

Has the Fed's Forecasting Advantage Eroded?
(Additional Results)

By

Edward N. Gamber
Department of Economics and Business
Lafayette College
Easton, PA 18042
gambere@lafayette.edu

And

Julie K. Smith
Department of Economics and Business
Lafayette College
Easton, PA 18042
smithjk@lafayette.edu

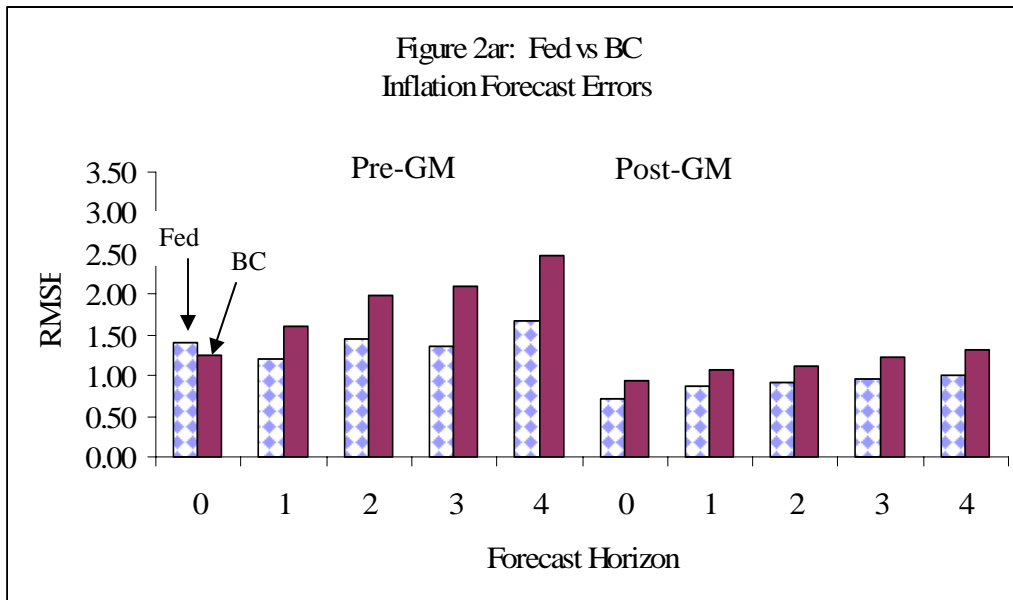
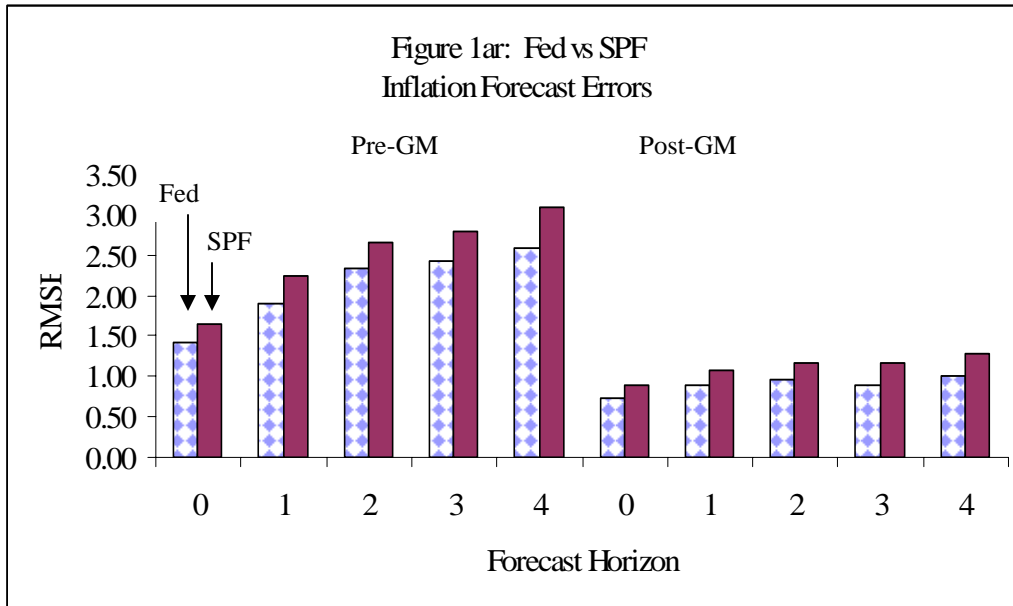
November 2007

