

# **Events that Shook the Market**

## **Table 1A**

**Ray C. Fair**

**August 2000**

**Table 1A**  
**One- to Five-Minute Price Changes Greater than 0.75 Percent in Absolute Value**

	day	k	k-minute-change			ave. vol.	Event
			end time	size	vol.		
1	6/24/82	5	3:28pm	-0.85	23	4.6	none
2	6/25/82	2	4:11pm	0.82	13	6.5	4:10pm: M1 down \$2.3 billion.
3	7/ 6/82	4	3:36pm	0.79	25	6.3	none
4	7/ 8/82	5	3:09pm	0.78	39	7.8	none
5	7/ 9/82	3	4:11pm	0.86	21	7.0	4:10pm: M1 down \$3.7 billion.
6	7/ 9/82	3	4:12pm	0.99	22	7.3	-
7	7/13/82	4	12:21pm	0.77	17	4.3	12:20pm: IBM profits \$1.68 vs. \$1.37 year ago.
8	7/16/82	5	4:14pm	-0.79	43	8.6	4:10pm: M1 up \$5.9 billion.
9	8/11/82	4	2:36pm	0.79	33	8.3	2:30pm: Retail sales up 1.0%.
10	8/13/82	2	4:13pm	0.78	20	10.0	4:10pm: M1 up \$2.0 billion.
11	8/17/82	4	2:20pm	0.87	22	5.5	none
12	8/19/82	4	10:16am	0.79	20	5.0	none
13	8/19/82	5	2:08pm	-0.88	32	6.4	?time: Rumor that a major US bank in trouble over Mexican loans.
14	8/19/82	2	2:09pm	-0.78	15	7.5	NY Fed denied rumor about 2:30pm.
15	8/19/82	5	2:14pm	0.79	46	9.2	-
16	8/19/82	4	2:29pm	0.93	33	8.3	-
17	8/19/82	5	2:31pm	0.79	38	7.6	-
18	8/19/82	5	2:32pm	0.88	34	6.8	-
19	8/19/82	5	2:33pm	0.93	31	6.2	-
20	8/19/82	4	2:34pm	0.79	23	5.8	-
21	8/19/82	1	2:38pm	-0.88	13	13.0	-
22	8/19/82	1	2:40pm	0.88	12	12.0	-
23	8/19/82	3	2:48pm	-0.78	21	7.0	-
24	8/19/82	3	2:49pm	-0.83	17	5.7	-
25	8/20/82	5	3:21pm	0.77	29	5.8	none
26	8/23/82	5	3:36pm	0.85	30	6.0	none
27	8/23/82	4	3:37pm	0.76	24	6.0	-
28	8/23/82	5	3:40pm	0.80	24	4.8	-
29	8/24/82	3	1:41pm	-0.78	17	5.7	1:40pm: GM mid August sales down to 81,597 from 134,949.
30	8/24/82	5	3:19pm	-0.77	42	8.4	none
31	8/24/82	5	3:22pm	-0.77	43	8.6	-
32	8/24/82	5	3:23pm	-0.82	41	8.2	-
33	9/ 2/82	3	2:56pm	0.77	13	4.3	none
34	9/ 3/82	4	10:04am	0.78	29	7.3	none
35	9/ 3/82	3	10:21am	0.78	33	11.0	-
36	9/ 3/82	3	10:23am	0.90	39	13.0	-
37	9/ 3/82	5	12:43pm	0.78	22	4.4	-
38	9/ 3/82	5	1:07pm	-0.82	34	6.8	-
39	9/ 3/82	5	1:08pm	-0.78	33	6.6	-
40	9/ 3/82	3	1:39pm	0.82	10	3.3	-
41	9/ 3/82	4	1:58pm	-0.82	20	5.0	-
42	9/ 3/82	5	3:25pm	0.82	24	4.8	-
43	9/14/82	5	3:34pm	-0.88	32	6.4	3:27pm: Rostenkowski said tax boost needed for defense budget.
44	9/14/82	4	3:35pm	-0.84	29	7.3	-

	day	k	k-minute-change			ave. vol.	Event
			end time	size	vol.		
45	9/23/82	5	11:12am	-0.77	27	5.4	?time: Five Fed Presidents testify before Congress.
46	9/30/82	5	3:38pm	-0.79	36	7.2	none
47	10/ 1/82	3	4:12pm	-0.84	24	8.0	4:10pm: M1 up \$0.4 billion.
48	10/ 8/82	4	2:27pm	-0.77	17	4.3	none
49	10/ 8/82	1	2:28pm	0.88	6	6.0	-
50	10/ 8/82	2	4:05pm	0.85	19	9.5	-
51	10/ 8/82	2	4:07pm	-0.96	19	9.5	-
52	10/ 8/82	3	4:10pm	0.77	37	12.3	4:10pm: M1 down \$2.7 billion.
53	10/ 8/82	3	4:11pm	0.92	42	14.0	-
54	10/11/82	1	2:55pm	-0.82	4	4.0	none
55	10/11/82	4	3:46pm	0.82	37	9.3	-
56	10/13/82	3	12:37pm	-0.78	22	7.3	none
57	10/13/82	3	2:09pm	0.79	23	7.7	-
58	10/13/82	3	3:23pm	0.86	24	8.0	-
59	10/13/82	3	3:24pm	1.01	36	12.0	-
60	10/13/82	2	3:27pm	0.98	23	11.5	-
61	10/13/82	2	3:29pm	-0.90	16	8.0	-
62	10/13/82	4	3:56pm	0.79	18	4.5	-
63	10/22/82	4	4:13pm	-0.85	59	14.8	4:10pm: M1 up \$3.2 billion.
64	10/26/82	4	2:58pm	-0.78	23	5.8	none
65	10/26/82	3	2:59pm	-0.82	15	5.0	-
66	10/26/82	5	3:20pm	0.82	36	7.2	-
67	10/27/82	5	2:59pm	0.77	33	6.6	none
68	11/ 2/82	4	3:34pm	-0.83	32	8.0	none
69	11/ 5/82	2	11:46am	-0.80	17	8.5	none
70	11/ 5/82	2	11:47am	-0.98	11	5.5	-
71	11/ 5/82	3	3:14pm	0.77	27	9.0	none
72	11/ 5/82	2	4:10pm	-0.77	12	6.0	4:10pm: M1 up \$2.7 billion.
73	11/ 5/82	2	4:11pm	-0.84	12	6.0	-
74	11/16/82	4	3:15pm	0.81	35	8.8	?time: Larry Speakes reported to have said Fed will
75	11/16/82	4	3:16pm	0.77	33	8.3	reduce discount rate. Denied at 3:33pm.
76	11/16/82	4	3:17pm	0.77	34	8.5	-
77	11/22/82	5	10:17am	-0.77	37	7.4	none
78	11/30/82	5	2:53pm	0.79	40	8.0	none
79	11/30/82	5	2:54pm	0.82	38	7.6	-
80	12/ 1/82	5	2:27pm	-0.82	40	8.0	none
81	12/ 1/82	4	2:28pm	-0.82	38	9.5	-
82	12/ 1/82	5	2:32pm	-0.78	41	8.2	-
83	12/ 2/82	4	2:38pm	-0.75	24	6.0	2:30pm: New home sales down 0.4%.
84	12/ 6/82	4	3:26pm	0.75	39	9.8	none
85	12/ 6/82	4	3:27pm	0.86	43	10.8	-
86	12/ 7/82	5	2:55pm	-0.83	41	8.2	none

	day	k	k-minute-change			ave. vol.	Event
			end time	size	vol.		
87	12/ 8/82	5	2:48pm	-0.77	32	6.4	none
88	12/ 9/82	3	3:24pm	-0.85	23	7.7	?time: Howard Baker withdrew capital gains bill.
89	12/14/82	5	1:38pm	-0.80	33	6.6	none
90	12/14/82	2	2:02pm	-0.77	9	4.5	-
91	12/14/82	4	3:27pm	-0.84	30	7.5	-
92	12/15/82	5	10:59am	-0.80	28	5.6	10:56am: Murray Weidenbaum testified that deficit an obstacle to recovery.
93	12/17/82	4	12:00pm	0.77	7	1.8	none
94	12/21/82	2	3:40pm	0.77	18	9.0	none
95	12/22/82	5	3:21pm	-0.78	27	5.4	none
96	12/28/82	3	2:56pm	-0.80	18	6.0	none
97	1/ 4/83	5	3:02pm	0.76	37	7.4	none
98	1/ 6/83	5	12:09pm	0.80	50	10.0	none
99	5/30/84	4	2:37pm	0.80	38	9.5	none
100	8/ 6/84	5	10:33am	0.89	70	14.0	none
101	1/ 8/86	3	3:48pm	-0.79	48	16.0	none
102	1/ 8/86	3	3:49pm	-0.90	63	21.0	-
103	1/ 8/86	4	3:53pm	0.77	63	15.8	-
104	1/17/86	4	9:58am	-0.76	38	9.5	9:54am: IBM profits \$4.36 vs. \$3.55 year ago.
105	2/ 7/86	3	12:02pm	-1.03	47	15.7	12:00pm: Three judge panel ruled part of Gramm-Rudman
106	2/ 7/86	2	12:07pm	0.75	33	16.5	law unconstitutional
107	9/11/86	4	11:36am	-0.88	59	14.8	none
108	9/11/86	4	11:53am	0.78	58	14.5	-
109	9/12/86	4	10:05am	-0.76	33	8.3	none (9 more through 12:16pm)
110	9/12/86	3	10:13am	-0.76	35	11.7	-
111	9/12/86	2	10:14am	-0.93	24	12.0	-
112	9/12/86	2	10:15am	-0.85	20	10.0	-
113	9/12/86	2	10:17am	0.98	22	11.0	-
114	9/12/86	2	10:49am	0.77	23	11.5	-
115	9/12/86	3	12:06pm	-1.06	22	7.3	-
116	9/12/86	2	12:07pm	-0.85	8	4.0	-
117	9/12/86	3	12:15pm	0.98	29	9.7	-
118	9/12/86	3	12:16pm	0.83	26	8.7	-
119	9/15/86	5	9:36am	0.78	44	8.8	none
120	9/18/86	4	9:45am	0.86	40	10.0	none
121	9/19/86	2	3:31pm	-0.78	36	18.0	none
122	9/25/86	4	11:01am	-0.76	46	11.5	none
123	9/25/86	5	11:03am	-0.83	50	10.0	-
124	10/ 3/86	5	11:08am	-0.87	63	12.6	none

