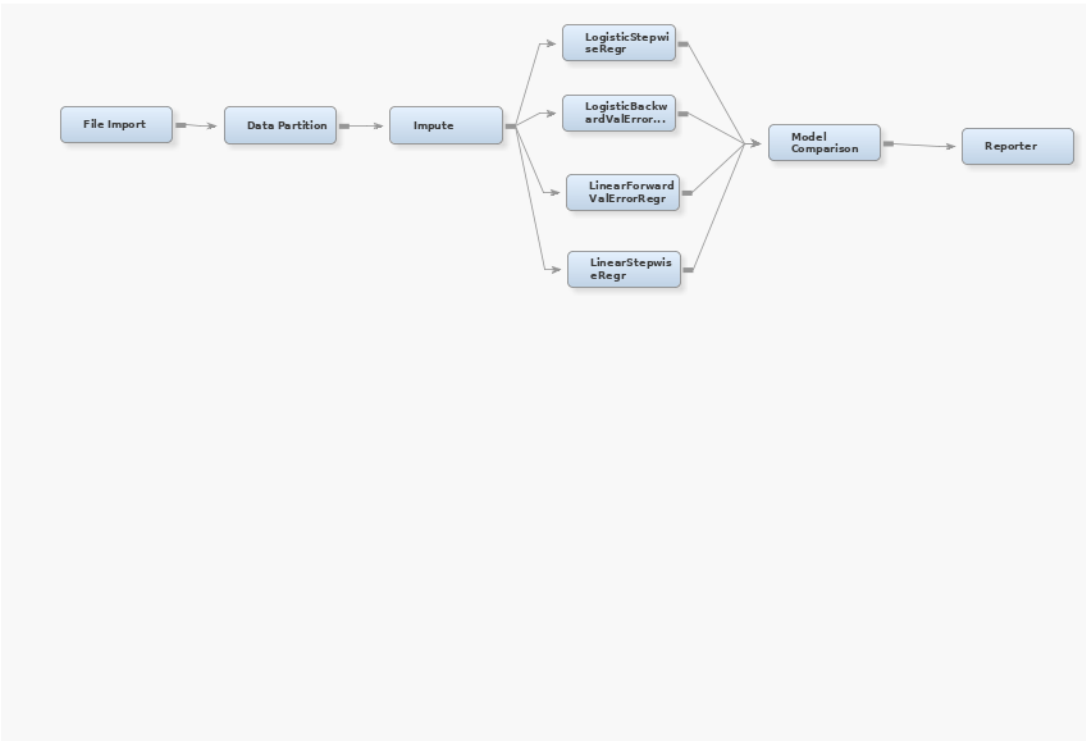
SAS Enterprise Miner Report

User = u47160410
Date = 20:17:32 June 05
Project = Semestrovka
Diagram = Semestrovka

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

Format = PDF
Style = LISTING

SAS Enterprise Miner Report
Process Flow Diagram



SAS Enterprise Miner Report

Node=File Import
Summary

Node id = FIMPORT
Node label = File Import
Meta path = FIMPORT
Notes =

Node=File Import
Properties

Property	Value	Default	Property	Value	Default	Property	Value	Default
Component	FileImport		GuessRows	500		NameRow	Y	
AccessTable	NoTableName		IFileName	C:\Users\Дмитрий\Documents\GitHub\Podlevskikh_Dmitrii_11_808\Data_Analysis\Semestrovka\update_credit_train.csv		Password	NoPassword	
AdvancedAdvisor	N		ImportType	Local	LOCAL	Role	TRAIN	
Delimiter	,		MaxCols	10000		SkipRows	0	
FileType	csv	XLS	MaxRows	1000000		Summarize	N	

Node=File Import
Data Attributes

Attribute	Value	Attribute	Value	Attribute	Value
Data Name	FIMPORT_DATA	Date Created	05Jun2020:19:58:12	Data Size	11404288
Data Type	DATA	Date Modified	05Jun2020:19:58:12	Role	TRAIN
Data Label		Number Rows	100514	Segment	
Engine	V9	Number Columns	14	Data Library	EMWS1

Node=File Import
Variables List

Name	Label	Role	Level	Type	Length	Format	Creator
Annual_Income	Annual Income	INPUT	INTERVAL	N	8	BEST12.0	
Bankruptcies		INPUT	INTERVAL	N	8	BEST12.0	
Credit_Score	Credit Score	INPUT	INTERVAL	N	8	BEST12.0	
Current_Credit_Balance	Current Credit Balance	INPUT	INTERVAL	N	8	BEST12.0	
Current_Loan_Amount	Current Loan Amount	INPUT	INTERVAL	N	8	BEST12.0	
Loan_Status	Loan Status	TARGET	BINARY	N	8	BEST12.0	
Maximum_Open_Credit	Maximum Open Credit	INPUT	INTERVAL	N	8	BEST12.0	
Monthly_Debt	Monthly Debt	INPUT	INTERVAL	N	8	BEST12.0	
Months_since_last_delinquent	Months since last delinquent	INPUT	INTERVAL	N	8	BEST12.0	
Number_of_Credit_Problems	Number of Credit Problems	INPUT	INTERVAL	N	8	BEST12.0	
Number_of_Open_Accounts	Number of Open Accounts	INPUT	INTERVAL	N	8	BEST12.0	
Tax_Liens	Tax Liens	INPUT	INTERVAL	N	8	BEST12.0	
VAR1		INPUT	INTERVAL	N	8	BEST12.0	
Years_of_Credit_History	Years of Credit History	INPUT	INTERVAL	N	8	BEST12.0	

Node=File Import
Created Variables List

SAS Enterprise Miner Report

Node=Data Partition
Summary

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

Node=Data Partition
Properties

Property	Value	Default	Property	Value	Default	Property	Value	Default
Component	Partition		Method	DEFAULT		TestPct	0	30
ClassDistribution	Y		OutputType	DATA		TrainPct	50	40
IntervalDistribution	Y		RandomSeed	12345		ValidatePct	50	30

Node=Data Partition
Variable Summary

Role	Level	Frequency Count	Name
TARGET	BINARY	1	Loan_Status
INPUT	INTERVAL	13	Annual_Income Bankruptcies Credit_Score Current_Credit_Balance Current_Loan_Amount Maximum_Open_Credit Monthly_Debt Months_since_last_delinquent Number_of_Credit_Problems Number_of_Open_Accounts ...

SAS Enterprise Miner Report

Node=Impute
Summary

Node id = Impt
Node label = Impute
Meta path = FIMPORT => Part => Impt
Notes =

Node=Impute
Properties

Property	Value	Default	Property	Value	Default	Property	Value	Default
Component	Impute		IndicatorRole	INPUT	REJECTED	MinCatSize	5	
ABWTuning	9		IndicatorSource	IMPUTED		Normalize	Y	
AHUBERTuning	1.5		LeafSize	5		Nrules	5	
AWAVETuning	6.2831853072		MaxPctMissing	50		Nsurrs	2	
DefaultChar			Maxbranch	2		RandomSeed	12345	
DefaultNum	.		Maxdepth	6		ReplaceVariable	N	
DistributionMissing	N		MethodClass	COUNT		SpacingProportion	90	
HideVariable	Y		MethodInterval	MEAN		Splitsize	.	
ImputeNoMissing	N		MethodTargetClass	NONE		ValidateTestMissing	N	
Indicator	UNIQUE	NONE	MethodTargetInterval	NONE				

Node=Impute
Variable Summary

Role	Level	Frequency Count	Name
INPUT	INTERVAL	13	Annual_Income Bankruptcies Credit_Score Current_Credit_Balance Current_Loan_Amount Maximum_Open_Credit Monthly_Debt Months_since_last_delinquent Number_of_Credit_Problems Number_of_Open_Accounts ...

SAS Enterprise Miner Report

Node=LinearStepwiseRegr
Summary

Node id = Reg4
Node label = LinearStepwiseRegr
Meta path = FIMPORT => Part => Impt => Reg4
Notes =

Node=LinearStepwiseRegr
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	
ClParm	N		MaxCPUTime	1 HOUR		SlEntry	0.05	
ConvDefaults	Y		MaxFunctionCalls	.		SlStay	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	NORMAL	LOGISTIC	ModelSelection	STEPWISE	NONE	SuppressOutput	N	
ExcludedVariable	REJECT		OptimizationTechnique	DEFAULT		Terms	N	
FConvTimes	1		Performance	N		TwoFactor	N	
FConvValue	0		Polynomial	N				

Node=LinearStepwiseRegr
Variable Summary

Role	Level	Frequency Count	Name
TARGET	BINARY	1	Loan_Status
INPUT	INTERVAL	13	Annual_Income Bankruptcies Credit_Score Current_Credit_Balance Current_Loan_Amount Maximum_Open_Credit Monthly_Debt Months_since_last_delinquent Number_of_Credit_Problems Number_of_Open_Accounts ...

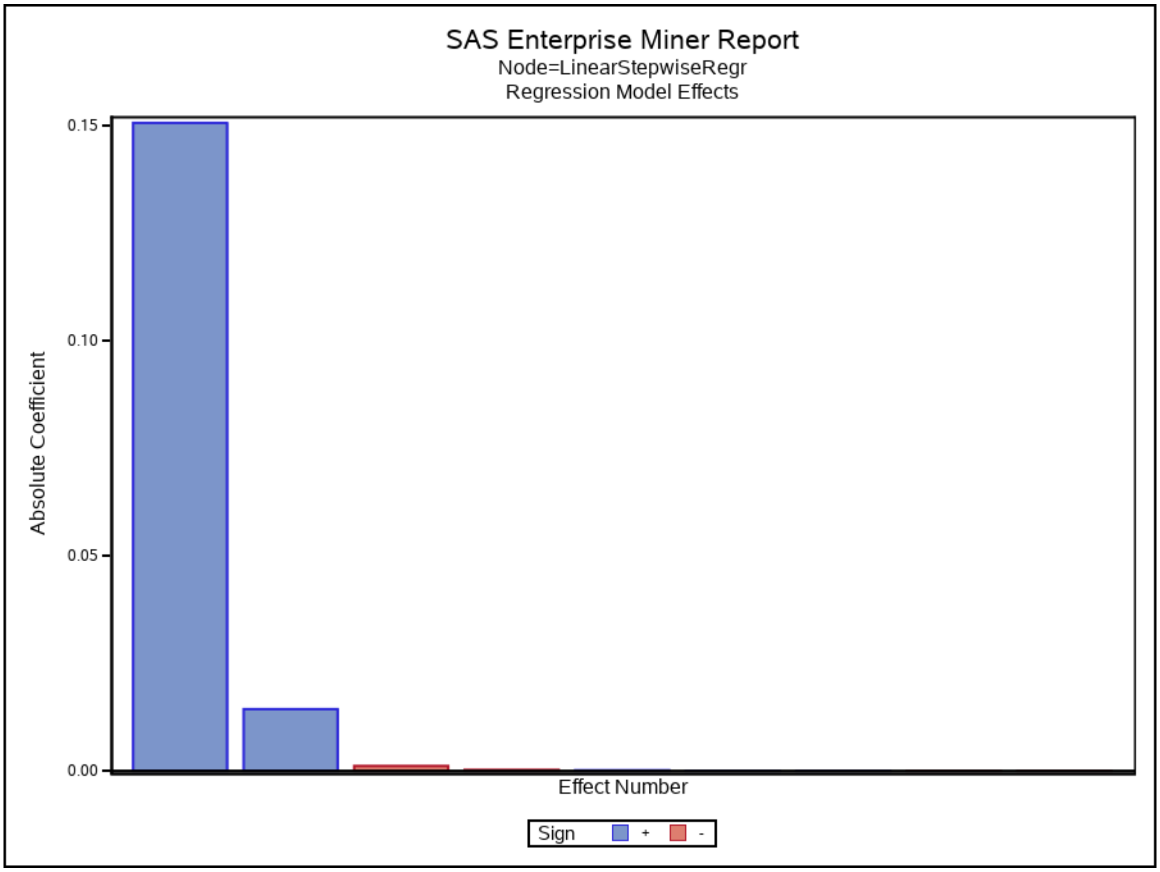
Node=LinearStepwiseRegr
Model Fit Statistics

Target=Loan_Status Target Label=Loan Status

Label of Statistic	Train	Validation	Test
Akaike's Information Criterion	-97868.08	.	.
Average Squared Error	0.14	0.14	.
Average Error Function	0.14	0.14	.
Degrees of Freedom for Error	50248.00	.	.
Model Degrees of Freedom	9.00	.	.
Total Degrees of Freedom	50257.00	.	.
Divisor for ASE	50257.00	50257.00	.

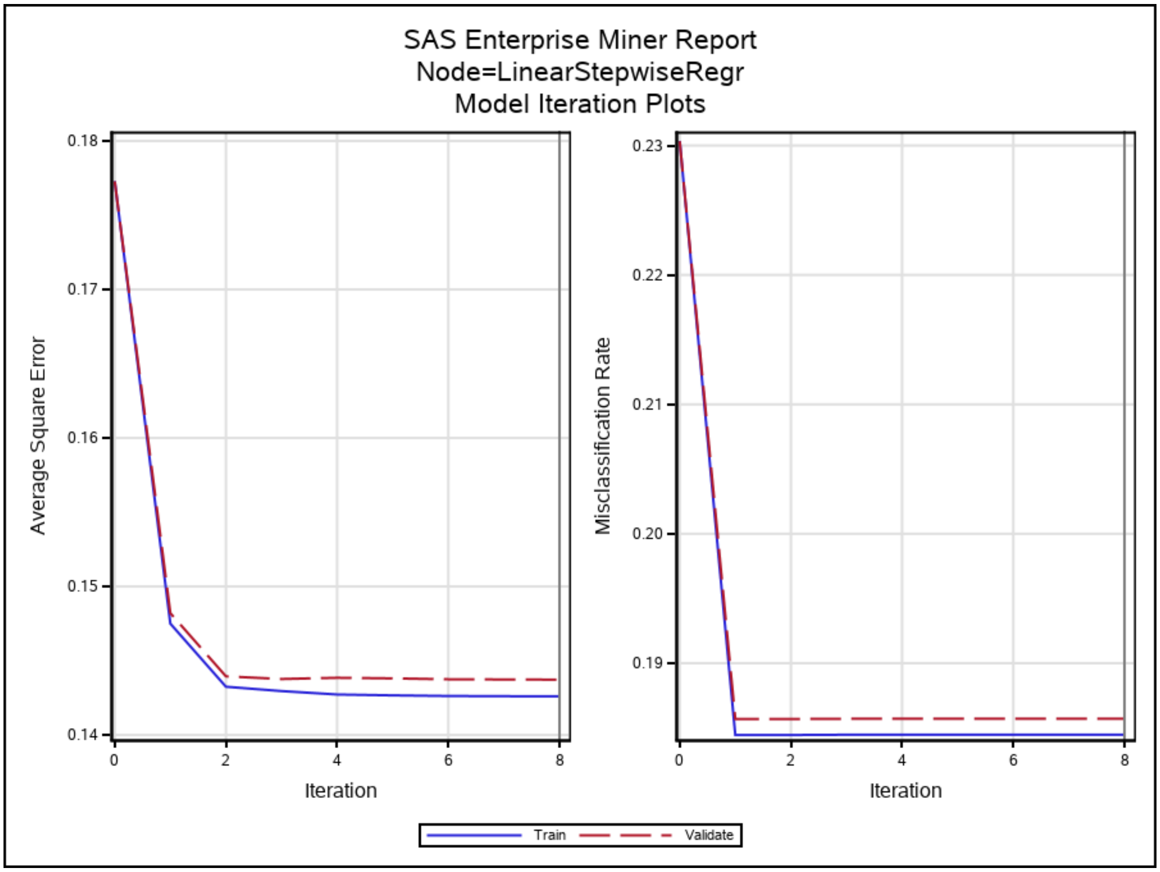
Target=Loan_Status Target Label=Loan Status

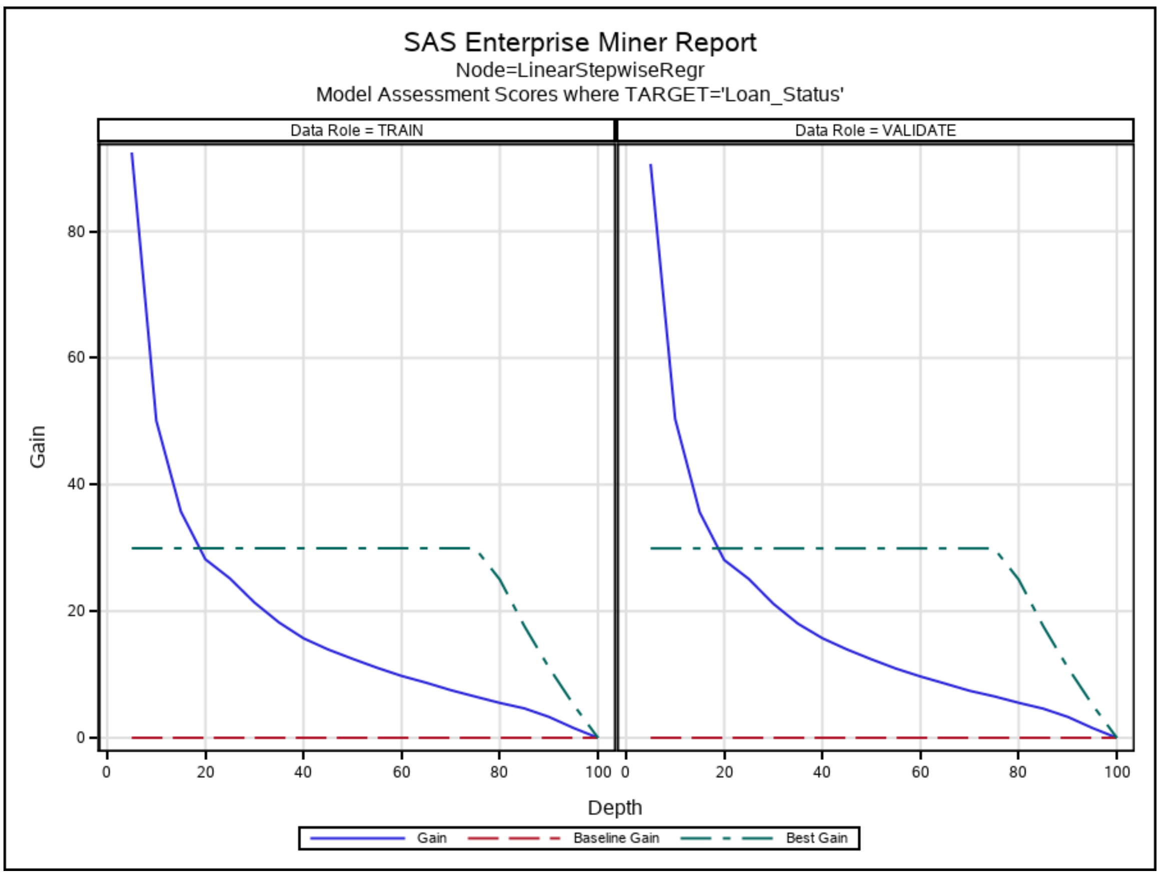
Label of Statistic	Train	Validation	Test
Error Function	7166.66	7223.31	.
Final Prediction Error	0.14	.	.
Maximum Absolute Error	1.51	5.01	.
Mean Square Error	0.14	0.14	.
Sum of Frequencies	50257.00	50257.00	.
Number of Estimate Weights	9.00	.	.
Root Average Sum of Squares	0.38	0.38	.
Root Final Prediction Error	0.38	.	.
Root Mean Squared Error	0.38	0.38	.
Schwarz's Bayesian Criterion	-97788.66	.	.
Sum of Squared Errors	7166.66	7223.31	.
Sum of Case Weights Times Freq	50257.00	50257.00	.
Misclassification Rate	0.18	0.19	.

