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Automatic Transfers
and the Money Supply Process

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SINCE November 1, 1978, commercial banks have been permitted to offer a new type of individual savings account from which funds are transferred automatically into a checking account. This automatic transfer service (ATS) enables individual customers to earn interest on funds which previously would have been held in their checking accounts. The use of these new ATS accounts affects the payments system and the money supply process.[1] Since some checkable balances can be held in savings accounts while other checkable balances will continue to be held in demand deposit accounts, ATS alters the interpretation of existing measures of monetary aggregates.

The use of these new savings accounts will change the relationship between Federal Reserve actions and conventional measures of monetary aggregates. The ATS innovation will reduce the responsiveness of the most widely reported aggregate, M1 (the sum of currency plus demand deposits), to Federal Reserve actions. At the same time, broader measures of monetary aggregates will become more responsive to Federal Reserve actions. Understanding these effects is essential both for analysts who study the impact of monetary aggregates on inflation and economic activity, and for policymakers who require a knowledge of the relationships between their actions and the objectives of policy.

The importance of these conclusions for the implementation and interpretation of monetary policy actions can be simply stated. During the adjustment period over which individuals rearrange the pattern of account holdings at commercial banks, M1 will grow slower and broader monetary aggregates will grow faster than they otherwise would have. Therefore, existing measures of these aggregates may provide conflicting signals of the direction of monetary actions and their prospective impact on the economy.[2]

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[1]An historical perspective on the development of ATS is provided by Alfred Broaddus, "Automatic Transfers from Savings to Checking: Perspective and Prospects," Federal Reserve Bank of Richmond *Economic Review* (November/December 1978), pp. 3-13. Some of the difficulties posed by ATS are also discussed by Scott Winningham, "Automatic Transfers and Monetary Policy," Federal Reserve Bank of Kansas City *Economic Review* (November 1978), pp. 18-27.

[2]The staff of the Board of Governors of the Federal Reserve System recently proposed a redefinition of the monetary aggregates which, if adopted, would tend to alleviate some of these difficulties. See "A Proposal for Redefining the Monetary Aggregates," *Federal Reserve Bulletin* (January 1979), pp. 13-42.

ATS DEPOSITS AND MONETARY AGGREGATES

An individual may open (or add to) a savings account with the ATS feature by using existing financial assets such as deposit balances held in demand or savings accounts.[3] For example, the individual may transfer funds from a demand deposit account. Although the individual may consider his total of checkable deposits or transaction-related balances to have remained the same, measured demand deposits (a component of M1) will fall, while ATS savings deposits (not a component of M1) will rise. Thus, M1 will fall. Since savings balances and demand deposit balances are both included in M2, it is not affected immediately by such a transaction.

The commercial banking system will be affected beyond the mere relabeling of the account in which the individual holds checkable deposits. The required reserve ratio against demand deposits is higher than the ratio for time and savings (including ATS) accounts for member banks in the Federal Reserve System (see Table I).[4] Thus, the transfer of funds from demand deposits to ATS deposits will reduce required reserves, allowing the banking system to increase loans, investments, and deposits.

If funds are transferred to an ATS account from an existing savings account at a commercial bank, there is no change in required reserves in the banking system, since the required reserve ratio is the same for both accounts. Since neither account is

Table I	
Member Bank Reserve Requirements (Percent of Deposits)	
Type of deposits, and deposit intervals in millions of dollars	Requirement in effect December 1978
Net Demand[1]	
$ 0–2	7 %
2–10	9 ½
10–100	11 ¾
100–400	12 ¾
Over $400	16 ¼
Time[2]	
Savings	3 %
Other Time[3, 4]	
$0-5 maturing in:	
30-179 days	3
180 days to 4 years	2 ½
4 years or more	1
Over $5 maturing in:	
30-179 days	6
180 days to 4 years	2 ½
4 years or more	1

[1]Demand deposits subject to reserve requirements are gross demand deposits minus cash items in process of collection and demand balances due from domestic banks.

[2]Negotiable orders of withdrawal (NOW) accounts and time deposits such as Christmas and vacation club accounts are subject to the same requirements as savings deposits.

[3]Time deposits with denominations of $100,000 or more are subject to a supplementary 2 percent reserve requirement.

[4]The average of reserves on savings and other time deposits must be at least 3 percent, the minimum specified by law.

SOURCE: *Federal Reserve Bulletin*, December 1978, p. A9.

included in M1 and both are included in M2, there is no change in the monetary aggregate measures.[5]

Thus, the introduction of the ATS feature affects the measures of monetary aggregates for both definitional and institutional reasons. The definitional reason is that ATS balances which individuals use to replace demand deposits are not included in M1;

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[3]Throughout this paper, unless noted otherwise, it is assumed that there is no Federal Reserve policy reaction to the shift into ATS deposits. It also must be noted that the relevant changes in financial asset holdings concern changes in the *desired* proportions of demand deposits and other savings deposits at commercial banks to checkable deposits, defined to include ATS balances after November 1, 1978. The source of the initial ATS deposit does not matter *per se*. This confusion easily arises when considering the Federal Reserve Board of Governors' surveys on the ATS experience which show that about 60 percent of ATS balances arise from demand deposits and 40 percent from other savings accounts. Such figures provide no information on the changes in the *desired* proportions in which various financial assets are held. For example, most time accounts are increased by the deposit of checks or currency. This does not mean that demand deposits or currency in the economy decline when time deposits expand. If the public's desired ratios of time deposits and currency to demand deposits are unchanged, one individual's deposit to a time account ultimately has no effect on M1 or M2. The individual transactions discussed are intended to represent changes in desired proportions of demand deposits or other time deposits to checkable deposits.

[4]Similar differential reserve requirements on demand and savings accounts exist in almost all states for nonmember commercial banks. See R. Alton Gilbert and Jean M. Lovati, "Bank Reserve Requirements and Their Enforcement: A Com-

parison Across States," this *Review* (March 1978), pp. 22-32. Changes in the member/nonmember composition of deposits are ignored in this article.

[5]If funds are withdrawn from a nonbank thrift institution, the result is quite different. In this case, the result is comparable to the switch from demand deposits to ATS accounts since the funds deposited in the ATS account are drawn upon the commercial bank demand deposit account of the nonbank thrift. In the unlikely event that other time deposits at commercial banks are transferred to ATS accounts, the results are also different. Since ATS balances have higher required reserve ratios than most other time deposits, reserves are absorbed by such a transaction (see Table I).

a transfer of balances from demand deposits to ATS savings deposits reduces M1. The institutional reason is that a given amount of ATS deposit balances requires commercial banks to hold less reserves than an equal amount of demand deposit balances; a transfer of balances from demand to ATS savings accounts increases excess reserves. In response, commercial bank loans, investments, and deposits will rise. This increase in bank deposits will partly offset the reduction in M1, and will increase broader aggregates such as M2. Of course, the Federal Reserve could offset the increase in excess reserves caused by movements of funds from demand deposits to ATS accounts. In this case, excess reserves and broader monetary aggregates would be unchanged, but M1 would still decline.

Another issue raised by the introduction of ATS accounts is its effect upon the interpretation of monetary aggregates. The sum of currency held by the public and demand deposits, M1, is generally considered a measure of the economy's medium of exchange, or financial assets which can be directly exchanged for goods and services. Since checks may be written against balances held in an ATS account, these balances should not be excluded from such a measure of financial assets. Consequently, it is useful to consider a third monetary aggregate measure which includes ATS balances as checkable deposits.[6] In the model of the money supply process below, ATS balances are added to M1 to form an aggregate denoted as M1*. A recent proposal by the staff of the Federal Reserve Board of Governors includes ATS balances in a new M1 measure. The resulting measure would be very similar to the M1* used here.[7]

Consider the effects of the introduction of ATS upon M1*. While a transfer of funds from a demand

deposit account to an ATS account lowers M1, M1* initially is unaffected; the rise in ATS balances offsets the equal-sized decline in demand deposits. The reduction of required reserves resulting from this transfer allows commercial banks to expand their loans, investments, and deposits, so M1* will ultimately rise and the initial decline in M1 will be partially offset. As discussed above, this effect arises solely because of differential reserve requirements. Transferring funds from an existing savings account to ATS will increase M1* while leaving M1, M2, and required reserves unaffected.

ATS AND THE MONEY SUPPLY PROCESS

A standard model of the money supply process can be modified to account for the effects of ATS on monetary aggregates. The central feature of the standard model is that individuals and banks demand currency and bank reserves while the available supply of assets which may be used for these purposes is controlled by the Federal Reserve System.[8]

The desired demand for currency relative to checkable deposits, expressed as a ratio (k), depends upon such economic factors as the relative costs and benefits of holding and using the two assets for transactions. For example, checks are more safely and cheaply used for some transactions while currency has a relative advantage for others. Changes in the relative proportions of such transactions in total spending affect the desired ratio of currency holdings to checkable deposits. Currency holdings, C, may be expressed as:

$$(1) \qquad C = k\,CD$$

where CD represents checkable deposits and k depends on an unspecified set of economic variables, which can be regarded as given for the purposes here.

The commercial banking system's holdings of currency and reserves depend primarily upon required

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[6]It may seem difficult to obtain a measure of directly spendable dollar balances comparable to pre-ATS measures of M1 since ATS accounts include balances held for the same reasons as other savings deposits, as well as balances held for transactions. The extent to which this classification difficulty represents a problem for measuring and interpreting monetary aggregates is unclear, since it is not peculiar to the introduction of ATS. For example, minimum balances held to reduce service charges on demand deposit accounts are not held for transactions purposes to the same extent as other demand deposit balances. Yet there is no evidence that the inclusion of these "idle" balances in M1 has affected the past usefulness of M1.

[7]See Board of Governors of the Federal Reserve System, "Redefining the Monetary Aggregates." The proposed M1 measure excludes selected foreign deposit balances which are currently included in M1. The proposed M1 measure also includes NOW account balances, credit union share draft balances, and other demand deposits at thrift institutions which are ignored in the discussion of M1*.

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[8]In the usual model, the ratios discussed below are defined relative to demand deposits instead of checkable deposits. The modification maintains continuity with older series on the relevant ratios since, before November 1, 1978, checkable deposits and demand deposits were virtually identical. Also, this change simplifies the arithmetic. In the usual model, ATS would tend to raise the k- and t-ratios and lower the r-ratio, as ATS balances replace demand deposits. These changes appear to have ambiguous effects on money multipliers. However, with considerable manipulation of the usual model, the results below can be derived.

reserve ratios of the Federal Reserve System. Commercial banks which are not Federal Reserve members are also subject to reserve requirements, but their reserves are held largely as demand deposits at other commercial banks and not as deposits at Federal Reserve Banks. Both member and nonmember banks hold vault cash as a part of their reserves.

