REGRESSION ANALYSIS
GEORGIA STATE UNIVERSITY

AnalyticsIQ, Inc.
Gregg Weldon

1. Data Preparation
2. Exploratory Data Analysis (Crosstabs)
3. Dummy Variables
4. First Regression
5. Last Regression

ageavg	BAD1		All	All	BAD1	
	0	1			0	1
	#	#	TOTAL #	TOTAL %	ROW %	ROW %
ageavg						
0 TO 11	72	129	201	9.93	35.82	64.18
11.01 TO 23	205	317	522	25.79	39.27	60.73
23.01 TO 35	229	253	482	23.81	47.51	52.49
35.01 TO 47	137	163	300	14.82	45.67	54.33
47.01 TO 59	100	112	212	10.47	47.17	52.83
59.01 TO 71	69	66	135	6.67	51.11	48.89
71.01 TO 83	40	37	77	3.80	51.95	48.05
83.01 TO 95	20	21	41	2.03	48.78	51.22
95.01 TO 107	14	13	27	1.33	51.85	48.15
107.01 TO 119	5	6	11	0.54	45.45	54.55
119.01 TO 131	9	2	11	0.54	81.82	18.18
131.01 TO 143	2	.	2	0.10	100.00	.
143.01 TO 179	2	1	3	0.15	66.67	33.33
TOTAL	904	1120	2024	100.00	44.66	55.34

rvoldt	BAD1		All	All	BAD1	
	0	1			0	1
	#	#	TOTAL #	TOTAL %	ROW %	ROW %
rvoldt						
NO TRADES OF THIS TYPE	61	97	158	7.81	38.61	61.39
0 TO 11	31	62	93	4.59	33.33	66.67
12 TO 23	53	90	143	7.07	37.06	62.94
24 TO 35	50	89	139	6.87	35.97	64.03
36 TO 47	41	68	109	5.39	37.61	62.39
48 TO 59	39	58	97	4.79	40.21	59.79
60 TO 71	39	52	91	4.50	42.86	57.14
72 TO 83	52	49	101	4.99	51.49	48.51
84 TO 95	66	87	153	7.56	43.14	56.86
96 TO 107	49	75	124	6.13	39.52	60.48
108 TO 119	55	67	122	6.03	45.08	54.92
120 TO 131	41	40	81	4.00	50.62	49.38
132 TO 143	49	43	92	4.55	53.26	46.74
144 TO 179	95	97	192	9.49	49.48	50.52
180 TO 239	96	79	175	8.65	54.86	45.14
240 TO 359	80	58	138	6.82	57.97	42.03
360+	7	9	16	0.79	43.75	56.25
TOTAL	904	1120	2024	100.00	44.66	55.34

BRTRDS	BAD1		All	All	BAD1	
	0	1	TOTAL	TOTAL	0	1
	#	#	#	%	ROW %	ROW %
brtrds						
0	165	274	439	21.69	37.59	62.41
1	153	229	382	18.87	40.05	59.95
2	140	184	324	16.01	43.21	56.79
3	130	125	255	12.60	50.98	49.02
4	97	79	176	8.70	55.11	44.89
5	51	75	126	6.23	40.48	59.52
6	42	51	93	4.59	45.16	54.84
7	35	20	55	2.72	63.64	36.36
8	23	21	44	2.17	52.27	47.73
9	16	16	32	1.58	50.00	50.00
10+	52	46	98	4.84	53.06	46.94
TOTAL	904	1120	2024	100.00	44.66	55.34

ORTB10	BAD1		All	All	BAD1	
	0	1	TOTAL	TOTAL	0	1
	#	#	#	%	ROW %	ROW %
ortb10						
NO TRADES OF THIS TYPE	108	140	248	12.25	43.55	56.45
0	325	544	869	42.93	37.40	62.60
1	212	224	436	21.54	48.62	51.38
2	104	84	188	9.29	55.32	44.68
3	59	58	117	5.78	50.43	49.57
4+	96	70	166	8.20	57.83	42.17
TOTAL	904	1120	2024	100.00	44.66	55.34

t2903x	BAD1		All	All	BAD1	
	0	1	TOTAL	TOTAL	0	1
	#	#	#	%	ROW %	ROW %
t2903x						
0	508	384	892	44.07	56.95	43.05
1	287	345	632	31.23	45.41	54.59
2	72	193	265	13.09	27.17	72.83
3	19	97	116	5.73	16.38	83.62
4	9	38	47	2.32	19.15	80.85
5	6	23	29	1.43	20.69	79.31
6+	3	40	43	2.12	6.98	93.02
TOTAL	904	1120	2024	100.00	44.66	55.34