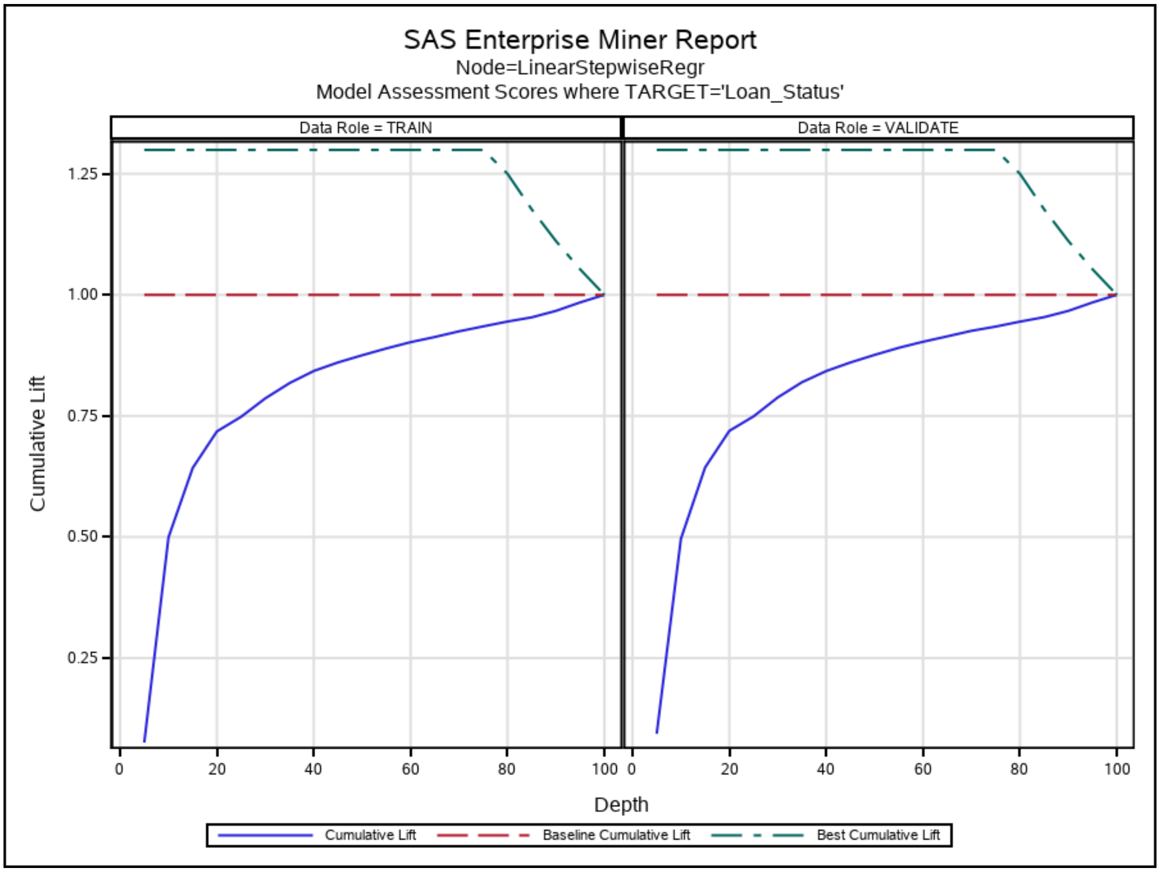


Effect Number	Variable	Level	Coefficient	T-value	P Value	Effect Number	Variable	Level	Coefficient	T-value	P Value
1	Intercept		0.15063	20.2509	0.000000	6	Monthly_Debt		0.000001549	9.5104	1.9808E-21
2	Tax_Liens		0.01435	2.2941	0.021788	7	VAR1		0.000000225	3.8766	.000106057
3	Years_of_Credit_History		-0.00113	-4.5900	0.000004	8	Annual_Income		-.000000031	-13.0624	6.2479E-39
4	Months_since_last_delinquent		-0.00023	-2.0395	0.041402	9	Current_Loan_Amount		-.000000002	-38.2721	0
5	Credit_Score		0.00012	97.8741	0.000000	.			.	.	.

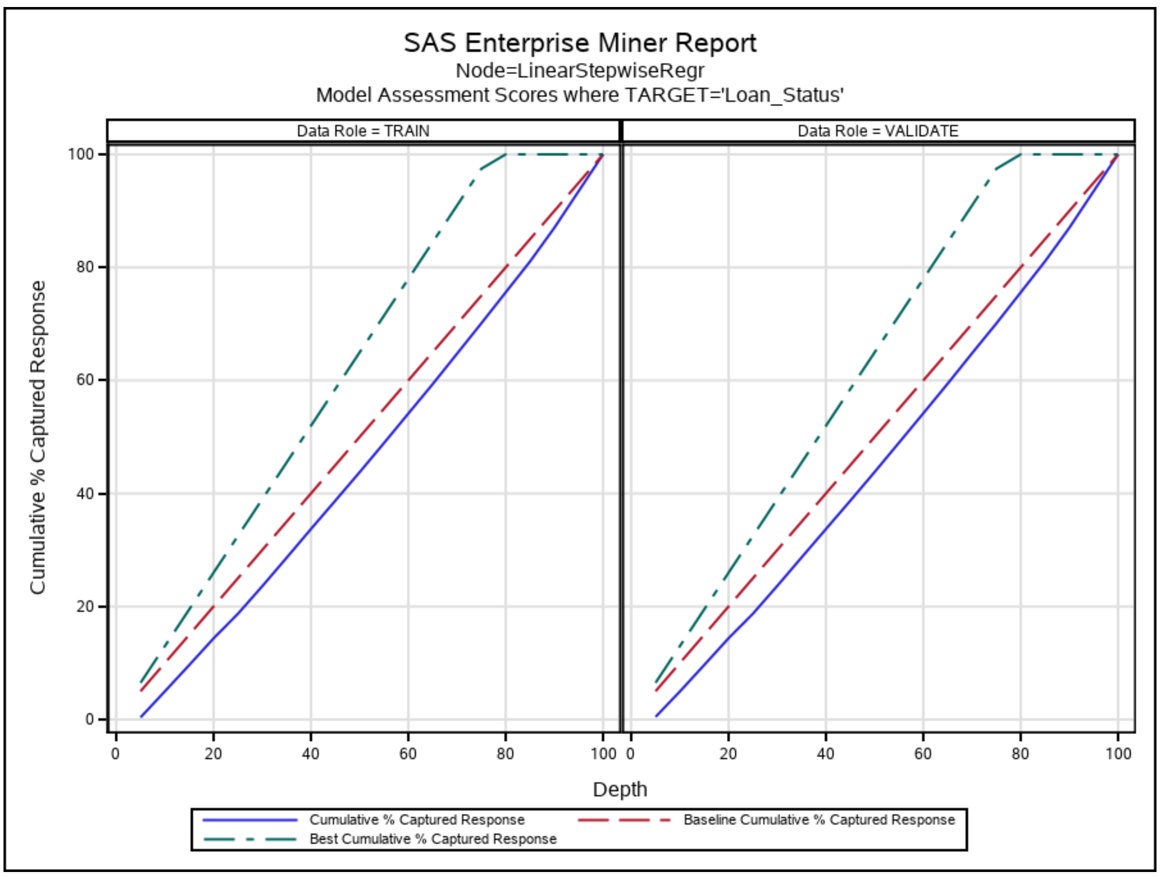
SAS Enterprise Miner Report
Node=LinearStepwiseRegr
Model Iteration Plots



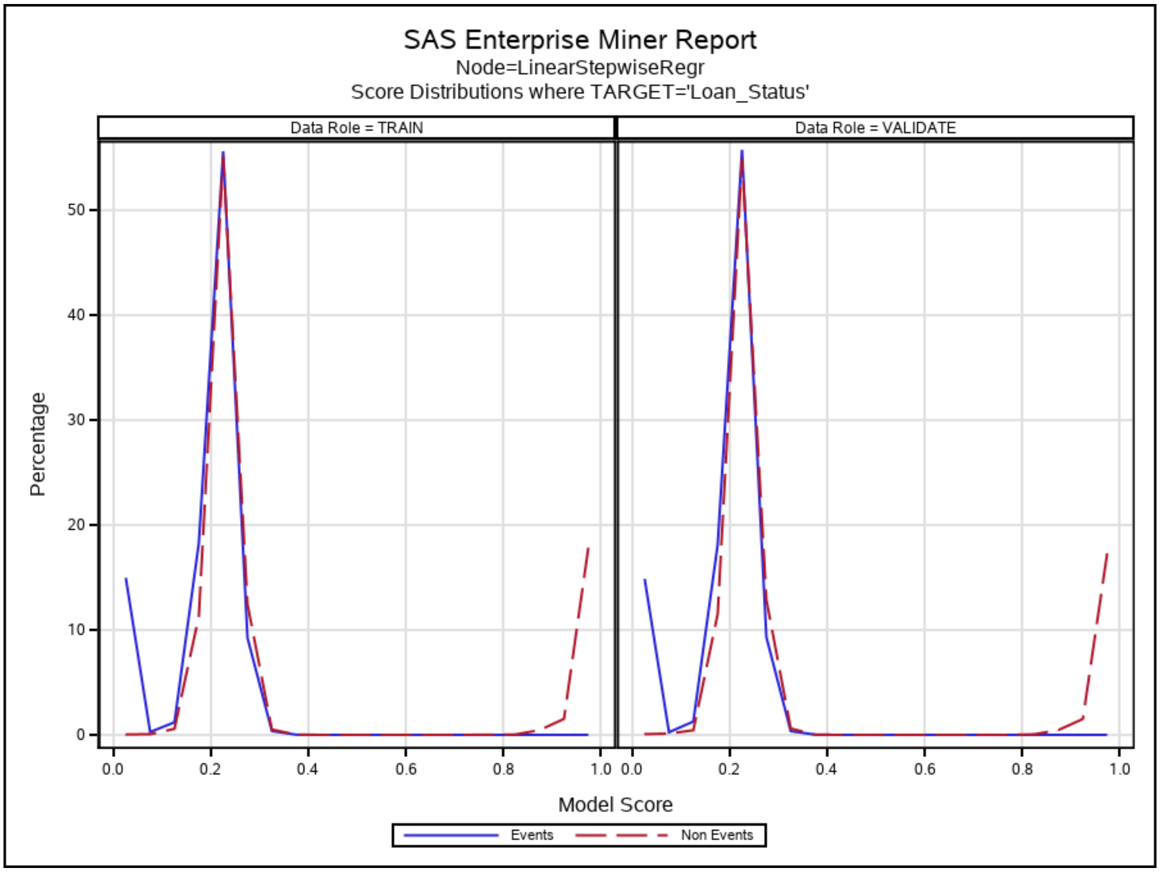


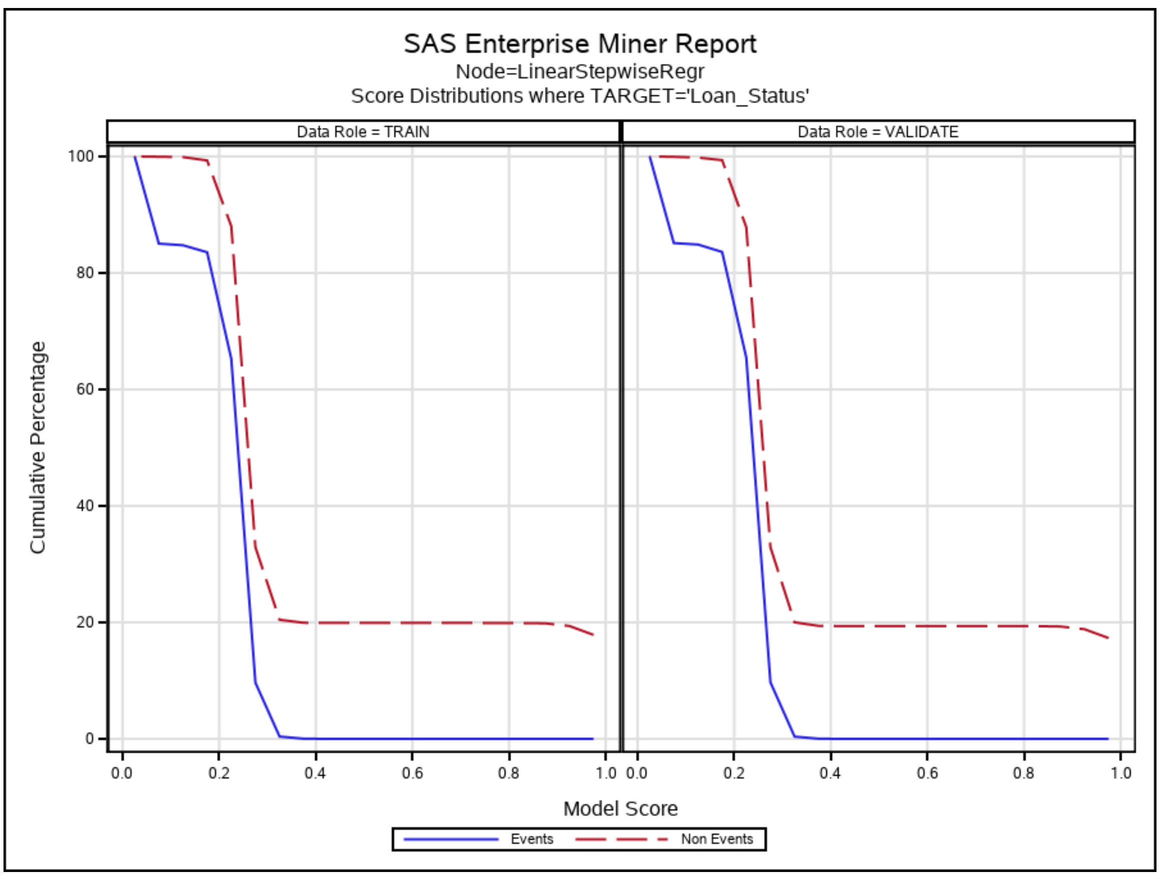


SAS Enterprise Miner Report
Node=LinearStepwiseRegr
Model Assessment Scores where TARGET='Loan_Status'
Data Role = TRAIN
Data Role = VALIDATE
Cumulative Lift
1.25
1.00
0.75
0.50
0.25
0
20
40
60
80
100
Depth
Cumulative Lift
Baseline Cumulative Lift
Best Cumulative Lift



SAS Enterprise Miner Report
Node=LinearStepwiseRegr
Model Assessment Scores where TARGET='Loan_Status'
Data Role = TRAIN
Data Role = VALIDATE
Cumulative % Captured Response
100
80
60
40
20
0
Depth
Cumulative % Captured Response
Baseline Cumulative % Captured Response
Best Cumulative % Captured Response





