VECM 02.sas: Original cq data

Obs	SYMBOL	DATE	TIME	BID	OFR	BIDSIZ	OFRSIZ	MODE	EX	MMID
21	MTZ	20051003	9:30:47	0.01	9999.00	1	1	12	T	CDRG
22	MTZ	20051003	9:30:47	0.00	0.00	0	0	12	T	CDRG
23	MTZ	20051003	9:30:55	10.78	10.90	1	1	10	N	
24	MTZ	20051003	9:30:56	10.31	11.41	1	1	12	X	
25	MTZ	20051003	9:30:56	10.38	11.30	1	1	12	M	
26	MTZ	20051003	9:30:56	0.00	0.00	0	0	12	T	TRIM
27	MTZ	20051003	9:30:56	10.67	11.03	17	5	12	T	TRIM
28	MTZ	20051003	9:30:56	10.67	11.03	17	5	12	T	CAES
29	MTZ	20051003	9:30:59	10.75	10.90	1	1	12	N	
30	MTZ	20051003	9:31:00	10.28	11.41	1	1	12	X	
31	MTZ	20051003	9:31:01	10.77	11.30	15	1	12	M	
32	MTZ	20051003	9:31:02	10.75	10.90	2	1	12	N	
33	MTZ	20051003	9:31:25	9.97	9999.00	1	1	12	T	CDRG
34	MTZ	20051003	9:31:25	9.97	11.72	1	1	12	T	CDRG
35	MTZ	20051003	9:31:31	10.75	10.90	2	2	12	N	
36	MTZ	20051003	9:31:57	10.77	10.90	1	2	12	N	
37	MTZ	20051003	9:31:57	10.30	11.41	1	1	12	X	
38	MTZ	20051003	9:31:58	10.31	11.40	1	1	12	X	
39	MTZ	20051003	9:31:58	10.78	10.89	1	1	12	N	
40	MTZ	20051003	9:32:00	10.78	10.85	1	2	12	N	
41	MTZ	20051003	9:32:01	10.78	11.85	1	30	12	P	
42	MTZ	20051003	9:32:01	10.31	11.36	1	1	12	X	
43	MTZ	20051003	9:32:14	10.35	11.36	1	1	12	X	
44	MTZ	20051003	9:32:14	10.82	10.85	1	2	12	N	
45	MTZ	20051003	9:32:37	10.82	10.85	1	3	12	N	
46	MTZ	20051003	9:32:41	10.82	10.85	2	3	12	N	
47	MTZ	20051003	9:33:19	10.82	10.85	3	3	12	N	
48	MTZ	20051003	9:33:52	10.83	10.85	1	3	12	N	
49	MTZ	20051003	9:33:53	10.36	11.36	1	1	12	X	
50	MTZ	20051003	9:33:54	10.83	10.85	1	1	12	N	

VECM 02.sas: Parallel quotes, every five minutes.

Stock Symbol=MTZ Quote date=20051003

time	Nbid	Nofr	Pbid	Pofr	Xbid	Xofr	Mbid	Mofr	Tbid	Tofr
9:34:59	10.78	10.90	9.95	.	.	.	.	.	8.53	.
9:39:59	10.84	10.90	10.84	10.90	10.37	11.41	10.77	11.30	10.67	11.03
9:44:59	10.87	10.98	10.87	10.97	10.40	11.49	10.77	11.30	10.67	11.03
9:49:59	10.94	10.98	10.87	11.60	10.47	11.49	10.77	11.35	10.67	11.03
9:54:59	11.00	11.02	10.91	11.60	10.53	11.53	10.77	11.35	10.67	11.03
9:59:59	10.98	11.00	10.91	11.01	10.51	11.51	10.77	11.35	10.67	11.03
10:04:59	11.00	11.03	10.91	11.03	10.53	11.54	10.77	11.35	10.67	11.03
10:09:59	11.01	11.02	10.91	11.21	10.54	11.53	10.77	11.35	10.67	11.03
10:14:59	10.97	10.98	10.92	11.16	10.50	11.49	10.77	11.00	10.67	11.03
10:19:59	10.98	10.99	10.94	11.16	10.51	11.50	10.77	11.00	10.67	11.03
10:24:59	10.93	10.97	10.93	10.98	10.46	11.48	10.77	11.00	10.67	11.03
10:29:59	10.97	10.98	10.96	11.02	10.50	11.49	10.77	11.00	10.67	11.03
10:34:59	10.98	11.00	10.94	11.12	10.51	11.51	10.77	11.00	10.67	11.03
10:39:59	10.98	11.00	10.94	11.00	10.51	11.51	10.77	11.00	10.67	11.03
10:44:59	11.00	11.01	10.94	11.04	10.53	11.52	10.77	11.35	10.67	11.03
10:49:59	10.97	11.01	10.95	11.01	10.50	11.52	10.77	11.35	10.67	11.03
10:54:59	11.00	11.01	10.99	11.05	10.53	11.52	10.77	11.35	10.67	11.03
10:59:59	11.02	11.03	10.99	11.06	10.55	11.54	10.77	11.35	10.67	11.03
11:04:59	11.01	11.02	10.94	11.04	10.54	11.53	10.77	11.35	10.67	11.03
11:09:59	10.96	11.00	10.96	11.02	10.49	11.51	10.77	11.35	10.67	11.03
11:14:59	10.99	11.00	10.98	11.12	10.52	11.51	10.77	11.35	10.67	11.03
11:19:59	10.99	11.00	10.98	11.00	10.52	11.51	10.77	11.35	10.67	11.03
11:24:59	11.00	11.01	10.98	11.02	10.53	11.52	10.77	11.35	10.67	11.03
11:29:59	11.01	11.02	11.01	11.06	10.54	11.53	10.77	11.35	10.67	11.03
11:34:59	11.02	11.03	11.01	11.06	10.55	11.54	10.77	11.35	10.67	11.03
11:39:59	11.02	11.03	11.01	11.06	10.55	11.54	10.77	11.35	10.67	11.24
11:44:59	11.02	11.03	11.00	11.06	10.55	11.54	10.77	11.35	10.67	11.24
11:49:59	11.02	11.03	11.02	11.03	10.55	11.54	10.77	11.35	10.67	11.24
11:54:59	11.02	11.03	11.02	11.06	10.55	11.54	10.77	11.35	11.01	11.24
11:59:59	11.02	11.04	11.00	11.06	10.55	11.55	10.77	11.44	11.01	11.24