Contents:

	<u>page</u>
1. Figures 1ar and 2ar, pre and post-Great Moderation	2
2. Figures 1ar_y and 2_ar_y, real GNP/real GDP growth	3
3. Figures 3ar-7ar, real GNP/GDP growth forecast error box plots	4
4. Tables 1ar, 2ar, real GNP/GDP growth forecast RMSE comparisons	5-7
5. Tables 3ar, 4ar, real GNP/GDP growth forecast RMSE <i>gap</i> comparisons	8-9
6. Tables 5ar, 6ar, real GNP/GDP growth tests for additional information	10-11

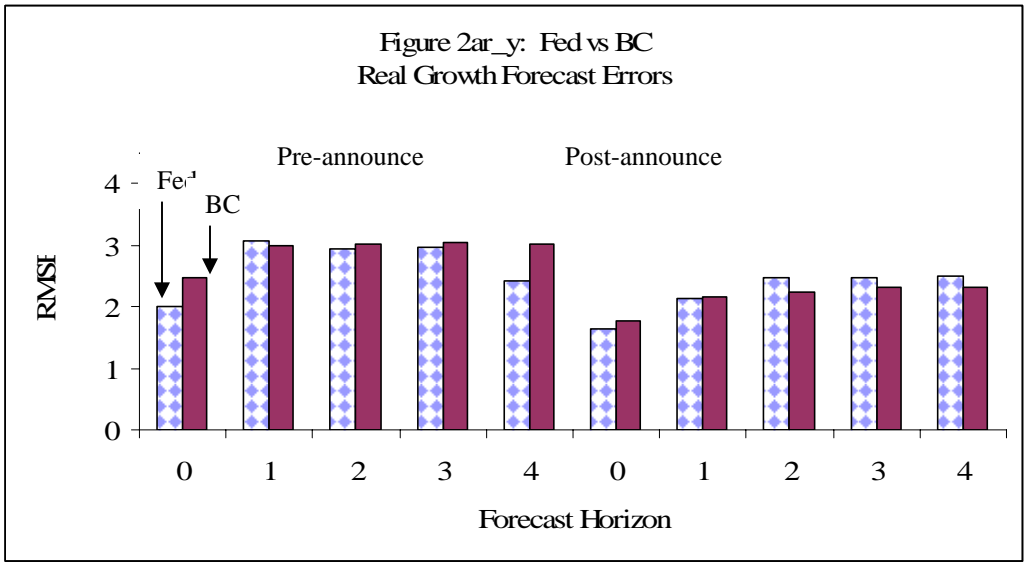
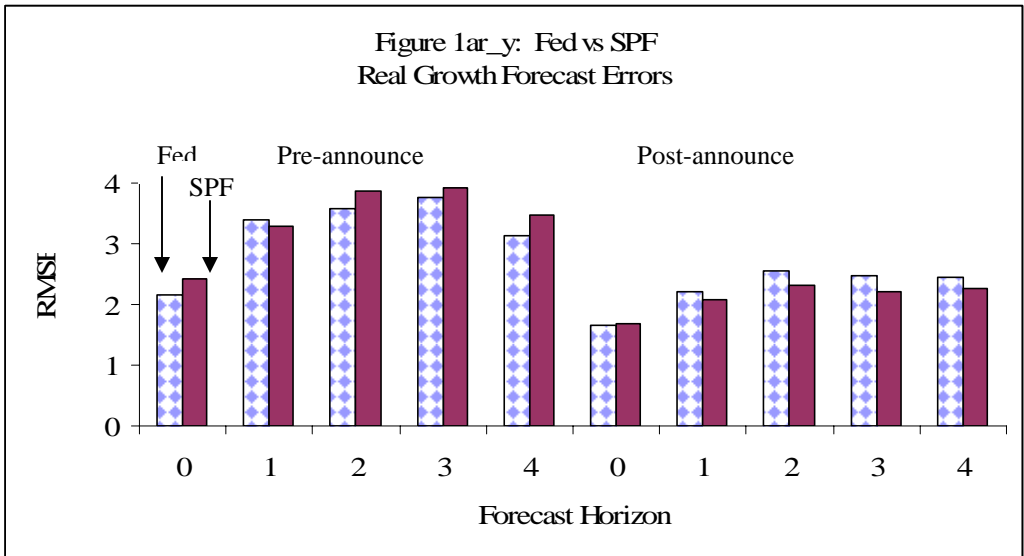
1. Figures 1ar and 2ar, pre and post-Great Moderation

