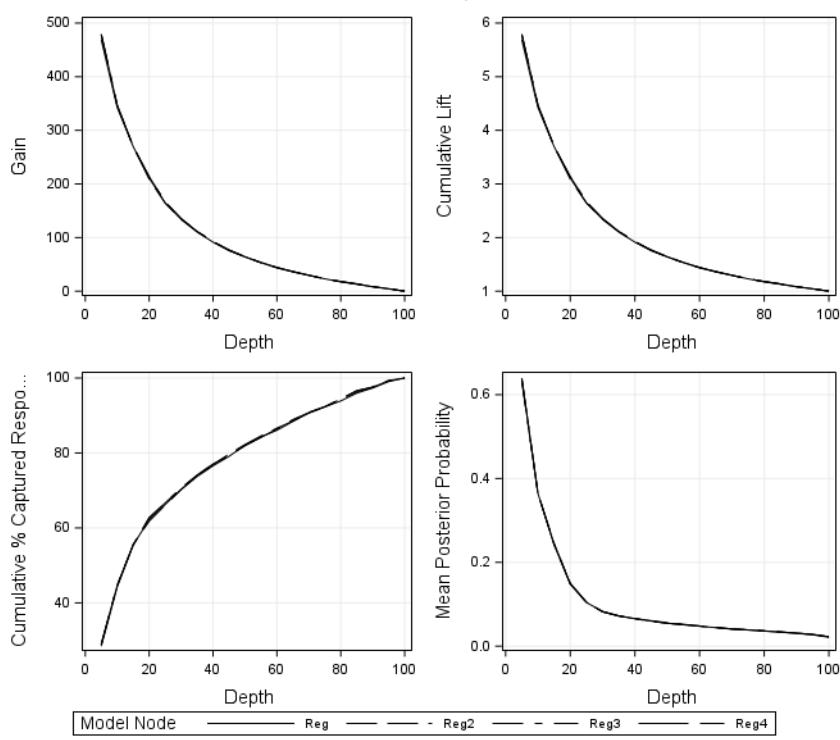


## SAS Enterprise Miner Report

Node=MLR ModelComparison

Multiple Model Assessment Scores where DataRole=TEST

TARGET='y'

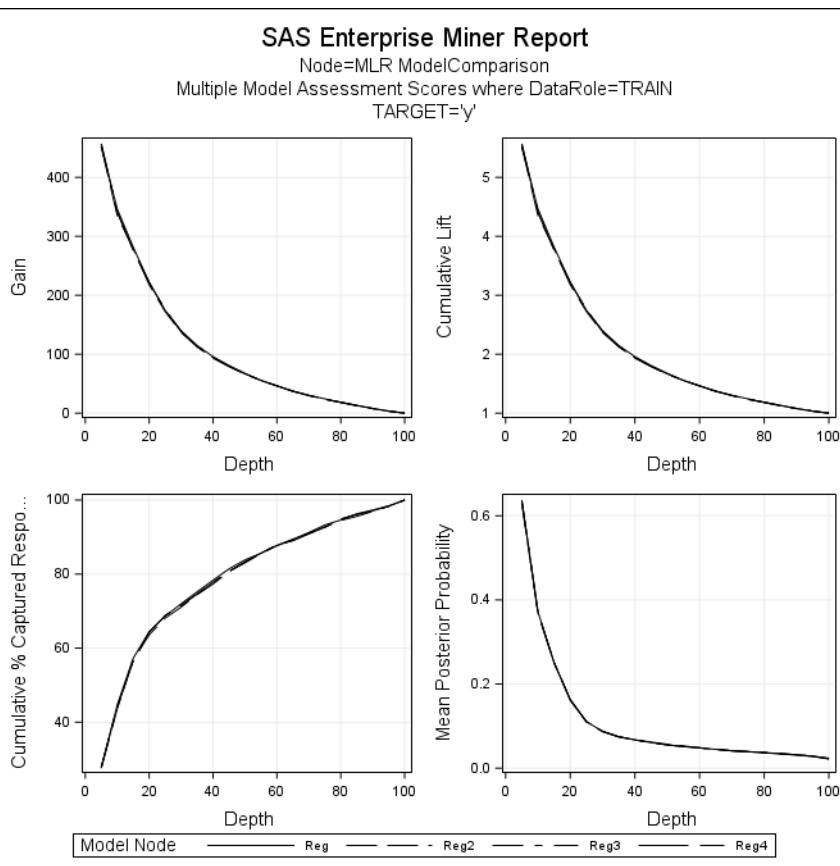


## SAS Enterprise Miner Report

Node=MLR ModelComparison

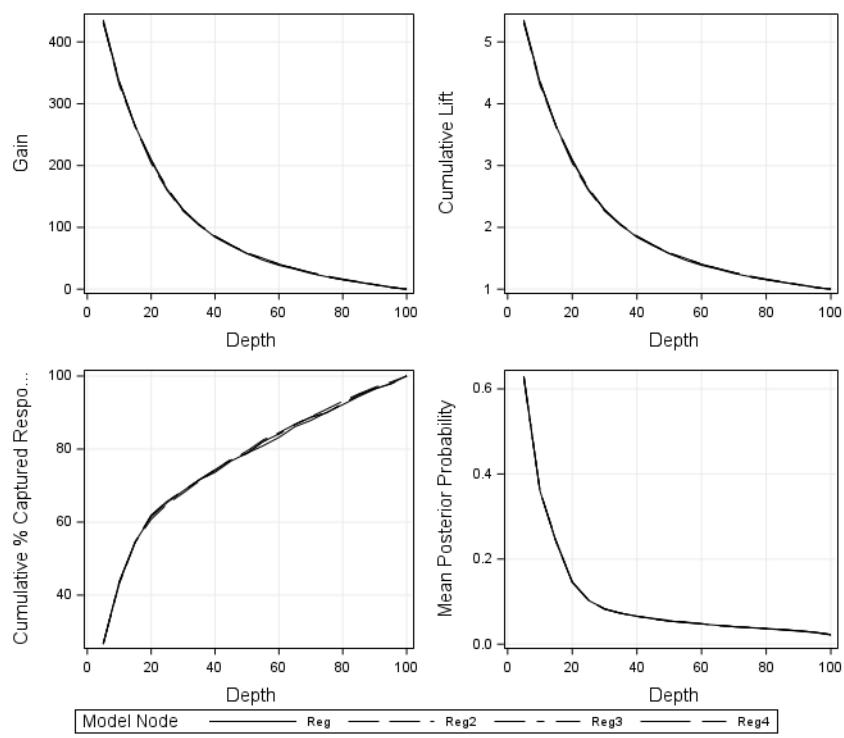
Multiple Model Assessment Scores where DataRole=TRAIN

TARGET='y'



**SAS Enterprise Miner Report**

Node=MLR ModelComparison

Multiple Model Assessment Scores where DataRole=VALIDATE  
TARGET='y'

## SAS Enterprise Miner Report

### Node=ClassDecTreeModel Comparison Summary

Node id = MdlComp  
 Node label = ClassDecTreeModel Comparison  
 Meta path = Ids => Part => Tree3 => MdlComp  
 Notes =

### Node=ClassDecTreeModel 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	_VMISC_	
LiftEpsilon	1E-6		RocChart	Y		TargetLabel	y	
ModelCriteria	Valid: Misclassification Rate		RocEpsilon	0.01		TargetName	y	
ModelDescription	ClassDecTree B3D4		RoiEpsilon	1E-6		classViyaCriteria	DEFAULT	
ModelId	Tree3		ScoreDistBin	20		intervalViyaCriteria	DEFAULT	
NormalizeReportingVariables	Y		SelectionCriteria	DEFAULT				

### Node=ClassDecTreeModel Comparison Variable Summary

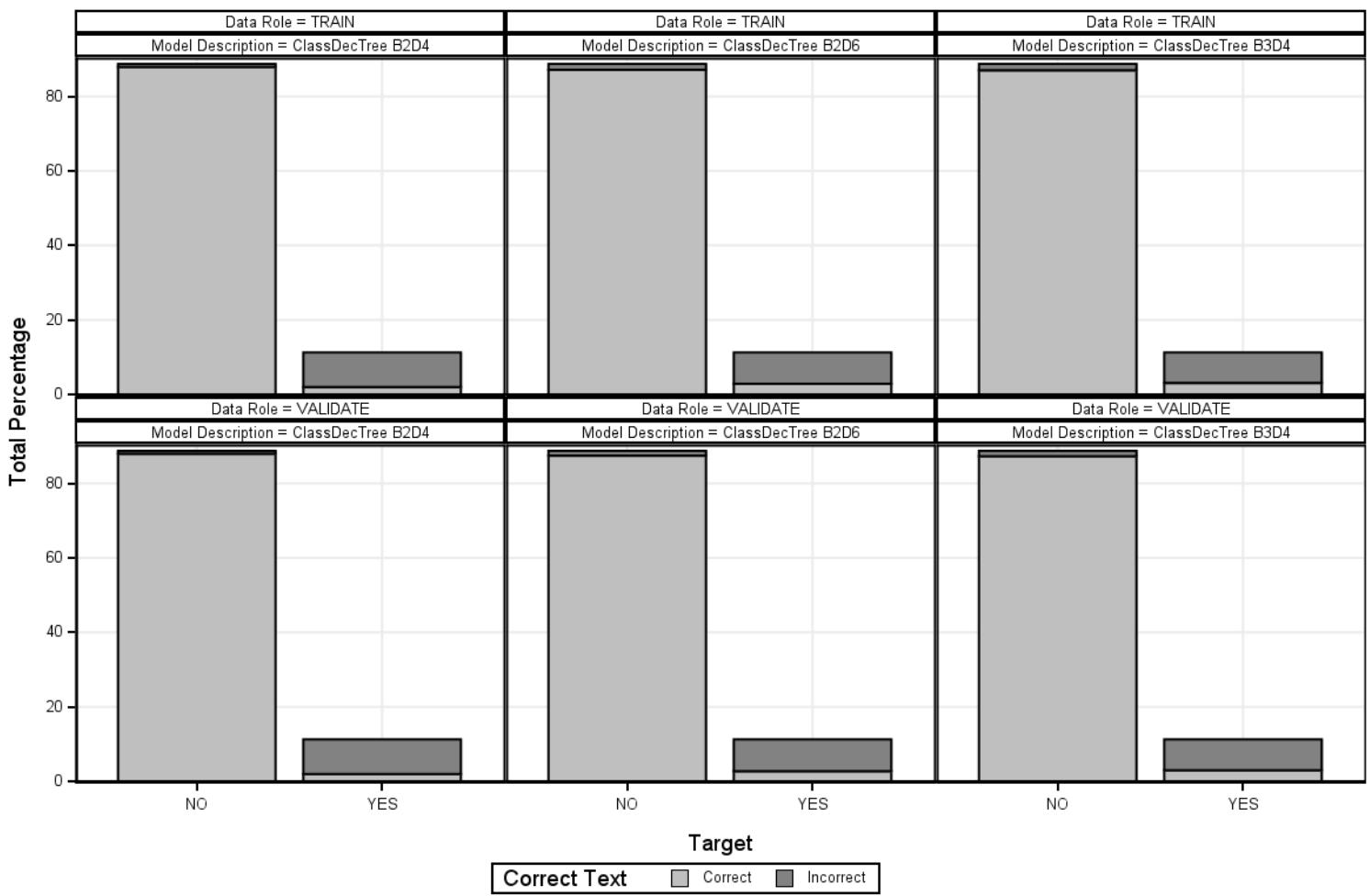
Role	Level	Frequency	
		Count	Name
TARGET	NOMINAL	1	y

### Node=ClassDecTreeModel Comparison Fit Statistics Table

Selected Model	Predecessor Node	Model Node	Model Description	Target Variable	Target Label	Selection Criterion:	Train: Average Squared Error	Train: Misclassification Rate	Train: Kolmogorov-Smirnov Statistic
						Valid: Misclassification Rate			
Y	Tree3	Tree3	ClassDecTree B3D4	y	y	0.09744	0.077350	0.09882	0.490
	Tree	Tree	ClassDecTree B2D6	y	y	0.09841	0.081998	0.10004	0.397
	Tree2	Tree2	ClassDecTree B2D4	y	y	0.10068	0.082530	0.10113	0.397

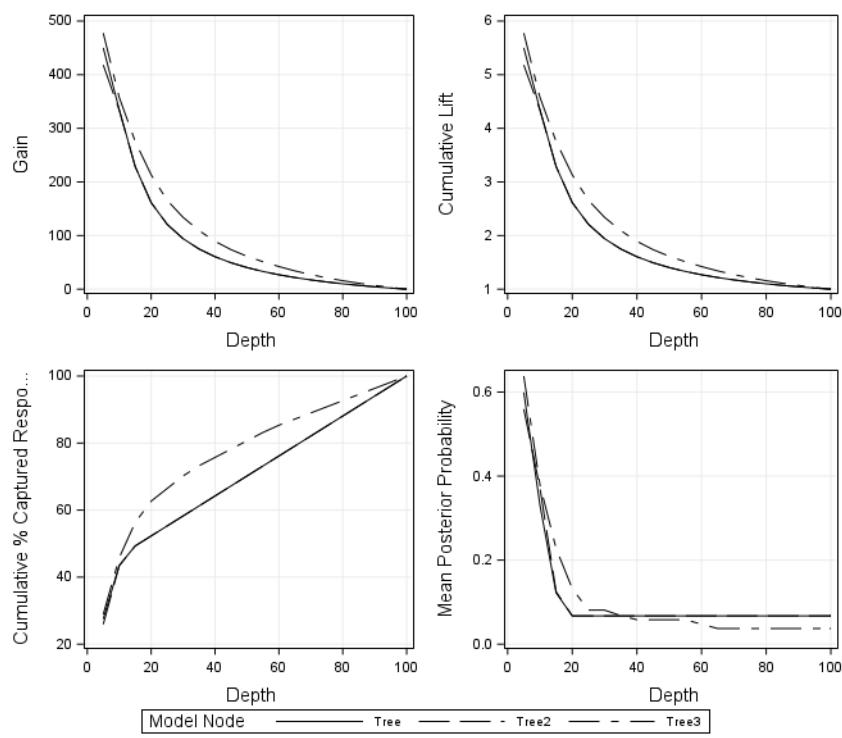
Selected Model	Predecessor Node	Model Node	Model Description	Target Variable	Target Label	Selection Criterion:	Valid: Average Squared Error	Valid: Misclassification Rate	Valid: Kolmogorov-Smirnov Statistic
						Valid: Misclassification Rate			
Y	Tree3	Tree3	ClassDecTree B3D4	y	y	0.09744	0.078415	0.09744	0.462
	Tree	Tree	ClassDecTree B2D6	y	y	0.09841	0.080781	0.09841	0.404
	Tree2	Tree2	ClassDecTree B2D4	y	y	0.10068	0.081202	0.10068	0.404

**SAS Enterprise Miner Report**  
**Node=ClassDecTreeModel Comparison**  
**Classification Chart**  
**TARGET='y' and \_TYPE\_='PREDICTION'**



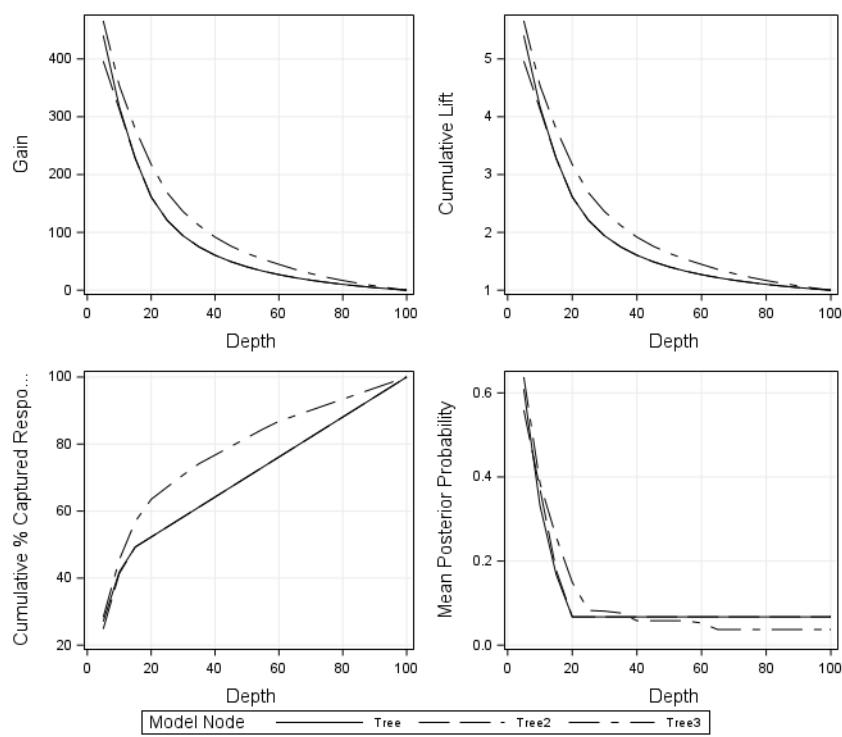
## SAS Enterprise Miner Report

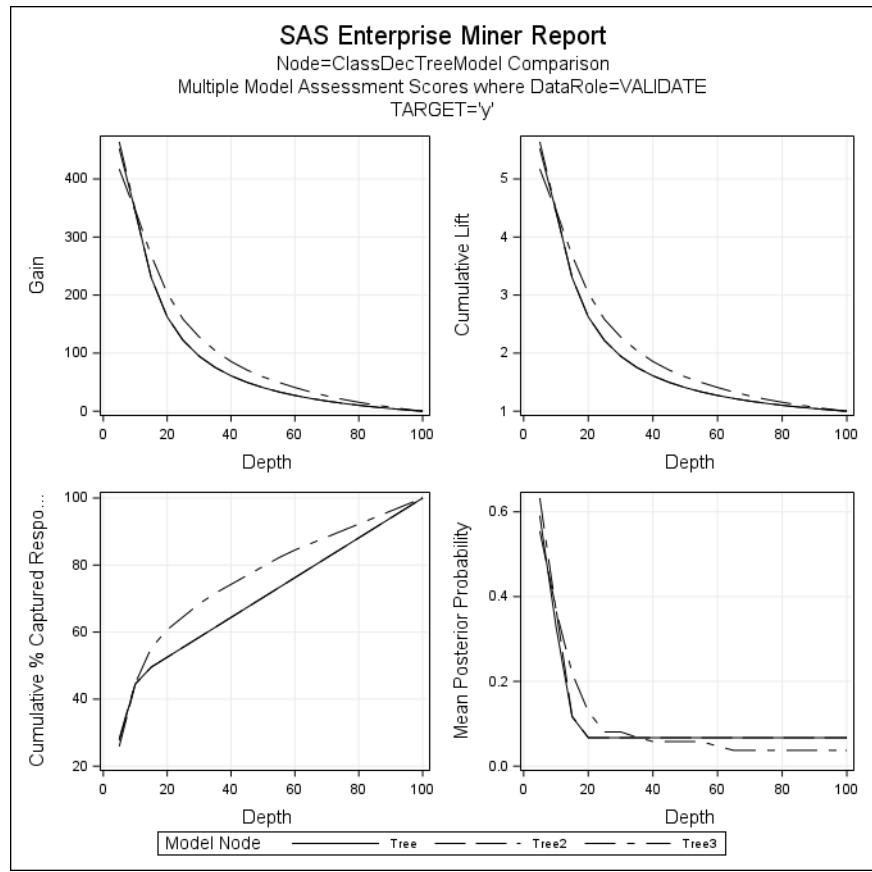
Node=ClassDecTreeModel Comparison  
Multiple Model Assessment Scores where DataRole=TEST  
TARGET='y'



## SAS Enterprise Miner Report

Node=ClassDecTreeModel Comparison  
Multiple Model Assessment Scores where DataRole=TRAIN  
TARGET='y'





## SAS Enterprise Miner Report

### Node=LogisticReg ModelComparison Summary

Node id = MdlComp3  
 Node label = LogisticReg ModelComparison  
 Meta path = Ids => Part => Tree3 => MdlComp => MdlComp3  
 Notes =

### Node=LogisticReg ModelComparison 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	_VMISC_	
LiftEpsilon	1E-6		RocChart	Y		TargetLabel	y	
ModelCriteria	Valid: Misclassification Rate		RocEpsilon	0.01		TargetName	y	
ModelDescription	ClassDecTree B3D4		RoiEpsilon	1E-6		classViyaCriteria	DEFAULT	
ModelId	Tree3		ScoreDistBin	20		intervalViyaCriteria	DEFAULT	
NormalizeReportingVariables	Y		SelectionCriteria	DEFAULT				