t2906x	BAD1		All	All	BAD1	
	0	1	TOTAL	TOTAL	0	1
	#	#	#	%	ROW %	ROW %
t2906x						
0	305	213	518	25.59	58.88	41.12
1	370	356	726	35.87	50.96	49.04
2	130	232	362	17.89	35.91	64.09
3	51	144	195	9.63	26.15	73.85
4	26	62	88	4.35	29.55	70.45
5	11	36	47	2.32	23.40	76.60
6	7	27	34	1.68	20.59	79.41
7	2	22	24	1.19	8.33	91.67
8+	2	28	30	1.48	6.67	93.33
TOTAL	904	1120	2024	100.00	44.66	55.34

```
************************************************************;
**                  DUMMY.SAS PROGRAM                     **;
**                                                        **;
**     THIS PROGRAM SERVES AS A MACRO FOR CREATING        **;
**  DUMMY VARIABLES ON WHICH TO MODEL. THIS PROGRAM       **;
**  DOES NOT NEED TO BE SUBMITTED.  IT IS CALLED IN BY    **;
**        THE REGRESSION PROGRAMS.                        **;
**                                                        **;
**  REPLACE THE ( ) BELOW WITH THE FOLLOWING:             **;
**                                                        **;
**   1. NAME OF THE VARIABLE.                             **;
**   2. LOWEST (FIRST) VALUE FOR THAT DUMMY VARIABLE.     **;
**   3. HIGHEST (LAST) VALUE FOR THAT DUMMY VARIABLE.     **;
**   4. DUMMY VARIABLE NUMBER (MAKE THEM 01, 02, etc.).   **;
**                                                        **;
**                                                        **;
** created: 6/5/98              updated: 3/05/10         **;
**                                                        **;
** 8/17/98: MADE PROGRAM A MACRO INSTEAD OF A TEMPLATE.   **;
** 1/28/99: ADDED COMMENTS FOR MISSINGS AND NEUTRAL GROUP.**;
** 4/27/04: REMOVED INSTR. FOR NEUTRAL DUMMY VARIABLES.   **;
** 3/05/10: ADDED CHARACTER VARIABLE DUMMIES.             **;
************************************************************;



%MACRO DUMMY(VAR,FIRST,LAST,TOT);

   IF ( &FIRST <= &VAR <= &LAST ) THEN &VAR.&TOT =1;
      ELSE &VAR.&TOT =0;
      LABEL &VAR.&TOT =" &VAR : &FIRST - &LAST ";

%MEND DUMMY;




%DUMMY()
%DUMMY()
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************************************************************;
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**  DOES NOT NEED TO BE SUBMITTED.  IT IS CALLED IN BY    **;
**        THE REGRESSION PROGRAMS.                        **;
**                                                        **;
**  REPLACE THE ( ) BELOW WITH THE FOLLOWING:             **;
**                                                        **;
**   1. NAME OF THE VARIABLE.                             **;
**   2. LOWEST (FIRST) VALUE FOR THAT DUMMY VARIABLE.     **;
**   3. HIGHEST (LAST) VALUE FOR THAT DUMMY VARIABLE.     **;
**   4. DUMMY VARIABLE NUMBER (MAKE THEM 01, 02, etc.).   **;
**                                                        **;
**                                                        **;
** created: 6/5/98              updated: 1/28/99         **;
**                                                        **;
** 8/17/98: MADE PROGRAM A MACRO INSTEAD OF A TEMPLATE.   **;
** 1/28/99: ADDED COMMENTS FOR MISSINGS AND NEUTRAL GROUP.**;
************************************************************;

************************************************************;
**  BE SURE TO CREATE A DUMMY INTERVAL FOR ALL "MISSINGS" **;
**  BY CREATING AN INTERVAL "0" (i.e. TRADES00).  ONLY    **;
**  USE THIS 0 INTERVAL FOR MISSINGS, SO THIS WILL BE     **;
**  UNDERSTOOD ON ALL PROJECTS.                           **;
**                                                        **;
**  ALSO, CREATE AN INTERVAL FOR YOUR NEUTRAL GROUP. THIS **;
**  WILL MAKE FINAL SCORECARD CREATION EASIER.            **;
************************************************************;


%MACRO DUMMY(VAR,FIRST,LAST,TOT);

   IF ( &FIRST <= &VAR <= &LAST ) THEN &VAR.&TOT =1;
      ELSE &VAR.&TOT =0;
      LABEL &VAR.&TOT =" &VAR : &FIRST - &LAST ";

%MEND DUMMY;


%DUMMY(INQ024,0,3,1)
%DUMMY(INQ024,17,99999,2)

%DUMMY(FINQ12,1,3,1)
%DUMMY(FINQ12,4,99999,2)

%DUMMY(AGEOTD,0,47,1)
%DUMMY(AGEOTD,48,71,2)
%DUMMY(AGEOTD,120,999999,3)

%DUMMY(AGEAVG,0,11,1)
```