For simplicity, the demand for vault cash and reserves at Federal Reserve Banks (R) can be attributed to the deposits against which reserves are held — demand, other time and savings, and ATS deposits.[9] The average required reserve ratio for member banks on all savings and time deposits is approximately the same as that for ATS deposits. It is assumed that the average reserve ratio on other time and savings deposits (T) and on ATS deposits (ATS) are the same, r_t, and equal the required ratio on savings deposits. The average reserve ratio on demand deposits (DD) is called r_d. Total reserves, R, can be expressed as:

$$(2) \qquad R = r_d \, DD + r_t \, T + r_t \, ATS$$

By dividing checkable deposits into its two components, demand deposits and ATS balances, each component may be measured as a fraction of checkable deposits. If the proportion of ATS balances to checkable deposits is called d, then the proportion of demand deposits is $(1-d)$. Similarly, other time and savings deposits may be expressed as a ratio of checkable deposits; this ratio is called t. Total reserves in equation (2) can be rewritten as:

$$(2') \qquad R = [r_d + r_t \, t - d \, (r_d - r_t)] \, CD = r \, CD$$

where r is the average reserve ratio, or in this case the ratio of total bank reserves to checkable deposits. Changes in the d-ratio may be used to analyze the impact of the introduction of ATS accounts.

Reserves of commercial banks and currency holdings of the public are limited by the existing supply of such assets. One measure of these assets is the *monetary base* which is adjusted for changes in member bank reserve requirements. Another is the *source base* which is not so adjusted. The source base is used here to simplify calculations, but the analytical

results and quantitative measures below are virtually identical using either measure of the base.[10]

Together with the definitions of various monetary aggregates, the source base and equations (1) and (2') provide a framework for analyzing the money supply process. In particular, any monetary aggregate (M) can be considered to be the product of a multiplier (m) and the base (B):

$$(3) \qquad\qquad M = m \, B$$

This result follows from equating the uses of the base and its supply:

$$(4) \qquad B = C + R = k \, CD + r \, CD \qquad or$$

$$(5) \qquad\qquad CD = \frac{1}{k + r} \, B$$

Monetary aggregates can be expressed using equation (5) and the ratios which relate the components of each aggregate to checkable deposits. For example, the narrow money supply is currency (k CD) plus demand deposits $[(1-d) \, CD]$ or:

$$(6) \qquad M1 = \frac{(1-d) + k}{k + r_d + r_t t - d(r_d - r_t)} \, B = m1 \, B$$

Within this framework, the introduction of ATS may be viewed as having an impact upon the money multiplier. For a given source base determined by Federal Reserve actions, a shift to ATS deposits changes a monetary aggregate measure by changing the multiplier.

Since a multiplier measures the link between Federal Reserve actions and each monetary aggregate, the effect of ATS on the size of a multiplier also determines its impact on the responsiveness of an aggregate to changes in the source base. If the multiplier for an aggregate rises, the aggregate is more responsive to a given Federal Reserve action which changes the source base. If the multiplier declines, the monetary aggregate changes less for a given change in the base.

Such changes in the responsiveness of aggregates to changes in the base are only likely to be significant during the period of transition to ATS. The rate of growth of an aggregate may be decomposed using equation (3) into the rate of growth of the base, B, and the rate of change of the multiplier, m.

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[9]U.S. government demand deposits at commercial banks are not included in the demand deposit component of the money supply, but they are included in commercial bank demand deposits for reserve requirement purposes. Thus, in the discussion here, these required reserves are included in the ratio of total reserves to private demand deposits.

[10]See Albert E. Burger and Robert H. Rasche, "Revision of the Monetary Base," this *Review* (July 1977), p. 13, for a rationale for using the monetary base instead of the source base in monetary analysis. Also, see Albert E. Burger, *The Money Supply Process* (Belmont, California: Wadsworth Publishing Co., Inc., 1971), pp. 38-39, 190.

Table II

Money Multipliers

Aggregate	Multiplier
M1	$m1 = \dfrac{(1-d)+k}{k + r_d + r_t\, t - d\,(r_d - r_t)}$
M1*	$m1^* = \dfrac{1+k}{k + r_d + r_t\, t - d\,(r_d - r_t)}$
M2	$m2 = \dfrac{1 + k + t_n}{k + r_d + r_t\, t - d\,(r_d - r_t)}$

Since the change in the multiplier will occur only during this period of transition, ATS will have no impact on the responsiveness of aggregates to base growth after the adjustment to ATS is complete.[11]

The money multipliers for M1, M2, and M1° are given in Table II. In the absence of ATS accounts, the d-ratio is zero and the multipliers are those of the usual model. Note that in this case k and t are ratios measured relative to demand deposits only. Also, in deriving the M2 expression, only a portion of time deposits is included, representing the ratio of other net time deposits to checkable deposits (t_n); large negotiable certificates of deposit at weekly reporting large banks are included in t but not in the definition of M2.

The effects of the introduction of ATS accounts on each of the monetary aggregate measures can be demonstrated using the multipliers in Table II. The effects on the various multipliers due to a change in d are shown in the first column of Table III.[12] The signs indicate that a rise in ATS savings deposits from zero to some proportion of checkable deposits, d, unambiguously reduces the M1 multiplier while increasing the M2 and M1° multipliers. The latter two results arise solely because of the difference in average reserve ratios for demand deposits and savings deposits. If reserve requirements were the same on demand and ATS deposits, the only effect of an in-

crease in the proportion of checkable balances held in ATS accounts would be a reduction in M1.

The second column of Table III provides expressions for the responsiveness of the aggregates to a change in the d-ratio. In each case the responsiveness is expressed by a measure (called a semi-elasticity) of the percentage change in the aggregate for each one percentage point rise in the d-ratio. These measures may be used to assess the impact of ATS on the aggregates as d increases from zero to the level which individuals desire.

The results in Table III are derived assuming that the ratios r_d, r_t, t, and k are unaffected by the introduction of ATS accounts. This assumption about the reserve ratios is motivated by the close relationship between average and required reserve ratios, which would not necessarily be expected to change due to ATS accounts. The currency ratio (k) may fall, however, if the rate of return on checkable deposits increases substantially due to ATS. If the currency ratio declines, the tendency for M1° and M2 to rise would be reinforced while the decline in M1 would be offset to some extent.[13] A substantial rise in the rate of return on checkable deposits is not an obvious result of the introduction of ATS, however. While checkable deposits held in ATS accounts will earn a positive and explicit rate of interest, it is not clear that this rate will significantly exceed the implicit rate of return previously available on demand deposit accounts. If commercial banks had found it feasible to offer a substantially higher rate of return on checkable deposits prior to November 1, 1978, competitive pressures presumably would have forced them to do so through greater service charge remission or other methods.

The assumption that the ratio of other savings and time deposits to checkable deposits is unaffected by ATS may be questioned also. The presumption here is that all ATS balances are checkable balances held for transactions purposes. To the extent that ATS balances replace other savings balances, the t-ratio would decline during the transition to ATS. Again, such a development would reinforce the M1° result, while partially offsetting the decline in M1. However, a decline in the t-ratio would partially offset the tendency for M2 to rise. Viewed in light of these qualifications, the expressions in Table III can be considered to provide a minimum estimate of the increase in M1°

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[11]A second and more important issue for monetary control is the variability of the money multipliers. If the multiplier becomes more variable due to the introduction of ATS accounts, the ability to control monetary aggregates is reduced. Because movements of funds between ATS accounts and demand deposits are likely to increase the variability of average reserve holdings due to differential reserve requirements, reduced control is to be expected, other things being equal.

[12]It is assumed here that all ATS balances are checkable balances held for transactions purposes. The effects of relaxing this assumption are discussed below.

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[13]This requires that $(r + d)$ is less than one, which is the case given current values of r and values of d considered below.

Table III

The Effects of ATS[1]

Effect on the Multiplier for:[2]

$$M1 : -\frac{1}{(k+r)^2}\left\{ k(1-r_d)+r_t(1+t+k)\right\} < 0$$

$$M1^* : \frac{1+k}{(k+r)^2}(r_d - r_t) > 0$$

$$M2 : \frac{1+k+t_n}{(k+r)^2}(r_d - r_t) > 0$$

The Percentage Change in the Monetary Aggregate:

$$M1 : \frac{1}{k+r}(r_d - r_t) - \left(\frac{1}{1+k-d}\right) < 0$$

$$M1^* : \frac{1}{k+r}(r_d - r_t) > 0$$

$$M2 : \frac{1}{k+r}(r_d - r_t) > 0$$

[1] The expressions are based upon the response due to a one percentage point increase in the ratio of ATS deposits to checkable deposits (d).
[2] Signs required: $1 > r_d > r_t$

and a maximum estimate of the decline in M1 which would result from the transition to ATS.[14]

ESTIMATES OF THE IMPACT OF ATS ON THE MONETARY AGGREGATES

It is possible to provide general estimates of the impact of ATS on the monetary aggregates by evaluating the semi-elasticity expressions in Table III. The results provide a measure of the percentage change in each aggregate due to each one percentage point rise in d, other factors remaining the same.

In October 1978 the average values of the t-ratio, k-ratio, and r-ratio were 2.249, 0.360, and 0.158, respectively.[15] Since ATS accounts did not exist prior to November, the ratios are measured relative to demand deposits only (d = 0). Letting r_t, the average reserve ratio on time and savings deposits, equal

3 percent, the average reserve ratio on demand deposits is found to be 0.091 ($r - r_t$ t). When these parameters are used to evaluate the semi-elasticities in Table III, the results for M1, M1*, and M2 are –0.618, 0.118, and 0.118, respectively.[16] Thus, each one percent of checkable deposits held in ATS savings accounts reduces M1 by 0.62 percent, while increasing both M1* and M2 by 0.12 percent, other factors remaining the same.