Node=LinearStepwiseRegr
Score Distributions

Target Variable=Loan_Status 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	0	0.0000	17.8544	0.000	17.854
0.90-0.95	0	0.0000	1.5289	0.000	19.383
0.85-0.90	0	0.0000	0.4578	0.000	19.841
0.80-0.85	0	0.0000	0.0432	0.000	19.884
0.75-0.80	0	0.0000	0.0173	0.000	19.902
0.70-0.75	0	0.0000	0.0086	0.000	19.910
0.65-0.70	0	0.0000	0.0086	0.000	19.919
0.40-0.45	3	0.0078	0.0000	0.008	19.919
0.35-0.40	9	0.0233	0.0173	0.031	19.936
0.30-0.35	144	0.3723	0.5183	0.403	20.454
0.25-0.30	3572	9.2347	12.4385	9.638	32.893
0.20-0.25	21515	55.6231	55.1179	65.261	88.011
0.15-0.20	7073	18.2859	11.2983	83.547	99.309
0.10-0.15	466	1.2048	0.5787	84.752	99.888
0.05-0.10	107	0.2766	0.0605	85.028	99.948
0.00-0.05	5791	14.9716	0.0518	100.000	100.000

Target Variable=Loan_Status 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	0	0.0000	17.3117	0.000	17.312
0.90-0.95	0	0.0000	1.5204	0.000	18.832
0.85-0.90	0	0.0000	0.4665	0.000	19.299
0.80-0.85	0	0.0000	0.0605	0.000	19.359
0.75-0.80	0	0.0000	0.0086	0.000	19.368
0.55-0.60	0	0.0000	0.0086	0.000	19.376
0.45-0.50	1	0.0026	0.0000	0.003	19.376
0.40-0.45	1	0.0026	0.0000	0.005	19.376
0.35-0.40	10	0.0259	0.0259	0.031	19.402
0.30-0.35	140	0.3619	0.6133	0.393	20.016
0.25-0.30	3606	9.3224	12.8887	9.715	32.904
0.20-0.25	21567	55.7561	54.9413	65.471	87.846
0.15-0.20	7012	18.1278	11.5152	83.599	99.361
0.10-0.15	494	1.2771	0.4406	84.876	99.801
0.05-0.10	97	0.2508	0.1296	85.127	99.931
0.00-0.05	5753	14.8729	0.0691	100.000	100.000

SAS Enterprise Miner Report

Node=LinearForwardValErrorRegr
Summary

Node id = Reg3
Node label = LinearForwardValErrorRegr
Meta path = FIMPORT => Part => Impt => Reg3
Notes =

Node=LinearForwardValErrorRegr
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	VERROR	DEFAULT
AbsGValue	0.00001		Interactions			SelectionDefault	Y	
AbsXTime	1		LinkFunction	LOGIT		Sequential	N	
AbsXValue	1E-8		MainEffect	Y		Simple	N	
ClParm	N		MaxCPUTime	1 HOUR		SlEntry	0.05	
ConvDefaults	Y		MaxFunctionCalls	.		SlStay	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	NORMAL	LOGISTIC	ModelSelection	FORWARD	NONE	SuppressOutput	N	
ExcludedVariable	REJECT		OptimizationTechnique	DEFAULT		Terms	N	
FConvTimes	1		Performance	N		TwoFactor	N	
FConvValue	0		Polynomial	N				

Node=LinearForwardValErrorRegr
Variable Summary

Role	Level	Frequency Count	Name
TARGET	BINARY	1	Loan_Status
INPUT	INTERVAL	13	Annual_Income Bankruptcies Credit_Score Current_Credit_Balance Current_Loan_Amount Maximum_Open_Credit Monthly_Debt Months_since_last_delinquent Number_of_Credit_Problems Number_of_Open_Accounts ...

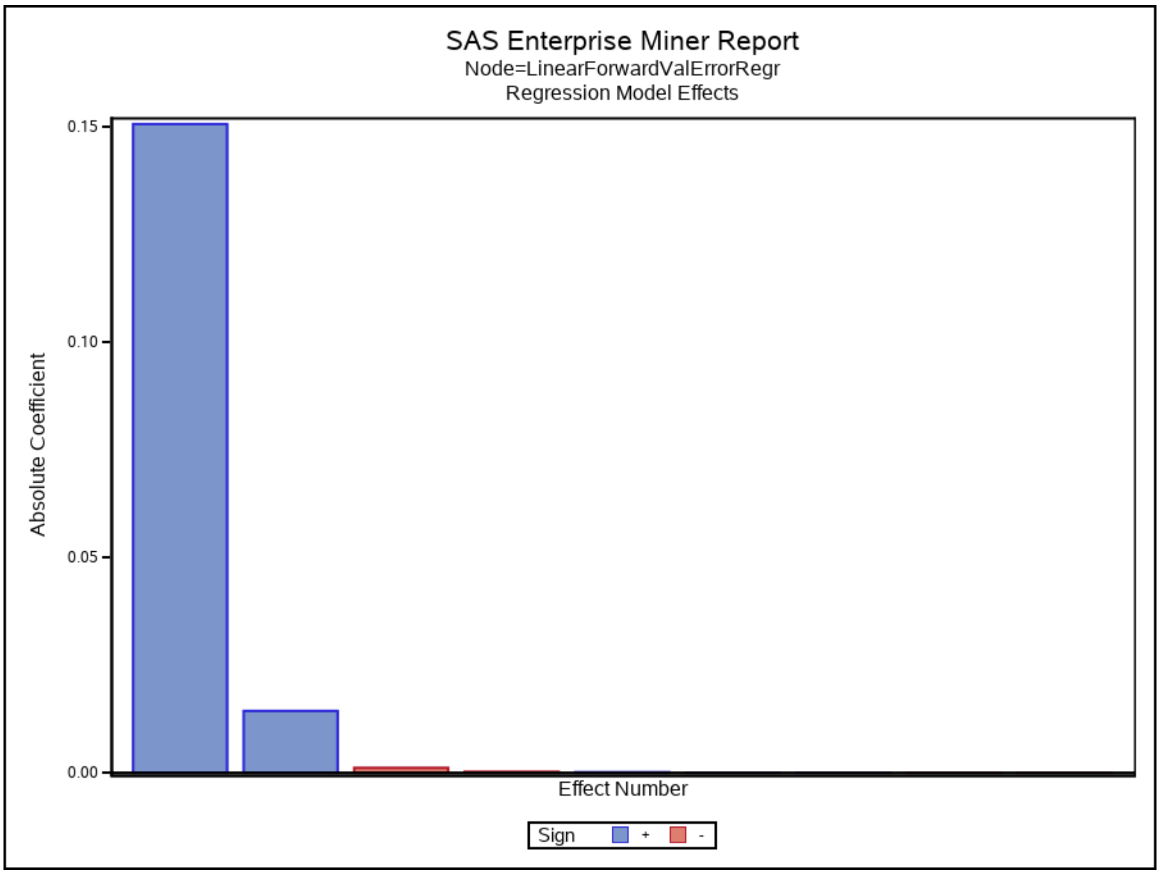
Node=LinearForwardValErrorRegr
Model Fit Statistics

Target=Loan_Status Target Label=Loan Status

Label of Statistic	Train	Validation	Test
Akaike's Information Criterion	-97868.08	.	.
Average Squared Error	0.14	0.14	.
Average Error Function	0.14	0.14	.
Degrees of Freedom for Error	50248.00	.	.
Model Degrees of Freedom	9.00	.	.
Total Degrees of Freedom	50257.00	.	.
Divisor for ASE	50257.00	50257.00	.

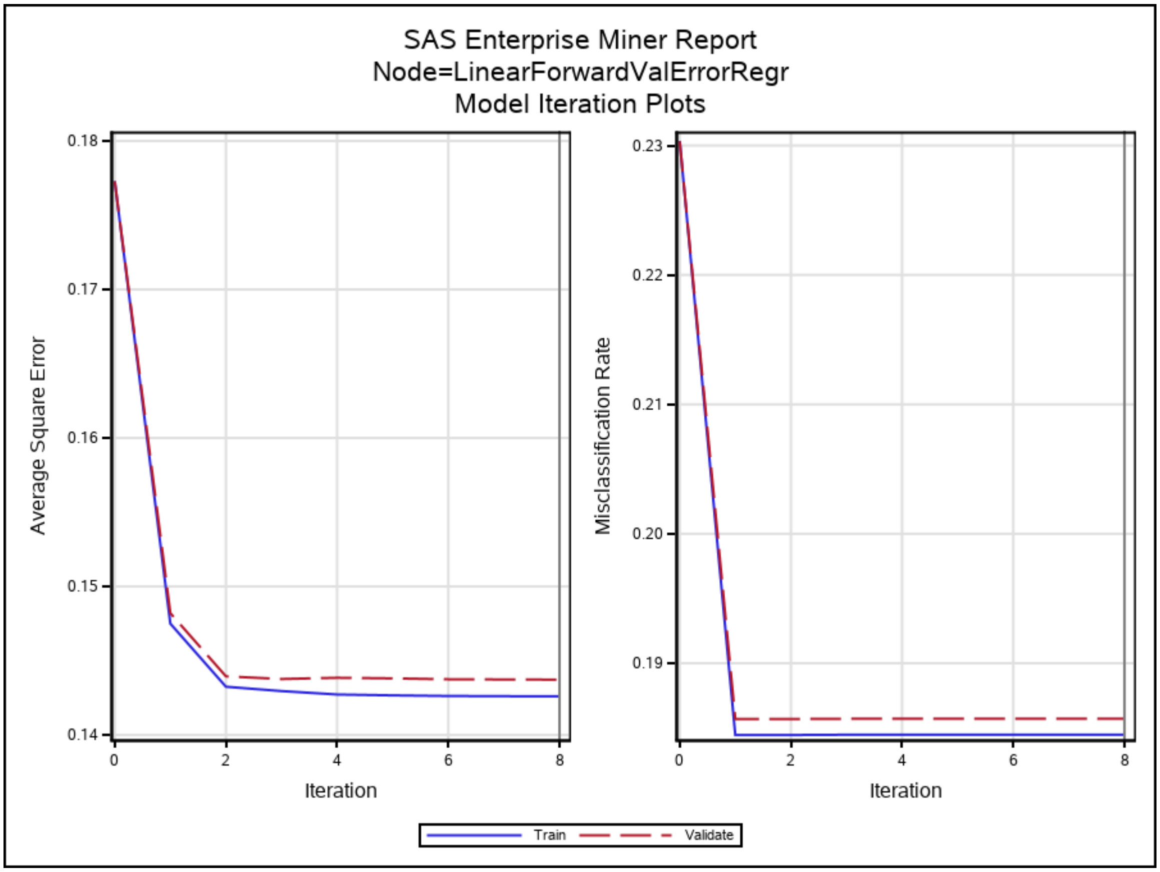
Target=Loan_Status Target Label=Loan Status

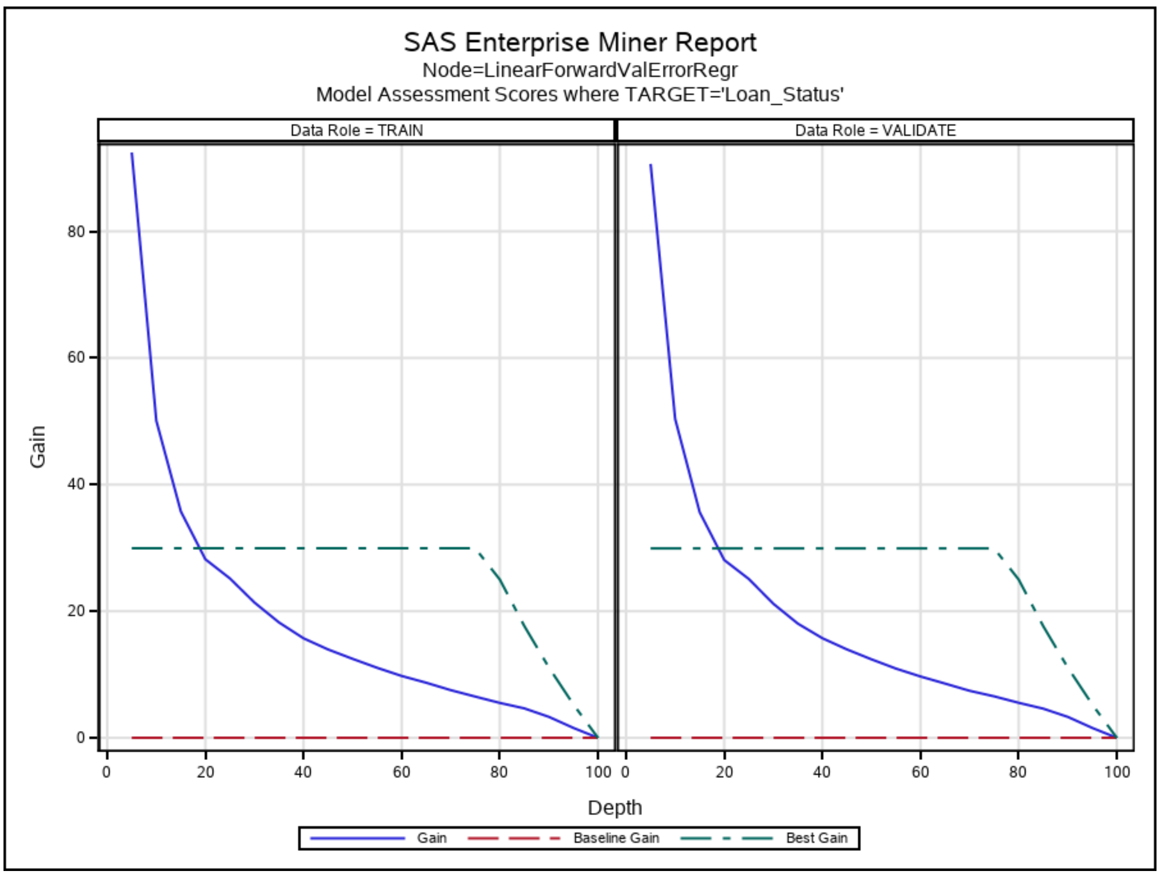
Label of Statistic	Train	Validation	Test
Error Function	7166.66	7223.31	.
Final Prediction Error	0.14	.	.
Maximum Absolute Error	1.51	5.01	.
Mean Square Error	0.14	0.14	.
Sum of Frequencies	50257.00	50257.00	.
Number of Estimate Weights	9.00	.	.
Root Average Sum of Squares	0.38	0.38	.
Root Final Prediction Error	0.38	.	.
Root Mean Squared Error	0.38	0.38	.
Schwarz's Bayesian Criterion	-97788.66	.	.
Sum of Squared Errors	7166.66	7223.31	.
Sum of Case Weights Times Freq	50257.00	50257.00	.
Misclassification Rate	0.18	0.19	.