VECM 02.sas: Parallel quotes, every five minutes.

The MEANS Procedure

Variable	Label	N	Mean	Std Dev	Minimum	Maximum
DATE	Quote date	1750	16725.27	8.4446435	16712.00	16740.00
time	Quote time	1750	46846.31	7213.93	34499.00	59399.00
Nbid		1729	10.2819375	0.4318737	9.2100000	11.3800000
Nofr		1729	10.3021689	0.4319354	9.2400000	11.3900000
Pbid		1729	10.1334413	0.5334112	7.7200000	11.3700000
Pofr		1704	10.4050646	0.4639030	9.2700000	11.9000000
Xbid		1717	9.8116191	0.4313449	8.7500000	10.9000000
Xofr		1715	10.8110845	0.4317151	9.7500000	11.8900000
Mbid		1711	9.7675511	1.0849452	4.6500000	11.3300000
Mofr		1711	10.8369082	1.1711018	9.4700000	17.4500000
Tbid		1729	10.0066744	0.5243886	6.4500000	11.1600000
Tofr		1708	10.5502225	0.4468598	9.3000000	13.2000000

The MODEL Procedure

Model Summary	
Model Variables	4
Parameters	63
Equations	4
Number of Statements	11
Program Lag Length	4

Note: The parameter zmean2 is shared by all 4 of the equations to be estimated.

Note: The parameter zmean3 is shared by all 4 of the equations to be estimated.

Note: The parameter zmean4 is shared by all 4 of the equations to be estimated.

The 4 Equations to Estimate	
Nbid =	F(zmean2, zmean3, zmean4, c_Nbid_Nbid_1, c_Nbid_Nbid_2, c_Nbid_Nbid_3, c_Nbid_Nofr_1, c_Nbid_Nofr_2, c_Nbid_Nofr_3, g_Nbid_2, c_Nbid_Pbid_1, c_Nbid_Pbid_2, c_Nbid_Pbid_3, g_Nbid_3, c_Nbid_Pofr_1, c_Nbid_Pofr_2, c_Nbid_Pofr_3, g_Nbid_4)
Nofr =	F(zmean2, zmean3, zmean4, c_Nofr_Nbid_1, c_Nofr_Nbid_2, c_Nofr_Nbid_3, c_Nofr_Nofr_1, c_Nofr_Nofr_2, c_Nofr_Nofr_3, g_Nofr_2, c_Nofr_Pbid_1, c_Nofr_Pbid_2, c_Nofr_Pbid_3, g_Nofr_3, c_Nofr_Pofr_1, c_Nofr_Pofr_2, c_Nofr_Pofr_3, g_Nofr_4)
Pbid =	F(zmean2, zmean3, zmean4, c_Pbid_Nbid_1, c_Pbid_Nbid_2, c_Pbid_Nbid_3, c_Pbid_Nofr_1, c_Pbid_Nofr_2, c_Pbid_Nofr_3, g_Pbid_2, c_Pbid_Pbid_1, c_Pbid_Pbid_2, c_Pbid_Pbid_3, g_Pbid_3, c_Pbid_Pofr_1, c_Pbid_Pofr_2, c_Pbid_Pofr_3, g_Pbid_4)
Pofr =	F(zmean2, zmean3, zmean4, c_Pofr_Nbid_1, c_Pofr_Nbid_2, c_Pofr_Nbid_3, c_Pofr_Nofr_1, c_Pofr_Nofr_2, c_Pofr_Nofr_3, g_Pofr_2, c_Pofr_Pbid_1, c_Pofr_Pbid_2, c_Pofr_Pbid_3, g_Pofr_3, c_Pofr_Pofr_1, c_Pofr_Pofr_2, c_Pofr_Pofr_3, g_Pofr_4)

