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In a recent paper in this *Review* (1983), Bradford Cornell presented a survey of existing literature on the empirical relationship between weekly money supply announcements made by the Federal Reserve and changes in the spot prices of several financial instruments at the time of the announcement. Cornell sought to unify and extend the work done in this area by estimating a number of relationships which bear directly on this issue. Among his main conclusions are that "asset markets are efficient with respect to money supply announcements" since "only the unexpected component of the announcement is correlated with price changes," and that the unexpected component of money supply announcements has "a highly significant positive correlation" with short-term interest rates, but only after the October 6, 1979 change in Fed policy (p. 651). Both of these conclusions are at variance with results reported in similar studies by Jacob Grossman (1981), V. Vance Roley (1982), and Thomas Urich and Paul Wachtel (1981). All three find that unanticipated announcements matter in periods before October 6, 1979, and Roley and Urich-Wachtel find that anticipated announcements matter in at least some of their regressions.

The main difference between Cornell's study and those mentioned above is that more exact measures of the change in short-term interest rates are used in the latter studies. Since the money supply announcements are made at 4:00 P.M., Cornell uses the change in the yield on three-month Treasury bills from 3:30 P.M. on the day of the announcement to 3:30 P.M. on the day after the announcement. Urich-Wachtel consider Treasury bill yield changes from 3:30 P.M. on the day of the announcement to 10:30 A.M. the next day. Grossman and Roley further refine the measure by looking at yield changes from 3:30 to 5:00 on the day of the announcement.

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While the different measure of changes in the short-term interest rates might account for the inconsistencies between Cornell's study and earlier studies, the inconsistencies are still surprising. Undoubtedly, Cornell's measure of Treasury bill yield changes includes fluctuations in interest rates caused by new information on the day after the announcement. However, to the extent that markets function efficiently, only unexpected information should cause these additional interest rate movements. Because this unexpected information must be uncorrelated with past information, Cornell's estimates should be consistent and unbiased. Thus, it is puzzling that Cornell's results differ so drastically with the earlier studies.

This comment indicates that the inconsistencies are not attributable to differences in measures of short-term interest rate changes. Using essentially the same data and methods as Cornell, we obtain results that are more in line with the earlier studies. Below we briefly summarize the data and methodology and then contrast our results to those Cornell reported.

Like Cornell, we used the median value of the weekly Money Market Services survey for $M1$ as our measure of the anticipated component of the announcement (EM_t) and the difference between the actual announcement and its anticipated value as our measure of the unanticipated component of the announcement (UM_t).[1] The immediate re-

[1] The Money Market Services data associate the anticipated announcement with the week to which the announcement actually pertains. Thus, for example, a money supply announcement made on Thursday, April 19, 1984, would be listed under "Statement Week April 9, 1984." We would look at the change in the Treasury bill rate from the close on the 19th to the close on the 20th as the response to this announcement. When the Fed's announcement occurs on a Friday, we consider the difference between the Friday close and the Monday close. More generally, we looked at the close on the first market-operating day after the announcement minus the close on the day of the announcement.

TABLE 1—SUMMARY STATISTICS

	Mean	Standard Deviation
Sample Period: January 5, 1978–October 4, 1979		
Cornell		
EM	0.12	0.45
UM	0.20	0.35
DTB	2.58	10.61
Falk-Orazem		
EM	0.21	0.35
UM	−0.12	0.44
DTB	2.81	10.48
Sample Period: October 11, 1979–December 18, 1981		
Cornell		
EM	0.06	0.26
UM	−0.04	0.58
DTB	8.68	40.80
Falk-Orazem		
EM	0.07	0.26
UM	0.04	0.54
DTB	6.46	40.66

Notes: *UM* = The unexpected component of the money supply announcement in percentage change in the money supply; *EM* = the anticipated component of the money supply announcement in percentage change in the money supply; *DTB* = the change from the close before the money supply announcement to the close after the announcement of the yield on the latest three-month Treasury bill in basis points.

sponse of the three-month Treasury-bill yield (DTB_t) was measured as the difference in the 3:30 closing yield on the day of the announcement and the 3:30 close on the following (market) day. Summary statistics for our data and Cornell's (p. 650) are presented in Table 1.