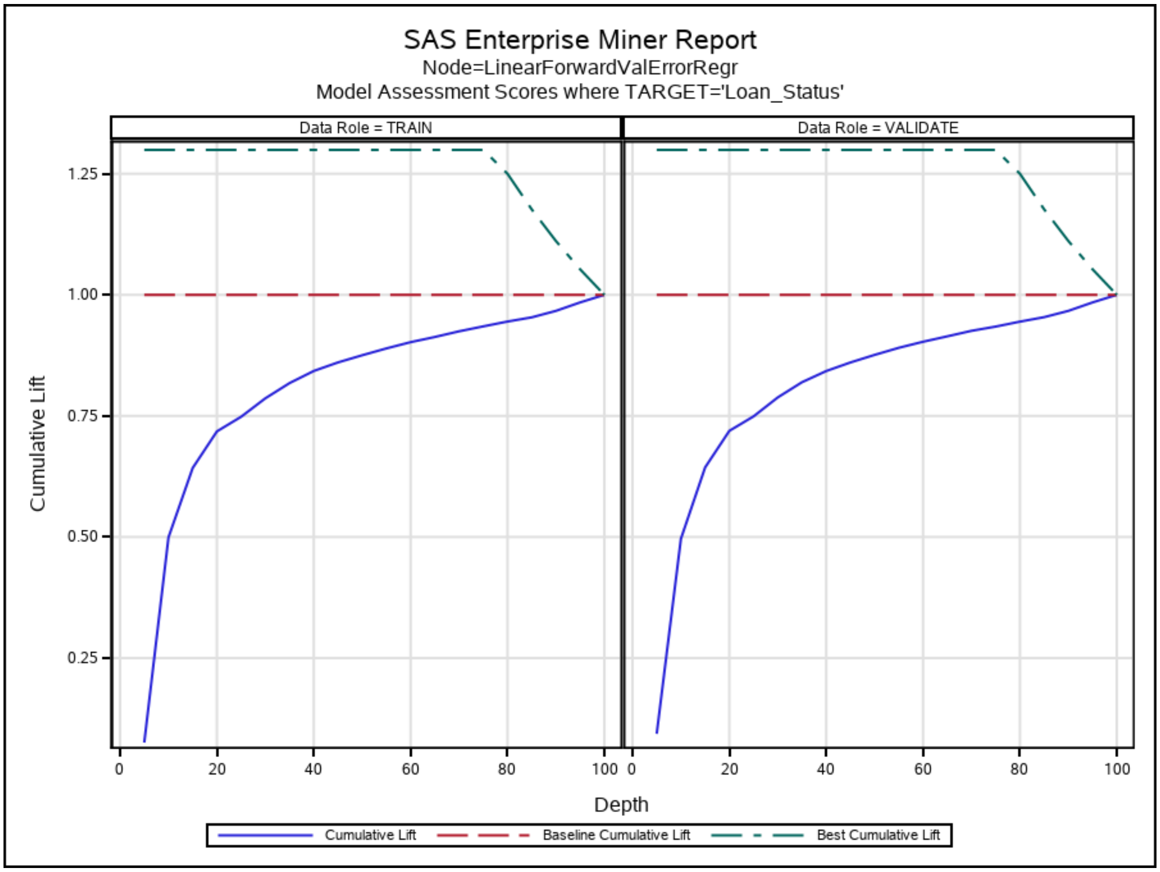


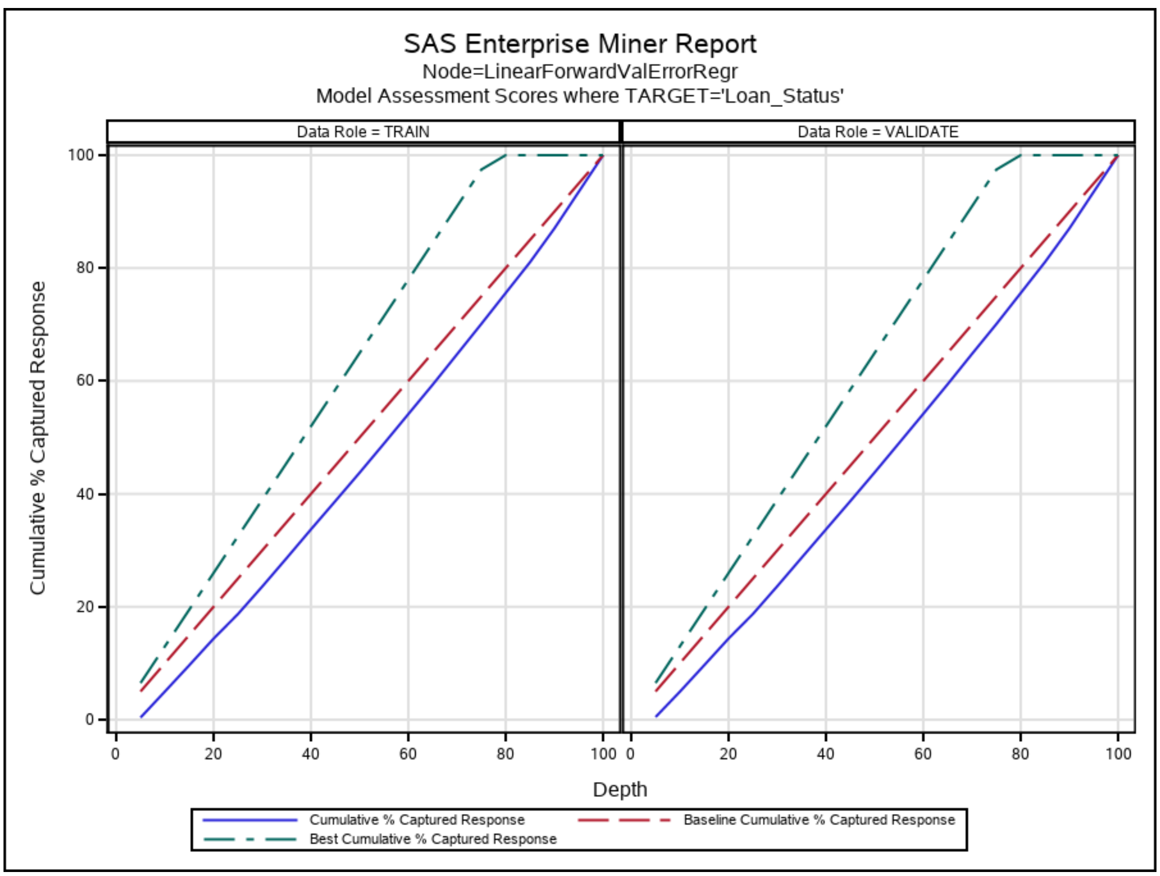
Effect Number	Variable	Level	Coefficient	T-value	P Value	Effect Number	Variable	Level	Coefficient	T-value	P Value
1	Intercept		0.15063	20.2509	0.000000	6	Monthly_Debt		0.000001549	9.5104	1.9808E-21
2	Tax_Liens		0.01435	2.2941	0.021788	7	VAR1		0.000000225	3.8766	.000106057
3	Years_of_Credit_History		-0.00113	-4.5900	0.000004	8	Annual_Income		-.000000031	-13.0624	6.2479E-39
4	Months_since_last_delinquent		-0.00023	-2.0395	0.041402	9	Current_Loan_Amount		-.000000002	-38.2721	0
5	Credit_Score		0.00012	97.8741	0.000000	.			.	.	.

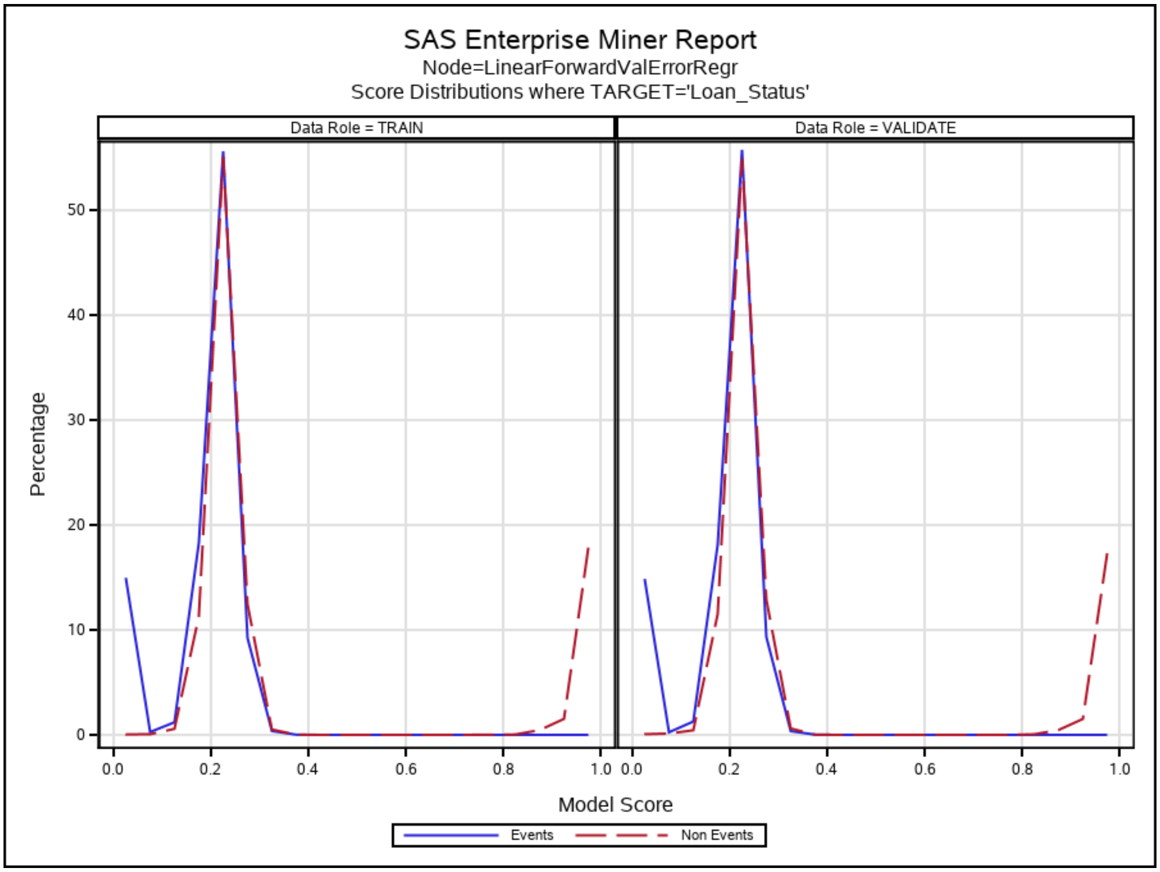
SAS Enterprise Miner Report
Node=LinearForwardValErrorRegr
Model Iteration Plots

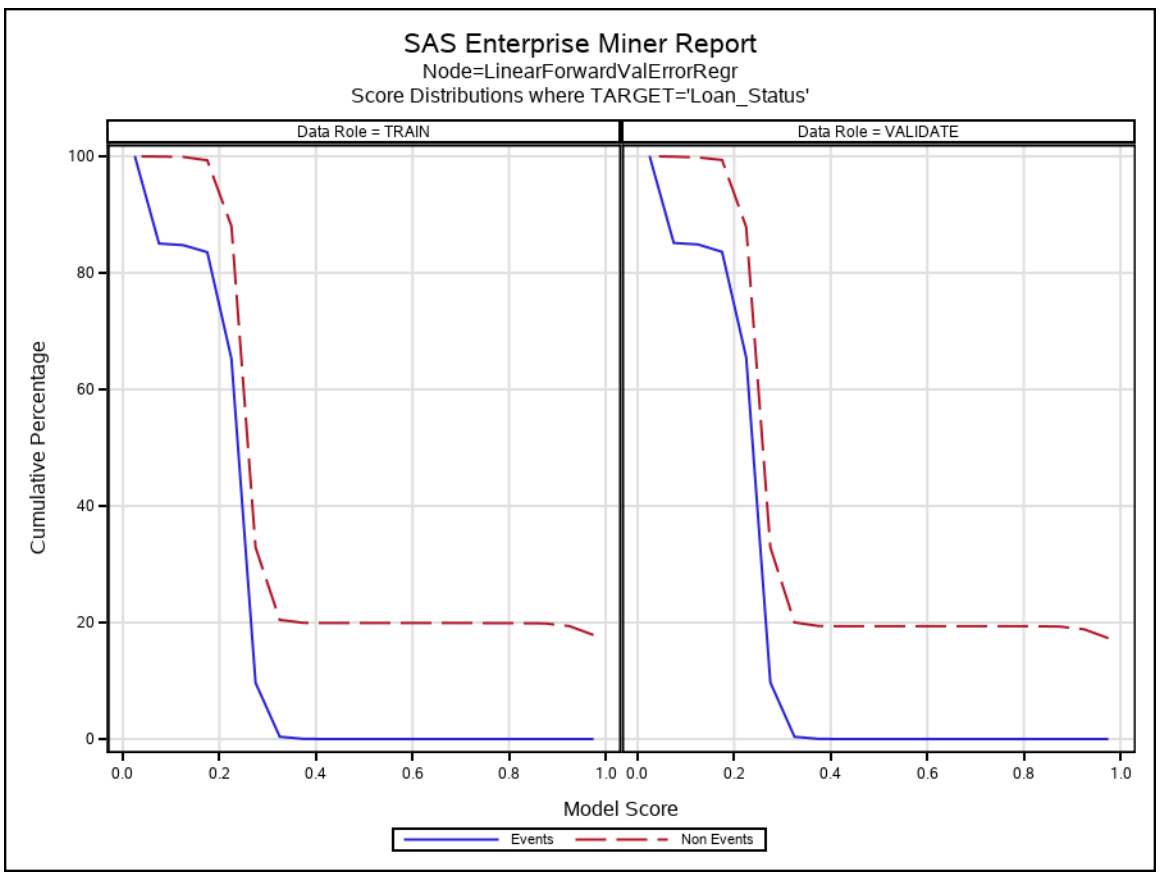





SAS Enterprise Miner Report
Node=LinearForwardValErrorRegr
Model Assessment Scores where TARGET='Loan_Status'
Data Role = TRAIN
Data Role = VALIDATE
Cumulative Lift
1.25
1.00
0.75
0.50
0.25
0 20 40 60 80 100
Depth
Cumulative Lift
Baseline Cumulative Lift
Best Cumulative Lift


SAS Enterprise Miner Report
Node=LinearForwardValErrorRegr
Model Assessment Scores where TARGET='Loan_Status'
Data Role = TRAIN
Data Role = VALIDATE
Cumulative % Captured Response
100
80
60
40
20
0
0 20 40 60 80 100
Depth
Cumulative % Captured Response
Baseline Cumulative % Captured Response
Best Cumulative % Captured Response





Node=LinearForwardValErrorRegr
Score Distributions

Target Variable=Loan_Status 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	0	0.0000	17.8544	0.000	17.854
0.90-0.95	0	0.0000	1.5289	0.000	19.383
0.85-0.90	0	0.0000	0.4578	0.000	19.841
0.80-0.85	0	0.0000	0.0432	0.000	19.884
0.75-0.80	0	0.0000	0.0173	0.000	19.902
0.70-0.75	0	0.0000	0.0086	0.000	19.910
0.65-0.70	0	0.0000	0.0086	0.000	19.919
0.40-0.45	3	0.0078	0.0000	0.008	19.919
0.35-0.40	9	0.0233	0.0173	0.031	19.936
0.30-0.35	144	0.3723	0.5183	0.403	20.454
0.25-0.30	3572	9.2347	12.4385	9.638	32.893
0.20-0.25	21515	55.6231	55.1179	65.261	88.011
0.15-0.20	7073	18.2859	11.2983	83.547	99.309
0.10-0.15	466	1.2048	0.5787	84.752	99.888
0.05-0.10	107	0.2766	0.0605	85.028	99.948
0.00-0.05	5791	14.9716	0.0518	100.000	100.000

Target Variable=Loan_Status 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	0	0.0000	17.3117	0.000	17.312
0.90-0.95	0	0.0000	1.5204	0.000	18.832
0.85-0.90	0	0.0000	0.4665	0.000	19.299
0.80-0.85	0	0.0000	0.0605	0.000	19.359
0.75-0.80	0	0.0000	0.0086	0.000	19.368
0.55-0.60	0	0.0000	0.0086	0.000	19.376
0.45-0.50	1	0.0026	0.0000	0.003	19.376
0.40-0.45	1	0.0026	0.0000	0.005	19.376
0.35-0.40	10	0.0259	0.0259	0.031	19.402
0.30-0.35	140	0.3619	0.6133	0.393	20.016
0.25-0.30	3606	9.3224	12.8887	9.715	32.904
0.20-0.25	21567	55.7561	54.9413	65.471	87.846
0.15-0.20	7012	18.1278	11.5152	83.599	99.361
0.10-0.15	494	1.2771	0.4406	84.876	99.801
0.05-0.10	97	0.2508	0.1296	85.127	99.931
0.00-0.05	5753	14.8729	0.0691	100.000	100.000

SAS Enterprise Miner Report

Node=LogisticBackwardValErrorRegr Summary

Node id = Reg2
Node label = LogisticBackwardValErrorRegr
Meta path = FIMPORT => Part => Impt => Reg2
Notes =

Node=LogisticBackwardValErrorRegr 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	VERROR	DEFAULT
AbsGValue	0.00001		Interactions			SelectionDefault	Y	
AbsXTime	1		LinkFunction	LOGIT		Sequential	N	
AbsXValue	1E-8		MainEffect	Y		Simple	N	
ClParm	N		MaxCPUTime	1 HOUR		SlEntry	0.05	
ConvDefaults	Y		MaxFunctionCalls	.		SlStay	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=LogisticBackwardValErrorRegr Variable Summary

Role	Level	Frequency Count	Name
TARGET	BINARY	1	Loan_Status
INPUT	INTERVAL	13	Annual_Income Bankruptcies Credit_Score Current_Credit_Balance Current_Loan_Amount Maximum_Open_Credit Monthly_Debt Months_since_last_delinquent Number_of_Credit_Problems Number_of_Open_Accounts ...

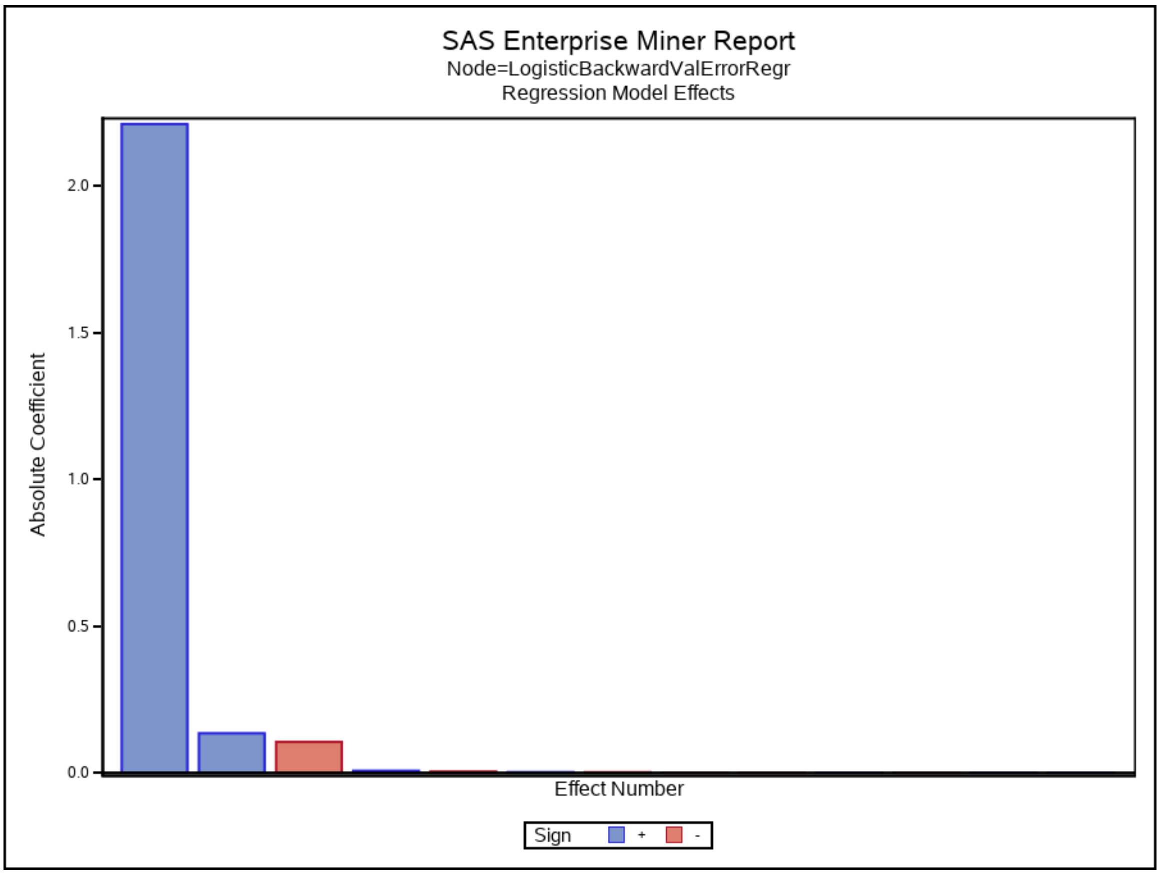
Node=LogisticBackwardValErrorRegr Model Fit Statistics

Target=Loan_Status Target Label=Loan Status

Label of Statistic	Train	Validation	Test
Akaike's Information Criterion	44006.04	.	.
Average Squared Error	0.14	0.14	.
Average Error Function	0.44	0.44	.
Degrees of Freedom for Error	50244.00	.	.
Model Degrees of Freedom	13.00	.	.
Total Degrees of Freedom	50257.00	.	.
Divisor for ASE	100514.00	100514.00	.