AGEOTD12 → (0-71)

```
%DUMMY(AGEAVG,11.01,23,2)
%DUMMY(AGEAVG,59.01,9999999,3)

%DUMMY(RVOLDT,0,11,1)
%DUMMY(RVOLDT,12,47,2)
%DUMMY(RVOLDT,48,71,3)
%DUMMY(RVOLDT,120,9999999,4)

%DUMMY(BROLDT,0,23,1)
%DUMMY(BROLDT,96,9999999,2)

%DUMMY(BRAVGA,0,11,1)
%DUMMY(BRAVGA,11.01,23,2)
%DUMMY(BRAVGA,71.01,9999999,3)

%DUMMY(REOLDT,0,47,1)
%DUMMY(REOLDT,132,239,2)
%DUMMY(REOLDT,240,9999999,3)

%DUMMY(REAVGA,71.01,9999999,1)

%DUMMY(AGERPT,0,0,1)

%DUMMY(RVTRDS,0,3,1)
%DUMMY(RVTRDS,4,4,2)
%DUMMY(RVTRDS,10,9999999,3)

%DUMMY(OREVTR,8,999999,1)

%DUMMY(BRTRDS,0,0,1)
%DUMMY(BRTRDS,1,1,2)

%DUMMY(ORTB10,1,1,1)
%DUMMY(ORTB10,2,3,2)
%DUMMY(ORTB10,4,9999999,3)

%DUMMY(ORTB25,0,0,1)
%DUMMY(ORTB25,2,5,2)
%DUMMY(ORTB25,6,9999999,3)

%DUMMY(BRBAL3,1,3,1)
%DUMMY(BRBAL3,4,9999999,2)

%DUMMY(REVRAT,0,35,1)
%DUMMY(REVRAT,35.01,80,2)
%DUMMY(REVRAT,95.01,9999999,3)

%DUMMY(BRUTIL,95.01,99999999,1)

%DUMMY(TOTHIC,0,10000,1)
%DUMMY(TOTHIC,10000.01,25000,2)
%DUMMY(TOTHIC,150000.01,250000,3)
%DUMMY(TOTHIC,250000.01,99999999999,4)
```

AGEAVG12 → (0-23)

BRAVGA12 → (0-23)

```
%DUMMY(HIGHHC,0,200,1)
%DUMMY(HIGHHC,200.01,1200,2)

%DUMMY(HSTSAT,0,1,1)
%DUMMY(HSTSAT,2,3,2)
%DUMMY(HSTSAT,18,9999999,3)

%DUMMY(BRHSAT,0,0,1)
%DUMMY(BRHSAT,6,99999,2)

%DUMMY(CURSAT,0,1,1)
%DUMMY(CURSAT,2,2,2)
%DUMMY(CURSAT,7,9999999,3)

%DUMMY(BRCSAT,0,0,1)
%DUMMY(BRCSAT,2,5,2)
%DUMMY(BRCSAT,6,9999999,3)

%DUMMY(HSATRT,0,35,1)
%DUMMY(HSATRT,50.01,75,2)
%DUMMY(HSATRT,75.01,99999999,3)

%DUMMY(TSAT03,0,1,1)
%DUMMY(TSAT03,2,2,2)
%DUMMY(TSAT03,3,3,3)
%DUMMY(TSAT03,5,6,4)
%DUMMY(TSAT03,7,13,5)
%DUMMY(TSAT03,14,9999999,6)

%DUMMY(TSAT06,0,0,1)
%DUMMY(TSAT06,1,1,2)
%DUMMY(TSAT06,2,2,3)
%DUMMY(TSAT06,3,3,4)
%DUMMY(TSAT06,4,4,5)
%DUMMY(TSAT06,9,9999999,6)

%DUMMY(STRT06,0,10,1)
%DUMMY(STRT06,10.01,20,2)
%DUMMY(STRT06,20.01,40,3)
%DUMMY(STRT06,50.01,9999999,4)

%DUMMY(TSAT12,0,1,1)
%DUMMY(TSAT12,2,3,2)
%DUMMY(TSAT12,10,9999999,3)

%DUMMY(STRT12,0,10,1)
%DUMMY(STRT12,10.01,30,2)
%OUMMY(STRT12,30.01,40,3)
%DUMMY(STRT12,50.01,9999999,4)

%DUMMY(TSAT24,0,2,1)
%DUMMY(TSAT24,3,3,2)
%DUMMY(TSAT24,6,9999999,3)

%DUMMY(STRT24,0,20,1)
%DUMMY(STRT24,20.01,40,2)
%DUMMY(STRT24,50.01,70,3)
%DUMMY(STRT24,70.01,9999999,4)

%DUMMY(CSORAT,0,40,1)
%DUMMY(CSORAT,60.01,80,2)
%DUMMY(CSORAT,80.01,90,3)
%DUMMY(CSORAT,90.01,99999999,4)

%DUMMY(PSTDUE,1,1,1)
%DUMMY(PSTDUE,2,2,2)
%OUMMY(PSTDUE,3,4,3)
%DUMMY(PSTDUE,5,9999999,4)

%DUMMY(PDAMNT,.01,200,1)
%DUMMY(PDAMNT,200.01,400,2)
%DUMMY(PDAMNT,400.01,99999999,3)

%DUMMY(PDBRAT,.01,5,1)
%DUMMY(PDBRAT,5.01,99999999,2)

%DUMMY(PDORAT,0,10,1)
%DUMMY(PDORAT,20.01,25,2)
%DUMMY(PDORAT,25.01,99999999,3)

%DUMMY(HST03X,0,1,1)
%DUMMY(HST03X,2,4,2)
%DUMMY(HST03X,8,13,3)
%DUMMY(HST03X,14,99999999,4)

%DUMMY(CUR23X,1,1,1)
%DUMMY(CUR23X,2,9999999,2)

%DUMMY(T2903X,0,0,1)
%DUMMY(T2903X,2,2,2)
%DUMMY(T2903X,3,9999999,3)

%DUMMY(T2906X,0,0,1)
%DUMMY(T2906X,2,2,2)
%DUMMY(T2906X,3,4,3)
%DUMMY(T2906X,5,9999999,4)

%DUMMY(CUR39X,1,2,1)
%DUMMY(CUR39X,3,9999999,2)

%DUMMY(T3906X,1,1,1)
%DUMMY(T3906X,2,2,2)
%DUMMY(T3906X,3,3,3)
%DUMMY(T3906X,4,99999999,4)

%DUMMY(T3912X,0,0,1)
%DUMMY(T3912X,2,2,2)
%DUMMY(T3912X,3,4,3)
```

