



BOARD OF GOVERNORS  
OF THE  
FEDERAL RESERVE SYSTEM  
WASHINGTON, D. C. 20551

July 7, 1980

STRICTLY CONFIDENTIAL (FR)  
CLASS I - FOMC

TO: Federal Open Market Committee

FROM: Murray Altmann *M. A.*

Attached for your information are materials prepared by the Board's staff concerning the range of uncertainty associated with the staff economic forecast prepared for the forthcoming meeting of the Committee and with alternative forecasts based on different monetary policy assumptions. The material also explores the projected consistency of these various forecasts with the short-term goals for the rates of unemployment and domestic price inflation selected by the Council of Economic Advisers.

Attachment

# Office Correspondence

Date July 7, 1980

To J. Kichline

From Staff\*/

Subject: Mid-year Review of: (1) Confidence Intervals for Staff Forecasts and (2) Monetary Policy Consistency with Humphrey-Hawkins Targets

This memorandum provides estimates of the uncertainty associated with the staff economic forecast and with alternative forecasts based on different monetary policy assumptions. It also examines the consistency of these various forecasts with economic goals selected by the Council of Economic Advisers. 1/ Section 1 presents the confidence interval material. Section 2 examines the consistency with administration targets.

The basic material on which this memorandum is based is a set of stochastic simulations of the quarterly FRB econometric model. While this characterization of uncertainty is strictly applicable only to forecasts generated by the econometric model, recent work suggests that the simulation technique provides reasonable estimates of the forecast uncertainty associated with staff projections of most variables. The simulation methodology is described in detail elsewhere and will be only outlined here. 2/

Stochastic simulations are performed by creating random errors for behavioral equations and exogenous variables projections which replicate the properties of historical prediction errors made by the behavioral equations

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1/ Section 108 of the Full Employment and Balanced Growth Act of 1978 requires a review of the relation of monetary policy objectives to the annual short-term goals published in the most recent Economic Report of the President. For the purpose of this memorandum, the recent economic assumptions underlying the administration's midsession budget review are selected as the most current formulation of Humphrey-Hawkins targets although a revision in economic targets has not been publically announced by the Council of Economic Advisers.

2/ See the series of memoranda on this subject addressed to Mr. Kichline dated February 4, 1980.

and time series extrapolations of the exogenous variables. <sup>3/</sup> Four hundred stochastic simulations are executed for each monetary policy assumption. The remainder of this memorandum provides an analysis of these simulations.

The alternative monetary policies considered are:

Q4/Q4 Percentage Growth Rates of M-1A

<u>Policy</u>	<u>1980</u>	<u>1981</u>
A'	5-1/2	5-1/2
A	4-1/2	5
B	4-1/2	4-1/2
C	4-1/2	4
C'	3-1/2	3-1/2

Paths B, C, and C' correspond to strategies discussed in this month's Bluebook. Paths A and A' differ from B by the same amounts as C and C' but in the opposite direction.

1. Projections and 70 Percent Confidence Intervals of Alternative Monetary Policies

Staff projections and upper and lower boundaries of the associated 70 percent confidence ranges are listed in Tables 1-5 for five alternative monetary policies. The widths of the confidence ranges are constructed to include about 70 percent of expected outcomes about each policy forecast. <sup>4/</sup>

<sup>3/</sup> In the case of the behavioral relation for the public's demand for demand deposits, the historical uncertainty has been arbitrarily increased to reflect the recent unpredictability of that relationship.

<sup>4/</sup> As noted in the introduction, a set of 400 stochastic simulations is constructed for each policy assumption to represent the dispersion of actual outcomes that may be expected around each policy forecast. In each quarter of the forecast horizon, the highest and lowest 15 percent of simulated outcomes for each predicted variable is discarded and the range of remaining outcomes is reported as the 70 percent confidence interval. Since many model relations are nonlinear, the policy projection may not always be centered within the 70 percent confidence interval.

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In the case of policy B, the projections and confidence ranges are also displayed in accompanying charts. As shown, there is a discernible tendency for the confidence ranges to widen with the length of the forecast horizon. This reflects the larger uncertainty attached to more distant forecasts. The confidence range is zero for interest rate projections in 1980 Q2 because final measurements are now available. Note also the substantial uncertainty attached to more distant projections of the Federal funds rate (Chart 1E) under policy B. This broad range of possible interest rate outcomes reflects not only the uncertainty surrounding projections of related economic variables but also the high degree of unpredictability of the money demand schedule of the public.

Both the Humphrey-Hawkins targets presented in the February Economic Report of the President (labeled "HH80.1") and the revised targets assumed in the administration's midsession budget review (labeled "HH80.3") are plotted in Charts 1C and 1D. The staff projection of domestic price inflation associated with policy B in Chart 1C is closer to the earlier inflation targets whereas the revised targets are near the upper boundary of the 70 percent projection region. The revised unemployment targets, as shown in Chart 1D, move up and are now within the lower boundary of the 70 percent confidence region of policy B. The staff unemployment projection of policy B is closer to the revised Humphrey-Hawkins target for 1980 Q4 but remains well above the revised target for 1981 Q4.