The estimation lag length (Lagexec)	4

NOTE: At OLS Iteration 9 CONVERGE=0.001 Criteria Met.

The MODEL Procedure
OLS Estimation Summary

Data Set Options	
DATA=	CQALL

Minimization Summary	
Parameters Estimated	63
Method	Gauss
Iterations	9
Subiterations	11
Average Subiterations	1.222222

Final Convergence Criteria	
R	0.000154
PPC(g_Nofr_3)	0.065272
RPC(g_Nofr_3)	2.548444
Object	0.000011
Trace(S)	0.089889
Objective Value	0.089015

Observations Processed	
Read	1750
Solved	1746
First	5
Last	1750
Used	1620
Missing	126
Lagged	4

NYSE versus P; Quotes sampled every five minutes; VECM order=3

The MODEL Procedure

Nonlinear OLS Summary of Residual Errors							
Equation	DF Model	DF Error	SSE	MSE	Root MSE	R- Square	Adj R- Sq
Nbid	15.75	1604	0.9461	0.000590	0.0243	0.9969	0.9968
Nofr	15.75	1604	0.9434	0.000588	0.0243	0.9969	0.9968
Pbid	15.75	1604	86.7781	0.0541	0.2326	0.7978	0.7959
Pofr	15.75	1604	55.5368	0.0346	0.1861	0.8339	0.8324

Nonlinear OLS Parameter Estimates				
Parameter	Estimate	Approx Std Err	t Value	Approx Pr > |t|
zmean2	- 0.01868	0.00171	- 10.94	<.0001
zmean3	0.133998	0.0131	10.20	<.0001
zmean4	- 0.11917	0.0111	- 10.73	<.0001
c_Nbid_Nbid_1	- 0.17872	0.0719	- 2.49	0.0130
c_Nbid_Nbid_2	- 0.04214	0.0624	- 0.67	0.4999
c_Nbid_Nbid_3	- 0.05069	0.0487	- 1.04	0.2979
c_Nbid_Nofr_1	0.169286	0.0725	2.34	0.0197
c_Nbid_Nofr_2	0.010734	0.0623	0.17	0.8632
c_Nbid_Nofr_3	0.119701	0.0502	2.39	0.0171
g_Nbid_2	- 0.29602	0.0738	- 4.01	<.0001
c_Nbid_Pbid_1	- 0.00178	0.00330	- 0.54	0.5895
c_Nbid_Pbid_2	- 0.00078	0.00294	- 0.27	0.7901
c_Nbid_Pbid_3	- 0.00063	0.00243	- 0.26	0.7946
g_Nbid_3	- 0.00519	0.00335	- 1.55	0.1212
c_Nbid_Pofr_1	- 0.00649	0.00417	- 1.56	0.1195
c_Nbid_Pofr_2	- 0.00194	0.00374	- 0.52	0.6041
c_Nbid_Pofr_3	- 0.0009	0.00317	- 0.28	0.7762
g_Nbid_4	- 0.00841	0.00418	- 2.01	0.0443
c_Nofr_Nbid_1	0.065534	0.0717	0.91	0.3610
c_Nofr_Nbid_2	0.069331	0.0623	1.11	0.2661
c_Nofr_Nbid_3	0.0202	0.0486	0.42	0.6777
c_Nofr_Nofr_1	- 0.09153	0.0724	- 1.26	0.2061
c_Nofr_Nofr_2	- 0.09835	0.0622	- 1.58	0.1138
c_Nofr_Nofr_3	0.055744	0.0501	1.11	0.2657
g_Nofr_2	0.203428	0.0736	2.76	0.0058