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%DUMMY(T3912X,5,9999999,4)

%DUMMY(T4503X,1,1,1)
%DUMMY(T4503X,2,9999999,2)

%DUMMY(T4506X,1,1,1)
%DUMMY(T4506X,2,999999,2)

%DUMMY(T4512X,1,1,1)
%DUMMY(T4512X,2,9999999,2)

%DUMMY(T4524X,1,1,1)
%DUMMY(T4524X,2,9999999,2)

%DUMMY(BR4524,1,9999999,1)

%DUMMY(T4906X,1,1,1)
%DUMMY(T4906X,2,2,2)
%DUMMY(T4906X,3,9999999,3)

%DUMMY(T4912X,1,1,1)
%DUMMY(T4912X,2,4,2)
%DUMMY(T4912X,5,9999999,3)

%DUMMY(T4918X,0,0,1)
%DUMMY(T4918X,2,4,2)
%DUMMY(T4918X,5,9999999,3)

%DUMMY(T4906P,1,1,1)
%DUMMY(T4906P,2,2,2)
%DUMMY(T4906P,3,4,3)
%DUMMY(T4906P,5,9999999,4)

%DUMMY(T4912P,0,0,1)
%DUMMY(T4912P,2,3,2)
%DUMMY(T4912P,4,99999999,3)

%DUMMY(T4924P,0,0,1)
%DUMMY(T4924P,2,4,2)
%DUMMY(T4924P,5,9999999,3)

%DUMMY(T7912X,1,1,1)
%DUMMY(T7912X,2,99999,2)

%DUMMY(T7924X,1,1,1)
%DUMMY(T7924X,2,4,2)
%DUMMY(T7924X,5,9999999,3)

%DUMMY(COLECT,1,1,1)
%DUMMY(COLECT,2,9999999,2)

%DUMMY(COL100,1,2,1)
%DUMMY(COL100,3,9999999,2)
```

```
%DUMMY(PDCOLL,0,0,1)

%DUMMY(PUB100,1,3,1)
%DUMMY(PUB100,4,99999,2)

%DUMMY(WRSTRT,2,2,0)
%DUMMY(WRSTRT,3,999,2)

%DUMMY(RATT30,0,15,1)
%DUMMY(RATT30,15.01,25,2)
%DUMMY(RATT30,50.01,60,3)
%DUMMY(RATT30,60.01,9999999,4)

%DUMMY(RATT60,0,15,1)
%DUMMY(RATT60,45.01,9999999,2)

%DUMMY(RATT90,0,15,1)
%DUMMY(RATT90,45.01,9999999,2)

%DUMMY(DERRAT,0,5,1)
%DUMMY(DERRAT,45.01,9999999,2)

%DUMMY(TIME39,-6,-6,9)
%DUMMY(TIME39,0,1,1)
%DUMMY(TIME39,2,3,2)
%DUMMY(TIME39,6,99999,3)
```

TIME3912 → (0.3)

