

Survey of

# PROFESSIONAL

FORECASTERS

Federal Reserve Bank  
of Philadelphia

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## FIRST QUARTER 1998

### **Forecasters Peg Real GDP Growth at 2.5 Percent in the First Quarter and 2.8 Percent for the Year**

Real GDP growth will decelerate to an annual rate of 2.5 percent in the first quarter, down sharply from the BEA's fourth-quarter advance estimate of 4.3 percent, according to 32 forecasters surveyed by the Federal Reserve Bank of Philadelphia. Continued deceleration, to an annual rate of 1.9 percent, is expected in the second quarter. Growth will rebound over the second half of the year, reaching an annual rate of 2.5 percent in the fourth quarter. On a year-over-year basis, the forecasters expect real GDP to grow at a rate of 2.8 percent in 1998, up from their expectation of 2.6 percent in last quarter's survey, and 2.4 percent in 1999.

Sizable downward revisions to near-term inflation projections stand out in this survey's results. Measured by the Consumer Price Index, inflation will average 1.8 percent at an annual rate in the first quarter, down sharply from the estimate of 2.5 percent in last quarter's survey. On a fourth-quarter-over-fourth-quarter basis, CPI inflation will average 2.1 percent in 1998, down one-half a percent from the last survey's estimate of 2.6 percent, and 2.3 percent in 1999.

Likewise, the forecasters are cutting their estimate for inflation measured by the GDP price index. Based on this measure, inflation will average 2.0 percent at an annual rate in the first quarter, down from the previous estimate of 2.3 percent in last quarter's survey. On a year-over-year basis, the GDP price index will grow at an annual rate of 1.9 percent in 1998, down from 2.1 percent previously, and 2.2 percent in 1999.

Accompanying these projections is a forecast for short-term interest rates that suggests no change in the rate on three-month Treasury bills. The forecasters expect that rate to hold steady at 5.1 percent over each of the next five quarters. The three-month rate will average 5.1 percent in 1998 and 1999.

The following table compares median forecasts for selected variables from the current survey with those from three months ago.

	Real GDP		CPI Inflation		GDP Price Index Inflation	
	Previous	New	Previous	New	Previous	New
<i>Quarterly data:</i>						
1998: Q1	2.5	2.5	2.5	1.8	2.3	2.0
Q2	2.4	1.9	2.6	2.0	2.3	2.0
Q3	2.3	2.1	2.7	2.3	2.4	2.0
Q4	2.2	2.5	2.6	2.4	2.2	2.2
1999: Q1	N.A.	2.6	N.A.	2.3	N.A.	2.7
<i>Annual average data:</i>						
1998	2.6	2.8	2.6	2.1	2.1	1.9
1999	N.A.	2.4	N.A.	2.3	N.A.	2.2

The following table compares long-term forecasts from the current survey with those from last year's first-quarter survey.

*Long-Term (10-year) Forecasts*

	<i>First Quarter 1997 Survey</i>	<i>Current Survey</i>
<i>CPI Inflation</i>	3.00	2.60
<i>Real GDP Growth</i>	2.50	2.50
<i>Productivity Growth</i>	1.28	1.50
<i>Stock Returns (S&amp;P 500)</i>	9.00	9.00
<i>Bond Returns (10-Year)</i>	6.50	6.00
<i>Bill Returns (3-Month)</i>	4.95	5.00

The Philadelphia Fed's Survey of Professional Forecasters was formerly conducted by the American Statistical Association (ASA) and the National Bureau of Economic Research (NBER) and was known as the ASA/NBER survey. The survey, which began in 1968, is conducted each quarter. The Federal Reserve Bank of Philadelphia, in cooperation with the NBER, assumed responsibility for the survey in June 1990.

For further information about the Survey of Professional Forecasters, contact:  
Dean Croushore, Assistant Vice President and Economist, Federal Reserve Bank of Philadelphia,  
Ten Independence Mall, Philadelphia, PA 19106 (215) 574-3809 email: dean.croushore@phil.frb.org

To subscribe to the survey, contact the Research Department's Publications Desk at (215) 574-6428. This three-page writeup contains partial results of the survey. More detailed tables are available. These tables can be accessed on the Internet at: <http://www.phil.frb.org/econ/spf/spfpage.html>.

