

NOW Accounts and the Seasonal Adjustment of M-1

In general, adjusting economic statistics to remove purely seasonal influences is an imperfect exercise at best. It is even more difficult a task when a long-time series upon which to base estimates of changing seasonal patterns is not available, or when a given time series contains components with different underlying seasonal patterns, but the relative size of the components cannot be determined.

In recent years, these types of seasonal adjustment problems have been quite serious for M-1. This aggregate includes a large and growing component, NOW account deposits, which were not available on a nationwide basis before 1981. By statistical standards, that is much too short a time period to estimate a reliable seasonal pattern for NOW accounts. Usually, five years or more of data are required to estimate seasonal adjustment factors.

Moreover, NOW accounts are not like the other deposit components of M-1, because they can fulfill two distinct functions. They can be used for transactions purposes as well as a savings vehicle. Indeed, in 1981 when nationwide NOWs were introduced, it was estimated that about 25 percent of the initial flow into NOWs came from sources outside M-1, primarily from passbook savings accounts. Therefore, it would appear incorrect to adjust NOW accounts using the same seasonal factors that are appropriate for demand deposits.

This, of course, raises the question of whether it would be better to adjust NOW accounts by using a weighted average of seasonal factors for demand deposits and for savings balances (which are part of M-2), where the weights would be in proportion to the degree to which consumers use NOW accounts for savings purposes. While that might sound good in theory, in practice it is impossible to know to what extent NOWs are used as a transaction vehicle and to what extent as savings accounts. Nonetheless, some calculations can be made to illustrate how serious a problem NOW account deposits could pose in the seasonal adjustment of M-1.

The following equation uses weighted average seasonal factors to adjust NOWs.

$$\text{OCD.SA} = \frac{\text{OCD}^{\text{CB}}}{x\text{SAV.SF}^{\text{CB}} + (1-x)\text{DDA.SF}} + \frac{\text{OCD}^{\text{T}}}{x\text{SAV.SF}^{\text{T}} + (1-x)\text{DDA.SF}}$$

M-1 under Alternative Seasonal Adjustment Procedure

Annualized one-month rates of growth, in percent

1983	M-1 prior to revisions	Savings balance fraction in alternate procedure			Revised M-1*
		25%	50%	75%	
January	9.8	11.8	10.8	10.2	13.9
February	22.4	18.6	15.4	12.1	14.6
March	15.9	16.9	16.9	16.7	13.0
April	-2.7	5.8	7.7	9.7	1.9
May	26.3	14.2	12.0	9.8	20.5
June	10.2	10.7	11.4	12.1	8.8
July	8.9	7.5	7.5	7.5	8.5
August	2.8	3.0	2.8	2.8	5.8
September	0.9	2.6	3.7	4.7	2.9
October	1.9	3.5	4.0	4.4	4.6
November	0.9	3.5	4.6	5.6	3.2
December	6.5	5.8	7.4	9.2	6.3

†(Standard deviation) 9.0 5.6 4.6 4.0 5.7

‡Correlation with revised M-1 0.77 0.80 0.81

*Adjusted for February 1984 revisions to seasonal factors and does not incorporate benchmark revisions

†In percentage points

‡Correlation between the changes to M-1 suggested by the alternative adjustment procedure and the published changes to M-1 derived from the revised 1983 seasonal factors

where

OCD^{SA} = Alternative seasonally adjusted interest-bearing checkable deposit component of M-1.

OCD^{CB} = Interest-bearing checkable deposits at commercial banks

OCD^T = Interest-bearing checkable deposits at thrift institutions

SAVSF^{CB} = Seasonal factor for savings deposits at all commercial banks

SAVSF^T = Seasonal factor for savings deposits at thrift institutions.

DDA SF = Seasonal factor for demand deposits

x = Portion of interest-bearing M-1 deposits assumed to reflect savings balances

The resultant impacts on the M-1 growth rates for 1983 are presented in the table. No matter which weights are chosen in the 25 percent to 75 percent range (the assumed share of savings in NOWs), this procedure yields a smoother pattern for monthly M-1

growth than originally reported in 1983. For example, the standard deviation of the monthly M-1 growth rates for 1983 was 9 percentage points as first reported and 5.7 percentage points after the annual seasonal factor revision. The assumption that something in the range of 25 to 75 percent of NOWs are savings resulted in standard deviations of 5.6 percentage points to 4.0 percentage points.¹

Furthermore, the impacts of the seasonal factor revisions made recently for 1983 and of the alternative seasonal factors calculated here are highly correlated, suggesting that the standard seasonal adjustment process is beginning to pick up some of the changing character of M-1, as a greater percentage of it is composed of interest-bearing accounts that can also be used for savings purposes. Picking up some of the new seasonal characteristics of M-1 is only one step in understanding the changing nature of M-1 now that it contains a savings component. We still do not have enough experience to understand its cyclical behavior.

All in all, the lesson from this exercise seems clear: Monetary data in general must be assessed with extreme care, particularly over intervals shorter than one year. But even greater caution should be exercised when looking at seasonally adjusted M-1 because it is no longer made up exclusively of transactions deposits NOW accounts—since they pay explicit interest—are likely to be used by consumers for savings purposes as well but to an unknown degree, not only in a seasonal sense, but over the business cycle as well.

¹A smaller standard deviation is not necessarily an indicator of better seasonal adjustment. The originally reported M-1 growth rates for 1983, however, were so volatile (a range of -2.7 to 26.3 percent) that it seemed quite natural to investigate whether alternative seasonal adjustment procedures would reduce the volatility in 1983.

Sandra C. Krieger