```
************************************************************;
**                  DUMMY.SAS PROGRAM                     **;
**                                                        **;
**     THIS PROGRAM SERVES AS A MACRO FOR CREATING        **;
**  DUMMY VARIABLES ON WHICH TO MODEL. THIS PROGRAM       **;
**  DOES NOT NEED TO BE SUBMITTED.  IT IS CALLED IN BY    **;
**        THE REGRESSION PROGRAMS.                        **;
**                                                        **;
**  REPLACE THE ( ) BELOW WITH THE FOLLOWING:             **;
**                                                        **;
**   1. NAME OF THE VARIABLE.                             **;
**   2. LOWEST (FIRST) VALUE FOR THAT DUMMY VARIABLE.     **;
**   3. HIGHEST (LAST) VALUE FOR THAT DUMMY VARIABLE.     **;
**   4. DUMMY VARIABLE NUMBER (MAKE THEM 01, 02, etc.).   **;
**                                                        **;
**                                                        **;
** created: 6/5/98              updated: 3/05/10         **;
**                                                        **;
** 8/17/98: MADE PROGRAM A MACRO INSTEAD OF A TEMPLATE.   **;
** 1/28/99: ADDED COMMENTS FOR MISSINGS AND NEUTRAL GROUP.**;
** 4/27/04: REMOVED INSTR. FOR NEUTRAL DUMMY VARIABLES.   **;
** 3/05/10: ADDED CHARACTER VARIABLE DUMMIES.             **;
************************************************************;



%MACRO DUMMY(VAR,FIRST,LAST,TOT);

   IF ( &FIRST <= &VAR <= &LAST ) THEN &VAR.&TOT =1;
      ELSE &VAR.&TOT =0;
      LABEL &VAR.&TOT =" &VAR : &FIRST - &LAST ";

%MEND DUMMY;



%MACRO DUMMY_C (VAR,VAL,TOT);         /* CHARACTER VARIABLES */

   IF (&VAR in (&VAL)) THEN &VAR.&TOT =1;
      ELSE &VAR.&TOT =0;
      LABEL &VAR.&TOT= " &VAR : &VAL ";

%MEND DUMMY_C;



%MACRO DUMMY_M (VAR,VAL);             /* CONTINUOUS VARIABLES */

   IF (&VAR = .) THEN &VAR._CONT = &VAL;
      ELSE &VAR._CONT = &VAR;