Figures 1 and 2 in the main paper show the inflation forecast errors before and after the 1994.1 break which we call the pre and post announcement period. The results are similar if we break the sample at the Great Moderation (1984.1) as shown below. The one exception is at the zero horizon in Figure 2ar where the Fed had a larger RMSE than the BC in the pre-Great Moderation sample.



2. Figures 1ar_ and 2ar_y, real GNP/real GDP growth.

As reported in footnote 2, an earlier version of this paper contained results from an evaluation of real GNP/GDP forecast errors. Figures 1ar_y and 2_ar_y show the pre and post-announcement period RMSEs for real growth forecast errors. These figures show that the Fed did not have as clear of a forecast advantage in the pre-1994 period (results are similar for the pre and post-1984 comparison). Because there was no clear advantage in the earlier samples, we decided that it did not make sense to measure the erosion of real growth forecast errors. In the interest of full disclosure, however, we report those results below.



3. Figures 3ar-7ar, real GNP/GDP box plots.

Figure 3ar: Output Growth Forecast Errors, SPF
Current Quarter

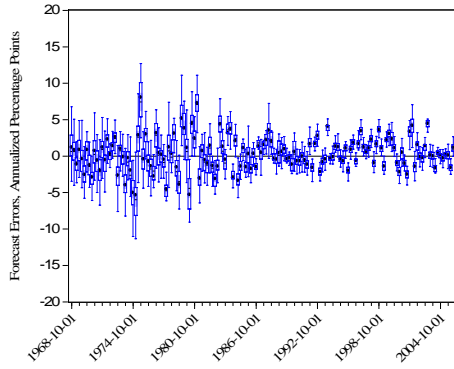


Figure 4ar: Output Growth Forecast Errors, SPF
1 Quarter Ahead

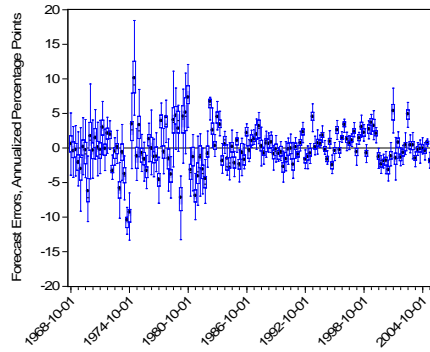


Figure 5ar: Output Growth Forecast Errors, SPF
2 Quarters Ahead

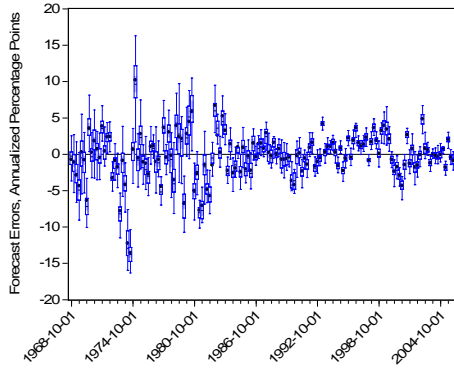


Figure 6ar: Output Growth Forecast Errors, SPF
3 Quarters Ahead

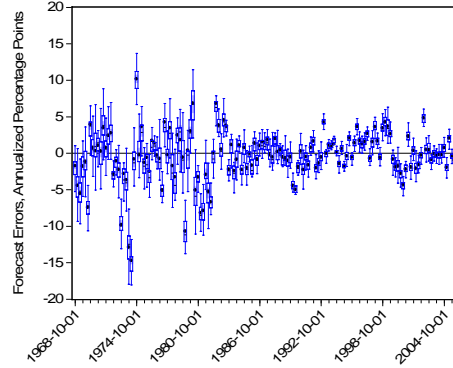
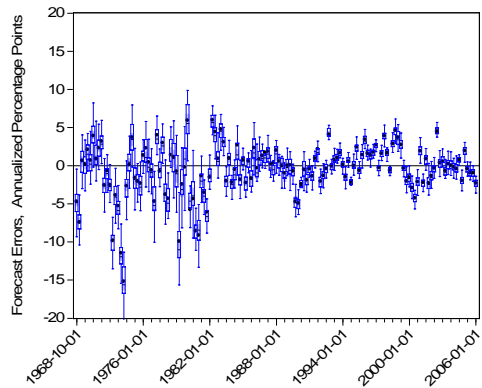


Figure 7ar: Output Growth Forecast Errors, SPF
4 Quarters Ahead



4. Tables 1ar, 2ar, real GNP/GDP growth forecast RMSE comparisons.

