
Review

Vol. 69, No. 2

February 1987

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In This Issue . . .

Effective exchange rate indexes are widely used in economic analysis, policy evaluation and financial planning and forecasting. Because these indexes are weighted averages of a number of exchange rates, their use avoids mistaken generalizations about the dollar's value that might arise by looking at fluctuations in a single exchange rate. Their value is generally conceded to depend on both the currencies included and the structure of the weighting scheme.

In the first article of this *Review*, "The Dollar's Effective Exchange Rate: Assessing the Impact of Alternative Weighting Schemes," Mack Ott compares the effect of varying the weighting scheme in an effective exchange rate of the dollar against the 10 leading industrial economy currencies. Ott finds that several alternatively weighted effective exchange rates using the same 10 currencies yield closely similar results when used in an export equation. This somewhat surprising outcome implies that the relative importance of the weighting schemes used to derive effective exchange rate indexes needs to be more thoroughly investigated.

* * *

In the second article, Philip A. Nuetzel reviews the deliberations and monetary policy decisions of the Federal Open Market Committee (FOMC) last year. In "The FOMC in 1986: Flexible Policy for Uncertain Times," Nuetzel discusses the factors that led the FOMC to take an accommodative policy stance.

To illustrate the FOMC's approach to policy in 1986, Nuetzel first reviews its long-run policy decisions for the year. This is followed by a more detailed examination of the FOMC's reasons for reducing its emphasis on M1 in guiding policy, and a discussion of other variables used by the FOMC as policy guides. Finally, the FOMC's short-run policy decisions are reviewed chronologically, each in the context of the prevailing economic climate in which it was made.

The Dollar's Effective Exchange Rate: Assessing the Impact of Alternative Weighting Schemes

Mack Ott

MANY analysts of international economics maintain that a multilateral weighted exchange rate is more useful than any single bilateral exchange rate in assessing the value or changes in the value of the dollar.¹ A multilateral or effective exchange rate (EER), which comprises many exchange rates, avoids mistaken generalizations that can result from changes peculiar to a single currency. Moreover, the EER reflects third-country impacts on the dollar's exchange value, which are excluded in a bilateral exchange rate.

The construction of an EER entails two analytic problems. First, which currencies should be included? Second, how should the included currencies be weighted? These issues appear to be inextricably related, so that the correct choice for one issue would seem always to be conditional on the correct choice for the other. Yet, some insights about the relative importance of the choice of weights can be obtained by examining the effects of changing the weights for a given set of exchange rates.

This article examines the weighting issue using the Federal Reserve Board's Trade-Weighted Exchange Rate (TWEX). In particular, EERs constructed with trade weights, capital-flow weights and equal ("naive") weights are compared in terms of their explanatory

power and out-of-sample forecasts in a trade equation.

THE USE OF EFFECTIVE EXCHANGE RATES

The usefulness of an EER can be illustrated by asking whether the dollar has strengthened or weakened during some interval.² As chart 1 shows, the value of the dollar has appreciated against some currencies and depreciated against others since 1973. For example, the dollar has appreciated against the Canadian dollar and sterling, is about the same in 1986 as it was in 1973 against the DM, and has depreciated vis-à-vis the yen and Swiss franc. Within this 13-year span, most currencies have exhibited similar relative patterns against the dollar, peaking in 1980 and bottoming out in 1985. In contrast, the yen, Canadian dollar, Swiss franc and sterling each have had substantial departures from the common patterns. The Swiss currency has been notable for its consistently strong dollar value — the dollar buying roughly half the number Swiss francs in 1986 that it could in 1973.

Moreover, as chart 2 shows, adjusting these bilateral exchange rates for different rates of inflation between the United States and the respective countries yield

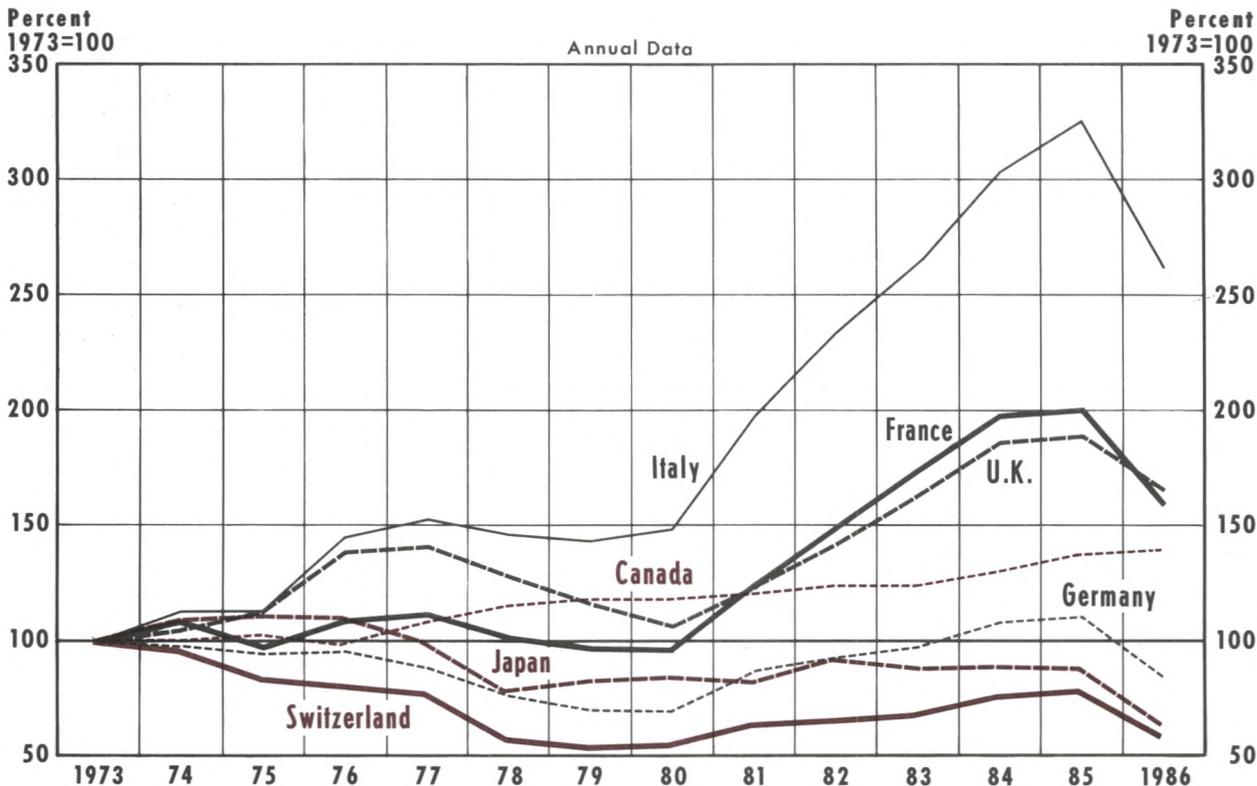
Mack Ott is a senior economist at the Federal Reserve Bank of St. Louis. James C. Poletti provided research assistance.

¹See Black (1976), Hooper and Morton (1978), Maciejewski (1983), Dutton and Grennes (1985), Belongia (1986), Cox (1986) and Rosensweig (1986).

²For expository purposes, therefore, we will use levels of the constituent exchange rates in illustrating and explaining EERs. For many analytical applications, levels of the EER are less useful than their changes; consequently, the remainder of the article will focus on changes in the variously defined EERs.

Chart 1

Nominal Dollar Exchange Rates for G-7 Countries and Switzerland



similar patterns. The dollar's real exchange rates against these currencies (adjusted by consumer price indexes) also demonstrate disparate assessments of the change in the dollar's value during this period.

Still, most analysts believe that the dollar appreciated during 1973-86. Such an assessment must be based on some type of weighting scheme — that is, an average of the currencies' exchange rates is implicitly evaluated. The use of EERs is simply an explicit formalization of this principle.

CONSTRUCTING AN EER: SOME GENERAL ISSUES

In order to construct an EER, several questions must be answered: Which currencies should be included? What measure of international commerce

should be used to weight these currencies?³ Should the weights be based on bilateral or multilateral exchange? Should the weights be arithmetic or geometric? What time period should be used for the weights? It has been commonly argued that the answers to each of these questions depends upon the purpose of the analysis — that is, the use to which the EER will be applied.⁴

Which Currencies?

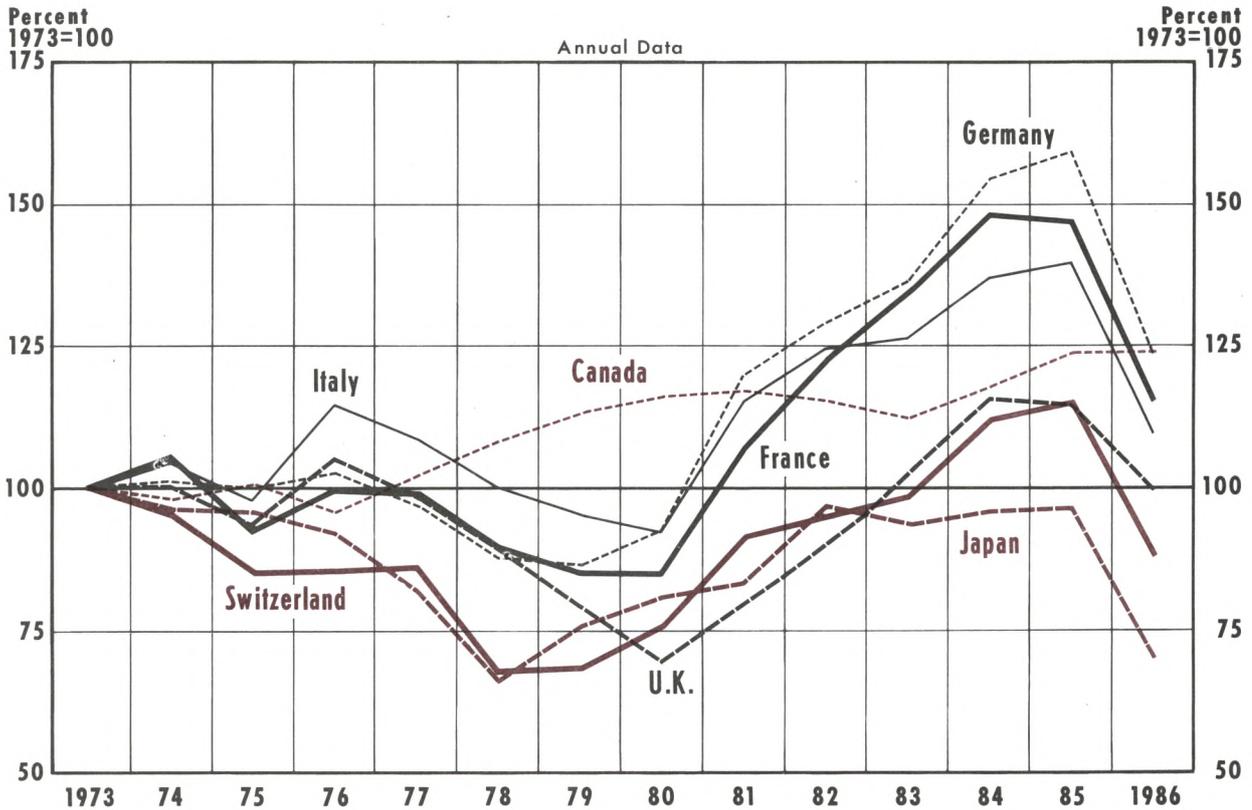
This choice generally has been governed by a compromise between completeness of the set of trading

³With the exception of the IMF's Multilateral Effective Exchange Rate (MERM), which has weights generated from the solution of a trade model, all major EERs are trade-weighted.

