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U.S. Official Forecasts of Group of Seven
Economic Performance, 1976-90

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**U.S. OFFICIAL FORECASTS OF GROUP OF SEVEN ECONOMIC PERFORMANCE,
1976-90**

ABSTRACT

In this paper, we evaluate the accuracy of the U.S. Treasury Department forecasts of real growth and inflation from 1976 to 1990 for the Group of Seven (G-7) economies. The accuracy of these forecasts is measured against the standard of actual real world growth and inflation as subsequently published in the Treasury's World Economic Outlook (WEO). The primary comparison is to forecasts made by the OECD for each of the G-7 nations, but for the United States and Canada, we compare the forecasts to those made by the Blue Chip consensus and the Federal Reserve "Greenbook."

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U.S. Official Forecasts of Group of Seven Economic
Performance, 1976-90

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INTRODUCTION

The purpose of this paper is to evaluate the accuracy of the U.S. official forecasts of real growth and inflation from 1976 to 1990 for the Group of Seven (G-7) economies: Canada, France, Germany, Japan, Italy, the United Kingdom and the United States.¹ The accuracy of these forecasts is measured against the standard of actual real growth and inflation as subsequently published in the Treasury's World Economic Outlook (WEO). The Administration forecasts and their accuracy are evaluated against a number of alternative forecasts.² The primary comparison is to projections made by the Organization for Economic Cooperation and Development (OECD) for each of the G-7 nations. For Canada and the United States, we also compare the Administration forecasts to those made by Data Resources, Incorporated (DRI), and for the United

¹ Though widely distributed within the government, the Administration forecasts have been classified and not available to the public. We obtained the forecasts for years through 1990 under a Freedom of Information Act request with the helpful cooperation of the Treasury Department.

² The data are described in Appendix A and are available from the authors on request.

States only, we compare the Administration forecasts to those made by the Blue Chip consensus and the U.S. Federal Reserve "Greenbook."³ For each country and for the G-7 nations taken as a whole, the outlooks are evaluated on the basis of the differences between predictions and outcomes. The predictions and outcomes are expressed in terms of year-over-year percentage changes. The statistics cited are the sum of squared errors, the mean squared errors, the root mean squared errors (RMSE) and the bias (sum of prediction minus outcome). We think these measures provide a simple but effective method of evaluating forecast accuracy.

THE ADMINISTRATION FORECASTS

Administration Real Growth Forecasts

The errors in the Administration forecasts of GNP/GDP growth in the G-7 nations are shown in figure 1. The summary statistics relating to the errors in these forecasts appear in table 1.

The sum of squared errors of the Administration's growth forecasts for Japan, the United States, Canada and West Germany are significant at the 1 percent error level as is the G-7 total. Just under half of the forecast errors were of a different sign from the errors of the preceding year.

³ The Federal Reserve "Greenbook" is a document distributed to top level staff and Federal Open Market Committee (FOMC) members shortly before each FOMC meeting. The FOMC is the primary policymaking arm of the Federal Reserve. Greenbook information is classified for five years following each FOMC meeting.

The number of sign reversals of forecast error ranged from four for Japan to nine for Canada.⁴

As was true for other forecasters, the Administration simply missed the deep recessions in 1982 in the United States and Canada. The Administration forecasted 1.5 percent real growth for the United States in 1982 and 0.2 percent for Canada. The outcome was a 3.8 percent decrease in output in the United States and a 7.8 percent decrease in Canada, one of the deepest recessions in either country since the end of World War II. In absolute terms the 1982 forecast errors for U.S. and Canadian economic growth were two to three times as large as any for a non-North-American G-7 economy over the 15 years covered here.⁵ While output fell in some other G-7 economies in 1982, no other nation experienced such a reversal of fortunes.

There were some large declines in real growth in other countries in other years too. Italy experienced a 4.2 percent fall in its output between 1980 and 1981; the United Kingdom, a 4.3 percent decline between 1979 and 1980; but Administration forecasts in these instances were not so wide of the mark as for

⁴ A zero error is not counted as a change in sign. Counting a zero error as a change in sign, the fraction of sign changes increases to just over half, and the range across countries runs from six (Japan and West Germany) to nine (Canada).