Table IV presents changes in the growth rates of M1, M1*, and M2 for various percentage shifts of *eligible* demand deposits into ATS deposits (assuming unchanged growth rates for the source base and for other factors influencing the growth rates of the monetary aggregates). When ATS accounts were introduced, about $95 billion of demand deposits held by individuals were eligible for use in ATS plans. These eligible deposits have averaged about 34 percent of *total* demand deposits during 1977 and 1978. (The percentage shifts in terms of *total* demand deposits are shown in parentheses in Table IV). The level of d is obtained by multiplying the percentage of eligible demand deposits which will be held in ATS deposits (ranging from 5 to 30 percent in Table IV) by 34 percent. For example, if 5 percent of eligible demand deposits are held in ATS balances, the percentage of total demand deposits, d, is only 1.7 percent. The change in the growth rate of a monetary aggregate is obtained by multiplying d by the semi-elasticity of the money multiplier with re-

[14] If some fraction, f, of ATS balances is held for transactions purposes while the remainder is held for savings purposes, the results are similar to those obtained in Table III. In this case, only δ (where δ = fd) of ATS balances should be included in checkable deposits and in M1*. Also, the appropriate t-ratio in the model is τ = t + (1 – f)d. This model results in expressions which are the same as in Tables II and III except that δ and τ replace d and t, respectively. When the semi-elasticities for M1 and M2 are measured relative to d, the expressions in Table III must be multiplied by f. The semi-elasticity for M1* (defined to include *all* ATS balances) for an observed change in d is more complicated. The semi-elasticity in Table III is again multiplied by f, but (1 – f) [1/(1 + k)] must be added to obtain the relevant semi-elasticity for M1*

[15] The r-ratio is calculated by dividing the sum of member bank reserves and nonmember bank vault cash by the demand deposit component of the money supply. The measures of the ratios are not very sensitive to the month or quarter chosen. For example, if the average monthly ratios for the year ending in October 1978 or for the third quarter of 1978 are used, the estimates of the effects on M1, M2, and M1* given below are the same.

[16] The semi-elasticity for M1 is calculated with d set equal to zero, its initial value in this case. An alternative approach would be to calculate this semi-elasticity with d set equal to its assumed value at the end of the period. This would result in a slightly larger (in absolute value) calculated semi-elasticity for M1. For the values of d considered below, this alternative approach has little effect on the reported results.

Table IV

Impact on Monetary Aggregate Growth Resulting from the Introduction of ATS

(In Percentage Points for the Period III/78 to III/79)

Monetary Aggregate	Percentage of Eligible Demand Deposits that Shift into ATS deposits[1]					
	5% (1.7%)	10% (3.4%)	15% (5.1%)	20% (6.8%)	25% (8.5%)	30% (10.2%)
M1	−1.1	−2.1	−3.2	−4.2	−5.3	−6.3
M1*	0.2	0.4	0.6	0.8	1.0	1.2
M2	0.2	0.4	0.6	0.8	1.0	1.2

[1]The percentages that are implied by these figures for the proportion of *total* demand deposits which shift into ATS deposits are shown in parentheses.

spect to d. Consequently, M1 would be reduced by about 1.1 percent (1.7 × −0.62) in this example. In Table IV it is assumed that the transition to ATS occurs over a one-year period, measured from the third quarter of 1978 to the third quarter of 1979.

While a 5 percent shift of eligible demand deposits reduces M1 growth by 1.1 percentage points over a one-year transition period, the growth of both M1* and M2 is increased by only 0.2 percentage points (Table IV). As the percent of eligible demand deposits held in ATS accounts increases, the reductions in M1 growth and the increases in M1* and M2 growth become larger. A shift of 30 percent of eligible demand deposits reduces M1 growth by 6.3 percentage points over a one-year transition period, while both M1* and M2 growth are increased by 1.2 percentage points.

One estimate of the possible effects of the introduction of ATS accounts on the growth rates of M1, M1*, and M2 over a one-year transition period is provided by the NOW account experience in New England. Estimates of the percentage of individual demand deposits shifted to NOW accounts in the first year have generally been close to 20 percent.[17] If the experience with ATS accounts is the same, M1 growth would be reduced by 4.2 percentage points in the first year, while growth of M1* and M2 would be increased by 0.8 percentage points, other things remaining constant.

[17]See *The Money Manager*, October 16, 1978, p. 28 which reports this percentage as consistent with the shift of demand deposits into NOW accounts in New England. A similar percentage also is expected at the largest commercial bank in the nation, *American Banker*, September 12, 1978, pp. 1, 15.

ATS, MONETARY POLICY, AND THE ECONOMIC OUTLOOK

Monetary aggregate growth affects the economy's growth of output, employment, and prices, and influences financial market developments domestically and abroad. Consequently, the Federal Open Market Committee (FOMC) in recent years has set ranges for growth rates of monetary aggregates which are intended to be consistent with national economic objectives. The FOMC monitors monetary aggregate growth and economic developments in order to assess the effectiveness of their actions and to decide whether to alter monetary policy. The FOMC does not directly control the M1 or M2 aggregates; instead, they control the size and composition of the total assets of the Federal Reserve System. Actions which change System assets, however, have a direct impact on the base, the total of financial assets available to be held as currency by the public or as reserves in the commercial banking system. The rate of growth of the base is the prime determinant of the growth of monetary aggregates.

The transition to ATS will affect the expected growth rates of monetary aggregates resulting from any given growth path for the source base. Since M1* and M2 will tend to grow faster as ATS balances rise to the desired proportion of the public's transaction balances, maintaining a given rate of growth of these aggregates will require slower growth of the source base. Alternatively, since ATS will tend to reduce M1 growth given a growth path of the base, maintaining a given rate of M1 growth would require faster growth in the base. Another effect of ATS is to widen the disparity between M1 and M2 growth which can be expected during the transition period. The transition to ATS will lower M1 growth and raise M2 growth independently of FOMC actions which change the source base.

The October change in the FOMC's announced M1 growth range from that announced in July of last year partly reflected this development. In February, April, July, and October of 1978, the FOMC determined one-year ranges for M1 and M2 growth. The ranges determined in July were the same as those of February and April, calling for M1 growth in the coming year of 4 to 6.5 percent and for M2 growth of 6.5 to 9 percent. The one-year period specified in July was from II/78 to II/79. In October the FOMC lowered the M1 growth range for the coming year (III/78 to III/79) to 2 to 6 percent, while leaving the M2 growth range unchanged. The difference be-

tween the midpoint of the M2 range and the midpoint of the M1 range widened from 2.50 percentage points for the second-quarter ranges to 3.75 percentage points for the third-quarter ranges. In comparison, the impact of ATS on this differential growth of M2 and M1 (or M1* and M1) is 0.74 percent for each one percentage point rise in d.

The switch to ATS balances could also have a significant impact on the interpretation of monetary actions. During the transition to ATS, the growth of M1 will tend to slow while the growth of M1* and M2 will receive a positive stimulus. If the thrust of monetary actions is assessed by the resulting growth rates, conflicting signals about the direction of policy will result.

Since M1* is a more accurate measure of currency plus checkable deposits, interpreting a slowing of M1 growth during the transition period is difficult unless one knows the extent of the shift from demand deposits into ATS deposits. Table V illustrates the relationship between the one-year growth of M1 and M1* (from III/78 to III/79) after the introduction of ATS, under various assumptions of the percentage of demand deposits that shift into ATS accounts. Again, other factors which would affect the difference between M1 and M1* growth are held constant.[18]

As shown in Table V, the M1* growth rate associated with any M1 growth rate is 1.3 to 7.5 percentage points higher for a 5 to 30 percent shift of eligible deposits, respectively. For a shift of 20 percent of eligible deposits, an M1 growth range of 2 to 6 percent corresponds to an M1* growth range of 7 to 11 percent, other factors remaining the same. Consequently, M1 growth of 2 to 6 percent does not necessarily represent a slowing of the growth of currency plus checkable deposits after the introduction of ATS; it could, in fact, represent an acceleration.

Most important, the interpretation of growth rates of monetary aggregates in assessing the prospects for inflation and recession is affected by the introduction of ATS. For example, consider two hypotheses concerning the impact of monetary actions on the economy. The first hypothesis is that inflation is a monetary phenomenon, so that changes in the rate of money growth result, with a long lag, in alterations of the inflation rate. The second hypothesis is

[18]The results reported in Table V are unaffected by whether or not some portion of ATS balances is held for savings purposes only.

Table V

Growth Rates of M1* Under Various Assumptions for M1 Growth and for the Percentage of Eligible Demand Deposits that Shift into ATS Deposits[1]

(In Percentage Points for the Period III/78 to III/79)

M1 Growth	Percentage of Eligible Demand Deposits that Shift into ATS deposits[2]					
	5% (1.7%)	10% (3.4%)	15% (5.1%)	20% (6.8%)	25% (8.5%)	30% (10.2%)
−4%	−2.7	−1.5	−0.2	1.0	2.3	3.5
−3%	−1.7	−0.5	0.8	2.0	3.3	4.5
−2%	−0.7	0.5	1.8	3.0	4.3	5.5
−1%	0.3	1.5	2.8	4.0	5.3	6.5
0%	1.3	2.5	3.8	5.0	6.3	7.5
1%	2.3	3.5	4.8	6.0	7.3	8.5
2%	3.3	4.5	5.8	7.0	8.3	9.5
3%	4.3	5.5	6.8	8.0	9.3	10.5
4%	5.3	6.5	7.8	9.0	10.3	11.5
5%	6.3	7.5	8.8	10.0	11.3	12.5
6%	7.3	8.5	9.8	11.0	12.3	13.5
7%	8.3	9.5	10.8	12.0	13.3	14.5
8%	9.3	10.5	11.8	13.0	14.3	15.5

[1]This table indicates an effect of ATS and is only illustrative of the difference between M1 and M1* growth over the year. The ratio of currency to checkable deposits is assumed to be constant; changes in this ratio also affect the difference between M1 and M1* growth.

[2]The percentages that are implied by these figures for the proportion of *total* demand deposits which shift into ATS deposits are shown in parentheses.

that a sharp slowdown in the rate of money growth relative to its recent trend rate of expansion is a primary cause of recession. Empirical assessment of the hypotheses often focuses upon the growth rate of M1, the monetary aggregate most sensitive to the ATS innovation.

A simplified version of the hypotheses in the context of the economic outlook for 1979 can be used to contrast the situation with and without ATS. Through the third quarter of 1978 (pre-ATS), the trend rate of growth of M1 over the previous five years had been 6.2 percent, but in the two years prior to ATS, M1 growth was at the highest rate (8 percent) in post-World War II history. Given this view, a continuation of the 8 percent annual rate of M1 growth would continue the acceleration of the inflation rate. Since money growth would exceed its past trend rate, no monetary-induced recession would occur. On the other hand, if M1 growth were to slow to perhaps a 4 percent rate or less for at least six months, the associated slowing in the growth of demand for goods and services could be large enough to produce a

recession. If such a slowing in M1 growth were maintained, the accelerating trend of monetary expansion would tend to slow gradually and then reverse, so the inflation rate could be expected to slow in future years.