⁴See Hooper and Morton (1978), Belongia (1986) and Rosensweig (1986).

Chart 2

Real Dollar Exchange Rates for G-7 Countries and Switzerland



partners and data availability. Most indexes use the principal industrial economies' currencies. The International Monetary Fund's (IMF's) Multilateral Effective Exchange Rate (MERM) covers 21 countries, Morgan Guaranty Trust of New York uses 15 industrial countries' currencies and the Federal Reserve Board's TWEX, the best known example of such an index, is based on the Group of 10 countries plus Switzerland.⁵ The currencies in TWEX are used both because of the availability of data and because these countries account for most international trading activity. Moreover, the 10 U.S. trading partners in the G-10 countries plus Switzerland also account for most U.S. foreign trade. For example, in 1973, these countries accounted for 60.1 percent of U.S. exports plus imports; including the United States, these 11 countries accounted for

67.2 percent of world exports plus imports. In 1983, these proportions fell to 52.5 and 53.8 percent, respectively; then rose to 58.5 and 62.4 percent in 1985.

What Measure of Commerce?

Except for the IMF's MERM, all existing EERs are weighted by some measure of traded goods and services, the sum of exports plus imports.⁶ Yet, either capital flows or trade flows — that is, either side of the balance of payments statistics — would seem to be reasonable bases for weighting exchange rates. As Hooper and Morton observe,

The total supply of and demand for dollars on foreign exchange markets derive from U.S. demands for foreign goods and foreign currency-denominated financial assets and foreign demands for U.S. goods and dollar denominated financial assets. . . . An excess sup-

⁵See Belongia (1986) for a fuller discussion of these indexes and their characteristics. In contrast, Cox (1986) has recently formulated an index covering all 131 of the U.S. trading partners.

⁶See Dutton and Grennes (1985).

ply of dollars resulting from a decline in demand for U.S. goods or dollar denominated assets would tend to cause a decline in the foreign currency price of the dollar.⁷

Thus, using capital flows, measured as the sum of domestic investment flows abroad and foreign investment flows in the home country, provides an alternative approach for weighting each currency's importance. Consider, briefly, the arguments in favor of each.

Trade flow weights Trade flow weights for the EER measure the direct impact on income (through net exports) of the foreign sector. Thus, a country whose trade share is large is one whose economy's impact on U.S. markets is large, while a country with a smaller trade share has less impact. The larger this share, the greater is the competitive importance of that country's producers for U.S. producers. Hence, the EER should also reflect these relative rankings of U.S. competitors' currencies.

Capital flow weights Capital flow weights for the EER scale the currencies by the magnitude of the financial flows between the respective countries. The currencies of countries with larger investment and portfolio flows are more important competitors for the dollar in international transactions than are currencies of countries with smaller investment and portfolio activity. Unlike trade weights, which emphasize an income approach to exchange rate determination, capital flow weights emphasize a financial approach to the dollar's valuation.⁸ An EER using capital flow weights will reflect these financial market consider-

ations and the relative importance of the non-U.S. currencies in international finance.

Multilateral or Bilateral Weights?

Under multilateral weighting, each country receives a weight equal to its proportion of *total* trade or capital flows. Under bilateral weighting, each country receives a weight equal to its proportion of the flows to and from the United States. Bilateral flows seem closer to the notion of measuring the importance of individual U.S. trading partners to U.S. economic activity; however, they omit third-party effects. For example, if the DM-price of autos rises, other things the same, the German share of U.S. auto imports would fall, and the Japanese, Italian and Swedish share of U.S. imports would increase. Analogously, considering financial assets, a multilateral weighting scheme is preferable because it includes these multicountry financial market implications.⁹

Base Period?

This choice may depend on the period of the analysis. If the relative size of trade or capital flows of the included countries are changing, it would seem that the base period should be chosen so that the weights characterize the structure of commerce or investment throughout the period of analysis. If the structure shifted, the weights from an earlier period conceivably would no longer reflect the current trade or capital relations.¹⁰

Arithmetic or Geometric?

The form of the index carries implications for the comparative importance of absolute vs. percentage changes. Most indexes, in particular the TWEX, are weighted geometrically, so that proportional changes are emphasized.¹¹

⁷Hooper and Morton (1978), p. 784; italics added.

⁸While capital flow weights emphasize the financial side of the balance of payments flows, they are not completely consistent with the modern asset market view of exchange rate determination which emphasizes stocks rather than flows; see Dornbusch (1976), Frenkel (1976, 1981), and Mussa (1979, 1982, 1984). As summarized by Mussa (1979, p. 38):

The asset market approach views the exchange rate as being determined by essentially the same forces that determine the prices of other assets that are traded in organized asset markets, such as the stock markets and the commodity exchanges. In such markets, prices are determined *not by the balancing of flow demands and flow supplies, but rather by the prices at which the market as a whole is prepared to hold the total outstanding stocks of the assets in question*. Since the assets in question are durable, the currently determined price of an asset is tightly linked to the market's expectation of the future price of that asset. (italics added)

The measures of capital flows used in constructing the capital weights are the annual net increment in national asset portfolios by financial asset class. To the extent that the relative national asset holdings (stocks) of these financial assets do not change, the relative net flows would be proportional to the unobserved stocks.

⁹See Black (1976) and Hooper and Morton (1978). Hooper and Morton also note that the bilateral construction assigns Canada a 20 percent weight in the EER, which is probably distorted by the cross-border trade in partially completed automobile assemblies. Recently, much attention has been focused on the dispute between adherents of bilateral vs. multilateral trade flows; see Belongia (1986), Cox (1986) and Rosensweig (1986).

¹⁰Based on this possibility, Cox (1986) uses a moving-average weighting scheme. This makes evaluation of the dollar problematic since changes in its value may result from changes in weights, not from changes in exchange values.

¹¹See Board of Governors of the Federal Reserve System (1978) and Belongia (1986). Among widely used EERs, only the IMF's SDR is arithmetically weighted.

Table 1
Alternative Weights for Dollar EER Based on Trade Flows and Capital Flows

Base years	Belgium-Luxembourg	Canada	France	Germany	Italy	Japan	Netherlands	Sweden	Switzerland	United Kingdom
TWEX: Trade Weights¹										
1972-76 ²	.074	.090	.129	.206	.090	.136	.084	.040	.034	.118
1979-83	.071	.078	.130	.203	.095	.156	.080	.032	.033	.119
CWEX: Capital Weights³										
1972-76	.152	.072	.243	.103	.095	.070	.058	.014	.067	.125
1979-83	.093	.046	.149	.061	.063	.103	.032	.016	.075	.362

NOTES: ¹Computed as the ratio of the five-year exports plus imports for the country divided by the sum of exports plus imports for all 10 countries, based on IMF data from the *International Financial Statistics* tape, July 1986.

²These weights differ slightly from the Board of Governors' trade weights (see *Board of Governors of the Federal Reserve System* [1978]) due to data revisions.

³Computed as the sum of the negative of non-official capital outflows (-) plus non-official capital inflows (+) for the five years for each country divided by the sum of such capital flows for all 10 countries based on data from the *IMF Balance of Payments Statistics*, July 1986.

COMPUTATION OF TRADE AND CAPITAL WEIGHTS FOR EER INDEXES

As noted above, the weighting schemes generally applied in EERs are derived from data on trade flows, not capital flows. Yet, for the reasons offered above, capital flows offer a potentially useful alternative for weighting the exchange rates in an EER.

The construction of the Capital Weighted Exchange Rate (CWEX) essentially parallels that of the TWEX. Since TWEX is familiar to most readers, we briefly review its construction, then examine that of CWEX. Following this, we show how each index is put into real terms; this deflation results in the priced-adjusted indexes, RTWEX and RCWEX.

TWEX

This index is constructed by computing the trade flows (imports plus exports) of each of the non-U.S. G-10 countries as a percent of the total for all of these countries. These weights are computed as the average for a five-year base period; two periods were used, 1972-76 and 1979-83. TWEX is then computed as the product of these weights multiplied by the natural log (ln) of the respective exchange rates, indexed to March 1973. Thus,

$$(1) \text{TWEX}_t = 100 \prod_{i=1}^{10} w_i R_{it}$$

$$= 100 \exp \sum_{i=1}^{10} w_i \ln R_{it}$$

where the weight for country *i* is

$$w_i \equiv (\text{Imports}_i + \text{Exports}_i) / \sum_{j=1}^{10} (\text{Imports}_j + \text{Exports}_j)$$

and

$$R_{it} \equiv \text{price in U.S. cents of currency } i \text{ in March 1973 divided by its price at time } t.$$

The alternative forms of the exchange rate index, equation 1, are shown to emphasize that TWEX is a geometric rather than an arithmetic average of the constituent exchange rates. Also, note that TWEX is specified in average foreign currency units per dollar and is indexed to its value at the beginning of the floating-rate period, March 1973. Thus, a rise in TWEX means the dollar's value is increasing, and values over 100 mean that its weighted foreign currency value is greater than it was in March 1973.

The weights for the two base periods, 1972-76 and 1979-83, are displayed in table 1.