The projections and confidence ranges for the four remaining policy assumptions are tabulated in Tables 2-5. Both projections and confidence intervals listed in Tables 3 and 4 for neighboring policies A and C are very similar to those reported for policy B in Table 1, owing in large measure to

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the identical policy assumptions for A,B, and C in the first year of the two year forecast horizon.

The forecasts associated with the peripheral policies A' and C', exhibit a sharper contrast. In the case of a more rapid rate of growth in M-1A, Tables 1 and 2 indicate that the rate of unemployment projected for 1981 Q4 is reduced from 8.7 (case B) to 8.4 (case A') while domestic price inflation projected for 1981 is increased from 8.8 to 8.9. Conversely, comparison of Tables 1 and 5 indicates that substitution of policy C' for policy B increases the 1981 Q4 projection of unemployment from 8.7 to 9.3 and lowers the 1981 projection of domestic inflation from 8.8 to 8.7. Thus, the projections suggest that the rate of unemployment is more responsive than the domestic inflation rate to alternative policy assumptions over the two year forecast horizon.

In comparing the confidence intervals of the peripheral policies, A' and C', it may be noted that the widths of the confidence intervals are relatively invariant to alternative policy assumptions, especially for the forecasts of unemployment and domestic price inflation. An exception to this rule is the uncertainty attached to projections of the Federal funds rate. The range of outcomes of the Federal funds rate in 1981 Q4 under policy C' is 25 percent larger than the corresponding range for the 1981 Q4 interest rate projection of policy A'.<sup>5/</sup>

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<sup>5/</sup> The demand for money becomes more insensitive to a given absolute change in interest rates as the level of interest rates increases. Thus, disturbances in the system have a greater impact on interest rates in more restrictive monetary policy simulations, such as policy C'.

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## 2. Probabilities of Obtaining Humphrey-Hawkins Targets Under Alternative Monetary Policies

In this section, the issue of the consistency of alternative monetary policies with the economic targets of the administration is addressed from the perspective of uncertain policy forecasts. The apparent precision of a point-to-point comparison is misleading since it does not reflect a reasonable range of possible outcomes. More meaningful evaluations can be obtained by the use of confidence intervals where a range of projected outcomes of a given monetary policy may or may not overlap a given set of target objectives.

Table 6 provides probabilities of achieving or bettering the 1980 and 1981 Humphrey-Hawkins targets for unemployment and inflation. Assuming 4-1/2 percent growth in M-1A for both 1980 and 1981 -- the assumption on which the Greenbook forecast was made -- the probability of achieving or bettering the unemployment rate target is 16 percent in 1980 and 19 percent in 1981. The corresponding probabilities for achieving or bettering the target for domestic price inflation are 81 and 74 percent. The money growth path of policy C' lowers the chances of attaining the unemployment rate targets to 13 and 8 percent, respectively, and increases the probabilities of reaching the inflation goals to 84 and 76 percent.

As monetary policy becomes less restrictive, the probabilities of achieving the unemployment targets increase while the chances of achieving the inflation targets decline. The effect on the unemployment probabilities is more marked, in part because much of the policy impact on price inflation occurs after 1981.

Tables 7 and 8 indicate the probabilities that both the unemploy-

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ment rate and domestic price inflation fall within specified regions. The third column from the right in each table contains the probabilities that both unemployment and inflation fall within 100 basis point ranges of the Humphrey-Hawkins annual targets. The next to last column lists the probabilities of falling within a 300 basis point neighborhood of the targets. For the A, B, and C policies, the probability that both unemployment and inflation fall within a 100 basis point neighborhood of the 1980 targets is 18 percent; this probability falls to around 7 percent in 1981.

The last column of each table shows the probabilities of achieving or bettering both Humphrey-Hawkins targets simultaneously. For example, assuming 4-1/2 percent growth in M-1A (policy B), the probability of achieving both targets is 13 percent in 1980 and 12 percent in 1981.

It is evident from Tables 7 and 8 that the likelihood of outcomes falling in the neighborhood of the Humphrey-Hawkins targets or of achieving both targets simultaneously tends to decline as monetary policy becomes more restrictive.