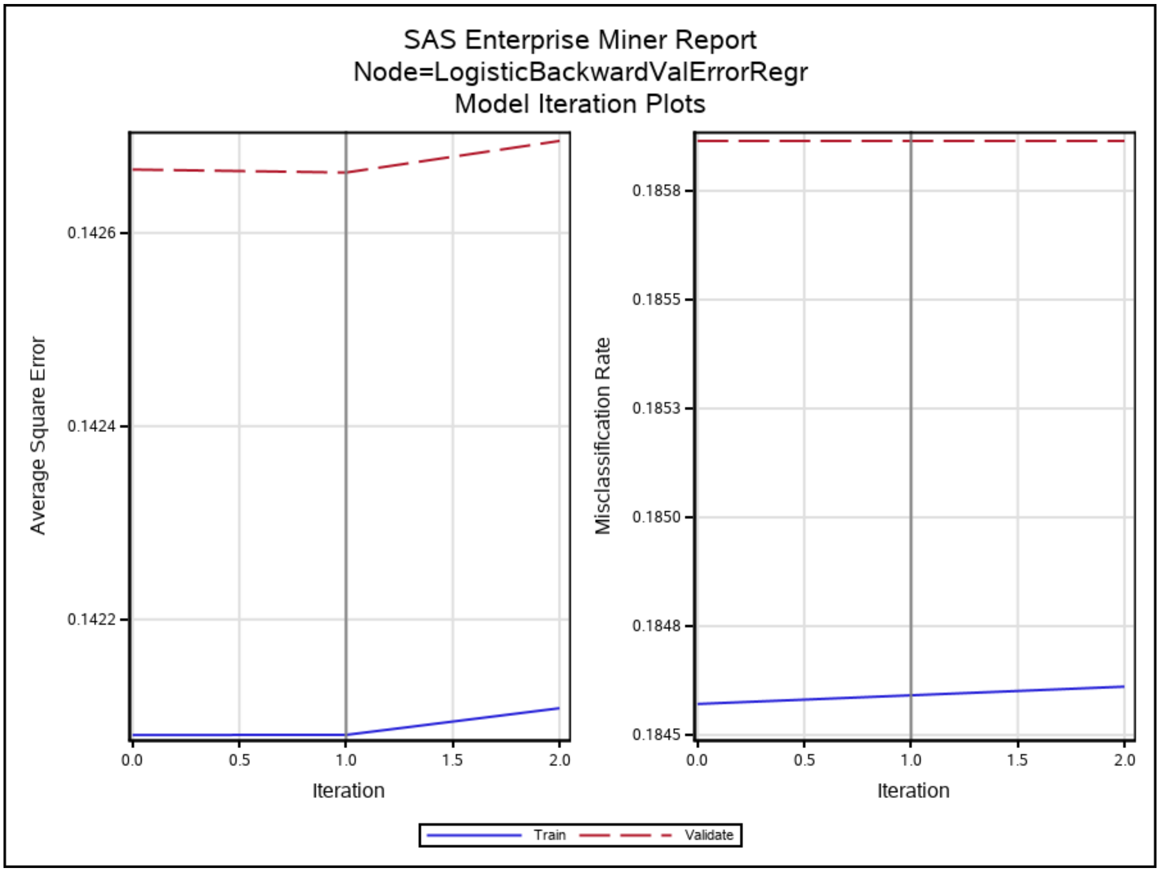
Target=Loan_Status Target Label=Loan Status

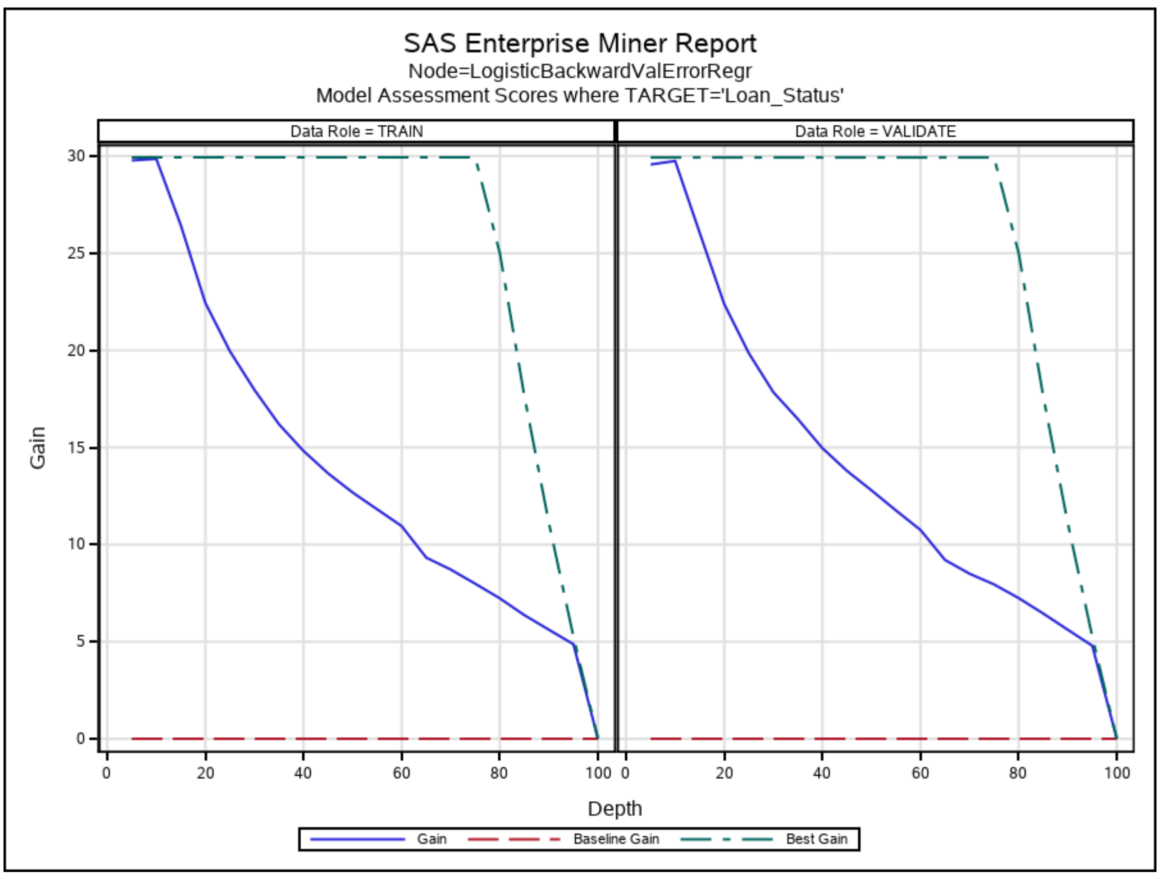
Label of Statistic	Train	Validation	Test
Error Function	43980.04	44212.81	.
Final Prediction Error	0.14	.	.
Maximum Absolute Error	1.00	1.00	.
Mean Square Error	0.14	0.14	.
Sum of Frequencies	50257.00	50257.00	.
Number of Estimate Weights	13.00	.	.
Root Average Sum of Squares	0.38	0.38	.
Root Final Prediction Error	0.38	.	.
Root Mean Squared Error	0.38	0.38	.
Schwarz's Bayesian Criterion	44120.76	.	.
Sum of Squared Errors	14281.08	14339.58	.
Sum of Case Weights Times Freq	100514.00	100514.00	.
Misclassification Rate	0.18	0.19	.

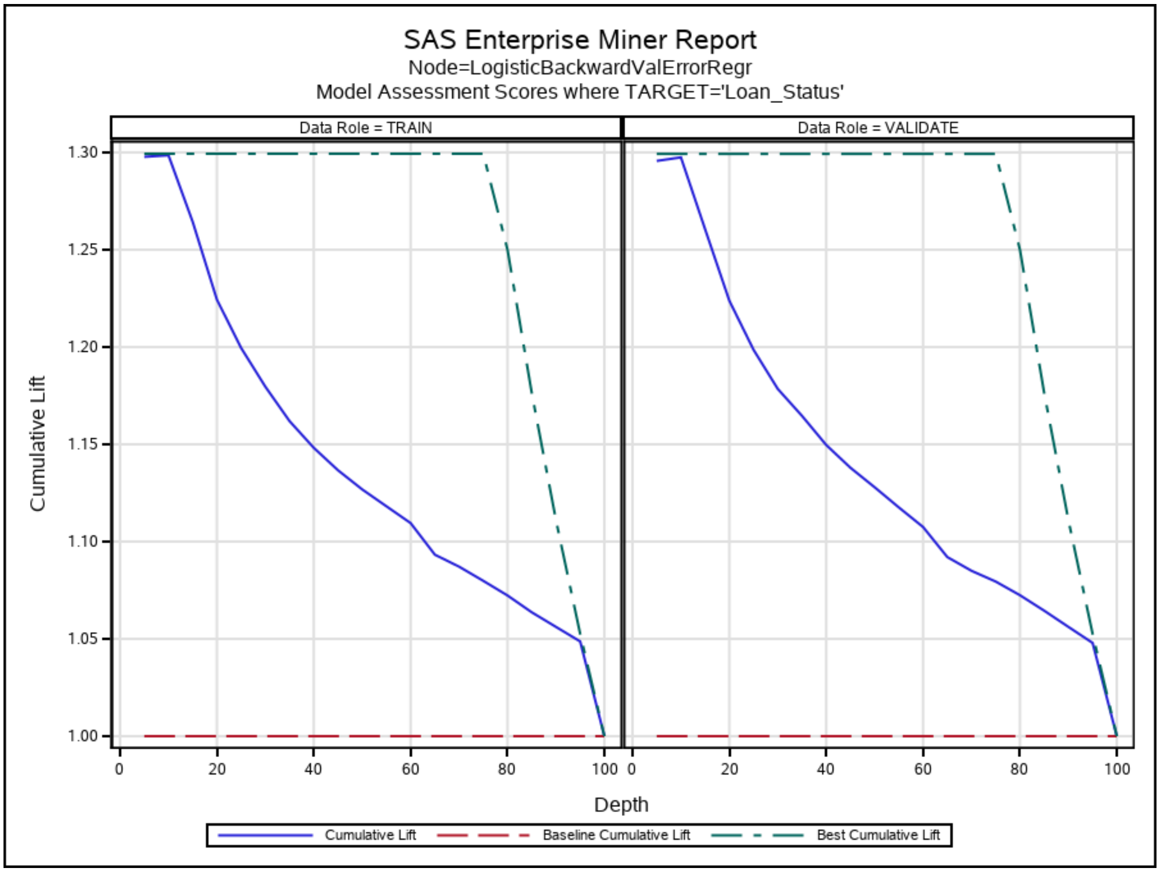


Effect Number	Variable	Level	Coefficient	T-value	P Value	Effect Number	Variable	Level	Coefficient	T-value	P Value
1	Intercept	1	2.21050	28.6919	0.00000	8	Monthly_Debt		-.000012649	-9.1879	0.000000
2	Bankruptcies		0.13435	2.7253	0.00642	9	VAR1		-.000001669	-4.0806	0.000045
3	Number_of_Credit_Problems		-0.10486	-3.0907	0.00200	10	Annual_Income		0.000000322	14.1576	0.000000
4	Years_of_Credit_History		0.00658	3.6433	0.00027	11	Current_Credit_Balance		-.000000156	-2.5344	0.011263
5	Number_of_Open_Accounts		-0.00410	-1.5257	0.12708	12	Maximum_Open_Credit		0.000000123	4.6122	0.000004
6	Months_since_last_delinquent		0.00190	2.3637	0.01809	13	Current_Loan_Amount		0.000000040	20.3996	0.000000
7	Credit_Score		-0.00153	-22.7535	0.00000	.			.	.	.

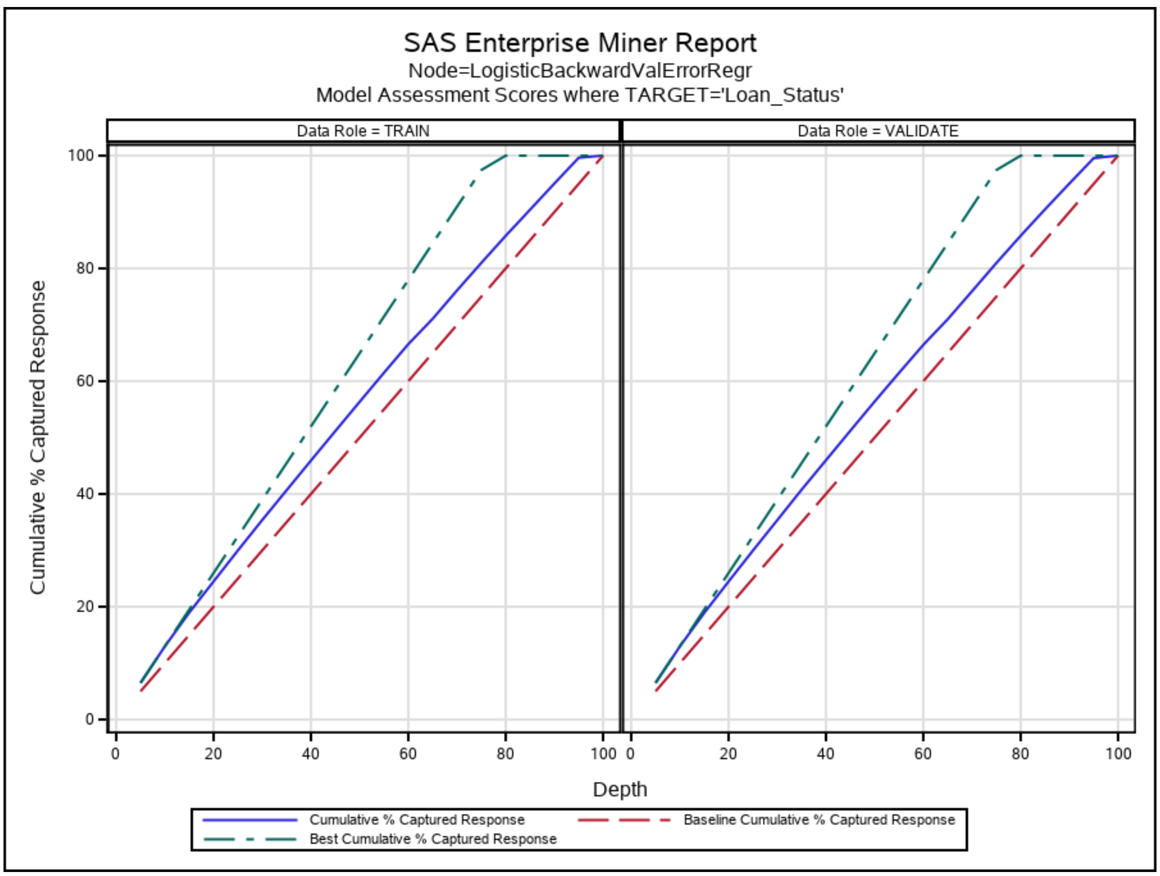
SAS Enterprise Miner Report
Node=LogisticBackwardValErrorRegr
Model Iteration Plots