CWEX

This index is constructed by computing the non-official net capital flows (imports plus exports) of each of the non-U.S. G-10 countries as a percent of the total for all of these countries. These capital flows include direct investment, portfolio investment, other long-

and short-term capital flows of deposit money banks and nonbank sectors as reported in the International Monetary Fund's *Balance of Payments Statistics*; a detailed breakdown of the included items appears in the appendix.¹²

Only non-official capital flows were used. This restriction is based on the assumption that private agents will buy and sell assets based on rationally formed forecasts of relative asset values and anticipated changes in those values in order to maximize their wealth. Official flows, in contrast, may be driven by attempts to change values or offset market anticipations. To the extent that these interventionist policies are successful, they will be reflected in non-official flows; otherwise, they are merely noise.¹³

Thus, the index is defined parallel to TWEX as

$$(2) \text{ CWEX}_t = 100 \exp \sum_{i=1}^{10} x_i \log_e R_{it}$$

where the weight for country *i* is

$$x_i = (\text{Capital Outflows}_i + \text{Capital Inflows}_i) / \sum_{j=1}^{10} (\text{Capital Outflows}_j + \text{Capital Inflows}_j).$$

The weights for CWEX for the two base periods are also displayed in table 1.¹⁴

Real EERs

For many analytic purposes, price adjusted EERs, here RTWEX and RCWEX, are more useful than nominal EERs. These real indexes, in principle, are constructed by weighting the real (price-deflated) ex-

change rates; however, this is equivalent to dividing the nominal index by the ratio of a weighted index of foreign CPIs to the U.S. CPI. Thus, the real TWEX (RTWEX) is obtained as

$$\begin{aligned} (3) \text{ RTWEX}_t &= 100 \exp \sum_{i=1}^{10} w_i [\ln R_{it} - \ln \text{CPI}_{it} + \ln \text{CPI}_{ust}] \\ &= 100 \exp \left[\sum_{i=1}^{10} w_i \ln R_{it} - \sum_{i=1}^{10} w_i (\ln \text{CPI}_{it} - \ln \text{CPI}_{ust}) \right] \\ &= \text{TWEX}_t / \left(100 \exp \sum_{i=1}^{10} w_i \ln (\text{CPI}_{it} / \text{CPI}_{ust}) \right) \\ &= \text{TWEX}_t / \text{CWCPI}_t. \end{aligned}$$

The real CWEX (RCWEX) is obtained analogously as

$$\begin{aligned} (4) \text{ RCWEX}_t &= \text{CWEX}_t / \left(100 \exp \sum_{i=1}^{10} x_i \ln (\text{CPI}_{it} / \text{CPI}_{ust}) \right) \\ &= \text{CWEX}_t / \text{CWCPI}_t. \end{aligned}$$

COMPARISONS OF THE ALTERNATIVE EERs

In order to determine whether different weighting schemes yield different results, empirical assessments were made of their comparative usefulness. These empirical analyses focused on changes, rather than levels, in the alternative EERs.

First, correlation coefficients were computed for the change in the natural logarithm (delta ln) of the EERs, both nominal and real. Second, the real EERs were each included as an explanatory variable in a trade equation with changes in U.S. agricultural exports as the dependent variable.¹⁵ These estimates and their out-of-sample forecasts provide measures of the relative explanatory power of the different weighting schemes. In each of these empirical exercises, a "naive" EER, in which each currency received equal weight, was also included as a benchmark (or null hypothesis) to see whether the theoretically based weights yielded superior results.

Correlation among the EERs

The correlations among these five exchange rate series, both nominal and real (CPI-deflated), are reported in table 2, and the results are striking. The delta ln of these alternative EERs' time series of changes are nearly perfectly correlated: the correlation coefficients

¹²One reservation about the capital weighting scheme is that it adds net capital outflows plus net capital inflows while trade weights are, in principle, based on gross exports plus gross imports. Yet, the capital flows used in constructing the CWEX EERs are the sum of narrowly specified asset categories; hence, while inflows and outflows *within* any category (e.g., foreign holdings of corporate equities) are netted out, there is no cancellation across asset categories (e.g., foreign holdings of corporate equities and foreign holdings of public sector bonds).

¹³See Batten and Ott (1984) for a general discussion of both the motivation for and the limitations on the efficacy of central bank foreign exchange intervention.

¹⁴An alternative version of the capital weights was computed because Switzerland reported no data on direct investment — overseas investment by the Swiss and foreign investment in Switzerland. Since direct investment constitutes a substantial portion of the capital flows for the other countries, this would be likely to bias downward the weight for the Swiss franc. To compensate for this omission, a capital-weighted exchange rate index with net errors and omissions (CWEXO) was computed in the same manner as TWEX and CWEX; see appendix. The results of its comparative performance in the tests below, however, were indistinguishable from those reported and are omitted.

¹⁵The choice of model was made to facilitate further comparisons with the related work by Belongia (1986) on alternative exchange rate measures.

Table 2
Correlation Coefficients for ΔLn Samples of Alternatively Weighted G-10 EERs — Trade, Capital and Naive

	TWEX72	TWEX79	CWEX72	CWEX79	NAIVE
NOMINAL (January 1972 – August 1986; n = 175)					
TWEX72	1.000	1.000	.996	.973	.998
TWEX79		1.000	.994	.973	.997
CWEX72			1.000	.972	.995
CWEX79				1.000	.971
NAIVE					1.000
REAL (January 1972 – December 1985; n = 167)¹					
TWEX72	1.000	1.000	.995	.970	.997
TWEX79		1.000	.994	.970	.996
CWEX72			1.000	.970	.994
CWEX79				1.000	.968
NAIVE					1.000

NOTE: All correlations are significant at the .0001 level.
¹Deflated by ratio of weighted foreign CPI to U.S. CPI.

between the five EERs vary from .968 to 1.000 (rounded to 3 significant digits); this relationship holds for both nominal and real changes specifications. While the extremely high correlations both among the EERs and among the REERs may seem to imply that they will be virtually identical in any empirical application, this generally is not correct. For example, Belongia found that, although different REERs were highly correlated, they generated different regression coefficients and highly divergent out-of-sample forecasts. Consequently, the regression and forecast comparisons are included here in order to determine whether or not these REERs perform identically.

Regression and Forecast Results for the EERs

In Belongia (1986), an equation explaining U.S. agricultural exports was estimated utilizing, in turn, five different REERs: the Federal Reserve Board's TWEX, the IMF's MERM and SDR, Morgan Guaranty's EER, and the U.S. Department of Agriculture's AG-Export weighted EER. These estimates afford a comparison of the explanatory power and out-of-sample forecasts of the five REERs. Belongia found that these real exchange rates had substantially different regression and out-of-sample properties, even though the correlation coefficients among them ranged from .853 to .983. Consequently, estimating some trade equation,

such as that used by Belongia, provides one direct way to determine determining whether REERs that vary only in their weighting schemes also produce disparate regression and out-of-sample forecast results.

Since this article focuses on the usefulness of the percentage change on delta ln EER series, a delta ln version of Belongia's (1986) model was used to compare the results of the alternative EERs. The purpose of this test was not to determine the best trade equation or test the validity of the specific equation estimated. Rather, the purpose was simply to see how differently each EER series performed using a typical trade equation from the trade literature.

The estimated equation is

$$(5) \Delta \ln X_t = a_0 + \sum_{i=0}^1 a_{1i} \Delta \ln FGNP_{t-i} + \sum_{j=1}^2 a_{2j} \Delta \ln (USAGP/USCPI)_{t-j} + \sum_{k=1}^3 a_{3k} \Delta \ln REER_{t-k} + \varepsilon_t$$

where,

- X_t = real exports of U.S. farm commodities,
- FGNP = foreign real GNP¹⁶,
- USAGP = index of U.S. farm prices,
- USCPI = U.S. CPI,
- REER = real TWEX72, TWEX79, CWEX72, CWEX79, NAIVE and
- ε = random error term.

The results of estimating this equation on quarterly data over I/1973–IV/1981 are reported in table 3; statistics for out-of-sample forecasts over I/1982–I/1985 are reported in table 4.

The summed coefficients are displayed for FGNP and USAGP/USCPI and the individual coefficients for the Δln REERs. These coefficients and their significance levels, as reported in table 3, are very similar across the five specifications for the non-REER variables, as are the R² and Durbin-Watson statistics. The latter imply that the residuals do not have significant first-order correlation. The magnitude, signs and t-ratios for the REERs are also similar, although the sums of the REER coefficients differ slightly — the

¹⁶This series, obtainable from the Federal Reserve Board, is a hybrid of weighted foreign GNPs, containing Mexican and other oil-exporting countries' GNPs as well as the (non U.S.) G-10 plus Switzerland industrial countries' GNPs.

Table 3

Estimates of U.S. Agricultural Exports Equation Using Alternately Weighted G-10 REERs (I/1973–IV/1981)

Weighting scheme	Intercept	$\Sigma \Delta \ln \text{FGNP}$	$\Sigma \Delta \ln (\text{USAGP}/\text{USCPI})$	$\Delta \ln \text{REER}$			\bar{R}^2	DW
				t	t-1	t-2		
TWEX72	0.004 (0.202)	1.597 (0.782)	-0.495 (2.156)*	0.326 (0.448)	0.751 (1.035)	-1.642 (2.027)+	0.335	2.16
TWEX79	0.004 (0.202)	1.603 (0.782)	-0.489 (2.119)*	0.321 (0.442)	0.789 (1.090)	-1.589 (1.971)+	0.332	2.16
CWEX72	0.005 (0.242)	1.494 (0.730)	-0.498 (2.194)*	0.253 (0.368)	0.664 (0.959)	-1.549 (2.018)+	0.324	2.16
CWEX79	0.003 (0.153)	1.712 (0.624)	-0.472 (2.138)*	0.461 (0.635)	0.791 (1.084)	-1.644 (2.026)+	0.344	2.16
NAIVE	0.004 (0.212)	1.585 (0.775)	-0.486 (2.113)*	0.363 (0.493)	0.771 (1.051)	-1.574 (1.940)+	0.329	2.16

NOTE: Absolute t-ratios in parentheses; * indicates significance at 5% level and + indicates significance at 10% level.

CWEX72 being smaller and CWEX79 larger than the other three, although not significantly so.¹⁷

The out-of-sample forecast properties of the five estimates of equation 5, differing only in their REERs, are shown in table 4. Error statistics and Theil statistics from the forecast series are displayed. The error statistics — the mean error, the mean absolute error and the root-mean-square error (RMSE) — are nearly identical for the five equations. Thus, the accuracy of the forecasts does not vary with the weighting scheme used for the REER. The Theil statistics decompose the forecast errors into three components.¹⁸ As shown in these error decompositions, there is no substantive difference in the pattern of the forecast errors.

The close conformity of the regression and forecast results for the variously weighted versions of the G-10

REERs contrasts starkly with the divergent results reported for different REERs in Belongia (1986). There are two key differences between Belongia's and those shown here. First, the REERs in this study contain the same currencies; differences between them are limited solely to alternative weighting schemes. In contrast, Belongia used REERs that differed both in their currencies and in their weighting. Second, the analysis here focuses on changes in the \ln REER; Belongia focused on levels of these data.

CONCLUSION

Trade-weighted effective exchange rates are widely used to assess both the value of the dollar as an end in itself and to provide a broad measure for use in analyzing and explaining trade and capital flows. Surprisingly, while questions often arise about which currencies to include or how to weight them, alternatives to asymmetrically trade-weighted EERs have seldom been examined.

Several alternative EERs have been examined in this article. An important finding is that the equally weighted naive EER is highly correlated with both the traditional trade-weighted EERs and alternative capital-flow-weighted EERs over the range of consid-

¹⁷Some differences in these sums may reflect scale differences, as the CWEX72 and CWEX79 have weights which differ most from TWEX72; see table 1.

¹⁸Bias measures the proportion of the mean square error (RMSE squared) due to a tendency to estimate too high or too low the level of the forecast. Variance measures the proportion of the MSE due to the variance of predictions differing from the variance of actual levels. The covariance is, essentially, the residual error proportion.