⁵ The largest forecast errors (in percentage points) for each nation were:

| | | | | | |
|----------------|------|------|--------|------|------|
| United States | 1982 | 5.3 | Canada | 1982 | 7.6 |
| Japan | 1988 | -2.7 | France | 1989 | -2.0 |
| West Germany | 1989 | -2.5 | Italy | 1976 | -2.7 |
| United Kingdom | 1977 | 2.1 | | | |

the U.S. and Canadian forecasts for 1982. Moreover, the error in the Administration's forecasts of growth in Italy and the United Kingdom was larger in non-turning-point years than during these turning-point episodes. In the case of Italy, the largest error was for 1976, when the nation's economy experienced a substantial upturn. Although the 1976 change in direction of the Italian economy (a total of 9.3 percentage points—from a decline of 3.7 percent in 1975 to growth of 5.6 percent in 1976) was greater than the percentage-point changes in the direction of output change in the U.S. and Canadian economies in 1982, the error in the Administration forecast of Italian GDP growth in 1976 was only -2.7 percentage points.

Administration Inflation Forecasts

The Administration forecast errors for inflation in the G-7 nations are shown in figure 2;⁶ table 2 presents the summary statistics with respect to the

⁶ The large error in the forecast of U.K. inflation in 1978 is attributable primarily to a decline in inflation in 1978; inflation fell from 15.9 percent in 1977 to 8.3 percent in 1978. It rose to 13.4 percent in 1979. During 1978, there were price controls in force on some components of the CPI market basket, and, at government urging, unions moderated their wage demands. In 1979, with the election of a Conservative government, the unions returned to no-holds-barred wage bargaining, and the government not only removed price controls, it increased the rate of value-added tax applicable to several items in the CPI market basket, boosting inflation during that year.

errors in the Administration forecasts of inflation in the G-7 nations from 1976 through 1990.⁷

The table reveals that the Administration tended to underpredict inflation in Italy and the United Kingdom, countries with high average inflation rates and to overpredict inflation in the United States, Germany, and, particularly, Japan, countries with comparatively low inflation.⁸ Errors in one direction were followed by errors in the other direction about a third of the time—less than was the case for real growth. The number of reversals of sign of the forecast error ranged from three for Japan to six for both France and the United Kingdom.⁹

We have looked at whether the Administration forecasting record was better when growth and inflation were rising than when they were falling.^{10 11}

⁷ The Administration forecasts of U.S. inflation in 1979 and 1980 pertained to the GNP deflator rather than the CPI. Hence, for these two years, the forecast errors are calculated with respect to the change in that measure rather than the CPI.

⁸ Japan's compounded annual rate of inflation between 1976 and 1990 was 3.1 percent, second among the G-7 nations to West Germany's 3.0 percent.

⁹ Once again, a zero error is not counted as a change in sign. If an accurate prediction were counted as a sign change, Canada would join the United Kingdom and France with six year-to-year sign changes.

¹⁰ Note that the focus here is on whether the growth or inflation rate is algebraically greater than or less than that during the previous year. Thus, a change in a growth or inflation rate from a positive number to a smaller positive number is counted as a fall in the rate while a change from a negative number to a smaller negative number is counted as a rise in the rate.

The RMSE of the Administration's forecasts of economic growth in the G-7 nations taken as a whole was more than one third larger for the periods when growth fell than when it rose. In contrast, the RMSE of the Administration's inflation forecasts for the G-7 nations taken together was lower when inflation was falling than when it was rising.

COMPARISONS TO ALTERNATIVE PREDICTIONS

Administration and OECD Predictions, 1977-90

OECD's projections of economic growth for G-7 nations¹² between 1977 and 1990 are readily available for comparison with the Administration predictions.¹³

¹¹ There were two cases in which economic growth was unchanged from the previous year. West German economic growth in 1986 was 2.5 percent, equal to the 1985 figure; U.K. growth in 1988 was 4.2 percent, equal to the 1987 number. There was also one instance of an unchanged inflation rate. The U.S. inflation rate in 1977 was 5.8 percent, equal to the 1976 rate. These observations have been deleted from the analysis of "up versus down" forecasting errors.

