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Produce Profits?**

**M. T. Belongia
and
R. W. Hafer**

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FEDERAL RESERVE BANK OF ST. LOUIS
Research Division
411 Locust Street
St. Louis, MO 63102

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THE FOMC DIRECTIVE AND THE TREASURY-BILL
FUTURES MARKET: COULD INSIDE INFORMATION
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M. T. Belongia and R. W. Hafer
Federal Reserve Bank of St. Louis
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I. INTRODUCTION

The purpose of this paper is to investigate the value of using pre-announced information concerning the Federal Open Market Committee's (FOMC) policy directive to form a trading strategy in the Treasury bills futures market. It is commonly asserted that holders of such "inside information" would reap large profits relative to other market participants. In related studies, however, the value of information concerning FOMC actions was not found to be great. For example, O'Brien's [1981] study of the effects of immediate disclosure of the FOMC's policy directive on investors' interest rate uncertainty concluded that "the prevailing policy directives may have had no more than marginal interest information value to market participants." In a highly stylized setting, Jaffe [1975] also found that the release of public information by authorities has no social value.

In our study, we address the issue differently than previous work. Using data gathered from published FOMC policy directives for the period January 1980 to August 1982, we attempt to gauge the usefulness of knowing the money supply growth target at the time the FOMC voted, some six weeks in advance of this information's formal release. In other words, we presume a single trader knows the Fed's growth target and policy horizon prior to all other traders in the T-bill futures

market. Then, using such information, we investigate whether this investor could have profited significantly by trading short-term (13-week) T-bill futures during the period studied.

The format of the paper is as follows. Section II presents construction of the policy signals and trading rules derived from FOMC actions. Section III provides evidence on trading in the T-bill futures market under several information schemes. Concluding remarks close the paper in Section IV.

II. POLICY SIGNALS

The FOMC of the Federal Reserve System meets routinely to set monetary growth targets.^{1/} Although the discussion of such growth targets has taken place for many years, only since late 1979 has the importance of controlling both short- and long-term movements in the money stock been acknowledged.^{2/} Prior to that time, the primary target used by policymakers was the federal funds rate. Regardless of policy target, however, details of the FOMC meetings are not made publicly available until about six weeks after the meeting is held.

Details of these meetings are of special interest to financial market participants because Fed policy actions are believed to offer signals concerning the direction and magnitude of changes in market interest rates. Previously, participants could watch developments in the federal funds market to assess the direction of Fed policy.^{3/} Since late 1979, however, the stated focus of Fed policy has been controlling the growth of selected monetary aggregates within

the targeted bounds. Therefore, to the extent that variations in short-run money growth affect interest rates, specific information on the planned course of Fed policy would be expected to improve forecasts of interest rate movements. Consequently, during the period under study, if one knew the intent of the FOMC with regard to the future path of money in advance of all other traders in the T-bill futures market, that individual, ceteris paribus, should be able to earn trading profits systematically as this informational advantage is exploited.

To establish a policy signal upon which to base our trading rule, the following criteria are used: If targeted growth for the money stock during the policy horizon is one or more percentage points less than the 13-week moving average of money growth prior to the FOMC meeting, then policy is viewed as "restrictive." If desired money growth is greater than the moving average by one or more percentage points, policy is judged to be "easing." Table 1 presents the FOMC meeting date, desired growth target and policy horizon for the period November 1979 to August 1982. The August 24, 1982 meeting is the last one used because since that time the FOMC has determined that recent financial innovations have distorted the narrow M1 measure and made it unsuited for policy purposes.^{4/}

In the next section, these policy signals will be used to establish our trading strategy.

III. TRADING RULES AND RESULTS

Defining different FOMC directives as restrictive or easing is meaningful only under a maintained hypothesis concerning the effects of money growth on short-term interest rates. One possible approach to this problem is to presume a liquidity effect; that is, "restrictive" policy actions will produce higher interest rates, and "easing" policy actions will yield lower rates in the short run. Presuming such an effect, however, clouds our test on the value of inside information by nesting it within another hypothesis. Or, rather, construction of a plausible trading rule requires a joint test of the inside information hypothesis conditioned on the existence of a liquidity effect.