NYSE versus P; Quotes sampled every five minutes; VECM order=3

The MODEL Procedure

Nonlinear OLS Parameter Estimates				
Parameter	Estimate	Approx Std Err	t Value	Approx Pr > |t|
c_Nofr_Pbid_1	0.000977	0.00329	0.30	0.7668
c_Nofr_Pbid_2	0.00255	0.00294	0.87	0.3856
c_Nofr_Pbid_3	0.002067	0.00243	0.85	0.3951
g_Nofr_3	- 0.00035	0.00334	- 0.11	0.9159
c_Nofr_Pofr_1	- 0.00523	0.00416	- 1.26	0.2090
c_Nofr_Pofr_2	- 0.00251	0.00374	- 0.67	0.5020
c_Nofr_Pofr_3	- 0.00174	0.00316	- 0.55	0.5827
g_Nofr_4	- 0.00926	0.00417	- 2.22	0.0265
c_Pbid_Nbid_1	0.242865	0.6884	0.35	0.7243
c_Pbid_Nbid_2	1.018821	0.5983	1.70	0.0888
c_Pbid_Nbid_3	1.086959	0.4663	2.33	0.0199
c_Pbid_Nofr_1	- 0.20889	0.6945	- 0.30	0.7636
c_Pbid_Nofr_2	- 0.96803	0.5968	- 1.62	0.1050
c_Pbid_Nofr_3	- 1.18369	0.4805	- 2.46	0.0139
g_Pbid_2	0.17804	0.7066	0.25	0.8011
c_Pbid_Pbid_1	- 0.1535	0.0316	- 4.85	<.0001
c_Pbid_Pbid_2	- 0.04365	0.0282	- 1.55	0.1218
c_Pbid_Pbid_3	- 0.01471	0.0233	- 0.63	0.5281
g_Pbid_3	0.458464	0.0321	14.28	<.0001
c_Pbid_Pofr_1	0.020971	0.0399	0.53	0.5995
c_Pbid_Pofr_2	- 0.02479	0.0359	- 0.69	0.4894
c_Pbid_Pofr_3	- 0.02711	0.0303	- 0.89	0.3714
g_Pbid_4	0.079155	0.0401	1.98	0.0484
c_Pofr_Nbid_1	- 0.09041	0.5507	- 0.16	0.8696
c_Pofr_Nbid_2	- 0.1938	0.4786	- 0.40	0.6856
c_Pofr_Nbid_3	- 0.18893	0.3730	- 0.51	0.6126
c_Pofr_Nofr_1	- 0.11168	0.5556	- 0.20	0.8407
c_Pofr_Nofr_2	0.173608	0.4774	0.36	0.7162
c_Pofr_Nofr_3	0.192556	0.3844	0.50	0.6164
g_Pofr_2	- 0.0438	0.5652	- 0.08	0.9383
c_Pofr_Pbid_1	0.01893	0.0253	0.75	0.4544
c_Pofr_Pbid_2	0.005999	0.0226	0.27	0.7903
c_Pofr_Pbid_3	- 0.00447	0.0186	- 0.24	0.8104

NYSE versus P; Quotes sampled every five minutes; VECM order=3

The MODEL Procedure

Nonlinear OLS Parameter Estimates				
Parameter	Estimate	Approx Std Err	t Value	Approx Pr > |t|
g_Pofr_3	0.038759	0.0257	1.51	0.1314
c_Pofr_Pofr_1	- 0.13687	0.0319	- 4.29	<.0001
c_Pofr_Pofr_2	- 0.06492	0.0287	- 2.26	0.0238
c_Pofr_Pofr_3	- 0.07068	0.0243	- 2.91	0.0036
g_Pofr_4	0.419555	0.0321	13.09	<.0001

Number of Observations		Statistics for System	
Used	1620	Objective	0.0890
Missing	126	Objective*N	144.2045

Note: An identity matrix is used for the covariance of residuals for this estimation.

Covariance of Residuals				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.0005898	0.0005224	0.0011973	0.0008566
Nofr	0.0005224	0.0005881	0.0012509	0.0009186
Pbid	0.0011973	0.0012509	0.0540926	- .0009400
Pofr	0.0008566	0.0009186	- .0009400	0.0346186

NYSE versus P; Quotes sampled every five minutes; VECM order=3
VECM2. Long- run (cumulative) impact coefficients (dataset=LRCoeff)

Variable	Nbid	Nofr	Pbid	Pofr
Nbid	0.39946	0.58284	.003260392	0.020259
Nofr	0.39947	0.58283	.003258424	0.020262
Pbid	0.39915	0.58319	.003246879	0.020254
Pofr	0.39972	0.58254	.003263442	0.020279

Variance Decomposition

Coefficient matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.3994622	0.5828431	0.0032604	0.0202594
Nofr	0.3994709	0.5828327	0.0032584	0.0202622
Pbid	0.3991538	0.5831911	0.0032469	0.0202537
Pofr	0.3997164	0.5825413	0.0032634	0.0202789