	k-minute-change							Event
	day	k	end time	size	vol.	ave. vol.		
125	10/ 3/86	2	11:09am	-0.76	21	10.5	-	
126	10/ 3/86	3	11:11am	-0.80	25	8.3	-	
127	10/ 3/86	3	11:17am	0.76	28	9.3	-	
128	10/ 6/86	2	10:06am	0.75	31	15.5	none	
129	12/11/86	4	11:15am	-0.95	46	11.5	none	
130	12/11/86	2	11:16am	-0.79	28	14.0	-	
131	1/23/87	4	2:35pm	-0.76	52	13.0	none (14 more during day)	
132	1/23/87	5	2:37pm	-0.79	68	13.6	-	
133	1/23/87	4	2:40pm	-0.81	41	10.3	-	
134	1/23/87	3	2:41pm	-0.76	27	9.0	-	
135	1/23/87	3	2:42pm	-1.08	37	12.3	-	
136	1/23/87	2	2:43pm	-1.05	31	15.5	-	
137	1/23/87	2	2:44pm	-1.23	27	13.5	-	
138	1/23/87	2	2:45pm	-0.87	14	7.0	-	
139	1/23/87	1	2:46pm	1.08	6	6.0	-	
140	1/23/87	2	2:49pm	1.09	9	4.5	-	
141	1/23/87	4	2:54pm	-1.08	22	5.5	-	
142	1/23/87	1	2:56pm	0.90	6	6.0	-	
143	1/23/87	3	3:00pm	0.91	13	4.3	-	
144	1/23/87	5	3:08pm	0.83	14	2.8	-	
145	1/23/87	5	3:25pm	-0.86	20	4.0	-	
146	3/ 9/87	5	9:35am	-0.86	74	14.8	none	
147	3/ 9/87	5	9:36am	-0.81	73	14.6	-	
148	3/30/87	5	9:46am	-0.85	54	10.8	none	
149	3/30/87	4	9:47am	-0.78	42	10.5	-	
150	3/30/87	3	9:48am	-0.95	31	10.3	-	
151	4/13/87	5	3:37pm	-0.81	53	10.6	none	
152	4/27/87	4	12:26pm	0.76	52	13.0	none	
153	4/27/87	4	12:27pm	0.78	43	10.8	-	
154	4/27/87	4	12:42pm	0.76	47	11.8	-	
155	4/27/87	5	12:44pm	0.80	67	13.4	-	
156	4/27/87	5	12:45pm	0.80	61	12.2	-	
157	4/27/87	5	12:46pm	0.87	66	13.2	-	
158	5/11/87	4	4:00pm	-0.84	48	12.0	none	
159	6/ 2/87	5	10:07am	-0.91	70	14.0	none	
160	6/10/87	5	3:09pm	-0.75	45	9.0	none	
161	6/30/87	2	4:14pm	-0.77	36	18.0	none	
162	10/16/87	5	11:25am	-0.83	42	8.4	none (12 more during day)	
163	10/16/87	5	1:26pm	-0.81	53	10.6	-	
164	10/16/87	5	1:27pm	-0.83	53	10.6	-	
165	10/16/87	4	3:05pm	-0.80	45	11.3	-	
166	10/16/87	5	3:14pm	0.77	51	10.2	-	
167	10/16/87	5	3:23pm	-0.76	51	10.2	-	
168	10/16/87	4	3:39pm	-0.83	35	8.8	-	
169	10/16/87	3	3:40pm	-0.86	21	7.0	-	
170	10/16/87	5	3:43pm	-0.99	35	7.0	-	
171	10/16/87	2	3:44pm	-0.90	13	6.5	-	
172	10/16/87	4	3:51pm	-0.99	12	3.0	-	

k-minute-change							
	day	k	end time	size	vol.	ave. vol.	Event
173	10/16/87	1	3:52pm	0.83	6	6.0	-
174	10/16/87	1	3:54pm	1.33	5	5.0	-
175	10/19/87	1	9:33am	0.76	7	7.0	none (123 more during day)
176	10/19/87	1	9:34am	1.53	7	7.0	-
177	10/19/87	1	9:35am	-0.76	10	10.0	-
178	10/19/87	1	9:37am	0.76	4	4.0	-
179	10/19/87	4	9:45am	-0.76	27	6.8	-
180	10/19/87	2	9:46am	-0.76	13	6.5	-
181	10/19/87	2	9:48am	0.77	13	6.5	-
182	10/19/87	1	9:50am	-0.96	5	5.0	-
183	10/19/87	2	9:54am	-1.05	7	3.5	-
184	10/19/87	2	10:04am	-0.76	11	5.5	-
185	10/19/87	1	10:06am	-1.53	5	5.0	-
186	10/19/87	1	10:07am	0.76	6	6.0	-
187	10/19/87	2	10:09am	-0.76	9	4.5	-
188	10/19/87	3	10:11am	-0.76	16	5.3	-
189	10/19/87	3	10:13am	-0.76	16	5.3	-
190	10/19/87	2	10:14am	-0.76	11	5.5	-
191	10/19/87	1	10:16am	-1.53	7	7.0	-
192	10/19/87	1	10:17am	0.76	3	3.0	-
193	10/19/87	1	10:20am	0.76	4	4.0	-
194	10/19/87	2	10:31am	0.77	12	6.0	-
195	10/19/87	1	10:36am	0.96	5	5.0	-
196	10/19/87	1	10:39am	-0.76	4	4.0	-
197	10/19/87	4	10:44am	-0.76	15	3.8	-
198	10/19/87	1	10:45am	0.76	6	6.0	-
199	10/19/87	1	10:46am	-1.15	7	7.0	-
200	10/19/87	3	10:51am	0.77	14	4.7	-
201	10/19/87	1	10:52am	0.76	5	5.0	-
202	10/19/87	1	10:54am	0.76	7	7.0	-
203	10/19/87	1	11:00am	1.53	7	7.0	-
204	10/19/87	1	11:01am	-0.76	9	9.0	-
205	10/19/87	1	11:03am	-0.76	4	4.0	-
206	10/19/87	2	11:05am	0.96	12	6.0	-
207	10/19/87	1	11:06am	-0.76	6	6.0	-
208	10/19/87	1	11:07am	0.76	6	6.0	-
209	10/19/87	1	11:09am	-0.76	7	7.0	-
210	10/19/87	2	11:11am	0.77	17	8.5	-
211	10/19/87	3	11:14am	-0.76	12	4.0	-
212	10/19/87	3	11:17am	0.77	20	6.7	-
213	10/19/87	2	11:20am	0.77	9	4.5	-
214	10/19/87	1	11:21am	-0.76	9	9.0	-
215	10/19/87	2	11:24am	0.77	12	6.0	-
216	10/19/87	3	11:43am	-0.76	21	7.0	-
217	10/19/87	4	11:51am	-0.76	18	4.5	-
218	10/19/87	2	11:55am	-0.76	7	3.5	-
219	10/19/87	1	11:56am	-1.34	5	5.0	-
220	10/19/87	1	12:10pm	0.76	4	4.0	-
221	10/19/87	2	12:12pm	-0.76	13	6.5	-
222	10/19/87	2	12:13pm	-0.76	9	4.5	-
223	10/19/87	5	12:26pm	-0.76	24	4.8	-
224	10/19/87	4	12:27pm	-0.76	21	5.3	-
225	10/19/87	5	12:29pm	-0.76	26	5.2	-
226	10/19/87	4	12:34pm	-0.76	15	3.8	-
227	10/19/87	3	12:53pm	0.77	14	4.7	-
228	10/19/87	4	12:55pm	0.77	19	4.8	-
229	10/19/87	3	1:17pm	-0.95	17	5.7	-
230	10/19/87	2	1:18pm	-0.76	13	6.5	-
231	10/19/87	1	1:28pm	-1.78	12	12.0	-

k-minute-change							Event
day	k	end time	size	vol.	ave. vol.		
232	10/19/87	1	1:29pm	-1.91	5	5.0	-
233	10/19/87	1	1:30pm	-2.29	7	7.0	-
234	10/19/87	1	1:31pm	1.53	10	10.0	-
235	10/19/87	1	1:32pm	1.53	7	7.0	-
236	10/19/87	1	1:33pm	1.15	9	9.0	-
237	10/19/87	1	1:35pm	-0.76	8	8.0	-
238	10/19/87	1	1:36pm	-1.15	7	7.0	-
239	10/19/87	2	1:40pm	-0.76	12	6.0	-
240	10/19/87	1	1:41pm	-0.76	2	2.0	-
241	10/19/87	1	1:43pm	-0.76	4	4.0	-
242	10/19/87	4	1:47pm	-0.95	20	5.0	-
243	10/19/87	1	1:48pm	-1.34	6	6.0	-
244	10/19/87	1	1:49pm	0.76	6	6.0	-
245	10/19/87	2	1:51pm	-0.76	14	7.0	-
246	10/19/87	2	1:53pm	0.77	12	6.0	-
247	10/19/87	1	1:54pm	-0.76	4	4.0	-
248	10/19/87	1	1:58pm	-0.96	4	4.0	-
249	10/19/87	1	2:00pm	-0.76	5	5.0	-
250	10/19/87	1	2:01pm	0.76	7	7.0	-
251	10/19/87	1	2:02pm	-1.15	9	9.0	-
252	10/19/87	2	2:08pm	0.96	13	6.5	-
253	10/19/87	5	2:12pm	0.77	26	5.2	-
254	10/19/87	1	2:14pm	0.96	6	6.0	-
255	10/19/87	2	2:21pm	0.77	11	5.5	-
256	10/19/87	1	2:24pm	-1.34	9	9.0	-
257	10/19/87	4	2:28pm	1.15	18	4.5	-
258	10/19/87	2	2:29pm	1.15	13	6.5	-
259	10/19/87	1	2:32pm	0.76	4	4.0	-
260	10/19/87	1	2:34pm	1.15	3	3.0	-
261	10/19/87	1	2:37pm	0.76	5	5.0	-
262	10/19/87	1	2:38pm	-1.72	6	6.0	-
263	10/19/87	2	2:40pm	0.77	10	5.0	-
264	10/19/87	1	2:42pm	-0.76	2	2.0	-
265	10/19/87	3	2:46pm	-1.14	17	5.7	-
266	10/19/87	1	2:48pm	-0.76	7	7.0	-
267	10/19/87	1	2:49pm	-0.76	8	8.0	-
268	10/19/87	1	2:54pm	-0.76	5	5.0	-
269	10/19/87	1	2:59pm	-1.72	10	10.0	-
270	10/19/87	1	3:01pm	0.76	9	9.0	-
271	10/19/87	1	3:02pm	-0.96	7	7.0	-
272	10/19/87	1	3:05pm	-0.96	5	5.0	-
273	10/19/87	1	3:07pm	-1.15	7	7.0	-
274	10/19/87	2	3:14pm	-1.14	13	6.5	-
275	10/19/87	5	3:18pm	-0.95	34	6.8	-
276	10/19/87	1	3:20pm	-1.53	7	7.0	-
277	10/19/87	1	3:21pm	-0.96	6	6.0	-
278	10/19/87	1	3:23pm	0.76	10	10.0	-
279	10/19/87	2	3:25pm	-0.95	13	6.5	-
280	10/19/87	1	3:26pm	0.96	4	4.0	-
281	10/19/87	1	3:28pm	1.15	6	6.0	-
282	10/19/87	1	3:30pm	1.34	7	7.0	-
283	10/19/87	1	3:31pm	-0.96	6	6.0	-
284	10/19/87	1	3:32pm	0.76	4	4.0	-
285	10/19/87	1	3:35pm	-0.76	6	6.0	-
286	10/19/87	2	3:37pm	0.77	19	9.5	-
287	10/19/87	1	3:38pm	-0.96	8	8.0	-
288	10/19/87	1	3:40pm	-0.76	4	4.0	-
289	10/19/87	1	3:41pm	-0.96	9	9.0	-
290	10/19/87	1	3:45pm	-0.76	6	6.0	-
291	10/19/87	1	3:47pm	-0.76	6	6.0	-