To circumvent that problem, an initial test was conducted to determine if a liquidity effect existed. The test posits that--if a liquidity effect were present--a trader with perfect foresight would be able to earn profits systematically by applying his knowledge to this behavioral relationship. Perfect foresight was endowed by comparing the actual growth of money during the policy horizon to the 13-week moving average of money growth dated as of the FOMC meeting. If the actual money growth during the policy horizon was one or more percentage points below the moving average, policy would have been labeled restrictive. Then, under the liquidity effect presumption, interest rates would be expected to rise and our trading rule would indicate a buy order in the T-bill futures

market. If actual money growth was greater than the average, the liquidity effect would predict lower interest rates and, consequently, a sell order would be executed. Actual money growth between plus and minus one percentage point of the average would be interpreted as "no change" in policy and a hold position would be taken. In each instance, a \$1 million futures contract is dealt, with a \$1 million endowment presumed at each meeting date.

The outcome of the experiment is presented in table 2. The first column presents the trading signal generated by the data. The second column presents the net profit from trading on perfect information under a presumed liquidity effect. In 10 instances, the trading signal indicated a buy order, and, in 10 other periods, a sell order. Four times a hold position was taken.

Trading on the presumption of a liquidity effect generated losses in nine periods out of 22 instances. In total, this trading scheme would have resulted in a net loss of \$5,200 for the period as a whole. More importantly, the average net profit from this scheme was \$-400, a value that is not significantly different from zero at standard significance levels. This finding suggests that, on average, trading under the presumption of a liquidity effect results in zero net profits. Indeed, such an outcome is supported by Mishkin's [1982] recent study of the relationship between money supply growth and nominal interest rates. His study also found that

increases in money growth do not produce decreases in short-term interest rates.^{5/}

Using the information from the preceding experiment, we can test the hypothesis that knowing the FOMC's intent for future money growth produces non-zero profits consistently. For this test, the experiment is altered in two respects: First, based on the earlier test, the assumption of a liquidity effect is abandoned. Second, perfect information on actual money growth over the entire policy horizon is replaced with knowledge of actual growth only for the period up to the date of the FOMC meeting. Because the FOMC's base for a policy horizon typically is set four to six weeks prior to its meeting, this permits a comparison between actual money growth over the initial weeks of the policy horizon and intended growth for the entire period.

In the altered experiment, a buy order was executed if money growth for the remainder of the policy horizon would have to be increased relative to the initial period average in order to achieve the FOMC's desired growth target. Conversely, a sell order was placed if money growth would have to be reduced relative to the initial average to hit the desired growth rate. As before, a hold position occurs when the change in money growth necessary to achieve the target rate is between plus and minus one percentage point of the initial weeks' average.

The outcome of this experiment is presented in

table 3. There we see that trading on FOMC directives produces 13 buy orders, eight sell orders and one hold position. In many instances, the trading signal and resultant profits are exactly opposite those of the liquidity effect experiment. In seven instances the net profit differs between the two. Still, the overall outcome of trading on inside information is a net loss of \$4,700. More importantly, the average profit to using inside information is \$-214, a value not significantly different from zero. Consequently, it is possible to reject the hypothesis that knowing the FOMC directive in advance of other market participants yields, on average, non-zero profits.

The evidence presented indicates that prior knowledge of the FOMC's intent does not, on average, lead to non-zero profits. As a final experiment, we determined the trading signal by using a random number generator and allowing positive integers to signal a buy order, negative values a sell order; no hold positions were allowed. Ten trials were run for the period studied. The outcome suggests that a trader following random signals would realize an average net profit of \$-656. This amount, however, again is not significantly different from zero. Thus, randomly selecting one's trading strategy during the period November 1979 to August 1982 would have resulted in the same average return as a trader using prior knowledge of the FOMC's policy intentions: zero.

IV. CONCLUSIONS

Could non-zero average profits be earned if one knew the FOMC's policy directive before the market? The analysis

presented here suggests that there is no value to acquiring such information in terms of trading in the 13-week Treasury bill futures market. This result agrees with previous analysis of the value of "inside information" to reducing interest rate uncertainty.