Covariance matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.0005898	0.0005224	0.0011973	0.0008566
Nofr	0.0005224	0.0005881	0.0012509	0.0009186
Pbid	0.0011973	0.0012509	0.0540926	- 0.00094
Pofr	0.0008566	0.0009186	- 0.00094	0.0346186

Correlation matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	1.000	0.887	0.212	0.190
Nofr	0.887	1.000	0.222	0.204
Pbid	0.212	0.222	1.000	- 0.022
Pofr	0.190	0.204	- 0.022	1.000

Purmutation used in decomposition / ordering of variables:			
Nbid	Nofr	Pbid	Pofr

Permuted coefficients				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.3994622	0.5828431	0.0032604	0.0202594
Nofr	0.3994709	0.5828327	0.0032584	0.0202622
Pbid	0.3991538	0.5831911	0.0032469	0.0202537
Pofr	0.3997164	0.5825413	0.0032634	0.0202789

Permuted covariance matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.0005898	0.0005224	0.0011973	0.0008566
Nofr	0.0005224	0.0005881	0.0012509	0.0009186
Pbid	0.0011973	0.0012509	0.0540926	- 0.00094
Pofr	0.0008566	0.0009186	- 0.00094	0.0346186

Variance Decomposition

Cholesky factor of permuted covariance matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.0242851	0	0	0
Nofr	0.0215128	0.0111932	0	0
Pbid	0.0493024	0.0169978	0.2266561	0
Pofr	0.0352725	0.014276	- 0.01289	0.1816713

Variance contributions (ordered)				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.0005343	0.0000472	2.2833E- 7	0.0000135
Nofr	0.0005343	0.0000472	2.2787E- 7	0.0000136
Pbid	0.0005343	0.0000472	2.2548E- 7	0.0000135
Pofr	0.0005343	0.0000471	2.2875E- 7	0.0000136

Total variance	
Nbid	0.0005953
Nofr	0.0005953
Pbid	0.0005952
Pofr	0.0005953

Proportional contributions				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.898	0.079	0.000	0.023
Nofr	0.898	0.079	0.000	0.023
Pbid	0.898	0.079	0.000	0.023
Pofr	0.898	0.079	0.000	0.023

Variance Decomposition

Coefficient matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.3994622	0.5828431	0.0032604	0.0202594
Nofr	0.3994709	0.5828327	0.0032584	0.0202622
Pbid	0.3991538	0.5831911	0.0032469	0.0202537
Pofr	0.3997164	0.5825413	0.0032634	0.0202789

Covariance matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.0005898	0.0005224	0.0011973	0.0008566
Nofr	0.0005224	0.0005881	0.0012509	0.0009186
Pbid	0.0011973	0.0012509	0.0540926	- 0.00094
Pofr	0.0008566	0.0009186	- 0.00094	0.0346186

Correlation matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	1.000	0.887	0.212	0.190
Nofr	0.887	1.000	0.222	0.204
Pbid	0.212	0.222	1.000	- 0.022
Pofr	0.190	0.204	- 0.022	1.000

Purmutation used in decomposition / ordering of variables:			
Nofr	Nbid	Pbid	Pofr

Permuted coefficients				
	Nofr	Nbid	Pbid	Pofr
Nbid	0.5828431	0.3994622	0.0032604	0.0202594
Nofr	0.5828327	0.3994709	0.0032584	0.0202622
Pbid	0.5831911	0.3991538	0.0032469	0.0202537
Pofr	0.5825413	0.3997164	0.0032634	0.0202789

Permuted covariance matrix				
	Nofr	Nbid	Pbid	Pofr
Nofr	0.0005881	0.0005224	0.0012509	0.0009186
Nbid	0.0005224	0.0005898	0.0011973	0.0008566
Pbid	0.0012509	0.0011973	0.0540926	- 0.00094
Pofr	0.0009186	0.0008566	- 0.00094	0.0346186

Variance Decomposition

Cholesky factor of permuted covariance matrix				
	Nofr	Nbid	Pbid	Pofr
Nbid	0.0242506	0	0	0
Nofr	0.0215434	0.0112091	0	0
Pbid	0.0515821	0.0076775	0.2266561	0
Pofr	0.0378798	0.0036162	- 0.01289	0.1816713

Variance contributions (ordered)				
	Nofr	Nbid	Pbid	Pofr
Nbid	0.0005605	0.0000209	2.2833E- 7	0.0000135
Nofr	0.0005605	0.0000209	2.2787E- 7	0.0000136
Pbid	0.0005606	0.0000209	2.2548E- 7	0.0000135
Pofr	0.0005605	0.000021	2.2875E- 7	0.0000136