¹² DRI forecasts of economic growth and inflation for all the G-7 countries are available over the period 1983-90. The summary statistics pertaining to these DRI forecasts are compared to those of the Administration's forecasts over the same period in the appendix. Generally the DRI forecasts over this evaluation period were somewhat more accurate than the Administration forecasts.

¹³ The OECD makes several assumptions about members' economies in projecting each nation's economic growth. The organization assumes that the exchange rate of the nation's currency during a year remains at the level of November in the previous year (the month the projections are prepared), that fiscal policy will remain unchanged and that the real oil price (the price of oil relative to that of OECD exports of manufactures) will remain constant. The reasoning behind these assumptions is that the OECD is "advising" its member governments where they are headed economically if they continue to pursue current policies—not predicting the nations' economic futures. Hence, the OECD considers its product a projection.

The OECD staff issues its projections in the Economic Outlook twice each year—around mid-year and in December. We compared the December OECD projections (prepared in mid-November) with Administration forecasts although the latter were generally made earlier. Summary statistics covering the Administration's predictions and OECD projections over 1977-90 appear in table 3.

To what might one attribute the greater accuracy of the OECD outlooks compared with the Administration's forecasts? One factor might be that OECD projections of growth in the G-7 nations were made closer to the beginning of the forecast year. The OECD might also be in a better position in closely following the economic performance of many nations to take into account worldwide influences than is the Administration whose forecasts are largely dependent on inputs from individual countries. On the other hand, the OECD procedure simply assumes unchanged fiscal policies, exchange rates and real oil prices, which might be a factor that would lead to less accuracy in their predictions if it were true that such factors have a predictable effect on growth and inflation. In sum, we don't have an explanation for the difference.

In any event, for each G-7 nation except Italy, the sum of squared errors of the OECD projection is smaller than that for the Administration forecast errors. Moreover, while the Administration's squared

rather than a forecast.

forecast errors of U.S. and German economic growth are statistically significant at the 1 percent level, the squared errors in the OECD projections for these two nations are not significant at even the 5 percent level. The errors in the Administration predictions of Japanese growth are significant at the 5 percent level; those in the OECD projections are not. In the case of Italy, the errors in the OECD projection are significant at the 5 percent level, but those in the Administration forecast are not. The errors concerning Canadian economic growth by both the Administration and the OECD are significant at the 1 percent level. The errors with regard to U.K. and French economic growth by both groups are not significant at the 5 percent level. For the G-7 as a whole, the sums of squared errors of both the Administration forecasts and OECD projections are significant at the 1 percent level.

Both the Administration forecasts and the OECD projections were biased—but in opposite directions. The Administration growth forecasts for six of the seven nations and in total are biased upward—substantially for U.S. and Canadian forecasts. In contrast, except for Canadian growth, the OECD projections are biased downward—substantially in the cases of the United States, Italy and the United Kingdom.¹⁴

¹⁴ Peter Jarrett of the OECD's U.S. desk offered two explanations of the overall downward bias of the organization's projections: (1) The period covered by this study has generally been marked by economic expansion in the G-7 nations, and its failure to

Since one large error can mar an otherwise good performance, we also examined errors with the largest error omitted.¹⁵ The statistical results are presented in table 4.

With one observation deleted, the errors in both the Administration and OECD forecasts for U.S. growth are not only very close but also insignificant at the 5 percent level. As for the full set of errors, the Administration forecasts were biased positively; OECD projections the opposite. The widest gaps between Administration and OECD forecasting accuracy were for Germany and Japan with OECD projections being the more accurate. As for the full set of forecasts, the Administration's forecasts of Italian real growth with

foresee downturns that could tend to introduce serious upward bias to the OECD projections; and (2) The projections are based, in part, on the assumption of unchanged (general government) fiscal policies. Mr. Jarrett asserted that, since 1977, G-7 fiscal deficits have tended to grow, imparting a short-term boost to national growth rates.