### ***Effects of Asian Crisis Are Likely in 1998***

In response to a special question on the Asian crisis, 26 of 32 participants indicated they are adjusting their forecasts for real GDP growth and CPI inflation to reflect recent turmoil in Asian financial markets. The brunt of the effect is expected in 1998. As the following table shows, the median adjustments to real GDP growth and CPI inflation in 1998 are -0.50 and -0.25 percentage points, respectively.

*Median Forecast Adjustments (percentage points) for Asian Crisis*

	<i>Real GDP Growth</i>	<i>CPI Inflation</i>
1998	-0.50	-0.25
1999	-0.10	-0.10

### ***Forecasters Assign Lower Chance of a Negative Quarter***

Despite increased uncertainty stemming from the Asian crisis, the forecasters are assigning a lower chance to the possibility of a negative quarter than that assigned in the last survey. Currently, the forecasters are assigning a 4 percent chance to the possibility that real GDP will decline in the first quarter, down from 10 percent in the last survey. The chance of a negative quarter over the following three quarters is about 5 percentage points lower than that assigned previously, as the following table shows.

<i>Mean Probability of a Decline in Real GDP</i>		
	<i>Previous</i>	<i>New</i>
1998:Q1	10.0	4.0
:Q2	13.0	8.0
:Q3	17.0	12.0
:Q4	19.0	14.0
1999:Q1	N.A.	15.0

### ***Long-Term Outlook for Inflation and Output Growth Is Holding Steady***

The outlook for long-term inflation, as measured by the Consumer Price Index, is roughly unchanged from that in last quarter's survey. Currently, the forecasters expect CPI inflation to average 2.60 percent over the next 10 years, down slightly from their expectation of 2.65 percent in last quarter's survey.

Participants in first-quarter surveys provide long-term forecasts for an expanded set of variables, including real GDP growth, productivity growth, and returns to stocks and bonds. As the following table shows, the forecasters' current expectation for real GDP growth over the next 10 years is 2.50 percent, the same rate expected in 1997's first-quarter survey. However, productivity growth, measured as the average annual rate of change in output per hour over the next 10 years, is expected to average 1.50 percent, up from 1.28 percent. On the financial side, the return to stocks (S&P 500) is expected to be 9.0 percent, unchanged from four surveys ago. At the same time, 10-year Treasury bonds will yield a return of 6.0 percent, and three-month Treasury bills 5.0 percent.

**SURVEY OF PROFESSIONAL FORECASTERS  
MAJOR MACROECONOMIC INDICATORS, 1998-99**

	1998				1999		ANNUAL AVERAGE
	Q1	Q2	Q3	Q4	Q1	1998	
	FORECAST						
<b>PERCENT GROWTH AT ANNUAL RATES</b>							
1. REAL GDP (BILLIONS, CHAIN WEIGHTED)	2.5	1.9	2.1	2.5	2.6	2.8	2.4
2. GDP PRICE INDEX (1992=100)	2.0	2.0	2.0	2.2	2.7	1.9	2.2
3. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	4.5	3.8	4.1	4.8	4.9	4.7	4.6
4. CONSUMER PRICE INDEX (CPI-U) (ANNUAL RATE)	1.8	2.0	2.3	2.4	2.3	2.1	2.3
<b>VARIABLES IN LEVELS</b>							
5. UNEMPLOYMENT RATE (PERCENT)	4.7	4.7	4.7	4.8	4.9	4.7	5.0
6. 3-MONTH TREASURY BILL RATE (PERCENT)	5.1	5.1	5.1	5.1	5.1	5.1	5.1
7. 10-YEAR TREASURY BOND YIELD (PERCENT)	5.6	5.7	5.8	5.8	5.8	5.7	5.8

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA, SURVEY OF PROFESSIONAL FORECASTERS, FIRST QUARTER 1998.

NOTES: THE FIGURES ON EACH LINE ARE MEDIANs OF 32 INDIVIDUAL FORECASTS. NA = NOT APPLICABLE.

**SURVEY OF PROFESSIONAL FORECASTERS**

**First Quarter 1998**

**Tables**

Note: Data in these tables listed as "actual" are the data that were available to the forecasters when they were sent the survey questionnaire on Feb. 2; the tables do not reflect subsequent revisions to the data. All forecasts were received on or before February 18.