Table 4

Out-of-Sample Statistics for Projected Farm Exports Using Alternatively Weighted G-10 REERs (I/1982-I/1985)

Weighting scheme	Error Statistics			Theil Statistics		
	Mean error	Mean absolute error	RMSE	Fraction due to:		
				Bias	Variance	Covariance
TWEX72	0.031	0.058	0.080	0.147	0.419	0.434
TWEX79	0.031	0.059	0.081	0.151	0.424	0.425
CWEX72	0.030	0.058	0.080	0.147	0.434	0.420
CWEX79	0.031	0.059	0.082	0.139	0.392	0.469
NAIVE	0.032	0.058	0.081	0.155	0.436	0.409

ered weights. Moreover, the explanatory and predictive power of the alternative EERs, including the naive EER, were found to be statistically equivalent in an agriculture export equation. Since these results are for one set of currencies and for one historical period, generalizations must be advanced with care; however, these results suggest that further research — both empirical and theoretical — on the comparative importance of the choice of weighting schemes vs. the choice of currencies to be included in the EER is warranted.¹⁹

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¹⁹Ironically, Irving Fisher (1922, p. 365) first advanced the importance of this question 65 years ago after arriving at an analogous empirical finding for weighting schemes for price indexes:

Among the consequences of the surprising agreement between the various legitimate methods of calculating index numbers are two which need emphasis here. The first is that all discussion of "different formulae appropriate for different purposes" falls to the ground. The second is that, the supposed differences among formulae once banished, the real problem of accuracy is shifted to the other features of an index number, — the assortment of the commodities included, their number, and data. . . . Thus the figures for weights in particular may usually be tenfold or one tenth of the true figures without appreciably disturbing the accuracy of the resulting index number. Henceforth, the effort to improve the accuracy of index numbers must center chiefly on the *assortment* of the items to be included.

Appendix

Sources of Data and Specification of Weights

TWEX: Data are from the July 1986 edition of the *International Financial Statistics* tape of the IMF. The data utilized are the imports of goods and services plus the exports of goods and services in billions of U.S. dollars, annual during 1972-76 and 1979-83.

CWEX: Data are from the July 1986 edition of the *Balance of Payments Statistics* tape of the IMF. The data utilized are:

Line	Data Description	Sign/Code
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Direct Investment

	Direct Investment Abroad	-3L.X4
	Foreign Direct Investment at Home	3Y.X4

Portfolio Investment

53	Public Sector Bonds	Assets	-6A1X4
54	Official Liabilities		6T1X4
55	Other Liabilities		6Q1X4
56	Other Bonds	Assets	-6B1X4
57	Official Liabilities		6U1X4
58	Other Liabilities		6R1X4
59	Corporate Equities	Assets	-6D1X4
60	Official Liabilities		6V1X4
	Other Liabilities		6S1X4

Other Long-Term Capital of Deposit Money Banks

69	Drawings on Loans Extended		-5C1Y4
70	Repayments on Loans		-5C1W4

71	Other Assets		-5K1X4
72	Liabilities Official (National Currency)		5U1X4
73	Liabilities Official (Foreign Currency)		5V1X4
74	Drawings on Other Loans		5P1W4
75	Repayments on Other Loans		5P1Y4
76	Other Liabilities		5S1X4

Other Long-Term Capital of Other Sectors

77	Drawings on Loans		-8C1Y4
78	Repayment on Loans		-8C1W4
79	Other Assets		-8K1X4
80	Liabilities (Foreign Official)		8W1X4
81	Drawings on Loans		8P1W4
82	Repayments on Loans		8P1Y4
83	Other Liabilities		8X1X4

Other Short-Term Capital of Deposit Money Banks

89	Assets		-5L2X4
90	Liabilities (National Currency)		5U2X4
91	Liabilities (Foreign Currency)		5V2X4
92	Other Liabilities		5X2X4

Other Short-Term Capital of Other Sectors

93	Loans Extended		-8C2X4
94	Other Assets		-8K2X4
95	Liabilities (Foreign Reserves)		8W2X4
96	Other Loans Received		8P2X4
97	Other Liabilities		8S2X4

The FOMC in 1986: Flexible Policy for Uncertain Times

Philip A. Nuetzel

THE Federal Reserve's monetary policy actions during 1986 were influenced by indications of weak economic growth and moderate inflation. The income velocity of money, defined as the ratio of nominal GNP to the narrowly defined money supply M1, declined even more rapidly in 1986 than it had in the previous year.¹ Interest rates declined on balance over 1986, and the Federal Open Market Committee (hereafter "Committee" or "FOMC") viewed their decline and the associated rapid growth of M1 as a desirable development in light of the sluggish economy. As the year progressed, the Committee deemphasized M1 as a guide to policy while focusing on the broader monetary aggregates, M2 and M3, and several indicators of economic and financial conditions. In the uncertain economic environment that prevailed in 1986, the Committee was flexible in its approach to monetary policy.

This article reviews the FOMC's monetary policy decisions during 1986. The Committee's annual growth objectives for the monetary aggregates are discussed in the next section, and the target ranges for 1986 are compared with actual money growth during

the year. Then, the Committee's views concerning the rapid growth of M1 are considered in more detail, and other variables that had a significant influence on policy are discussed. Finally, the short-run directives issued by the FOMC during 1986 are reviewed chronologically.

ANNUAL TARGETS FOR 1986

Each February, the Board of Governors appears before Congress to report on the annual growth targets that the FOMC has established for the monetary and credit aggregates for the coming year. In July, the Board reports on the progress made toward meeting these goals and announces the FOMC's provisional growth targets for the following calendar year.² The Committee states its annual targets in terms of growth ranges from the fourth quarter of the previous year to the fourth quarter of the current year.³ The dates of the three meetings at which the annual target ranges for 1986 were considered are listed in table 1 along with the ranges established for M1, M2 and M3, and the actual growth rates of these aggregates during 1986.

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NOTE: Citations referred to as "Record" are to the "Record of Policy Actions of the Federal Open Market Committee" found in various issues of the *Federal Reserve Bulletin*. Citations referred to as "Report" are to the "Monetary Policy Report to Congress," also found in various issues of the *Federal Reserve Bulletin*.

¹M1 growth from IV/1985 to IV/1986 was 15.3 percent, up from 12.1 percent over the preceding four quarters. Over the same two periods, nominal GNP grew at rates of 4.2 percent and 6.3 percent, respectively.

²These reports are required under the Full Employment and Balanced Growth Act of 1978, also known as the Humphrey-Hawkins Act.

³The Committee's use of the fourth quarter of the previous year as the base period for establishing the current year's growth targets leads to an upward drift in money growth if the growth of an aggregate during the previous year exceeded the target range for that year. The "base drift" problem is discussed by Broaddus and Goodfriend (1984). For a viewpoint that favors base drift, see Walsh (1986).

July 1985 Meeting

The tentative ranges for 1986 established at the July 1985 FOMC meeting reflected the Committee's feeling, at that time, that continuation of the rapid money growth in the first half of 1985 might be inconsistent with sustainable economic expansion and reasonable price stability. The tentative 1986 range for M1 of 4 to 7 percent was 2 percentage points narrower than the 3 to 8 percent rebased range adopted in July 1985 for the II/1985–IV/1985 period;⁴ the upper limit of the tentative M3 range of 6 to 9 percent was one-half percentage point lower than the upper limit of its 1985 range.

The growth of the three monetary aggregates slowed somewhat during the second half of 1985. M1 growth exceeded the upper limit of its rebased range, however, and its velocity declined even more sharply than it had during the first half.

February 1986 Meeting

The annual growth ranges for 1986 were reconsidered at the Committee's meeting on February 11–12, 1986. For M1 growth, the Committee chose a target range of 3 to 8 percent, which was based on expectations that M1 growth would slow while nominal GNP growth would accelerate. This range was 2 percentage points wider than the FOMC had tentatively planned, reflecting continuing uncertainty about the future behavior of M1 and its velocity. The Board's report to Congress stated that:

The width of the M1 range reflects continuing uncertainty about the behavior of M1 under varying economic and financial circumstances.... While the range for M1 is wide enough to allow for some variation in behavior of the aggregate's income velocity in response to changing conditions, the range was set on the assumption that there would not be a large drop in velocity, such as occurred in 1985. In that connection, the Committee will evaluate behavior of M1 in light of its consistency with other monetary aggregates, economic and financial developments, and the potential for inflationary pressures.⁵

The 6 to 9 percent ranges for M2 and M3 established tentatively in July were affirmed by the Committee at

Table 1

FOMC Annual Monetary Growth Ranges and Actual Money Growth: IV/1985–IV/1986

Dates of meeting	M1	M2	M3
July 9–10, 1985 ¹	4–7%	6–9%	6–9%
February 11–12, 1986	3–8	6–9	6–9
July 8–9, 1986	[3–8] ²	6–9	6–9
Actual Growth Rate	15.3%	8.9%	8.7%

¹The ranges established for 1986 at this meeting were tentative. Mr. Martin dissented from this action because he preferred a somewhat higher growth range for M1 to guard against the possibility that velocity would continue to decline or grow sluggishly in 1986. Ms. Seger dissented because she felt that higher growth ranges were more consistent with sustaining economic expansion and reducing financial strains in the economy.

²The Committee did not establish any new range for M1 growth at this meeting and agreed that growth in excess of the existing range would be acceptable, taking account of the growth of the broader aggregates and other economic and financial developments.

the February meeting. The growth of these broader aggregates had been within their target ranges in 1985, and it was observed that "on balance over the past few years, the behavior of M2 and M3 seemed to have been less affected by institutional and interest rate changes."⁶

July 1986 Meeting

Over the first half of 1986, the growth rates of M2 and M3 were roughly in the middle of their target ranges. M1 growth slowed in the first quarter from its pace in 1985, but accelerated sharply in the second quarter, leaving its annualized growth rate from December through June at 13.3 percent, more than 5 percentage points above the upper bound of the Committee's target range for the year. Other evidence reviewed by the Committee at the meeting of July 8–9, 1986, suggested that the rate of economic growth had slowed considerably in the second quarter from the 2.9 percent growth of real GNP registered in I/1986.⁷ Further-

⁴Because of the apparent decline in M1 velocity during the first half of 1985, the FOMC decided in July 1985 that the annual range originally established for M1 growth was undesirable. The Committee voted to move the base period of that range from IV/1984 to II/1985. See Hafer (1986) for a discussion of the decision to rebase the M1 range and the influence that declining M1 velocity had on the FOMC's decisions in general during 1985.

⁵Report (April 1986), p. 214.

⁶Record (June 1986), p. 410. The Committee also adopted a monitoring range for the growth of total domestic nonfinancial debt of 8 to 11 percent.

⁷Revisions showed that real GNP grew at a rate of 3.8 percent in I/1986 and 0.6 percent in II/1986. All of the data used in the text in discussing the Committee's deliberations are those that were available to the Committee at the time.

more, wage and price increases continued to moderate over the first half of the year, even when the direct effects of declines in food and energy prices were eliminated.