¹⁵ The omitted observations are:

Administration

| | | | | | |
|----------------|--------|------|--------|--------|------|
| United States | (1982) | 5.3 | Canada | (1982) | 7.6 |
| Japan | (1988) | -2.7 | France | (1989) | -2.0 |
| West Germany | (1989) | -2.5 | Italy | (1983) | 2.3 |
| United Kingdom | (1977) | 2.1 | | | |

OECD

| | | | | | |
|----------------|--------|------|--------|--------|------|
| United States | (1988) | -1.9 | Canada | (1982) | 5.4 |
| Japan | (1988) | -2.2 | France | (1988) | -1.9 |
| West Germany | (1982) | 2.3 | Italy | (1980) | -2.0 |
| United Kingdom | (1983) | -2.3 | | | |

Note: The 1984 error in the OECD projection of French growth was the same as that in the projection of French growth in 1984. Only one observation was deleted, however.

the largest error deleted were marginally more accurate than the OECD's.

**Administration, Blue Chip, Federal Reserve and DRI
Forecasts for Canada and the United States**

Real Growth—The Blue Chip Economic Indicators consensus forecast of year-on-year real economic growth in the United States has been published monthly since 1976.¹⁶ The first year for which growth forecasts were made was 1977. A consensus forecast of year-on-year change in the U.S. Consumer Price Index (CPI) has been published since 1979 (forecasting 1980). Though DRI forecasts for the United States are available for the full period for which we have Administration forecasts, we compared the three forecasting records over only the period for which the Blue Chip consensus has been available. Likewise, the Federal Reserve's "Greenbook" forecasts were available for the entire period 1976-90, but in order to keep the same basis for comparison, we compared the Federal Reserve forecasts to the alternatives for only the years in which the Blue Chip consensus was available. As shown in table 5, the Blue Chip, DRI and the Federal Reserve forecasts of U.S. economic growth were all more accurate than the Administration forecasts, with the Greenbook achieving the greatest overall accuracy.

¹⁶ While the growth and inflation forecasts have appeared since 1976 and 1979 respectively, both the number and the identities of participating private sector forecasters have changed over time.

The Administration and DRI forecasts for Canadian growth were very similar in every respect. For U.S. growth, the positive bias of the Administration forecasts was matched in magnitude only by the negative bias of the Federal Reserve forecasts. As noted, the exclusion of the forecast for 1982 greatly improves the accuracy of the Administration forecasts, particularly compared with DRI. In fact, the same observation accounted for the greatest error in each of the forecasts except those of the Federal Reserve. In September 1981, many forecasters predicted positive economic growth for the U.S. economy in 1982 even though it was already several months into a recession that would not bottom out until the following November. The Greenbook forecast was considerably better, predicting -0.6 versus an actual outcome of -1.9. Table 6 shows the effects of omitting the largest error in computing the accuracy of these forecasts.¹⁷ Clearly, the Federal Reserve is helped the least by this exclusion, and ranks last in accuracy in table 6.

Inflation—Turning to inflation, as shown in table 7, in contrast to the situation with respect to growth, the Administration was a marginally more accurate forecaster of U.S. inflation than the Blue Chip survey and enormously more accurate than DRI.

¹⁷ The errors in the Treasury, Blue Chip, DRI and Federal Reserve forecasts of U.S. growth for 1982 were 5.3, 4.5, 4.3 and 1.3 percentage points, respectively. The largest Federal Reserve error was -2.5, recorded in 1981. The largest errors in the Treasury and DRI forecasts of Canadian growth were 7.6 and 7.9 percentage points, respectively.

The Federal Reserve was again the most accurate overall for the United States. DRI predicted Canadian inflation more accurately than the Administration. Summary statistics with the largest forecast error omitted are presented in table 8.¹⁸ Once again the Administration forecasts hold up very well against those of the other forecasters for the United States. DRI's inflation forecasts for Canada were more accurate than the Administration's though also more biased.