Prior to 1981 the SPF did not collect forecasts for the growth rate of real GNP but it did collect forecasts of the level of nominal GNP and the level of the implicit price deflator.

In the tables below we computed $realGNP = 100 \times \left(\frac{NGNP}{GNP\ deflator} \right)$. We then rounded the

resulting realGNP numbers to the nearest integer before calculating the annualized growth rate to match the level of precision that was reported for real GNP in the SPF after 1981.

Table 1ar
Real GDP Forecast RMSE Comparison
Fed vs SPF (rounded)

	horizon	RMSE		Ratio	Modified	
		Fed	SPF		DM	N
Full sample 1968-2001	0	2.07	2.29	1.11	2.56*	108
	1	3.19	3.08	0.97	-1.44	108
	2	3.39	3.59	1.06	0.29	107
	3	3.51	3.60	1.03	0.13	102
	4	2.98	3.23	1.08	1.55	93
	0-4	1.76	1.71	0.97	-1.58	93
Pre-GM 1968-1983	0	2.41	2.69	1.11	1.67†	56
	1	3.97	3.88	0.98	-0.76	56
	2	4.20	4.60	1.10	0.67	55
	3	4.58	4.80	1.05	1.11	50
	4	3.88	4.33	1.12	1.94†	41
	0-4	2.14	2.14	1.00	-0.95	41
Post-GM 1984-2001	0	1.61	1.76	1.09	2.38*	52
	1	2.02	1.88	0.93	-1.56	52
	2	2.25	2.06	0.92	-0.83	52
	3	2.01	1.83	0.91	-2.18*	52
	4	2.02	1.97	0.97	-0.47	52
	0-4	1.39	1.28	0.92	-1.65	52
Pre-Announce 1968-1993	0	2.16	2.42	1.12	2.31*	85
	1	3.40	3.30	0.97	-1.10	85
	2	3.59	3.87	1.08	0.54	84
	3	3.76	3.92	1.04	0.54	79
	4	3.14	3.48	1.11	1.92†	70
	0-4	1.77	1.75	0.99	-1.24	70
Post-Announce 1994-2001	0	1.66	1.69	1.02	0.97	23
	1	2.22	2.07	0.93	-1.33	23
	2	2.55	2.31	0.91	-0.69	23
	3	2.47	2.21	0.90	-1.08	23
	4	2.45	2.27	0.93	-0.89	23
	0-4	1.71	1.58	0.92	-1.38	23
Post-GM & Pre-Announce 1984-1993	0	1.57	1.81	1.15	2.32*	29
	1	1.86	1.72	0.92	-0.92	29
	2	1.97	1.83	0.93	-0.40	29
	3	1.56	1.46	0.94	-1.91†	29
	4	1.59	1.69	1.06	0.26	29
	0-4	1.07	0.98	0.92	-1.01	29