### Node=LogisticReg ModelComparison Variable Summary

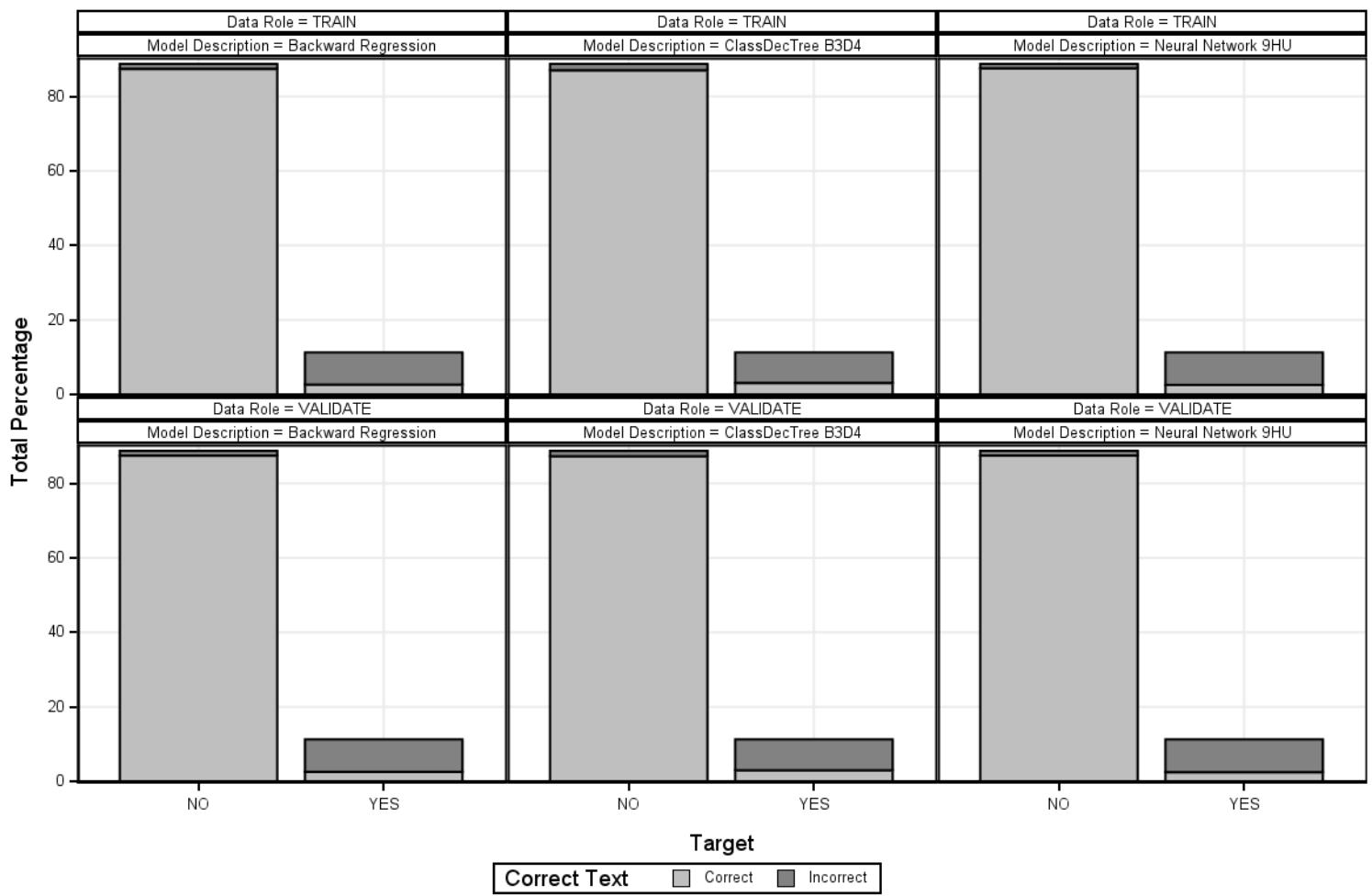
Frequency			
Role	Level	Count	Name
TARGET	NOMINAL	1	y

### Node=LogisticReg ModelComparison Fit Statistics Table

Selected Model	Predecessor Node	Model Node	Model Description	Target Variable	Target Label	Selection Criterion: Valid:		Train: Average Squared Error	Train: Misclassification Rate	Train: Kolmogorov-Smirnov Statistic
						Misclassification	Rate			
Y	MdlComp	Tree3	ClassDecTree B3D4	y	y	0.09744	0.077350	0.098822		0.490
	MdlComp2	Reg3	Backward Regression	y	y	0.10011	0.077786	0.099612		0.500
	MdlComp4	Neural3	Neural Network 9HU	y	y	0.10076	0.076850	0.098822		0.503

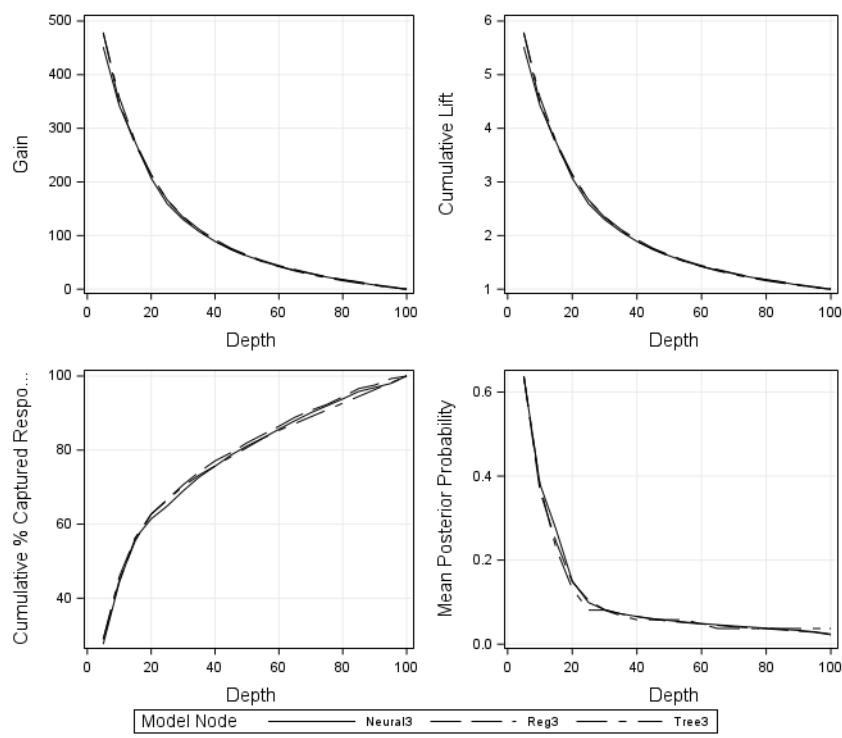
Selected Model	Predecessor Node	Model Node	Model Description	Target Variable	Target Label	Selection Criterion: Valid:		Valid: Average Squared Error	Valid: Misclassification Rate	Valid: Kolmogorov-Smirnov Statistic
						Misclassification	Rate			
Y	MdlComp	Tree3	ClassDecTree B3D4	y	y	0.09744	0.078415	0.09744		0.462
	MdlComp2	Reg3	Backward Regression	y	y	0.10011	0.079367	0.10011		0.472
	MdlComp4	Neural3	Neural Network 9HU	y	y	0.10076	0.079040	0.10076		0.471

**SAS Enterprise Miner Report**  
**Node=LogisticReg ModelComparison**  
**Classification Chart**  
**TARGET='y' and \_TYPE\_='PREDICTION'**



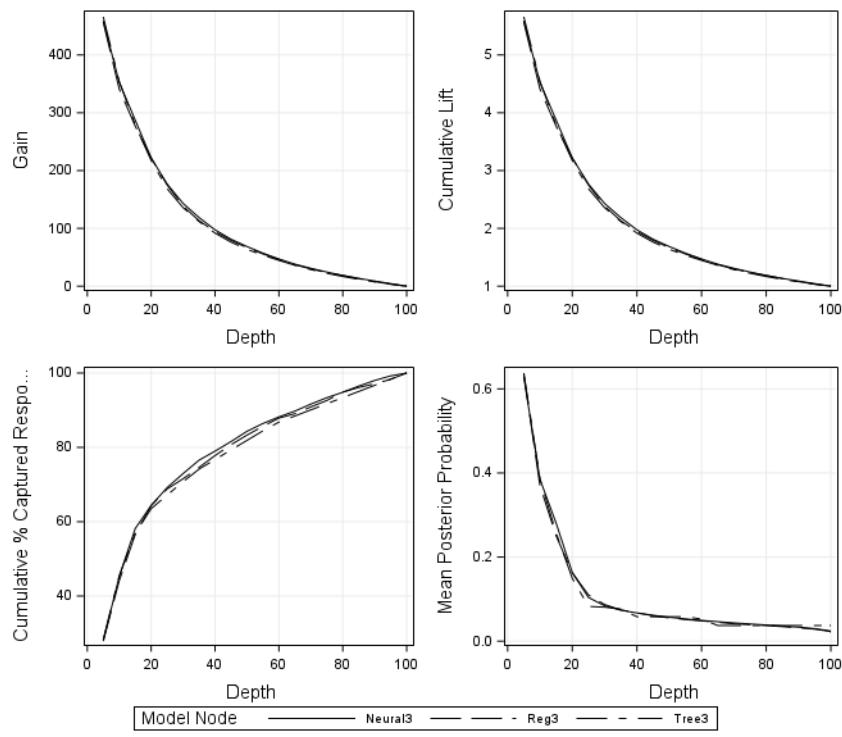
## SAS Enterprise Miner Report

Node=LogisticReg ModelComparison  
 Multiple Model Assessment Scores where DataRole=TEST  
 TARGET='y'



## SAS Enterprise Miner Report

Node=LogisticReg ModelComparison  
 Multiple Model Assessment Scores where DataRole=TRAIN  
 TARGET='y'

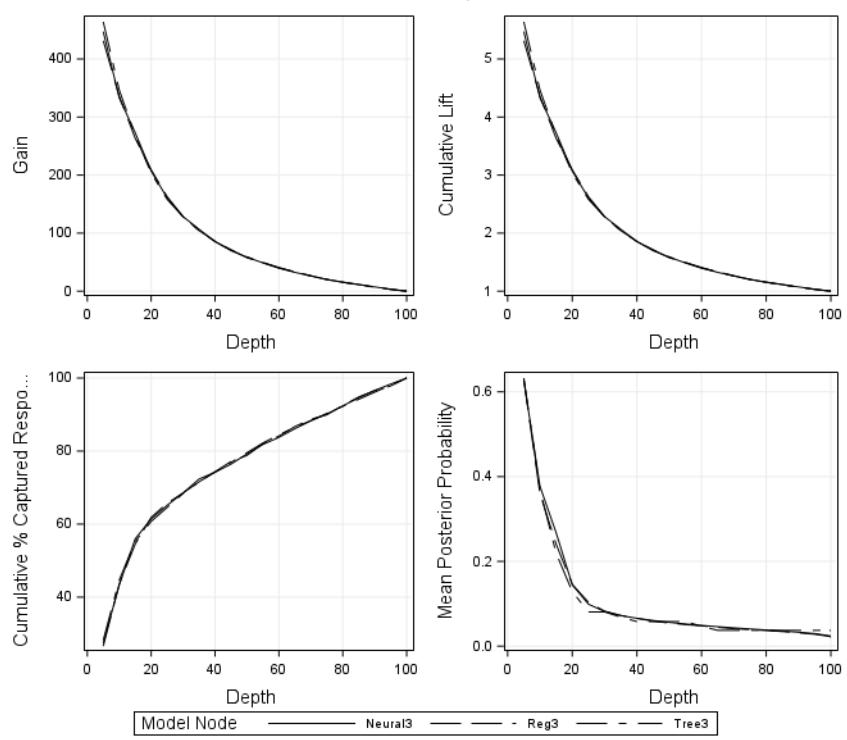


**SAS Enterprise Miner Report**

Node=LogisticReg ModelComparison

Multiple Model Assessment Scores where DataRole=VALIDATE

TARGET='y'



## SAS Enterprise Miner Report

### Node=Score Summary

Node id = Score  
 Node label = Score  
 Meta path = Ids => Part => Tree3 => 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		Name
		Count	Name	
TARGET	NOMINAL	1	y	
SEGMENT	NOMINAL	1	_NODE_	

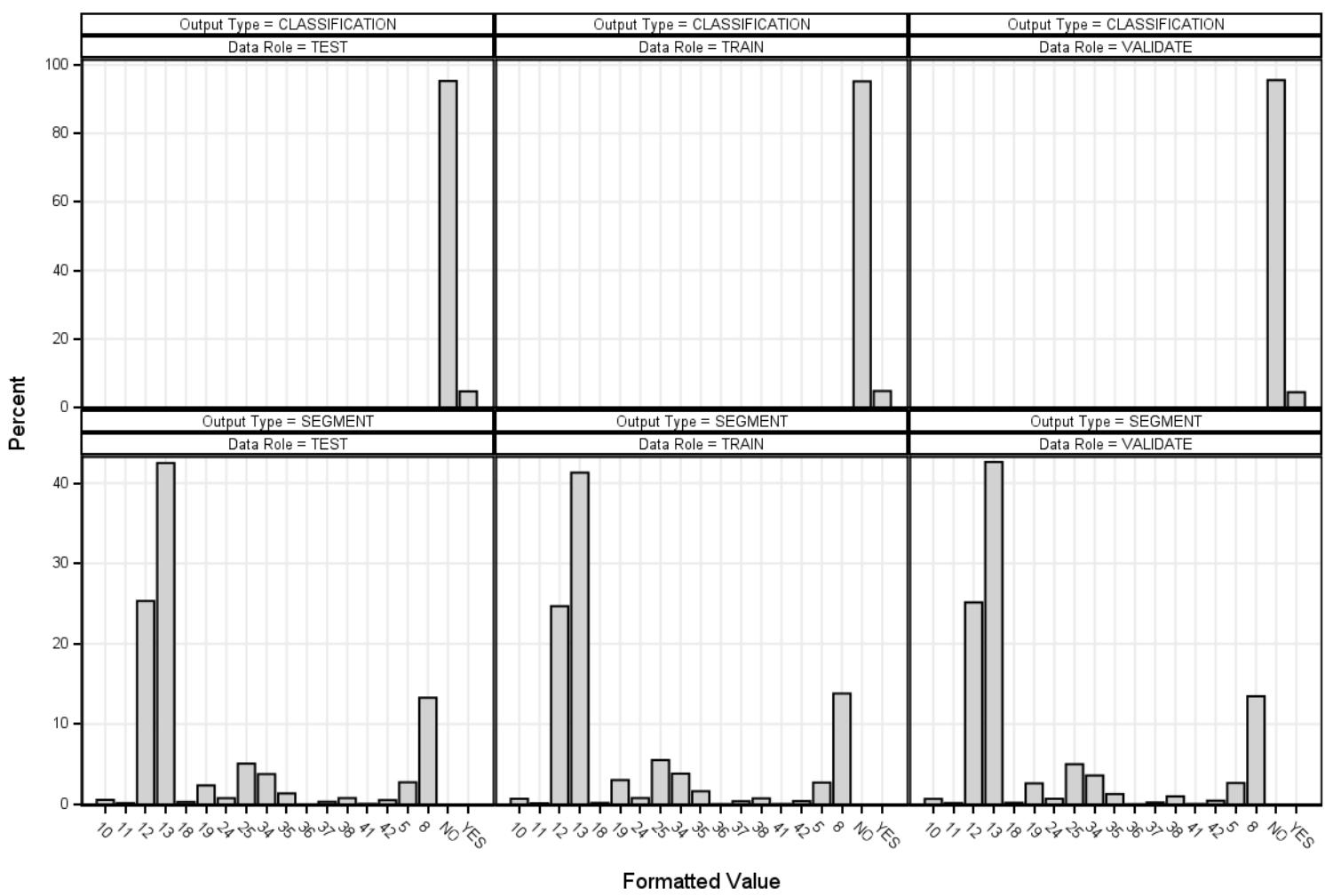
### Node=Score Output Variables

Variable Name	Creator	Variable Label	Function	Type
EM_CLASSIFICATION	Score	Prediction for y	CLASSIFICATION	C
EM_EVENTPROBABILITY	Score	Probability for level YES of y	PREDICT	N
EM_PROBABILITY	Score	Probability of Classification	PREDICT	N
EM_SEGMENT	Score	Node	TRANSFORM	N
I_y	Tree3	Into: y	CLASSIFICATION	C
P_yno	Tree3	Predicted: y=no	PREDICT	N
P_yyes	Tree3	Predicted: y=yes	PREDICT	N
Q_yno	Tree3	Unadjusted P: y=no	TRANSFORM	N
Q_yyes	Tree3	Unadjusted P: y=yes	TRANSFORM	N
U_y	Tree3	Unnormalized Into: y	CLASSIFICATION	C
V_yno	Tree3	Validated: y=no	PREDICT	N
V_yyes	Tree3	Validated: y=yes	PREDICT	N
_NODE_	Tree3	Node	TRANSFORM	N
_WARN_	Tree3	Warnings	ASSESS	C

# SAS Enterprise Miner Report

Node=Score

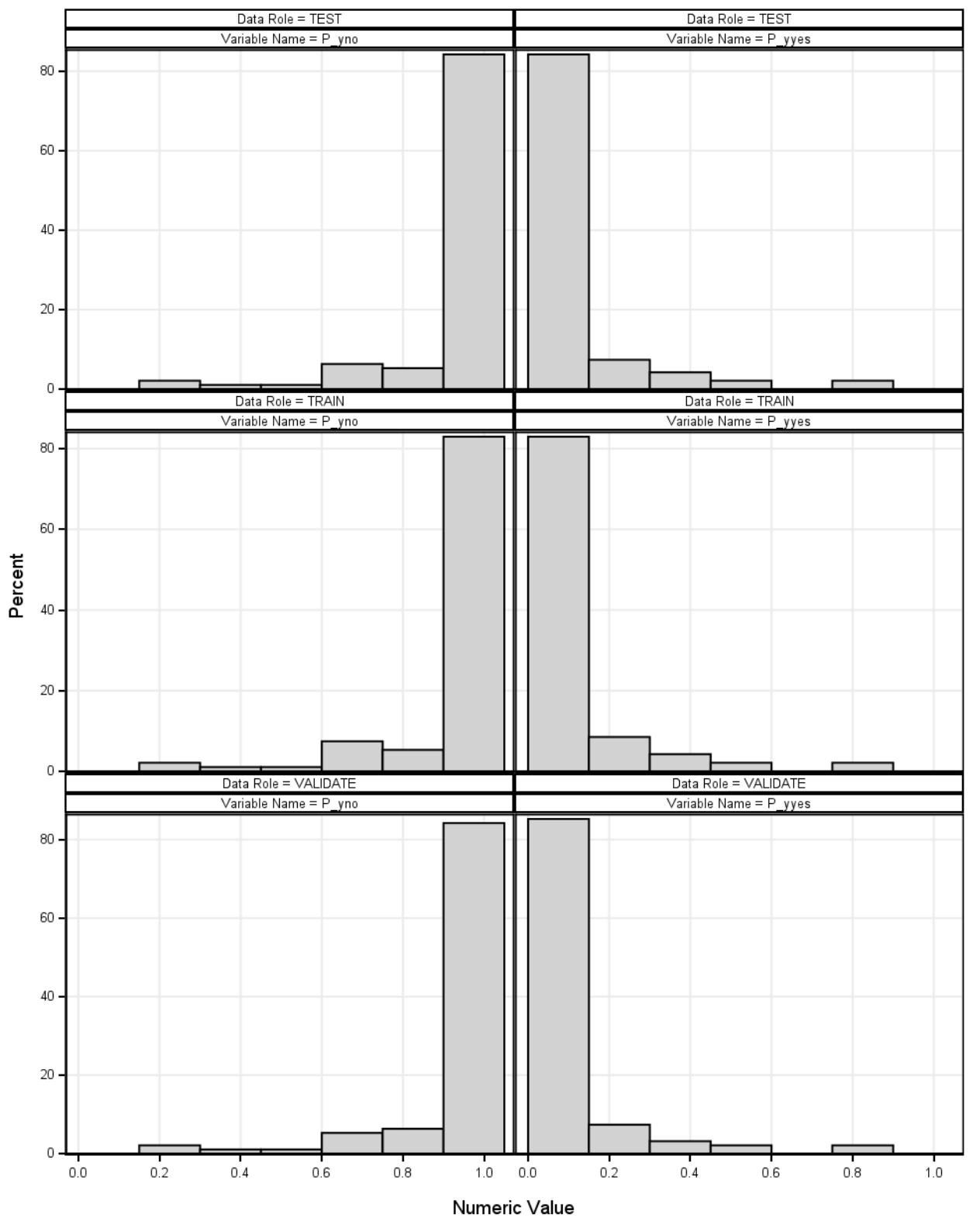
Bar Chart



# SAS Enterprise Miner Report

Node=Score

Histogram



## SAS Enterprise Miner Report

### Node=Save Data Summary

Node id = EMSave  
 Node label = Save Data  
 Meta path = Ids => Part => Tree3 => MdlComp => MdlComp3 => Score => EMSave  
 Notes =

### Node=Save Data Properties

Property	Value	Default	Property	Value	Default	Property	Value	Default
Component	EMSave		Name	PredictiveAnalysis.Scored		Train	Y	
AllObs	Y		OutObs	1000		Transaction	Y	
AllRoles	Y		Replace	Y		Type	XLSX	SAS7DBAT
DirectorySelector	\uisnutvdiprof1a\redirected\\$szebu2\Documents\SZ.SAS EM Assignments\KaizenTeam Project		Score	Y		Validate	Y	
Lib			Test	Y				

### Node=Save Data Variable Summary

Role	Level	Frequency		Name
		Count	Count	
INPUT	INTERVAL	4	4	emp_var_rate euribor3m nr_employed pdays
INPUT	NOMINAL	3	3	contact month poutcome