TABLE ONE

**MAJOR MACROECONOMIC INDICATORS, 1998-99  
MEDIAN OF FORECASTER PREDICTIONS**

	NUMBER OF FORE- CASTERS	ACTUAL 1997 Q4	FORECASTS				ACTUAL 1997	FORECAST 1998	FORECAST 1999
			1998 Q1	Q2	Q3	Q4			
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	32	8241.5	8332.7	8411.5	8497.3	8597.0	8700.7	8083.4	8463.3
2. GDP PRICE INDEX (1992=100)	29	113.10	113.66	114.24	114.80	115.42	116.20	112.46	114.55
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	19	N.A.	500.4	507.3	512.9	518.2	525.2	N.A.	510.2
4. UNEMPLOYMENT RATE (PERCENT)	32	4.7	4.7	4.7	4.8	4.9	5.0	4.7	5.0
5. INDUSTRIAL PRODUCTION (1987=100)	30	127.4	128.5	129.2	130.0	130.8	131.2	124.5	129.5
6. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	31	1.53	1.50	1.47	1.46	1.45	1.48	1.47	1.41
7. CONSUMER PRICE INDEX (CPI-U) (ANNUAL RATE)	31	2.1	1.8	2.0	2.3	2.4	2.3	1.9	2.1
8. 3-MONTH TREASURY BILL RATE (PERCENT)	32	5.09	5.10	5.10	5.09	5.10	5.10	5.06	5.10
9. AAA CORPORATE BOND YIELD (PERCENT)	30	6.88	6.65	6.65	6.73	6.70	6.81	7.26	6.68
10. 10-YEAR TREASURY BOND YIELD (PERCENT)	31	5.91	5.60	5.69	5.76	5.75	5.79	6.35	5.69

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA, SURVEY OF PROFESSIONAL FORECASTERS, FIRST QUARTER 1998.

TABLE ONE CONTINUED

**MAJOR MACROECONOMIC INDICATORS, 1998-99  
MEDIAN OF FORECASTER PREDICTIONS**

	NUMBER OF FORE- CASTERS	ACTUAL 1997 Q4	FORECASTS				ACTUAL 1997	FORECAST 1998	FORECAST 1999	
			1998	Q1	Q2	Q3	Q4	Q1	Q1	
11. REAL GDP (BILLIONS, CHAIN WEIGHTED)	31	7290.3	7335.8	7369.5	7407.0	7452.5	7500.7	7191.4	7391.5	7571.5
12. TOTAL CONSUMPTION EXPENDITURES (BILLIONS, CHAIN WEIGHTED)	31	4935.0	4973.2	5008.1	5041.5	5074.0	5105.4	4869.7	5024.0	5153.3
13. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	31	866.5	888.2	905.0	920.2	933.0	944.2	846.7	911.5	963.2
14. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	31	287.1	291.0	291.9	292.0	292.5	293.8	279.7	291.5	294.1
15. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	31	459.5	458.5	459.1	458.4	458.1	458.8	457.8	458.0	458.9
16. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	31	819.0	823.5	827.7	831.8	836.6	841.6	812.9	829.5	847.5
17. CHANGE IN BUSINESS INVENTORIES (BILLIONS, CHAIN WEIGHTED)	31	59.9	52.0	45.2	41.6	41.6	38.0	62.2	45.4	36.0
18. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	31	-141.4	-163.6	-175.5	-183.8	-190.0	-190.4	-142.1	-177.8	-188.0

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA, SURVEY OF PROFESSIONAL FORECASTERS, FIRST QUARTER 1998.