Note: ** denotes significance at 1%, * denotes significance at 5%, † denotes significance at 10%

Table 2ar
 Real GDP Forecast RMSE Comparison
 Fed vs Blue Chip

	horizon	RMSE		Ratio	Modified	
		Fed	BC		DM	N
Full sample 1980-2001	0	1.87	2.24	1.20	4.91**	178
	1	2.76	2.73	0.99	0.25	178
	2	2.78	2.75	0.99	-0.12	178
	3	2.79	2.80	1.00	0.16	178
	4	2.44	2.78	1.14	1.58	174
	0-4	1.41	1.54	1.10	0.50	174
Pre-GM 1980-1983	0	2.81	3.51	1.25	2.90**	34
	1	4.82	4.80	1.00	0.82	34
	2	4.64	4.86	1.05	0.78	34
	3	4.69	4.91	1.05	0.84	34
	4	3.68	4.99	1.36	2.70*	30
	0-4	1.80	2.46	1.37	1.12	30
Post-GM 1984-2001	0	1.57	1.82	1.16	4.35**	144
	1	1.99	1.94	0.98	-0.58	144
	2	2.12	1.95	0.92	-1.48	144
	3	2.11	2.01	0.95	-1.55	144
	4	2.09	2.03	0.97	-0.55	144
	0-4	1.31	1.27	0.97	-0.85	144
Pre-Announce 1980-1993	0	1.99	2.47	1.24	4.38**	114
	1	3.06	3.00	0.98	-0.14	114
	2	2.95	3.01	1.02	0.32	114
	3	2.96	3.05	1.03	0.46	114
	4	2.41	3.01	1.25	1.95*	110
	0-4	1.27	1.53	1.21	0.82	110
Post-Announce 1994-2001	0	1.64	1.77	1.08	2.25*	64
	1	2.13	2.17	1.02	1.17	64
	2	2.46	2.23	0.91	-1.30	64
	3	2.47	2.31	0.94	-0.95	64
	4	2.50	2.32	0.93	-0.79	64
	0-4	1.61	1.56	0.97	-0.90	64
Post-GM & Pre-Announce 1984-1993	0	1.51	1.85	1.23	3.49**	80
	1	1.87	1.74	0.93	-1.49	80
	2	1.81	1.69	0.94	-0.86	80
	3	1.77	1.73	0.98	-1.21	80
	4	1.71	1.77	1.04	0.10	80
	0-4	1.00	0.98	0.98	-0.37	80

Note: ** denotes significance at 1%, * denotes significance at 5%, † denotes significance at 10%

5. Tables 3ar, 4ar, real GNP/GDP growth forecast RMSE *gap* comparisons

Table 3ar

Difference between the Absolute Forecast Errors (SPF minus Fed): Real GDP

Horizon	Pre-GM	Post-GM	Modified
	1968-1983	1984-2001	Diebold-Mariano t-stat
0	0.25	0.17	0.51
1	-0.11	-0.13	0.15
2	0.14	-0.08	0.97
3	0.22	-0.18	1.91†
4	0.46	-0.04	2.02*
0-4	-0.14	-0.09	-0.35

	Pre-Announce	Post-Announce	Modified
	1968-1993	1994-2001	Diebold-Mariano t-stat
0	0.24	0.11	0.83
1	-0.11	-0.15	0.28
2	0.08	-0.12	0.90
3	0.07	-0.18	1.23
4	0.28	-0.13	2.05*
0-4	-0.11	-0.11	-0.01