SUMMARY

Comparing Administration forecasts to the Blue Chip consensus, Federal Reserve Greenbook and DRI predictions of growth and inflation in the U.S. economy, one finds that the other forecasters saw the future more accurately and less optimistically with respect to real growth than the Administration did. Much, though not all, of that rosy perspective was connected with the failure of the Administration to forecast the recession in 1982. Deleting that observation substantially enhances measured forecast

¹⁸ For the U.S. inflation rate, the forecast observations deleted from the Treasury and Blue Chip forecasts were those pertaining to 1986, which were 2.3 and 2.1 percentage points, respectively. The observation deleted from the DRI forecast was that for 1980, which was -3.9 percentage points. For the Federal Reserve, the largest error was either -1.6 (1990) or 1.6 (1986). Which one is deleted is important only for the bias measure, as noted in table 8. For the Canadian inflation rate, the forecast observations deleted from the Treasury and DRI forecasts were those for 1984 and 1981, respectively, which were 2.1 and -2.0 percentage points.

accuracy, reducing the RMSE to 1 percentage point or less. Forecast errors of U.S. inflation were generally statistically insignificant at the 5 percent level though both the Blue Chip consensus and Administration tended to overpredict U.S. inflation to a substantial extent. DRI, in contrast, tended to underpredict inflation over the 1980-90 period.

Compared to OECD projections between 1977 and 1990, the errors in the Administration's forecasts of economic growth for Japan, Germany and even the United States are significantly larger than those of the OECD projections. The errors in both sets of forecasts of G-7 economic growth are statistically significant at the 1 percent level. The biases in the Administration's forecasts tend to be positive; those in the forecasts of U.S. and Canadian growth are particularly large. On the whole, the biases of the OECD projections are negative; those associated with forecasts of U.S., Italian and U.K. growth are large. Omitting one observation reduces both forecast errors substantially. For the G-7 as a whole, the projection errors of the OECD are not significant at the 5 percent level, but the Administration's forecast errors remain statistically significant at the 1 percent level.

The differences between the forecast errors of the Administration and the forecast (or projection) errors of the other forecasters may arise from differences in the times at which the forecasts or projections were prepared, a situation that may have influenced the quality of the historical baseline

available to forecasters and the values of exogenous variables assumed in predicting the future paths of the economies. Nonetheless, so far as we can ascertain, every forecast we have evaluated was a genuine forecast of growth and inflation made in the closing months of a year with respect to the next year. By the standards that we have discussed, the Administration forecasts have been well within the range of the forecast errors of others.

APPENDIX 1: Data Sources

The data used in this study come primarily from the World Economic Outlook (WEO) prepared by the United States Department of the Treasury, Blue Chip Economic Indicators, DRI's various Reviews, the OECD's Economic Outlook and the Federal Reserve's Greenbook. The Administration forecasts of G-7 nations' economic growth and inflation have been made since 1975. The forecasts evaluated in this study cover 1976-90, the last year for which forecasts have been cleared for release to the public by the Treasury. This is also the last year for which the Greenbook forecasts are cleared for public release. With one major exception, the Administration forecasts for the U.S. economy are those of the Council of Economic Advisers.¹⁹ Forecasts for the other G-7 economies are produced by Treasury financial attaches at U.S. embassies in the capitals of these nations. The attaches review the host-government and host-country private-sector forecasts for the economies of the nations to which they are posted and base their own forecasts on such information, together with their own judgments about the national economies. The Blue Chip consensus forecasts are the mean values of the forecasts of the firms covered in the Blue Chip surveys. The DRI forecasts are based on the outputs of the DRI models of the U.S. and Canadian economies and the judgments

¹⁹ The Treasury thought the Council's forecast of U.S. economic growth in 1983 was too high and substituted the Blue Chip consensus forecast. (As it turned out, the Treasury—i.e., Blue Chip—forecast was also too high, but not so high as the Council's.)

of that firm's staff. The OECD projections are prepared by members of that organization's staff.²⁰ The Federal Reserve forecasts are prepared by the staff at the Federal Reserve Board in Washington.

The Administration, Blue Chip and DRI forecasts and the OECD outlooks have appeared several times each year and are frequently revised. The WEO forecasts evaluated here are the last predictions of both growth and inflation for the next year made during the previous year.²¹ The Blue Chip and DRI forecasts for the U.S. and Canadian economies selected for comparison to the Administration forecasts were those published during the same months as the Administration forecasts. The DRI forecasts begin with those for 1976 and run through those for 1990. DRI forecasts for all of the other G-7 countries are available for each year since 1983. The OECD projections are those published in December for the next year, beginning with the outlook for 1977.