### Node=Save Data Data

Output Location	Total Observations	Saved Observations	Number of Variables
\uisnutvdiprof1a\redirected\\$szebu2\Documents\SZ.SAS EM Assignments\KaizenTeam Project\PredictiveAnalysis.Scored_TRAIN.xlsx	16474	MAX	25
\uisnutvdiprof1a\redirected\\$szebu2\Documents\SZ.SAS EM Assignments\KaizenTeam Project\PredictiveAnalysis.Scored_VALIDATE.xlsx	12356	MAX	25
\uisnutvdiprof1a\redirected\\$szebu2\Documents\SZ.SAS EM Assignments\KaizenTeam Project\PredictiveAnalysis.Scored_TEST.xlsx	12358	MAX	25

## SAS Enterprise Miner Report

### Node=Reporter Summary

Node id = Report  
 Node label = Reporter  
 Meta path =  
 Notes =

### Node=Reporter Properties

Property	Value	Default	Property	Value	Default	Property	Value	Default
Component	Reporter		LiftChart	Y		basicoutput	Y	
Classification	Y		Nodes	ALL	PATH	headersize	8	
CompareMdl	Y		ShowAll	N		textfont	Arial	
CrossTabs	Y		Style	JOURNAL	DEFAULT	textsize	6	
FitStat	Y		Summarization	Y		titlesize	10	
Format	PDF		VarRanking	Y				

## SAS Enterprise Miner Report

### Node=BANK\_DATA\_KAIZEN\_TRAIN Summary

Node id = lds  
 Node label = BANK\_DATA\_KAIZEN\_TRAIN  
 Meta path = lds  
 Notes =

### Node=BANK\_DATA\_KAIZEN\_TRAIN Properties

Property	Value	Default	Property	Value	Default
Component	DataSource		DsCreatedBy	szebu2	
ApplyIntervalLevelLowerLimit	Y		DsId	bankdatakaizentrain	
ApplyMaxClassLevels	Y		DsModifiedBy	szebu2	
ApplyMaxPercentMissing	Y		DsModifyDate	2037013594.3	
CMeta	WORK.M2I81TMI		DsSampleName		
ComputeStatistics	N		DsSampleSize		
DBPassThrough	Y		DsSampleSizeType		
Data	PRJDATA.BANK_DATA_KAIZEN_TRAIN		DsScope	LOCAL	
DataSelection	DATASOURCE		IdentifyEmptyColumns	Y	
DataSource	bankdatakaizentrain		IntervalLowerLimit	20	
DataSourceRole	RAW		Library	PRJDATA	
Description			MaxClassLevels	20	
DropMapVariables	Y		MaxPercentMissing	50	
DsCreateDate	2037013594.1		MetaAdvisor	BASIC	

Property	Value	Default
NBytes	7341056	.
NCols	21	.
NObs	41188	.
NewTable		
NewVariableRole	REJECT	
OutputType	VIEW	
Role	RAW	TRAIN
Sample	D	
SampleSizeObs	10000	
SampleSizePercent	20	
SampleSizeType	PERCENT	
Scope	LOCAL	
Segment		
Table	BANK_DATA_KAIZEN_TRAIN	

### Node=BANK\_DATA\_KAIZEN\_TRAIN Data Attributes

Attribute	Value	Attribute	Value	Attribute	Value
Data Name	BANK_DATA_KAIZEN_TRAIN	Date Created	19Jul2024:12:35:54	Data Size	7341056
Data Type	DATA	Date Modified	19Jul2024:12:35:54	Role	RAW
Data Label		Number Rows	41188	Segment	
Engine	BASE	Number Columns	21	Data Library	PRJDATA

## Node=BANK\_DATA\_KAIZEN\_TRAIN

### Variables List

Name	Label	Role	Level	Type	Length	Format	Creator
age	age	INPUT	INTERVAL	N	8	BEST.	
campaign	campaign	INPUT	INTERVAL	N	8	BEST.	
cons_conf_idx		INPUT	INTERVAL	N	8		
cons_price_idx		INPUT	INTERVAL	N	8		
contact	contact	INPUT	NOMINAL	C	9	\$9.	
day_of_week	day_of_week	INPUT	NOMINAL	C	3	\$3.	
default	default	INPUT	NOMINAL	C	7	\$7.	
duration	duration	REJECTED	INTERVAL	N	8	BEST.	
education	education	INPUT	NOMINAL	C	19	\$19.	
emp_var_rate		INPUT	INTERVAL	N	8		
euribor3m	euribor3m	INPUT	INTERVAL	N	8	BEST.	
housing	housing	INPUT	NOMINAL	C	7	\$7.	
job	job	INPUT	NOMINAL	C	13	\$13.	
loan	loan	INPUT	NOMINAL	C	7	\$7.	
marital	marital	INPUT	NOMINAL	C	8	\$8.	
month	month	INPUT	NOMINAL	C	3	\$3.	
nr_employed		INPUT	INTERVAL	N	8		
pdays	pdays	INPUT	INTERVAL	N	8	BEST.	
poutcome	poutcome	INPUT	NOMINAL	C	11	\$11.	
previous	previous	INPUT	INTERVAL	N	8	BEST.	
y	y	TARGET	NOMINAL	C	3	\$3.	

## SAS Enterprise Miner Report

### Node=BANK\_DATA\_KAIZEN\_TESTDATA Summary

Node id = lds2  
 Node label = BANK\_DATA\_KAIZEN\_TESTDATA  
 Meta path = lds2  
 Notes =

### Node=BANK\_DATA\_KAIZEN\_TESTDATA Properties

Property	Value	Default	Property	Value	Default
Component	DataSource		DsCreatedBy	szebu2	
ApplyIntervalLevelLowerLimit	Y		DsId	bankdatakaizentestdata	
ApplyMaxClassLevels	Y		DsModifiedBy	szebu2	
ApplyMaxPercentMissing	Y		DsModifyDate	2037013634	
CMeta	WORK.M3SLOT7V		DsSampleName		
ComputeStatistics	N		DsSampleSize		
DBPassThrough	Y		DsSampleSizeType		
Data	PRJDATA.BANK_DATA_KAIZEN_TESTDATA		DsScope	LOCAL	
DataSelection	DATASOURCE		IdentifyEmptyColumns	Y	
DataSource	bankdatakaizentestdata		IntervalLowerLimit	20	
DataSourceRole	RAW		Library	PRJDATA	
Description			MaxClassLevels	20	
DropMapVariables	Y		MaxPercentMissing	50	
DsCreateDate	2037013633.8		MetaAdvisor	BASIC	

Property	Value	Default
NBytes	787456	.
NCols	21	.
NObs	4119	.
NewTable		
NewVariableRole	REJECT	
OutputType	VIEW	
Role	RAW	TRAIN
Sample	D	
SampleSizeObs	10000	
SampleSizePercent	20	
SampleSizeType	PERCENT	
Scope	LOCAL	
Segment		
Table	BANK_DATA_KAIZEN_TESTDATA	

### Node=BANK\_DATA\_KAIZEN\_TESTDATA Data Attributes

Attribute	Value	Attribute	Value	Attribute	Value
Data Name	BANK_DATA_KAIZEN_TESTDATA	Date Created	19Jul2024:12:40:03	Data Size	787456
Data Type	DATA	Date Modified	19Jul2024:12:40:03	Role	RAW
Data Label		Number Rows	4119	Segment	
Engine	BASE	Number Columns	21	Data Library	PRJDATA

## Node=BANK\_DATA\_KAIZEN\_TESTDATA

### Variables List

Name	Label	Role	Level	Type	Length	Format	Creator
age	age	INPUT	INTERVAL	N	8	BEST.	
campaign	campaign	INPUT	INTERVAL	N	8	BEST.	
cons_conf_idx		INPUT	INTERVAL	N	8		
cons_price_idx		INPUT	INTERVAL	N	8		
contact	contact	INPUT	NOMINAL	C	9	\$9.	
day_of_week	day_of_week	INPUT	NOMINAL	C	3	\$3.	
default	default	INPUT	NOMINAL	C	7	\$7.	
duration	duration	INPUT	INTERVAL	N	8	BEST.	
education	education	INPUT	NOMINAL	C	19	\$19.	
emp_var_rate		INPUT	INTERVAL	N	8		
euribor3m	euribor3m	INPUT	INTERVAL	N	8	BEST.	
housing	housing	INPUT	NOMINAL	C	7	\$7.	
job	job	INPUT	NOMINAL	C	13	\$13.	
loan	loan	INPUT	NOMINAL	C	7	\$7.	
marital	marital	INPUT	NOMINAL	C	8	\$8.	
month	month	INPUT	NOMINAL	C	3	\$3.	
nr_employed		INPUT	INTERVAL	N	8		
pdays	pdays	INPUT	INTERVAL	N	8	BEST.	
poutcome	poutcome	INPUT	NOMINAL	C	11	\$11.	
previous	previous	INPUT	INTERVAL	N	8	BEST.	
y	y	INPUT	NOMINAL	C	3	\$3.	

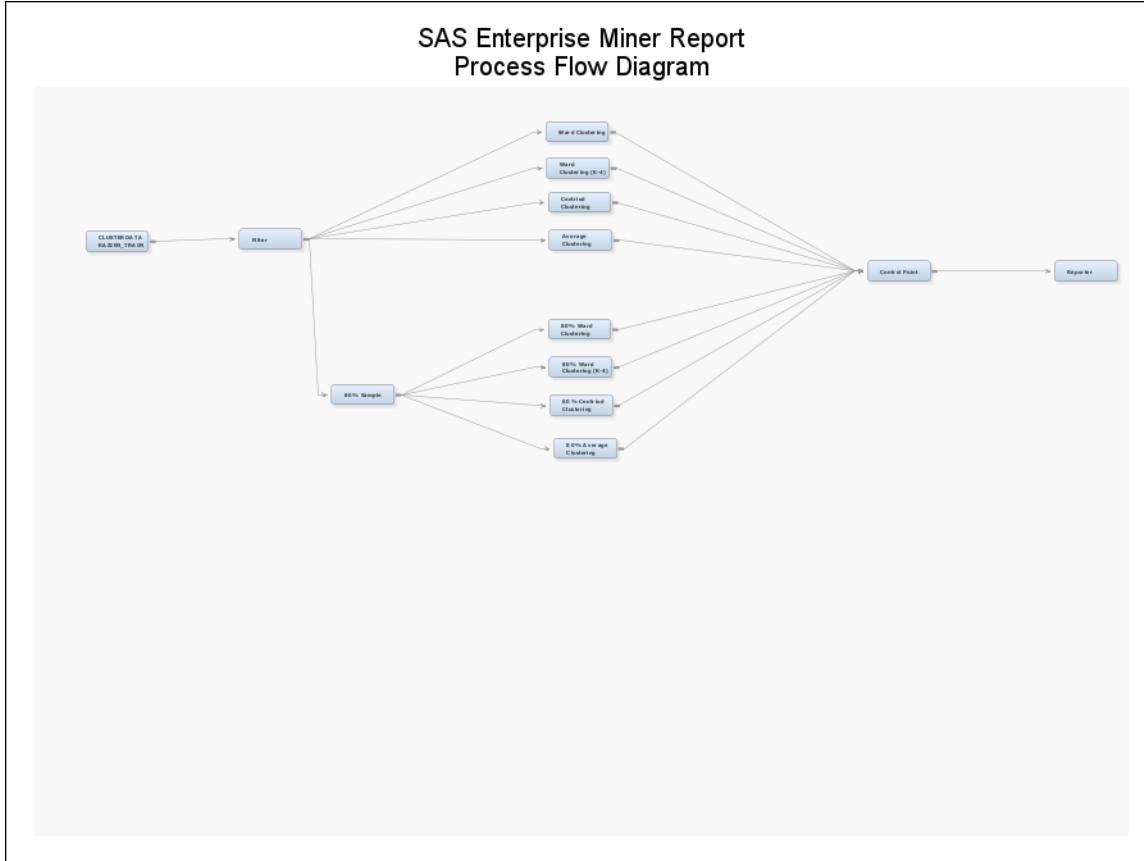
End of Report

## SAS Enterprise Miner Report

User = szebu2  
 Date = 11:46:38 July 16  
 Project = Kaizen.DM Project  
 Diagram = ExploratoryModel.SZ

Start Node = Report  
 Node label = Reporter  
 Nodes = ALL  
 Showall = N

Format = PDF  
 Style = JOURNAL



## SAS Enterprise Miner Report

### Node=CLUSTERDATAKAZIEN\_TRAIN Summary

Node id = lds  
 Node label = CLUSTERDATAKAZIEN\_TRAIN  
 Meta path = lds  
 Notes =

### Node=CLUSTERDATAKAZIEN\_TRAIN Properties

Property	Value	Default	Property	Value	Default
Component	DataSource		DsCreatedBy	szebu2	
ApplyIntervalLevelLowerLimit	Y		DsId	clusterdatakazientrain	
ApplyMaxClassLevels	Y		DsModifiedBy	szebu2	
ApplyMaxPercentMissing	Y		DsModifyDate	2036656547.7	
CMeta	WORK.M0_DSMO9		DsSampleName		
ComputeStatistics	N		DsSampleSize		
DBPassThrough	Y		DsSampleSizeType		
Data	PRJDATA.CLUSTERDATAKAZIEN_TRAIN		DsScope	LOCAL	
DataSelection	DATASOURCE		IdentifyEmptyColumns	Y	
DataSource	clusterdatakazientrain		IntervalLowerLimit	20	
DataSourceRole	RAW		Library	PRJDATA	
Description			MaxClassLevels	20	
DropMapVariables	Y		MaxPercentMissing	50	
DsCreateDate	2036656547.5		MetaAdvisor	BASIC	

Property	Value	Default
NBytes	21300224	.
NCols	64	.
NObs	41188	.
NewTable		
NewVariableRole	REJECT	
OutputType	VIEW	
Role	RAW	TRAIN
Sample	D	
SampleSizeObs	10000	
SampleSizePercent	20	
SampleSizeType	PERCENT	
Scope	LOCAL	
Segment		
Table	CLUSTERDATAKAZIEN_TRAIN	

### Node=CLUSTERDATAKAZIEN\_TRAIN Data Attributes

Attribute	Value	Attribute	Value	Attribute	Value
Data Name	CLUSTERDATAKAZIEN_TRAIN	Date Created	15Jul2024:09:53:01	Data Size	21300224
Data Type	DATA	Date Modified	15Jul2024:09:53:01	Role	RAW
Data Label		Number Rows	41188	Segment	
Engine	BASE	Number Columns	64	Data Library	PRJDATA

## Node=CLUSTERDATAKAZIEN\_TRAIN

### Variable Summary

Role	Level	Frequency		
		Count		Name
REJECTED	NOMINAL	1	y	
INPUT	INTERVAL	63	age campaign cons_conf_idx cons_price_idx contact_cellular contact_telephone day_of_week_fri day_of_week_mon day_of_week_thu day_of_week_tue day_of_week_wed default_no default_unknown default_yes ...	

## SAS Enterprise Miner Report

### Node=Filter Summary

Node id = Filter  
 Node label = Filter  
 Meta path = Ids => 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		Name
		Count		
REJECTED	NOMINAL	1	y	
INPUT	INTERVAL	63	age campaign cons_conf_idx cons_price_idx contact_cellular contact_telephone day_of_week_fri day_of_week_mon day_of_week_thu day_of_week_tue day_of_week_wed default_no default_unknown default_yes ...	

### Node=Filter Limits for Interval Variables

Variable	Role	Minimum	Maximum	STDDEV	Keep Missing	
					Filter Method	Values Label
age	INPUT	8.76	71.29	STDDEV	Y	age
campaign	INPUT	-5.74	10.88	STDDEV	Y	campaign
cons_conf_idx	INPUT	-54.39	-26.62	STDDEV	Y	
cons_price_idx	INPUT	91.84	95.31	STDDEV	Y	
contact_cellular	INPUT	-0.81	2.08	STDDEV	Y	contact_cellular
contact_telephone	INPUT	-1.08	1.81	STDDEV	Y	contact_telephone
day_of_week_fri	INPUT	-0.99	1.37	STDDEV	Y	day_of_week_fri
day_of_week_mon	INPUT	-1.01	1.42	STDDEV	Y	day_of_week_mon
day_of_week_thu	INPUT	-1.01	1.43	STDDEV	Y	day_of_week_thu
day_of_week_tue	INPUT	-1.00	1.39	STDDEV	Y	day_of_week_tue
day_of_week_wed	INPUT	-1.00	1.39	STDDEV	Y	day_of_week_wed
default_no	INPUT	-0.43	2.01	STDDEV	Y	default_no
default_unknown	INPUT	-1.01	1.43	STDDEV	Y	default_unknown
default_yes	INPUT	-0.03	0.03	STDDEV	Y	default_yes
duration	INPUT	-519.55	1036.12	STDDEV	Y	duration
education_basic_4y	INPUT	-0.80	1.01	STDDEV	Y	
education_basic_6y	INPUT	-0.63	0.74	STDDEV	Y	
education_basic_9y	INPUT	-0.91	1.21	STDDEV	Y	
education_high_school	INPUT	-1.03	1.50	STDDEV	Y	

Variable	Role	Minimum	Maximum	Filter Method	Keep Missing Values		Label
education_illiterate	INPUT	-0.06	0.06	STDDEV	Y		education_illiterate
education_professional_course	INPUT	-0.87	1.13	STDDEV	Y		
education_university_degree	INPUT	-1.07	1.66	STDDEV	Y		
education_unknown	INPUT	-0.56	0.64	STDDEV	Y		education_unknown
emp_var_rate	INPUT	-4.63	4.79	STDDEV	Y		
euribor3m	INPUT	-1.58	8.82	STDDEV	Y		euribor3m
housing_no	INPUT	-1.04	1.95	STDDEV	Y		housing_no
housing_unknown	INPUT	-0.44	0.48	STDDEV	Y		housing_unknown
housing_yes	INPUT	-0.97	2.02	STDDEV	Y		housing_yes
job_admin_	INPUT	-1.05	1.56	STDDEV	Y		
job_blue-collar	INPUT	-1.03	1.48	STDDEV	Y		
job_entrepreneur	INPUT	-0.52	0.59	STDDEV	Y		job_entrepreneur
job_housemaid	INPUT	-0.45	0.50	STDDEV	Y		job_housemaid
job_management	INPUT	-0.70	0.84	STDDEV	Y		job_management
job_retired	INPUT	-0.56	0.64	STDDEV	Y		job_retired
job_self-employed	INPUT	-0.51	0.58	STDDEV	Y		
job_services	INPUT	-0.79	0.98	STDDEV	Y		job_services
job_student	INPUT	-0.41	0.45	STDDEV	Y		job_student
job_technician	INPUT	-0.95	1.27	STDDEV	Y		job_technician
job_unemployed	INPUT	-0.44	0.49	STDDEV	Y		job_unemployed
job_unknown	INPUT	-0.26	0.28	STDDEV	Y		job_unknown
loan_no	INPUT	-0.32	1.97	STDDEV	Y		loan_no
loan_unknown	INPUT	-0.44	0.48	STDDEV	Y		loan_unknown
loan_yes	INPUT	-0.92	1.23	STDDEV	Y		loan_yes
marital_divorced	INPUT	-0.83	1.06	STDDEV	Y		marital_divorced
marital_married	INPUT	-0.86	2.07	STDDEV	Y		marital_married
marital_single	INPUT	-1.07	1.63	STDDEV	Y		marital_single
marital_unknown	INPUT	-0.13	0.13	STDDEV	Y		marital_unknown
month_apr	INPUT	-0.67	0.80	STDDEV	Y		month_apr
month_aug	INPUT	-0.92	1.22	STDDEV	Y		month_aug
month_dec	INPUT	-0.19	0.20	STDDEV	Y		month_dec
month_jul	INPUT	-0.96	1.31	STDDEV	Y		month_jul
month_jun	INPUT	-0.88	1.14	STDDEV	Y		month_jun
month_mar	INPUT	-0.33	0.36	STDDEV	Y		month_mar
month_may	INPUT	-1.08	1.75	STDDEV	Y		month_may
month_nov	INPUT	-0.80	1.00	STDDEV	Y		month_nov
month_oct	INPUT	-0.38	0.41	STDDEV	Y		month_oct
month_sep	INPUT	-0.34	0.36	STDDEV	Y		month_sep
nr_employed	INPUT	4950.48	5383.55	STDDEV	Y		
pdays	INPUT	401.74	1523.21	STDDEV	Y		pdays
poutcome_failure	INPUT	-0.81	1.02	STDDEV	Y		poutcome_failure
poutcome_nonexistent	INPUT	-0.17	1.89	STDDEV	Y		poutcome_nonexistent
poutcome_success	INPUT	-0.51	0.57	STDDEV	Y		poutcome_success
previous	INPUT	-1.31	1.66	STDDEV	Y		previous

## SAS Enterprise Miner Report

### Node=Ward Clustering Summary

Node id = Clus2  
 Node label = Ward Clustering  
 Meta path = Ids => Filter => Clus2  
 Notes =

### Node=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	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	10		TrainDefaults	Y	
ClusvarRole	SEGMENT		MaxIter	10		TreeProfile	Y	
DistancePlot	Y		MaxSteps	1200		XConv	0.0001	
Drift	N		MissingInterval	DEFAULT				

### Node=Ward Clustering Variable Summary

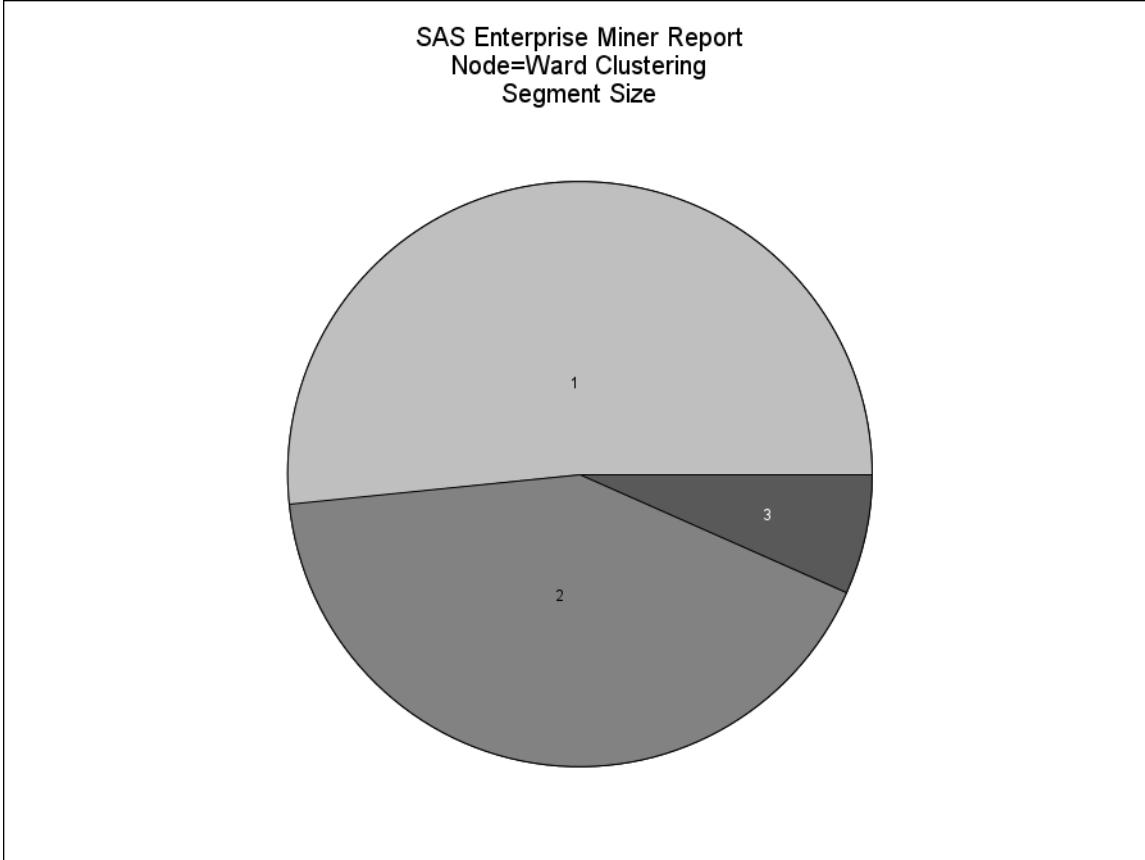
Role	Level	Frequency		Name
		Count		
INPUT	INTERVAL	63	age campaign cons_conf_idx cons_price_idx contact_cellular contact_telephone day_of_week_fri day_of_week_mon day_of_week_thu day_of_week_tue day_of_week_wed default_no default_unknown default_yes ...	