	Pre-GM	Post-GM & Pre-Announce	Modified
	1968-1983	1984-1993	Diebold-Mariano t-stat
0	0.25	0.21	0.24
1	-0.11	-0.12	0.05
2	0.14	-0.05	0.80
3	0.22	-0.19	1.87†
4	0.46	0.03	1.66†
0-4	-0.14	-0.07	-0.45

	Post-GM & Pre-Announce	Post-Announce	Modified
	1984-1993	1994-2001	Diebold-Mariano t-stat
0	0.21	0.11	0.68
1	-0.12	-0.15	0.21
2	-0.05	-0.12	0.35
3	-0.19	-0.18	-0.03
4	0.03	-0.13	0.89
0-4	-0.07	-0.11	0.41

Note: ** denotes significance at 1%, * denotes significance at 5%, † denotes significance at 10%

Table 4ar

Difference between the Absolute Forecast Errors (**Blue Chip** minus Fed): Real GDP

Horizon	Pre-GM	Post-GM	Modified
	1980-1983	1984-2001	Diebold-Mariano t-stat
0	0.72	0.26	1.89†
1	0.31	-0.04	0.95
2	0.40	-0.11	1.03
3	0.46	-0.08	1.02
4	1.17	-0.03	2.87**
0-4	0.41	-0.04	1.27

	Pre-Announce	Post-Announce	Modified
	1980-1993	1994-2001	Diebold-Mariano t-stat
0	0.43	0.19	1.89†
1	-0.02	0.10	-0.73
2	0.06	-0.14	0.96
3	0.08	-0.09	0.87
4	0.32	-0.07	2.11*
0-4	0.10	-0.06	1.16

	Pre-GM	Post-GM & Pre-Announce	Modified
	1980-1983	1984-1993	Diebold-Mariano t-stat
0	0.72	0.31	1.61
1	0.31	-0.16	1.23
2	0.40	-0.09	0.97
3	0.46	-0.07	1.00
4	1.17	0.01	2.76**
0-4	0.41	-0.02	1.21

	Post-GM & Pre-Announce	Post-Announce	Modified
	1984-1993	1994-2001	Diebold-Mariano t-stat
0	0.31	0.19	0.98
1	-0.16	0.10	-1.92†
2	-0.09	-0.14	0.36
3	-0.07	-0.09	0.17
4	0.01	-0.07	0.73
0-4	-0.02	-0.06	0.43

Note: ** denotes significance at 1%, * denotes significance at 5%, † denotes significance at 10%

6. Tables 5ar, 6ar, real GNP/GDP growth tests for additional information

Table 5ar

Tests for Additional Information (real output growth): Fed vs SPF

Sample	Horizon	Fed	SPF	R ²	N
Full 1968-2001	0	.94** (.15)	.11 (.20)	.69	108
	1	.11 (.47)	.81 (.51)	.29	108
	2	.96* (.40)	.10 (.39)	.25	107
	3	.61 (.44)	.02 (.49)	.08	102
	4	1.04** (.31)	-.04 (.33)	.16	93
	0-4	.31 (.44)	.71 (.52)	.43	93
Pre-GM 1968-1983	0	.85** (.17)	.23 (.22)	.75	56
	1	.21 (.61)	.72 (.68)	.32	56
	2	1.15** (.43)	.02 (.42)	.33	55
	3	.73 (.54)	.15 (.61)	.12	50
	4	1.15** (.35)	.98 (.71)	.34	41
	0-4	.24 (.50)	.92 (.62)	.56	41
Post-GM 1984-2001	0	1.33** (.32)	-.53 (.43)	.39	52
	1	-.21 (.44)	1.09* (.51)	.15	52
	2	-.50 (.46)	1.17* (.52)	.10	52
	3	-.45 (.40)	.55 (.47)	.03	52
	4	-.02 (.55)	.27 (.38)	.01	52
	0-4	-.59 (.52)	1.23* (.59)	.13	52
Pre-Announce 1968-1993	0	.96** (.17)	.07 (.22)	.72	85
	1	.16 (.50)	.76 (.54)	.32	85
	2	1.09* (.42)	.09 (.39)	.31	84
	3	.71 (.49)	.16 (.50)	.12	79
	4	1.23** (.31)	.05 (.36)	.26	70
	0-4	.31 (.44)	.80 (.52)	.54	70
Post-Announce 1994-2001	0	.28 (.57)	1.19 (1.06)	.36	23
	1	-.07 (1.04)	.42 (1.48)	.01	23
	2	-.21 (.65)	-.36 (1.05)	.03	23
	3	.06 (.48)	-2.16† (1.1)	.24	23
	4	-.87 (.92)	-.33 (.91)	.17	23
	0-4	.80 (.55)	-3.29 (.87)	.39	23
Post-GM & Pre- Announce 1984-1993	0	1.78** (.40)	-1.08* (.49)	.48	29
	1	-.01 (.48)	.96 (.56)	.27	29
	2	-.12 (.77)	1.23† (.62)	.26	29
	3	.11 (.61)	.85* (.41)	.19	29
	4	1.15* (.45)	.29 (.41)	.27	29
	0-4	-.12 (.62)	1.23† (.66)	.43	29