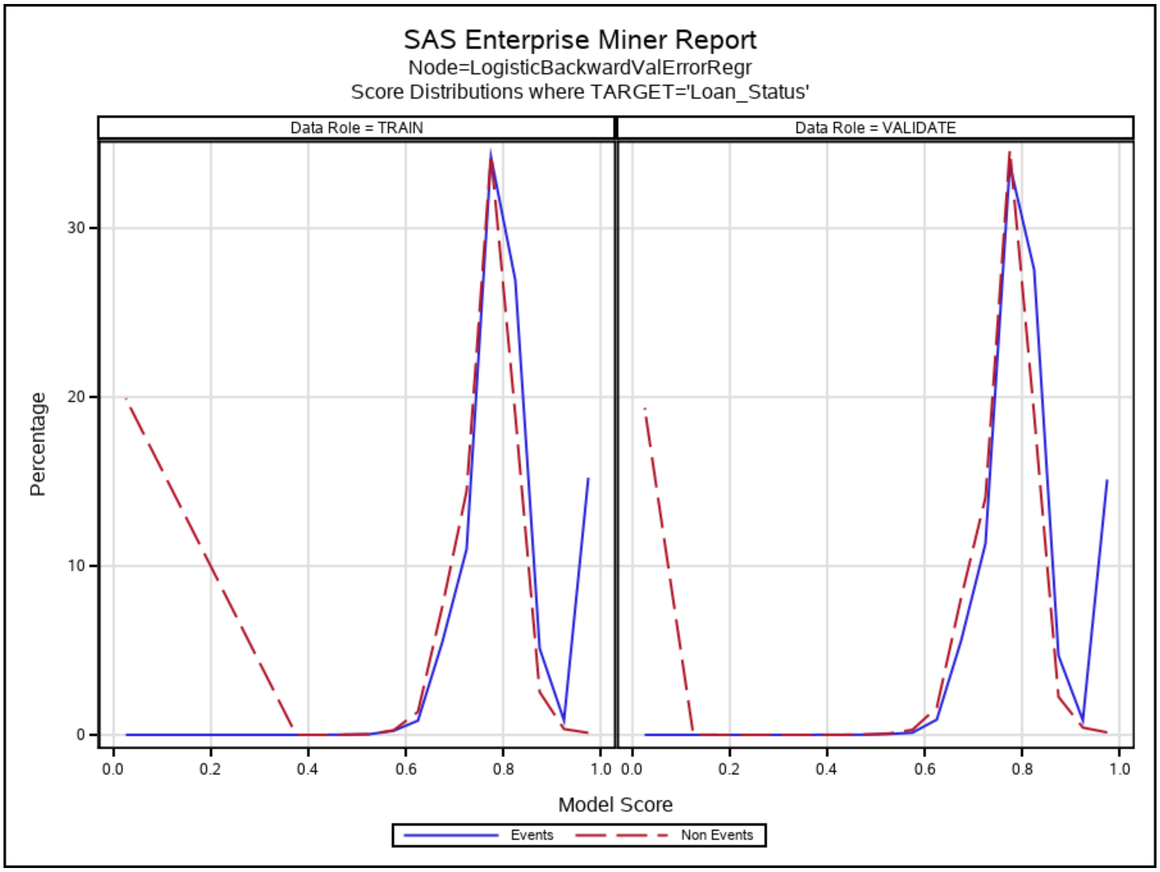


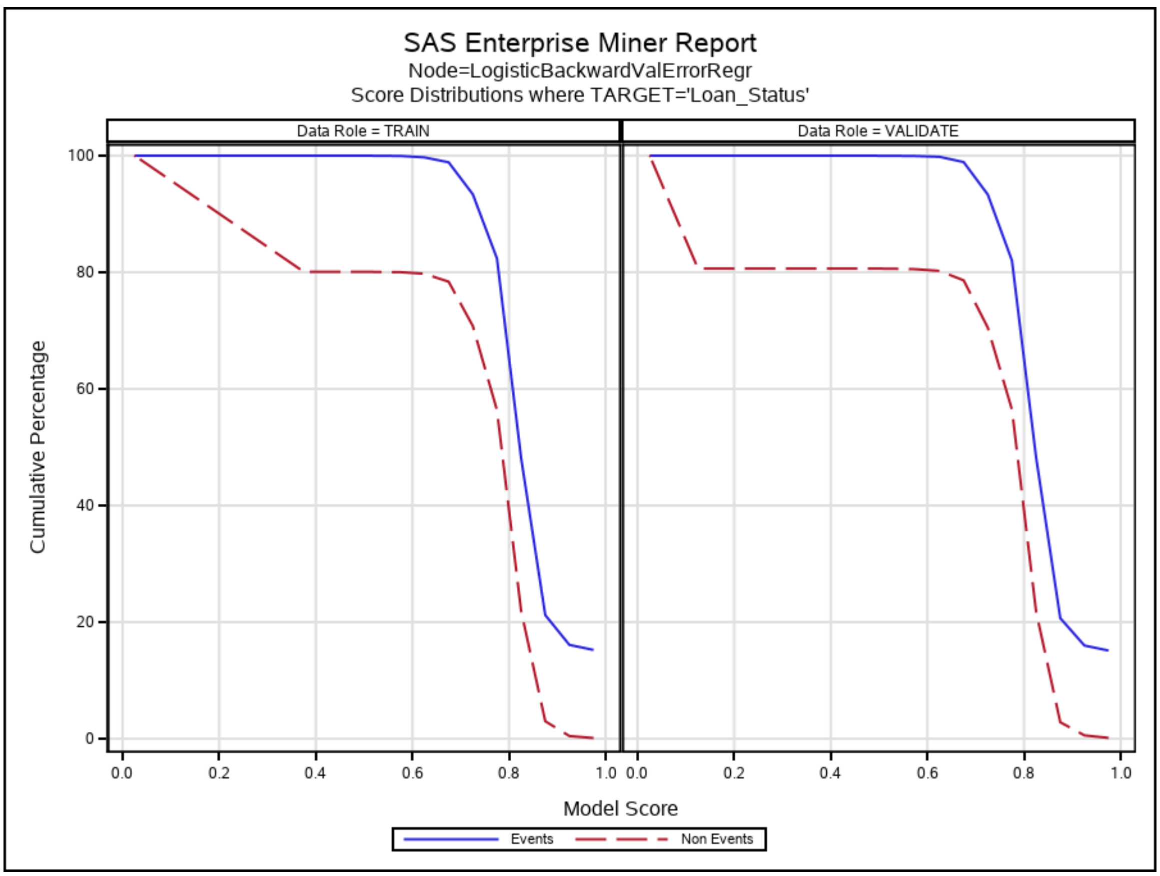


SAS Enterprise Miner Report
Node=LogisticBackwardValErrorRegr
Model Assessment Scores where TARGET='Loan_Status'
Data Role = TRAIN
Data Role = VALIDATE
Cumulative Lift
Depth
Cumulative Lift
Baseline Cumulative Lift
Best Cumulative Lift



SAS Enterprise Miner Report
Node=LogisticBackwardValErrorRegr
Model Assessment Scores where TARGET='Loan_Status'
Data Role = TRAIN
Data Role = VALIDATE
Cumulative % Captured Response
Depth
Cumulative % Captured Response
Baseline Cumulative % Captured Response
Best Cumulative % Captured Response





Node=LogisticBackwardValErrorRegr
Score Distributions

Target Variable=Loan_Status 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	5891	15.2301	0.1209	15.230	0.121
0.90-0.95	334	0.8635	0.3455	16.094	0.466
0.85-0.90	1979	5.1163	2.5395	21.210	3.006
0.80-0.85	10416	26.9286	18.9341	48.139	21.940
0.75-0.80	13238	34.2244	34.4131	82.363	56.353
0.70-0.75	4257	11.0057	14.4338	93.369	70.787
0.65-0.70	2121	5.4835	7.5926	98.852	78.380
0.60-0.65	327	0.8454	1.3648	99.698	79.744
0.55-0.60	94	0.2430	0.2764	99.941	80.021
0.50-0.55	15	0.0388	0.0432	99.979	80.064
0.45-0.50	6	0.0155	0.0173	99.995	80.081
0.40-0.45	1	0.0026	0.0000	99.997	80.081
0.35-0.40	1	0.0026	0.0000	100.000	80.081
0.00-0.05	0	0.0000	19.9188	100.000	100.000

Target Variable=Loan_Status 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	5849	15.1211	0.1469	15.121	0.147
0.90-0.95	334	0.8635	0.4319	15.985	0.579
0.85-0.90	1817	4.6974	2.2547	20.682	2.833
0.80-0.85	10655	27.5458	18.9616	48.228	21.795
0.75-0.80	13060	33.7633	34.6406	81.991	56.436
0.70-0.75	4380	11.3234	14.0549	93.315	70.491
0.65-0.70	2157	5.5764	8.1202	98.891	78.611
0.60-0.65	350	0.9048	1.6154	99.796	80.226
0.55-0.60	51	0.1318	0.3023	99.928	80.529
0.50-0.55	18	0.0465	0.0777	99.974	80.606
0.45-0.50	5	0.0129	0.0259	99.987	80.632
0.40-0.45	3	0.0078	0.0000	99.995	80.632
0.30-0.35	2	0.0052	0.0000	100.000	80.632
0.10-0.15	0	0.0000	0.0086	100.000	80.641
0.00-0.05	0	0.0000	19.3590	100.000	100.000

SAS Enterprise Miner Report

Node=LogisticStepwiseRegr
Summary

Node id = Reg
Node label = LogisticStepwiseRegr
Meta path = FIMPORT => Part => Impt => Reg
Notes =

Node=LogisticStepwiseRegr
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	
ClParm	N		MaxCPUTime	1 HOUR		SlEntry	0.05	
ConvDefaults	Y		MaxFunctionCalls	.		SlStay	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=LogisticStepwiseRegr
Variable Summary

Role	Level	Frequency Count	Name
TARGET	BINARY	1	Loan_Status
INPUT	INTERVAL	13	Annual_Income Bankruptcies Credit_Score Current_Credit_Balance Current_Loan_Amount Maximum_Open_Credit Monthly_Debt Months_since_last_delinquent Number_of_Credit_Problems Number_of_Open_Accounts ...

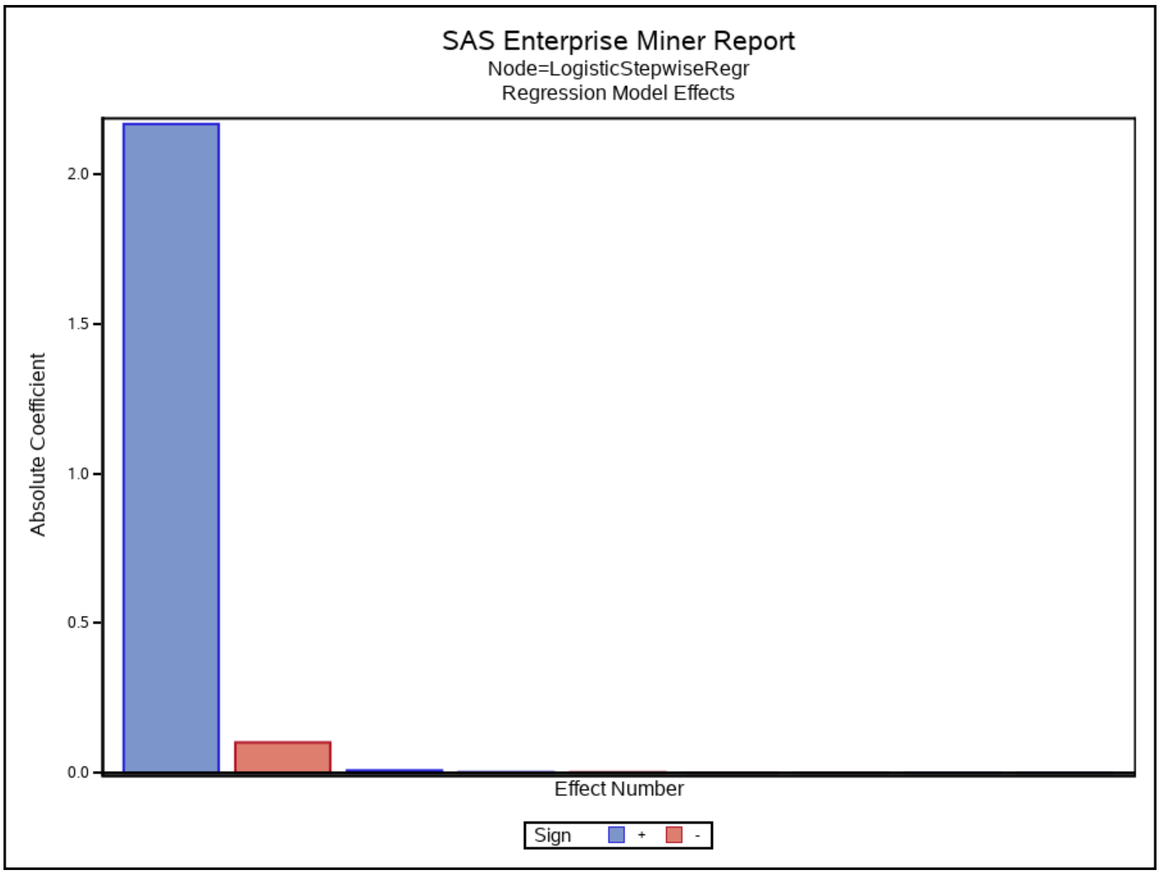
Node=LogisticStepwiseRegr
Model Fit Statistics

Target=Loan_Status Target Label=Loan Status

Label of Statistic	Train	Validation	Test
Akaike's Information Criterion	44038.35	.	.
Average Squared Error	0.14	0.14	.
Average Error Function	0.44	0.44	.
Degrees of Freedom for Error	50248.00	.	.
Model Degrees of Freedom	9.00	.	.
Total Degrees of Freedom	50257.00	.	.
Divisor for ASE	100514.00	100514.00	.

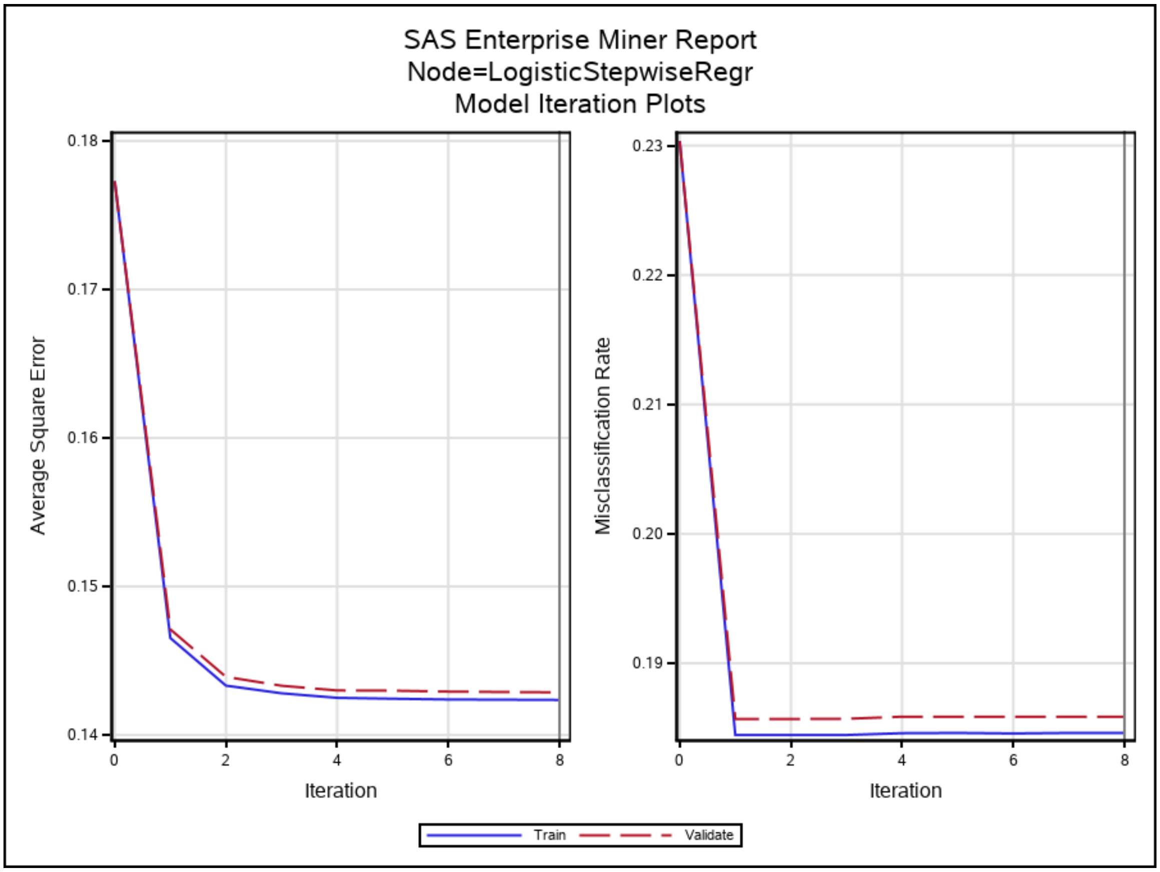
Target=Loan_Status Target Label=Loan Status

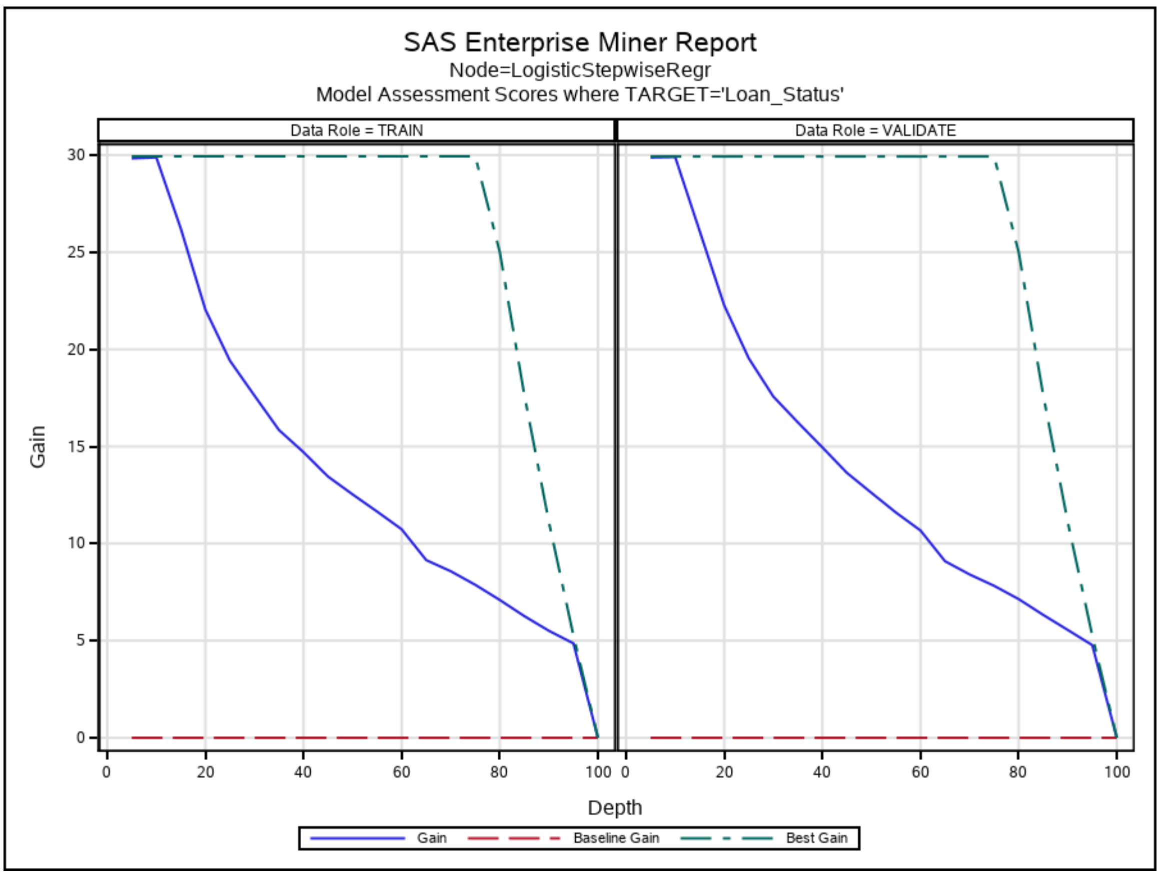
Label of Statistic	Train	Validation	Test
Error Function	44020.35	44189.64	.
Final Prediction Error	0.14	.	.
Maximum Absolute Error	1.00	1.00	.
Mean Square Error	0.14	0.14	.
Sum of Frequencies	50257.00	50257.00	.
Number of Estimate Weights	9.00	.	.
Root Average Sum of Squares	0.38	0.38	.
Root Final Prediction Error	0.38	.	.
Root Mean Squared Error	0.38	0.38	.
Schwarz's Bayesian Criterion	44117.77	.	.
Sum of Squared Errors	14309.31	14360.65	.
Sum of Case Weights Times Freq	100514.00	100514.00	.
Misclassification Rate	0.18	0.19	.