### Node=Ward Clustering Mean Statistics

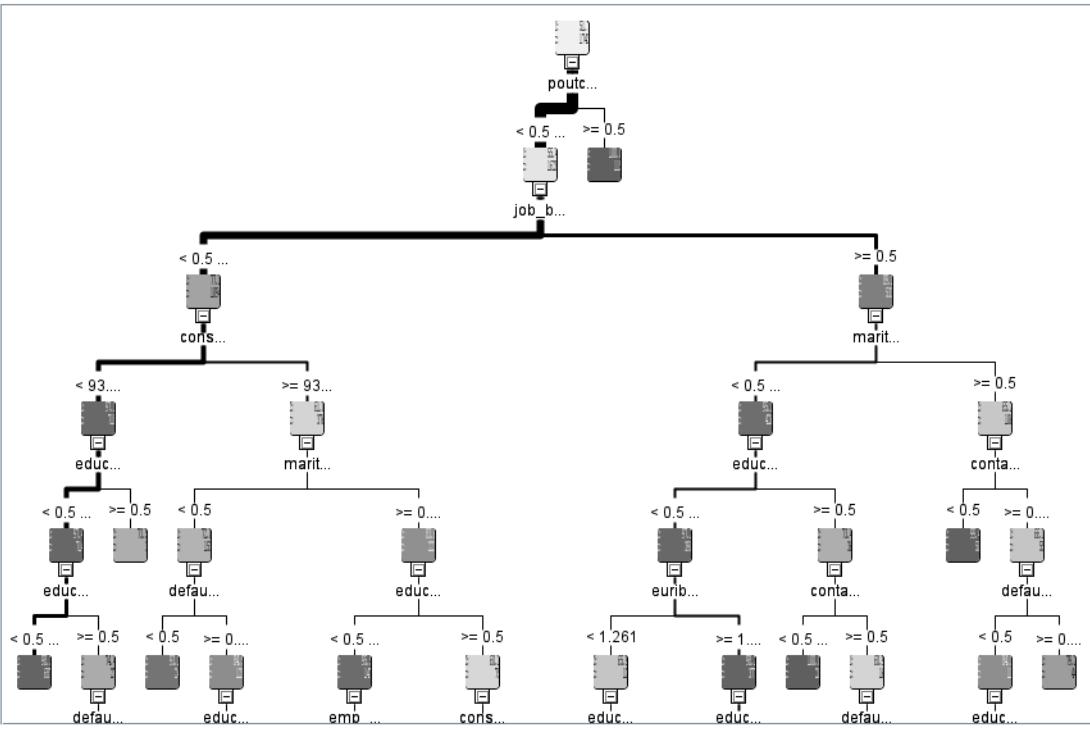
Variable	Segment	Segment	Segment
	1	2	3
Clustering Criterion	0.72	0.72	0.72
Maximum Relative Change in Cluster Seeds	0.01	0.01	0.01
Improvement in Clustering Criterion	.	.	.
Frequency of Cluster	9022.00	7259.00	1157.00
Root-Mean-Square Standard Deviation	0.73	0.72	0.67
Maximum Distance from Cluster Seed	8.63	8.69	8.45
Nearest Cluster	2.00	1.00	1.00
Distance to Nearest Cluster	3.33	3.33	7.95
age	36.80	40.79	36.87
campaign	2.45	2.38	2.13
cons_conf_idx	-39.81	-39.87	-44.55
cons_price_idx	93.52	93.97	92.91
contact_cellular	0.79	0.27	0.92
contact_telephone	0.21	0.73	0.08

Variable	Segment	Segment	Segment
	1	2	3
day_of_week_fri	0.17	0.19	0.22
day_of_week_mon	0.21	0.20	0.18
day_of_week_thu	0.20	0.20	0.18
day_of_week_tue	0.20	0.20	0.20
day_of_week_wed	0.21	0.21	0.23
default_no	0.90	0.63	0.88
default_unknown	0.10	0.37	0.12
default_yes	0.00	0.00	0.00
duration	224.60	238.76	217.13
education_basic_4y	0.01	0.25	0.09
education_basic_6y	0.00	0.00	0.00
education_basic_9y	0.04	0.39	0.22
education_high_school	0.25	0.15	0.26
education_illiterate	0.00	0.00	0.00
education_professional_course	0.21	0.13	0.15
education_university_degree	0.49	0.08	0.28
education_unknown	0.00	0.00	0.00
emp_var_rate	0.49	0.94	-1.93
euribor3m	4.00	4.53	1.23
housing_no	0.43	0.53	0.43
housing_unknown	0.00	0.00	0.00
housing_yes	0.57	0.47	0.57
job_admin_	0.58	0.17	0.43
job_blue-collar	0.06	0.66	0.35
job_entrepreneur	0.00	0.00	0.00
job_housemaid	0.00	0.00	0.00
job_management	0.00	0.00	0.00
job_retired	0.00	0.00	0.00
job_self-employed	0.00	0.00	0.00
job_services	0.00	0.00	0.00
job_student	0.00	0.00	0.00
job_technician	0.36	0.17	0.22
job_unemployed	0.00	0.00	0.00
job_unknown	0.00	0.00	0.00
loan_no	0.83	0.86	0.85
loan_unknown	0.00	0.00	0.00
loan_yes	0.17	0.14	0.15
marital_divorced	0.13	0.08	0.11
marital_married	0.42	0.79	0.51
marital_single	0.44	0.13	0.38
marital_unknown	0.00	0.00	0.00
month_apr	0.00	0.00	0.00
month_aug	0.38	0.05	0.07
month_dec	0.00	0.00	0.00
month_jul	0.26	0.17	0.03
month_jun	0.07	0.27	0.06
month_mar	0.00	0.00	0.00
month_may	0.29	0.51	0.84
month_nov	0.00	0.00	0.00
month_oct	0.00	0.00	0.00
month_sep	0.00	0.00	0.00

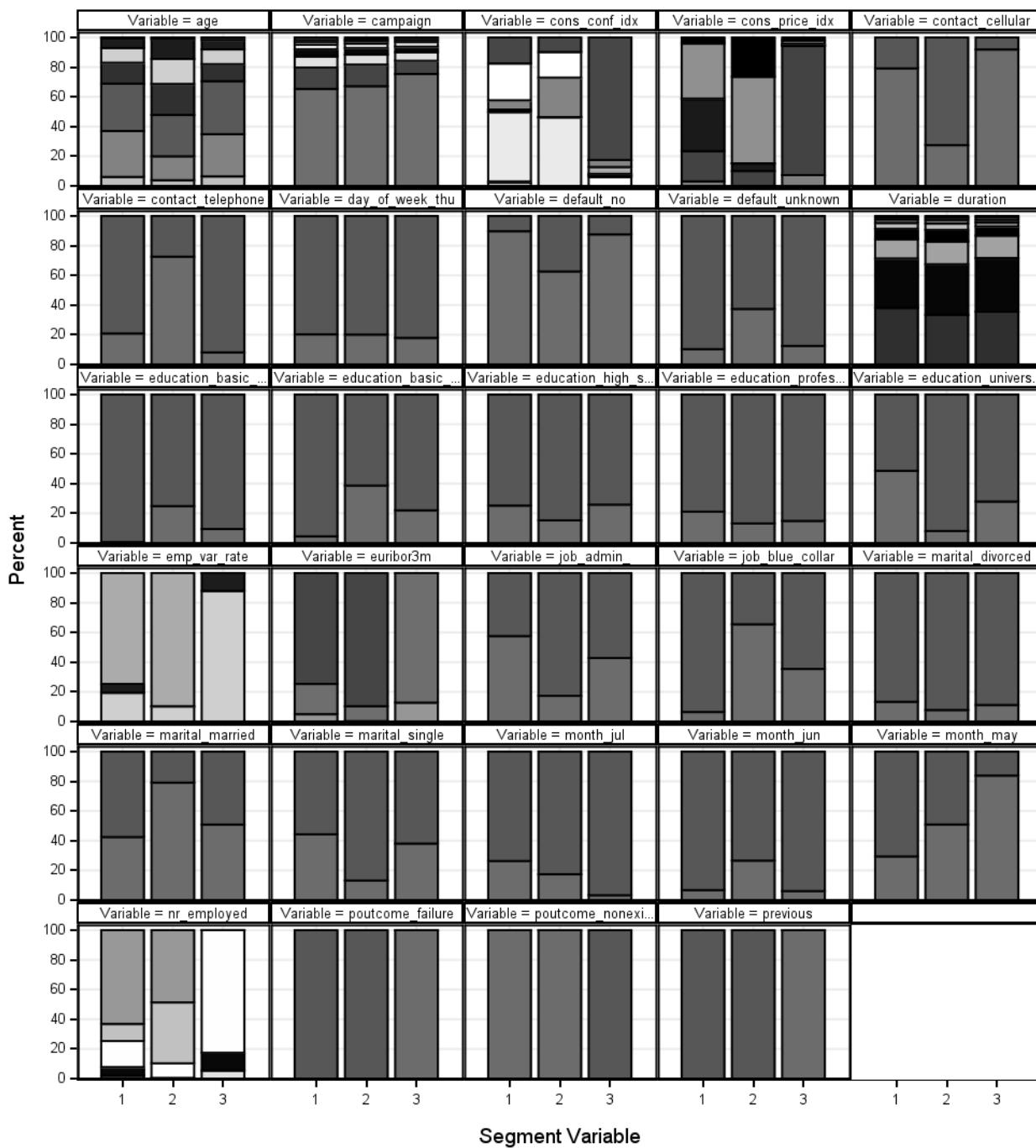
Variable	Segment	Segment	Segment
	1	2	3
nr_employed	5187.77	5199.19	5090.63
poutcome_failure	-0.00	-0.00	1.00
poutcome_nonexistent	1.00	1.00	0.00
poutcome_success	0.00	0.00	0.00
previous	-0.00	-0.00	1.00



SAS Enterprise Miner Report  
Node=Ward Clustering  
Tree Diagram



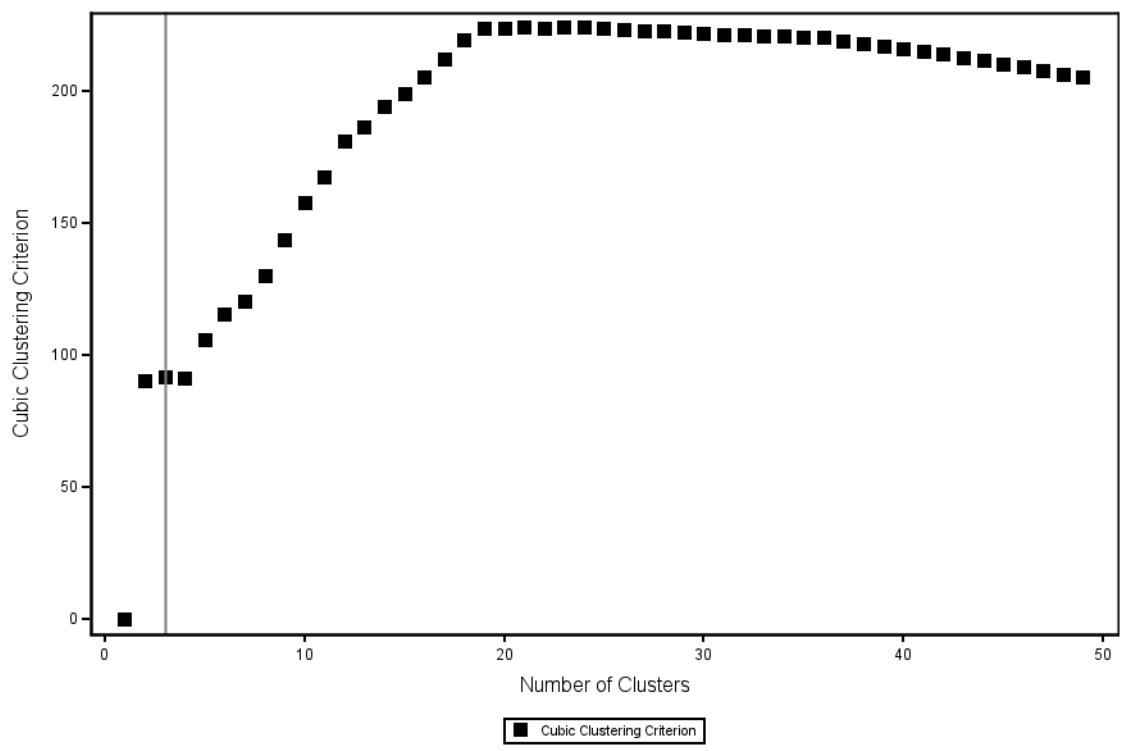
**SAS Enterprise Miner Report**  
**Node=Ward Clustering**  
**Segment Plot**



Segment Variable

Formatted Value

20:26.375	26.375:32.75	32.75:39.125	39.125:45.5	45.5:51.875	51.875:58.25	58.25:64.625
64.625:71	1:2.125	2.125:3.25	3.25:4.375	4.375:5.5	5.5:6.625	6.625:7.75
7.75:8.875	8.875:10	-33.25:-31.4	-35.1:-33.25	-36.95:-35.1	-38.8:-36.95	-40.65:-38.8
-42.5:-40.65	-44.35:-42.5	-46.2:-44.35	92.201:92.484	92.767:93.05	93.333:93.616	93.616:93.899
93.899:94.182	94.182:94.465	0.875:1	0:0.125	0:129.5	129.5:259	259:388.5
388.5:518	518:647.5	647.5:777	777:906.5	906.5:1036	-1.825:-1.288	-2.9:-2.363
0.8625:1.4	0.668:1.2058	1.2058:1.7435	4.4323:4.97	4992:5021.5	5051:5080.5	5080.5:5110
5169:5198.5	5198.5:5228					

**SAS Enterprise Miner Report**Node=Ward Clustering  
CCC Plot

## SAS Enterprise Miner Report

### Node=Centriod Clustering Summary

Node id = Clus3  
 Node label = Centriod Clustering  
 Meta path = Ids => Filter => Clus3  
 Notes =

### Node=Centriod Clustering 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	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	10		TrainDefaults	Y	
ClusvarRole	SEGMENT		MaxIter	10		TreeProfile	Y	
DistancePlot	Y		MaxSteps	1200		XConv	0.0001	
Drift	N		MissingInterval	DEFAULT				

### Node=Centriod Clustering Variable Summary

Role	Level	Frequency		Name
		Count	Frequency	
INPUT	INTERVAL	63	age campaign cons_conf_idx cons_price_idx contact_cellular contact_telephone day_of_week_fri day_of_week_mon day_of_week_thu day_of_week_tue day_of_week_wed default_no default_unknown default_yes ...	

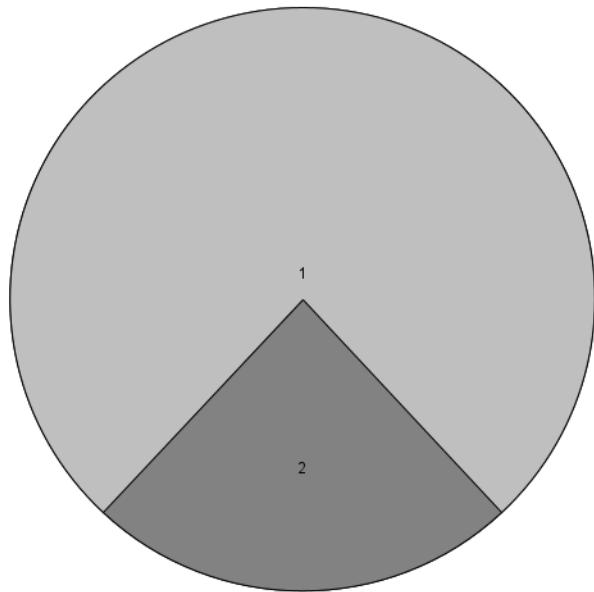
### Node=Centriod Clustering Mean Statistics

Variable	Segment	
	Segment 1	2
Clustering Criterion	0.74	0.74
Maximum Relative Change in Cluster Seeds	0.00	0.00
Improvement in Clustering Criterion	0.00	0.00
Frequency of Cluster	13247.00	4191.00
Root-Mean-Square Standard Deviation	0.73	0.78
Maximum Distance from Cluster Seed	8.40	9.75
Nearest Cluster	2.00	1.00
Distance to Nearest Cluster	5.27	5.27
age	39.02	36.72
campaign	2.47	2.20
cons_conf_idx	-38.88	-44.17
cons_price_idx	93.91	92.92
contact_cellular	0.48	0.90
contact_telephone	0.52	0.10

Variable	Segment	
	Segment 1	2
day_of_week_fri	0.18	0.19
day_of_week_mon	0.20	0.21
day_of_week_thu	0.20	0.19
day_of_week_tue	0.20	0.20
day_of_week_wed	0.21	0.21
default_no	0.75	0.88
default_unknown	0.25	0.12
default_yes	0.00	0.00
duration	229.53	231.48
education_basic_4y	0.12	0.10
education_basic_6y	0.00	0.00
education_basic_9y	0.19	0.22
education_high_school	0.20	0.23
education_illiterate	0.00	0.00
education_professional_course	0.18	0.15
education_university_degree	0.30	0.30
education_unknown	0.00	0.00
emp_var_rate	1.31	-1.98
euribor3m	4.93	1.23
housing_no	0.49	0.42
housing_unknown	0.00	0.00
housing_yes	0.51	0.58
job_admin_	0.39	0.42
job_blue-collar	0.32	0.36
job_entrepreneur	0.00	0.00
job_housemaid	0.00	0.00
job_management	0.00	0.00
job_retired	0.00	0.00
job_self-employed	0.00	0.00
job_services	0.00	0.00
job_student	0.00	0.00
job_technician	0.29	0.22
job_unemployed	0.00	0.00
job_unknown	0.00	0.00
loan_no	0.84	0.84
loan_unknown	0.00	0.00
loan_yes	0.16	0.16
marital_divorced	0.11	0.09
marital_married	0.60	0.52
marital_single	0.29	0.38
marital_unknown	0.00	0.00
month_apr	0.00	0.00
month_aug	0.27	0.08
month_dec	0.00	0.00
month_jul	0.26	0.04
month_jun	0.17	0.09
month_mar	0.00	0.00
month_may	0.30	0.79
month_nov	0.00	0.00
month_oct	0.00	0.00
month_sep	0.00	0.00

Variable	Segment	
	1	2
nr_employed	5216.79	5089.01
poutcome_failure	-0.00	0.28
poutcome_nonexistent	1.00	0.72
poutcome_success	0.00	0.00
previous	-0.00	0.28