Note: ** denotes significance at 1%, * denotes significance at 5%, † denotes significance at 10%

Table 6ar
Tests for Additional Information (real output growth): Fed vs BC

Sample	Horizon	Fed	BC	R ²	N
Full 1980-2001	0	1.27** (.12)	-.63** (.19)	.63	178
	1	.51 (.40)	.29 (.47)	.19	178
	2	.48 (.41)	-1.11 (.64)	.05	178
	3	.32 (.38)	-.48 (.50)	.02	178
	4	1.29** (.43)	-1.00* (.38)	.17	174
	0-4	1.07** (.34)	-.02 (.40)	.37	174
Pre-GM 1980-1983	0	1.70** (.20)	-1.02** (.30)	.72	34
	1	.84 (1.12)	-.05 (1.25)	.19	34
	2	2.41** (.71)	-2.83** (.94)	.34	34
	3	1.46† (.82)	-2.83* (1.31)	.76	34
	4	3.12** (.46)	-5.76** (.81)	.76	30
	0-4	2.23** (.47)	-1.17 (.78)	.77	30
Post-GM 1984-2001	0	1.15** (.10)	-.39* (.17)	.50	144
	1	.38† (.21)	.42 (.37)	.14	144
	2	-.25 (.29)	.70† (.38)	.04	144
	3	-.13 (.34)	.29 (.42)	.004	144
	4	.03 (.55)	-.12 (.53)	.0006	144
	0-4	.28 (.33)	.38 (.41)	.10	144
Pre-Announce 1968-1993	0	1.46** (.13)	-.71** (.20)	.67	114
	1	.36 (.49)	.51 (.52)	.22	114
	2	.61 (.49)	-.06 (.70)	.10	114
	3	.39 (.52)	-.22 (.54)	.02	114
	4	2.09** (.36)	-.83** (.32)	.39	110
	0-4	1.15** (.34)	.03 (.37)	.61	110
Post-Announce 1994-2001	0	1.11** (.21)	-.55 (.42)	.42	64
	1	1.06** (.34)	-1.64** (.54)	.16	64
	2	-.14 (.46)	-.96 (.86)	.07	64
	3	.24 (.27)	-1.73** (.63)	.17	64
	4	-.46 (.70)	-.94 (.86)	.20	64
	0-4	.80** (.31)	-2.33** (.54)	.30	64
Post-GM & Pre- Announce 1984-1993	0	1.22** (.15)	-.38 (.17)	.56	80
	1	.22 (.20)	.83** (.30)	.30	80
	2	.06 (.41)	1.01 (.33)	.21	80
	3	.21 (.71)	1.10* (.52)	.18	80
	4	1.09* (.52)	.19 (.50)	.18	80
	0-4	.47 (.40)	.80* (.39)	.46	80

Note: ** denotes significance at 1%, * denotes significance at 5%, † denotes significance at 10%