Total variance	
Nbid	0.0005953
Nofr	0.0005953
Pbid	0.0005952
Pofr	0.0005953

Proportional contributions				
	Nofr	Nbid	Pbid	Pofr
Nbid	0.942	0.035	0.000	0.023
Nofr	0.942	0.035	0.000	0.023
Pbid	0.942	0.035	0.000	0.023
Pofr	0.942	0.035	0.000	0.023

Variance Decomposition

Coefficient matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.3994622	0.5828431	0.0032604	0.0202594
Nofr	0.3994709	0.5828327	0.0032584	0.0202622
Pbid	0.3991538	0.5831911	0.0032469	0.0202537
Pofr	0.3997164	0.5825413	0.0032634	0.0202789

Covariance matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.0005898	0.0005224	0.0011973	0.0008566
Nofr	0.0005224	0.0005881	0.0012509	0.0009186
Pbid	0.0011973	0.0012509	0.0540926	- 0.00094
Pofr	0.0008566	0.0009186	- 0.00094	0.0346186

Correlation matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	1.000	0.887	0.212	0.190
Nofr	0.887	1.000	0.222	0.204
Pbid	0.212	0.222	1.000	- 0.022
Pofr	0.190	0.204	- 0.022	1.000

Purmutation used in decomposition / ordering of variables:			
Pbid	Pofr	Nbid	Nofr

Permuted coefficients				
	Pbid	Pofr	Nbid	Nofr
Nbid	0.0032604	0.0202594	0.3994622	0.5828431
Nofr	0.0032584	0.0202622	0.3994709	0.5828327
Pbid	0.0032469	0.0202537	0.3991538	0.5831911
Pofr	0.0032634	0.0202789	0.3997164	0.5825413

Permuted covariance matrix				
	Pbid	Pofr	Nbid	Nofr
Pbid	0.0540926	- 0.00094	0.0011973	0.0012509
Pofr	- 0.00094	0.0346186	0.0008566	0.0009186
Nbid	0.0011973	0.0008566	0.0005898	0.0005224
Nofr	0.0012509	0.0009186	0.0005224	0.0005881

Variance Decomposition

Cholesky factor of permuted covariance matrix				
	Pbid	Pofr	Nbid	Nofr
Nbid	0.2325783	0	0	0
Nofr	- 0.004042	0.1860168	0	0
Pbid	0.005148	0.0047168	0.0232597	0
Pofr	0.0053784	0.0050552	0.0202457	0.011123

Variance contributions (ordered)				
	Pbid	Pofr	Nbid	Nofr
Nbid	0.0000344	0.0000739	0.0004448	0.000042
Nofr	0.0000344	0.000074	0.0004448	0.000042
Pbid	0.0000344	0.0000739	0.0004448	0.0000421
Pofr	0.0000344	0.000074	0.0004448	0.000042

Total variance	
Nbid	0.0005953
Nofr	0.0005953
Pbid	0.0005952
Pofr	0.0005953

Proportional contributions				
	Pbid	Pofr	Nbid	Nofr
Nbid	0.058	0.124	0.747	0.071
Nofr	0.058	0.124	0.747	0.071
Pbid	0.058	0.124	0.747	0.071
Pofr	0.058	0.124	0.747	0.071

VECM 02.sas: Parallel quotes, every five seconds.