Policy Assumption A'

Q4/Q4 M-1A growth = 5-1/2 ('80) and 5-1/2 ('81)

Table 2A

4-QTR PERCENT GROWTH: REAL GNP

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	1.0	1.0	1.0	0.0
80.2	-1.0	-0.7	-0.4	0.6
80.3	-3.7	-3.0	-2.2	1.5
80.4	-4.8	-3.9	-2.9	1.9
81.1	-4.9	-3.6	-2.4	2.5
81.2	-1.9	-0.4	0.9	2.8
81.3	0.1	1.9	3.3	3.2
81.4	1.3	3.3	4.7	3.4

Table 2B

4-QTR PERCENT GROWTH: NOMINAL GNP

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	10.0	10.0	10.0	0.0
80.2	7.7	8.1	8.6	0.9
80.3	4.6	5.7	6.7	2.1
80.4	4.0	5.3	6.5	2.5
81.1	3.9	5.7	7.5	3.6
81.2	7.2	9.1	11.0	3.8
81.3	9.0	11.4	13.5	4.5
81.4	10.2	12.4	14.4	4.2

Table 2C

4-QTR PERCENT GROWTH: GNP DEFLATOR

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	8.9	8.9	8.9	0.0
80.2	8.5	8.9	9.2	0.7
80.3	8.4	8.9	9.5	1.1
80.4	8.8	9.5	10.3	1.5
81.1	8.7	9.6	10.6	1.9
81.2	8.5	9.5	10.8	2.3
81.3	8.2	9.3	10.7	2.5
81.4	7.7	8.9	10.4	2.7

Table 2D

UNEMPLOYMENT RATE

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	6.1	6.1	6.1	0.0
80.2	7.5	7.5	7.6	0.1
80.3	8.2	8.5	8.8	0.6
80.4	8.3	8.9	9.4	1.1
81.1	8.1	8.9	9.6	1.5
81.2	7.9	8.7	9.5	1.6
81.3	7.6	8.6	9.5	1.9
81.4	7.4	8.4	9.5	2.1

Table 2E

FEDERAL FUNDS RATE

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	15.0	15.0	15.0	0.0
80.2	12.7	12.7	12.7	0.0
80.3	6.8	8.4	10.1	3.3
80.4	6.8	8.7	10.9	4.1
81.1	7.3	9.9	13.2	5.9
81.2	7.9	10.4	13.7	5.8
81.3	7.2	10.4	14.3	7.1
81.4	7.1	10.4	14.3	7.2



Policy Assumption A

Q4/Q4 M-1A growth = 4-1/2 ('80) and 5 ('81)

Table 3A

4-QTR PERCENT GROWTH: REAL GNP

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	1.0	1.0	1.0	0.0
80.2	-1.1	-0.7	-0.4	0.7
80.3	-3.8	-3.0	-2.3	1.5
80.4	-4.9	-4.0	-3.0	1.9
81.1	-5.0	-3.8	-2.6	2.4
81.2	-2.2	-0.7	0.7	2.9
81.3	-0.3	1.5	2.8	3.1
81.4	0.8	2.7	4.1	3.3

Table 3B

4-QTR PERCENT GROWTH: NOMINAL GNP

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	10.0	10.0	10.0	0.0
80.2	7.7	8.1	8.5	0.8
80.3	4.5	5.6	6.7	2.2
80.4	3.7	5.1	6.3	2.6
81.1	3.7	5.4	7.1	3.4
81.2	6.8	8.7	10.5	3.7
81.3	8.5	10.9	12.9	4.4
81.4	9.6	11.8	13.6	4.0

Table 3C

4-QTR PERCENT GROWTH: GNP DEFLATOR

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	8.9	8.9	8.9	0.0
80.2	8.5	8.9	9.2	0.7
80.3	8.3	8.9	9.4	1.1
80.4	8.7	9.4	10.2	1.5
81.1	8.6	9.6	10.6	2.0
81.2	8.4	9.4	10.7	2.3
81.3	8.1	9.3	10.6	2.5
81.4	7.7	8.8	10.3	2.6

Table 3D

UNEMPLOYMENT RATE

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	6.1	6.1	6.1	0.0
80.2	7.5	7.5	7.6	0.1
80.3	8.2	8.6	8.8	0.6
80.4	8.4	8.9	9.5	1.1
81.1	8.2	9.0	9.7	1.5
81.2	8.0	8.9	9.6	1.6
81.3	7.8	8.7	9.7	1.9
81.4	7.7	8.6	9.7	2.0

