

The Monetary Aggregates in 1985

The monetary aggregates gave conflicting signals in 1985. The growth of M1 (fourth quarter to fourth quarter) accelerated sharply from its 1984 pace, while M2's growth held fairly steady and M3's slowed considerably. As a result, M1's growth exceeded M2's and M3's by a large margin, an infrequent occurrence. Moreover, M1's velocity posted a decline in 1985 about as large as the record drop in 1982. M2's and M3's velocity, however, did not fall last year as sharply as M1's, nor were their declines nearly as large as in 1982. Clearly, M1's behavior was very unusual. In this article, we explore how the strength in M1 was part of a general shift by the household sector toward more liquid bank deposits, caused by the substantially lower interest rates on time deposits.

The relative performance of the monetary aggregates
M1 grew a rapid 11.6 percent (up from 5.2 percent in 1984), while M2 increased a more moderate 8.6 percent (only a little stronger than the year before), and M3's growth was 8 percent (down from 10.4 percent).¹ Last year's spreads between M1's growth rate and the growth rates of the broader aggregates turned out to be far from ordinary (Table 1). On average, the growth rates of M2 and M3 have exceeded M1's by three to four percentage points, but in 1985 the opposite was true (Table 1, first two columns). While some variation from the average spreads is normal and to be expected, the spreads fell

beyond two standard deviations, a commonly used measure of "normal" bounds (Table 1, last two columns).

Of course, an extremely wide spread between the growth of M1 and M2 or M3 does not necessarily imply that M1 is the aggregate displaying unusual behavior. The income velocities (ratios of GNP to each monetary aggregate) of the monetary aggregates, however, do suggest that M1 was the aggregate out of line with past experience (Table 1, bottom half). M1's velocity was over two standard deviations below its long-run average growth rate of about 3 percent. Hence, normal year-to-year volatility in M1's velocity cannot account for its behavior in 1985. M2's and M3's velocities, while weak, were considerably closer to average than two standard deviations. This means that the growth rates of the broad aggregates were generally in line with the performance of GNP.

The velocities of the monetary aggregates, however, have been positively correlated in the past (in part because a broader aggregate contains a narrower aggregate). As a result, it is possible that the aberration in M1's velocity growth last year (7.9 percentage points below average) has been overstated somewhat, given that the velocities of M2 and M3 were also below average. In the regressions on page 7, the annual (fourth quarter to fourth quarter) growth rates of M1's velocity (VM1) are regressed alternatively on the growth rates of M2's velocity (VM2) and M3's velocity (VM3). (For the sake of comparison, M2's velocity is also regressed on M3's velocity.)²

¹ M1 consists primarily of currency and checking account deposits (NOWs and demand deposits). M2 includes M1 plus savings deposits, money market deposit accounts (MMDAs), noninstitutional money market mutual funds (MMMFs), small time deposits, overnight repurchase agreements (RPs), and Eurodollars. M3 equals M2 plus term RPs and Eurodollars, institutional MMMFs, and large denomination (\$100,000 or more) time deposits. This study was prepared before the Board staff's annual benchmark and seasonal factor revisions.

² The regressions were also run with the non-M1 (or non-transactions) components of M2 and M3 as the independent variables, respectively, in equations (1) and (2). The estimated correlations were smaller, but significant, and the 1985 forecast errors remained over two standard errors.

Basically, the first two equations say that M1's velocity growth would be expected to be stronger (or weaker) than its average of about 3 percent when M2's or M3's velocity is stronger (or weaker) than its average. But even after allowing for the weakness in M2's or M3's velocity in 1985, M1's velocity was still 6.4 or 7.3 percentage points below expected (far right column), well over two standard errors