The Committee reaffirmed the long-run growth ranges of 6 to 9 percent for M2 and M3. In their discussion of the range for M1 growth, however, the members again emphasized uncertainties affecting the outlook for M1 velocity and the changes in M1's composition resulting from the rapid growth of its deregulated, interest-bearing component. Interest rates had declined by 1 to 2 percentage points during the first half and were thought to be associated with the rapid growth of M1. Some members thought that the M1 range should be eliminated, "at least pending the reestablishment of a more predictable relationship with overall measures of economic activity."⁸ A majority, however, preferred to retain a range for M1 "even though they believed its operational significance could only be judged in the perspective of concurrent economic and financial developments, including the behavior of M2 and M3."⁹ Rather than raising or rebasing the existing M1 range, the Committee acknowledged its desire to accommodate uncertain changes in M1 demand by agreeing that, after accounting for the behavior of the broader aggregates and other developments, including trends in interest rates, growth of M1 in excess of 8 percent would be acceptable for 1986.

Actual Money Growth in 1986

The actual growth rates of the monetary aggregates for 1986 are reported at the bottom of table 1. M1 growth of 15.3 percent was 7.3 percentage points above the upper bound of its range set early in the year. This growth rate represents a significant acceleration from the already rapid 12.1 percent growth of M1 from IV/1984 to IV/1985. In comparison, M1's average annual growth rate over the 1960–84 period was only 5.8 percent.

One reason why the Committee accepted the rapid M1 growth during 1986 was that the growth rates of M2 and M3 were quite close to the 9 percent upper limit of their target ranges for the year. M2 growth of 8.9 percent and M3 growth of 8.7 percent were slightly more rapid than their respective growth rates of 8.7

percent and 7.7 percent over the IV/1984–IV/1985 period. The Committee felt, however, that the behavior of these aggregates was generally consistent with its overall policy objectives. The Board's mid-year report to Congress stated that "during a period of greater overall price stability and adequate capacity relative to the demands placed upon it," monetary policy had been able "to accommodate demands for money and credit, helping facilitate further declines in interest rates. . . ."¹⁰

THE FOMC'S GUIDES FOR POLICY IMPLEMENTATION

The Committee's use of a variable as a policy guide is based on assumptions about the effect of that variable on real economic growth and the rate of inflation, which are of ultimate concern, as well as the ability of policy actions to influence that variable. As noted previously, the deemphasis of M1 as a policy guide was a reaction to the instability of M1 velocity. In this section, we review the Committee's explanation for the unusually rapid growth of M1 relative to nominal GNP and its reasons for believing that the relationship between M1 and economic activity would be subject to a high degree of uncertainty for some time. We then discuss the Committee's reasons for continuing to use other variables as policy guides, such as M2 and M3, the level of interest rates, the foreign exchange value of the dollar, real GNP and indicators of output and prices.

Institutional Changes and M1

In accounting for the rapid growth of M1 in 1986, the Committee emphasized that the composition of M1 had changed in part because of the deregulation of deposit interest rates and minimum balance requirements that had taken place under the Monetary Control Act of 1980 and the Garn-St. Germain Act of 1982.¹¹ From 1980 to 1985, for example, the proportion of interest-bearing checkable deposits (other checkable deposits, or OCDs) in M1 rose from 5.5 percent to 27.6 percent, a trend that continued in 1986.

Table 2 shows the annualized growth rates of M1 and its three major components for each quarter of

⁸Record (October 1986), p. 708.

⁹Ibid.

¹⁰Report (September 1986), p. 603.

¹¹For a discussion of federal policy on deposit interest rate ceilings, or Regulation Q, and the phaseout of deposit regulation, see Gilbert (1986).

Table 2

**Growth of M1 and Its Major Components in 1986
(seasonally adjusted, compounded annual rates)**

Period	Currency	Demand deposits	Other checkable deposits	M1
IV/1984–IV/1985	7.5%	8.9%	22.2%	12.1%
IV/1985–I/1986	7.5	4.7	17.9	9.1
I/1986–II/1986	6.6	15.4	28.1	16.4
II/1986–III/1986	7.5	13.3	34.2	17.6
III/1986–IV/1986	8.3	13.4	34.9	18.2
IV/1985–IV/1986	7.5	11.6	28.6	15.3

1986 and for the year as a whole. The OCD component of M1 grew at 28.6 percent, 6.4 percentage points faster than its 1985 growth rate. Growth in demand deposits was also quite rapid, accelerating from 8.9 percent in 1985 to 11.6 percent in 1986. Growth of the public's currency holdings was unchanged at 7.5 percent.

The Committee attributed much of the rapid growth of OCDs and demand deposits, and hence declining M1 velocity in 1986, to declining interest rates and subsiding inflationary expectations. In the midyear report to Congress, the Board stressed that "the advent and expansion of interest-bearing checking accounts over the years have attracted more savings-type balances and have increased the responsiveness of M1 to interest rate changes."¹² Commenting on the rapid growth of demand deposits, Chairman Paul Volcker said that there were "some indications of a greater willingness of businesses to hold demand deposits at a time of lower interest rates, partly because, with interest rates down, a larger balance is necessary to compensate banks for a given amount of services."¹³

Chart 1 shows the paths of selected short-term

interest rates and the growth of M1 over 1985 and 1986. There were major accelerations in M1 growth accompanied by declining short-term rates during the spring of 1985, the late winter and spring of 1986, and the summer of 1986. On the other hand, there were also accelerations of M1 growth during periods of relatively stable interest rates in the summer and the late fall of 1985, and the fall of 1986. The consensus at the Committee's meeting in July 1986 was that rapid M1 growth during the first half of the year reflected lagged adjustments to declining inflationary expectations and interest rates; it did not seem to hold the usual potential for reigniting inflationary pressures when judged in the context of other developments, including more restrained growth of the broader aggregates.¹⁴

While the Committee thought that M1 still had some informational value, it did not wish to restrain the process of adjustment that it felt was responsible for rapid M1 growth and declining velocity. Chairman Volcker stated in July 1986 that "... a firm conclusion concerning the nature and stability of future velocity characteristics may take years of experience in the new institutional and economic setting."¹⁵ The Chairman went on to summarize the Committee's attitude toward the use of M1 as a policy tool:

¹²Report (September 1986), p. 614. Support for the view that the interest elasticity of money demand has increased with deposit deregulation can be found in Keeley and Zimmerman (1986), Roth (1985), Mehra (1985) and Wenninger (1986).

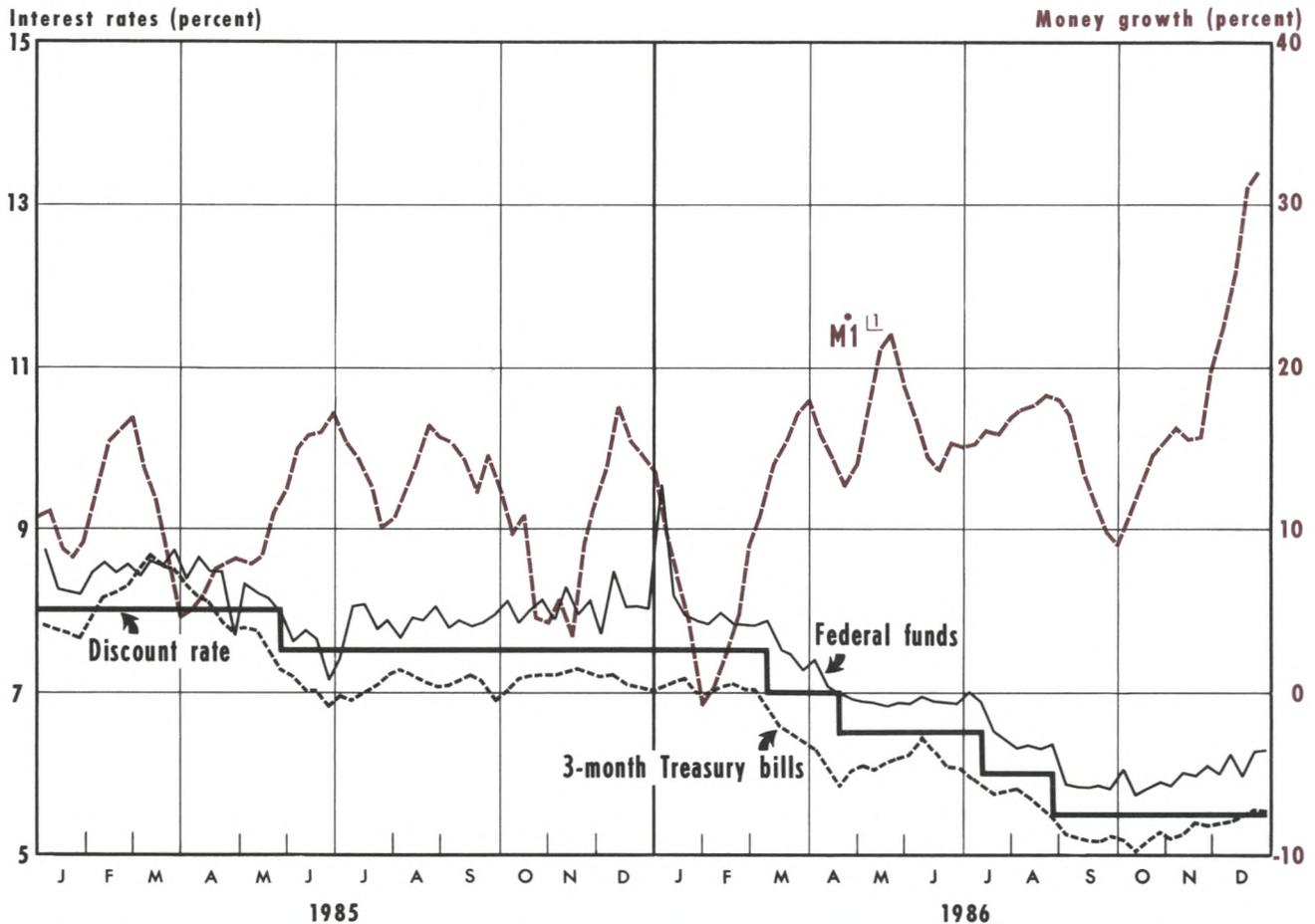
¹³Volcker (1986), p. 640.

¹⁴See the Record (October 1986), p. 708.

¹⁵Volcker (1986), p. 641.

Chart 1

Short-Term Interest Rates and M1 Growth



¹ M1 growth rates are compounded annual rates of change of four-week moving averages of M1 from four weeks previous.

Experience over the first half of 1986 underscored the difficulty — I would say impossibility — of conducting monetary policy in current circumstances according to one or two simple, preset criteria . . . the weight of the evidence strongly suggests that M1 *alone* during this period of economic and institutional transition is not today a reliable measure of future price pressures (or indeed a good short-term “leading indicator” of business activity). The more restrained performance of the broader aggregates, as well as the performance of the economy and prices themselves, point in a different direction.¹⁶

M2 and M3

In recent years, the velocity behavior of M2 and M3

have not changed as radically as M1's. Apparently, the shifts in asset holdings resulting from the combination of falling interest rates and deposit deregulation have occurred largely within the broader aggregates and have not led to as large a surge in their growth as in M1's.