k-minute-change							
	day	k	end time	size	vol.	ave. vol.	Event
292	10/19/87	1	3:48pm	0.96	8	8.0	-
293	10/19/87	1	3:49pm	-0.96	7	7.0	-
294	10/19/87	1	3:54pm	-0.76	5	5.0	-
295	10/19/87	3	4:00pm	-0.76	15	5.0	-
296	10/19/87	1	4:01pm	0.76	4	4.0	-
297	10/19/87	4	4:08pm	-0.77	26	6.5	-
298	10/19/87	1	4:14pm	1.15	9	9.0	-
299	10/20/87	1	9:31am	1.78	5	5.0	none (161 more during day)
300	10/20/87	1	9:33am	0.89	10	10.0	-
301	10/20/87	1	9:34am	-0.89	2	2.0	-
302	10/20/87	1	9:35am	2.22	5	5.0	-
303	10/20/87	3	9:38am	0.89	25	8.3	-
304	10/20/87	2	9:39am	0.89	16	8.0	-
305	10/20/87	1	9:40am	1.33	6	6.0	-
306	10/20/87	1	9:41am	0.89	4	4.0	-
307	10/20/87	1	9:43am	-1.78	7	7.0	-
308	10/20/87	2	9:45am	0.89	15	7.5	-
309	10/20/87	3	9:47am	0.89	20	6.7	-
310	10/20/87	5	9:51am	0.89	24	4.8	-
311	10/20/87	1	9:54am	-0.89	3	3.0	-
312	10/20/87	1	9:55am	0.89	7	7.0	-
313	10/20/87	1	9:57am	-0.89	9	9.0	-
314	10/20/87	3	10:02am	-0.89	18	6.0	-
315	10/20/87	1	10:05am	-1.33	6	6.0	-
316	10/20/87	1	10:08am	-0.89	6	6.0	-
317	10/20/87	1	10:12am	-0.89	10	10.0	-
318	10/20/87	3	10:16am	0.89	19	6.3	-
319	10/20/87	1	10:19am	-1.33	12	12.0	-
320	10/20/87	1	10:20am	0.89	5	5.0	-
321	10/20/87	3	10:26am	-0.89	15	5.0	-
322	10/20/87	2	10:28am	0.89	13	6.5	-
323	10/20/87	1	10:31am	0.89	7	7.0	-
324	10/20/87	1	10:33am	-0.89	3	3.0	-
325	10/20/87	1	10:35am	-0.89	9	9.0	-
326	10/20/87	1	10:36am	-2.22	7	7.0	-
327	10/20/87	1	10:37am	-4.00	9	9.0	-
328	10/20/87	1	10:38am	0.89	6	6.0	-
329	10/20/87	1	10:39am	1.33	5	5.0	-
330	10/20/87	1	10:41am	-1.11	3	3.0	-
331	10/20/87	1	10:42am	-1.56	5	5.0	-
332	10/20/87	1	10:43am	0.89	4	4.0	-
333	10/20/87	1	10:44am	-1.78	6	6.0	-
334	10/20/87	1	10:46am	2.22	8	8.0	-
335	10/20/87	1	10:47am	-0.89	8	8.0	-
336	10/20/87	1	10:48am	-0.89	5	5.0	-
337	10/20/87	2	10:50am	-0.89	10	5.0	-
338	10/20/87	1	10:51am	-1.33	7	7.0	-
339	10/20/87	1	10:52am	-2.22	10	10.0	-
340	10/20/87	1	10:54am	1.33	7	7.0	-
341	10/20/87	1	10:56am	1.78	8	8.0	-
342	10/20/87	1	10:57am	0.89	10	10.0	-
343	10/20/87	1	10:59am	0.89	4	4.0	-
344	10/20/87	1	11:01am	2.22	5	5.0	-
345	10/20/87	1	11:02am	-1.33	4	4.0	-
346	10/20/87	1	11:06am	-1.78	6	6.0	-
347	10/20/87	1	11:07am	1.33	3	3.0	-
348	10/20/87	1	11:08am	-0.89	4	4.0	-
349	10/20/87	1	11:09am	-0.89	6	6.0	-
350	10/20/87	1	11:10am	-1.33	3	3.0	-



k-minute-change							Event
day	k	end time	size	vol.	ave. vol.		
351	10/20/87	1	11:12am	-0.89	6	6.0	-
352	10/20/87	1	11:15am	-1.33	5	5.0	-
353	10/20/87	1	11:16am	0.89	4	4.0	-
354	10/20/87	1	11:18am	-2.22	7	7.0	-
355	10/20/87	1	11:19am	0.89	4	4.0	-
356	10/20/87	1	11:21am	-0.89	6	6.0	-
357	10/20/87	1	11:22am	-0.89	6	6.0	-
358	10/20/87	2	11:25am	-0.89	9	4.5	-
359	10/20/87	2	11:30am	0.89	6	3.0	-
360	10/20/87	2	11:31am	1.11	12	6.0	-
361	10/20/87	1	11:32am	-1.11	10	10.0	-
362	10/20/87	1	11:33am	0.89	4	4.0	-
363	10/20/87	1	11:36am	0.89	6	6.0	-
364	10/20/87	1	11:38am	1.78	6	6.0	-
365	10/20/87	2	11:40am	0.89	8	4.0	-
366	10/20/87	2	11:41am	1.11	10	5.0	-
367	10/20/87	3	11:43am	0.89	16	5.3	-
368	10/20/87	1	11:44am	0.89	6	6.0	-
369	10/20/87	1	11:47am	-0.89	6	6.0	-
370	10/20/87	2	11:49am	0.89	17	8.5	-
371	10/20/87	1	11:50am	-0.89	2	2.0	-
372	10/20/87	1	11:51am	-1.33	6	6.0	-
373	10/20/87	1	11:52am	-1.78	7	7.0	-
374	10/20/87	1	11:53am	-1.78	6	6.0	-
375	10/20/87	1	11:55am	-0.89	6	6.0	-
376	10/20/87	1	11:57am	-0.89	4	4.0	-
377	10/20/87	1	11:58am	-0.89	4	4.0	-
378	10/20/87	1	12:01pm	-2.00	8	8.0	-
379	10/20/87	1	12:03pm	0.89	2	2.0	-
380	10/20/87	1	12:12pm	-1.11	4	4.0	-
381	10/20/87	2	12:14pm	0.89	9	4.5	-
382	10/20/87	1	1:06pm	2.22	7	7.0	-
383	10/20/87	1	1:09pm	-1.78	10	10.0	-
384	10/20/87	1	1:10pm	1.78	10	10.0	-
385	10/20/87	1	1:11pm	-2.22	7	7.0	-
386	10/20/87	1	1:12pm	0.89	4	4.0	-
387	10/20/87	1	1:13pm	-0.89	4	4.0	-
388	10/20/87	1	1:14pm	-0.89	4	4.0	-
389	10/20/87	1	1:15pm	-1.33	4	4.0	-
390	10/20/87	1	1:17pm	-1.78	6	6.0	-
391	10/20/87	1	1:18pm	-1.33	5	5.0	-
392	10/20/87	1	1:20pm	0.89	6	6.0	-
393	10/20/87	1	1:24pm	0.89	4	4.0	-
394	10/20/87	1	1:26pm	0.89	8	8.0	-
395	10/20/87	1	1:27pm	0.89	6	6.0	-
396	10/20/87	1	1:33pm	1.78	10	10.0	-
397	10/20/87	1	1:35pm	0.89	6	6.0	-
398	10/20/87	1	1:37pm	0.89	5	5.0	-
399	10/20/87	1	1:38pm	-1.33	8	8.0	-
400	10/20/87	1	1:39pm	0.89	7	7.0	-
401	10/20/87	1	1:41pm	0.89	5	5.0	-
402	10/20/87	4	1:45pm	0.89	12	3.0	-
403	10/20/87	2	1:46pm	0.89	9	4.5	-
404	10/20/87	1	1:48pm	0.89	6	6.0	-
405	10/20/87	1	1:49pm	-1.33	7	7.0	-
406	10/20/87	3	1:52pm	0.89	13	4.3	-
407	10/20/87	2	1:54pm	-0.89	9	4.5	-
408	10/20/87	3	1:56pm	-1.11	18	6.0	-
409	10/20/87	1	1:57pm	-0.89	5	5.0	-
410	10/20/87	1	1:59pm	-0.89	6	6.0	-

k-minute-change							Event
day	k	end time	size	vol.	ave. vol.		
411	10/20/87	1	2:00pm	0.89	6	6.0	-
412	10/20/87	1	2:01pm	0.89	8	8.0	-
413	10/20/87	1	2:05pm	1.56	7	7.0	-
414	10/20/87	1	2:06pm	-1.11	5	5.0	-
415	10/20/87	1	2:07pm	-1.33	4	4.0	-
416	10/20/87	1	2:08pm	0.89	7	7.0	-
417	10/20/87	1	2:20pm	0.89	2	2.0	-
418	10/20/87	2	2:23pm	-0.89	11	5.5	-
419	10/20/87	3	2:27pm	0.89	14	4.7	-
420	10/20/87	1	2:30pm	0.89	6	6.0	-
421	10/20/87	2	2:36pm	0.89	12	6.0	-
422	10/20/87	3	2:39pm	-0.89	14	4.7	-
423	10/20/87	1	2:40pm	0.89	3	3.0	-
424	10/20/87	1	2:41pm	-0.89	5	5.0	-
425	10/20/87	1	2:42pm	0.89	5	5.0	-
426	10/20/87	1	2:44pm	0.89	7	7.0	-
427	10/20/87	2	2:48pm	0.89	9	4.5	-
428	10/20/87	3	2:50pm	0.89	14	4.7	-
429	10/20/87	1	2:51pm	0.89	3	3.0	-
430	10/20/87	2	2:53pm	0.89	6	3.0	-
431	10/20/87	1	2:54pm	-0.89	3	3.0	-
432	10/20/87	3	2:57pm	-0.89	15	5.0	-
433	10/20/87	1	2:59pm	-1.56	6	6.0	-
434	10/20/87	1	3:00pm	-0.89	4	4.0	-
435	10/20/87	4	3:04pm	-0.89	19	4.8	-
436	10/20/87	1	3:08pm	2.22	7	7.0	-
437	10/20/87	1	3:09pm	-0.89	4	4.0	-
438	10/20/87	1	3:10pm	0.89	6	6.0	-
439	10/20/87	1	3:12pm	-0.89	3	3.0	-
440	10/20/87	1	3:13pm	-0.89	8	8.0	-
441	10/20/87	1	3:14pm	0.89	4	4.0	-
442	10/20/87	1	3:16pm	-0.89	6	6.0	-
443	10/20/87	1	3:17pm	0.89	3	3.0	-
444	10/20/87	1	3:22pm	0.89	3	3.0	-
445	10/20/87	2	3:25pm	1.11	6	3.0	-
446	10/20/87	5	3:29pm	0.89	24	4.8	-
447	10/20/87	1	3:31pm	1.11	5	5.0	-
448	10/20/87	1	3:32pm	-0.89	9	9.0	-
449	10/20/87	1	3:36pm	-0.89	6	6.0	-
450	10/20/87	1	3:38pm	-0.89	8	8.0	-
451	10/20/87	1	3:40pm	-0.89	6	6.0	-
452	10/20/87	2	3:53pm	-0.89	11	5.5	-
453	10/20/87	1	3:55pm	-0.89	7	7.0	-
454	10/20/87	4	4:00pm	0.89	23	5.8	-
455	10/20/87	1	4:01pm	-0.89	5	5.0	-
456	10/20/87	1	4:02pm	-1.33	6	6.0	-
457	10/20/87	2	4:04pm	0.89	10	5.0	-
458	10/20/87	1	4:06pm	-1.33	8	8.0	-
459	10/20/87	1	4:08pm	0.89	10	10.0	-
460	10/20/87	1	4:09pm	1.11	4	4.0	-
461	10/21/87	1	9:31am	1.26	7	7.0	none (82 more during day)
462	10/21/87	1	9:32am	-1.26	4	4.0	-
463	10/21/87	1	9:33am	1.26	3	3.0	-
464	10/21/87	1	9:36am	0.84	10	10.0	-
465	10/21/87	1	9:40am	0.84	7	7.0	-
466	10/21/87	1	9:43am	0.84	6	6.0	-
467	10/21/87	2	9:46am	0.84	20	10.0	-
468	10/21/87	2	9:49am	0.84	14	7.0	-
469	10/21/87	2	9:50am	0.84	13	6.5	-