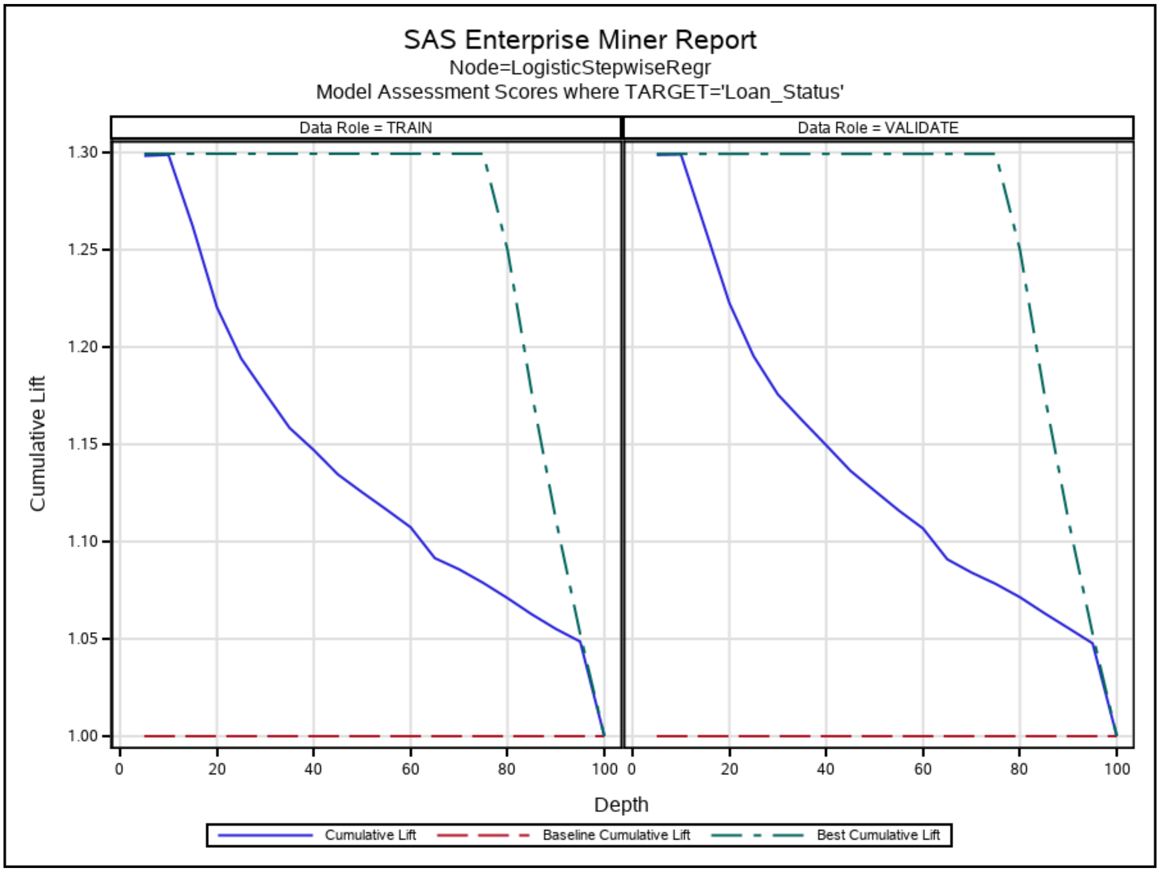


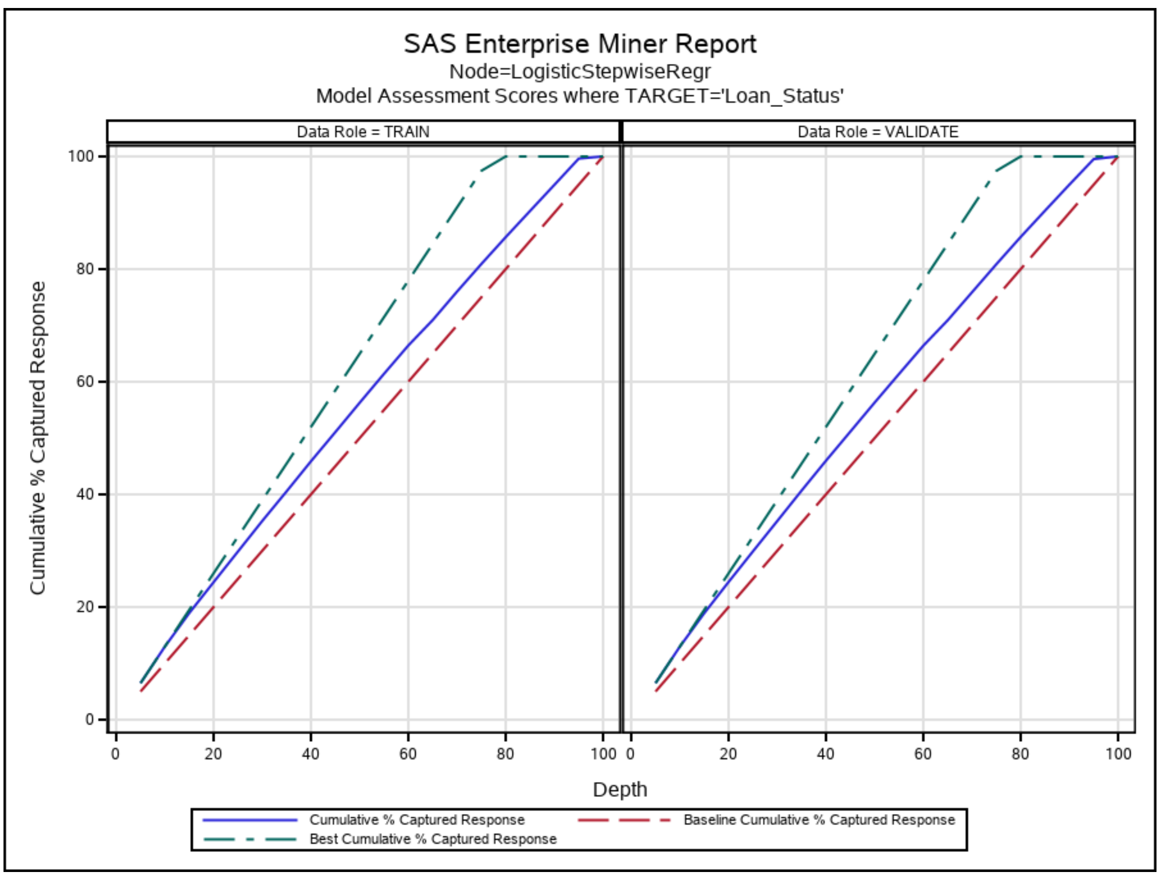
Effect Number	Variable	Level	Coefficient	T-value	P Value	Effect Number	Variable	Level	Coefficient	T-value	P Value
1	Intercept	1	2.16803	29.3452	0.000000	6	Monthly_Debt		-.000013191	-11.1978	4.1799E-29
2	Tax_Liens		-0.10115	-2.4299	0.015104	7	VAR1		-.000001669	-4.0807	.000044901
3	Years_of_Credit_History		0.00764	4.3171	0.000016	8	Annual_Income		0.000000332	14.6697	1.0084E-48
4	Months_since_last_delinquent		0.00184	2.3012	0.021379	9	Current_Loan_Amount		0.000000040	20.3958	1.8224E-92
5	Credit_Score		-0.00152	-22.6311	0.000000	.			.	.	.

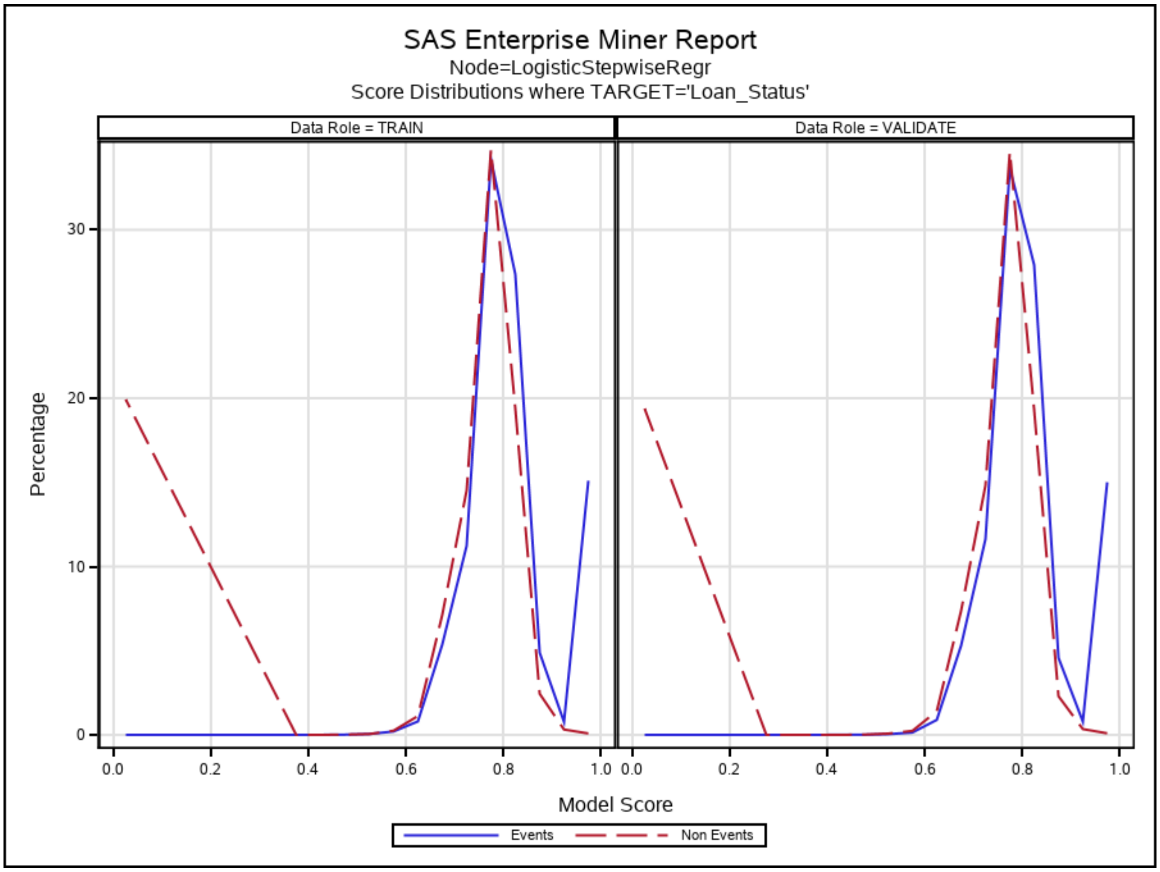
SAS Enterprise Miner Report
Node=LogisticStepwiseRegr
Model Iteration Plots

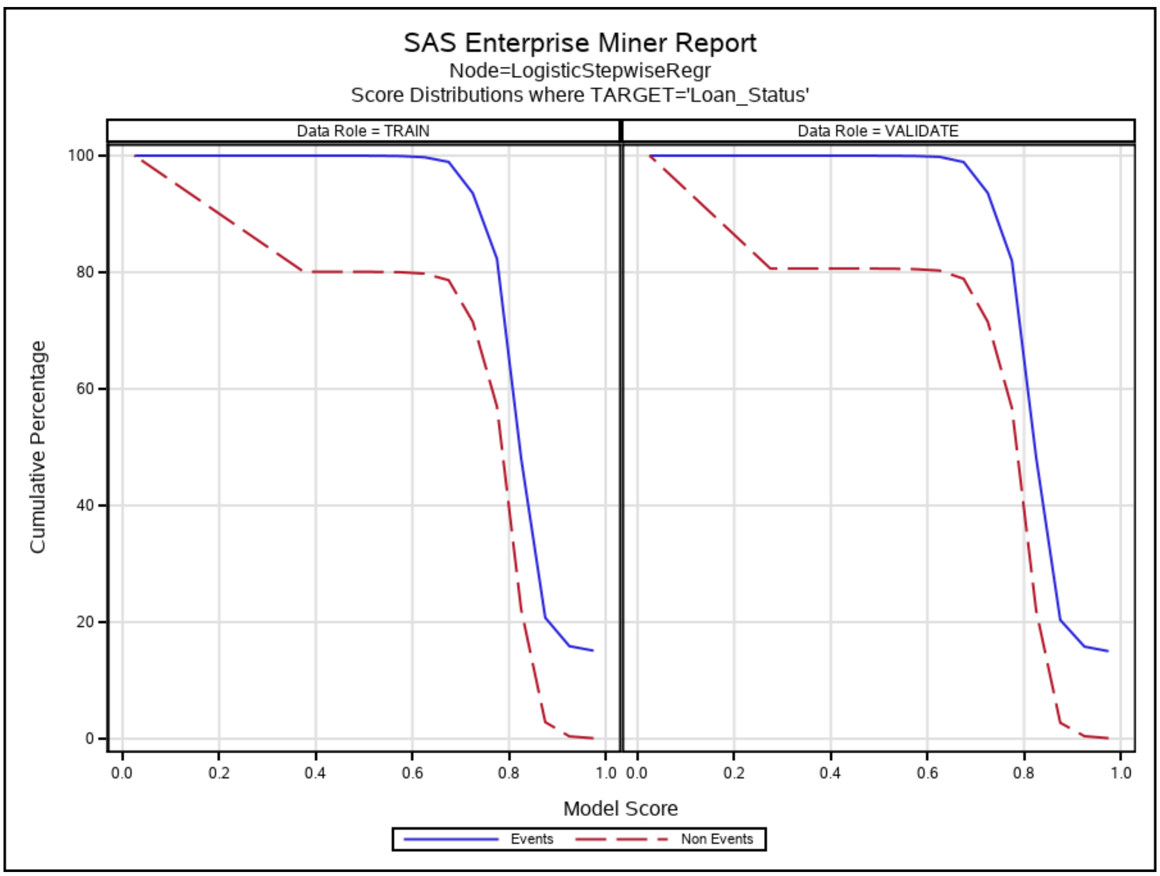





SAS Enterprise Miner Report
Node=LogisticStepwiseRegr
Model Assessment Scores where TARGET='Loan_Status'
Data Role = TRAIN
Data Role = VALIDATE
Cumulative Lift
Depth
1.30
1.25
1.20
1.15
1.10
1.05
1.00
0
20
40
60
80
100
Cumulative Lift
Baseline Cumulative Lift
Best Cumulative Lift


SAS Enterprise Miner Report
Node=LogisticStepwiseRegr
Model Assessment Scores where TARGET='Loan_Status'
Data Role = TRAIN
Data Role = VALIDATE
Cumulative % Captured Response
Depth
100
80
60
40
20
0
Cumulative % Captured Response
Baseline Cumulative % Captured Response
Best Cumulative % Captured Response





Node=LogisticStepwiseRegr
Score Distributions

Target Variable=Loan_Status 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	5841	15.1008	0.0864	15.101	0.086
0.90-0.95	300	0.7756	0.3196	15.876	0.406
0.85-0.90	1889	4.8837	2.4445	20.760	2.850
0.80-0.85	10583	27.3604	19.3833	48.120	22.234
0.75-0.80	13226	34.1934	34.7499	82.314	56.984
0.70-0.75	4345	11.2332	14.5202	93.547	71.504
0.65-0.70	2077	5.3697	7.1348	98.917	78.639
0.60-0.65	310	0.8014	1.1229	99.718	79.762
0.55-0.60	79	0.2042	0.2505	99.922	80.012
0.50-0.55	21	0.0543	0.0518	99.977	80.064
0.45-0.50	6	0.0155	0.0173	99.992	80.081
0.40-0.45	2	0.0052	0.0000	99.997	80.081
0.35-0.40	1	0.0026	0.0000	100.000	80.081
0.00-0.05	0	0.0000	19.9188	100.000	100.000