SAS Enterprise Miner Report  
Node=Centriod Clustering  
Segment Size



SAS Enterprise Miner Report  
Node=Centriod Clustering  
Tree Diagram

1: 76.0%  
Count: 17438

**emp\_var\_rate**

< -0.3

2: 100.0%  
Count: 4191

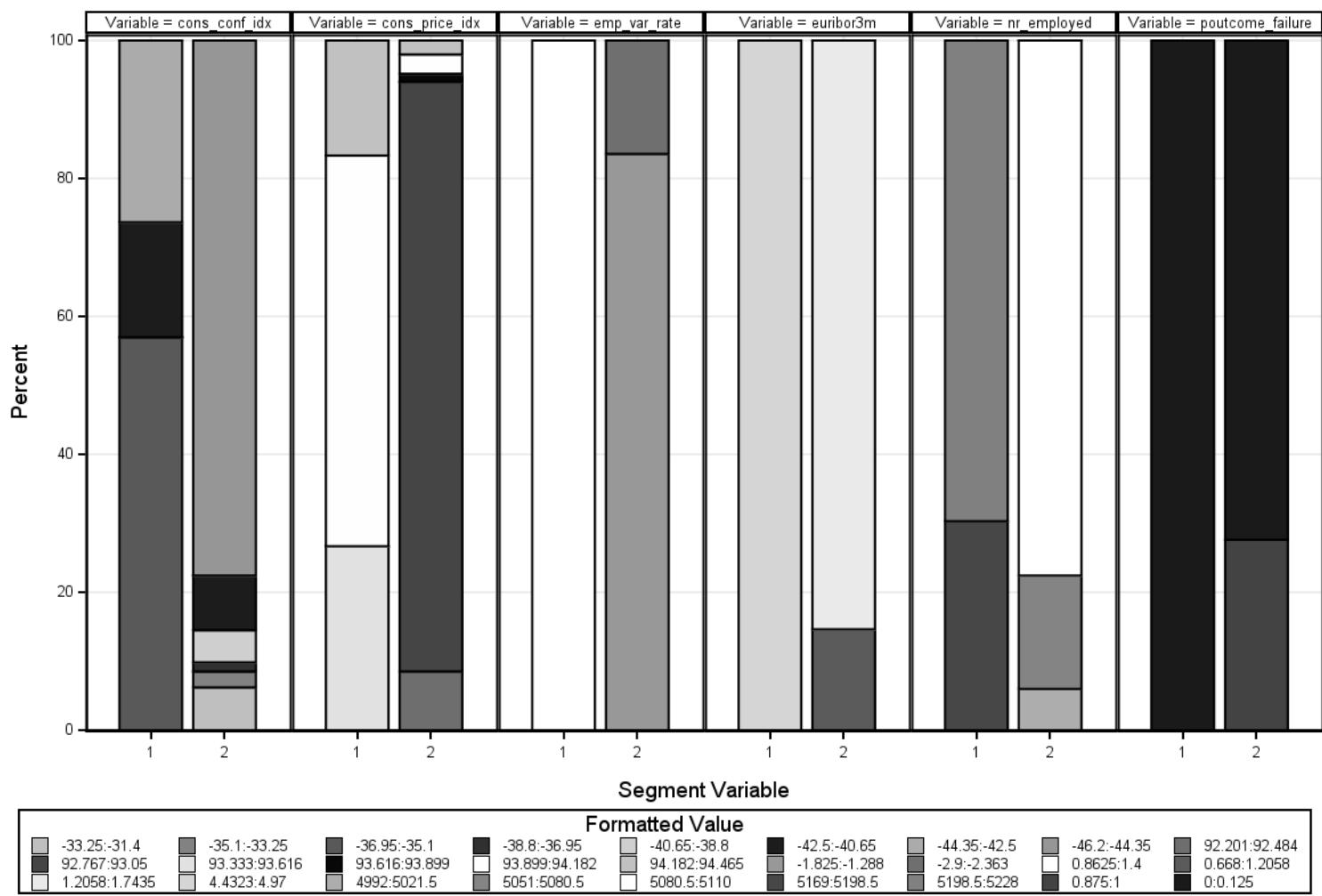
>= -0.3 Or Mi...

1: 100.0%  
Count: 13247

# SAS Enterprise Miner Report

Node=Centriod Clustering

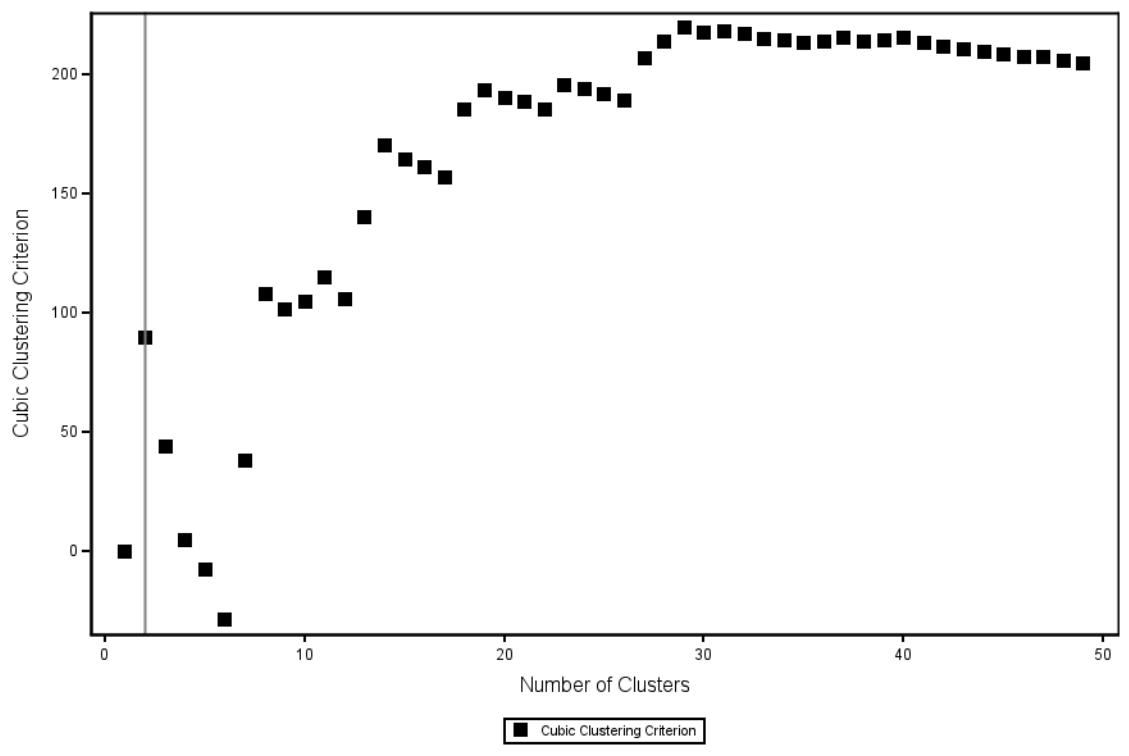
Segment Plot



**SAS Enterprise Miner Report**

Node=Centroid Clustering

CCC Plot



## SAS Enterprise Miner Report

### Node=Average Clustering Summary

Node id = Clus4  
 Node label = Average Clustering  
 Meta path = Ids => Filter => Clus4  
 Notes =

### Node=Average Clustering 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	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	10		TrainDefaults	Y	
ClusvarRole	SEGMENT		MaxIter	10		TreeProfile	Y	
DistancePlot	Y		MaxSteps	1200		XConv	0.0001	
Drift	N		MissingInterval	DEFAULT				

### Node=Average Clustering Variable Summary

Role	Level	Frequency		Name
		Count		
INPUT	INTERVAL	63	age campaign cons_conf_idx cons_price_idx contact_cellular contact_telephone day_of_week_fri day_of_week_mon day_of_week_thu day_of_week_tue day_of_week_wed default_no default_unknown default_yes ...	

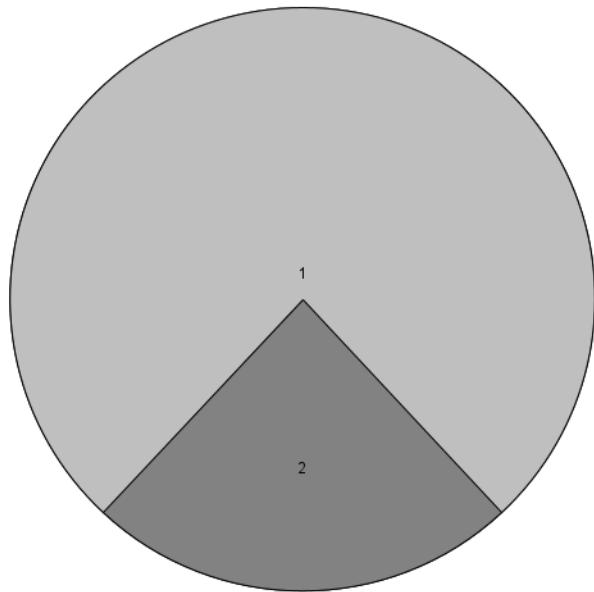
### Node=Average Clustering Mean Statistics

Variable	Segment	
	Segment 1	2
Clustering Criterion	0.74	0.74
Maximum Relative Change in Cluster Seeds	0.00	0.00
Improvement in Clustering Criterion	0.00	0.00
Frequency of Cluster	13247.00	4191.00
Root-Mean-Square Standard Deviation	0.73	0.78
Maximum Distance from Cluster Seed	8.40	9.75
Nearest Cluster	2.00	1.00
Distance to Nearest Cluster	5.27	5.27
age	39.02	36.72
campaign	2.47	2.20
cons_conf_idx	-38.88	-44.17
cons_price_idx	93.91	92.92
contact_cellular	0.48	0.90
contact_telephone	0.52	0.10

Variable	Segment	
	Segment 1	2
day_of_week_fri	0.18	0.19
day_of_week_mon	0.20	0.21
day_of_week_thu	0.20	0.19
day_of_week_tue	0.20	0.20
day_of_week_wed	0.21	0.21
default_no	0.75	0.88
default_unknown	0.25	0.12
default_yes	0.00	0.00
duration	229.53	231.48
education_basic_4y	0.12	0.10
education_basic_6y	0.00	0.00
education_basic_9y	0.19	0.22
education_high_school	0.20	0.23
education_illiterate	0.00	0.00
education_professional_course	0.18	0.15
education_university_degree	0.30	0.30
education_unknown	0.00	0.00
emp_var_rate	1.31	-1.98
euribor3m	4.93	1.23
housing_no	0.49	0.42
housing_unknown	0.00	0.00
housing_yes	0.51	0.58
job_admin_	0.39	0.42
job_blue-collar	0.32	0.36
job_entrepreneur	0.00	0.00
job_housemaid	0.00	0.00
job_management	0.00	0.00
job_retired	0.00	0.00
job_self-employed	0.00	0.00
job_services	0.00	0.00
job_student	0.00	0.00
job_technician	0.29	0.22
job_unemployed	0.00	0.00
job_unknown	0.00	0.00
loan_no	0.84	0.84
loan_unknown	0.00	0.00
loan_yes	0.16	0.16
marital_divorced	0.11	0.09
marital_married	0.60	0.52
marital_single	0.29	0.38
marital_unknown	0.00	0.00
month_apr	0.00	0.00
month_aug	0.27	0.08
month_dec	0.00	0.00
month_jul	0.26	0.04
month_jun	0.17	0.09
month_mar	0.00	0.00
month_may	0.30	0.79
month_nov	0.00	0.00
month_oct	0.00	0.00
month_sep	0.00	0.00

Variable	Segment	
	1	2
nr_employed	5216.79	5089.01
poutcome_failure	-0.00	0.28
poutcome_nonexistent	1.00	0.72
poutcome_success	0.00	0.00
previous	-0.00	0.28

SAS Enterprise Miner Report  
Node=Average Clustering  
Segment Size



SAS Enterprise Miner Report  
Node=Average Clustering  
Tree Diagram

1: 76.0%  
Count: 17438

**emp\_var\_rate**

< -0.3

2: 100.0%  
Count: 4191

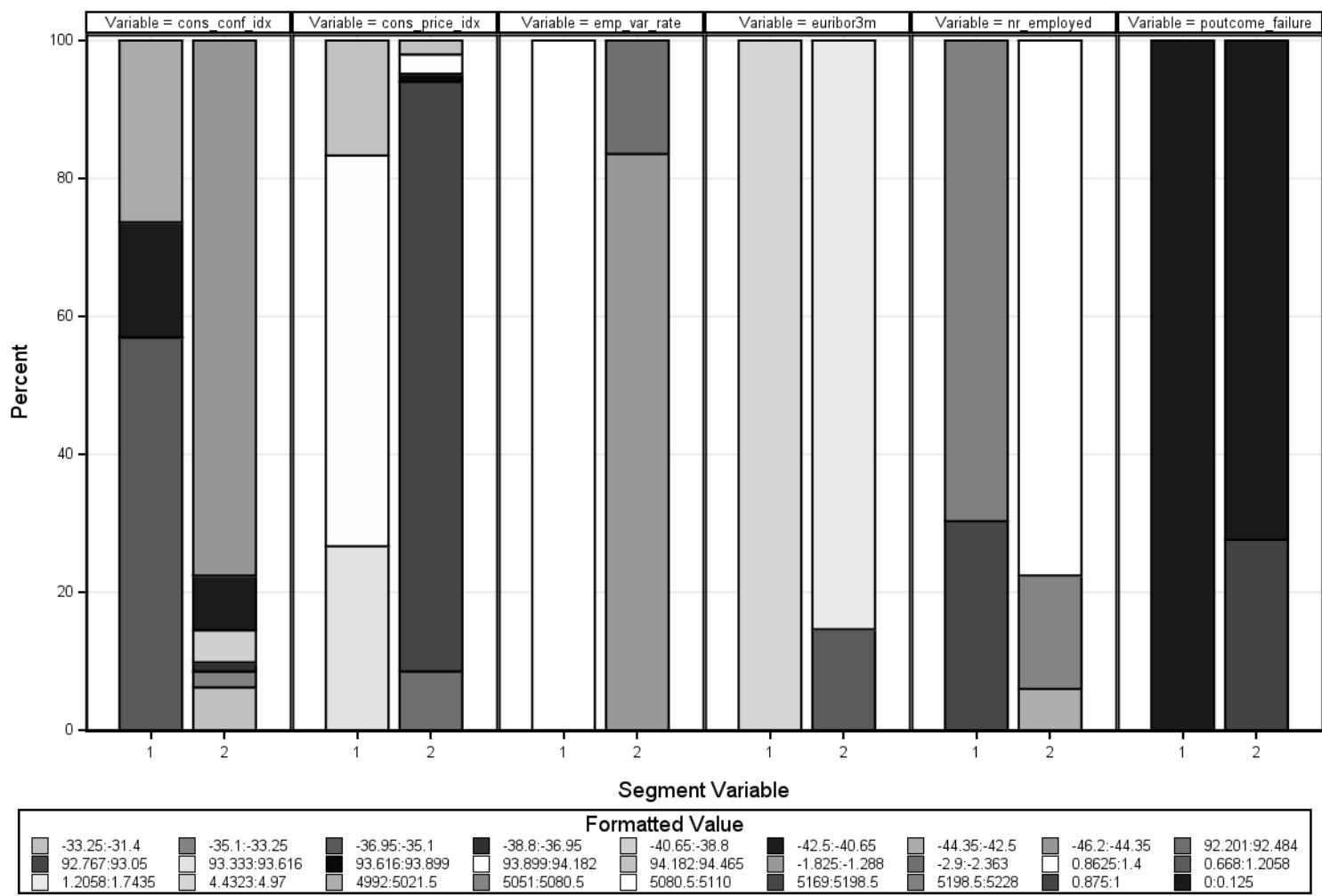
>= -0.3 Or Mi...

1: 100.0%  
Count: 13247

# SAS Enterprise Miner Report

Node=Average Clustering

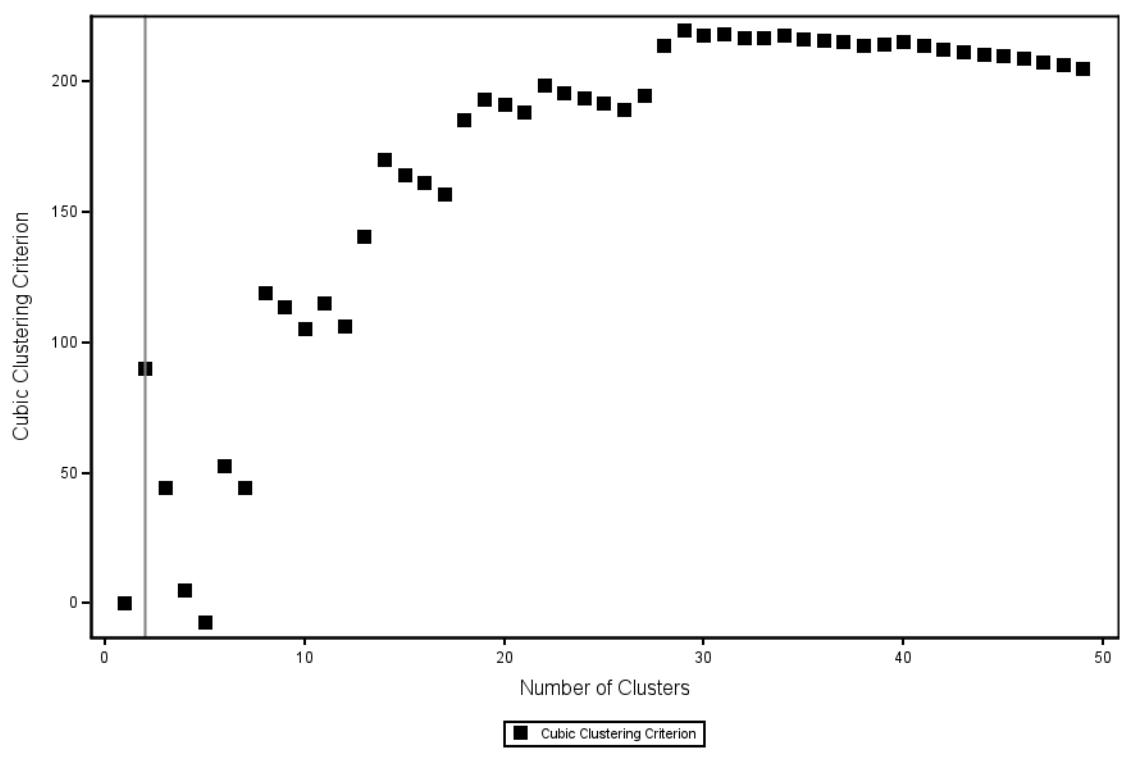
Segment Plot



**SAS Enterprise Miner Report**

Node=Average Clustering

CCC Plot



## SAS Enterprise Miner Report

### Node=80% Sample Summary

Node id = Smpl  
 Node label = 80% Sample  
 Meta path = Ids => Filter => Smpl  
 Notes =

### Node=80% Sample 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	80	10
FreqCount	N		Method	DEFAULT		SizeType	PERCENT	
FreqMiss	N		MinStrataSize	5		StratifyCriterion	PROPORTIONAL	

### Node=80% Sample Variable Summary

Role	Level	Frequency		Name
		Count	Name	
REJECTED	NOMINAL	1	y	
INPUT	INTERVAL	63	age campaign cons_conf_idx cons_price_idx contact_cellular contact_telephone day_of_week_fri day_of_week_mon day_of_week_thu day_of_week_tue day_of_week_wed default_no default_unknown default_yes ...	

## SAS Enterprise Miner Report

### Node=Ward Clustering (K-4) Summary

Node id = Clus8  
 Node label = Ward Clustering (K-4)  
 Meta path = Ids => Filter => Clus8  
 Notes =

### Node=Ward Clustering (K-4) 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	4	10	TrainDefaults	Y	
ClusvarRole	SEGMENT		MaxIter	10		TreeProfile	Y	
DistancePlot	Y		MaxSteps	1200		XConv	0.0001	
Drift	N		MissingInterval	DEFAULT				

### Node=Ward Clustering (K-4) Variable Summary

Role	Level	Frequency		Name
		Count		
INPUT	INTERVAL	63	age campaign cons_conf_idx cons_price_idx contact_cellular contact_telephone day_of_week_fri day_of_week_mon day_of_week_thu day_of_week_tue day_of_week_wed default_no default_unknown default_yes ...	