Table 1

Comparison of M1, M2, and M3 Growth

In percent

	Annual rates (fourth-quarter to fourth-quarter)			Standard deviation†
	Long-run average*	1985	Difference	
M2 growth less M1 growth	3.0	-3.0	6.0	2.2
M3 growth less M1 growth	4.0	-3.7	7.7	2.3
M3 growth less M2 growth	1.0	-0.6	1.6	1.9
M1 velocity growth	2.8	-5.2	8.0	2.4
M2 velocity growth	-0.1	-2.6	2.5	2.7
M3 velocity growth	-1.0	-2.0	1.0	2.5

* 1960-84

† Computed from annual rates, 1960-84

Table 2

Composition of M3 Growth

In percentage points

	Contribution to M3 by component (fourth-quarter to fourth-quarter)		Difference
	1984	1985	
M1	1.0	2.2	1.2
Non-M1 components of M2			
Small time	3.9	-0.2	-4.1
Savings	-0.7	0.5	1.2
MMDA	1.0	3.5	2.5
Noninstitutional money funds	0.9	0.5	-0.4
Other M2 components	0.2	0.4	0.2
Subtotal	5.3	4.7	-0.6
Non-M2 components of M3			
Large time	3.2	0.9	-2.3
Institutional money funds	0.5	0.2	-0.3
Other M3 components	0.4	0	-0.4
Subtotal	4.1	1.1	-3.0
Total	10.4	8.0	-2.4

	R ²	Durbin-Watson statistic	Standard error	1985 forecast error
(1) VM1 = 2.8 + 0.62 (VM2) (7.7) (4.5)	0.46	1.4	1.8	-6.4
(2) VM1 = 3.3 + 0.60 (VM3) (7.9) (3.7)	0.38	1.5	2.0	-7.3
(3) VM2 = 0.7 + 0.82 (VM3) (1.9) (5.9)	0.60	1.8	1.7	-1.7

Estimation period 1960 to 1984

The components of the monetary aggregates in 1985

One reason why M1's velocity dropped so steeply might be that households were shifting funds into M1 from other M2 or M3 components. Such shifts would cause M1 to accelerate and its velocity to decline, while M2 and M3 growth would be unaffected and their velocities would be more stable. Hence, it seems worthwhile to look more closely at the components of the broad aggregates.

Table 2 shows the contributions to M3 growth from its major components in 1984 and 1985. The center part of Table 2 shows that overall the non-transactions (or non-M1) components of M2 added about the same amount to M3's growth in both years. But individually, they differ markedly. The least liquid of these components, small time deposits, showed the largest reduction of any individual component in its contribution to M3 growth. On the other hand, many of the more liquid components of M3 (NOW accounts, MMDAs, and even passbook savings accounts) supplied considerably more growth to M3 in 1985. This reveals a stronger preference by individuals and firms for highly liquid bank deposits.

Finally, the components of M3 not included in M1 or M2 also brought about M3's weaker growth (Table 2, bottom half). In particular, large time deposits contributed a much smaller fraction of M3 growth in 1985 versus the previous year. Apparently, the weaker demand for loans and the ability to attract "retail" deposits led banks to issue fewer "wholesale" deposits, basically large negotiable CDs. Therefore, the deceleration in M3 growth was caused by slow growth of large time deposits. The acceleration in M1 growth, in contrast, resulted from an increased demand for liquidity which did not affect M3 because most of the shifting was among M3 components.

The fall in interest rates helps to explain this greater preference for highly liquid deposits (including checkable deposits in M1). Table 3 compares the current and maturing yields for two popular small time deposit maturities, six months and one year. During the first quarter of 1985 the yield on new six-month certificates was 2.5 percentage points below maturing six-month certificates. And in the third quarter, the yield on new one-year certificates was 3.6 percentage points below maturing certificates, and the difference remained quite large (at almost 2.4 percentage

points) in the fourth quarter. Certainly, with such large declines in these yields, investors accustomed to double-digit rates would balk at rolling over these deposits. Apparently, they put the funds into more liquid accounts, such as MMDAs, Super NOW accounts, or conventional NOWs, either on a permanent basis or temporarily while they shopped for alternative investments.