Stock Symbol=MTZ Quote date=20051003

time	Nbid	Nofr	Pbid	Pofr	Xbid	Xofr	Mbid	Mofr	Tbid	Tofr
9:30:59	10.78	10.90	9.95	.	10.31	11.41	10.38	11.3	8.53	11.03
9:31:04	10.75	10.90	9.95	.	10.28	11.41	10.38	11.3	10.67	11.03
9:31:09	10.75	10.90	9.95	.	10.28	11.41	10.77	11.3	10.67	11.03
9:31:14	10.75	10.90	9.95	.	10.28	11.41	10.77	11.3	10.67	11.03
9:31:19	10.75	10.90	9.95	.	10.28	11.41	10.77	11.3	10.67	11.03
9:31:24	10.75	10.90	9.95	.	10.28	11.41	10.77	11.3	10.67	11.03
9:31:29	10.75	10.90	9.95	.	10.28	11.41	10.77	11.3	10.67	11.03
9:31:34	10.75	10.90	9.95	.	10.28	11.41	10.77	11.3	10.67	11.03
9:31:39	10.75	10.90	9.95	.	10.28	11.41	10.77	11.3	10.67	11.03
9:31:44	10.75	10.90	9.95	.	10.28	11.41	10.77	11.3	10.67	11.03
9:31:49	10.75	10.90	9.95	.	10.28	11.41	10.77	11.3	10.67	11.03
9:31:54	10.75	10.90	9.95	.	10.28	11.41	10.77	11.3	10.67	11.03
9:31:59	10.75	10.90	9.95	.	10.28	11.41	10.77	11.3	10.67	11.03
9:32:04	10.78	10.85	9.95	11.85	10.31	11.40	10.77	11.3	10.67	11.03
9:32:09	10.78	10.85	10.78	11.85	10.31	11.36	10.77	11.3	10.67	11.03
9:32:14	10.78	10.85	10.78	11.85	10.31	11.36	10.77	11.3	10.67	11.03
9:32:19	10.82	10.85	10.78	11.85	10.35	11.36	10.77	11.3	10.67	11.03
9:32:24	10.82	10.85	10.78	11.85	10.35	11.36	10.77	11.3	10.67	11.03
9:32:29	10.82	10.85	10.78	11.85	10.35	11.36	10.77	11.3	10.67	11.03
9:32:34	10.82	10.85	10.78	11.85	10.35	11.36	10.77	11.3	10.67	11.03
9:32:39	10.82	10.85	10.78	11.85	10.35	11.36	10.77	11.3	10.67	11.03
9:32:44	10.82	10.85	10.78	11.85	10.35	11.36	10.77	11.3	10.67	11.03
9:32:49	10.82	10.85	10.78	11.85	10.35	11.36	10.77	11.3	10.67	11.03
9:32:54	10.82	10.85	10.78	11.85	10.35	11.36	10.77	11.3	10.67	11.03
9:32:59	10.82	10.85	10.78	11.85	10.35	11.36	10.77	11.3	10.67	11.03
9:33:04	10.82	10.85	10.78	11.85	10.35	11.36	10.77	11.3	10.67	11.03
9:33:09	10.82	10.85	10.78	11.85	10.35	11.36	10.77	11.3	10.67	11.03
9:33:14	10.82	10.85	10.78	11.85	10.35	11.36	10.77	11.3	10.67	11.03
9:33:19	10.82	10.85	10.78	11.85	10.35	11.36	10.77	11.3	10.67	11.03
9:33:24	10.82	10.85	10.78	11.85	10.35	11.36	10.77	11.3	10.67	11.03

NYSE versus P; Quotes sampled every five seconds; VECM order=12

The MEANS Procedure

Variable	Label	N	Mean	Std Dev	Minimum	Maximum
DATE	Quote date	103144	16725.27	8.4434058	16712.00	16740.00
time	Quote time	103144	46528.87	7091.47	34214.00	59374.00
Nbid		103123	10.2820975	0.4308914	9.2000000	11.3800000
Nofr		103123	10.3017877	0.4315472	9.2400000	11.3900000
Pbid		103123	10.1371331	0.5313401	7.7200000	11.3800000
Pofr		102679	10.4098603	0.4690017	9.2700000	12.3900000
Xbid		103113	9.8121267	0.4309944	8.7300000	10.9100000
Xofr		103110	10.8113667	0.4317049	9.7500000	11.9000000
Mbid		103108	9.7414373	1.1394400	4.6500000	11.3300000
Mofr		103108	10.8664390	1.2294291	9.4600000	17.4500000
Tbid		103123	10.0300018	0.4719513	6.4500000	11.3600000
Tofr		103104	10.5517663	0.4461343	9.3000000	13.2000000

NYSE versus P; Quotes sampled every five seconds; VECM order=12
VECM2. Long- run (cumulative) impact coefficients (dataset=LRCoeff)

Variable	Nbid	Nofr	Pbid	Pofr
Nbid	0.40603	0.45537	.008745434	.008310477
Nofr	0.40603	0.45537	.008745397	.008310501
Pbid	0.40603	0.45537	.008747153	.008309354
Pofr	0.40603	0.45538	.008744398	.008311155

Variance Decomposition

Coefficient matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.4060292	0.4553746	0.0087454	0.0083105
Nofr	0.4060291	0.4553747	0.0087454	0.0083105
Pbid	0.4060312	0.4553718	0.0087472	0.0083094
Pofr	0.406028	0.4553763	0.0087444	0.0083112

Covariance matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.0000238	6.106E-6	6.5825E-6	9.1785E-6
Nofr	6.106E-6	0.0000188	0.0000134	3.5228E-6
Pbid	6.5825E-6	0.0000134	0.0034559	-0.000024
Pofr	9.1785E-6	3.5228E-6	-0.000024	0.0024475

Correlation matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	1.000	0.288	0.023	0.038
Nofr	0.288	1.000	0.053	0.016
Pbid	0.023	0.053	1.000	-0.008
Pofr	0.038	0.016	-0.008	1.000

Purmutation used in decomposition / ordering of variables:			
Nbid	Nofr	Pbid	Pofr