Gross National Product (GNP) and Gross Domestic Product (GDP) data are frequently revised. It was necessary to choose a fixed target to which to compare the forecasts. What we did was to use the Treasury Department's historical data, which it provided along with its forecasts in each issue of the WEO.

²⁰ The OECD focuses on year-on-year growth rates. Since the OECD uses the personal consumption deflator (rather than the consumer price index) as its measure of inflation, its inflation projections are not considered here.

²¹ The dates of the Administration forecasts for the next year range from September through December of the previous year.

Generally, historical data on GNP or GNP changes for a particular year continue to appear in the WEO for about 18 months following the end of that year. The last historical citation of the annual change in national GNP or GDP appearing in the WEO is the outcome to which the forecasts are compared.²²

Although Consumer Price Index (CPI) data tend not to be revised after they are issued, a similar procedure has been followed in selecting the inflation data with which to compare the forecasts. Because the Treasury presents no historical data for growth or inflation in 1978, we have compared their forecasts for 1978 with outcomes taken from the 1981 International Financial Statistics (IFS) yearbook.²³

²² In 1986 Canada changed the emphasis in its National Income and Product Accounts (NIPA) from GNP to GDP and stopped explicitly reporting historical real GNP data in its official bulletin, National Income and Expenditure Accounts (NIEA). When the Canadian NIPA focus shifted, the Administration began to forecast GDP instead of GNP for Canada and reported historical GDP data in the WEO. Since the 1985 and 1986 growth forecasts for Canada prepared by the Administration pertained to GNP, it was necessary to obtain real GNP growth data for 1985 and 1986 with which to compare the forecasts.

²³ The Administration's 1980 inflation forecast for the United States, which appeared in the September 1979 WEO, pertained to the GNP deflator rather than the CPI. The deflator calculated on the basis of data appearing in the 1981 IFS yearbook was used to test the accuracy of this forecast. (Given the Administration data, the September 1979 DRI and Blue Chip forecasts of the increase in the U.S. GNP deflator—rather than CPI inflation—are employed in this comparison.)

APPENDIX 2: Are the Sizes of the Administration's Forecast Errors and Year-to-Year Changes in Forecasted Variables Related?

In this paper we have analyzed absolute forecast errors. Greater period-to-period movements in variables being predicted might be associated with greater absolute forecast errors: Presumably it takes more skill to hit a moving target than a stationary bull's eye. If this be the case, it would seem appropriate to consider the extent to which the forecast target moves from year to year in assessing the accuracy of the forecast: Hence, we examined the sum of squared errors of the Administration's forecasts of both growth and inflation in each of the G-7 countries normalized by the sum of squared year-to-year changes in growth and inflation. A ratio close to unity indicates that there is a relationship between forecast accuracy and target-variable volatility; a ratio far from unity (either above or below one) indicates there is not such a relationship. The ratios pertaining to the Administration's forecasts of growth and inflation in each of the G-7 countries (and for the G-7 countries taken together) are presented in table 11.

With respect to growth forecasts, the only country for which there appears to be a close relationship—a ratio between, say 0.80 and 1.20—between the size of forecast errors and the extent of change in real output from year to year is Japan. For the G-7 taken as a whole, such a relationship does not exist over the period under

study here. The relationship between the size of forecast error and the extent of period-to-period movement in the variable being predicted is far more frequent in the case of inflation in the G-7 countries. The relationship holds for forecasts of inflation in Canada, France, West Germany and Italy—a group that includes both low- and high-inflation nations--and for the G-7 nations as a whole.