k-minute-change							
	day	k	end time	size	vol.	ave. vol.	Event
470	10/21/87	1	9:51am	1.46	11	11.0	-
471	10/21/87	1	9:52am	-1.26	8	8.0	-
472	10/21/87	1	9:55am	-1.67	9	9.0	-
473	10/21/87	1	9:57am	-0.84	5	5.0	-
474	10/21/87	1	9:58am	0.84	6	6.0	-
475	10/21/87	1	9:59am	-1.88	7	7.0	-
476	10/21/87	1	10:00am	0.84	7	7.0	-
477	10/21/87	2	10:04am	-1.04	12	6.0	-
478	10/21/87	1	10:09am	0.84	3	3.0	-
479	10/21/87	1	10:11am	-1.26	7	7.0	-
480	10/21/87	3	10:14am	0.84	13	4.3	-
481	10/21/87	3	10:23am	0.84	17	5.7	-
482	10/21/87	1	10:25am	-0.75	6	6.0	-
483	10/21/87	3	10:28am	-0.83	7	2.3	-
484	10/21/87	5	10:46am	-0.81	37	7.4	-
485	10/21/87	5	10:48am	-0.86	35	7.0	-
486	10/21/87	3	11:02am	0.80	16	5.3	-
487	10/21/87	4	11:04am	0.75	19	4.8	-
488	10/21/87	4	11:05am	0.97	20	5.0	-
489	10/21/87	2	11:06am	1.13	13	6.5	-
490	10/21/87	2	11:21am	1.05	8	4.0	-
491	10/21/87	4	11:29am	0.84	19	4.8	-
492	10/21/87	3	11:43am	-0.84	25	8.3	-
493	10/21/87	1	11:44am	-1.26	7	7.0	-
494	10/21/87	1	11:45am	0.84	4	4.0	-
495	10/21/87	2	11:53am	-1.04	7	3.5	-
496	10/21/87	3	11:55am	-1.04	11	3.7	-
497	10/21/87	2	11:57am	0.84	8	4.0	-
498	10/21/87	3	12:02pm	-1.04	15	5.0	-
499	10/21/87	2	12:03pm	-0.84	9	4.5	-
500	10/21/87	2	12:05pm	0.84	12	6.0	-
501	10/21/87	1	12:09pm	-0.84	5	5.0	-
502	10/21/87	2	12:20pm	1.05	7	3.5	-
503	10/21/87	4	12:26pm	0.84	15	3.8	-
504	10/21/87	4	12:27pm	0.84	17	4.3	-
505	10/21/87	4	12:29pm	0.84	16	4.0	-
506	10/21/87	2	12:30pm	0.84	12	6.0	-
507	10/21/87	2	12:39pm	-0.84	6	3.0	-
508	10/21/87	1	12:46pm	0.84	3	3.0	-
509	10/21/87	2	12:51pm	0.84	14	7.0	-
510	10/21/87	1	12:53pm	0.84	4	4.0	-
511	10/21/87	2	12:55pm	-0.84	9	4.5	-
512	10/21/87	2	1:07pm	0.84	8	4.0	-
513	10/21/87	2	1:14pm	0.84	5	2.5	-
514	10/21/87	4	1:49pm	1.05	11	2.8	-
515	10/21/87	5	1:52pm	0.84	17	3.4	-
516	10/21/87	5	1:53pm	0.84	18	3.6	-
517	10/21/87	2	1:57pm	-0.84	6	3.0	-
518	10/21/87	3	2:00pm	-0.84	17	5.7	-
519	10/21/87	3	2:03pm	1.26	16	5.3	-
520	10/21/87	3	2:06pm	-0.83	15	5.0	-
521	10/21/87	3	2:07pm	-0.83	12	4.0	-
522	10/21/87	4	2:09pm	-0.83	14	3.5	-
523	10/21/87	1	2:27pm	-0.84	5	5.0	-
524	10/21/87	1	2:33pm	-0.84	3	3.0	-
525	10/21/87	2	2:41pm	0.84	6	3.0	-
526	10/21/87	2	2:42pm	0.84	6	3.0	-
527	10/21/87	4	2:53pm	-0.84	10	2.5	-
528	10/21/87	2	2:54pm	-1.04	6	3.0	-
529	10/21/87	2	2:56pm	0.84	6	3.0	-

k-minute-change							
	day	k	end time	size	vol.	ave. vol.	Event
530	10/21/87	2	2:58pm	-0.84	6	3.0	-
531	10/21/87	2	3:01pm	-0.84	9	4.5	-
532	10/21/87	2	3:12pm	0.84	8	4.0	-
533	10/21/87	4	3:15pm	0.84	12	3.0	-
534	10/21/87	3	3:16pm	0.84	8	2.7	-
535	10/21/87	3	3:17pm	1.05	12	4.0	-
536	10/21/87	5	3:38pm	0.84	22	4.4	-
537	10/21/87	2	3:39pm	0.80	7	3.5	-
538	10/21/87	1	3:42pm	0.84	6	6.0	-
539	10/21/87	1	3:43pm	0.84	9	9.0	-
540	10/21/87	4	3:50pm	-0.83	19	4.8	-
541	10/21/87	2	3:54pm	0.84	11	5.5	-
542	10/21/87	4	4:14pm	1.05	27	6.8	-
543	10/21/87	1	4:15pm	-1.05	4	4.0	-
544	10/22/87	1	9:31am	-3.47	5	5.0	none (109 more during day)
545	10/22/87	1	9:33am	2.48	3	3.0	-
546	10/22/87	1	9:35am	2.97	6	6.0	-
547	10/22/87	1	9:36am	4.46	8	8.0	-
548	10/22/87	1	9:37am	5.94	6	6.0	-
549	10/22/87	1	9:38am	0.99	3	3.0	-
550	10/22/87	1	9:39am	-4.46	8	8.0	-
551	10/22/87	1	9:41am	0.99	5	5.0	-
552	10/22/87	1	9:42am	0.99	2	2.0	-
553	10/22/87	1	9:45am	-0.99	1	1.0	-
554	10/22/87	1	9:48am	0.99	4	4.0	-
555	10/22/87	1	9:51am	-1.49	5	5.0	-
556	10/22/87	1	9:52am	2.48	4	4.0	-
557	10/22/87	1	9:53am	-1.49	7	7.0	-
558	10/22/87	1	9:56am	1.49	3	3.0	-
559	10/22/87	1	9:58am	1.98	6	6.0	-
560	10/22/87	1	9:59am	-0.99	6	6.0	-
561	10/22/87	1	10:05am	0.99	6	6.0	-
562	10/22/87	1	10:07am	-0.99	6	6.0	-
563	10/22/87	2	10:09am	-0.99	5	2.5	-
564	10/22/87	1	10:10am	-0.99	2	2.0	-
565	10/22/87	1	10:13am	-1.49	11	11.0	-
566	10/22/87	1	10:14am	-0.99	8	8.0	-
567	10/22/87	1	10:16am	1.49	4	4.0	-
568	10/22/87	2	10:19am	0.99	8	4.0	-
569	10/22/87	1	10:22am	1.98	6	6.0	-
570	10/22/87	1	10:23am	1.49	6	6.0	-
571	10/22/87	2	10:27am	0.99	9	4.5	-
572	10/22/87	1	10:29am	0.99	4	4.0	-
573	10/22/87	1	10:31am	0.99	4	4.0	-
574	10/22/87	1	10:33am	0.99	5	5.0	-
575	10/22/87	1	10:34am	1.24	5	5.0	-
576	10/22/87	1	10:36am	-0.99	2	2.0	-
577	10/22/87	1	10:42am	1.49	5	5.0	-
578	10/22/87	1	10:43am	0.99	2	2.0	-
579	10/22/87	1	10:44am	-0.99	4	4.0	-
580	10/22/87	1	10:47am	0.99	2	2.0	-
581	10/22/87	1	10:48am	-1.49	3	3.0	-
582	10/22/87	1	10:51am	-1.49	3	3.0	-
583	10/22/87	3	10:54am	0.97	13	4.3	-
584	10/22/87	1	10:57am	0.99	5	5.0	-
585	10/22/87	1	11:01am	1.98	7	7.0	-
586	10/22/87	1	11:03am	0.99	6	6.0	-
587	10/22/87	3	11:07am	0.99	16	5.3	-
588	10/22/87	2	11:09am	-0.99	14	7.0	-

