

The LOGISTIC Procedure

Model Information	
Data Set	WORK.ASSIGN6IN
Response Variable	death
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	148122
Number of Observations Used	148122

Response Profile		
Ordered Value	death	Total Frequency
1	1	1137
2	0	146985

Probability modeled is death=1.

Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	13340.818	10326.668
SC	13350.724	10415.820
-2 Log L	13338.818	10308.668

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	3030.1498	8	<.0001
Score	5605.3054	8	<.0001
Wald	2331.2999	8	<.0001

The LOGISTIC Procedure

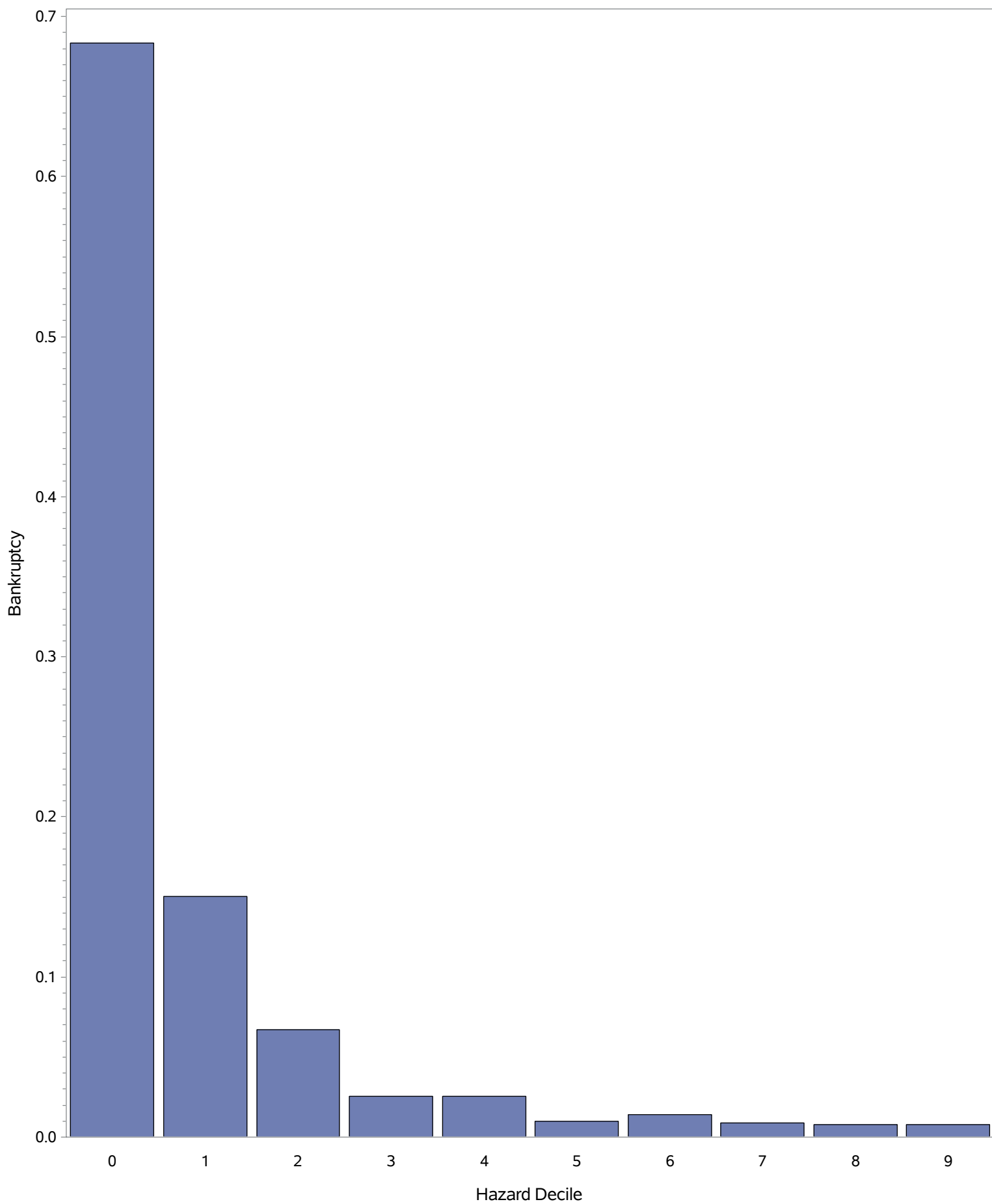
Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-7.3974	0.1470	2532.6557	<.0001
QUICK	1	-0.5534	0.0718	59.4824	<.0001
WCAP	1	0.1912	0.0455	17.6355	<.0001
ROTA	1	-0.0109	0.0134	0.6638	0.4152
DEBT_TA	1	0.1106	0.0499	4.9191	0.0266
O_SCORE	1	3.5140	0.1553	511.9857	<.0001
SALES	1	0.00107	0.0207	0.0027	0.9587
DD	1	-0.00002	0.000344	0.0046	0.9462
PD	1	2.4980	0.1006	616.6722	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
QUICK	0.575	0.500	0.662
WCAP	1.211	1.107	1.324
ROTA	0.989	0.963	1.015
DEBT_TA	1.117	1.013	1.232
O_SCORE	33.583	24.770	45.532
SALES	1.001	0.961	1.042
DD	1.000	0.999	1.001
PD	12.158	9.982	14.807