%MEND DUMMY_M;
```

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%DUMMY()
%DUMMY()
%DUMMY()
%DUMMY()
%DUMMY()
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```

LOGREG 01

The LOGISTIC Procedure

Model Information

Data Set	WORK.BOTH
Response Variable	BAD1
Number of Response Levels	2
Number of Observations	2024
Link Function	Logit
Optimization Technique	Fisher's scoring

Response Profile

Ordered Value	BAD1	Total Frequency
1	0	904
2	1	1120

NOTE: 16131 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

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

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	2784.764	2617.450
SC	2790.377	3661.437
-2 Log L	2782.764	2245.450

10:18 Friday, September 6, :

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	537.3143	185	<.0001
Score	462.1835	185	<.0001
Wald	357.9291	185	<.0001

NOTE: The following parameters have been set to 0, since the variables are a linear combinat: other variables as shown.

PDBRAT2 = PDAMNT1 + PDAMNT2 + PDAMNT3 - PDBRAT1
WRSTRT2 = PSTDUE1 + PSTDUE2 + PSTDUE3 + PSTDUE4 - WRSTRT1

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Chi-Square	Pr > ChiSq
Intercept	1	-0.3152	1.0218	0.0951	0.7577
INQ0241	1	0.1265	0.1234	1.0506	0.3054
INQ0242	1	-0.4805	0.2261	4.5173	0.0336
FINQ121	1	-0.0941	0.1348	0.4873	0.4851
FINQ122	1	-0.0328	0.3139	0.0109	0.9168
AGEOTD1	1	-0.2609	0.2590	1.0144	0.3138
AGEOTD2	1	-0.3631	0.2372	2.3426	0.1259
AGEOTD3	1	-0.1721	0.2173	0.6276	0.4282
AGEAVG1	1	0.1705	0.2793	0.3725	0.5417
AGEAVG2	1	-0.0410	0.1851	0.0490	0.8248
AGEAVG3	1	-0.1622	0.2086	0.6045	0.4368
RVOLDT1	1	0.00574	0.3404	0.0003	0.9866
RVOLDT2	1	0.1275	0.2396	0.2832	0.5946
RVOLDT3	1	0.2360	0.2523	0.8747	0.3496
RVOLDT4	1	0.1257	0.2745	0.2097	0.6470
BROLDT1	1	-0.1007	0.2822	0.1274	0.7211
BROLDT2	1	-0.0487	0.1913	0.0647	0.7992
BRAVGA1	1	-0.1826	0.3288	0.3085	0.5786
BRAVGA2	1	-0.1674	0.2097	0.6370	0.4248
BRAVGA3	1	0.3371	0.2028	2.7623	0.0965
REOLDT1	1	-0.1306	0.1732	0.5684	0.4509
REOLDT2	1	0.1651	0.2350	0.4940	0.4821
REOLDT3	1	0.3443	0.3209	1.1513	0.2833

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Chi-Square	Pr > ChiSq
REAVGA1 7+	1	0.2347	0.1974	1.4143	0.2343
AGERPT1 0	1	0.0244	0.1744	0.0196	0.8886
RVTRDS1 0-3	1	0.2688	0.2146	1.5688	0.2104
RVTRDS2 4	1	0.1552	0.2278	0.4643	0.4956
RVTRDS3 5+	1	0.2704	0.2100	1.6574	0.1980
OREVTR1 8+	1	-0.0959	0.2603	0.1357	0.7126
BRTRDS1 0	1	-0.5579	0.2661	4.3957	0.0360
BRTRDS2 1	1	-0.1737	0.2004	0.7513	0.3861
ORTB101 1	1	0.1164	0.2207	0.2780	0.5980
ORTB102 2-3	1	-0.3390	0.3594	0.8896	0.3456
ORTB103 4+	1	0.5134	0.4225	1.4764	0.2243
ORTB251 0	1	-0.1688	0.2010	0.7050	0.4011
ORTB252 2-5	1	0.6131	0.2964	4.2787	0.0386
ORTB253 6+	1	1.1485	0.4849	5.6099	0.0179
BRBAL31 1-3	1	-0.0330	0.1637	0.0408	0.8400
BRBAL32 4+	1	0.0946	0.4414	0.0459	0.8303
REVRAT1 0-35	1	0.0576	0.2127	0.0734	0.7864
REVRAT2 35-80	1	0.1198	0.1517	0.6233	0.4298
REVRAT3 80+	1	-0.5277	0.2032	6.7413	0.0094
BRUTIL1 95+	1	-0.2322	0.1634	2.0202	0.1552
TOTHIC1 0-100	1	-0.7231	0.2375	9.2725	0.0023
TOTHIC2 100-150	1	-0.3859	0.1817	4.5110	0.0337
TOTHIC3 150-250	1	0.1199	0.1781	0.4531	0.5009
TOTHIC4 250+	1	0.3601	0.2191	2.7021	0.1002
HIGHHC1 0-200	1	-0.6970	0.4158	2.8099	0.0937
HIGHHC2 201-1200	1	0.0390	0.1669	0.0545	0.8154
HSTSAT1 0-1	1	-0.3676	0.3564	1.0640	0.3023
HSTSAT2 2-3	1	-0.1235	0.2413	0.2622	0.6086
HSTSAT3 4+	1	0.3633	0.3163	1.3194	0.2507
BRHSAT1 0	1	-0.1021	0.1971	0.2682	0.6046
BRHSAT2 6+	1	0.0785	0.3343	0.0551	0.8144
CURSAT1 0-1	1	0.0497	0.3365	0.0218	0.8825
CURSAT2 2	1	-0.0183	0.2357	0.0060	0.9381
CURSAT3 3+	1	0.2490	0.2428	1.0519	0.3051