Table 4 shows the rate spreads between time deposits and these liquid deposits over the past two years. The spreads were widest in the third quarter of 1984, when time deposit rates exceeded the rate on Super NOWs by three and one-half to four percentage points, conventional NOWs by about six percentage points, demand deposits by eleven to eleven and one-half percentage points, and MMDAs by about one and one-half percentage points. One year later,

the rate spreads between time deposits and NOWs had declined by over one-half, between time deposits and demand deposits about one-third, and between time deposits and MMDAs by one-third to one-half. Clearly, such a marked narrowing in these spreads would induce many individuals to put their maturing certificates into M1 balances (particularly NOW accounts) or MMDAs, thereby gaining liquidity with only a small sacrifice in yield. Likewise, new savings that at higher spreads would have gone into time deposit accounts would be placed in these more liquid accounts.

Developments in 1985 were considerably different from what would have occurred prior to the extensive deregulation of interest rates on bank deposits. As long as the interest rate ceilings on the components of M2 were binding, the relative rates on various M2 deposits could not change,

Table 3
Current versus Maturing Yields on Small Time Deposits

Annualized yields (in percent)

Date	Six-month certificates			One-year certificates		
	Current	Maturing	Spread	Current	Maturing	Spread
1985-I	8.7	11.2	-2.5	9.3	10.0	-0.7
1985-II	8.2	10.0	-1.8	8.8	10.8	-2.0
1985-III	7.6	8.7	-1.1	8.0	11.6	-3.6
1985-IV	7.7	8.2	-0.5	8.1	10.5	-2.4
1986-I		7.6			9.3	
1986-II		7.7			8.8	
1986-III					8.0	
1986-IV					8.1	

Source: *Bank Rate Monitor*

Table 4
Selected Interest Rate Spreads

In percentage points

Date	Six-month certificates less:				One-year certificates less:			
	Super NOWs	NOWs	Demand deposits	MMDAs	Super NOWs	NOWs	Demand deposits	MMDAs
Difference in yield								
1984-I	2.0	4.2	9.5	0.7	2.5	4.7	10.0	1.2
1984-II	2.9	5.1	10.4	1.1	3.3	5.5	10.8	1.5
1984-III	3.6	6.0	11.2	1.5	3.9	6.3	11.6	1.8
1984-IV	2.5	4.7	10.0	0.7	3.0	5.2	10.5	1.2
1985-I	1.7	3.4	8.7	0.6	2.2	4.0	9.3	1.2
1985-II	1.6	3.0	8.2	0.7	2.1	3.5	8.8	1.3
1985-III	1.5	2.4	7.6	0.7	1.9	2.8	8.0	1.1
1985-IV	1.6	2.5	7.7	0.8	2.0	2.8	8.1	1.2
Percentage change in yield spread from one year earlier								
1985-I	-18.0	-19.6	-8.8	-8.3	-10.8	-15.7	-7.4	2.9
1985-II	-45.2	-42.1	-20.8	-38.1	-34.9	-36.2	-18.6	-17.6
1985-III	-59.1	-60.5	-32.2	-52.9	-51.6	-55.8	-30.5	-38.2
1985-IV	-36.6	-47.8	-22.6	13.8	-34.2	-45.4	-22.6	-0.4

Source: *Bank Rate Monitor*

even when market rates fluctuated widely. In the current environment, however, banks have set the rates offered on time deposits in line with market rates, resulting in significant movements in the rate spreads between these deposits and more liquid deposits, including those in M1.³ This suggests that the responsiveness of the demand for M1 to market interest rates could have increased in recent years because individuals now have incentives to shift funds between non-transactions M2 and M1. M2's interest elasticity would not increase in a similar fashion because these shifts are contained within M2. Indeed, since the rates paid on a large share of M2 deposits now move with market rates, households have less incentive to substitute between M2 deposits and short-term market instruments. Disintermediation has been greatly reduced, and M2's interest rate responsiveness has probably declined somewhat.⁴