Figure 1

Administration forecast errors, output

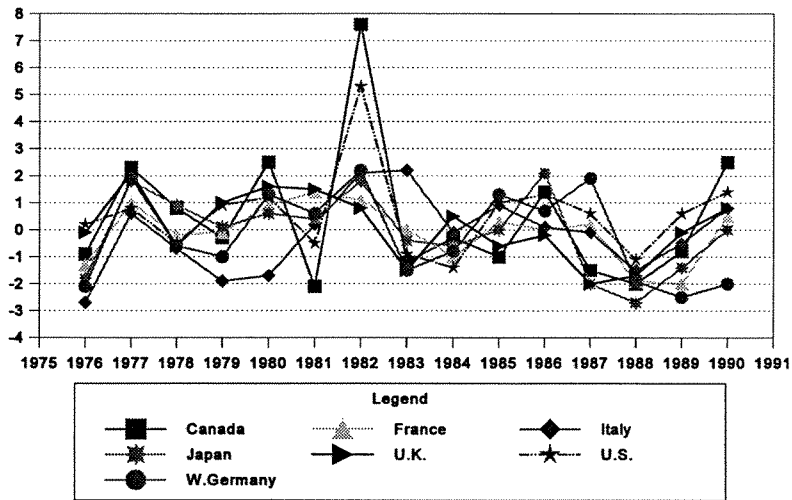


Figure 2

Admin. forecast errors, inflation

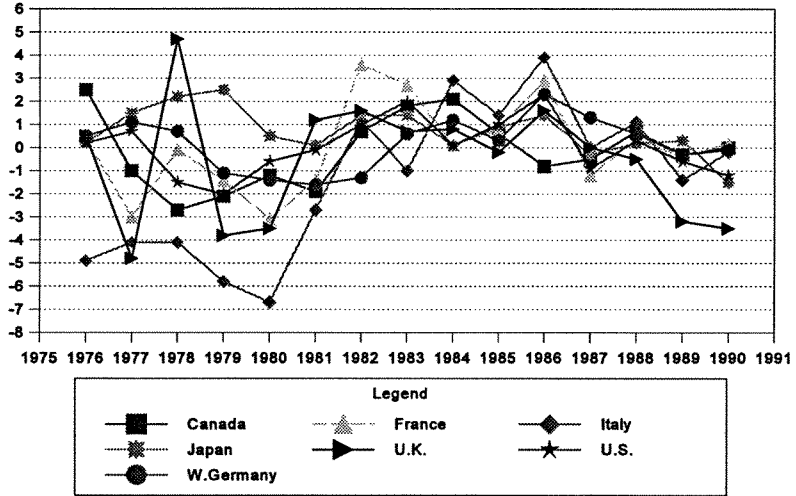


Table 1
 Errors in Administration GNP/GDP Growth Forecasts, 1976-90

| Country | Sum of squared errors | Mean squared error | RMSE | Bias |
|----------------|-----------------------|--------------------|------|------|
| United States | 40.87 | 2.72 | 1.65 | 8.9 |
| Canada | 92.88 | 6.19 | 2.49 | 7.0 |
| Japan | 29.24 | 1.95 | 1.40 | -1.2 |
| France | 15.71 | 1.05 | 1.02 | -1.1 |
| West Germany | 38.81 | 2.59 | 1.61 | -2.5 |
| Italy | 27.91 | 1.86 | 1.36 | -2.3 |
| United Kingdom | 21.67 | 1.44 | 1.20 | 1.5 |
| G-7 total | 267.09 | 2.54 | 1.59 | 10.3 |

Table 2
 Errors in Administration Inflation Forecasts, 1976-90

| Country | Sum of squared errors | Mean squared error | RMSE | Bias |
|----------------|-----------------------|--------------------|------|-------|
| United States | 21.15 | 1.41 | 1.19 | 0.7 |
| Canada | 33.97 | 2.26 | 1.50 | -2.1 |
| Japan | 22.81 | 1.52 | 1.23 | 10.9 |
| France | 53.81 | 3.59 | 1.89 | 0.5 |
| West Germany | 18.70 | 1.25 | 1.11 | 2.8 |
| Italy | 174.68 | 11.65 | 3.41 | -20.4 |
| United Kingdom | 102.54 | 6.84 | 2.61 | -9.4 |
| G-7 total | 427.66 | 4.07 | 2.02 | -17.0 |