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	88.8	Somers' D	0.776
Percent Discordant	11.2	Gamma	0.776
Percent Tied	0.0	Tau-a	0.012
Pairs	167121945	c	0.888

In-Sample Logistics

Bankruptcies per Decile in In-sample, 1962 to 2014



The LOGISTIC Procedure

Model Information	
Data Set	WORK.OUT_LEFT
Response Variable	death
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	66940
Number of Observations Used	66940

Response Profile		
Ordered Value	death	Total Frequency
1	1	468
2	0	66472

Probability modeled is death=1.

Model Convergence Status
Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	5580.167	4348.926
SC	5589.278	4430.929
-2 Log L	5578.167	4330.926

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	1247.2412	8	<.0001
Score	1858.9744	8	<.0001
Wald	782.0089	8	<.0001

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-8.0533	0.2856	795.0498	<.0001
QUICK	1	-0.5240	0.1358	14.8766	0.0001
WCAP	1	0.0968	0.0889	1.1858	0.2762
ROTA	1	-0.0375	0.0263	2.0348	0.1537
DEBT_TA	1	-0.1310	0.1716	0.5824	0.4454
O_SCORE	1	4.6707	0.2809	276.5073	<.0001
SALES	1	0.0482	0.0349	1.8995	0.1681
DD	1	-0.00003	0.000343	0.0082	0.9278
PD	1	1.8705	0.1593	137.8570	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
QUICK	0.592	0.454	0.773
WCAP	1.102	0.925	1.311
ROTA	0.963	0.915	1.014
DEBT_TA	0.877	0.627	1.228
O_SCORE	106.767	61.567	185.151
SALES	1.049	0.980	1.124
DD	1.000	0.999	1.001
PD	6.491	4.750	8.870

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	89.5	Somers' D	0.789
Percent Discordant	10.5	Gamma	0.789
Percent Tied	0.0	Tau-a	0.011
Pairs	31108896	c	0.895

The MEANS Procedure

Variable	Mean
beta_quick	-0.5948455
beta_wcap	0.1803830
beta_rota	-0.0194338
beta_debt_ta	0.0792740
beta_o_score	3.5269716
beta_sales	0.0075469
beta_dd	-0.000017509
beta_pd	2.2603635