³ In the case of Super NOWs, the narrowing of the spread reflected not only the reduction of the rates on time deposits as market rates fell but also the consideration that banks were slow to adjust the Super NOW rate downward

⁴ Disintermediation is the diversion of savings from accounts with low fixed interest rates to direct investment in high-yielding instruments

The liquid components of M3

In part, M1 appeared so strong in 1985 compared with M2 and M3 because of the way the various types of deposits are grouped in the monetary aggregates (Table 5). M1 contains currency and checking deposits, but M2 includes deposits (or similar assets) with varying degrees of liquidity. A large portion of M2 consists of immediately available deposits or overnight investments. M1, savings deposits, MMDAs, MMMFs, and overnight RPs and Eurodollars. But another sizeable portion of M2 (35 percent) is less liquid deposits, *i.e.*, small time deposits. M3 contains M2 (which makes up about 80 percent of M3) plus time deposits of \$100,000 and over, institutional MMMFs, and term RPs and Eurodollars. So M3 like M2 is comprised of both highly liquid and less liquid assets. Therefore, shifts in liquidity preferences have little effect on the growth rates of M2 and M3. As the aggregates are now defined, only M1 would be much affected by such shifts.

Table 6 compares the growth rate of the liquid components of M3 (as defined in Table 5) with the monetary aggregates. The liquid components of M3, like M1, accelerat-

Table 5
Components of M3

In billions of dollars

Definitions of monetary aggregates	Volume	Components grouped by liquidity	Volume	
M1	617.9	M1	617.9	
+ Savings deposits and MMDAs	810.6	+ Savings deposits and MMDAs	810.6	} Immediate availability or overnight maturity
+ Overnight RPs and Eurodollars	69.6	+ Overnight RPs and Eurodollars	69.6	
+ Noninstitutional MMMFs	176.4	+ Noninstitutional MMMFs	176.4	
+ Small time deposits	873.9	+ Institutional MMMFs	64.1	
= M2	2,548.4*	= Liquid components of M3	1,738.6*	
+ Institutional MMMFs	64.1	+ Small time deposits	873.9	} Longer than overnight maturity
+ Large time deposits	437.4	+ Large time deposits	437.4	
+ Term RPs and Eurodollars	152.6	+ Term RPs and Eurodollars	152.6	
= M3	3,202.5*	= M3	3,202.5*	

* Components do not add exactly to the total due to consolidation components. Dollar volumes are as of the fourth quarter of 1985.

Table 6
Recent Growth Rates of the Monetary Aggregates

Annual rates of growth (in percent)

Date	M1	M2	M3	Non-M1 components of M2	Non-M2 components of M3	Liquid components of M3*	Liquid components of M3 not in M1*
1983-IV to 1984-IV	5.2	7.7	10.4	8.6	11.7	5.4	5.5
1984-IV to 1985-IV	11.6	8.6	8.0	7.7	7.1	14.0	15.4

* See Table 5 for definition

ed sharply in 1985. Indeed, the acceleration was even more pronounced than for M1. This suggests that individuals and firms responded to the recent drop in interest rates and narrower spreads by building up their liquid assets.

Summary

Seen in this light, the acceleration in M1 in 1985 looks less puzzling. The contrasts in the growth of the narrow and broad monetary aggregates stemmed in part from the different behavior of the less liquid and more liquid components of M2 and M3 as relative yields changed. In a regulated environment, the relative yields on the components of M2

(or M3) did not change when interest rate ceilings were binding—even when market rates fluctuated significantly. Hence, the distinction between the less and more liquid components of M2 and M3 was less important in understanding how the monetary aggregates responded to changes in market rates. Individuals reacted by moving funds between M2 (or M3) deposits and short-term market instruments. In a deregulated structure individuals at times still have incentives to shift funds, not only between market instruments and the monetary aggregates but also between M2 (or M3) components. This can contribute to growth in M1 that appears very unusual compared with GNP or M2 and M3, as it did in 1985.

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