TABLE TWO

**MAJOR MACROECONOMIC INDICATORS, 1998-99  
PERCENTAGE CHANGES AT ANNUAL RATES**

	NUMBER OF FORE- CASTERS	Q4 '97 TO Q1 '98	Q1 '98 TO Q2 '98	Q2 '98 TO Q3 '98	Q3 '98 TO Q4 '98	Q4 '98 TO Q1 '99	1997 TO 1998	1998 TO 1999
1. GROSS DOMESTIC PRODUCT (GDP) (\$ BILLIONS)	32	4.5	3.8	4.1	4.8	4.9	4.7	4.6
2. GDP PRICE INDEX (1992=100)	29	2.0	2.0	2.0	2.2	2.7	1.9	2.2
3. CORPORATE PROFITS AFTER TAXES (\$ BILLIONS)	19	.4	5.6	4.5	4.2	5.5	5.3	5.1
4. UNEMPLOYMENT RATE (PERCENT)	32	.0	.0	.0	.1	.1	-.3	.3
5. INDUSTRIAL PRODUCTION (1987=100)	30	3.5	2.4	2.3	2.5	1.2	4.0	2.2
6. NEW PRIVATE HOUSING STARTS (ANNUAL RATE, MILLIONS)	31	-6.6	-1.3	-6.1	-2.4	-3.5	-.2	-4.1
7. CONSUMER PRICE INDEX (CPI-U) (ANNUAL RATE)	31	-.3	.2	.3	.1	-.1	.2	.2
8. 3-MONTH TREASURY BILL RATE (PERCENT)	32	.01	.00	-.01	.01	.00	.04	.00
9. AAA CORPORATE BOND YIELD (PERCENT)	30	-.23	.00	.08	-.03	.11	-.58	.12
10. 10-YEAR TREASURY BOND YIELD (PERCENT)	31	-.31	.09	.07	-.01	.04	-.66	.16

NOTE: FIGURES FOR UNEMPLOYMENT RATE, PERCENT CHANGE IN CONSUMER PRICE INDEX, TREASURY BILL RATE, AAA CORPORATE BOND YIELD,  
AND 10-YEAR TREASURY BOND YIELD ARE CHANGES IN THESE RATES, IN PERCENTAGE POINTS.  
ALL OTHERS ARE PERCENTAGE CHANGES AT ANNUAL RATES.

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA, SURVEY OF PROFESSIONAL FORECASTERS, FIRST QUARTER 1998.

TABLE TWO CONTINUED

**MAJOR MACROECONOMIC INDICATORS, 1998-99  
PERCENTAGE CHANGES AT ANNUAL RATES**

	NUMBER OF FORE- CASTERS	Q4 97 TO Q1 98	Q1 98 TO Q2 98	Q2 98 TO Q3 98	Q3 98 TO Q4 98	Q4 98 TO Q1 99	1997 1998 10 10 1998 1999
11. REAL GDP (BILLIONS, CHAIN WEIGHTED)	31	2.5	1.9	2.1	2.5	2.6	2.8 2.4
12. TOTAL CONSUMPTION EXPENDITURES (BILLIONS, CHAIN WEIGHTED)	31	3.1	2.8	2.7	2.6	2.5	3.2 2.6
13. NONRESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	31	10.4	7.8	6.9	5.7	4.9	7.7 5.7
14. RESIDENTIAL FIXED INVESTMENT (BILLIONS, CHAIN WEIGHTED)	31	5.5	1.2	.2	.7	1.8	4.2 .9
15. FEDERAL GOVERNMENT C & I (BILLIONS, CHAIN WEIGHTED)	31	-.9	.5	-.6	-.3	-.6	.1 .2
16. STATE AND LOCAL GOVT C & I (BILLIONS, CHAIN WEIGHTED)	31	2.2	2.1	2.0	2.3	2.4	2.0 2.2
17. CHANGE IN BUSINESS INVENTORIES (BILLIONS, CHAIN WEIGHTED)	31	-7.9	-6.8	-3.6	.0	-3.5	-16.8 -9.5
18. NET EXPORTS (BILLIONS, CHAIN WEIGHTED)	31	-22.2	-11.9	-8.3	-6.3	-.4	-35.6 -10.3

NOTE: FIGURES FOR BUSINESS INVENTORIES AND NET EXPORTS ARE CHANGES IN BILLIONS OF CHAIN-WEIGHTED DOLLARS.  
ALL OTHERS ARE PERCENTAGE CHANGES AT ANNUAL RATES.

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA, SURVEY OF PROFESSIONAL FORECASTERS, FIRST QUARTER 1998.

TABLE THREE  
ESTIMATED PROBABILITY OF DECLINE IN REAL GDP

ESTIMATED PROBABILITY (CHANCES IN 100)	NUMBER OF FORECASTERS					
	Q4 TO Q1	97 TO 98	Q1 TO Q2	98 TO 98	Q3 TO Q4	98 TO 98
10 OR LESS	27	23	17	15	11	
11 TO 20	2	6	11	10	14	
21 TO 30	1	1	1	5	5	
31 TO 40	0	0	1	0	0	
41 TO 50	0	0	0	0	0	
51 TO 60	0	0	0	0	0	
61 TO 70	0	0	0	0	0	
71 TO 80	0	0	0	0	0	
81 TO 90	0	0	0	0	0	
91 AND OVER	0	0	0	0	0	
NOT REPORTING	2	2	2	2	2	
MEDIAN PROBABILITY	1	8	10	13	15	
MEAN PROBABILITY	4	8	12	14	15	

NOTE: TOTAL NUMBER OF FORECASTERS REPORTING IS 30.