k-minute-change							Event
day	k	end time	size	vol.	ave. vol.		
589	10/22/87	1	11:14am	-1.24	4	4.0	-
590	10/22/87	1	11:15am	-2.23	5	5.0	-
591	10/22/87	1	11:18am	1.49	4	4.0	-
592	10/22/87	1	11:19am	0.99	7	7.0	-
593	10/22/87	1	11:21am	-0.99	4	4.0	-
594	10/22/87	3	11:25am	0.99	20	6.7	-
595	10/22/87	4	11:28am	0.99	22	5.5	-
596	10/22/87	3	11:30am	0.99	15	5.0	-
597	10/22/87	2	11:31am	0.99	11	5.5	-
598	10/22/87	2	11:32am	1.49	11	5.5	-
599	10/22/87	3	11:41am	-0.99	11	3.7	-
600	10/22/87	2	11:43am	1.24	8	4.0	-
601	10/22/87	3	11:45am	1.24	11	3.7	-
602	10/22/87	3	11:47am	0.99	8	2.7	-
603	10/22/87	2	11:50am	-1.48	5	2.5	-
604	10/22/87	1	11:51am	-1.98	6	6.0	-
605	10/22/87	1	11:53am	1.49	4	4.0	-
606	10/22/87	1	11:54am	1.73	4	4.0	-
607	10/22/87	2	11:59am	-0.99	8	4.0	-
608	10/22/87	2	12:03pm	-0.99	7	3.5	-
609	10/22/87	2	12:05pm	0.99	4	2.0	-
610	10/22/87	2	12:06pm	1.24	4	2.0	-
611	10/22/87	1	12:10pm	-0.99	7	7.0	-
612	10/22/87	4	12:16pm	-1.23	10	2.5	-
613	10/22/87	3	12:17pm	-0.99	8	2.7	-
614	10/22/87	3	12:21pm	-0.99	14	4.7	-
615	10/22/87	2	12:35pm	-0.99	6	3.0	-
616	10/22/87	2	12:54pm	-0.99	10	5.0	-
617	10/22/87	2	12:55pm	-0.99	9	4.5	-
618	10/22/87	3	1:02pm	-0.99	10	3.3	-
619	10/22/87	1	1:03pm	-0.99	3	3.0	-
620	10/22/87	2	1:08pm	1.49	12	6.0	-
621	10/22/87	5	1:12pm	0.99	18	3.6	-
622	10/22/87	1	1:29pm	0.99	4	4.0	-
623	10/22/87	2	1:32pm	1.24	5	2.5	-
624	10/22/87	3	1:39pm	-0.99	10	3.3	-
625	10/22/87	3	1:55pm	-1.23	14	4.7	-
626	10/22/87	5	1:58pm	-0.99	22	4.4	-
627	10/22/87	3	2:11pm	-0.99	7	2.3	-
628	10/22/87	3	2:18pm	-0.99	8	2.7	-
629	10/22/87	2	2:19pm	-0.99	8	4.0	-
630	10/22/87	2	2:20pm	-0.99	10	5.0	-
631	10/22/87	2	2:24pm	1.24	5	2.5	-
632	10/22/87	1	2:32pm	-0.94	7	7.0	-
633	10/22/87	1	2:33pm	0.99	4	4.0	-
634	10/22/87	1	2:42pm	0.99	5	5.0	-
635	10/22/87	1	2:45pm	0.99	7	7.0	-
636	10/22/87	1	2:54pm	-1.24	4	4.0	-
637	10/22/87	2	2:56pm	1.49	6	3.0	-
638	10/22/87	2	2:58pm	-0.99	5	2.5	-
639	10/22/87	1	2:59pm	-1.49	5	5.0	-
640	10/22/87	1	3:01pm	-1.24	5	5.0	-
641	10/22/87	1	3:03pm	1.49	4	4.0	-
642	10/22/87	4	3:08pm	-0.99	11	2.8	-
643	10/22/87	3	3:09pm	-0.99	7	2.3	-
644	10/22/87	3	3:10pm	-0.86	10	3.3	-
645	10/22/87	1	3:14pm	0.99	7	7.0	-
646	10/22/87	4	3:24pm	0.99	11	2.8	-
647	10/22/87	1	3:47pm	-0.99	9	9.0	-
648	10/22/87	2	3:53pm	0.77	7	3.5	-

								k-minute-change		
	day	k	end time	size	vol.	ave. vol.				
								Event		
649	10/22/87	3	3:56pm	-0.77	8	2.7	-			
650	10/22/87	3	3:59pm	0.99	10	3.3	-			
651	10/22/87	3	4:11pm	-0.99	14	4.7	-			
652	10/22/87	3	4:12pm	-0.99	14	4.7	-			
653	10/22/87	3	4:13pm	-0.99	13	4.3	-			
654	10/23/87	1	9:31am	-1.23	4	4.0	-	none (33 more during day)		
655	10/23/87	1	9:32am	-1.64	9	9.0	-			
656	10/23/87	3	9:35am	-0.82	20	6.7	-			
657	10/23/87	5	9:38am	-0.82	29	5.8	-			
658	10/23/87	1	9:39am	1.43	9	9.0	-			
659	10/23/87	2	9:41am	0.82	14	7.0	-			
660	10/23/87	2	9:45am	-0.82	6	3.0	-			
661	10/23/87	1	9:49am	1.23	6	6.0	-			
662	10/23/87	5	10:08am	-0.82	18	3.6	-			
663	10/23/87	4	10:15am	-0.82	15	3.8	-			
664	10/23/87	4	10:21am	0.82	22	5.5	-			
665	10/23/87	5	10:23am	0.82	18	3.6	-			
666	10/23/87	4	10:42am	0.82	11	2.8	-			
667	10/23/87	2	10:43am	1.03	7	3.5	-			
668	10/23/87	2	10:44am	0.82	6	3.0	-			
669	10/23/87	1	10:46am	1.43	5	5.0	-			
670	10/23/87	1	10:54am	0.82	3	3.0	-			
671	10/23/87	2	10:57am	-1.23	10	5.0	-			
672	10/23/87	4	11:02am	-0.82	13	3.3	-			
673	10/23/87	4	11:38am	0.82	24	6.0	-			
674	10/23/87	3	11:42am	0.82	13	4.3	-			
675	10/23/87	4	11:45am	0.82	10	2.5	-			
676	10/23/87	3	12:06pm	-0.82	11	3.7	-			
677	10/23/87	4	1:03pm	-0.82	11	2.8	-			
678	10/23/87	2	1:04pm	-0.94	4	2.0	-			
679	10/23/87	3	1:06pm	-0.82	13	4.3	-			
680	10/23/87	1	1:10pm	-0.82	4	4.0	-			
681	10/23/87	2	1:27pm	-1.02	9	4.5	-			
682	10/23/87	2	1:29pm	1.03	10	5.0	-			
683	10/23/87	4	1:50pm	0.82	11	2.8	-			
684	10/23/87	5	1:52pm	0.82	20	4.0	-			
685	10/23/87	2	1:53pm	0.82	11	5.5	-			
686	10/23/87	1	1:57pm	0.82	10	10.0	-			
687	10/23/87	1	2:00pm	-0.82	3	3.0	-			
688	10/26/87	1	9:32am	-1.50	9	9.0	-	none (22 more during day)		
689	10/26/87	1	9:33am	1.50	6	6.0	-			
690	10/26/87	5	9:39am	0.86	26	5.2	-			
691	10/26/87	5	9:44am	-0.86	22	4.4	-			
692	10/26/87	3	9:45am	-0.86	13	4.3	-			
693	10/26/87	5	9:56am	-0.86	21	4.2	-			
694	10/26/87	2	10:04am	0.86	9	4.5	-			
695	10/26/87	2	10:11am	0.86	13	6.5	-			
696	10/26/87	2	10:12am	0.75	13	6.5	-			
697	10/26/87	2	10:20am	-1.07	9	4.5	-			
698	10/26/87	5	10:30am	-0.86	12	2.4	-			
699	10/26/87	1	11:31am	-1.24	9	9.0	-			
700	10/26/87	5	11:40am	-0.86	25	5.0	-			
701	10/26/87	3	11:41am	-0.86	11	3.7	-			
702	10/26/87	5	11:44am	-0.86	18	3.6	-			
703	10/26/87	5	12:39pm	0.86	23	4.6	-			
704	10/26/87	3	12:41pm	0.86	17	5.7	-			
705	10/26/87	3	1:07pm	-0.75	15	5.0	-			
706	10/26/87	1	1:08pm	-0.86	4	4.0	-			

k-minute-change							
	day	k	end time	size	vol.	ave. vol.	Event
707	10/26/87	2	1:12pm	0.86	8	4.0	–
708	10/26/87	4	1:16pm	-0.86	19	4.8	–
709	10/26/87	3	1:22pm	-0.86	10	3.3	–
710	10/26/87	5	1:52pm	0.86	20	4.0	–
711	10/27/87	1	9:31am	0.84	9	9.0	none (22 more during day)
712	10/27/87	1	9:32am	-1.68	5	5.0	–
713	10/27/87	1	9:36am	-1.26	7	7.0	–
714	10/27/87	4	9:42am	-0.95	31	7.8	–
715	10/27/87	2	9:44am	0.84	9	4.5	–
716	10/27/87	2	10:03am	-1.05	14	7.0	–
717	10/27/87	5	10:16am	-0.84	23	4.6	–
718	10/27/87	4	10:18am	-0.94	13	3.3	–
719	10/27/87	1	10:23am	-0.84	7	7.0	–
720	10/27/87	4	10:32am	-0.84	17	4.3	–
721	10/27/87	2	10:35am	0.84	13	6.5	–
722	10/27/87	4	10:53am	0.84	14	3.5	–
723	10/27/87	4	11:02am	-1.15	12	3.0	–
724	10/27/87	2	11:03am	-1.05	8	4.0	–
725	10/27/87	3	11:08am	0.84	12	4.0	–
726	10/27/87	3	11:09am	0.84	8	2.7	–
727	10/27/87	3	11:12am	-0.84	13	4.3	–
728	10/27/87	5	11:54am	-0.84	16	3.2	–
729	10/27/87	5	12:12pm	0.84	19	3.8	–
730	10/27/87	5	12:13pm	0.91	20	4.0	–
731	10/27/87	5	12:16pm	0.84	17	3.4	–
732	10/27/87	3	1:50pm	0.88	17	5.7	–
733	10/27/87	2	1:51pm	0.84	12	6.0	–
734	10/28/87	2	9:37am	0.80	10	5.0	none (22 more during day)
735	10/28/87	5	10:03am	0.80	33	6.6	–
736	10/28/87	5	10:18am	0.84	23	4.6	–
737	10/28/87	2	11:14am	0.86	12	6.0	–
738	10/28/87	2	11:15am	0.91	8	4.0	–
739	10/28/87	4	11:21am	0.91	29	7.3	–
740	10/28/87	2	11:27am	0.80	8	4.0	–
741	10/28/87	4	11:59am	-0.82	19	4.8	–
742	10/28/87	4	12:01pm	-0.79	25	6.3	–
743	10/28/87	4	12:09pm	0.80	21	5.3	–
744	10/28/87	4	12:10pm	0.80	23	5.8	–
745	10/28/87	3	1:10pm	-0.77	15	5.0	–
746	10/28/87	3	1:12pm	-0.91	14	4.7	–
747	10/28/87	1	1:13pm	-0.91	9	9.0	–
748	10/28/87	5	1:32pm	0.80	37	7.4	–
749	10/28/87	1	1:33pm	1.36	7	7.0	–
750	10/28/87	1	1:34pm	-0.80	6	6.0	–
751	10/28/87	5	1:41pm	0.87	21	4.2	–
752	10/28/87	3	1:42pm	0.80	16	5.3	–
753	10/28/87	3	1:43pm	0.80	17	5.7	–
754	10/28/87	4	1:45pm	0.84	32	8.0	–
755	10/28/87	4	1:49pm	-0.79	22	5.5	–
756	10/28/87	2	1:55pm	-0.91	12	6.0	–
757	10/29/87	1	9:32am	1.27	6	6.0	none (7 more during day)
758	10/29/87	3	9:38am	-1.26	13	4.3	–
759	10/29/87	3	10:58am	0.76	16	5.3	–
760	10/29/87	3	11:02am	0.85	22	7.3	–
761	10/29/87	4	12:53pm	0.85	14	3.5	–
762	10/29/87	5	12:55pm	0.85	19	3.8	–
763	10/29/87	4	12:56pm	0.89	19	4.8	–