Now suppose that the hypotheses above are correct and that the transition to ATS is as large as 20 percent. If observed M1 growth were to slow to a 4 percent rate over the year, it would not involve the restrictive implications above. Indeed, this "slowing" of M1 growth would be deceptive since M1* could be growing at a 9 percent rate, faster than the record 8 percent rate of growth of currency plus checkable deposits over the two years ending in the third quarter of 1978 (Table V). If M1* has the same implications for the economic outlook as M1 formerly possessed, a sharp slowing of M1 growth over the first year of ATS could occur without recessionary implications. Indeed, given the assumptions used in Table V, a sharp slowing of M1 growth could be required for M1* growth to match the record rate of M1 growth in the prior two years, depending on the extent to which individuals adopt ATS accounts.

CONCLUSION

The introduction of ATS accounts at commercial banks may have substantial impacts on the behavior of monetary aggregates and their implications for economic developments over the year. The effects will depend upon the extent to which individuals switch from demand deposits to ATS savings accounts. The primary source of difficulty in controlling and interpreting monetary aggregate behavior is the existence of differential reserve requirements for checkable deposits held in ATS savings accounts and those held as demand deposits. Notwithstanding this problem, the definition of M1, by excluding checkable savings balances, implies that M1 growth will tend to slow during the transition to ATS, independently of changes in monetary actions and without necessarily altering the economic outlook. Should the Federal Reserve System adopt the new definition of M1 recently proposed by the Federal Reserve Board staff, the interpretation of M1 as a measure of currency plus checkable deposits would cease to be affected by ATS, but effects due to differential reserve requirements would remain.

Economic Developments in 1978

MICHAEL E. TREBING

At the beginning of 1978, Administration policy-makers, focusing upon the prospect of a slower rate of economic growth for the upcoming year, proposed several steps which they hoped would insure that the economy's growth would continue at a satisfactory rate.[1] Income tax cuts, designed to take effect toward the end of the year, were proposed to offset the dampening effect of increased social security taxes and the inflation-induced higher income taxes. Economic growth of 4.5 to 5 percent was forecast for 1978 on the assumption that these tax cuts would be approved. With the help of a "deceleration strategy," which included a request for voluntary moderation of prices and wages, policymakers believed that inflation could be held to about a 5.75 to 6.25 percent rate for the year.

The economy in 1978, however, did not meet these expectations. Although output of real goods and services grew at a 4.3 percent rate, the rate of inflation, as measured by the consumer price index, accelerated to 9 percent. This unexpectedly high rate of inflation caused widespread public alarm.

By the latter part of 1978, policymakers had singled out the acceleration of inflation as the most important problem facing the U.S. economy. Voluntary wage and price standards and the implied methods of enforcement (for example, the use of public exhortation and procurement sanctions) accompanied this official recognition as did a postponement of the proposed tax cuts.[2] In November the Federal Reserve and the Treasury jointly announced major actions "to strengthen the dollar in foreign exchange markets and thereby to counter continuing inflationary pressures."[3] The Federal Reserve increased certain reserve requirements for member banks, raised the discount rate by one percentage point, and the Federal Open Market Committee voted to reduce the expansion of money and credit. The Treasury announced that it would increase its monthly sales of gold beginning in December, increase central bank swap facilities, and issue foreign-currency-denominated securities in Europe. This article provides a review of the economy in 1978, including a description of the major policy actions during the year.
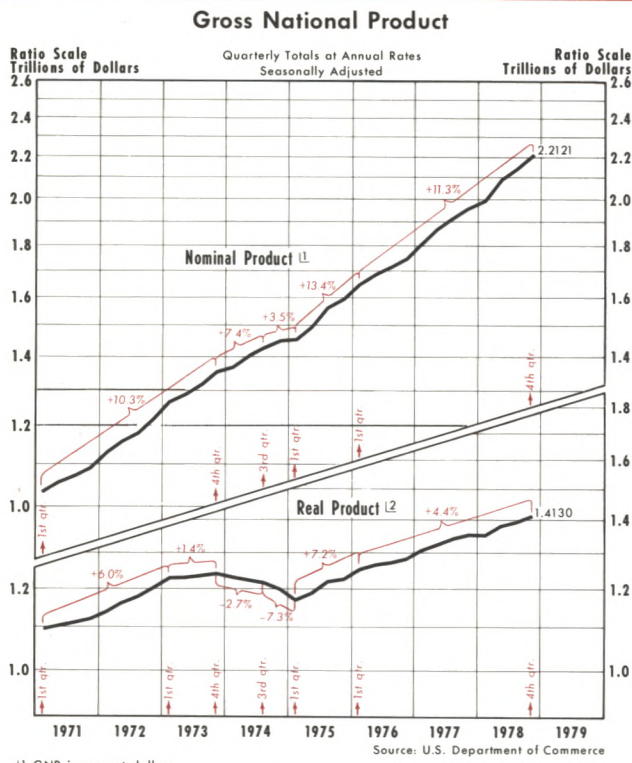
BUSINESS DEVELOPMENTS

Spending and Output

Following slow growth in the first quarter of the year, which was attributable primarily to a prolonged coal strike and inclement weather, the economy rebounded in the remaining three quarters of 1978. Growth in total spending on goods and services (Gross National Product (GNP) in current dollars) acceler-

[1]See Council of Economic Advisors, *Economic Report of the President* (Washington, D.C.: U.S. Government Printing Office, 1978), pp. 75-76.

[2]For a description of these actions and the Administration's intentions to reduce the rate of inflation see Council of Economic Advisors, *Economic Report of the President* (Washington, D.C.: U.S. Government Printing Office, 1979), pp. 45-52, 80-84.

[3]See "Record of Policy Actions of the Federal Open Market Committee," *Federal Reserve Bulletin* (December 1978), p. 957.

Gross National Product

Ratio Scale Trillions of Dollars

Quarterly Totals at Annual Rates
Seasonally Adjusted

Ratio Scale Trillions of Dollars

Nominal Product L1

Real Product L2

L1 GNP in current dollars.
L2 GNP in 1972 dollars.
Percentages are annual rates of change for periods indicated.
Latest data plotted: 4th quarter

Source: U.S. Department of Commerce

Table I

Selected Economic Indicators
(Compounded Annual Rates of Change)

Output:	1978 (IV/77-IV/78)	1977 (IV/76-IV/77)	Expansion (I/75-IV/78)
Real GNP	4.3%	5.5%	5.1%
Components of Real GNP			
Personal Consumption Expenditures	4.1	4.8	5.1
Gross Private Domestic Investment	5.3	15.5	12.7
Nonresidential Fixed Investment	8.5	9.1	5.5
Residential Fixed Investment	−0.2	15.3	14.4
Government Purchases of Goods & Services	1.8	5.1	2.0
Federal Government Purchases	−1.2	6.3	1.8
State & Local Government Purchases	3.6	4.3	2.2
Prices:			
GNP deflator	8.3	6.1	6.4
Consumer Price Index	9.0	6.6	6.9
Producer Price Index	9.6	6.0	6.5

ated at a relatively rapid 13 percent rate in the year ending fourth quarter of 1978. This four-quarter growth rate has been exceeded only once (I/75 to I/76) since the current expansion began in March 1975. Real output of the economy, as measured by GNP adjusted for price changes, grew only slightly more than 4 percent in 1978 which represents a slowing from the 5.5 percent increase in 1977. The economy ended the year with rapid growth in output and spending. In the fourth quarter, total spending increased at a 15.0 percent annual rate and output grew at a 6.4 percent rate.

The growth rate of industrial production accelerated during the year and was still expanding rapidly in the final quarter. From IV/77 to IV/78, industrial production grew 7.4 percent after expanding 5.9 percent in the previous four-quarter period. This relatively rapid rate of growth contributed to a rise in the utilization of manufacturing capacity. In the fourth quarter, the Federal Reserve Board capacity utilization index reached 85.8 percent, compared to 82.9 percent a year earlier. In the past 10 years, this rate of utilization has been exceeded only during the period from late 1972 through mid-1974.

Table I displays several indicators of business activity for 1977, 1978, and the entire current expansion. The overall expansion has exhibited differential growth rates across the various sectors. For example, real consumer spending, which played an important role in the early stages of the expansion, slowed to a 4.1 percent increase for the year ending IV/78. This slowing is associated with a moderation of real disposable income growth from 5.4 percent in 1977 to 3.4 percent last year. Increases in social security taxes, which went into effect in January, and higher effective tax rates, induced by a progressive tax structure based on nominal incomes accompanied by inflation, contributed to the slower rate of growth.

The strongest component of total real spending was nonresidential fixed investment which grew 8.5 percent in 1978 and which has grown faster than real GNP in each of the last three years. Real investment in commercial and industrial structures in 1978 increased 13.2 percent. On the other hand, investment in producers' durable equipment grew 6.2 percent over the year — considerably slower than the rate that was expected as the economy approached full capacity. Real residential fixed investment, which has made significant gains over the course of the current expansion, declined by 0.2 percent in 1978 despite a

Table II

Labor Force and Employment Growth — 1978
(Percent change, IV/77-IV/78)

Civilian Labor Force	3.0%
Civilian Employment	3.9
Employment in:	
Agriculture	1.3%
Manufacturing	8.6
Mining	14.4[1]
Transportation and Utilities	4.4
Trade	4.5
Finance	3.0
Service	4.4
Government	1.4
Contract Construction	11.2

[1]The coal strike beginning in the fourth quarter of 1977 affected this figure. If the month of December is dropped from the IV/77 average, employment growth was only 7.5 percent over the year.