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA, SURVEY OF PROFESSIONAL FORECASTERS, FIRST QUARTER 1998.

TABLE FOUR

**MEAN PROBABILITY OF CHANGES IN GDP AND PRICES  
1997-98 AND 1998-99**

**MEAN PROBABILITY ATTACHED TO POSSIBLE  
PERCENT CHANGES IN REAL GDP:**

	1997-98	1998-99
6.0 OR MORE	.13	.14
5.0 TO 5.9	.33	.56
4.0 TO 4.9	.31	.14
3.0 TO 3.9	27.74	18.37
2.0 TO 2.9	47.25	41.67
1.0 TO 1.9	15.25	23.66
0.0 TO 0.9	3.51	7.35
-1.0 TO -0.1	1.33	3.59
-2.0 TO -1.1	.10	1.42
LESS THAN -2.0	.03	.10

**MEAN PROBABILITY ATTACHED TO POSSIBLE  
PERCENT CHANGES IN GDP PRICE INDEX:**

	1997-98	1998-99
8.0 OR MORE	.03	.03
7.0 TO 7.9	.03	.03
6.0 TO 6.9	.03	.10
5.0 TO 5.9	.10	.28
4.0 TO 4.9	1.91	4.83
3.0 TO 3.9	9.99	13.72
2.0 TO 2.9	41.17	48.78
1.0 TO 1.9	40.16	25.67
0.0 TO 0.9	6.00	5.60
WILL DECLINE	.57	.97

NOTE: TOTAL NUMBER OF FORECASTERS REPORTING IS 30.

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA, SURVEY OF PROFESSIONAL FORECASTERS, FIRST QUARTER 1998.

TABLE FIVE

## LONG-TERM (10 YEAR) FORECASTS

SERIES: CPI INFLATION RATE		SERIES: REAL GDP GROWTH RATE		SERIES: PRODUCTIVITY GROWTH	
STATISTIC		STATISTIC		STATISTIC	
MINIMUM	2.000	MINIMUM	2.200	MINIMUM	1.000
LOWER QUARTILE	2.300	LOWER QUARTILE	2.300	LOWER QUARTILE	1.300
MEDIAN	2.600	MEDIAN	2.500	MEDIAN	1.500
UPPER QUARTILE	3.000	UPPER QUARTILE	2.800	UPPER QUARTILE	1.668
MAXIMUM	3.500	MAXIMUM	3.000	MAXIMUM	3.000
MEAN	2.618	MEAN	2.555	MEAN	1.527
STD. DEV.	.412	STD. DEV.	.251	STD. DEV.	.388
N	31	N	31	N	28
MISSING	1	MISSING	1	MISSING	4
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SERIES: STOCK RETURNS (S&P 500)		SERIES: BOND RETURNS (10-YEAR)		SERIES: BILL RETURNS (3-MONTH)	
STATISTIC		STATISTIC		STATISTIC	
MINIMUM	.000	MINIMUM	5.000	MINIMUM	4.000
LOWER QUARTILE	7.500	LOWER QUARTILE	5.600	LOWER QUARTILE	4.500
MEDIAN	9.000	MEDIAN	6.000	MEDIAN	5.000
UPPER QUARTILE	10.000	UPPER QUARTILE	6.288	UPPER QUARTILE	5.200
MAXIMUM	15.000	MAXIMUM	7.000	MAXIMUM	5.500
MEAN	8.500	MEAN	5.929	MEAN	4.869
STD. DEV.	2.788	STD. DEV.	.539	STD. DEV.	.484
N	25	N	28	N	27
MISSING	7	MISSING	4	MISSING	5

SOURCE: RESEARCH DEPARTMENT, FEDERAL RESERVE BANK OF PHILADELPHIA, SURVEY OF PROFESSIONAL FORECASTERS, FIRST QUARTER 1998.