The FOMC has responded by assigning more weight to M2 and M3 as policy guides.¹⁷ In 1986, the Commit-

¹⁷Monetary policy actions have a weaker influence on the broader aggregates than on M1, however, because most of the non-M1 deposit liabilities included in M2 and M3 are not subject to reserve requirements. Moreover, information on these aggregates is available at a longer lag. See Lawler (1981). Also, Hafer (1981) presents empirical evidence suggesting that M2 is less controllable through policy actions than M1.

¹⁶*ibid.*, p. 642.

Organization of the Committee in 1986

The Federal Open Market Committee (FOMC) consists of 12 members: the seven members of the Federal Reserve Board of Governors and five of the 12 Federal Reserve Bank presidents. The chairman of the Board of Governors is, by tradition, also chairman of the Committee. The president of the New York Federal Reserve Bank is, also by tradition, its vice chairman. All Federal Reserve Bank presidents attend Committee meetings and present their views, but only those who are members of the Committee may vote. Four memberships rotate among Bank presidents and are held for one-year terms beginning on March 1 of each year. The president of the New York Federal Reserve Bank is a permanent voting member of the Committee.

Members of the Board of Governors at the beginning of 1986 included Chairman Paul A. Volcker, Vice Chairman Preston Martin, Henry C. Wallich, J. Charles Partee, Emmett J. Rice and Martha R. Seger.¹ The term of J. Charles Partee expired on February 1. The two open seats on the Board were filled by Wayne D. Angell and Manuel H. Johnson on February 7. Preston Martin resigned from the Board effective April 30.² On August 19, H. Robert Heller joined the Board, and, on August 22, Manuel H. Johnson took the office of vice chairman. Henry C. Wallich resigned from the Board effective December 15, and Emmett J. Rice resigned effective December 31.³

The following Bank presidents voted at the meeting on February 11 and 12, 1986: Robert P. Black (Richmond), E. Gerald Corrigan (New York), Robert P. Forrestal (Atlanta), Silas Keehn (Chicago) and Robert T. Parry (San Francisco). The Committee membership changed in March and the presidents' voting positions were filled by E. Gerald Corrigan (New York), Roger Guffey (Kansas City), Karen N. Horn (Cleveland), Thomas C. Melzer (St. Louis) and Frank E. Morris (Boston).⁴

The Committee met eight times at regularly scheduled meetings during 1986 to discuss economic trends and to decide upon the future course of open-market operations.⁵ As in previous years, telephone or telegram consultations were held occasionally between scheduled meetings. During each regularly scheduled meeting, a directive was issued to the Federal Reserve Bank of New York. Each directive contained a short review of economic developments, the general economic goals sought by the Committee, the Committee's long-run monetary growth objectives and instructions to the Manager of the System Open Market Account at the New York Bank for the conduct of open-market operations. These instructions typically were stated in terms of the degree of pressure on reserve positions. The latter were associated with expected short-term growth rates for M1, M2 and M3 that were in turn considered to be consistent with desired longer-run growth rates of the monetary aggregates.⁶ The Committee also specified intermeeting ranges for the federal funds rate. These ranges provide a mechanism for initiating consultations between meetings whenever it appears that the constraint of the federal funds rate is proving inconsistent with the objectives for the behavior of the monetary aggregates.

The account manager has the major responsibility for formulating plans regarding the timing, types and amount of daily buying and selling of securities in fulfilling the Committee's directive. Each morning the manager and his staff plan the open-market operations for that day. This plan is developed on the basis of the Committee's directive and the latest developments affecting money and credit market conditions, the growth of the monetary aggregates and bank reserve conditions. The manager also consults with the Board of Governors' staff. Present market conditions and open-market operations that the manager proposes to execute are dis-

¹Ms. Seger did not attend the May FOMC meeting.

²Mr. Martin did not attend the April meeting.

³Mr. Wallich did not attend the May and November meetings. Mr. Rice did not attend the December meeting.

⁴Robert H. Boykin (Dallas) voted as an alternate for Mr. Melzer at the May meeting.

⁵No formal meetings were held in January, March, June and October.

⁶In July, the FOMC agreed that M1 growth in excess of its annual target range would be acceptable and discontinued statements regarding the Committee's expectations for short-run growth in M1.

cussed each morning in a telephone conference call involving the staff at the New York Bank, the Board and one voting president and his staff. Other members of the Committee may participate and are informed of the daily plan by internal memo or wire.

The directives issued by the Committee and a summary of the reasons for Committee actions are published in the "Record of Policy Actions of the Federal Open Market Committee." The "Record" for each meeting is released a few days after the Committee meeting. Soon after its release, it appears in the *Federal Reserve Bulletin*. In addition, "Records" for the entire year are published in the annual report of the Board of Governors. The "Record" for each meeting during 1986 included:

1) a staff summary of recent economic developments — such as changes in prices, employment, industrial production and components of the national income accounts — and projections of general price, output and employment developments for the year ahead;

2) a summary of recent international financial developments and the U.S. foreign trade balance;

3) a summary of open-market operations, growth of the monetary aggregates and bank reserves and money market conditions since the previous meeting;

4) a summary of the Committee's discussion of the current and prospective economic and financial conditions and the current policy considerations, including money market conditions and the movement of monetary aggregates;

5) decisions of the Committee;

6) a policy directive issued by the Committee to the Federal Reserve Bank of New York;

7) a list of the members' votes and any dissenting comments; and

8) a description of any actions regarding the Committee's other authorizations and directives and reports on any actions or consultations that may have occurred between the regularly scheduled meetings.

tee often evaluated potential changes in policy on the basis of the recent growth of these aggregates, among other factors. For example, in April, the Committee viewed the growth of M2 and M3 at rates within their target ranges as evidence that the rapid growth of M1 did not represent an excessive buildup of liquidity.¹⁸ At later meetings, when M2 and M3 were near the upper limits of their ranges, members expressed more concern about the implications of accommodative policy for inflation.¹⁹

Interest Rates

The Committee also evaluated potential changes in its policy stance during 1986 in the context of recent movements in interest rates. By implementing an accommodative policy in 1986, the Committee sought to provide the reserves necessary to support increases in money demand.²⁰ At two meetings, though it felt that

less restrictive reserve conditions were desirable, the Committee contemplated that the easing would be achieved through discount rate reductions by the Board. This was expected to facilitate a market tendency toward lower interest rates.²¹ Moreover, the appropriateness of potential intermeeting adjustments in the provision of reserves were viewed as conditional on near-term changes in rates, including potential discount rate reductions.

While it sought to promote easier credit market conditions, the Committee also took account of movements in long-term interest rates as indicators of changes in inflationary expectations. For example, an increase in interest rates before the September meeting, together with some other developments, was interpreted as a sign of an increase in expected inflation. This was one factor that led to a vote for "maintaining unchanged conditions of reserve availability," and one

¹⁸See the Record (September 1986), pp. 649–50.

¹⁹See the following Records: November 1986, pp. 784–85; January 1987, pp. 34–35; February 1987, pp. 120–21.

²⁰See Report (September 1986), pp. 612–13.

²¹See the following Records: October 1986, p. 710; November 1986, p. 784. The same point is discussed in Record (June 1986), pp. 411–12.

member believed that less ease in policy implementation was desirable at that time.²²

International Developments

Concerns about the external sector also influenced the FOMC's policy actions in 1986. The foreign exchange value of the dollar had declined substantially on a trade-weighted basis since early 1985. As a result, the trade deficit was expected to decline during 1986, but it widened instead and was a continuing element of uncertainty in the economic outlook. Throughout the year, the Committee expressed doubts about the timing and magnitude of any improvement in the trade balance because it believed that foreign producers would attempt to maintain their U.S. market shares by reducing their profit margins.²³ The Committee also felt that increases in U.S. net exports would be hindered by sluggish growth in the economies of some major U.S. trading partners in the absence of more stimulative policies abroad.²⁴

While the falling dollar improved the prospects for a smaller trade deficit, Committee members noted that it also had a potential inflationary impact.²⁵ Furthermore, the trade deficit implied large capital inflows from abroad that were financing domestic economic activity. Loss of confidence in the dollar might require sharp increases in domestic interest rates to maintain the inflow of foreign capital; members of the Committee often mentioned this risk to economic expansion.²⁶ In general, the Committee felt that greater caution should be exercised in providing reserves in the event of sharp dollar depreciation during intermeeting periods.²⁷

²²See the Record (January 1987), p. 34.

²³Mann (1986) presents evidence in support of this view. See Report (April 1986), p. 216, Report (September 1986), p. 610, and the following Records: June 1986, p. 409; July 1986, p. 480; January 1987, p. 33.

²⁴See Report (September 1986), pp. 604–05 and p. 610, and the following Records: July 1986, pp. 480–81; October 1986, p. 707; January 1987, p. 33. Also see the Record in Press Release, Federal Reserve Board of Governors, February 13, 1987, p. 7. There were, in fact, limited moves toward expansionary policies in some major industrial nations during the year, including coordinated rounds of discount rate reductions with the Federal Reserve.

²⁵See the following Records: June 1986, p. 409; November 1986, pp. 783–84; January 1987, pp. 33–34; February 1987, p. 120.

²⁶See the following Records: June 1986, p. 412; October 1986, p. 710; November 1986, p. 784. Also, see Report (September 1986), p. 641, for a brief discussion of the risks of sharp depreciation of the dollar on foreign exchange markets, and how those risks influenced the Board's decisions on discount rate reductions.

²⁷See the following Records: June 1986, p. 412; October 1986, p. 710; November 1986, pp. 784–85; January 1987, p. 35; Press Release, February 13, 1987, p. 11.

Real Activity and Prices

Finally, the FOMC's decisions in 1986 were guided by available data on production, employment, wages and prices, and projections of economic activity based on recent developments. Consumer prices rose by only 1.1 percent in 1986, the lowest rate of inflation by this measure since 1965. Steep declines in oil prices early in the year contributed to the low rate of inflation, but wage and price pressures were otherwise quite moderate. Monthly data on production and employment and the growth of real GNP indicated, over much of the year, that the expansion was proceeding at a slower pace than the Committee had anticipated.²⁸ Throughout the year, the members generally anticipated more rapid real growth and inflation in later quarters. Nevertheless, current indications of sluggish growth, moderate price pressures and downside risks in the economic outlook weighed heavily in the Committee's decisions to maintain the accommodative stance of policy.²⁹ The Committee's views on the desirability of intermeeting adjustments in policy implementation also depended upon indications of the pace of economic growth and inflation, among other developments.³⁰

SHORT-RUN POLICY OBJECTIVES

The FOMC meets eight times each year to review economic developments and discuss the status of policy and its implementation. At each meeting, the Committee's decisions are summarized in a directive issued to the Federal Reserve Bank of New York. The directive is then used by the Manager for Domestic Operations, System Open Market Account, to guide the day-to-day implementation of monetary policy through open-market operations during the intermeeting period.

Recent policy directives specify the Committee's decision about the appropriate "degree of pressure on reserve positions" of depository institutions for the

²⁸Real GNP grew 2.1 percent over the IV/1985–IV/1986 period. At the February 1986 meeting, the forecasts of real GNP growth of the members of the Committee and Federal Reserve Bank presidents had a central tendency of 3 to 3½ percent. See the Record (June 1986), p. 408. At the July 1986 meeting, the forecasts for the year had a central tendency of 2½ to 3 percent. See the Record (October 1986), p. 706.