Table 3E

FEDERAL FUNDS RATE

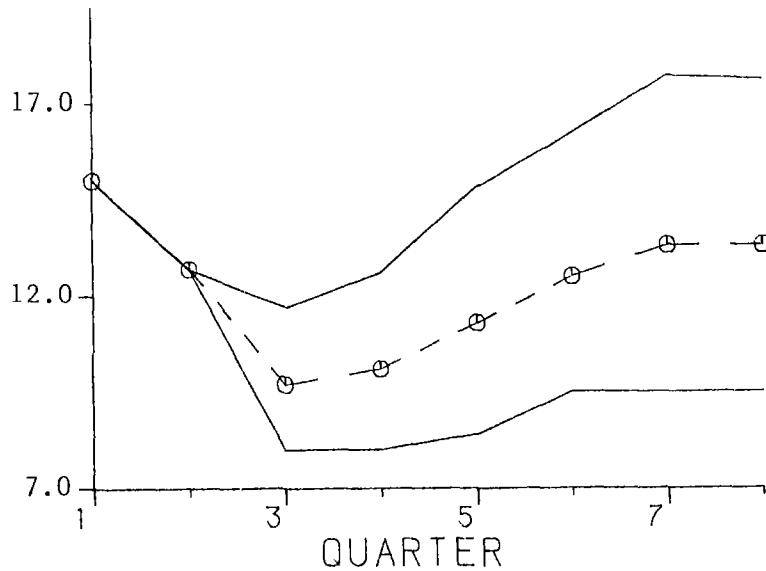
<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	15.0	15.0	15.0	0.0
80.2	12.7	12.7	12.7	0.0
80.3	8.0	9.7	11.7	3.7
80.4	8.0	10.1	12.6	4.6
81.1	8.2	10.9	14.4	6.2
81.2	9.0	11.8	15.4	6.4
81.3	8.7	12.4	16.6	7.9
81.4	8.7	12.3	16.5	7.8

Policy Assumption B

Q4/Q4 M-1A growth = 4-1/2 ('80) and 4-1/2 ('81)

Chart 1E

Table 1E



<u>Date</u>	<u>FEDERAL FUNDS RATE</u>			
	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	15.0	15.0	15.0	0.0
80.2	12.7	12.7	12.7	0.0
80.3	8.0	9.7	11.7	3.7
80.4	8.0	10.1	12.6	4.6
81.1	8.4	11.3	14.8	6.4
81.2	9.5	12.5	16.2	6.7
81.3	9.5	13.3	17.7	8.2
81.4	9.5	13.3	17.6	8.1

NOTE: o = prediction

solid lines are boundaries of 70% confidence region.

Policy Assumption B

Q4/Q4 M-1A growth = 4-1/2 ('80) and 4-1/2 ('81)

Chart 1A

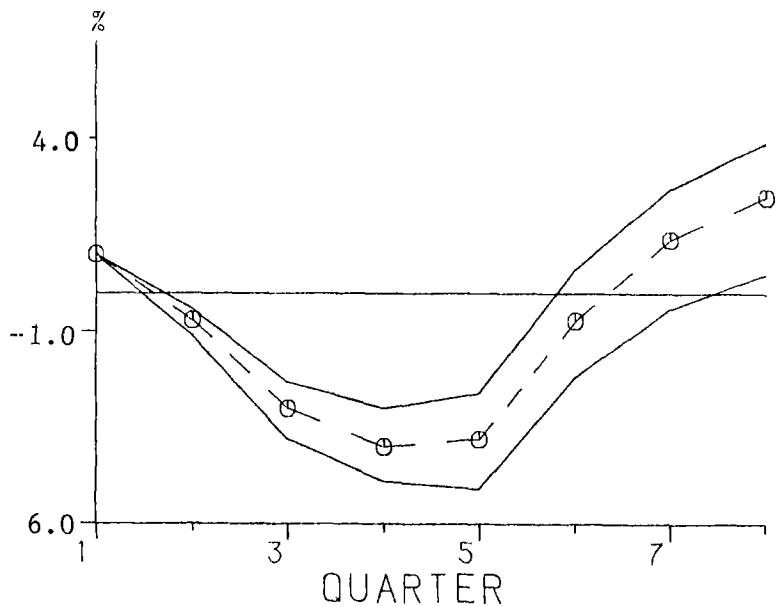


Table 1A

4-QTR PERCENT GROWTH: REAL GNP				
Date	Low	Predict	High	Range
80.1	1.0	1.0	1.0	0.0
80.2	-1.1	-0.7	-.4	0.7
80.3	-3.8	-3.0	-2.3	1.5
80.4	-4.9	-4.0	-3.0	1.9
81.1	-5.1	-3.8	-2.6	2.5
81.2	-2.2	-.7	0.6	2.8
81.3	-.4	1.4	2.7	3.1
81.4	.5	2.5	3.9	3.4