BRCSAT1 0	1	-0.1447	0.2081	0.4839	0.4866
BRCSAT2 2-5	1	-0.1435	0.1835	0.6114	0.4343
BRCSAT3 6+	1	-0.5942	0.4286	1.9217	0.1657
HSATRT1 0-35	1	-0.1746	0.2084	0.7019	0.4021
HSATRT2 50-75	1	0.0780	0.1706	0.2088	0.6477
HSATRT3 75+	1	0.1905	0.3027	0.3962	0.5291

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The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Chi-Square	Pr > ChiSq
TSAT031 0-1	1	0.1689	0.4288	0.1552	0.6936
TSAT032 2	1	0.0445	0.3406	0.0171	0.8961
TSAT033 3	1	-0.1918	0.2601	0.5441	0.4607
TSAT034 5-6	1	0.0225	0.2461	0.0084	0.9271
TSAT035 7-13	1	0.2874	0.3071	0.8763	0.3492
TSAT036 14+	1	0.5041	0.4687	1.1567	0.2821
TSAT061 0	1	1.4157	0.9858	2.0624	0.1510
TSAT062 1	1	0.8109	0.7375	1.2089	0.2715
TSAT063 2	1	0.4607	0.5166	0.7953	0.3725
TSAT064 3	1	0.2011	0.3854	0.2722	0.6019
TSAT065 4	1	0.1033	0.2661	0.1506	0.6979
TSAT066 9+	1	-0.0114	0.2813	0.0017	0.9676
STRT061 0-10	1	-1.8659	0.7237	6.6474	0.0099
STRT062 10-20	1	-0.5955	0.4019	2.1955	0.1384
STRT063 20-40	1	-0.3638	0.2244	2.6286	0.1050
STRT064 50+	1	-0.2632	0.2243	1.3765	0.2407
TSAT121 0-1	1	0.2476	0.5490	0.2034	0.6520
TSAT122 2-3	1	0.4375	0.3379	1.6759	0.1955
TSAT123 4+	1	-0.0506	0.2690	0.0354	0.8509
STRT121 0-10	1	0.9490	0.5582	2.8903	0.0891
STRT122 10-30	1	0.1911	0.3018	0.4010	0.5266
STRT123 30-40	1	0.2074	0.2428	0.7296	0.3930
STRT124 50+	1	0.4302	0.2469	3.0367	0.0814
TSAT241 0-2	1	-0.5453	0.3789	2.0710	0.1501
TSAT242 3	1	-0.4122	0.2915	1.9992	0.1574
TSAT243 4+	1	-0.1385	0.2180	0.4038	0.5252
STRT241 0-20	1	0.3496	0.3812	0.8411	0.3591
STRT242 20-40	1	-0.00651	0.2214	0.0009	0.9765
STRT243 50-70	1	-0.1823	0.2109	0.7470	0.3874
STRT244 70+	1	0.0148	0.2793	0.0028	0.9576
CSORAT1 0-40	1	0.00423	0.2157	0.0004	0.9844
CSORAT2 60-80	1	0.00423	0.1738	0.0006	0.9806
CSORAT3 80-90	1	-0.0344	0.2477	0.0193	0.8895
CSORAT4 90+	1	0.3787	0.3574	1.1229	0.2893
PSTDUE1 1	1	0.6913	0.5464	1.6005	0.2058
PSTDUE2 2	1	1.4458	0.6653	4.7231	0.0298
PSTDUE3 3-9	1	2.0168	0.8609	5.4883	0.0191
PSTDUE4 31+	1	2.2698	1.1189	4.1156	0.0425
PDAMNT1 1-200	1	0.4018	0.3729	1.1611	0.2812
PDAMNT2 201-400	1	0.1536	0.3938	0.1521	0.6965

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Chi-Square	Pr > ChiSq
PDAMNT3	1	-0.2339	0.3073	0.5794	0.4465
PDBRAT1	1	-0.5548	0.2307	5.7817	0.0162
PDBRAT2	0	0	.	.	.
PDORAT1	1	-0.0157	0.2862	0.0030	0.9562
PDORAT2	1	-0.0710	0.2920	0.0591	0.8079
PDORAT3	1	-0.3961	0.2617	2.2906	0.1302
HST03X1	1	-0.1588	0.5127	0.0960	0.7567
HST03X2	1	-0.1727	0.2656	0.4229	0.5155
HST03X3	1	-0.1067	0.2330	0.2096	0.6471
HST03X4	1	-0.0673	0.3211	0.0439	0.8341
CUR23X1	1	-0.4014	0.3010	1.7779	0.1824
CUR23X2	1	-1.6313	0.5642	8.3592	0.0038
T2903X1	1	0.2777	0.2122	1.7128	0.1906
T2903X2	1	-0.5333	0.2825	3.5643	0.0590
T2903X3	1	-0.7814	0.4566	2.9288	0.0870
T2906X1	1	0.4400	0.2016	4.7622	0.0291
T2906X2	1	-0.0966	0.2090	0.2136	0.6439
T2906X3	1	0.0388	0.3054	0.0161	0.8989
T2906X4	1	0.6864	0.5589	1.5084	0.2194
CUR39X1	1	0.0472	0.3885	0.0147	0.9034
CUR39X2	1	-0.4569	0.6183	0.5461	0.4599
T3906X1	1	0.4639	0.6347	0.5343	0.4648
T3906X2	1	0.7321	0.7598	0.9283	0.3353
T3906X3	1	0.7626	0.9136	0.6968	0.4039
T3906X4	1	2.2644	1.0470	0.0638	0.8006
T3912X1	1	-0.0875	0.2858	0.0937	0.7596
T3912X2	1	-0.7934	0.3194	6.1712	0.0130
T3912X3	1	-0.5606	0.4485	1.5627	0.2113
T3912X4	1	-1.5325	0.8347	3.3710	0.0664
T4503X1	1	0.4060	0.3081	1.7367	0.1876
T4503X2	1	0.1932	0.6837	0.0799	0.7775
T4506X1	1	-0.6850	0.4424	2.3980	0.1215
T4506X2	1	-1.7948	0.7636	5.5249	0.0187
T4512X1	1	0.9282	0.4844	3.6714	0.0554
T4512X2	1	1.0154	0.8252	1.5142	0.2185
T4524X1	1	-0.3094	0.2700	1.3135	0.2518
T4524X2	1	0.2827	0.4540	0.3878	0.5335