	day	k	k-minute-change			ave. vol.	Event
			end time	size	vol.		
764	10/29/87	5	1:39pm	-0.84	32	6.4	-
765	10/30/87	4	9:47am	0.79	28	7.0	none (5 more during day)
766	10/30/87	5	9:50am	0.75	30	6.0	-
767	10/30/87	4	11:15am	0.79	34	8.5	-
768	10/30/87	3	11:16am	0.75	22	7.3	-
769	10/30/87	4	1:51pm	0.77	40	10.0	-
770	10/30/87	3	1:52pm	0.75	27	9.0	-
771	11/ 2/87	4	9:34am	-0.78	38	9.5	none
772	11/ 2/87	5	9:36am	-0.78	50	10.0	-
773	11/ 3/87	2	9:35am	0.80	19	9.5	none (18 more during day)
774	11/ 3/87	3	9:48am	-0.95	27	9.0	-
775	11/ 3/87	3	9:49am	-0.83	26	8.7	-
776	11/ 3/87	4	9:51am	-0.90	31	7.8	-
777	11/ 3/87	5	10:09am	-0.83	33	6.6	-
778	11/ 3/87	5	1:08pm	0.78	44	8.8	-
779	11/ 3/87	2	1:25pm	1.00	19	9.5	-
780	11/ 3/87	2	1:26pm	0.98	15	7.5	-
781	11/ 3/87	4	1:49pm	-0.76	27	6.8	-
782	11/ 3/87	5	1:51pm	-0.80	34	6.8	-
783	11/ 3/87	4	2:06pm	0.84	38	9.5	-
784	11/ 3/87	2	2:10pm	0.84	23	11.5	-
785	11/ 3/87	3	2:12pm	1.22	28	9.3	-
786	11/ 3/87	4	2:15pm	0.80	30	7.5	-
787	11/ 3/87	2	2:16pm	0.80	18	9.0	-
788	11/ 3/87	2	2:17pm	1.00	20	10.0	-
789	11/ 3/87	1	2:18pm	-1.00	7	7.0	-
790	11/ 3/87	3	2:25pm	-0.80	17	5.7	-
791	11/ 3/87	2	2:26pm	-0.80	13	6.5	-
792	11/ 4/87	4	9:46am	0.77	38	9.5	none
793	11/ 4/87	3	9:47am	0.77	26	8.7	-
794	11/ 5/87	4	9:35am	0.81	38	9.5	none
795	11/ 6/87	4	11:41am	0.78	38	9.5	none
796	11/ 9/87	5	2:34pm	-0.83	52	10.4	none
797	11/10/87	5	9:35am	-0.88	48	9.6	none
798	11/10/87	4	9:36am	-0.88	39	9.8	-
799	11/10/87	5	10:10am	-0.82	51	10.2	-
800	11/19/87	2	4:02pm	-0.75	29	14.5	none
801	12/ 1/87	4	4:00pm	-0.77	64	16.0	none
802	12/ 8/87	4	3:58pm	0.85	43	10.8	none
803	12/10/87	3	3:39pm	-0.76	38	12.7	none
804	12/14/87	4	9:37am	0.78	65	16.3	none
805	12/15/87	5	3:31pm	0.75	59	11.8	none
806	1/ 8/88	4	3:39pm	-0.76	60	15.0	none (4 more through 3:49pm)
807	1/ 8/88	3	3:40pm	-0.76	31	10.3	-
808	1/ 8/88	3	3:47pm	-0.88	33	11.0	-



k-minute-change							
	day	k	end time	size	vol.	ave. vol.	Event
809	1/ 8/88	1	3:48pm	-1.03	11	11.0	-
810	1/ 8/88	1	3:49pm	0.76	11	11.0	-
811	1/11/88	2	9:52am	-0.82	21	10.5	none (7 more through 10:16am)
812	1/11/88	2	9:53am	-0.82	15	7.5	-
813	1/11/88	3	9:58am	-0.81	16	5.3	-
814	1/11/88	2	9:59am	-0.94	13	6.5	-
815	1/11/88	3	10:09am	0.80	22	7.3	-
816	1/11/88	3	10:10am	1.02	19	6.3	-
817	1/11/88	5	10:13am	0.82	31	6.2	-
818	1/11/88	5	10:16am	1.02	34	6.8	-
819	1/15/88	3	9:43am	-0.78	31	10.3	none
820	1/21/88	5	10:15am	-0.82	59	11.8	none
821	4/14/88	4	2:30pm	-0.86	58	14.5	none (6 more through 2:41pm)
822	4/14/88	4	2:31pm	-0.88	61	15.3	-
823	4/14/88	3	2:32pm	-0.78	43	14.3	-
824	4/14/88	3	2:34pm	-0.78	37	12.3	-
825	4/14/88	2	2:36pm	0.75	23	11.5	-
826	4/14/88	4	2:39pm	0.86	35	8.8	-
827	4/14/88	3	2:41pm	0.75	28	9.3	-
828	4/21/88	5	3:08pm	-0.81	64	12.8	none
829	10/13/89	3	3:04pm	-0.75	27	9.0	none (6 more through 3:44pm)
830	10/13/89	4	3:06pm	-0.85	31	7.8	-
831	10/13/89	2	3:32pm	1.05	11	5.5	-
832	10/13/89	2	3:33pm	1.12	12	6.0	-
833	10/13/89	1	3:36pm	-0.98	6	6.0	-
834	10/13/89	2	3:41pm	-0.84	16	8.0	-
835	10/13/89	1	3:44pm	-1.26	9	9.0	-
836	10/16/89	1	9:31am	1.20	10	10.0	none (18 more during day)
837	10/16/89	3	9:39am	-1.08	14	4.7	-
838	10/16/89	2	9:41am	0.87	16	8.0	-
839	10/16/89	5	10:12am	0.77	29	5.8	-
840	10/16/89	3	10:13am	0.99	21	7.0	-
841	10/16/89	3	10:14am	0.93	18	6.0	-
842	10/16/89	1	10:15am	0.77	5	5.0	-
843	10/16/89	4	10:19am	0.77	39	9.8	-
844	10/16/89	4	10:22am	0.77	18	4.5	-
845	10/16/89	4	10:24am	0.77	20	5.0	-
846	10/16/89	4	10:25am	0.77	26	6.5	-
847	10/16/89	2	10:32am	-0.77	17	8.5	-
848	10/16/89	5	10:38am	-0.77	46	9.2	-
849	10/16/89	4	11:14am	0.77	20	5.0	-
850	10/16/89	4	11:16am	0.77	33	8.3	-
851	10/16/89	4	11:17am	0.79	35	8.8	-
852	10/16/89	5	11:59am	-0.80	28	5.6	-
853	10/16/89	5	1:48pm	-0.83	61	12.2	-
854	10/16/89	4	1:59pm	0.91	53	13.3	-
855	10/17/89	5	11:17am	-0.79	58	11.6	none
856	10/17/89	5	11:25am	0.88	37	7.4	-
857	10/17/89	5	11:26am	0.88	41	8.2	-
858	10/24/89	4	10:24am	-0.78	56	14.0	none (9 more during day)
859	10/24/89	4	10:25am	-0.78	50	12.5	-

	k-minute-change						Event
	day	k	end time	size	vol.	ave. vol.	
860	10/24/89	5	10:27am	-0.92	69	13.8	-
861	10/24/89	5	10:28am	-0.80	57	11.4	-
862	10/24/89	4	10:30am	-0.78	43	10.8	-
863	10/24/89	4	10:32am	-0.78	37	9.3	-
864	10/24/89	2	10:36am	1.01	13	6.5	-
865	10/24/89	2	10:37am	1.30	12	6.0	-
866	10/24/89	5	3:24pm	0.88	54	10.8	-
867	10/24/89	3	3:25pm	0.78	37	12.3	-
868	1/12/90	3	9:33am	-0.86	22	7.3	none
869	1/12/90	4	2:36pm	-0.90	40	10.0	-
870	1/12/90	4	2:41pm	0.84	47	11.8	-
871	1/24/90	3	9:39am	-0.83	25	8.3	none
872	1/24/90	3	9:40am	-0.77	24	8.0	-
873	1/24/90	1	9:41am	0.77	7	7.0	-
874	7/23/90	5	10:30am	-0.75	58	11.6	none
875	7/23/90	4	10:32am	-0.77	49	12.3	-
876	7/23/90	2	10:33am	-1.10	19	9.5	-
877	7/23/90	5	10:54am	0.91	43	8.6	-
878	8/ 3/90	4	9:47am	-0.85	31	7.8	?time: Iraq invaded Kuwait.
879	8/ 3/90	3	9:48am	-0.85	19	6.3	-
880	8/ 3/90	3	9:49am	-1.13	22	7.3	-
881	8/ 3/90	5	9:55am	0.97	34	6.8	-
882	8/ 3/90	2	1:49pm	-1.11	14	7.0	-
883	8/ 3/90	4	2:01pm	0.88	19	4.8	-
884	8/ 3/90	5	2:04pm	0.86	28	5.6	-
885	8/ 6/90	5	10:27am	0.84	31	6.2	none
886	8/17/90	3	12:16pm	-0.78	40	13.3	12:11pm: Pentagon recommended maybe calling up reserves.
887	8/21/90	1	11:16am	0.77	13	13.0	11:13am: Iraq's Aziz says ready to discuss Gulf situation.
888	8/23/90	3	9:46am	0.96	16	5.3	none
889	9/20/90	4	10:25am	-0.82	59	14.8	none
890	9/27/90	4	10:59am	-0.77	50	12.5	none
891	10/ 1/90	4	12:18pm	0.76	43	10.8	none
892	10/ 1/90	4	12:19pm	0.78	38	9.5	-
893	10/ 2/90	5	9:39am	0.78	54	10.8	none
894	10/ 9/90	4	3:45pm	-0.79	47	11.8	3:39pm: (?) Brazil's central bank president sees rescheduling needed.
895	10/10/90	3	3:28pm	-0.88	39	13.0	none
896	10/12/90	3	11:55am	0.77	31	10.3	11:51pm: Opposition party in exile says Iraqi leaders considering Kuwait withdrawal.
897	10/15/90	3	10:45am	-0.82	42	14.0	none
898	10/15/90	2	10:46am	-0.82	29	14.5	-
899	12/ 4/90	5	3:33pm	0.99	45	9.0	?time: British TV reports Iraq makes new offer on Kuwait.
900	12/ 4/90	2	3:34pm	0.84	20	10.0	-
901	12/18/90	2	3:27pm	0.84	29	14.5	none