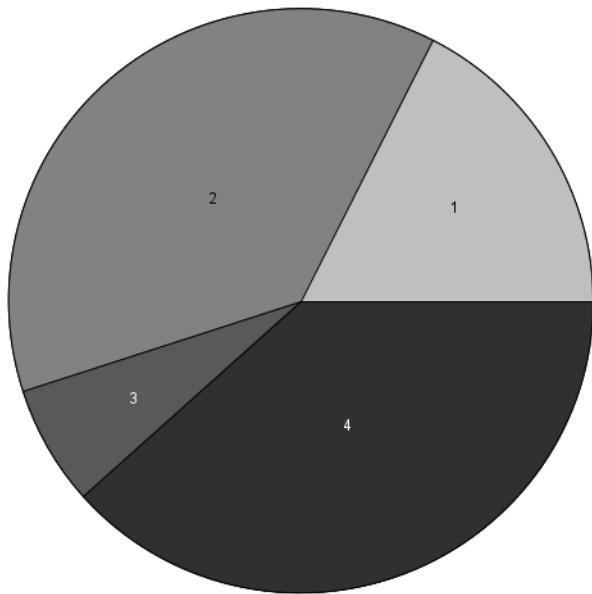
### Node=Ward Clustering (K-4) Mean Statistics

Variable	Segment	Segment	Segment	Segment
	1	2	3	4
Clustering Criterion	0.68	0.68	0.68	0.68
Maximum Relative Change in Cluster Seeds	0.00	0.00	0.00	0.00
Improvement in Clustering Criterion	.	.	.	.
Frequency of Cluster	3034.00	6541.00	1157.00	6706.00
Root-Mean-Square Standard Deviation	0.68	0.68	0.67	0.68
Maximum Distance from Cluster Seed	8.52	8.43	8.45	8.44
Nearest Cluster	2.00	4.00	1.00	2.00
Distance to Nearest Cluster	5.08	3.83	6.97	3.83
age	36.66	38.59	36.87	39.44
campaign	2.22	2.52	2.13	2.41
cons_conf_idx	-44.03	-39.16	-44.55	-38.61
cons_price_idx	92.92	93.66	92.91	94.14
contact_cellular	0.90	0.98	0.92	0.00
contact_telephone	0.10	0.02	0.08	1.00

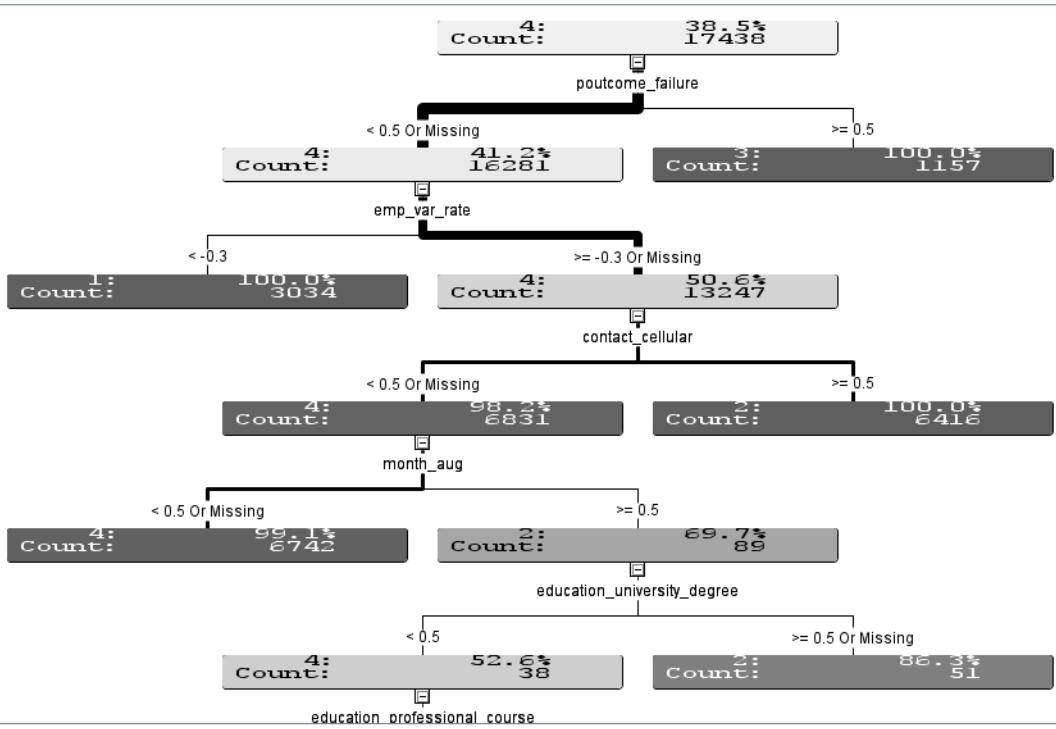
Variable	Segment	Segment	Segment	Segment
	1	2	3	4
day_of_week_fri	0.18	0.15	0.22	0.21
day_of_week_mon	0.23	0.21	0.18	0.20
day_of_week_thu	0.20	0.22	0.18	0.18
day_of_week_tue	0.19	0.21	0.20	0.20
day_of_week_wed	0.20	0.20	0.23	0.21
default_no	0.88	0.79	0.88	0.72
default_unknown	0.12	0.21	0.12	0.28
default_yes	0.00	0.00	0.00	0.00
duration	236.95	226.00	217.13	232.98
education_basic_4y	0.10	0.08	0.09	0.15
education_basic_6y	0.00	0.00	0.00	0.00
education_basic_9y	0.22	0.13	0.22	0.25
education_high_school	0.22	0.19	0.26	0.22
education_illiterate	0.00	0.00	0.00	0.00
education_professional_course	0.15	0.21	0.15	0.16
education_university_degree	0.31	0.39	0.28	0.22
education_unknown	0.00	0.00	0.00	0.00
emp_var_rate	-1.99	1.40	-1.93	1.22
euribor3m	1.23	4.96	1.23	4.89
housing_no	0.41	0.44	0.43	0.54
housing_unknown	0.00	0.00	0.00	0.00
housing_yes	0.59	0.56	0.57	0.46
job_admin_	0.42	0.43	0.43	0.35
job_blue-collar	0.36	0.22	0.35	0.42
job_entrepreneur	0.00	0.00	0.00	0.00
job_housemaid	0.00	0.00	0.00	0.00
job_management	0.00	0.00	0.00	0.00
job_retired	0.00	0.00	0.00	0.00
job_self-employed	0.00	0.00	0.00	0.00
job_services	0.00	0.00	0.00	0.00
job_student	0.00	0.00	0.00	0.00
job_technician	0.22	0.35	0.22	0.23
job_unemployed	0.00	0.00	0.00	0.00
job_unknown	0.00	0.00	0.00	0.00
loan_no	0.83	0.83	0.85	0.85
loan_unknown	0.00	0.00	0.00	0.00
loan_yes	0.17	0.17	0.15	0.15
marital_divorced	0.09	0.12	0.11	0.11
marital_married	0.53	0.55	0.51	0.65
marital_single	0.39	0.33	0.38	0.24
marital_unknown	0.00	0.00	0.00	0.00
month_apr	0.00	0.00	0.00	0.00
month_aug	0.08	0.54	0.07	0.00
month_dec	0.00	0.00	0.00	0.00
month_jul	0.05	0.46	0.03	0.07
month_jun	0.11	-0.00	0.06	0.33
month_mar	0.00	0.00	0.00	0.00
month_may	0.77	-0.00	0.84	0.60
month_nov	0.00	0.00	0.00	0.00
month_oct	0.00	0.00	0.00	0.00
month_sep	0.00	0.00	0.00	0.00

Variable	Segment 1	Segment 2	Segment 3	Segment 4
nr_employed	5088.39	5228.00	5090.63	5205.85
poutcome_failure	-0.00	-0.00	1.00	-0.00
poutcome_nonexistent	1.00	1.00	0.00	1.00
poutcome_success	0.00	0.00	0.00	0.00
previous	-0.00	-0.00	1.00	-0.00

SAS Enterprise Miner Report  
Node=Ward Clustering (K=4)  
Segment Size



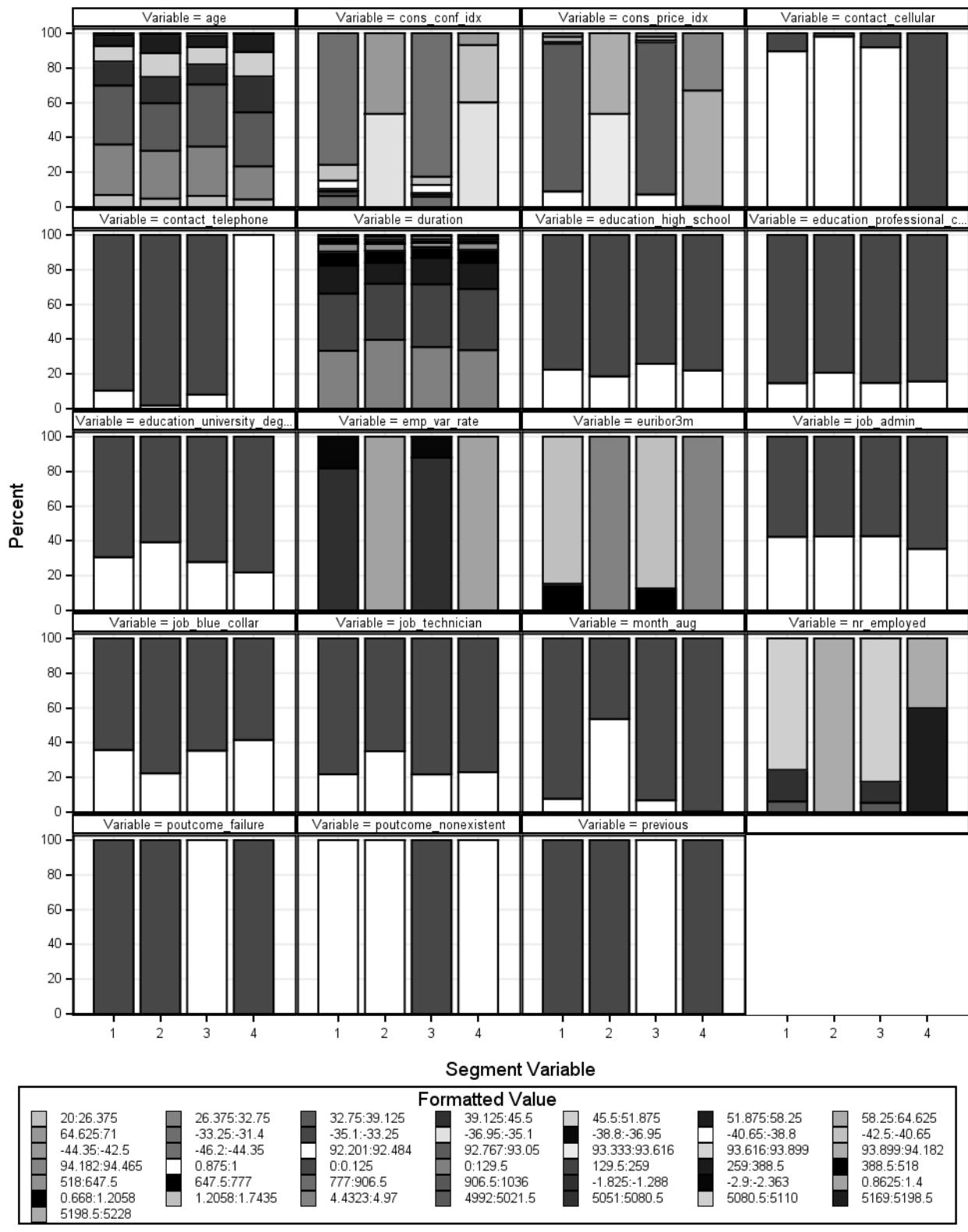
SAS Enterprise Miner Report  
 Node=Ward Clustering (K=4)  
 Tree Diagram



# SAS Enterprise Miner Report

## Node=Ward Clustering (K=4)

### Segment Plot



## SAS Enterprise Miner Report

### Node=80% Ward Clustering Summary

Node id = Clus5  
 Node label = 80% Ward Clustering  
 Meta path = Ids => Filter => Smpl => Clus5  
 Notes =

### Node=80% 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	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	10		TrainDefaults	Y	
ClusvarRole	SEGMENT		MaxIter	10		TreeProfile	Y	
DistancePlot	Y		MaxSteps	1200		XConv	0.0001	
Drift	N		MissingInterval	DEFAULT				

### Node=80% Ward Clustering Variable Summary

Role	Level	Frequency		Name
		Count		
INPUT	INTERVAL	63	age campaign cons_conf_idx cons_price_idx contact_cellular contact_telephone day_of_week_fri day_of_week_mon day_of_week_thu day_of_week_tue day_of_week_wed default_no default_unknown default_yes ...	
ID	INTERVAL	1	_dataobs_	

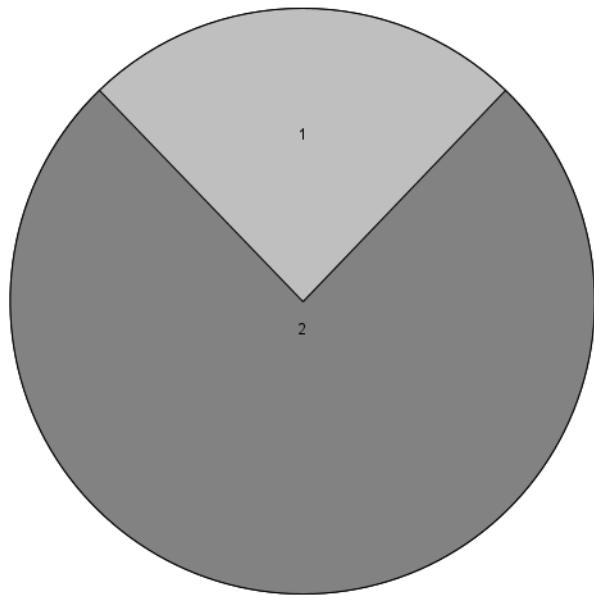
### Node=80% Ward Clustering Mean Statistics

Variable	Segment	
	1	Segment 2
Clustering Criterion	0.74	0.74
Maximum Relative Change in Cluster Seeds	0.00	0.00
Improvement in Clustering Criterion	0.00	0.00
Frequency of Cluster	3409.00	10541.00
Root-Mean-Square Standard Deviation	0.78	0.73
Maximum Distance from Cluster Seed	9.26	8.31
Nearest Cluster	2.00	1.00
Distance to Nearest Cluster	5.24	5.24
age	36.69	39.05
campaign	2.19	2.47
cons_conf_idx	-44.16	-38.85
cons_price_idx	92.92	93.90
contact_cellular	0.90	0.49

Variable	Segment	
	1	Segment 2
contact_telephone	0.10	0.51
day_of_week_fri	0.19	0.18
day_of_week_mon	0.21	0.20
day_of_week_thu	0.19	0.20
day_of_week_tue	0.20	0.20
day_of_week_wed	0.21	0.21
default_no	0.88	0.75
default_unknown	0.12	0.25
default_yes	0.00	0.00
duration	231.68	228.99
education_basic_4y	0.10	0.12
education_basic_6y	0.00	0.00
education_basic_9y	0.22	0.19
education_high_school	0.24	0.20
education_illiterate	0.00	0.00
education_professional_course	0.14	0.18
education_university_degree	0.30	0.31
education_unknown	0.00	0.00
emp_var_rate	-1.98	1.31
euribor3m	1.23	4.93
housing_no	0.41	0.49
housing_unknown	0.00	0.00
housing_yes	0.59	0.51
job_admin_	0.43	0.39
job_blue_collar	0.36	0.32
job_entrepreneur	0.00	0.00
job_housemaid	0.00	0.00
job_management	0.00	0.00
job_retired	0.00	0.00
job_self-employed	0.00	0.00
job_services	0.00	0.00
job_student	0.00	0.00
job_technician	0.22	0.29
job_unemployed	0.00	0.00
job_unknown	0.00	0.00
loan_no	0.84	0.84
loan_unknown	0.00	0.00
loan_yes	0.16	0.16
marital_divorced	0.10	0.11
marital_married	0.52	0.60
marital_single	0.38	0.29
marital_unknown	0.00	0.00
month_apr	0.00	0.00
month_aug	0.08	0.27
month_dec	0.00	0.00
month_jul	0.04	0.26
month_jun	0.09	0.16
month_mar	0.00	0.00
month_may	0.79	0.30
month_nov	0.00	0.00
month_oct	0.00	0.00

Variable	Segment	
	1	Segment 2
month_sep	0.00	0.00
nr_employed	5088.94	5216.72
poutcome_failure	0.27	-0.00
poutcome_nonexistent	0.73	1.00
poutcome_success	0.00	0.00
previous	0.27	-0.00

SAS Enterprise Miner Report  
Node=80% Ward Clustering  
Segment Size



SAS Enterprise Miner Report  
Node=80% Ward Clustering  
Tree Diagram

2: 75.6%  
Count: 13950

**emp\_var\_rate**

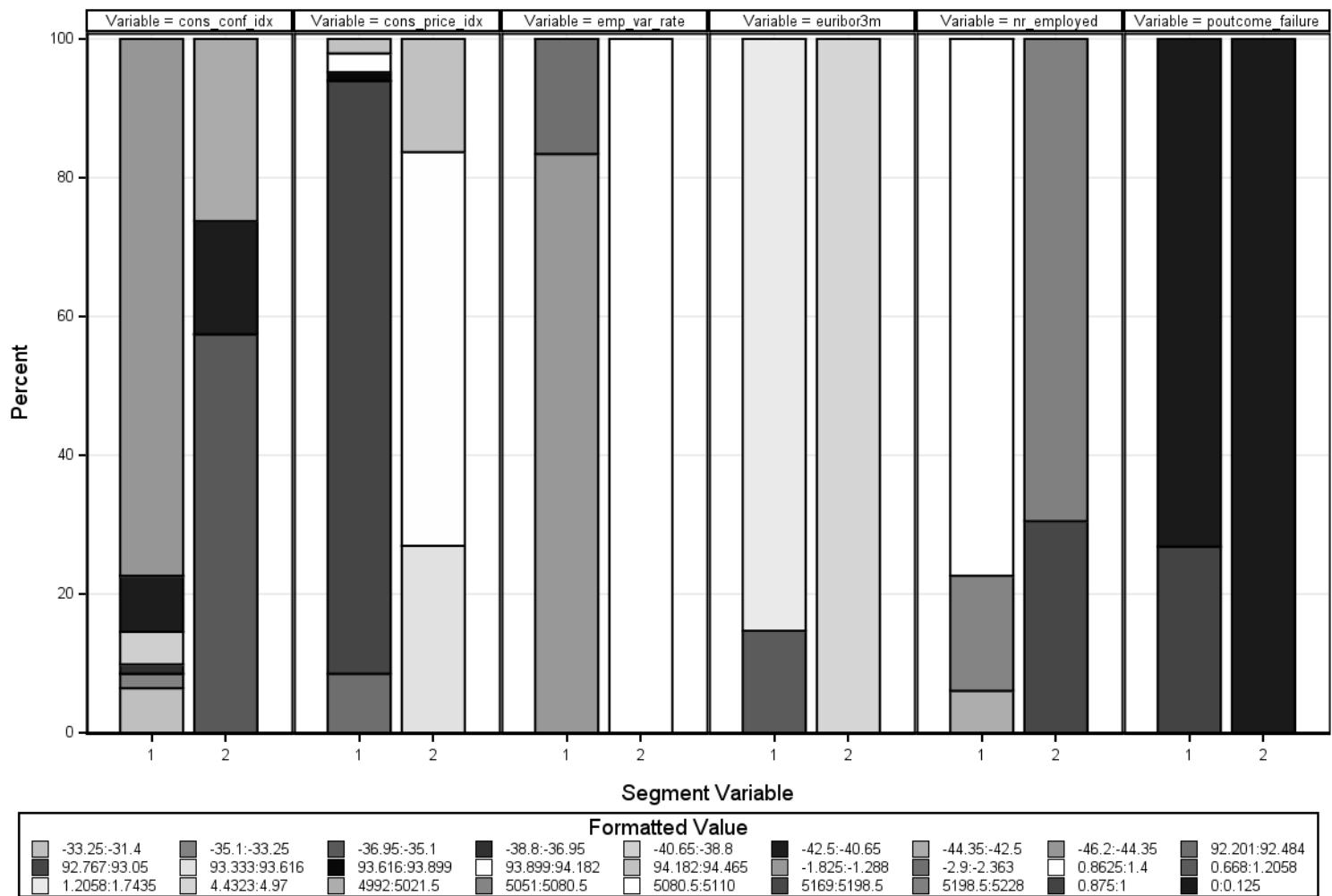
< -0.3

1: 100.0%  
Count: 3409

>= -0.3 Or Mi...