SOURCE: U.S. Department of Labor.

total of over 2 million housing starts. In the previous three years, real residential fixed investment grew at an annual rate of 14.9 percent.
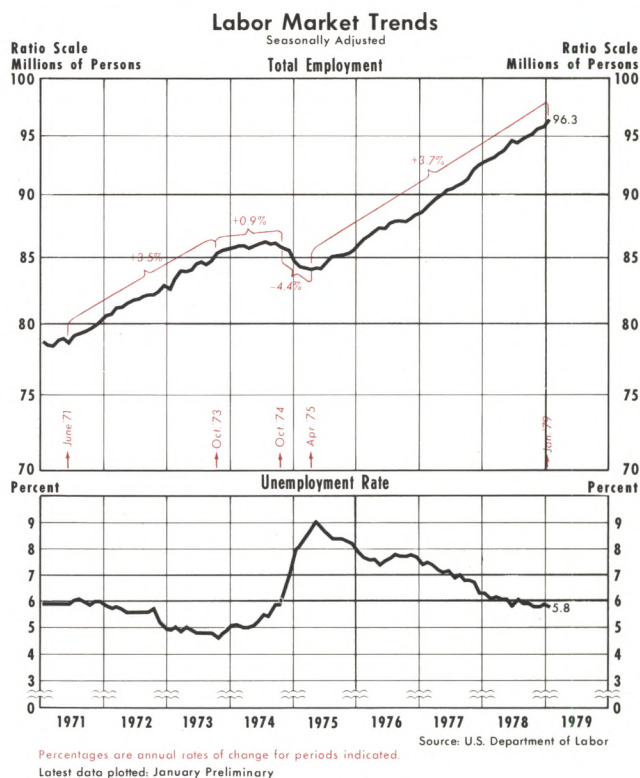
Employment

An additional 3.6 million workers were employed from IV/77 to IV/78. This represents a 3.9 percent rate of employment growth in 1978, close to the average rate for the entire expansion period. In the 1961-69 expansion — the only other expansion since World War II which lasted as long as the current one — annual employment growth averaged only a little over 2 percent. Employment gains were observed across all industries in 1978 with service and cyclical industries (especially contract construction) achieving the largest gains (see Table II).

The percentage of total civilian employment to civilian noninstitutional population of working age (16 years and over) provides another way of assessing the current employment picture. In December this ratio was almost 60 percent — higher than at any time in the previous 30 years.

Since the second quarter of 1975, when the unemployment rate peaked at about 9 percent, employment gains have been strong relative to labor force growth. As a consequence, significant progress in lowering the unemployment rate was achieved in 1978. The unemployment rate dropped from 6.6 percent in IV/77 to 5.8 percent in IV/78.

Despite recent employment gains, the unemployment rate remained about one percentage point above

Labor Market Trends

Percentages are annual rates of change for periods indicated.
Latest data plotted: January Preliminary

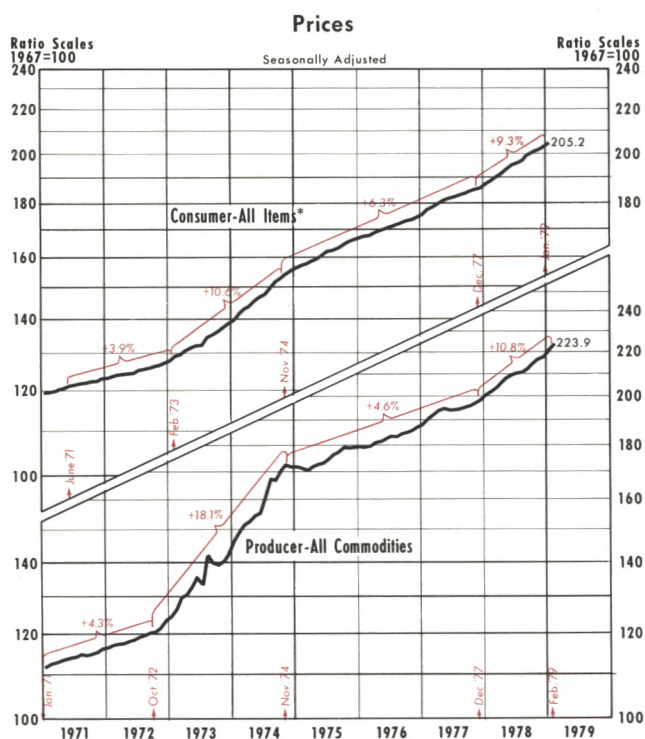Source: U.S. Department of Labor

its low point in the previous expansion (IV/70 to IV/73). Several factors have contributed to maintaining the unemployment rate at a relatively high level compared to historical experience. One of these is the exceptional growth of the labor force in recent years. In the past three years, it has grown at a 2.9 percent annual rate, compared to a growth rate of 1.7 percent during the previous 30 years.

Moreover, the labor force now contains a larger proportion of women and teenagers than previously. Last year, participation in the labor force for both of these groups rose to record highs. The participation rate for adult women increased 1.5 percentage points to 50.1 percent, and the teenage participation rate jumped 1.6 percentage points to 58.5 percent.[4]
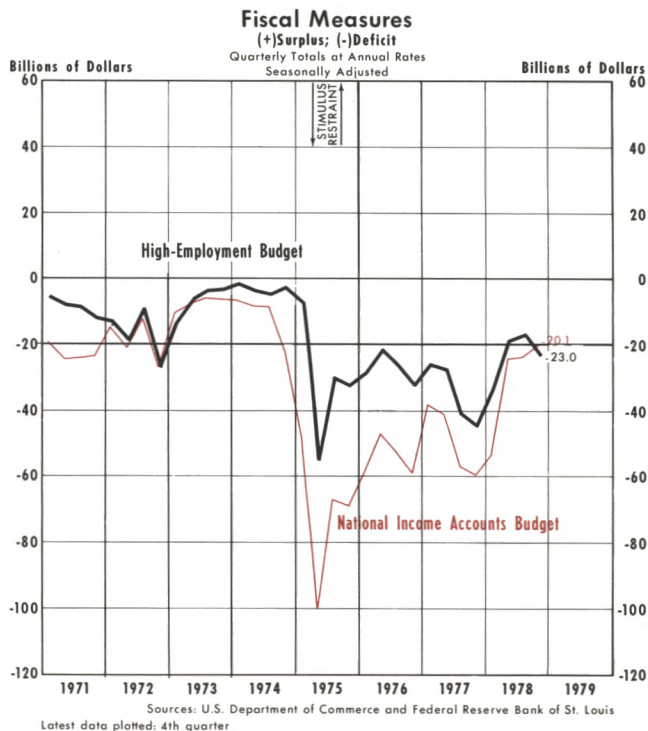
Prices

Prices, as measured by the GNP deflator, increased 8.3 percent from IV/77 to IV/78, up sharply from the 6.1 percent increase in 1977 and the 4.7 percent increase in 1976. Both the producer price index and the

[4]Participation rates measure the proportion of persons in a specific population group that are either employed or seeking employment.

Prices

Percentages are annual rates of change for periods indicated.
*CPI for Urban Wage Earners and Clerical Workers.
Latest data plotted: Consumer-January; Producer-February

Fiscal Measures
(+)Surplus; (-)Deficit
Quarterly Totals at Annual Rates
Seasonally Adjusted

Sources: U.S. Department of Commerce and Federal Reserve Bank of St. Louis
Latest data plotted: 4th quarter

consumer price index also showed similar accelerations last year (see Table I).

At the retail level, consumer prices increased at a 9 percent rate in 1978. However, there was considerable variation in the price increases among particular components. Food prices, for example, represented a sizable component of the general price increase as retail food prices rose 11.6 percent.[5] Strong demand for housing coupled with raw material shortages and higher mortgage rates resulted in a 9.9 percent rise in the housing component of the consumer price index. Prices for services increased 9.5 percent in 1978. Both durable and nondurable commodity prices rose 8.6 percent over the year.

FISCAL AND
MONETARY DEVELOPMENTS

Fiscal and monetary actions have an important influence on the economy's level of output, employment, and prices. Fiscal actions can be measured by

the level of government purchases of goods and services and by the form of financing these purchases. Monetary actions can be evaluated by examining the growth of monetary aggregates and the level of interest rates.
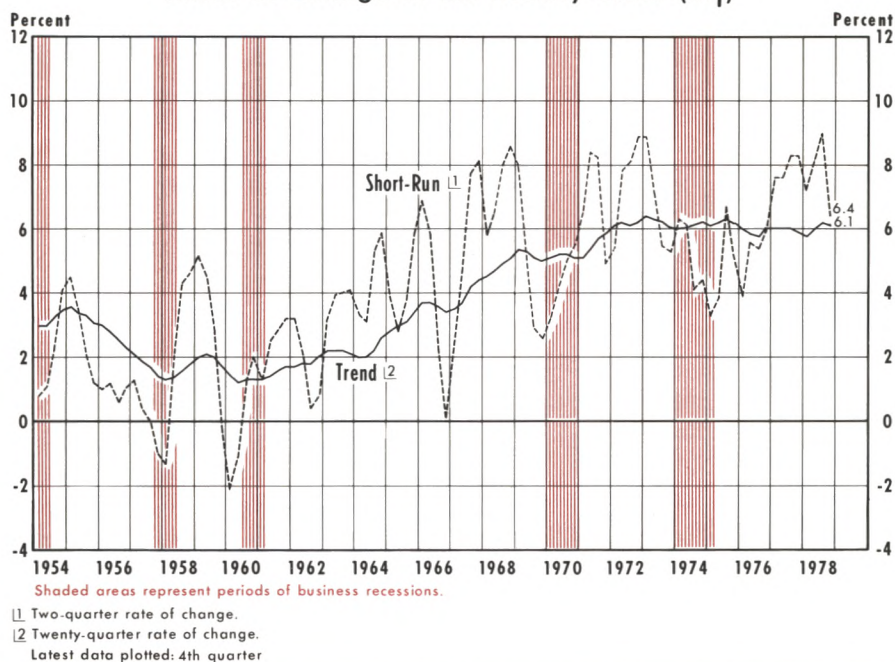
Fiscal Developments

Growth of real Government spending has shown a mixed pattern in recent years. Government purchases showed little growth in the first two years of the expansion. Between I/75 and I/76, real Government spending advanced 1.9 percent, and over the following four quarters declined 0.6 percent. However, this pattern was reversed beginning in 1977 as real government spending increased more than 5 percent for the year.

This spending, however, grew 1.8 percent last year. The greatest spending stimulus originated from state and local governments. From IV/77 to IV/78 state and local purchases in constant dollars rose 3.5 percent. In the first two quarters of 1978, these purchases grew at a much faster 4.6 percent rate but slowed to a 2.6 percent rate in the final two quarters. Continued federal aid, attributable in part to the 1977-78 stimulus package, contributed to the rapid rate of growth in the first two quarters. Included in the package were

[5]For a review of the rapid food price increases in 1978 see Neil A. Stevens and Clifton B. Luttrell, "1979 Food and Agricultural Outlook," this *Review* (February 1979), p. 19.

Rates of Change of the Money Stock (M₁)

Shaded areas represent periods of business recessions.

|1 Two-quarter rate of change.
|2 Twenty-quarter rate of change.
Latest data plotted: 4th quarter

special countercyclical aid and fiscal assistance grants. Large revenues from inflation and economic growth also helped sustain the pace of expenditures throughout the year.