Target Variable=Loan_Status 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	5805	15.0074	0.0950	15.007	0.095
0.90-0.95	306	0.7911	0.3455	15.798	0.441
0.85-0.90	1770	4.5759	2.2979	20.374	2.738
0.80-0.85	10795	27.9078	19.3072	48.282	22.046
0.75-0.80	13026	33.6754	34.6406	81.958	56.686
0.70-0.75	4498	11.6284	14.8151	93.586	71.501
0.65-0.70	2054	5.3101	7.3773	98.896	78.879
0.60-0.65	345	0.8919	1.4081	99.788	80.287
0.55-0.60	55	0.1422	0.2419	99.930	80.529
0.50-0.55	17	0.0439	0.0777	99.974	80.606
0.45-0.50	5	0.0129	0.0173	99.987	80.624
0.40-0.45	3	0.0078	0.0000	99.995	80.624
0.30-0.35	1	0.0026	0.0000	99.997	80.624
0.25-0.30	1	0.0026	0.0000	100.000	80.624
0.00-0.05	0	0.0000	19.3763	100.000	100.000

SAS Enterprise Miner Report

Node=Model Comparison
Summary

Node id = MdlComp
Node label = Model Comparison
Meta path = FIMPORT => Part => Impt => Reg3 => MdlComp
Notes =

Node=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	Loan Status	
ModelCriteria	Valid: Misclassification Rate		RocEpsilon	0.01		TargetName	Loan_Status	
ModelDescription	LinearForwardValErrorRegr		RoiEpsilon	1E-6		classViyaCriteria	DEFAULT	
ModelId	Reg3		ScoreDistBin	20		intervalViyaCriteria	DEFAULT	
NormalizeReportingVariables	Y		SelectionCriteria	DEFAULT				

Node=Model Comparison
Variable Summary

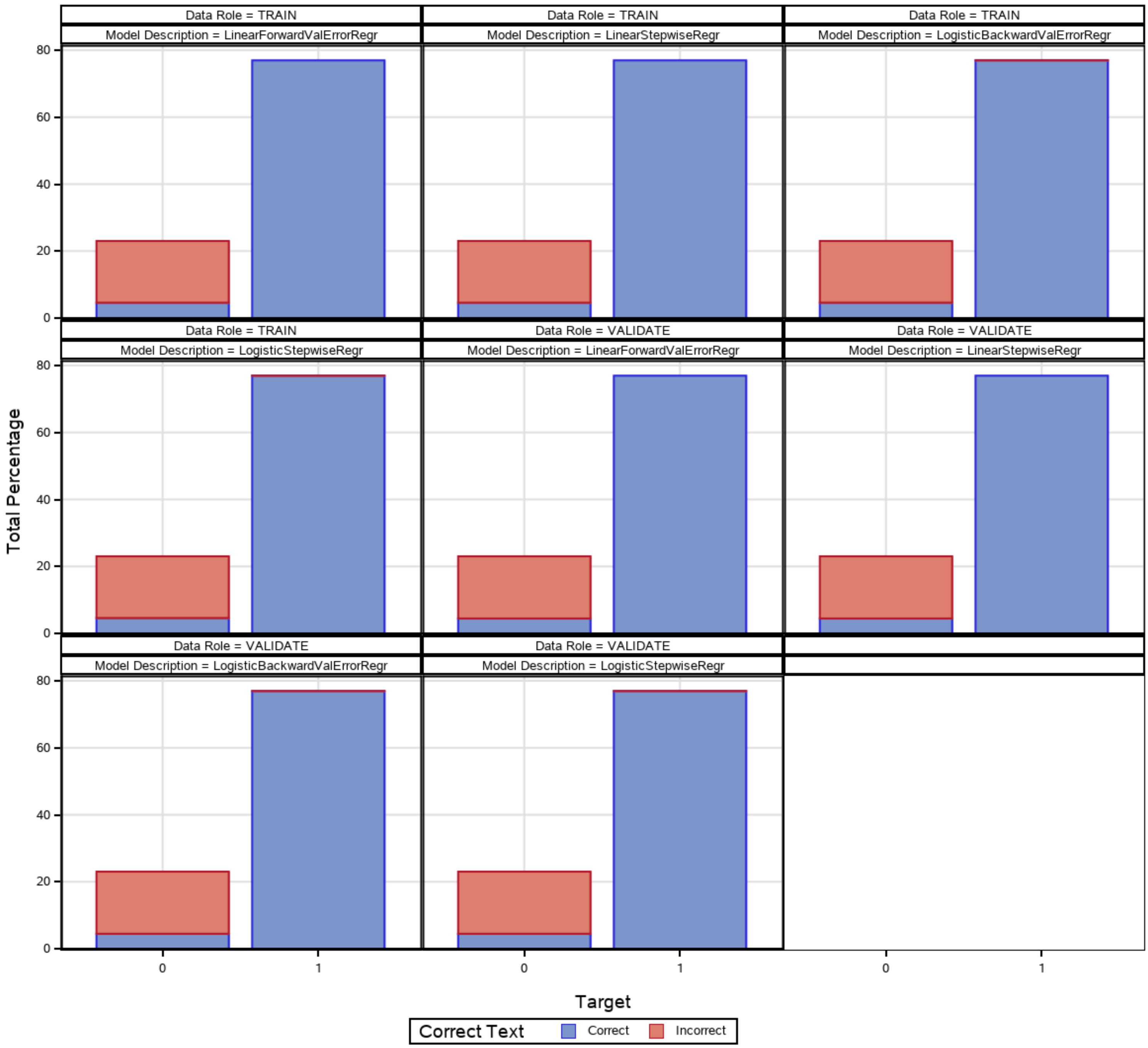
Role	Level	Frequency Count	Name
TARGET	BINARY	1	Loan_Status

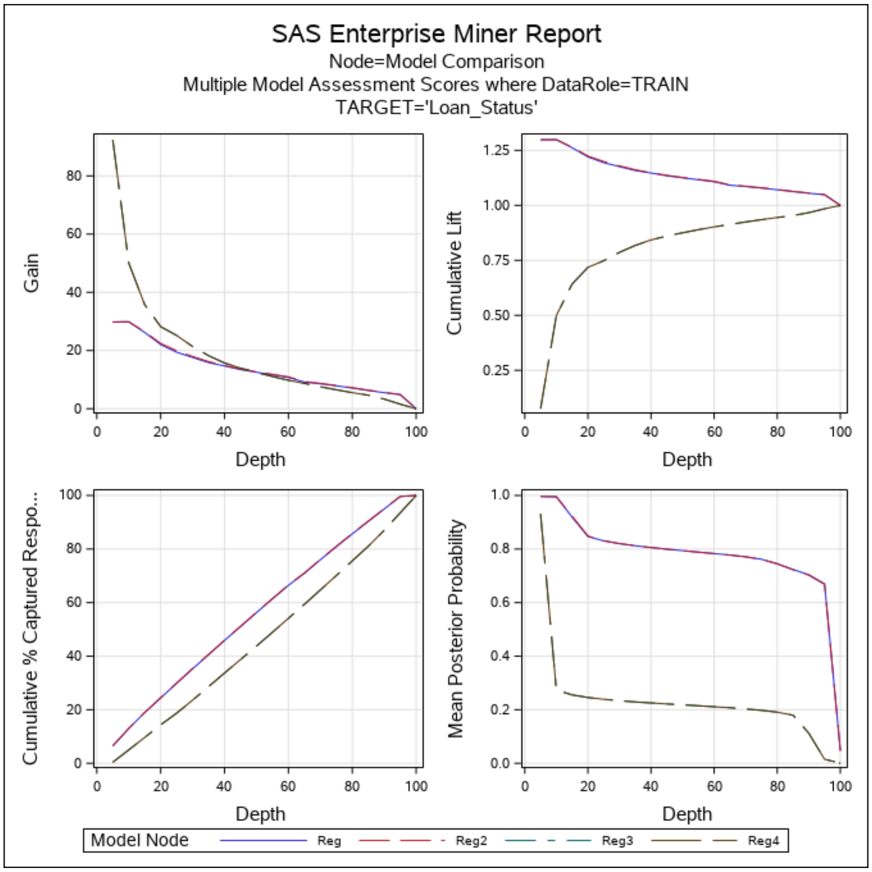
Node=Model Comparison
Fit Statistics Table

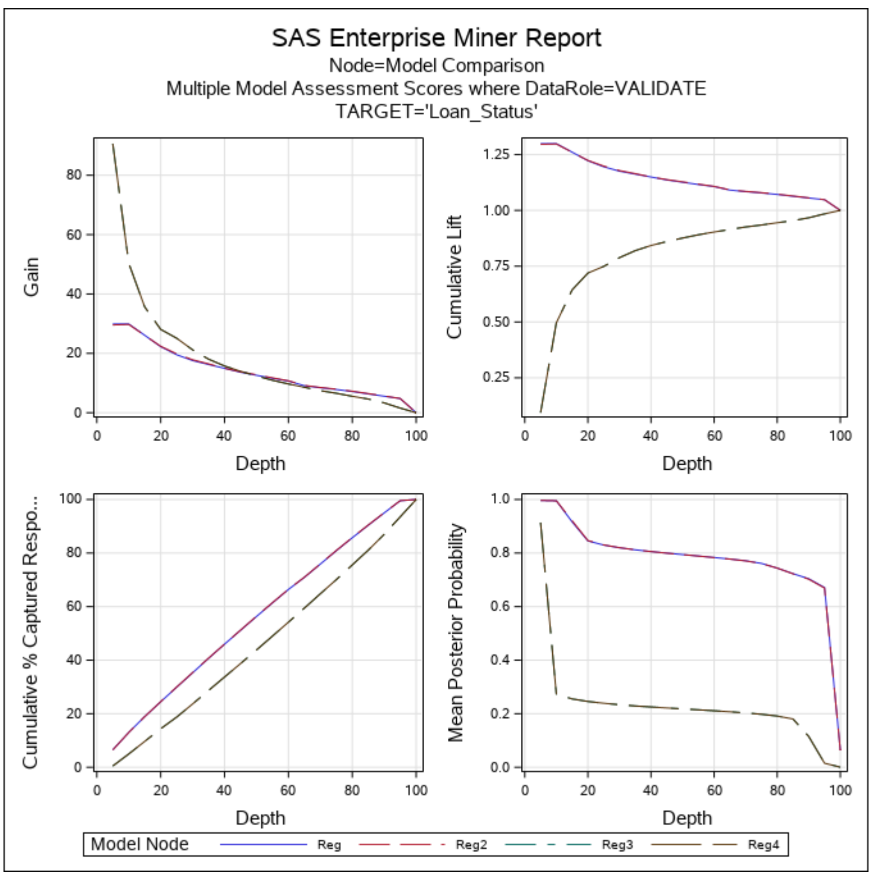
Selected Model	Predecessor Node	Model Node	Model Description	Target Variable	Target Label	Selection Criterion: Valid: Misclassification Rate	Train: Average Squared Error	Train: Misclassification Rate	Train: Kolmogorov-Smirnov Statistic
Y	Reg3	Reg3	LinearForwardValErrorRegr	Loan_Status	Loan Status	0.18571	0.14260	0.18447	0.279
	Reg4	Reg4	LinearStepwiseRegr	Loan_Status	Loan Status	0.18571	0.14260	0.18447	0.279
	Reg2	Reg2	LogisticBackwardValErrorRegr	Loan_Status	Loan Status	0.18586	0.14208	0.18459	0.285
	Reg	Reg	LogisticStepwiseRegr	Loan_Status	Loan Status	0.18586	0.14236	0.18461	0.280

Selected Model	Predecessor Node	Model Node	Model Description	Target Variable	Target Label	Selection Criterion: Valid: Misclassification Rate	Valid: Average Squared Error	Valid: Misclassification Rate	Valid: Kolmogorov-Smirnov Statistic
Y	Reg3	Reg3	LinearForwardValErrorRegr	Loan_Status	Loan Status	0.18571	0.14373	0.18571	0.276
	Reg4	Reg4	LinearStepwiseRegr	Loan_Status	Loan Status	0.18571	0.14373	0.18571	0.276
	Reg2	Reg2	LogisticBackwardValErrorRegr	Loan_Status	Loan Status	0.18586	0.14266	0.18586	0.285
	Reg	Reg	LogisticStepwiseRegr	Loan_Status	Loan Status	0.18586	0.14287	0.18586	0.279

SAS Enterprise Miner Report
Node=Model Comparison
Classification Chart
TARGET='Loan_Status' and _TYPE_='PREDICTION'




SAS Enterprise Miner Report
Node=Model Comparison
Multiple Model Assessment Scores where DataRole=TRAIN
TARGET='Loan_Status'
Gain
Cumulative Lift
Cumulative % Captured Respo...
Mean Posterior Probability
Depth
Model Node
Reg
Reg2
Reg3
Reg4

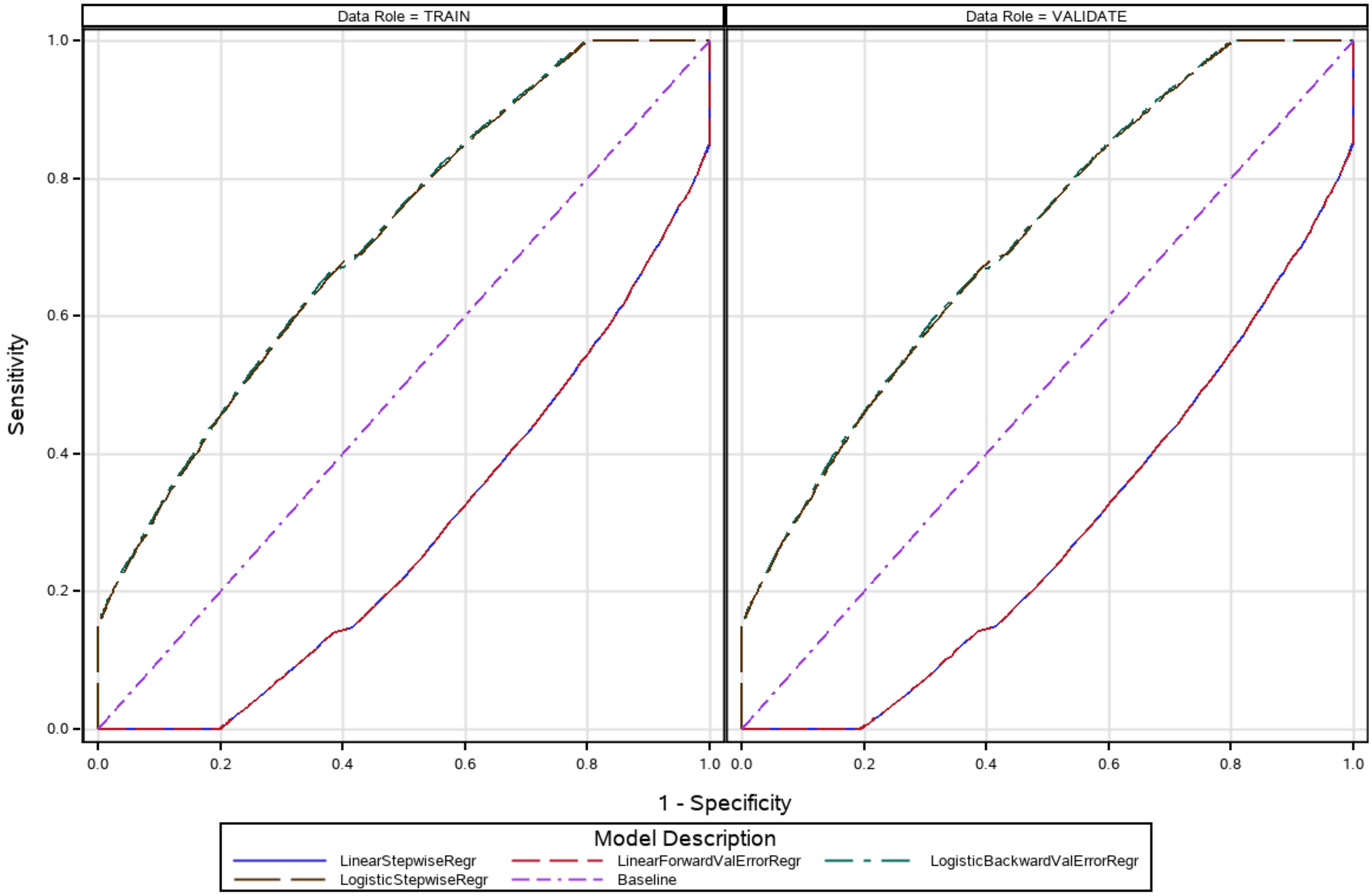

SAS Enterprise Miner Report
Node=Model Comparison
Multiple Model Assessment Scores where DataRole=VALIDATE
TARGET='Loan_Status'
Gain
Cumulative Lift
Cumulative % Captured Respo...
Mean Posterior Probability
Depth
Model Node
Reg
Reg2
Reg3
Reg4

SAS Enterprise Miner Report

Node=Model Comparison

ROC Chart

TARGET='Loan_Status' and EVENT='1'



End of Report