The MEANS Procedure

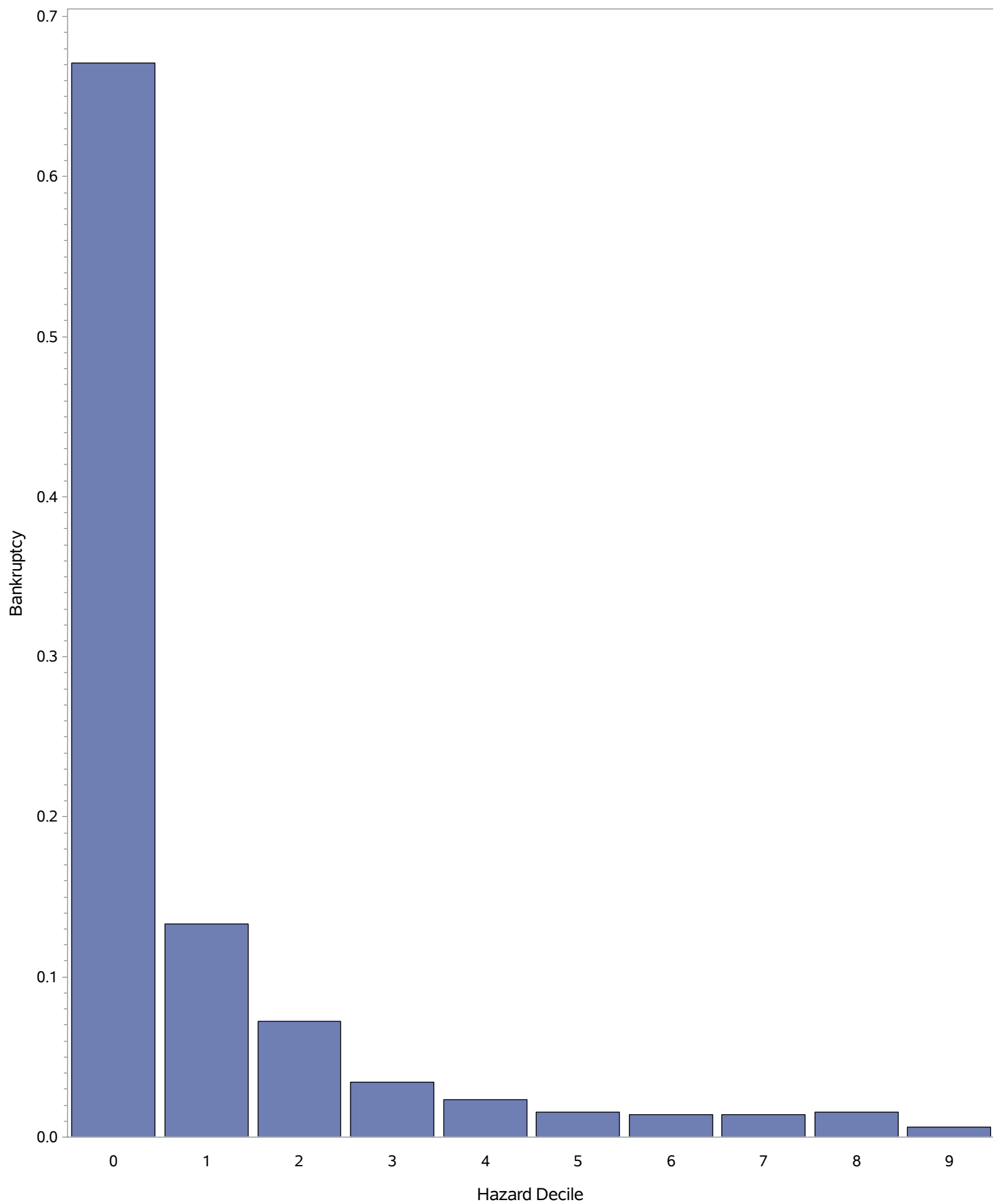
Variable	Mean
beta_quick	-0.5999864
beta_wcap	0.1703866
beta_rota	-0.0204681
beta_debt_ta	0.0708535
beta_o_score	3.7438076
beta_sales	0.0130422
beta_dd	-0.000017954
beta_pd	2.2211646

The MEANS Procedure

Variable	Mean
beta_quick	-0.5239726
beta_wcap	0.0968419
beta_rota	-0.0375278
beta_debt_ta	-0.1309914
beta_o_score	4.6706517
beta_sales	0.0481582
beta_dd	-0.000031106
beta_pd	1.8704590