Chart 1B

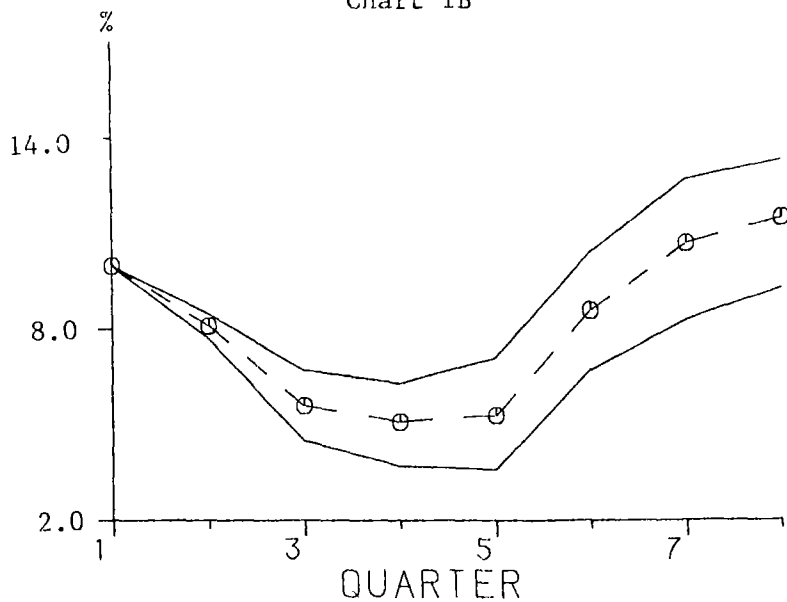


Table 1B

4-QTR PERCENT GROWTH: NOMINAL GNP				
Date	Low	Predict	High	Range
80.1	10.0	10.0	10.0	0.0
80.2	7.7	8.1	8.5	0.8
80.3	4.5	5.6	6.7	2.2
80.4	3.7	5.1	6.3	2.6
81.1	3.6	5.3	7.1	3.5
81.2	6.7	8.6	10.4	3.7
81.3	8.3	10.7	12.7	4.4
81.4	9.3	11.5	13.3	4.0

NOTE: o = prediction

solid lines are boundaries of 70% confidence region.

Policy Assumption B

Q4/Q4 M-1A growth = 4-1/2 ('80) and 4-1/2 ('81)

Chart 1C

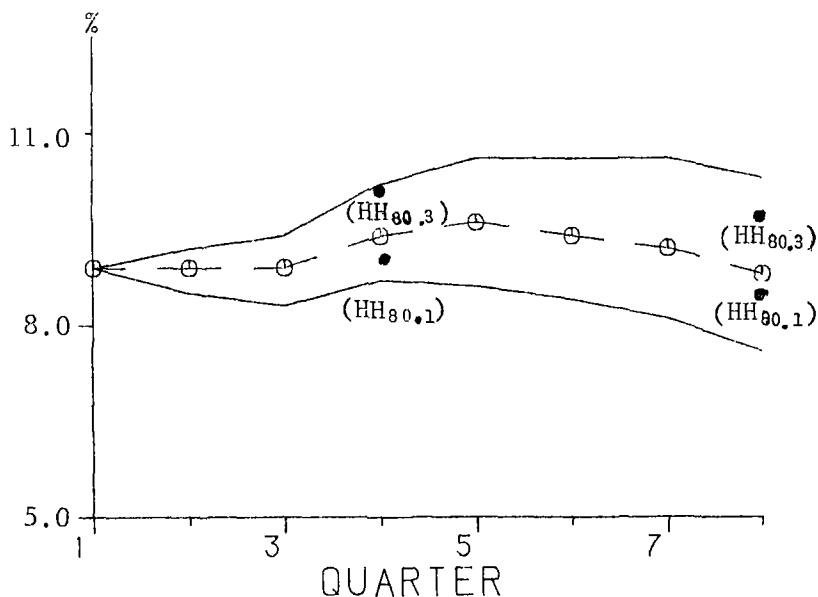


Table 1C<sup>1/</sup>

4-QTR PERCENT GROWTH:		GNP DEFLATOR		
Date	Low	Predict	High	Range
80.1	8.9	8.9	8.9	0.0
80.2	8.5	8.9	9.2	0.7
80.3	8.3	8.9	9.4	1.1
80.4	8.7	9.4	10.2	1.5
81.1	8.6	9.6	10.6	2.0
81.2	8.4	9.4	10.6	2.2
81.3	8.1	9.2	10.6	2.5
81.4	7.6	8.8	10.3	2.7