BR45241	1	-0.2009	0.2386	0.7087	0.3999
T4906X1	1	-0.00007	0.6843	0.0000	0.9999
T4906X2	1	2.2743	1.1050	4.2359	0.0396

10:18 Friday, September 6, :

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Chi-Square	Pr > ChiSq
T4906X3	1	2.2605	1.4560	2.4104	0.1205
T4912X1	1	0.0249	0.6543	0.0014	0.9697
T4912X2	1	-1.0740	1.0092	1.1326	0.2872
T4912X3	1	-0.7404	1.3558	0.2982	0.5850
T4918X1	1	-0.1322	0.3554	0.1384	0.7098
T4918X2	1	-0.1427	0.3874	0.1357	0.7126
T4918X3	1	0.9093	0.7452	1.4888	0.2224
T4906P1	1	-0.0697	0.5151	0.0183	0.8924
T4906P2	1	-1.4552	0.8139	3.1966	0.0738
T4906P3	1	-2.0751	1.1433	3.2940	0.0695
T4906P4	1	-3.3016	1.3494	5.9862	0.0144
T4912P1	1	0.6514	0.3840	2.8772	0.0898
T4912P2	1	0.4582	0.3797	1.4562	0.2275
T4912P3	1	1.1215	0.5873	3.6467	0.0562
T4924P1	1	0.2323	0.2443	0.9041	0.3417
T4924P2	1	-0.0374	0.2508	0.0222	0.8815
T4924P3	1	-0.8531	0.4719	3.2679	0.0706
T7912X1	1	0.6702	0.4261	2.4743	0.1157
T7912X2	1	0.1989	0.7549	0.0694	0.7921
T7924X1	1	-0.0907	0.3148	0.0829	0.7734
T7924X2	1	0.2887	0.4865	0.3521	0.5529
T7924X3	1	0.0287	0.6987	0.0017	0.9672
COLECT1	1	0.1930	0.2037	0.8974	0.3435
COLECT2	1	-0.0835	0.2472	0.1141	0.7355
COL1001	1	-0.2197	0.2472	0.7901	0.3741
COL1002	1	-1.0585	0.4531	5.4576	0.0195
PDCOLL1	1	-0.0893	0.2130	0.1756	0.6752
PUB1001	1	0.0983	0.1728	0.3237	0.5694
PUB1002	1	0.6975	0.4008	3.0278	0.0818
WRSTRT1	1	-0.1281	0.5068	0.0639	0.8004
WRSTRT2	0	0	.	.	.
RATT301	1	0.2102	0.2476	0.7207	0.3959
RATT302	1	-0.0708	0.1787	0.1571	0.6918
RATT303	1	-0.1192	0.2320	0.2639	0.6075
RATT304	1	0.2349	0.2452	0.9176	0.3381
RATT601	1	-0.0611	0.2482	0.0605	0.8057
RATT602	1	-0.0720	0.3304	0.0474	0.8276
RATT901	1	0.0305	0.2465	0.0153	0.9014
RATT902	1	-0.1378	0.3500	0.1549	0.6939
DERRAT1	1	0.1554	0.2059	0.5692	0.4506

LOGREG05

RB619

The LOGISTIC Procedure

Model Information

Data Set	WORK.BOTH
Response Variable	BAD1
Number of Response Levels	2
Number of Observations	2024
Link Function	Logit
Optimization Technique	Fisher's scoring

Response Profile

Ordered Value	BAD1	Total Frequency
1	0	904
2	1	1120

NOTE: 16131 observations were deleted due to missing values for the response or explanatory variables.

Model Convergence Status

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

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	2784.764	2460.698
SC	2790.377	2606.631
-2 Log L	2782.764	2408.698

10:22 Monday, September 9, :

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	374.0666	25	<.0001
Score	330.4057	25	<.0001
Wald	273.8985	25	<.0001

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Chi-Square	Pr > ChiSq
Intercept	1	0.3452	0.2122	2.6468	0.1038
INQ0241	1	0.1691	0.1046	2.6158	0.1058
INQ0242	1	-0.4821	0.1910	6.3721	0.0116
AGEOTD12	1	-0.1092	0.1343	0.6609	0.4162
BRAVGA3	1	0.2268	0.1596	2.0195	0.1553
REAVGA1	1	0.2524	0.1264	3.9857	0.0459
ORTB251	1	-0.1226	0.1183	1.0747	0.2999
ORTB253	1	0.1631	0.2522	0.4179	0.5180
REVRAT1	1	0.2562	0.1638	2.4480	0.1177
REVRAT2	1	0.1198	0.1210	0.9800	0.3222
REVRAT3	1	-0.6138	0.1689	13.2067	0.0003
TOTHIC1	1	-0.5252	0.1877	7.8276	0.0051
TOTHIC2	1	-0.2786	0.1558	3.1994	0.0737
TOTHIC4	1	0.1935	0.1819	1.1327	0.2872
HSATRT1	1	-0.2344	0.1215	3.7224	0.0537
CUR23X1	1	-0.5779	0.1364	17.9439	<.0001
CUR23X2	1	-1.6533	0.2952	31.3586	<.0001
T4906P1	1	-0.3421	0.1843	3.4458	0.0634
T4906P2	1	-0.6126	0.2353	6.7747	0.0092
T4906P3	1	-0.9792	0.2890	11.4781	0.0007
T4906P4	1	-1.8243	0.4272	18.2385	<.0001
COL1001	1	-0.2679	0.1303	4.2268	0.0398
COL1002	1	-0.8086	0.2790	8.4000	0.0038
TIME399	1	0.1924	0.2024	0.9040	0.3417
TIME391	1	-0.2447	0.1529	2.5603	0.1096
TIME393	1	0.2500	0.1854	1.8185	0.1775