2: 100.0%  
Count: 10541

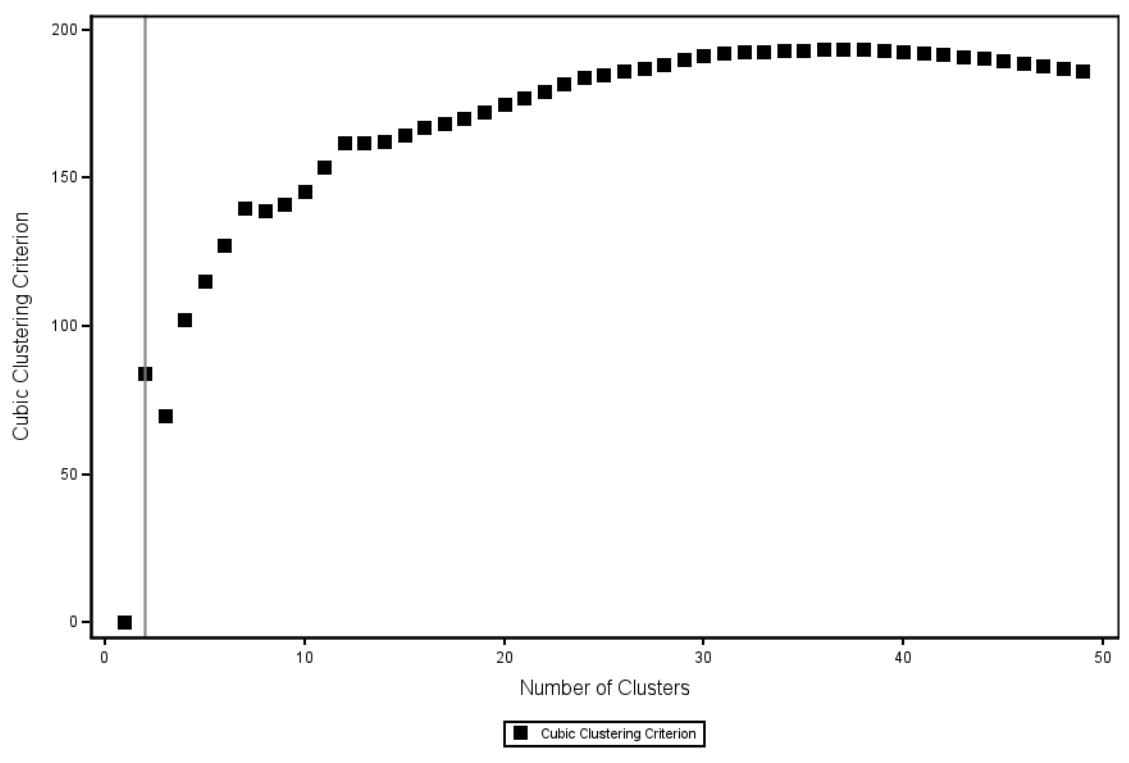
**SAS Enterprise Miner Report**  
**Node=80% Ward Clustering**  
**Segment Plot**



**SAS Enterprise Miner Report**

Node=80% Ward Clustering

CCC Plot



## SAS Enterprise Miner Report

### Node=80% Centriod Clustering Summary

Node id = Clus6  
 Node label = 80% Centriod Clustering  
 Meta path = Ids => Filter => Smpl => Clus6  
 Notes =

### Node=80% Centriod Clustering 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	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	10		TrainDefaults	Y	
ClusvarRole	SEGMENT		MaxIter	10		TreeProfile	Y	
DistancePlot	Y		MaxSteps	1200		XConv	0.0001	
Drift	N		MissingInterval	DEFAULT				

### Node=80% Centriod Clustering Variable Summary

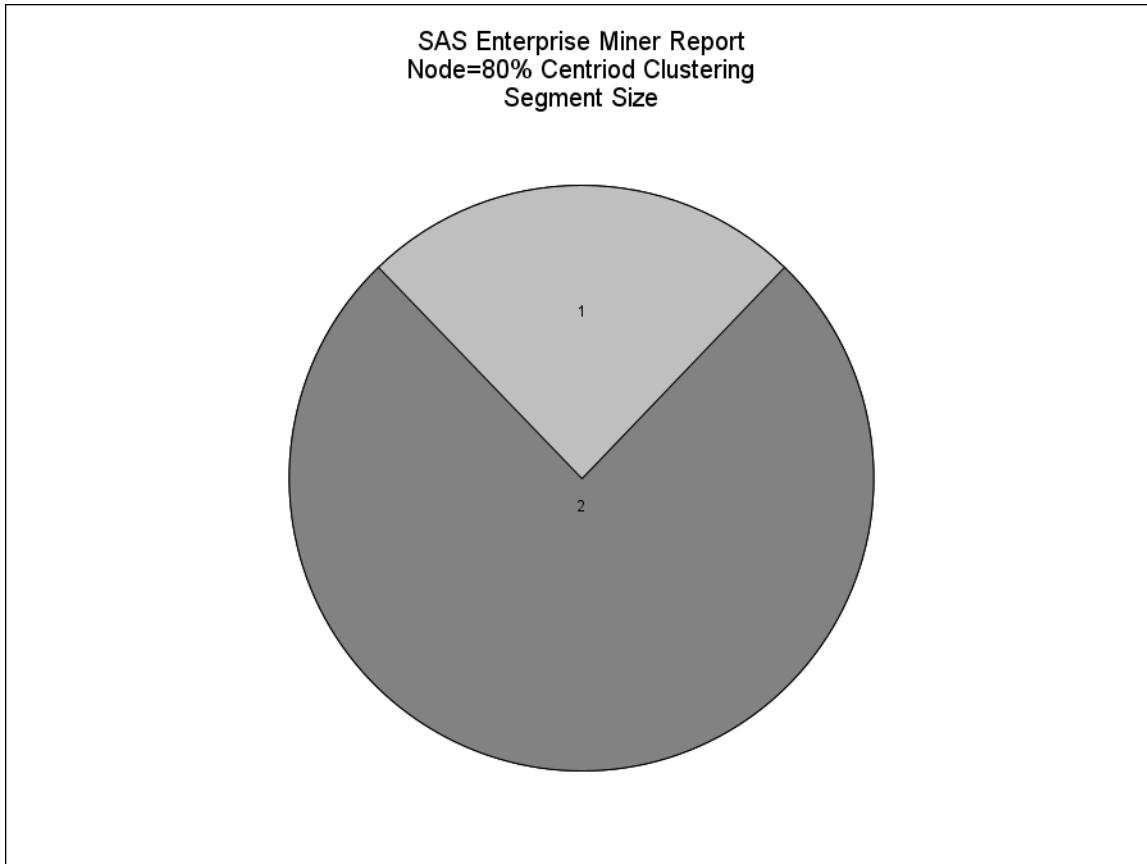
Role	Level	Frequency	
		Count	Name
INPUT	INTERVAL	63	age campaign cons_conf_idx cons_price_idx contact_cellular contact_telephone day_of_week_fri day_of_week_mon day_of_week_thu day_of_week_tue day_of_week_wed default_no default_unknown default_yes ...
ID	INTERVAL	1	_dataobs_

### Node=80% Centriod Clustering Mean Statistics

Variable	Segment	
	1	Segment 2
Clustering Criterion	0.74	0.74
Maximum Relative Change in Cluster Seeds	0.00	0.00
Improvement in Clustering Criterion	0.00	0.00
Frequency of Cluster	3409.00	10541.00
Root-Mean-Square Standard Deviation	0.78	0.73
Maximum Distance from Cluster Seed	9.26	8.31
Nearest Cluster	2.00	1.00
Distance to Nearest Cluster	5.24	5.24
age	36.69	39.05
campaign	2.19	2.47
cons_conf_idx	-44.16	-38.85
cons_price_idx	92.92	93.90
contact_cellular	0.90	0.49

Variable	Segment	
	1	Segment 2
contact_telephone	0.10	0.51
day_of_week_fri	0.19	0.18
day_of_week_mon	0.21	0.20
day_of_week_thu	0.19	0.20
day_of_week_tue	0.20	0.20
day_of_week_wed	0.21	0.21
default_no	0.88	0.75
default_unknown	0.12	0.25
default_yes	0.00	0.00
duration	231.68	228.99
education_basic_4y	0.10	0.12
education_basic_6y	0.00	0.00
education_basic_9y	0.22	0.19
education_high_school	0.24	0.20
education_illiterate	0.00	0.00
education_professional_course	0.14	0.18
education_university_degree	0.30	0.31
education_unknown	0.00	0.00
emp_var_rate	-1.98	1.31
euribor3m	1.23	4.93
housing_no	0.41	0.49
housing_unknown	0.00	0.00
housing_yes	0.59	0.51
job_admin_	0.43	0.39
job_blue_collar	0.36	0.32
job_entrepreneur	0.00	0.00
job_housemaid	0.00	0.00
job_management	0.00	0.00
job_retired	0.00	0.00
job_self-employed	0.00	0.00
job_services	0.00	0.00
job_student	0.00	0.00
job_technician	0.22	0.29
job_unemployed	0.00	0.00
job_unknown	0.00	0.00
loan_no	0.84	0.84
loan_unknown	0.00	0.00
loan_yes	0.16	0.16
marital_divorced	0.10	0.11
marital_married	0.52	0.60
marital_single	0.38	0.29
marital_unknown	0.00	0.00
month_apr	0.00	0.00
month_aug	0.08	0.27
month_dec	0.00	0.00
month_jul	0.04	0.26
month_jun	0.09	0.16
month_mar	0.00	0.00
month_may	0.79	0.30
month_nov	0.00	0.00
month_oct	0.00	0.00

Variable	Segment	
	1	Segment 2
month_sep	0.00	0.00
nr_employed	5088.94	5216.72
poutcome_failure	0.27	-0.00
poutcome_nonexistent	0.73	1.00
poutcome_success	0.00	0.00
previous	0.27	-0.00



SAS Enterprise Miner Report  
Node=80% Centriod Clustering  
Tree Diagram

2: 75.6%  
Count: 13950

**emp\_var\_rate**

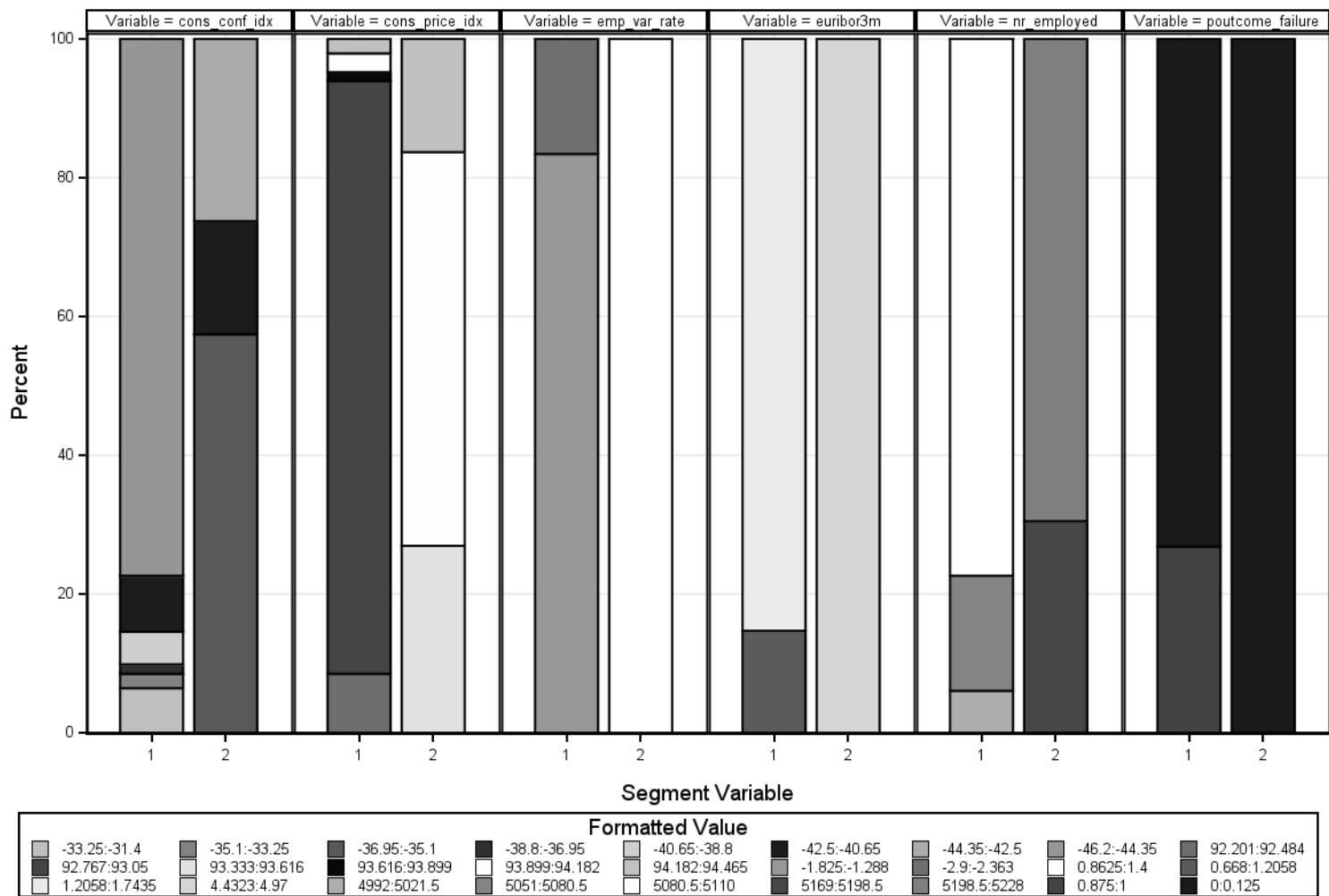
< -0.3

1: 100.0%  
Count: 3409

>= -0.3 Or Mi...

2: 100.0%  
Count: 10541

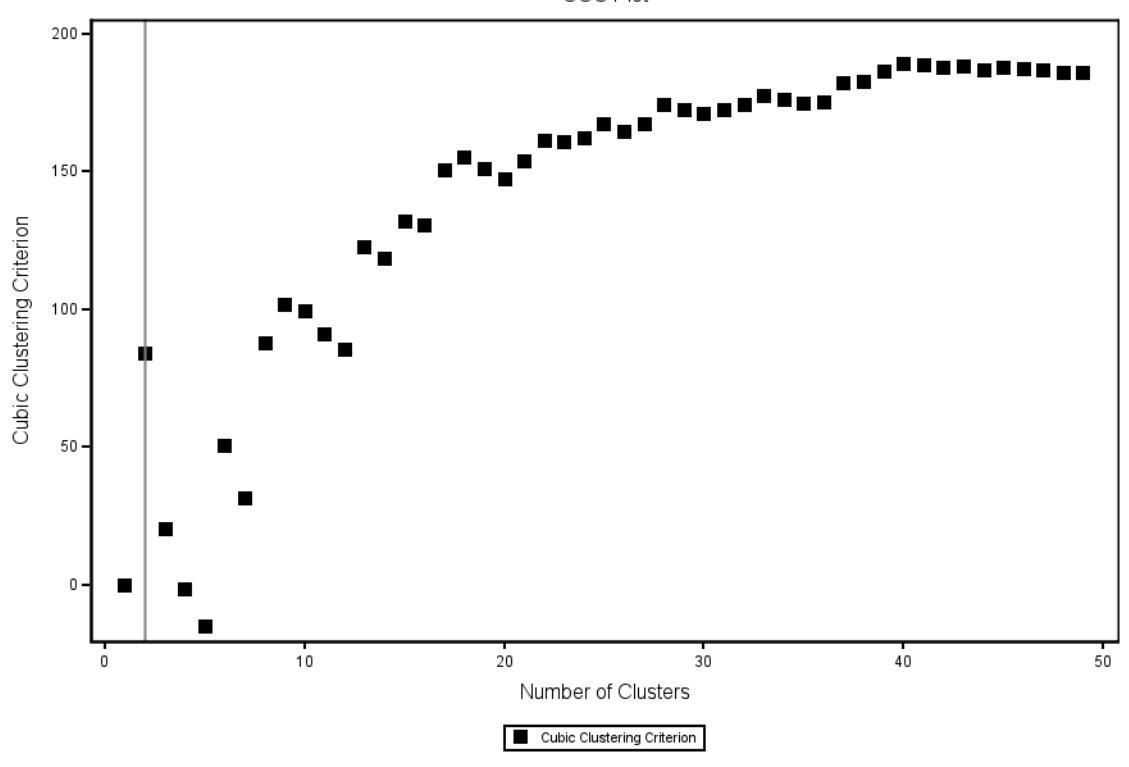
**SAS Enterprise Miner Report**  
**Node=80% Centroid Clustering**  
**Segment Plot**



**SAS Enterprise Miner Report**

Node=80% Centriod Clustering

CCC Plot



## SAS Enterprise Miner Report

### Node=80% Average Clustering Summary

Node id = Clus7  
 Node label = 80% Average Clustering  
 Meta path = Ids => Filter => Smpl => Clus7  
 Notes =

### Node=80% Average Clustering 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	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	10		TrainDefaults	Y	
ClusvarRole	SEGMENT		MaxIter	10		TreeProfile	Y	
DistancePlot	Y		MaxSteps	1200		XConv	0.0001	
Drift	N		MissingInterval	DEFAULT				

### Node=80% Average Clustering Variable Summary

Role	Level	Frequency		Name
		Count		
INPUT	INTERVAL	63	age campaign cons_conf_idx cons_price_idx contact_cellular contact_telephone day_of_week_fri day_of_week_mon day_of_week_thu day_of_week_tue day_of_week_wed default_no default_unknown default_yes ...	
ID	INTERVAL	1	_dataobs_	

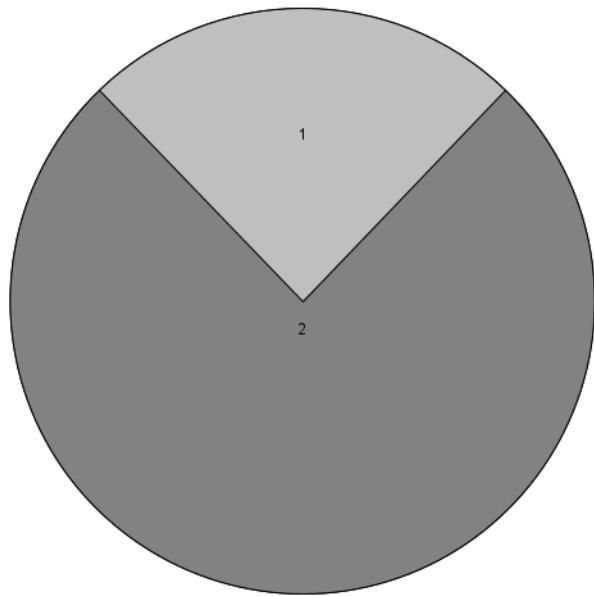
### Node=80% Average Clustering Mean Statistics

Variable	Segment	
	1	Segment 2
Clustering Criterion	0.74	0.74
Maximum Relative Change in Cluster Seeds	0.00	0.00
Improvement in Clustering Criterion	0.00	0.00
Frequency of Cluster	3409.00	10541.00
Root-Mean-Square Standard Deviation	0.78	0.73
Maximum Distance from Cluster Seed	9.26	8.31
Nearest Cluster	2.00	1.00
Distance to Nearest Cluster	5.24	5.24
age	36.69	39.05
campaign	2.19	2.47
cons_conf_idx	-44.16	-38.85
cons_price_idx	92.92	93.90
contact_cellular	0.90	0.49

Variable	Segment	
	1	Segment 2
contact_telephone	0.10	0.51
day_of_week_fri	0.19	0.18
day_of_week_mon	0.21	0.20
day_of_week_thu	0.19	0.20
day_of_week_tue	0.20	0.20
day_of_week_wed	0.21	0.21
default_no	0.88	0.75
default_unknown	0.12	0.25
default_yes	0.00	0.00
duration	231.68	228.99
education_basic_4y	0.10	0.12
education_basic_6y	0.00	0.00
education_basic_9y	0.22	0.19
education_high_school	0.24	0.20
education_illiterate	0.00	0.00
education_professional_course	0.14	0.18
education_university_degree	0.30	0.31
education_unknown	0.00	0.00
emp_var_rate	-1.98	1.31
euribor3m	1.23	4.93
housing_no	0.41	0.49
housing_unknown	0.00	0.00
housing_yes	0.59	0.51
job_admin_	0.43	0.39
job_blue_collar	0.36	0.32
job_entrepreneur	0.00	0.00
job_housemaid	0.00	0.00
job_management	0.00	0.00
job_retired	0.00	0.00
job_self-employed	0.00	0.00
job_services	0.00	0.00
job_student	0.00	0.00
job_technician	0.22	0.29
job_unemployed	0.00	0.00
job_unknown	0.00	0.00
loan_no	0.84	0.84
loan_unknown	0.00	0.00
loan_yes	0.16	0.16
marital_divorced	0.10	0.11
marital_married	0.52	0.60
marital_single	0.38	0.29
marital_unknown	0.00	0.00
month_apr	0.00	0.00
month_aug	0.08	0.27
month_dec	0.00	0.00
month_jul	0.04	0.26
month_jun	0.09	0.16
month_mar	0.00	0.00
month_may	0.79	0.30
month_nov	0.00	0.00
month_oct	0.00	0.00

Variable	Segment	
	1	Segment 2
month_sep	0.00	0.00
nr_employed	5088.94	5216.72
poutcome_failure	0.27	-0.00
poutcome_nonexistent	0.73	1.00
poutcome_success	0.00	0.00
previous	0.27	-0.00

SAS Enterprise Miner Report  
Node=80% Average Clustering  
Segment Size



SAS Enterprise Miner Report  
Node=80% Average Clustering  
Tree Diagram

2: 75.6%  
Count: 13950

**emp\_var\_rate**

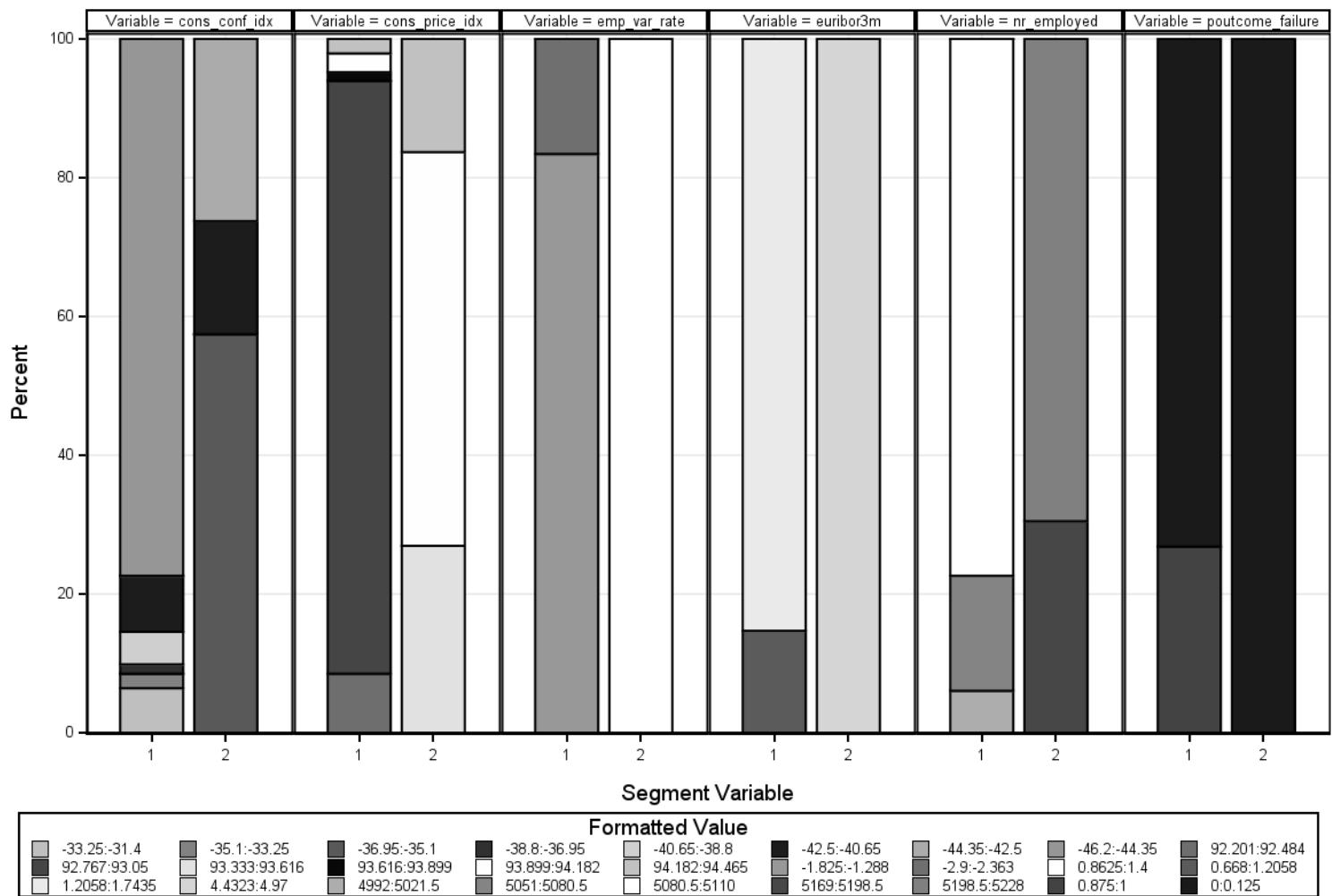
< -0.3

1: 100.0%  
Count: 3409

>= -0.3 Or Mi...