Chart 1D

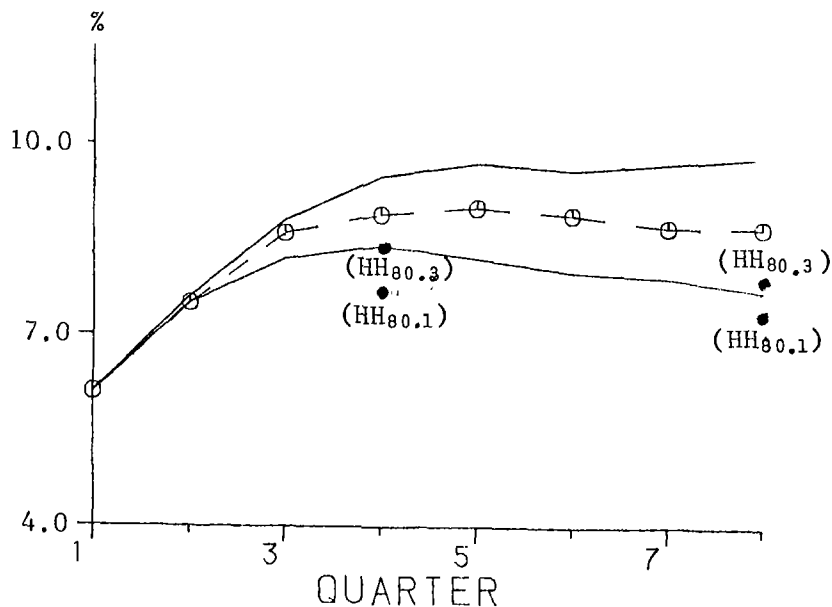


Table 1D<sup>1/</sup>

UNEMPLOYMENT RATE				
Date	Low	Predict	High	Range
80.1	6.1	6.1	6.1	0.0
80.2	7.5	7.5	7.6	0.1
80.3	8.2	8.6	8.3	0.6
80.4	8.4	8.9	9.5	1.1
81.1	8.2	9.0	9.7	1.5
81.2	8.0	8.9	9.6	1.6
81.3	7.9	8.7	9.7	1.8
81.4	7.7	8.7	9.8	2.1

<sup>1/</sup>

	Humphrey-Hawkins Targets			
	Inflation		Unemployment	
	1980 Q4	1981 Q4	1980 Q4	1981 Q4
"HH <sub>80,1</sub> "	9.0	8.6	7.5	7.3
"HH <sub>80,3</sub> "	10.1	9.7	8.4	7.9

Policy Assumption C

Q4/Q4 M-1A growth = 4-1/2 ('80) and 4 ('81)

Table 4A

4-QTR PERCENT GROWTH: REAL GNP

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	1.0	1.0	1.0	0.0
80.2	-1.1	-0.7	-0.4	0.7
80.3	-3.8	-3.0	-2.3	1.5
80.4	-4.9	-4.0	-3.0	1.9
81.1	-5.1	-3.9	-2.6	2.5
81.2	-2.3	-0.8	0.4	2.7
81.3	-0.6	1.2	2.5	3.1
81.4	0.4	2.1	3.6	3.2

Table 4B

4-QTR PERCENT GROWTH: NOMINAL GNP

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	10.0	10.0	10.0	0.0
80.2	7.7	8.1	8.5	0.8
80.3	4.5	5.6	6.7	2.2
80.4	3.7	5.1	6.3	2.6
81.1	3.6	5.3	7.0	3.4
81.2	6.6	8.5	10.3	3.7
81.3	8.1	10.5	12.5	4.4
81.4	9.1	11.0	13.0	3.9

Table 4C

4-QTR PERCENT GROWTH: GNP DEFLATOR

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	8.9	8.9	8.9	0.0
80.2	8.5	8.9	9.2	0.7
80.3	8.3	8.9	9.4	1.1
80.4	8.7	9.4	10.2	1.5
81.1	8.6	9.5	10.6	2.0
81.2	8.4	9.4	10.6	2.2
81.3	8.1	9.2	10.6	2.5
81.4	7.6	8.7	10.2	2.6

Table 4D

UNEMPLOYMENT RATE

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	6.1	6.1	6.1	0.0
80.2	7.5	7.5	7.6	0.1
80.3	8.2	8.6	8.8	0.6
80.4	8.4	8.9	9.5	1.1
81.1	8.2	9.0	9.7	1.5
81.2	8.1	8.9	9.7	1.6
81.3	7.9	8.8	9.7	1.8
81.4	7.8	8.8	9.9	2.1

Table 4E

FEDERAL FUNDS RATE

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	15.0	15.0	15.0	0.0
80.2	12.7	12.7	12.7	0.0
80.3	8.0	9.7	11.7	3.7
80.4	8.0	10.1	12.6	4.6
81.1	8.8	12.0	15.5	6.7
81.2	10.0	13.5	17.0	7.0
81.3	10.0	14.4	18.5	8.5
81.4	10.1	14.7	18.6	8.5

Policy Assumption C'

Q4/Q4 M-1A growth = 3-1/2 ('80) and 3-1/2 ('81)

Table 5A

4-QTR PERCENT GROWTH: REAL GNP

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	1.0	1.0	1.0	0.0
80.2	-1.1	-0.8	-0.5	0.6
80.3	-3.9	-3.1	-2.4	1.5
80.4	-5.1	-4.2	-3.2	1.9
81.1	-5.4	-4.2	-3.0	2.4
81.2	-2.8	-1.4	-0.2	2.6
81.3	-1.2	0.3	1.9	3.1
81.4	-0.3	1.1	3.0	3.3

Table 5B

4-QTR PERCENT GROWTH: NOMINAL GNP

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	10.0	10.0	10.0	0.0
80.2	7.6	8.0	8.5	0.9
80.3	4.4	5.5	6.5	2.1
80.4	3.5	4.8	6.0	2.5
81.1	3.2	4.8	6.5	3.3
81.2	5.9	7.6	9.6	3.7
81.3	7.4	9.4	11.7	4.3
81.4	8.4	9.9	12.1	3.7