	k-minute-change							Event
	day	k	end time	size	vol.	ave. vol.		
902	12/18/90	3	3:29pm	0.88	23	7.7	-	
903	1/4/91	2	12:12pm	0.83	20	10.0	none	
904	1/9/91	2	1:57pm	-0.92	22	11.0	none	
905	1/9/91	1	1:58pm	-1.50	10	10.0	-	
906	1/9/91	1	1:59pm	-1.56	6	6.0	-	
907	1/9/91	1	2:00pm	0.94	5	5.0	-	
908	1/9/91	1	2:02pm	0.94	9	9.0	-	
909	1/9/91	2	2:04pm	-0.78	14	7.0	-	
910	1/14/91	4	3:19pm	0.84	44	11.0	none	
911	1/16/91	1	12:43pm	0.84	12	12.0	none	
912	1/17/91	2	9:44am	-0.93	13	6.5	none	
913	1/17/91	4	9:47am	-0.93	29	7.3	-	
914	4/30/91	2	9:32am	0.87	28	14.0	9:30am: Fed cut discount rate to 5.5%.	
915	5/10/91	5	3:25pm	-0.78	54	10.8	none	
916	11/15/91	4	3:41pm	-0.81	34	8.5	none	
917	11/15/91	4	3:46pm	0.76	21	5.3	-	
918	11/15/91	4	3:47pm	0.76	27	6.8	-	
919	11/19/91	5	10:47am	-0.81	57	11.4	none	
920	1/2/92	5	4:05pm	0.77	68	13.6	none	
921	7/2/92	4	10:21am	-0.82	62	15.5	?time: Fed cut discount rate to 3.0% from 3.5%;	
922	7/2/92	4	10:22am	-0.87	58	14.5	anemic employment report earlier.	
923	10/5/92	5	10:21am	-0.78	57	11.4	none	
924	10/5/92	3	10:26am	-0.83	33	11.0	-	
925	10/5/92	3	10:27am	-0.78	24	8.0	-	
926	10/5/92	3	11:16am	-0.86	27	9.0	-	
927	2/16/93	5	10:43am	-0.79	55	11.0	none	
928	3/2/94	1	5:15am	-1.52	4	4.0	none	
929	3/31/94	5	10:55am	-0.78	52	10.4	none	
930	3/31/94	5	10:57am	-0.76	45	9.0	-	
931	3/31/94	4	11:07am	0.75	27	6.8	-	
932	10/13/94	4	8:33am	0.75	70	17.5	8:30am: PPI down .5%; core up .1%.	
933	11/15/94	3	2:38pm	-0.83	38	12.7	2:37pm: Fed raised discount rate to 4.75% from 4.0%.	
934	11/22/94	4	3:51pm	-0.81	47	11.8	none	
935	2/26/96	5	3:27pm	-0.76	79	15.8	none	
936	2/26/96	5	3:28pm	-0.76	70	14.0	-	
937	3/8/96	4	8:33am	-0.79	110	27.5	8:30am: Payrolls up 705,000; largest increase in 12 years.	
938	3/8/96	1	8:34am	-0.75	17	17.0	-	
939	3/8/96	2	3:03pm	-0.80	21	10.5	none	
940	3/8/96	4	3:27pm	0.77	31	7.8	-	
941	3/8/96	4	3:28pm	0.77	26	6.5	-	
942	4/10/96	4	3:43pm	-0.76	46	11.5	none	

	day	k	k-minute-change			ave. vol.	Event
			end time	size	vol.		
943	5/ 3/96	4	8:30am	0.78	89	22.3	8:30am: Payrolls up 2,000.
944	5/ 3/96	4	8:31am	0.89	120	30.0	-
945	5/ 3/96	3	8:32am	0.96	137	45.7	-
946	5/ 3/96	3	8:35am	-0.77	172	57.3	-
947	6/ 7/96	2	8:31am	-0.93	94	47.0	8:30am: Payrolls up 348,000.
948	6/ 7/96	3	8:33am	-0.84	123	41.0	-
949	6/ 7/96	3	8:34am	-0.93	124	41.3	-
950	7/11/96	3	1:44pm	-0.79	20	6.7	none
951	7/15/96	4	3:29pm	-0.85	40	10.0	none
952	7/16/96	4	12:22pm	-0.84	40	10.0	none (7 more during day)
953	7/16/96	3	12:23pm	-0.83	19	6.3	-
954	7/16/96	2	12:59pm	-0.79	15	7.5	-
955	7/16/96	3	1:24pm	0.90	28	9.3	-
956	7/16/96	3	1:25pm	0.79	25	8.3	-
957	7/16/96	5	1:42pm	0.79	49	9.8	-
958	7/16/96	5	1:43pm	0.95	47	9.4	-
959	7/16/96	5	1:55pm	-0.79	58	11.6	-
960	8/ 2/96	2	8:31am	1.02	91	45.5	8:30am: Payrolls up 193,000.
961	9/ 6/96	1	8:30am	-0.81	61	61.0	8:30am: Payrolls up 250,000.
962	9/13/96	3	8:32am	0.84	123	41.0	8:30am: CPI up .1%; core up .1%. Also retail sales data.
963	12/11/96	5	2:12am	0.80	31	6.2	none
964	1/23/97	4	3:46pm	-0.84	27	6.8	none
965	1/23/97	5	3:48pm	-0.76	35	7.0	-
966	1/23/97	5	3:55pm	-0.75	41	8.2	-
967	1/23/97	4	4:00pm	0.76	37	9.3	-
968	1/29/97	3	8:31am	0.76	91	30.3	8:30am: Durable goods down 1.7%.
969	2/ 5/97	3	3:40pm	0.76	23	7.7	none
970	2/26/97	4	10:04am	-0.97	35	8.8	10:00am: Greenspan testimony; angst about stock market.
971	2/26/97	2	10:05am	-0.86	14	7.0	-
972	3/ 7/97	1	8:30am	-0.81	48	48.0	8:30am: Payrolls up 339,000.
973	3/ 7/97	2	8:32am	0.75	87	43.5	-
974	3/27/97	4	3:37pm	-0.87	30	7.5	none
975	3/27/97	4	3:45pm	0.75	26	6.5	-
976	4/15/97	3	8:31am	0.78	115	38.3	8:30am: CPI up .1%; core up .2%.
977	4/15/97	3	8:32am	0.99	182	60.7	-
978	4/29/97	2	8:31am	1.09	106	53.0	8:30am: Employment cost index up .6% in first quarter.
979	5/20/97	4	2:17pm	0.82	51	12.8	2:15pm: Fed kept rates unchanged.
980	6/ 6/97	1	8:31am	-0.88	77	77.0	8:30am: Payrolls up 138,000.
981	7/ 9/97	4	3:38pm	-0.75	43	10.8	none
982	7/18/97	4	10:08am	-0.80	44	11.0	none

	day	k	k-minute-change			ave. vol.	Event
			end time	size	vol.		
983	8/ 1/97	3	10:11am	-0.94	24	8.0	10:00am: (?) New orders up 1.2%; strong NAPM report; Michigan sentiment revised up.
984	8/ 8/97	2	8:29am	-0.89	39	19.5	none???
985	8/ 8/97	3	8:32am	0.76	65	21.7	-
986	8/13/97	4	8:31am	0.79	164	41.0	8:30am: PPI down .1%; core down .1%. Also retail sales data.
987	8/13/97	4	8:32am	0.85	226	56.5	-
988	8/13/97	4	8:33am	1.04	265	66.3	-
989	8/13/97	3	8:34am	0.84	192	64.0	-
990	8/13/97	5	10:22am	-0.82	64	12.8	none
991	8/13/97	3	10:23am	-0.77	38	12.7	-
992	8/13/97	3	10:24am	-0.77	34	11.3	-
993	8/22/97	5	3:53pm	0.83	57	11.4	none
994	9/ 2/97	2	10:03am	0.84	22	11.0	10:00am: NAPM 56.8 vs. 58.6 last month.
995	10/ 3/97	2	8:31am	0.77	97	48.5	8:30am: Payrolls up 215,000.
996	10/10/97	1	8:30am	-0.82	73	73.0	8:30am: PPI up .5%; core up .4%.
997	10/27/97	3	1:52pm	-0.85	28	9.3	none
998	10/27/97	4	1:55pm	-0.80	42	10.5	-
999	10/27/97	2	1:56pm	-0.80	13	6.5	-
1000	10/27/97	2	3:12pm	-1.17	20	10.0	-
1001	10/27/97	2	3:13pm	-0.96	22	11.0	-
1002	10/27/97	4	3:23pm	-0.96	27	6.8	-
1003	10/27/97	3	3:24pm	-0.85	18	6.0	-
1004	10/28/97	3	6:48am	-0.75	42	14.0	none
1005	10/28/97	4	9:42am	0.82	27	6.8	none
1006	10/28/97	4	10:13am	0.87	40	10.0	none (15 more during day)
1007	10/28/97	3	10:15am	0.82	33	11.0	-
1008	10/28/97	2	10:16am	0.76	18	9.0	-
1009	10/28/97	2	10:19am	0.82	17	8.5	-
1010	10/28/97	4	10:22am	0.82	42	10.5	-
1011	10/28/97	2	10:30am	0.82	11	5.5	-
1012	10/28/97	1	10:31am	0.93	8	8.0	-
1013	10/28/97	1	10:32am	-0.81	9	9.0	-
1014	10/28/97	5	10:53am	-0.81	34	6.8	-
1015	10/28/97	2	10:54am	-0.93	11	5.5	-
1016	10/28/97	4	11:01am	0.93	33	8.3	-
1017	10/28/97	4	11:02am	0.82	30	7.5	-
1018	10/28/97	5	12:46pm	0.82	42	8.4	-
1019	10/28/97	5	1:23pm	0.76	31	6.2	-
1020	10/28/97	3	3:10pm	0.87	34	11.3	-
1021	10/28/97	2	3:11pm	1.17	21	10.5	-
1022	10/30/97	5	10:02am	0.88	45	9.0	none
1023	11/ 7/97	5	9:35am	-0.86	52	10.4	none
1024	11/ 7/97	5	9:40am	0.76	44	8.8	-
1025	12/ 5/97	5	8:30am	-0.82	129	25.8	8:30am: Payrolls up 404,000.
1026	12/ 5/97	2	8:31am	-0.92	151	75.5	-
1027	12/23/97	5	3:56pm	-0.79	51	10.2	none
1028	4/30/98	2	8:31am	0.87	154	77.0	8:30am: Employment cost index up .7% in first quarter. Also GDP data released.