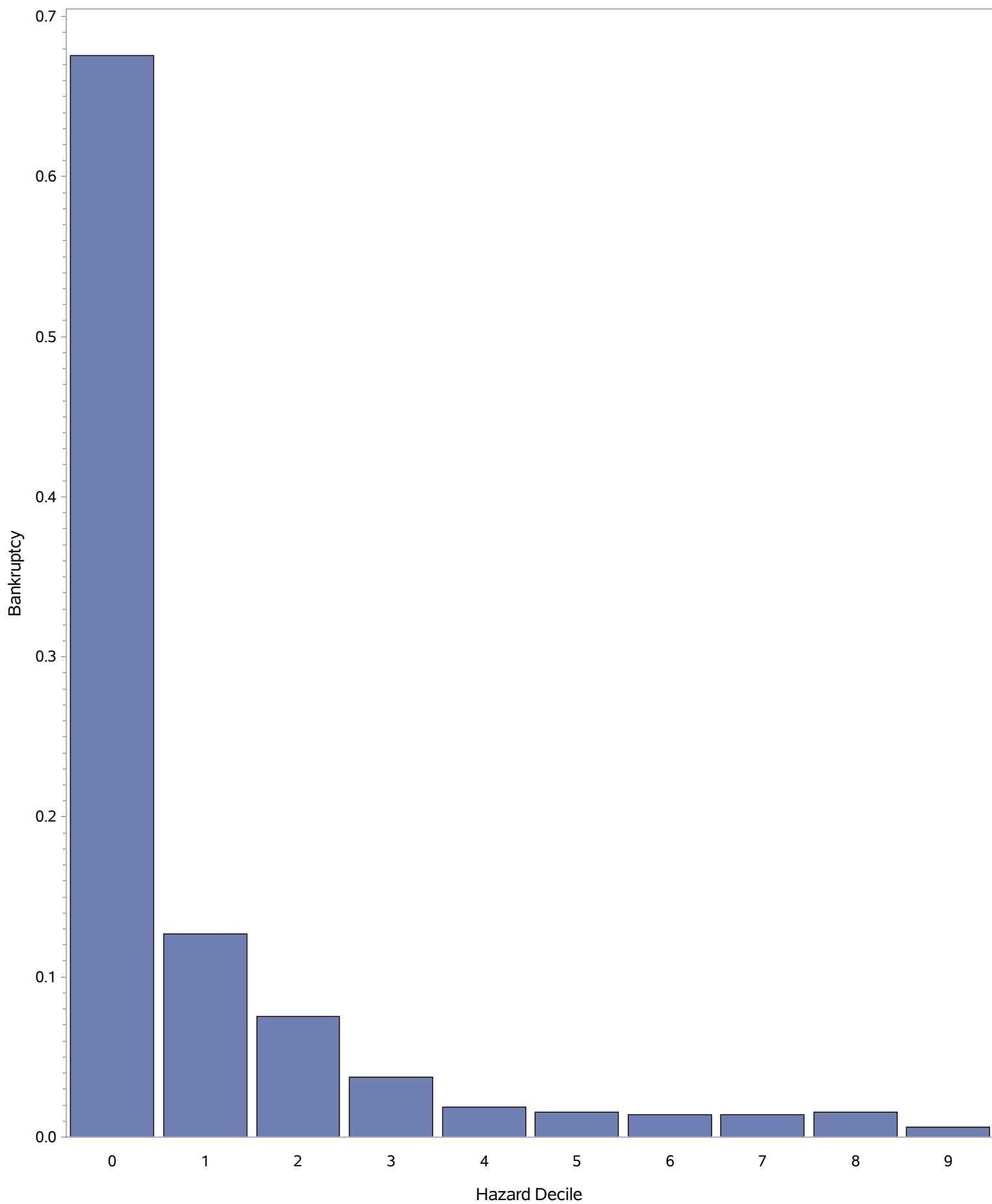
Out-Sample Logistics

Bankruptcies per Decile in Rolling Out-sample, 1991 to 2014



Out-Sample Logistics

Bankruptcies per Decile in Fixed Window Out-sample, 1991 to 2014



Out-Sample Logistics

Bankruptcies per Decile in Standard Out-sample, 1991 to 2014