Permuted coefficients				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.4060292	0.4553746	0.0087454	0.0083105
Nofr	0.4060291	0.4553747	0.0087454	0.0083105
Pbid	0.4060312	0.4553718	0.0087472	0.0083094
Pofr	0.406028	0.4553763	0.0087444	0.0083112

Permuted covariance matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.0000238	6.106E-6	6.5825E-6	9.1785E-6
Nofr	6.106E-6	0.0000188	0.0000134	3.5228E-6
Pbid	6.5825E-6	0.0000134	0.0034559	-0.000024
Pofr	9.1785E-6	3.5228E-6	-0.000024	0.0024475

Variance Decomposition

Cholesky factor of permuted covariance matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.0048784	0	0	0
Nofr	0.0012516	0.0041573	0	0
Pbid	0.0013493	0.0028243	0.0587033	0
Pofr	0.0018815	0.0002809	- 0.000464	0.0494338

Variance contributions (ordered)				
	Nbid	Nofr	Pbid	Pofr
Nbid	6.6469E- 6	3.687E- 6	2.5962E- 7	1.6877E- 7
Nofr	6.6469E- 6	3.687E- 6	2.5962E- 7	1.6877E- 7
Pbid	6.647E- 6	3.687E- 6	2.5973E- 7	1.6873E- 7
Pofr	6.6469E- 6	3.687E- 6	2.5956E- 7	1.688E- 7

Total variance	
Nbid	0.0000108
Nofr	0.0000108
Pbid	0.0000108
Pofr	0.0000108

Proportional contributions				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.618	0.343	0.024	0.016
Nofr	0.618	0.343	0.024	0.016
Pbid	0.618	0.343	0.024	0.016
Pofr	0.618	0.343	0.024	0.016

Variance Decomposition

Coefficient matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.4060292	0.4553746	0.0087454	0.0083105
Nofr	0.4060291	0.4553747	0.0087454	0.0083105
Pbid	0.4060312	0.4553718	0.0087472	0.0083094
Pofr	0.406028	0.4553763	0.0087444	0.0083112

Covariance matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	0.0000238	6.106E-6	6.5825E-6	9.1785E-6
Nofr	6.106E-6	0.0000188	0.0000134	3.5228E-6
Pbid	6.5825E-6	0.0000134	0.0034559	-0.000024
Pofr	9.1785E-6	3.5228E-6	-0.000024	0.0024475

Correlation matrix				
	Nbid	Nofr	Pbid	Pofr
Nbid	1.000	0.288	0.023	0.038
Nofr	0.288	1.000	0.053	0.016
Pbid	0.023	0.053	1.000	-0.008
Pofr	0.038	0.016	-0.008	1.000

Purmutation used in decomposition / ordering of variables:			
Pbid	Pofr	Nbid	Nofr

Permuted coefficients				
	Pbid	Pofr	Nbid	Nofr
Nbid	0.0087454	0.0083105	0.4060292	0.4553746
Nofr	0.0087454	0.0083105	0.4060291	0.4553747
Pbid	0.0087472	0.0083094	0.4060312	0.4553718
Pofr	0.0087444	0.0083112	0.406028	0.4553763

Permuted covariance matrix				
	Pbid	Pofr	Nbid	Nofr
Pbid	0.0034559	-0.000024	6.5825E-6	0.0000134
Pofr	-0.000024	0.0024475	9.1785E-6	3.5228E-6
Nbid	6.5825E-6	9.1785E-6	0.0000238	6.106E-6
Nofr	0.0000134	3.5228E-6	6.106E-6	0.0000188

Variance Decomposition

Cholesky factor of permuted covariance matrix				
	Pbid	Pofr	Nbid	Nofr
Nbid	0.0587867	0	0	0
Nofr	- 0.000406	0.0494709	0	0
Pbid	0.000112	0.0001865	0.0048735	0
Pofr	0.0002285	0.0000731	0.0012448	0.0041524

Variance contributions (ordered)				
	Pbid	Pofr	Nbid	Nofr
Nbid	4.3591E- 7	2.7052E- 7	6.4804E- 6	3.5755E- 6
Nofr	4.3591E- 7	2.7052E- 7	6.4804E- 6	3.5755E- 6
Pbid	4.3605E- 7	2.7046E- 7	6.4804E- 6	3.5755E- 6
Pofr	4.3583E- 7	2.7055E- 7	6.4804E- 6	3.5756E- 6

Total variance	
Nbid	0.0000108
Nofr	0.0000108
Pbid	0.0000108
Pofr	0.0000108

Proportional contributions				
	Pbid	Pofr	Nbid	Nofr
Nbid	0.041	0.025	0.602	0.332
Nofr	0.041	0.025	0.602	0.332
Pbid	0.041	0.025	0.602	0.332
Pofr	0.040	0.025	0.602	0.332