FOOTNOTES

^{1/}The number of meetings recently has been reduced. During 1980, for example, the FOMC convened 11 times. During 1981 and 1982, the number of meetings was reduced to eight.

^{2/}See "Announcement," Federal Reserve Bulletin, (October 1979), p. 830.

^{3/}One way to view the October 1979 change in Fed policy objectives is the range over which the federal funds rate has been allowed to vary. Prior to the change--when the Fed was targeting the funds rate--it moved within a range of about 75 basis points. Since then, however, the range has covered several hundred basis points.

^{4/}This has been debated recently. See, for example, Tatom [1983].

^{5/}The reader is referred to related studies by Grossman [1981], Roley [1982] and Urich and Wachtel [1981].

Table 1
 RECORD OF FOMC M1 GROWTH TARGETS
 January 8-9, 1980 to August 24, 1982

<u>Meeting Date</u>	<u>Growth Target</u>	<u>Target Horizon</u>
January 8-9, 1980	4.0 - 5.0%	December 1979-March 1980
February 4-5	5.0	December 1979-March 1980
March 18	5.0	March - June
April 22	5.0	March - June
May 20	7.5 - 8.0	May - June
July 9	8.0	June - September
August 12	9.0	June - September
September 16	6.5	August - December
October 21	5.0	September - December
November 18	5.0	September - December
December 18-19	4.75	December - March 1981
February 2-3, 1981	5.0 - 6.0	December 1980-March 1981
March 31	5.5	March - June
May 18	3.0	April - June
July 6-7	7.0	June - September
August 18	7.0	June - September
October 5-6	7.0	September - December
November 17	7.0	October - December
December 21-22	4.0 - 5.0	November-March 1982
February 1-2, 1982	0.0	January - March
March 29-30	3.0	March - June
May 18	3.0	March - June
June 30-July 1	5.0	June - September
August 24	5.0	June - September

1/ All growth rates expressed in terms of M1 or M1B, not shift-adjusted M1B.

Table 2
 PROFITS FROM TRADING ON PERFECT FORESIGHT:
 A TEST OF THE LIQUIDITY EFFECT

<u>Meeting Date</u>	<u>Trading Signal</u>	<u>Net Profit</u>
January 8-9, 1980	Buy	\$ --
February 4-5	Hold	--
March 18	Sell	-38,100
April 22	Hold	--
May 20	Buy	-60,900
July 9	Buy	- 1,800
August 12	Buy	- 8,400
September 16	Sell	-20,100
October 21	Sell	1,500
November 18	Sell	21,700
December 18-19	Buy	10,100
February 2-3, 1981	Buy	2,800
March 31	Sell	5,000
May 18	Sell	42,900
July 6-7	Sell	- 400
August 18	Hold	--
October 5-6	Buy	5,300
November 17	Buy	29,300
December 21-22	Hold	--
February 1-2, 1982	Sell	-29,000
March 29-30	Sell	- 3,600
May 18,	Sell	-16,300
July 1	Buy	7,800
August 24	Buy	43,400
TOTAL NET PROFIT		\$- 5,200

Table 3
 PROFITS FROM TRADING ON FOMC DIRECTIVE:
 A TEST OF THE VALUE OF INSIDE INFORMATION

<u>Meeting Date</u>	<u>Trading Signal</u>	<u>Net Profit</u>
January 8-9, 1980	Sell	\$ --
February 4-5	Hold	--
March 18	Buy	38,100
April 22	Sell	33,600
May 20	Sell	-27,300
July 9	Sell	- 1,800
August 12	Buy	8,400
September 16	Buy	-20,100
October 21	Buy	- 1,500
November 18	Buy	-21,700
December 18-19	Buy	-10,100
February 2-3, 1981	Buy	2,800
March 31	Buy	5,000
May 18	Buy	-42,900
July 6-7	Sell	- 400
August 18	Sell	12,700
October 5-6	Sell	- 2,700
November 17	Sell	-29,300
December 21-22	Buy	13,000
February 1-2, 1982	Buy	-16,000
March 29-30	Buy	3,600
May 18	Buy	16,300
July 1	Hold	--
August 18	Sell	35,600
TOTAL NET PROFITS		\$- 4,700

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