	day	k	k-minute-change			ave. vol.	Event
			end time	size	vol.		
1029	8/ 4/98	4	3:43pm	-0.93	39	9.8	none
1030	8/ 4/98	4	3:46pm	-0.80	34	8.5	-
1031	8/ 5/98	4	9:43am	-0.88	22	5.5	none
1032	8/ 5/98	4	3:45pm	0.93	41	10.3	none
1033	8/27/98	3	11:38am	-0.84	29	9.7	none
1034	8/27/98	4	11:41am	-0.84	46	11.5	-
1035	8/27/98	5	2:47pm	0.84	36	7.2	none
1036	8/27/98	5	2:48pm	0.84	40	8.0	-
1037	8/28/98	5	11:49am	0.77	47	9.4	none
1038	8/28/98	5	11:50am	0.86	45	9.0	-
1039	8/31/98	4	10:09am	-0.96	31	7.8	none
1040	8/31/98	4	3:07pm	-0.77	47	11.8	none (10 more during day)
1041	8/31/98	4	3:08pm	-0.77	35	8.8	-
1042	8/31/98	2	3:09pm	-0.87	11	5.5	-
1043	8/31/98	2	3:10pm	-0.77	13	6.5	-
1044	8/31/98	5	3:15pm	0.77	68	13.6	-
1045	8/31/98	5	3:31pm	-0.77	29	5.8	-
1046	8/31/98	3	3:32pm	-0.77	22	7.3	-
1047	8/31/98	3	3:33pm	-1.06	22	7.3	-
1048	8/31/98	5	3:36pm	-0.87	43	8.6	-
1049	8/31/98	3	3:38pm	-0.77	23	7.7	-
1050	8/31/98	1	3:41pm	-1.16	11	11.0	-
1051	9/ 1/98	2	9:32am	0.94	19	9.5	none (21 more during day)
1052	9/ 1/98	4	9:35am	0.94	41	10.3	-
1053	9/ 1/98	5	10:00am	-0.83	45	9.0	-
1054	9/ 1/98	4	10:01am	-0.83	39	9.8	-
1055	9/ 1/98	4	10:03am	-0.77	38	9.5	-
1056	9/ 1/98	3	10:13am	-0.83	29	9.7	-
1057	9/ 1/98	4	10:16am	-0.78	48	12.0	-
1058	9/ 1/98	2	10:17am	-0.83	17	8.5	-
1059	9/ 1/98	4	10:22am	0.94	38	9.5	-
1060	9/ 1/98	4	10:25am	0.78	37	9.3	-
1061	9/ 1/98	4	10:26am	0.83	37	9.3	-
1062	9/ 1/98	2	10:27am	0.89	20	10.0	-
1063	9/ 1/98	2	10:28am	1.15	20	10.0	-
1064	9/ 1/98	5	10:34am	0.83	51	10.2	-
1065	9/ 1/98	5	10:44am	-0.83	54	10.8	-
1066	9/ 1/98	4	10:49am	0.78	21	5.3	-
1067	9/ 1/98	3	10:50am	0.94	16	5.3	-
1068	9/ 1/98	4	10:52am	0.83	24	6.0	-
1069	9/ 1/98	4	11:36am	0.78	18	4.5	-
1070	9/ 1/98	3	11:54am	0.83	35	11.7	-
1071	9/ 1/98	5	12:26pm	0.89	44	8.8	-
1072	9/ 1/98	4	3:25pm	0.78	22	5.5	-
1073	9/ 2/98	3	9:37am	0.75	30	10.0	none
1074	9/ 2/98	5	3:49pm	-0.80	58	11.6	-
1075	9/ 3/98	4	9:35am	-0.82	37	9.3	none
1076	9/ 3/98	5	10:30am	0.93	47	9.4	-
1077	9/ 3/98	5	10:56am	-0.77	45	9.0	-
1078	9/ 3/98	4	3:42pm	0.77	37	9.3	-
1079	9/ 4/98	5	2:50pm	-0.76	39	7.8	none

	day	k	k-minute-change			ave. vol.	Event
			end time	size	vol.		
1080	9/ 4/98	5	3:39pm	0.76	48	9.6	-
1081	9/ 4/98	5	3:41pm	0.85	45	9.0	-
1082	9/10/98	5	3:36pm	-0.80	49	9.8	none
1083	9/10/98	3	3:42pm	0.76	37	12.3	-
1084	9/11/98	4	9:46am	0.87	49	12.3	none
1085	9/11/98	4	9:48am	0.77	51	12.8	-
1086	9/11/98	5	9:50am	0.77	69	13.8	-
1087	9/11/98	3	9:53am	0.77	36	12.0	-
1088	9/11/98	2	10:03am	0.92	20	10.0	-
1089	9/11/98	4	2:50pm	0.82	34	8.5	-
1090	9/11/98	4	2:51pm	0.82	37	9.3	-
1091	9/16/98	5	3:43pm	0.81	40	8.0	none
1092	9/29/98	2	2:17pm	-0.89	18	9.0	2:17pm: Fed cut funds rate 25 basis points.
1093	9/29/98	2	2:18pm	-1.08	18	9.0	-
1094	9/29/98	3	2:20pm	-0.84	30	10.0	-
1095	10/ 1/98	5	11:19am	-0.79	51	10.2	none
1096	10/ 2/98	5	10:18am	-0.90	47	9.4	none
1097	10/ 2/98	4	12:41pm	0.80	42	10.5	none
1098	10/ 2/98	5	2:52pm	0.75	45	9.0	none
1099	10/ 2/98	4	3:15pm	0.75	30	7.5	none
1100	10/ 5/98	4	3:37pm	0.78	31	7.8	none
1101	10/ 5/98	4	3:42pm	0.80	33	8.3	-
1102	10/ 5/98	4	3:43pm	0.75	30	7.5	-
1103	10/ 7/98	5	10:12am	0.91	41	8.2	none
1104	10/ 7/98	5	3:06pm	0.76	41	8.2	none
1105	10/ 7/98	4	3:26pm	-0.75	44	11.0	none
1106	10/ 7/98	5	3:41pm	0.91	48	9.6	none
1107	10/ 8/98	3	9:50am	-0.78	32	10.7	none (8 more during day)
1108	10/ 8/98	5	11:54am	-0.94	52	10.4	-
1109	10/ 8/98	4	1:11pm	-0.78	28	7.0	-
1110	10/ 8/98	4	3:00pm	0.89	39	9.8	-
1111	10/ 8/98	5	3:39pm	0.84	47	9.4	-
1112	10/ 8/98	4	3:40pm	0.79	35	8.8	-
1113	10/ 8/98	4	3:46pm	0.84	32	8.0	-
1114	10/ 8/98	4	3:49pm	0.79	41	10.3	-
1115	10/ 8/98	4	3:51pm	0.84	41	10.3	-
1116	10/ 9/98	4	10:14am	-0.77	31	7.8	none
1117	10/15/98	1	3:15pm	0.89	11	11.0	3:14pm: Fed cut funds rate and discount rate 25 basis
1118	10/15/98	1	3:16pm	1.00	11	11.0	points (not a normal FOMC meeting)
1119	10/15/98	1	3:17pm	1.00	9	9.0	-
1120	10/15/98	1	3:18pm	1.29	10	10.0	-
1121	10/15/98	1	3:19pm	1.00	8	8.0	-
1122	10/15/98	1	3:21pm	-1.19	8	8.0	-
1123	10/15/98	1	3:22pm	-1.29	7	7.0	-
1124	10/15/98	5	3:44pm	0.80	36	7.2	-
1125	10/15/98	5	3:45pm	0.80	34	6.8	-
1126	10/15/98	5	3:46pm	0.80	36	7.2	-
1127	11/17/98	2	2:19pm	0.83	19	9.5	2:15pm: Fed cut funds rate and discount rate 25 basis points.

	day	k	k-minute-change			ave. vol.	Event
			end time	size	vol.		
1128	11/17/98	2	2:20pm	1.14	17	8.5	-
1129	1/15/99	5	7:31am	-0.78	198	39.6	none
1130	1/15/99	4	8:10am	0.77	102	25.5	8:10am: Estado said Brazil central bank won't intervene in foreign exchange market.
1131	1/15/99	5	8:12am	0.81	125	25.0	
1132	1/15/99	5	8:16am	0.82	159	31.8	-
1133	1/31/99	1	5:57pm	0.85	9	9.0	none
1134	2/23/99	5	10:04am	-0.82	68	13.6	10:00am: Greenspan testimony; economy may be stretched.
1135	3/ 5/99	2	8:31am	1.05	152	76.0	8:30am: Payrolls up 275,000.
1136	4/16/99	4	9:48am	-0.78	47	11.8	none
1137	4/19/99	5	1:17pm	-0.86	54	10.8	none
1138	5/12/99	1	9:47am	-0.81	17	17.0	?time: Rubin to announce resignation; Summers is successor.
1139	5/12/99	1	9:48am	-0.81	12	12.0	
1140	5/12/99	1	9:50am	0.88	12	12.0	
1141	5/18/99	4	2:14pm	-0.80	41	10.3	2:11pm: Fed let rates stand; adopted tightening bias.
1142	6/ 1/99	5	10:05am	-0.85	54	10.8	10:00am: NAPM 55.2 vs. 52.8 last month.
1143	6/ 4/99	3	8:33am	-0.88	191	63.7	8:30am: Payrolls up 11,000.
1144	6/13/99	1	5:35pm	-0.77	2	2.0	none
1145	6/15/99	1	4:19pm	-1.01	3	3.0	none
1146	6/16/99	3	8:30am	0.79	170	56.7	8:30am: CPI unchanged; core up .1%.
1147	6/30/99	2	2:17pm	0.96	24	12.0	2:15pm: Fed raised funds rate 25 basis points; adapted neutral bias.
1148	6/30/99	3	2:19pm	0.89	31	10.3	
1149	8/ 6/99	2	8:30am	-0.83	151	75.5	8:30am: Payrolls up 310,000.
1150	9/ 3/99	1	8:30am	0.89	150	150.0	8:30am: Payrolls up 124,000.
1151	9/10/99	1	8:31am	0.80	93	93.0	8:30am: PPI up .5%; core down .1%.
1152	9/15/99	1	8:30am	0.81	106	106.0	8:30am: CPI up .3%; core up .1%.
1153	10/ 5/99	2	2:12pm	-0.93	32	16.0	2:12pm: Fed let rates stand; adopted tightening bias.
1154	10/ 5/99	2	2:13pm	-0.80	27	13.5	
1155	10/ 8/99	1	8:30am	0.75	126	126.0	8:30am: Payrolls down 8,000.
1156	10/13/99	2	4:21pm	-0.77	5	2.5	none
1157	10/13/99	1	4:22pm	-0.84	1	1.0	-
1158	10/15/99	1	8:30am	-0.95	150	150.0	8:30am: PPI up 1.1%; core up .8%.
1159	10/20/99	1	4:27pm	1.21	3	3.0	none

Notes:

CPI = consumer price index; core excludes food and energy.

PPI = producers price index; core excludes food and energy.

Percentage changes are at monthly rates except for the change in the employment cost index, which is at a quarterly rate.

NAPM = National Association of Purchasing Managers.