The high-employment budget, a measure of the Federal budget adjusted for cyclical revenue and expenditure changes, indicates that the high-employment deficit declined in 1978 (see chart). The reduction resulted from both a lower-than-expected rate of government expenditures and a higher rate of tax revenues. The spending shortfall for fiscal 1978 was approximately 2.5 percent of total expected outlays. Higher inflation and real economic growth moved individuals into higher tax brackets and thus increased total tax revenues. Also, tax cuts which were scheduled to become effective October 1, were postponed until January 1, 1979. The budget deficit, however, is still quite large compared to similar points in past business expansions. On a National Income Accounts basis, the budget deficit for 1978 was $29.8 billion.

Monetary Aggregates

The rate of money growth has been found to be associated with the growth of total spending, prices, and the level of interest rates in the economy. Continuing rapid growth of the money stock had a significant influence in propelling the growth of total spending in 1978. M1, defined to include demand de-

posits and currency in the hands of the public, grew at a 7.6 percent annual rate over the two years ending IV/1978 — the fastest rate of growth registered over any eight-quarter period since World War II and well above the twenty-quarter trend rate of money stock growth of about 6 percent.

In contrast, M1 growth fell to a 4.4 percent annual rate in the final quarter of 1978. M2 (M1 plus net time deposits) displayed a similar pattern, growing at an 8.7 percent rate in the first three quarters but slowing to a 7.9 percent rate in the final quarter. The rate of growth of M2 was particularly slow in the final two months, increasing at a 3.8 percent rate.

Expansion of the money stock results primarily from the growth in the monetary base, which is the major determinant of the banking system's ability to create deposits.[6] Growth of the monetary base demonstrated a mixed pattern in 1978. In the first three quarters, the base grew at an annual rate of 9.4 percent — just above the 9 percent annual rate for the two years ending in the third quarter — and M1 increased at an 8.2 percent annual rate over this same three-quarter period. The growth of the monetary base slowed markedly in the final two months of the year to a 7.0 percent rate.

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[6]For a description of the monetary base, see Anatol B. Balbach and Albert E. Burger, "Derivation of the Monetary Base," this *Review* (November 1976), pp. 2-8.

Short-Term Interest Rates

Federal Funds

Prime Bank
Loan Rate

11.75

10.06

9.50

Discount Rate*

1971   1972   1973   1974   1975   1976   1977   1978   1979

*Rate changes when one of the twelve Federal Reserve Banks has the approval of the Federal
Reserve Board to change its discount rate. Data used is the day that rate is in effect.
Latest data plotted: February
Date of latest rate change: Discount Rate-November 1, 1978; PBLR-December 26, 1978

Interest Rates

Short-term interest rates on financial assets rose sharply last year. For example, the Federal Funds rate, which was at 6.56 percent in December 1977, rose to over 10 percent by the end of 1978. Long-term interest rates also increased as evidenced by a one percentage point rise in the yield on Corporate Aaa bonds.

Interest rates are established by forces of supply and demand for credit. Therefore, interest rate movements reflect not only the impact of current monetary actions on the supply of credit but also the impact of changes in the demand for credit. *Both* of these factors were responsible for higher interest rates in 1978. Demands for bank credit were quite strong as evidenced by a 15.5 percent increase in total loans over the year despite the general rise in interest rates. A reduced flow of reserves restricted the ability of the banking system to increase deposits in the final months of the year. In the final two months of 1978, commercial bank reserves *fell* at a 1.3 percent annual rate compared to an 11.6 percent growth over the previous six months. The combined effects of continued strong growth of loan demand and reduced rate of growth in the monetary base resulted in a further rise in interest rates in the final months of 1978.

INTERNATIONAL DEVELOPMENTS

International economic developments played an important role in influencing monetary policy actions during 1978. For example, the Federal Reserve gave international developments as a reason for five of the seven discount rate changes last year. The dollar fell relative to most currencies throughout much of 1978, especially with respect to the Japanese yen, German mark, British pound, and French franc. The dollar's decline was particularly pronounced in the third quarter of 1978. By the end of October, the dollar had declined 10.3 percent on a trade weighted basis from its value at the beginning of the year.

On November 1, the Federal Reserve Board and the U.S. Treasury announced that official support of the dollar would be significantly increased. The discount rate was raised a full percentage point and, effective November 2, a supplementary member bank reserve requirement of 2 percent was imposed on time deposits in denominations of $100,000 or more, obligations of affiliates, and ineligible acceptances. In addition, there was an announcement of increases in gold sales and an allotment of additional funds for foreign intervention in exchange markets. Following the November 1 announcement, the foreign exchange value of the dollar rose steadily until early December and then declined slightly. By late December, the value of the dollar in terms of the Japanese yen and Swiss franc was only somewhat below its November peak. In terms of most other major currencies, however, the dollar had fallen back to its lower levels of mid-October by the end of December.

FINANCIAL INNOVATIONS

Two major financial innovations occurred in 1978. Beginning on June 1, commercial banks and other thrift institutions were authorized to issue money market certificates. Starting November 1, commercial banks were permitted to introduce an automatic transfer service between savings and checking accounts. These innovations have had a significant and continuing impact on the economy.

Money Market Certificates

Money market certificates (MMCs) are nonnegotiable time deposits issued in denominations of $10,000 or more with original maturities of 26 weeks. The maximum permissible rate of interest on new MMCs issued by commercial banks is equal to the discount

Table III

Growth of Money Market Certificates

	Interest Rate on 6-month Treasury Bills[1]	Commercial Banks[2]		Mutual Savings Banks[3]		Savings & Loan Associations[4]
		Number of Offering Institutions	Amount Outstanding ($ millions)	Number of Offering Institutions	Amount Outstanding ($ millions)	Amount Outstanding ($ millions)
June 7	7.16%	6,455	$ 774	224	$ 847	$ —
June 28	7.23	7,963	2,055	258	1,596	5,400
July 26	7.50	8,961	5,470	273	3,504	11,790
August 30	7.47	9,825	7,792	331	5,009	15,080
September 27	7.98	9,886	9,679	364	6,136	19,338
October 25	8.56	10,552	13,858	319	8,908	26,660[5]
November 29	9.00	11,065	19,729	349	10,841	34,630[5]
December 27	9.52	11,658	22,956	431	12,822	40,790[5]
January 31	9.48	11,972	31,855	451	17,538	55,000[5]

[1]New issue rate, for week ending Saturday four days earlier than date shown.
[2]Based on a sample of 527 commercial banks.
[3]Based on a sample of 95 mutual savings banks.
[4]Data for end of month.
[5]Estimated figures; FSLIC - insured associations.
SOURCE: Federal Reserve releases G.13, H.6 and Federal Home Loan Bank Board *News*.

yield (auction average) on the most recent weekly six-month Treasury bill auction. The interest rate ceiling for new MMCs issued by mutual savings banks and other thrift institutions is one-quarter of a percentage point above that for commercial banks.

The introduction of MMCs enabled thrift institutions to reduce substantially the extent of disintermediation which had threatened to become a problem since the middle of 1977 when market interest rates began to rise above the legal ceiling rates on time and savings deposits. After June 1978, as the new issue rate on six-month Treasury bills rose — from 7.16 percent for the week ending June 7 to 9.58 percent by the end of December — the growth of MMCs surged (Table III), resulting in continuing high levels of mortgage lending and residential construction.[7]

Automatic Transfer from Savings

The automatic transfer service (ATS), available since November 1, 1978, represents a new type of individual savings account. By providing for the automatic transfer of funds from ATS savings accounts to cover checks written against their checking accounts, banks enable individuals to earn interest on

balances which had previously been held in their non-interest-bearing demand deposit accounts. Outstanding balances in ATS accounts at commercial banks are estimated to have been $4.3 billion in the week ending Jan. 31, 1979 (Table IV).

Table IV

Balances in Automatic Transfer Accounts[1]
(Millions of dollars)

			Insured commercial banks[2]	Mutual savings banks[3]
1978	November	8	$ 770	$ 2
		15	1,360	5
		22	1,720	6
		29	2,005	8
	December	6	2,475	9
		13	2,835	10
		20	3,005	11
		27	3,245	11
1979	January	3	3,760	13
		10	4,025	15
		17	4,310	n.a.
		24	4,215	n.a.
		31	4,305	n.a.

[1]Excludes commercial and mutual savings banks in the New England states and mutual savings banks in Alaska, Washington, and Wisconsin.
[2]Based on a sample of 351 commercial banks.
[3]Based on a sample of 73 mutual savings banks.
SOURCE: Federal Reserve H.6 release.

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[7]For a detailed analysis of the impact of MMCs on disintermediation, see R. Alton Gilbert and Jean M. Lovati, "Disintermediation: An Old Disorder With a New Remedy," this *Review* (January 1979), pp. 10-15.

The importance of ATS is that, depending upon the extent to which individuals utilize these new savings accounts, growth of the monetary aggregates will be affected during the transition period in which demand deposits, and perhaps, other time and savings deposits, are transferred into the new ATS accounts. In particular, growth of M1 is likely to be reduced, and growth of M2 is likely to be increased, until full adjustment to the ATS innovation occurs.[8] In addition, the issue of re-defining the monetary aggregates is now under consideration, in part because of the introduction of the ATS accounts.

SUMMARY

Economic events in 1978 were disappointing to most economic analysts who had anticipated faster growth and slower inflation than actually occurred last year. In response to the largely unexpected acceleration of inflation in 1978, public policy has recently been directed towards devising ways to reduce the rate of growth of prices over the upcoming year. Included in this program are wage and price guidelines, planned reductions in the level of federal deficits, and the widely publicized actions announced on November 1, 1978.

In addition to these policy actions, data for the final two months of 1978 and January 1979 reveal that

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[8]For a more detailed analysis of the impact of ATS on the money supply process, see John A. Tatom and Richard W. Lang, "Automatic Transfers and the Money Supply Process," this *Review* (February 1979), p. 2.

Table V

Growth Rates of the Monetary Base and Monetary Aggregates

(Compounded Annual Rates of Change)

Period	Monetary Base[1]	M1	M2
Last 3 months (10/78 - 1/79)	6.7%	−1.8%	2.1%
Previous 3 months (7/78 - 10/78)	10.9	8.3	10.9
Previous 6 months (4/78 - 10/78)	10.6	8.0	10.0
Previous 10 months (12/77 - 10/78)	10.0	8.2	9.2

[1]Uses of the monetary base are member bank reserves and currency held by the public and nonmember banks. Adjustments are made for reserve requirement changes and shifts in deposits among classes of banks. Data are computed by the Federal Reserve Bank of St. Louis.

growth in the monetary aggregates slowed substantially when compared to previous periods in 1978 (Table V). Growth in the monetary base was reduced to a 6.7 percent annual rate from its 10.6 percent annual rate of growth over the previous six months. Sharp reductions in the rates of growth in both M1 and M2 accompanied the decrease in the rate of growth of the monetary base. However, it is still too early to tell whether these reduced growth rates in the monetary aggregates will be sustained long enough to have significant impacts on economic growth or the rate of inflation.