²⁹For example, see the following Records: June 1986, p. 411; September 1986, p. 650; October 1986, p. 710.

³⁰For example, see the following Records: June 1986, p. 412; July 1986, p. 482; September 1986, p. 650; February 1987, pp. 120–21; Press Release, February 13, 1987, p. 11.

Table 3
FOMC Short-Run Operating Specifications

Meeting date	Target period	Expected growth rates			Intermeeting federal funds range	Degree of reserve pressure
		M1	M2	M3		
December 16–17, 1985 ¹	November 1985– March 1986	7–9%	about 6–8%	about 6–8%	6–10%	decrease somewhat
February 11–12, 1986 ²	November 1985– March 1986	about 7	about 6	about 7	6–10	unchanged
April 1, 1986	March 1986– June 1986	about 7–8	about 7	about 7	6–10	unchanged
May 20, 1986 ³	March 1986– June 1986	about 12–14	about 8–10	about 8–10	5–9	unchanged
July 8–9, 1986 ⁴	June 1986– September 1986	not specified ⁵	about 7–9	about 7–9	4–8	decrease somewhat
August 19, 1986 ⁶	June 1986– September 1986	not specified	about 7–9	about 7–9	4–8	decrease slightly
September 23, 1986 ⁷	August 1986– December 1986	not specified	7–9	7–9	4–8	unchanged
November 5, 1986	September 1986– December 1986	not specified	7–9	7–9	4–8	unchanged
December 15–16, 1986	November 1986– March 1987	not specified	about 7	about 7	4–8	unchanged

¹Mr. Black dissented because he felt that a decrease in the degree of reserve pressure was undesirable, given the rapid growth of M1.

²Mr. Martin and Ms. Seger dissented because they believed that the risks to the economic expansion would be lessened by reductions in short-term interest rates, including an eventual reduction in the discount rate. They favored some easing of reserve conditions in order to facilitate these reductions.

³Mr. Wallich dissented because he was concerned about the inflationary implications of rapid monetary expansion and felt that open-market operations should be directed toward somewhat greater restraint.

⁴Mr. Melzer dissented because he felt that easing under current circumstances could have an adverse impact on inflationary expectations and lead to an undesirably sharp depreciation in the value of the dollar on foreign exchange markets. He also noted that the outlook for the quarters ahead appeared to be consistent with the economy's long-run growth potential, and that further ease, in his view, would generate inflationary pressures without encouraging much faster growth in real output. He therefore favored maintaining the existing degree of reserve pressure.

⁵The directive stated that "While growth in M1 is expected to moderate . . . that growth will continue to be judged in the light of the behavior of M2 and M3 and other factors." See Record (October 1986), p. 711, and subsequent Records referenced in the footnotes to the text.

⁶Mr. Melzer dissented because he was concerned that further ease might heighten inflationary expectations and put excessive downward pressure on the foreign exchange value of the dollar. He also felt that the prospects for economic growth had improved during the intermeeting period. Mr. Wallich dissented because he felt that policy should be directed toward slowing the growth of the monetary aggregates and reducing the potential for inflation. Mr. Wallich and Mr. Melzer preferred to maintain the existing degree of pressure on reserve positions.

⁷Mr. Wallich dissented because he believed that a slight tightening of reserve conditions was desirable in light of the persistence of rapid monetary growth and the threat that it presented to continued price stability.

period before the next meeting.³¹ In addition, each directive gives the Committee's expectation of the growth of various monetary aggregates for some short-run target period, contingent upon the stated degree

of reserve pressure, and specifies an intermeeting range for the federal funds rate. If reserve conditions proved to be inconsistent with a federal funds rate in that range, the chairman could call for a Committee consultation before the date of the next meeting. Table 3 shows the Committee's expectations for money growth at each meeting in 1986. The table also shows the intermeeting federal funds range established at

³¹See the directives contained in any of the Records of Policy Actions referenced below.

each meeting and the degree of pressure to be applied to reserve positions.

February Meeting

The economic data reviewed at the February meeting indicated a moderate and, perhaps, improving rate of economic growth. Real GNP grew at an annual rate of 2.4 percent in IV/1985, which was slower than its 3 percent growth in the previous quarter. Several indicators of real activity, however, such as industrial production, housing starts and new orders for nondefense capital goods had shown strength in December after performing sluggishly in prior months. Moreover, substantial gains in employment were reported for January.

The Committee discussed a number of uncertainties that clouded the outlook at the February meeting. The sharp decline in oil prices in early 1986 was expected to have broadly favorable effects on the economy. These effects were difficult to assess, however, and energy-producing regions of the country and some oil-producing, developing countries with large debt burdens were likely to suffer. While prospective fiscal restraint associated with deficit reduction under the Gramm-Rudman-Hollings legislation was thought to have had a beneficial impact on financial markets, it was expected to have adverse effects on aggregate demand. Some members expressed concern over the strength of business investment in light of the uncertainties surrounding tax reform legislation, which was likely to tilt the composition of tax liabilities toward businesses and away from households.

Despite these considerations, members generally agreed that the economy was likely to grow at a faster rate during 1986 than it had in 1985. Some of the positive factors cited were the effects of rapid M1 growth, lower interest rates, higher stock prices and further declines in the foreign exchange value of the dollar. In fact, some members felt that inflationary pressures might crop up several quarters ahead.

The growth of M1 and M2 had slowed in the weeks prior to the February meeting, and money growth was close to the rate expected by the Committee in December for the November-to-March period. While that fact was encouraging, some members were concerned about the failure of short-term interest rates to decline further in recent months in response to the relatively accommodative stance of monetary policy that had prevailed for some time. There was general accord on the desirability of implementing policy "in a manner that would not in itself signal or encourage higher

interest rates or impede the tendency for some market rates to decline."³² There was, however, a perceived risk of "a cumulating decline in the exchange rate that might discourage willingness to hold dollars at declining interest rates. In these circumstances, nearly all participants agreed that little or no change in reserve availability was warranted."³³

The Committee viewed its policy stance as accommodative, but some members felt that further easing might be necessary in light of the risks of a weakening economy. In fact, "the point was made that the discount rate might need to be reduced to permit or accommodate a market tendency toward lower interest rates and that such a move would be a desirable complement to open market operations. . . ."³⁴ On the other hand, members felt that the desirability of a reduction in the discount rate would depend on evolving circumstances and the prospects for similar action by major foreign central banks.³⁵

April Meeting

Interest rates of all maturities declined during the period between the February and April meetings, with long-term rates falling more sharply than short-term rates. The foreign exchange value of the dollar also declined on balance. At the time of the April meeting, however, there were conflicting signals about the pace of economic activity. Spending and real output were thought to have grown more rapidly during the first quarter than in the sluggish fourth quarter.³⁶ On the other hand, growth was clearly weak in some key sectors, and production and employment data for February were disappointing. On the bright side, declines in oil prices dominated the inflation outlook, and were viewed as instrumental in lowering inflationary expectations.

The Committee decided to maintain "about the existing degree of pressure on reserve conditions."³⁷ This was felt to be consistent with the long-run objec-

³²Record (June 1986), pp. 411–12.

³³Ibid., p. 411.

³⁴Ibid.

³⁵The Federal Reserve announced a reduction of the discount rate from 7½ to 7 percent on March 7. Subsequently, this action was matched by several foreign central banks.

³⁶The Commerce Department had reported a downward revision in real GNP growth in IV/1985 to 0.7 percent.

³⁷Record (July 1986), p. 482.

tives for growth in the monetary aggregates. The growth of M1 had accelerated in February and March, and was near the upper end of the Committee's annual range, but the growth of the broader aggregates had been moderate. The Committee discussed the possibility that demands for M1 balances could grow substantially if interest rates continued to decline. Furthermore, the velocity of M1 remained weak, and some members suggested that a more accommodative posture with respect to money and reserve growth might well become desirable. For the weeks immediately ahead, however, "most of the members felt that there should be no presumptions about the likely direction of any intermeeting adjustments."³⁸

The Board announced another reduction in the discount rate of one-half point, to 6½ percent, effective April 21. The Committee held a telephone conference on that date and agreed to make no changes in the current directive. Recent data indicated that growth in the monetary aggregates had accelerated, however, and the members felt that, in implementing open market operations, "a degree of caution should be exercised to avoid an impression that a further change in the discount rate was sought over the period immediately ahead."³⁹

May Meeting

The acceleration in the growth of M1 continued, and the appropriateness of using that aggregate as a guide to policy was prominent in the discussion at the Committee's meeting on May 20. As of early May, M1 was well above the 8 percent upper limit of its target range for 1986. Some members noted that the relatively rapid growth of M1 balances needed to be accommodated in light of the continuing adjustments to earlier declines in inflationary expectations and interest rates and some indications of weakness in the economy.⁴⁰

Other members suggested that the rapid money growth might represent excessive growth in liquidity that eventually would have inflationary consequences. In this view, rapidly growing cash balances "were available to support a considerable pickup in spend-

ing at some point in the future."⁴¹ The growth of the broader aggregates had been well within their respective target ranges for 1986, however, which "raised questions as to whether the growth of M1 really represented a potentially excessive buildup in liquidity or was more of a shift in the composition of liquid holdings in response to relative movements in interest rates."⁴² The members generally agreed that some slowing in M1 growth was likely in the weeks ahead, but, because of uncertainties about the timing and extent of the slowdown, "some proposed omitting numerical references in the directive to the Committee's expectations for monetary growth in the second quarter."⁴³ This proposal was rejected by the majority.

While some evidence of slower real growth had emerged by the time of the May meeting, a number of factors pointed toward more rapid growth later in the year. These factors included rapid money growth, higher prices of financial assets, lower energy prices and further depreciation of the dollar against the currencies of major trading partners. In response to these elements in the outlook, "most of the members indicated that they were in favor of continuing to direct open market operations at least initially toward maintaining the existing degree of reserve availability."⁴⁴ In their discussion of possible intermeeting adjustments, most members emphasized a potential need for restraint in response to signals of a strengthening economy if growth in the monetary aggregates did not slow as anticipated. The directive stated that, under those circumstances, "somewhat greater reserve restraint would be acceptable," but in the event of slower money growth and sluggish economic activity, "somewhat lesser reserve restraint might be acceptable."⁴⁵

July Meeting

Some optimism was expressed at the July meeting about the prospects for economic growth over the second half, and the outlook for inflation remained favorable. There was concern, however, about the

⁴¹Record (September 1986), p. 648.

⁴²Ibid., p. 649.

⁴³Ibid., p. 650.

⁴⁴Ibid., p. 650.

⁴⁵Ibid., pp. 651–52. In response to rapid growth in required reserves and currency in circulation, the limit on changes in System Account holdings of U.S. government and federal agency securities between Committee meetings was temporarily raised by the Committee from \$3 billion to \$9 billion on June 18.

³⁸Ibid.

³⁹Ibid., p. 483.