2: 100.0%  
Count: 10541

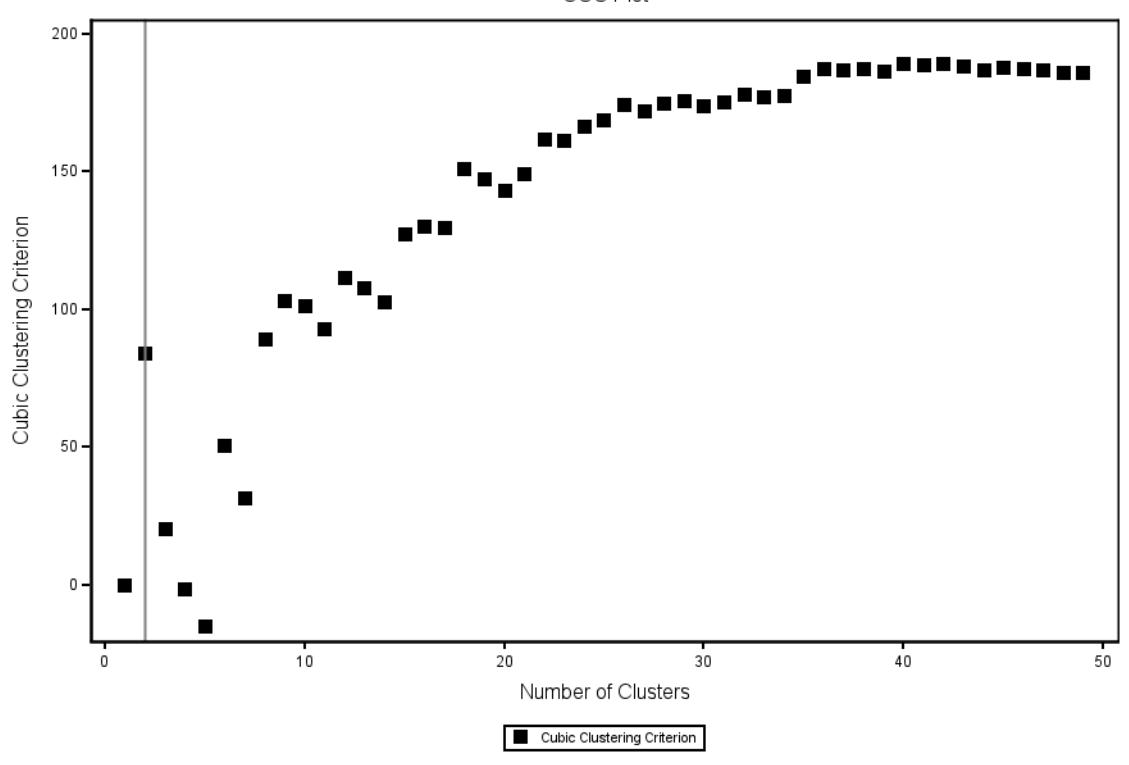
**SAS Enterprise Miner Report**  
**Node=80% Average Clustering**  
**Segment Plot**



**SAS Enterprise Miner Report**

Node=80% Average Clustering

CCC Plot



## SAS Enterprise Miner Report

### Node=80% Ward Clustering (K-4) Summary

Node id = Clus9  
 Node label = 80% Ward Clustering (K-4)  
 Meta path = Ids => Filter => Smpl => Clus9  
 Notes =

### Node=80% Ward Clustering (K-4) 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	4	10	TrainDefaults	Y	
ClusvarRole	SEGMENT		MaxIter	10		TreeProfile	Y	
DistancePlot	Y		MaxSteps	1200		XConv	0.0001	
Drift	N		MissingInterval	DEFAULT				

### Node=80% Ward Clustering (K-4) Variable Summary

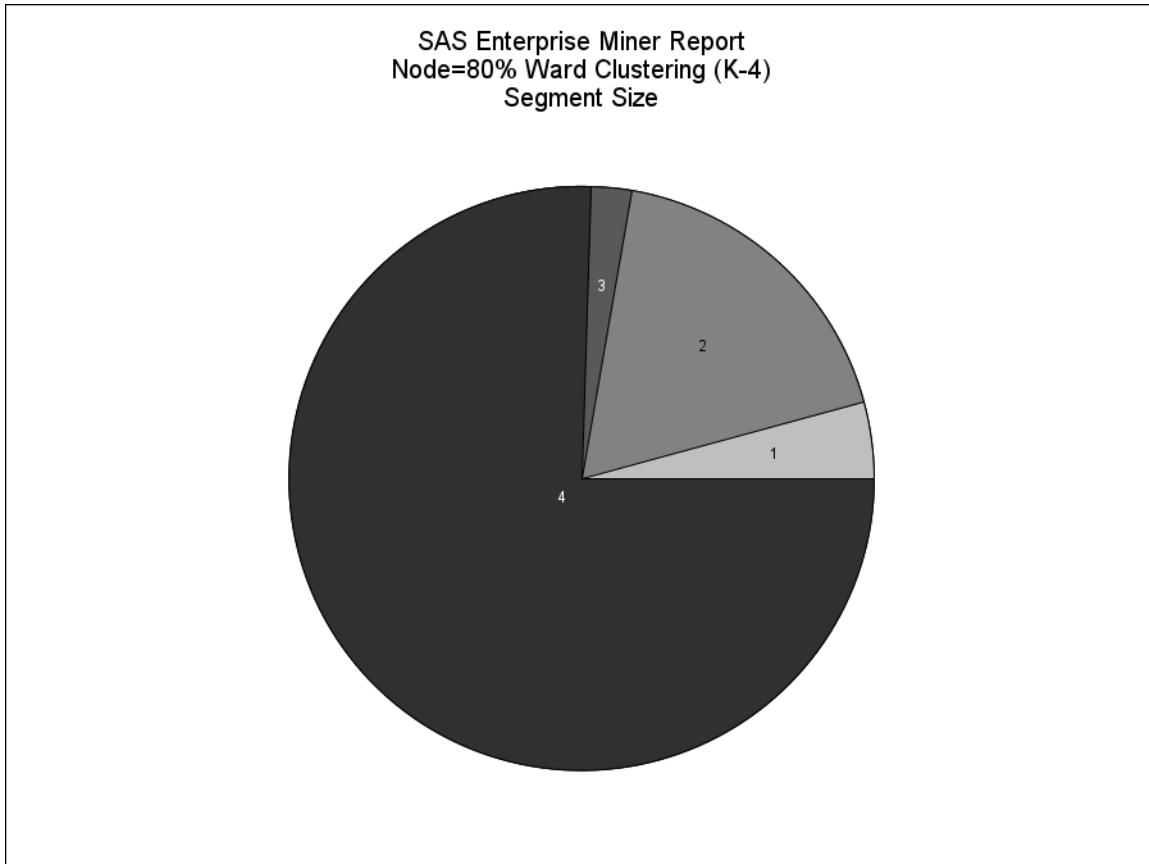
Role	Level	Frequency		Name
		Count		
INPUT	INTERVAL	63	age campaign cons_conf_idx cons_price_idx contact_cellular contact_telephone day_of_week_fri day_of_week_mon day_of_week_thu day_of_week_tue day_of_week_wed default_no default_unknown default_yes ...	
ID	INTERVAL	1	_dataobs_	

### Node=80% Ward Clustering (K-4) Mean Statistics

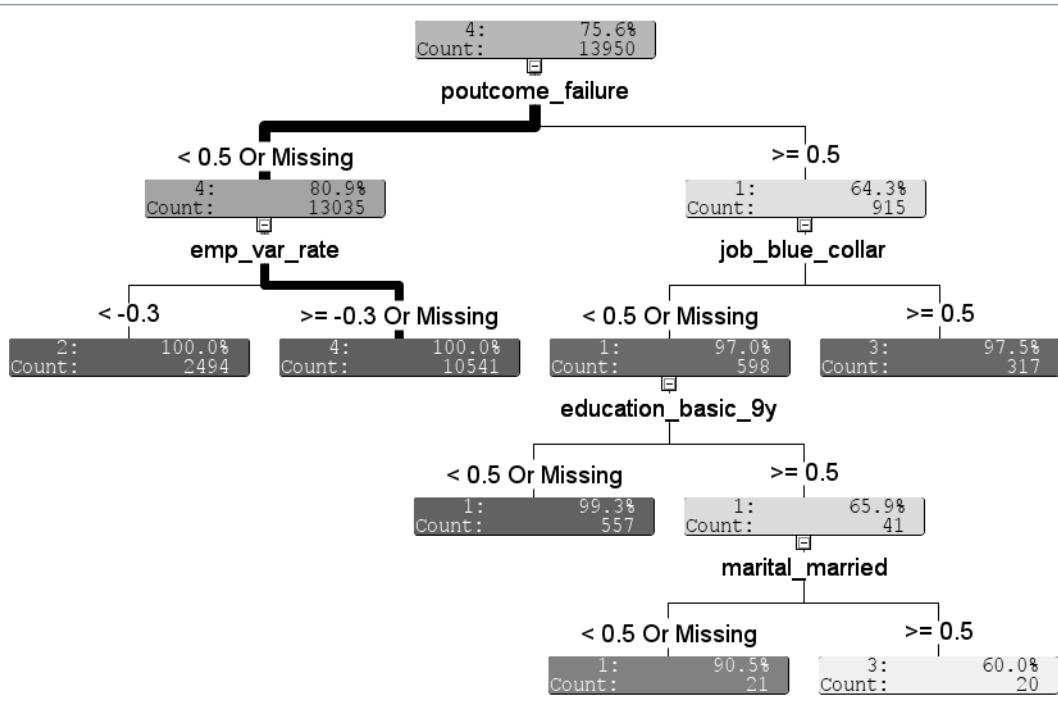
Variable	Segment	Segment	Segment	Segment
	1	2	3	4
Clustering Criterion	0.71	0.71	0.71	0.71
Maximum Relative Change in Cluster Seeds	0.01	0.01	0.01	0.01
Improvement in Clustering Criterion	.	.	.	.
Frequency of Cluster	588.00	2494.00	327.00	10541.00
Root-Mean-Square Standard Deviation	0.65	0.68	0.61	0.73
Maximum Distance from Cluster Seed	7.53	8.52	7.39	8.31
Nearest Cluster	3.00	4.00	1.00	2.00
Distance to Nearest Cluster	3.29	4.88	3.29	4.88
age	36.28	36.65	37.81	39.05
campaign	2.18	2.22	2.03	2.47
cons_conf_idx	-43.94	-43.99	-45.80	-38.85
cons_price_idx	92.92	92.92	92.90	93.90
contact_cellular	0.91	0.90	0.93	0.49

Variable	Segment	Segment	Segment	
	1	2	3	Segment 4
contact_telephone	0.09	0.10	0.07	0.51
day_of_week_fri	0.20	0.19	0.24	0.18
day_of_week_mon	0.21	0.22	0.11	0.20
day_of_week_thu	0.17	0.20	0.18	0.20
day_of_week_tue	0.21	0.20	0.20	0.20
day_of_week_wed	0.22	0.20	0.27	0.21
default_no	0.96	0.88	0.73	0.75
default_unknown	0.04	0.12	0.27	0.25
default_yes	0.00	0.00	0.00	0.00
duration	209.19	237.56	227.28	228.99
education_basic_4y	0.00	0.10	0.27	0.12
education_basic_6y	0.00	0.00	0.00	0.00
education_basic_9y	0.05	0.23	0.51	0.19
education_high_school	0.33	0.22	0.15	0.20
education_illiterate	0.00	0.00	0.00	0.00
education_professional_course	0.19	0.14	0.06	0.18
education_university_degree	0.43	0.31	0.01	0.31
education_unknown	0.00	0.00	0.00	0.00
emp_var_rate	-1.98	-2.00	-1.83	1.31
euribor3m	1.21	1.22	1.28	4.93
housing_no	0.39	0.41	0.48	0.49
housing_unknown	0.00	0.00	0.00	0.00
housing_yes	0.61	0.59	0.52	0.51
job_admin_	0.65	0.43	0.03	0.39
job_blue_collar	0.01	0.36	0.94	0.32
job_entrepreneur	0.00	0.00	0.00	0.00
job_housemaid	0.00	0.00	0.00	0.00
job_management	0.00	0.00	0.00	0.00
job_retired	0.00	0.00	0.00	0.00
job_self-employed	0.00	0.00	0.00	0.00
job_services	0.00	0.00	0.00	0.00
job_student	0.00	0.00	0.00	0.00
job_technician	0.34	0.21	0.03	0.29
job_unemployed	0.00	0.00	0.00	0.00
job_unknown	0.00	0.00	0.00	0.00
loan_no	0.86	0.83	0.83	0.84
loan_unknown	0.00	0.00	0.00	0.00
loan_yes	0.14	0.17	0.17	0.16
marital_divorced	0.13	0.09	0.07	0.11
marital_married	0.44	0.53	0.64	0.60
marital_single	0.44	0.38	0.28	0.29
marital_unknown	0.00	0.00	0.00	0.00
month_apr	0.00	0.00	0.00	0.00
month_aug	0.09	0.08	0.02	0.27
month_dec	0.00	0.00	0.00	0.00
month_jul	0.04	0.05	0.00	0.26
month_jun	0.09	0.11	0.02	0.16
month_mar	0.00	0.00	0.00	0.00
month_may	0.78	0.77	0.96	0.30
month_nov	0.00	0.00	0.00	0.00
month_oct	0.00	0.00	0.00	0.00

Variable	Segment	Segment	Segment	Segment
	1	2	3	4
month_sep	0.00	0.00	0.00	0.00
nr_employed	5087.72	5088.19	5096.78	5216.72
poutcome_failure	1.00	-0.00	1.00	-0.00
poutcome_nonexistent	0.00	1.00	0.00	1.00
poutcome_success	0.00	0.00	0.00	0.00
previous	1.00	-0.00	1.00	-0.00



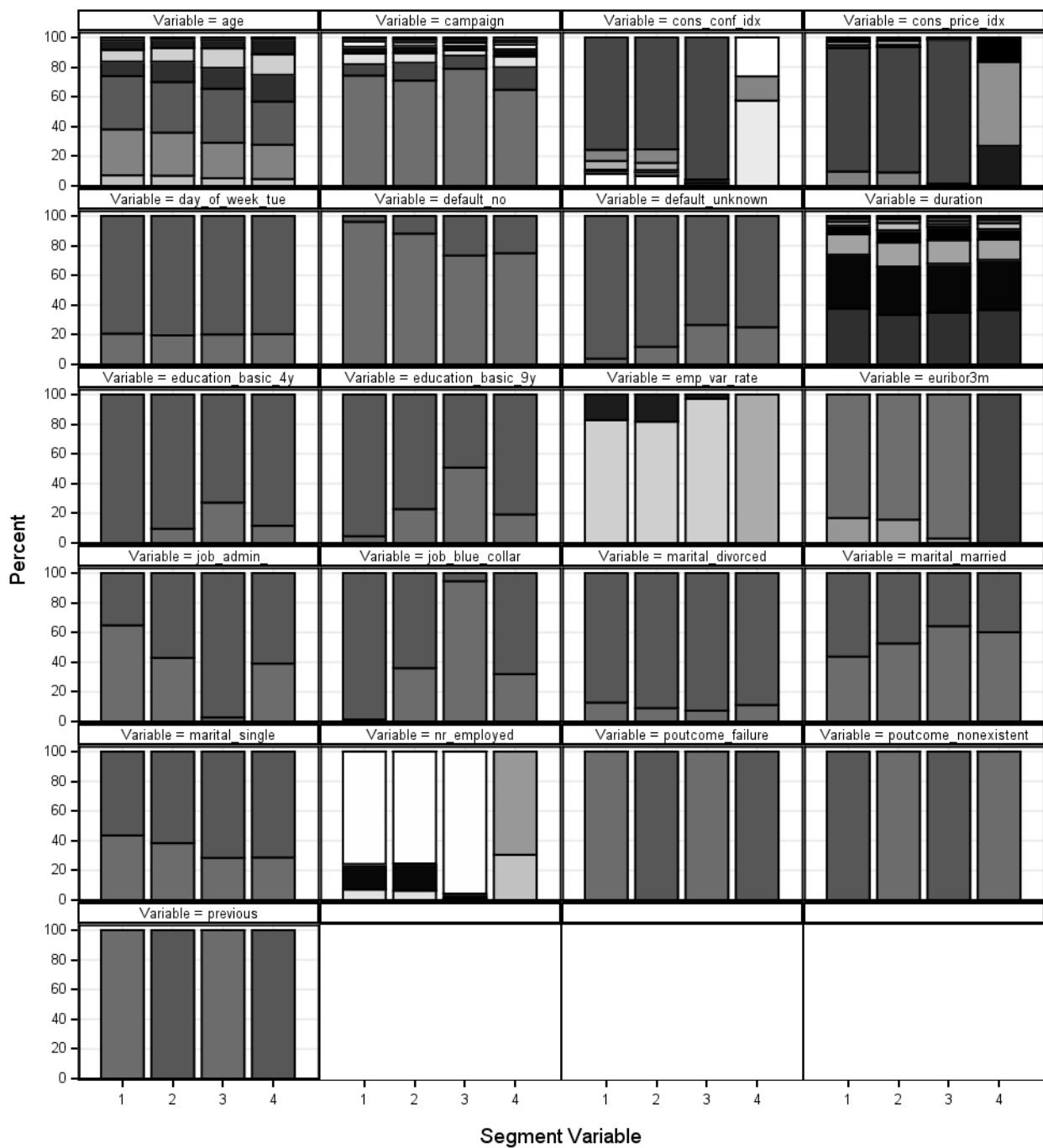
SAS Enterprise Miner Report  
 Node=80% Ward Clustering (K-4)  
 Tree Diagram



# SAS Enterprise Miner Report

Node=80% Ward Clustering (K-4)

## Segment Plot



Segment Variable

Formatted Value

20:26.375	26.375:32.75	32.75:39.125	39.125:45.5	45.5:51.875	51.875:58.25	58.25:64.625
64.625:71	1:2.125	2.125:3.25	3.25:4.375	4.375:5.5	5.5:6.625	6.625:7.75
7.75:8.875	8.875:10	-33.25:-31.4	-35.1:-33.25	-36.95:-35.1	-38.8:-36.95	-40.65:-38.8
-42.5:-40.65	-44.35:-42.5	-46.2:-44.35	92.201:92.484	92.767:93.05	93.333:93.616	93.616:93.899
93.899:94.182	94.182:94.465	0.875:1	0:0.125	0:129.5	129.5:259	259:388.5
388.5:518	518:647.5	647.5:777	777:906.5	906.5:1036	-1.825:-1.288	-2.9:-2.363
0.8625:1.4	0.668:1.2058	1.2058:1.7435	4.4323:4.97	4992:5021.5	5051:5080.5	5080.5:5110
5169:5198.5	5198.5:5228					