1979 Food and Agricultural Outlook

NEIL A. STEVENS and CLIFTON B. LUTTRELL

THE 1979 forecast of U.S. food and agricultural developments by the U.S. Department of Agriculture (USDA) points to larger food supplies and a slower rate of food price increases than last year. Net farm income is expected to be above the relatively high 1978 level. These general conclusions by USDA analysts will be discussed in this article along with a brief review of food and agricultural developments in 1978.[1]

1978 in Review

In 1978 food prices increased at a rapid 10 percent rate, well above the 4 to 6 percent rate of increase that the USDA had predicted in late 1977. The USDA based its outlook predictions on expectations of a moderate increase in demand and larger beginning stocks of grain and other feedstuffs. The underestimation of food price inflation in 1978 resulted, in part, from a greater-than-expected increase in the demand for food, reflecting an unanticipated increase in total aggregate demand in the U.S. economy which was fueled by rapid advances in the nation's money stock. Most economic forecasters underestimated the rise in aggregate demand and, as a result, underpredicted the nation's inflation rate.

Unexpected food supply developments resulted in additional upward pressure on food prices in 1978. Beef production was down about 4 percent, as anticipated. But, for the second successive year, severe weather adversely affected the quantity of pork produced. Although farrowings had been expected to rise by 13 percent over their 1977 level, they actually declined 1 percent during the severe winter months. Consequently, hog production rose only 1 percent for the year rather than the anticipated 10 percent. Since the increases in hog and poultry production did not materialize and offset the price impact of the decline in beef production, meat prices rose sharply from their 1977 levels. Furthermore, bad weather in the early months of the year contributed to reduced vegetable production, which caused a sharp rise in vegetable prices early in 1978. Finally, changes in the method of calculating the consumer price index

had a marginal upward impact on the reported rate of increase in food prices. Higher weights in the index were given to such categories as food away from home and non-alcoholic beverages which tended to increase measured food prices.

LARGER INVENTORIES OF COMMODITIES AVAILABLE FOR FOOD PRODUCTION

Despite the recent weather-related decline in food supplies, particularly fresh vegetables and livestock, the food supply situation is improved in 1979 from a year ago. An expanded base of farm commodities, including feed grain, oilseed, and livestock and poultry with the exception of cattle, is available for food production.

Feed Grains

Record world feed grain production is expected in 1978-79, up about 6 percent from the previous year's crop. Last fall, U.S. production of feed grains contributed to this increase, with a record output of about 217 million tons in 1978-79, up 7 percent from the relatively large 1977-78 harvest. This large U.S. harvest in 1978-79 resulted from an 11 percent increase in yields which more than offset the 4 percent decline in acres harvested. Corn, the major U.S. feed grain crop, contributed most to the larger output as several corn-producing states experienced nearly ideal weather conditions. The average corn yield for 1978-79 is estimated at 101 bushels per acre, up 11 bushels per acre from the 1977-78 average.

As a result of the large harvest of feed grains last fall, the total supply in the United States for the current year is 259 million tons, up from 234 million tons last year, and 211 million tons in 1976-77.

Food Grains

World wheat production is estimated at an all-time high in the 1978-79 crop year, up about 14 percent from 1977-78. Production in the United States, however, was down about 12 percent from 1977-78 as a result of Government programs which reduced the acreage planted to wheat, and adverse planting conditions in some wheat-growing areas. Since almost

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[1]U.S., Congress, Senate; Committee on Agriculture, Nutrition, and Forestry; *1979 Food and Agricultural Outlook*, Ninety-Fifth Congress, Second Session, December 29, 1978; and subsequent outlook releases of the United States Department of Agriculture.

1.2 billion bushels of wheat were held in the United States at the beginning of the current marketing year, the total supply available for domestic consumption plus exports is 2.98 billion bushels, only 5.5 percent below the relatively large 1977-78 supply.

Higher prices provided farmers with the incentive to produce a record U.S. rice crop last year. Acreage harvested was up 36 percent from 1977 and average yields were up 2 percent; hence, production was up sharply, rising from 99 million hundredweight (cwt.) in 1977 to 138 million cwt. last year. Carryover stocks totaling 27.4 million cwt. at the beginning of the current marketing year were down from the 40.5 million cwt. a year ago. Nevertheless, the total supply of 165 million cwt. this year is well above the estimated 140 million cwt. in 1977-78.

Oilseeds

The U.S. soybean crop was at a record 1.8 billion bushels in 1978. This was 5 percent above the relatively large crop in 1977. Nearly 10 percent more acres were harvested than a year earlier, but average yields were down 1.4 bushels per acre from record high yields of 1977. With beginning stocks at 161 million bushels, up somewhat from a year ago, total supplies are estimated at about 2 billion bushels. This is about 7 percent more than last year.

U.S. cotton production in 1978 was 10.8 million bales, down a hefty 25 percent from the previous year. Relatively low prices in early 1978 induced a 5 percent decline in acreage planted. Also, adverse growing conditions — especially in Texas, Oklahoma, and California — resulted in a 19 percent decline in yields from the above-average yields in 1977. This lower production, combined with the large beginning stocks, provided a total supply of 16.2 million bales in 1978-79, only 6 percent below the 1977-78 level. With the larger carryover stocks, however, cottonseed supplies in the current marketing year are estimated at 5 million short tons, only about 13 percent below last year.

Livestock Herds and Flocks

One of the less favorable food outlook factors is the declining inventory of cattle. The January 1, 1979, inventory of cattle and calves on farms was 110.9 million head, down 16 percent from its peak in 1975. The smaller cow herd suggests that the 1979 calf crop will be down somewhat from the estimated 44.1 million last year. The number of cattle in feedlots early this year was slightly smaller

than a year ago. Furthermore, the number placed in feedlots during the fourth quarter of 1978 was down about 9 percent from a year ago, and, if the anticipated herd rebuilding begins, more heifers will be kept for breeding purposes, and the placements in feedlots will continue at a lower rate during 1979.

The hog and pig inventory is more likely to provide greater production than the cattle inventory. The number of hogs and pigs on farms has been rising since 1975, and the number kept for breeding purposes last December was 11 percent greater than a year earlier and 19 percent greater than on December 1, 1976. Sufficient breeding hogs are available for a sharp increase in farrowings. Farrowings in September-November 1978, for example, were 10 percent above a year earlier, and estimates of farrowings this spring are up 16 percent from last year's level.

The number of milk cattle on farms has decreased in recent decades, declining from an average of 21.0 million head in early 1955 to 10.9 million in late 1978. Last year's decline, however, was quite small.

Inventories of laying hens for commercial egg production this year are about the same as a year ago. Layers for broiler-hatching eggs, however, are more plentiful than last year. Placements of pullets last fall indicate that the broiler-hatchery flock will be about 14 percent larger in the first quarter of this year than a year ago.

FORECAST OF 1979 FOOD OUTPUT

Given the existing supply of basic food commodities and livestock, USDA analysts project larger food supplies this year than in 1978. As a result of the relatively large supply of feed and expectations of relatively stable feed prices, farmers and ranchers have an incentive to increase livestock feeding. The relatively small inventory of cattle will limit beef output despite the greater incentive for feeding, but pork and poultry production is expected to increase sharply. Production of red meat plus poultry is expected to increase at about the same rate as population growth; hence, per capita output will remain unchanged from 1978 levels.

Livestock Products

Beef production is expected to decline 6 percent this year following an estimated 4 percent decline last year. Again, this decline is expected to be in

the lower-priced cuts. Slaughter of steers and heifers directly off the pasture, so-called nonfed beef, is expected to total only about one-half to two-thirds the 1978 level. Cow slaughter also will be down, perhaps as much as one-fifth from 1978. The production of higher-quality beef from feedlot cattle may be up slightly from the 1978 level.

In contrast to the projected decline in beef production, both pork and poultry production are expected to increase by about 10 percent. Hog producers are increasing sow farrowings sharply in response to the greater incentive for feeding. There will be 9 percent more hogs available for slaughter in the spring quarter, and the year-to-year increase is expected to widen in the summer and autumn quarters. Broiler and turkey producers experienced relatively high profits in 1978, and the outlook is again favorable for producers in 1979. As a result, broiler production may rise 8 to 10 percent above last year's level, and turkey production in the first half of 1979 is expected to increase 20 to 25 percent from year-ago levels.

The relatively low egg prices late last year were not sufficient to provide much incentive for increased production. Nevertheless, overall egg production is expected to rise slightly this year; but most, if not all, of the increase will go to hatcheries for broiler chickens rather than to grocery stores. With population trending upward, egg consumption per person may continue downward. Per capita egg consumption declined from 40.7 pounds in 1967 to about 35 pounds last year.

Milk production for the first half of 1979 is expected to remain at the same level as a year ago, and to rise only slightly for the year as a whole.

Crop Foods

Crop-related food supplies, on the whole, will likely expand somewhat in 1979; thus, per capita consumption of crop foods should increase. Supplies of most cereals (largely wheat and rice) are well above expected domestic consumption at Government price-support levels. Hence, the quantity of food output from cereal grains, given these prices, will be determined largely by consumer demand.

Prospects are that fruit supplies per capita will be slightly less this year than a year ago and that vegetable supplies will be about the same. The projected 1978-79 orange crop is even smaller than last year's weather-damaged crop, but juice yields should increase enough for the output of frozen concentrate to exceed last year's production by about 5 percent. The noncitrus fruit crop was slightly smaller than last year's crop.

The total stock of processed vegetables, both canned and frozen, on January 1, 1979, was about the same as last year. Carryover stocks of most canned vegetables into the 1978-79 marketing year were lower than a year earlier, and, with a slightly smaller pack of most items, the supply of canned vegetables in the 1978-79 marketing year is slightly lower than in the previous year. On the other hand, January 1 stocks of frozen vegetables were 11 percent larger than a year ago. Potatoes also are relatively abundant; last fall's harvest exceeded the previous record harvest in 1976 by 1.5 percent.

Soybean oil supplies, which now account for about 60 percent of all U.S. fats and oils, are projected at 11.5 billion pounds, up about 5 percent from a year ago. Domestic use is expected to total around 8.7 billion pounds, 5 percent more than in 1977-78. Among other oils, greater quantities of sunflower seed, corn, peanut, and imported palm oil should be available, but supplies of cottonseed oil and butter will be down.