Table 5C

4-QTR PERCENT GROWTH: GNP DEFLATOR

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	8.9	8.9	8.9	0.0
80.2	8.5	8.9	9.2	0.7
80.3	8.3	8.9	9.4	1.1
80.4	8.6	9.3	10.1	1.5
81.1	8.5	9.4	10.4	1.9
81.2	8.2	9.2	10.4	2.2
81.3	8.0	9.1	10.5	2.5
81.4	7.6	8.7	10.2	2.6

Table 5D

UNEMPLOYMENT RATE

<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	6.1	6.1	6.1	0.0
80.2	7.5	7.5	7.6	0.1
80.3	8.3	8.6	8.9	0.6
80.4	8.4	9.0	9.5	1.1
81.1	8.4	9.1	9.8	1.4
81.2	8.3	9.1	9.8	1.5
81.3	8.2	9.2	10.0	1.8
81.4	8.2	9.3	10.3	2.1

Table 5E

FEDERAL FUNDS RATE

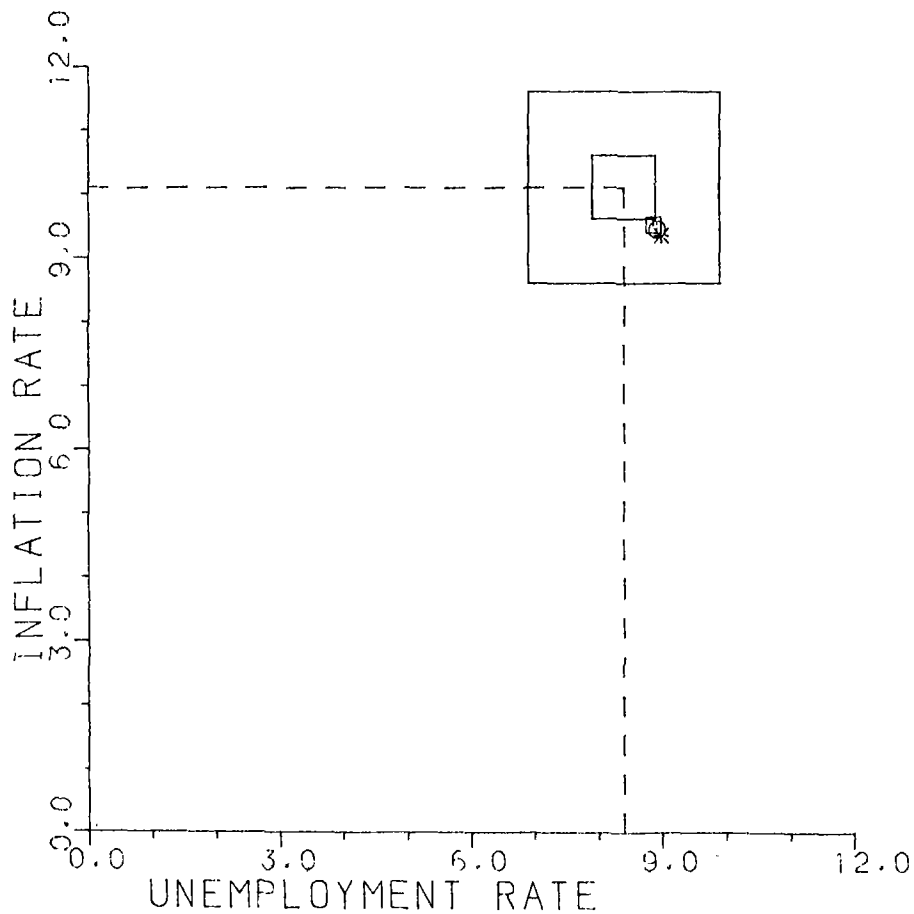
<u>Date</u>	<u>Low</u>	<u>Predict</u>	<u>High</u>	<u>Range</u>
80.1	15.0	15.0	15.0	0.0
80.2	12.7	12.7	12.7	0.0
80.3	9.4	11.9	13.8	4.4
80.4	10.3	13.5	15.8	5.5
81.1	11.0	15.3	18.8	7.8
81.2	11.9	16.1	19.5	7.6
81.3	11.6	16.5	20.5	8.9
81.4	11.6	16.5	20.6	9.0

Table 6: Probabilities of Achieving or Bettering  
Each Humphrey-Hawkins Target

Monetary Policy			1980 Targets		1981 Targets	
Q4/Q4	Percentage 1980	M-1A growth 1981	Unemployment Rate	Inflation	Unemployment Rate	Inflation
A'	5-1/2	5-1/2	.19	.80	.30	.71
A	4-1/2	5	.16	.81	.20	.72
B	4-1/2	4-1/2	.16	.81	.19	.74
C	4-1/2	4	.16	.81	.17	.75
C'	3-1/2	3-1/2	.13	.84	.08	.76
Target levels			8.4	10.1	7.9	9.7