If one reverses the line corresponding to anticipated and unanticipated money supply announcements for the first sample period in Cornell's summary, then our data on the money supply are virtually identical except for the sign differences on *UM* (which we computed by subtracting *EM* from the actual announcement). The standard deviations on the Treasury bill rate changes are nearly identical although our mean values differ somewhat. Since our data sources are identical and we thoroughly hand-checked our punched data against the original sources, we suspect that Cornell's sample mean for *DTB* during the second sample period should probably read "6," rather than "8."

To estimate the effect of the money supply announcement on the three-month Treasury bill yield, Cornell regressed DTB_t on EM_t, UM_t, and a constant for each of the two sample periods. We did likewise. The results from our regressions are compared to Cornell's (p. 651) in Table 2. Our fits (as measured by the R^2) are substantially higher than those Cornell reports for both sample periods. We found that unanticipated money supply changes have a significant positive effect over both sample periods and anticipated money supply changes have a significant negative effect during the second sample period. The only significant coefficient Cornell found was the coefficient on unanticipated money over the second sample period.

Roley found that over the period September 9, 1977–October 4, 1979, unanticipated money supply changes had a significantly positive effect on Treasury bill yields while anticipated money supply changes had a negative, but not significant effect. This result persisted over the sample period October 11, 1979–January 31, 1980. Over the sample period February 8, 1980–November 20, 1981, Roley found both anticipated and unanticipated money supply announcements to have significant negative and positive effects, respectively.[2] Thus Roley's results look very much like our own.[3]

We are led to conclude that the results reported by Cornell regarding the effects of anticipated and unanticipated money supply

[2] Roley obtained the following results:

Sample period: September 29, 1977–October 4, 1979

$$DTB = \underset{(0.0045)}{-0.0027} + \underset{(0.0025)}{0.0065}\, UM_t - \underset{(0.0031)}{0.0014}\, EM_t,\ R^2 = .05$$

Sample period: October 11, 1979–January 31, 1980

$$DTB = \underset{(0.0205)}{0.0014} + \underset{(0.0161)}{0.0510}\, UM_t - \underset{(0.0223)}{0.0070}\, EM_t,\ R^2 = .34$$

Sample period: February 8, 1980–November 20, 1981

$$DTB = \underset{(0.0230)}{0.0160} + \underset{(0.0096)}{0.0657}\, UM_t - \underset{(0.0210)}{0.0531}\, EM_t,\ R^2 = .34$$

(Standard errors are in parentheses.) Roley measures UM_t and EM_t in terms of the change in the money supply in billions of dollars.

[3] Estimates by Grossman and Urich-Wachtel over the pre-October 6, 1979 sample period are also similar to ours, i.e., they obtain positive coefficients on unanticipated announcements and negative coefficients on anticipated announcements.

TABLE 2—REGRESSION COMPARISONS[a]
$DTB_t = a_0 + a_1 UM_t + a_2 EM_t + U_t$

	a_0	a_1	a_2	R^2
Sample period: January 5, 1978–October 4, 1979				
Cornell	2.30	1.92	0.24	.063
	(1.72)	(0.77)	(0.07)	
Falk-Orazem	4.66	7.09	−4.64	.104
	(3.62)	(2.93)	(−1.53)	
Sample period: October 11, 1979–December 18, 1981				
Cornell	7.21	30.46	−5.36	.234
	(1.97)	(4.33)	(−0.35)	
Falk-Orazem	6.75	41.83	−27.37	.303
	(2.03)	(6.90)	(−2.16)	

Notes: See Table 1.
[a] t-statistics are shown in parentheses.

announcements on the price of Treasury bill yields are incorrect quantitatively and qualitatively. Furthermore, we find that the measured response of short-term interest rates to money supply announcements are robust to slight changes in the measurement of the interest rate changes. Our results suggest that studies of money supply announcement effects are not as sensitive to the specification of Treasury bill rate changes as Cornell's results would suggest.

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