IMPLICATIONS FOR FOOD PRICES AND FARM INCOMES

Food Prices

Despite expected gains in food production this year, USDA analysts forecast an 8.5 percent increase in food prices, about equal to the expected rate of inflation. This increase, if realized, would be well below the 10 percent increase in 1978 food prices.

Underlying the food price forecast for this year are specific assumptions about the likely behavior of the three major components of food expenditures — the value of basic farm commodities, the value of marketing services, and expenditures for "other" foods (those without a domestic farm product base, such as fish, coffee, bananas, and sugar). These three components account for roughly 26, 57, and 17 percent of total food expenditures, respectively.[2] The value of farm commodities and the "other" foods are the

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[2]Marketing services as used here include transportation, storing, milling, slaughtering, processing, and all other functions which are included in the food production process from the time foodstuffs leave the farmer until they reach the consumer.

most volatile of these components since their production fluctuates with weather conditions. Last year, for instance, the reduced supplies of meat and vegetables had such a significant impact on domestic farm product prices that farm prices were a major contributor to the greater-than-expected increase in food prices. Prices of the "other" food category — fish, coffee, bananas, and sugar — have risen over 145 percent since 1970 compared with the 60 percent increase in prices of domestically-produced foods. Prices of marketing services, on the other hand, are more stable from year to year and closely follow the general rate of inflation.

Given the above weights for each of the food cost factors, the forecast of an 8.5 percent increase in food prices in 1979 is based on the expected price behavior in each component. The prices of all farm commodities, for example, are expected to increase about 10 percent in 1979; since they account for about one-fourth of total food costs, they will contribute almost 2 percentage points to the overall food price increase.

The marketing cost component also is expected to rise about 8 percent this year, about equal to the rate of inflation. Marketing costs will contribute about 5 percentage points to the predicted food price increases. Finally, prices of "other" foods are expected to rise about 6 percent and contribute about 1 percentage point to the overall increase in food prices.

While most types of foods are expected to rise in cost over last year, some will rise at a faster rate than others. Hence, consumers will likely make further alterations in their diets by shifting to relatively lower-priced substitute foods. Most of the substitutions will likely take place within the meat categories. For example, with the increased output of high-quality beef (especially early in the year) and of pork and poultry, prices of these meats will decline relative to hamburger and other lower-quality beef. Consequently, consumers will change their diets to include less hamburger and more of the other meats. Nevertheless, expanding demand based on somewhat higher consumer incomes, coupled with little change in per capita meat production, will result in higher average meat prices.

Retail meat prices are expected to average about 11 percent above last year's level, with the price of beef registering the largest price increase. Price increases in other red meats will be relatively small. Despite increased broiler and turkey production in

prospect, poultry prices are likely to average more than 5 percent above the 1978 level. Broiler prices are expected to average somewhat above the 1978 level. Turkey prices should average above the prices of a year earlier in the first half of the year and below the prices of a year earlier in the second half.

With a downtrend in the demand for eggs in recent decades, 1979 prices are likely to rise more slowly than the general rate of inflation despite the relatively stable level of egg production. Milk prices and retail prices for other dairy products are likely to rise about 8 percent from their 1978 level, and per capita consumption of these products is expected to increase only marginally.

Despite the abundant supplies of the cereal crops, wheat and rice, prices of food derived from these commodities are expected to increase at or slightly above the general rate of inflation. Part of this increase can be attributed to Government price supports of grain through the grain reserve program, part to the sharp increase in exports, and part to rising processing and marketing costs.

Demand for processed vegetables should continue to increase, and prices are likely to rise as fast as the overall rate of inflation. Also, coupled with strong demand, overall prices of canned and frozen fruit products are expected to rise significantly in 1979 and average about 10 percent above 1978.

Outlook for Farm Income

Economic conditions for farmers improved in 1978. Last year's net farm income of $28.1 billion was about 40 percent above that in 1977. This increase, due primarily to higher crop and livestock prices, was largely unanticipated at the 1977 USDA Agricultural Outlook Conference. At that time, farm income was expected to remain near the fairly low level of 1977. Crop prices, for example, had been expected to average somewhat lower than the previous year, when, in fact, they rose by 6 percent above those for 1977. In addition, only a small increase in overall livestock prices was anticipated, yet livestock prices in 1978 averaged 23 percent above their 1977 level.

Prospects are generally favorable for the improved 1978 farm income level to be increased in 1979. Cash receipts are largely dependent on 1979 crop and livestock production and prices. Since the quantity of feed and livestock inventories on hand are

major factors in determining the supply of many farm products until late 1979, and consumer income plus exports are major factors in determining demand, some predictions about prospective price movements can be made. These predictions by USDA analysts, as described in the previous sections, indicate average agricultural product price increases of about 10 percent in 1979. Most of the price increases are likely to occur among livestock products; there is little basis to expect much change in either average prices or production of crops.

Farm production expenses also are expected to rise over the whole range of farm inputs, including wages, nonfarm inputs, transportation, taxes, insurance, and interest. These increases will not offset the increases in overall cash receipts so that, on balance, net farm income may be above last year's level.

Tending to stabilize domestic crop prices, especially grain, is the improved world grain supply situation. Last year's world grain production — wheat, feed grains, and rice — is estimated to have increased 6.5 percent over output in 1977. This large harvest is expected to exceed consumption at current grain prices so that world stocks may reach 238 million tons — the highest level ever recorded — by the end of the current marketing year. Such stocks are equal to about 16 percent of world consumption this year, compared to the low of 11 percent in the mid-1970s. As a result of these increased stocks, sharp increases in grain prices are not likely in the first half of 1979.

Utilization of U.S. feed grains is expected to increase about 5 percent in the current marketing year. Nevertheless, carryover stocks at the end of the year are expected to increase to almost 57 million tons, up sharply from 41 million tons at the end of last year. Such large stocks should preclude a sharp runup in prices as occurred in 1977-78. Part of these stocks have been removed from the market by the farmer-owned reserves which are expected to total about 22 million tons. These stocks are not to be marketed until corn prices to farmers reach at least $2.50 a bushel. The grain storage program, expectations of continued heavy export demand, increased feeding use, and reduced feed grain acreage in 1979 as a result of the feed grain program are likely to keep corn prices from declining during the 1978-79 marketing year. Corn prices should average between $2.05 and $2.15 a bushel for the 1978-79 season, slightly above the previous year's average.

Large supplies likewise dominate the outlook for food grain producers. Beginning stocks of wheat totaled 1.2 billion bushels which, added to projected production of 1.8 billion bushels, provides a total supply of 3.0 billion bushels. This is 1.0 billion bushels in excess of total usage in 1977-78. Export demand for U.S. wheat has been quite strong so far this marketing year, reflecting primarily increased purchases by the People's Republic of China and Brazil. By the end of the year, large exports and the smaller U.S. crop are expected to have reduced the U.S. carryover of wheat stocks for the first time in four years. Projected year-end stocks of U.S. wheat will remain at 51 percent of projected use this year, down from the 60 percent in 1977, but above the 20 to 25 percent levels of 1973 and 1974. World wheat stocks, however, are expected to be nearly 106 million tons, up about 24 million tons from 1977-78.

Despite the relatively large stocks of wheat, prices to farmers early this year were about 50 cents per bushel above a year ago and only about 25 to 30 cents per bushel below the $3.29 release price of wheat in the price support (grain reserve) program. Little further increase in wheat prices is anticipated. A Government wheat program has been announced for 1979-80 that is similar to the 1978-79 program. It provides for acreage reduction, a target price, and a loan on wheat. The "set aside" stays at 20 percent.

The larger rice crops here and in a number of other major producing nations and the probability that rice exports will decline about 9 percent from a year ago have resulted in lower prices. U.S. rice prices for the 1978-79 marketing year are expected to average between $7.50 and $7.80 per cwt., down from about $9.50 per cwt. last season. As a consequence of the larger rice supplies and the price support program, Government-held stocks will build up during the current marketing year.

Demand for the products derived from soybeans, chiefly oil and meal, continues to rise, and farm prices of soybeans early last year were almost $1.00 per bushel above the previous year despite the larger crop in 1978. This rising demand for soybeans mainly reflects the prospective increase in demand for soybean meal used in feeding livestock and for exporting. Soybean exports in 1978-79 are projected at 760 million bushels — about 40 percent of the crop produced and 9 percent higher than the 1977-78 exports. USDA analysts estimate that year-end inventories of U.S. soybeans will approximate those at the beginning of the current marketing year.

Demand for cotton is expected to increase in 1979 and as the world cotton supply-demand situation has tightened, cotton prices have risen. For example, the U.S. average farm price for all types of cotton

was about 57 cents per pound in early 1979, about 9 cents per pound above a year earlier. Reflecting the reduced crop last fall and about the same level of domestic mill use plus exports, stocks of cotton are expected to be down to 4.1 million bales by the end of this marketing year compared with 5.3 million bales a year earlier.

Production of tobacco, a large cash crop in some areas of the United States, was 5 percent larger in 1978 than in the previous year, which reflects primarily higher yields. Tobacco stocks are generally above desired levels despite acreage restrictions.

Tobacco use in the current marketing year is expected to remain near last season's level as the downward trend in domestic use offsets greater export demand. Use of U.S.-produced tobacco in the current year will probably be less than the 1978 crop so that carryover this summer will likely be at higher levels than a year earlier. A smaller tobacco crop in 1979 is likely, however, as the USDA has reduced the 1979 marketing quotas for flue-cured tobacco.

Since price supports are mandatory for tobacco produced under marketing quotas, farm prices will rise in 1979 despite larger stocks of tobacco. According to the support formula, the price for the 1979 crop will rise about 7 percent from the 1978 average.

SUMMARY

According to USDA analysts, total food production will be somewhat greater this year than in 1978, but about the same per capita. Production of foods derived from livestock is expected to rise somewhat, with increases in pork, poultry, and milk offsetting declines in beef and eggs. Crop-related foods, on the whole, are also expected to expand. Food prices, however, are expected to rise about 8.5 percent, as a result of rising overall demand.

The projections for rising food production are based on the larger supplies of feed available compared to a year ago and the greater incentive for feeding livestock and poultry. Feed grain supplies in the United States this year are almost 11 percent greater than a year ago, and prices of feed grain have not risen as much in the past 12 months as prices of livestock products.

Farm incomes should increase from 1978 levels. Farm commodity prices are expected to average about 10 percent higher than in 1978 with most of the increase contributed by higher prices for livestock products. Expected higher costs for farm inputs, however, will offset part of the gross farm income gains from the higher prices.