Table 7: Probabilities of Achieving Humphrey -Hawkins Target Areas - 1980 Q4

Q4/Q4 Percentage M-1A growth	Monetary Policy		1980 Q4 Projections		Dimension of Target Area		
	1980	1981	U	P	Basis Points		H-H or better
					100 x 100	300 x 300	
A'	5-1/2	5-1/2	8.9	9.5	.21	.89	.15
A	4-1/2	5	8.9	9.4	.18	.87	.13
B	4-1/2	4-1/2	8.9	9.4	.18	.87	.13
C	4-1/2	4	8.9	9.4	.18	.87	.13
C'	3-1/2	3-1/2	9.0	9.3	.16	.83	.10
Humphrey-Hawkins Targets			8.4	10.1			



NOTE:

□ = A' forecast

⊙ = B forecast

\* = C' forecast

Large square = 300 x 300  
basis point area

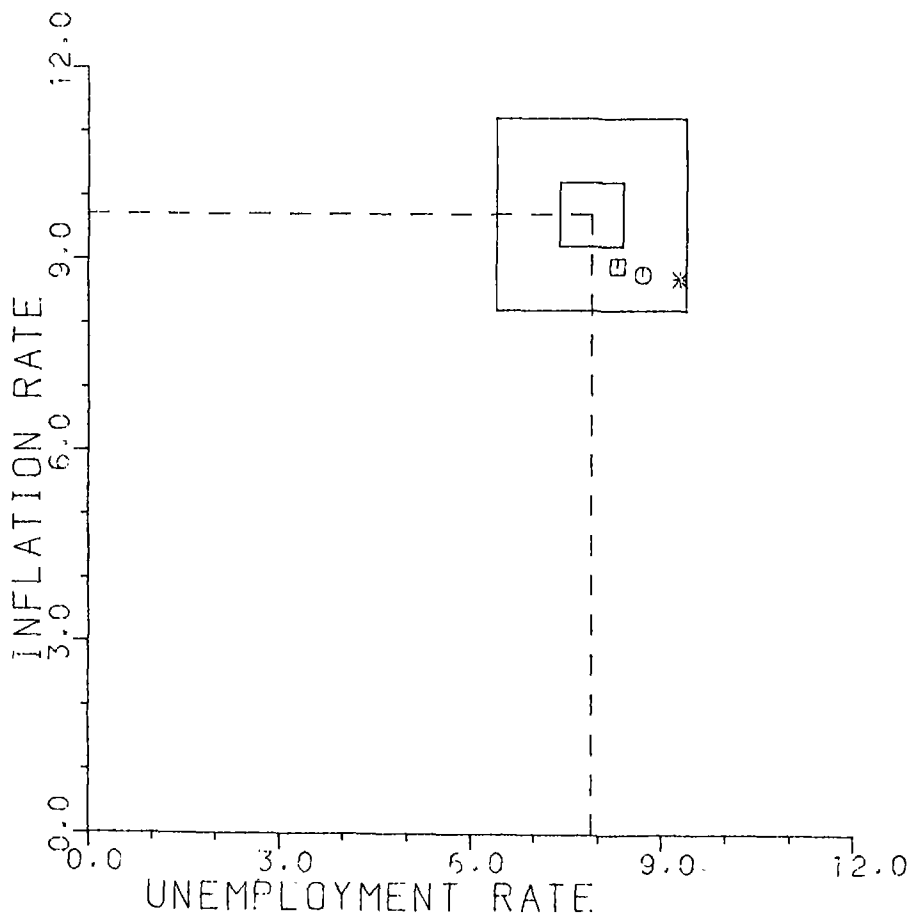
Small square = 100 x 100  
basis point area

Dashed line = Humphrey-  
Hawkins target



Table 8: Probabilities of Achieving Humphrey-Hawkins Target Areas - 1981 Q4

Q4/Q4 Percentage M-1A growth	Monetary Policy		1980 Q4 Projections		Dimension of Target Area		
	1980	1981	U	P	Basis Points		H-H or better
					100 x 100	300 x 300	
A'	5-1/2	5-1/2	8.4	8.9	.08	.57	.18
A	4-1/2	5	8.6	8.8	.07	.54	.13
B	4-1/2	4-1/2	8.7	8.8	.07	.52	.12
C	4-1/2	4	8.8	8.7	.06	.48	.11
C'	3-1/2	3-1/2	9.3	8.7	.04	.39	.05
Humphrey-Hawkins Targets			7.9	9.7			



NOTE:

- = A' forecast
- = B forecast
- \* = C' forecast

Large square = 300 x 300 basis point area

Small square = 100 x 100 basis point area

Dashed line = Humphrey-Hawkins target