⁴⁰The Commerce Department's preliminary estimate of real GNP growth in the first quarter was 3.7 percent, but industrial production declined on balance over the three months ending in April. Moreover, weakness among oil producers and uncertain but potentially adverse changes in the tax code were retarding business fixed investment.

sluggish pace of business investment, the lack of improvement in the trade balance, and the "sharp contrasts in the economic performance of different sectors and regions of the country and . . . strains on financial institutions that serviced the depressed industries."⁴⁶

At the previous meeting, the members had anticipated that a move toward restraint might be necessary. By July, the favorable inflation outlook and concern over slow economic growth led most of the members to believe "that some easing was desirable," which they preferred to implement "at least initially, through a lower discount rate rather than through open market operations."⁴⁷ The members accepted a directive "that called for some decrease in the existing degree of reserve pressure, recognizing that relaxation could be accomplished in the first instance by a reduction in the discount rate."⁴⁸

The Committee continued to anticipate a slowdown in the growth of M1, which had decelerated somewhat in June but was still quite rapid (see chart 1). Considerable doubt remained about the extent and timing of such a slowdown, however. With the growth of the broader aggregates around the midpoints of their ranges for the year, and in the context of an unexpectedly sluggish economy, the Committee members agreed that rigid adherence to the original M1 target was inconsistent with their objectives. Because of their uncertainty about the usefulness of M1 as a guide to policy under prevailing conditions, "a majority of the members expressed a preference for not indicating a specific rate of expected growth for M1 in the short-run operational paragraph of the Committee's directive."⁴⁹

August Meeting

The rapid growth of M1 continued through July and into early August. The broader aggregates also grew

⁴⁶Record (October 1986), p. 707.

⁴⁷Ibid., p. 710. Of course, a cut in the discount rate should increase the demand for borrowed reserves by depository institutions. Under the borrowed reserve operating procedure currently used by the open-market desk, this would result in open-market purchases of securities unless the borrowed reserves target is increased. See Gilbert (1985) for a discussion of the current operating procedure and two others that have been used by the open-market desk since 1970. The borrowed reserves targets used by the desk during each year are published during the following year in the Federal Reserve Bank of New York *Quarterly Review*.

⁴⁸Record (October 1986), p. 710. On July 10, the Federal Reserve announced a 1/2-point reduction in the discount rate to 6 percent.

⁴⁹Ibid.

quite rapidly, leaving them near the upper limits of their target ranges. At the Committee's August meeting, there was some concern about whether the rapid growth in all three aggregates had inflationary implications. Moreover, there had been further depreciation in the foreign exchange value of the dollar during the intermeeting period. The cheaper dollar was expected to put some upward pressure on prices, even though there were not yet any signs of the long-awaited reduction in the trade deficit. There was some evidence that economic growth was accelerating from the weak pace of the second quarter, including strong consumption demand and housing activity.⁵⁰ Nevertheless, the data reviewed at this meeting continued to indicate a lack of balance in terms of growth among different sectors of the economy and only moderate wage and price pressures. In view of the fact that interest rates had resumed their decline since early June, the members agreed that money growth had not been excessive.

The members considered a number of uncertainties that continued to cloud the economic outlook in August. These included downside risks related to the effects of tax reform legislation, rising consumer debt burdens and sluggish growth of the economies of several major U.S. trading partners. There was also uncertainty about the course of the federal budget deficit and its impact on the economy.

The Committee agreed that "some slight easing in the degree of reserve pressure" was appropriate, and once again stated that this "might be accomplished through a reduction in the discount rate."⁵¹ The members felt that an intermeeting adjustment in either the direction of ease or restraint might be warranted, depending on ensuing developments. It was noted, however, that in the event of a further cut in the discount rate, a significant depreciation of the dollar on foreign exchange markets would call for "a little greater caution in the provision of reserves through open market operations . . ."⁵² The Board reduced the discount rate by 1/2 percentage point to 5 1/2 percent effective August 21.

September Meeting

Short-term interest rates fell somewhat after the reduction in the discount rate, but long-term rates

⁵⁰The preliminary estimate of real GNP growth in II/1986 was 1.1 percent.

⁵¹Record (November 1986), p. 785.

⁵²Ibid.

rose sharply, and by the time of the Committee's meeting on September 23, the value of the dollar on foreign exchange markets had changed little. The growth rates of M2 and M3 decelerated in August but were still fairly rapid, and M1 growth accelerated from its already rapid pace before slowing sharply in early September.

Most Committee members believed that, despite an apparently stronger economy in the third quarter, an improvement in the trade balance was critical to sustained growth. At the same time, the members felt that there were compelling reasons for expecting some upward price pressures in the quarters ahead, including the likelihood of price increases for imports and import-competing goods stemming from the decline of the dollar, and a continuing reversal of the earlier decline in world oil prices. In addition, there had been indications of a resurgence of inflationary expectations in financial markets and in markets for precious metals. Because "monetary policy had moved toward an increasingly accommodative posture over the course of recent months," several members believed "that it was now time to pause and observe developments. . . ."⁵³ The Committee voted for "no change in the current degree of pressure on reserve positions."⁵⁴ In fact, while not ruling out the possibility of a move toward ease, most of the members believed that any potential intermeeting adjustment would more likely involve some restraint, depending on the behavior of a number of guides reflecting economic and financial conditions.

November Meeting

The Committee's expectation that money growth would fall somewhat from its exceptionally rapid pace during the summer months was fulfilled in September and October: M2 and M3 advanced at annual rates of 9.3 and 8 percent over the two months, and M1 growth slowed to a rate of 12.5 percent. Meanwhile, economic activity appeared to be growing at a moderate rate.⁵⁵

At the Committee's November meeting, the members saw a continuation in the moderate pace of economic expansion as a likely outcome, but certain aspects of the outlook were disturbing. Improvement

in the trade balance remained elusive and, in large part, dependent upon stronger economic growth overseas to spur demands for U.S. exports. One member referred to increasing protectionist sentiment as a threat to real growth and price stability. In addition, tax reform legislation appeared to be deterring business investment, particularly in structures.

The Committee expected inflation to accelerate somewhat over the quarters ahead because of the lagged impacts of the dollar's depreciation and energy price developments. On the other hand, relatively low rates of capacity utilization in most industries, moderate wage growth and continuing efforts by businesses to reduce costs and improve productivity were factors that would help to hold inflation in check. Moreover, the value of the dollar on foreign exchange markets had stabilized during the intermeeting period. If continued, that stability would limit a potential source of upward price pressure.

Given the prospects for sustained, moderate growth in economic activity and recent moderation in the growth of the monetary aggregates, the Committee voted for "maintaining unchanged conditions of reserve availability."⁵⁶ With regard to possible intermeeting adjustments, some members felt that an easing might be desirable in the context of indications of weakness in the economy, while others felt that money growth below the Committee's expectations should be tolerated in the absence of rising interest rates or a weak economy. The directive did not incorporate any presumption, however, about the likely direction of any intermeeting adjustment in policy.⁵⁷

December Meeting

The data reviewed at the Committee's December meeting showed that employment growth, industrial production and consumer spending had strengthened in recent months. Sluggishness in business spending and the housing sector were elements of concern, however, and the balance of trade showed no convincing signs of improvement. To a considerable extent, the discussion focused on downside risks to economic growth, particularly for the early part of 1987. The earlier decline of the dollar had enhanced the international competitiveness of many U.S. firms,

⁵³Record (January 1987), p. 34.

⁵⁴*Ibid.*, p. 35.

⁵⁵Real GNP grew at an annual rate of 2.4 percent in III/1986, according to the preliminary estimate, after growth of only 0.6 percent in II/1986.

⁵⁶Record (February 1987), p. 120.

⁵⁷The Committee approved a temporary increase from \$6 billion to \$7 billion in the limit on changes in System Account holdings of government securities during the next intermeeting period, effective December 3. Outright purchases through December 1 had left insufficient leeway for additional purchases that would be necessary to provide for seasonal increases in required reserves and currency in circulation.

but a number of members expected only minor improvement in foreign trade over the quarters ahead. The growth of consumer debt was viewed as a factor that might inhibit domestic demand in 1987. Moreover, consumers and businesses were thought to have shifted some purchases originally planned for 1987 into 1986 to take advantage of certain provisions of the tax code that were scheduled for rescission under the new tax legislation.⁵⁸ While the reduction in personal tax rates for 1987 was good news for consumers, the new tax code along with high vacancy rates had negative implications for spending on multifamily housing and nonresidential construction.

In their discussion of policy implementation, the members noted that the broader monetary aggregates, whose growth had slowed in November, were within their target ranges for the year. On the other hand, the growth of M1 had accelerated in November. Some members felt that a continuation of the rapid growth of that aggregate, and the reserves needed to support it, carried an inflationary risk. There was a strong likelihood, however, that M1 velocity would continue to decline even with some slowing in M1 growth. Once again, the Committee agreed that the growth of M1 would be appraised in the context of the growth of the broader aggregates and other developments.

Given the economic outlook and the fact that M2 and M3 were within their long-run ranges, the Committee directed the desk "to maintain the existing degree of pressure on reserve positions."⁵⁹ In light of the downside risks to the economy, several members emphasized that in subsequent weeks, developments might call for some easing of reserve conditions. These members noted that flexibility in the direction of ease was afforded by the recent firming of the dollar's value. Members recognized, however, that circumstances might call for a small adjustment in either direction.

The Committee's deemphasis of M1 as an intermediate target and guide for policy was underscored at the December meeting. A tentative range of 3 to 8 percent for M1 growth in 1987 had been reported to Congress in July as more tentative than usual. In December, a majority of the Committee indicated that they opposed "establishing a formal target range for M1 growth in 1987." Many of those members believed, however, that M1 growth "should continue to be monitored or evaluated in light of information about the economy, prices, and the broad monetary aggregates and other financial variables."⁶⁰

CONCLUSION

The FOMC deemphasized M1 and placed relatively more weight on the broader monetary aggregates and various economic and financial indicators in establishing its overall approach to policy and in guiding short-run policy implementation during 1986. A statement typical of the 1986 directives issued by the Committee was that changes in the direction of policy implementation would depend "on the behavior of the aggregates, taking into account the strength of the business expansion, developments in foreign exchange markets, progress against inflation, and conditions in domestic and international credit markets."⁶¹ The lengthy list of factors guiding policy underscored the Committee's desire to take a flexible approach in providing reserves in what it viewed as a highly uncertain economic environment.

The recent changes in the relative weights attached to various policy guides have reflected the Committee's evaluation of the importance and reliability of these variables in influencing real growth and inflation. The accommodative thrust of policy was motivated by sluggish economic growth and a number of risks to sustained expansion. While the Committee was wary of inflationary risks in the outlook, price pressures over the course of 1986 were well-contained. Whether monetary policy can continue to provide sufficient liquidity to sustain economic growth without an acceleration in the rate of inflation is a major issue confronting the Federal Reserve in 1987.

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⁵⁸See *Tax Reform Act of 1986*.

⁵⁹Record (April 1987), p. 304.

⁶⁰Ibid., p. 302.

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