Table 3
 Errors in Administration and OECD Growth Forecasts, 1977-90

| Country | Sum of squared errors | Mean squared error | RMSE | Bias |
|----------------|-----------------------|--------------------|------|-------|
| United States | | | | |
| Admin. | 40.83 | 2.92 | 1.71 | 8.7 |
| OECD | 16.04 | 1.15 | 1.07 | -5.6 |
| Canada | | | | |
| Admin. | 92.07 | 6.58 | 2.56 | 7.9 |
| OECD | 56.97 | 4.07 | 2.02 | 2.7 |
| Japan | | | | |
| Admin. | 26.00 | 1.86 | 1.36 | 0.6 |
| OECD | 13.37 | 0.96 | 0.98 | -3.9 |
| France | | | | |
| Admin. | 14.02 | 1.00 | 1.00 | 0.2 |
| OECD | 10.60 | 0.76 | 0.87 | -1.6 |
| West Germany | | | | |
| Admin. | 34.40 | 2.46 | 1.57 | -0.4 |
| OECD | 19.78 | 1.41 | 1.19 | -2.2 |
| Italy | | | | |
| Admin. | 20.62 | 1.47 | 1.21 | 0.4 |
| OECD | 23.42 | 1.67 | 1.29 | -6.8 |
| United Kingdom | | | | |
| Admin. | 21.66 | 1.55 | 1.24 | 1.6 |
| OECD | 14.38 | 1.03 | 1.01 | -5.4 |
| G-7 total | | | | |
| Admin. | 249.60 | 2.55 | 1.60 | 19.0 |
| OECD | 154.56 | 1.58 | 1.26 | -22.8 |

Table 4
 Errors in Administration and OECD Growth Forecasts, 1977-90
 (largest error omitted)

| Country | Sum of squared errors | Mean squared error | RMSE | Bias |
|--------------------------|-----------------------|--------------------|------|-------|
| United States Admin. | 12.74 | 0.98 | 0.99 | 3.4 |
| OECD | 12.43 | 0.96 | 0.98 | -2.0 |
| Canada Admin. | 34.31 | 2.64 | 1.62 | 0.3 |
| OECD | 27.81 | 2.14 | 1.46 | -8.1 |
| Japan Admin. | 18.71 | 1.44 | 1.20 | 3.3 |
| OECD | 8.53 | 0.66 | 0.81 | 0.5 |
| France Admin. | 10.02 | 0.77 | 0.88 | 2.2 |
| OECD | 6.99 | 0.54 | 0.73 | 2.2 |
| West Germany Admin. | 28.15 | 2.17 | 1.47 | 2.1 |
| OECD | 14.49 | 1.11 | 1.06 | -6.8 |
| Italy Admin. | 15.78 | 1.21 | 1.10 | -1.8 |
| OECD | 18.58 | 1.43 | 1.20 | -2.4 |
| United Kingdom Admin. | 17.25 | 1.33 | 1.15 | -0.5 |
| OECD | 9.09 | 0.70 | 0.84 | -0.8 |
| G-7 total Admin. | 136.96 | 1.51 | 1.23 | 9.0 |
| OECD | 97.92 | 1.08 | 1.04 | -17.4 |

Table 5
 Errors in U.S. and Canadian Growth Forecasts, 1977-90

| Country | Sum of squared errors | Mean squared error | RMSE | Bias |
|---------------|-----------------------|--------------------|------|------|
| United States | | | | |
| Admin. | 40.83 | 2.92 | 1.71 | 8.7 |
| Blue Chip | 27.65 | 1.98 | 1.41 | 0.9 |
| DRI | 32.83 | 2.35 | 1.53 | -2.5 |
| Greenbook | 24.32 | 1.74 | 1.32 | -7.2 |
| Canada | | | | |
| Admin. | 92.88 | 6.19 | 2.49 | 7.0 |
| DRI | 89.45 | 6.39 | 2.53 | 6.5 |

Table 6
 Errors in U.S. and Canadian Growth Forecasts, 1977-90
 (largest error omitted)

| Country | Sum of squared errors | Mean squared error | RMSE | Bias |
|---------------|-----------------------|--------------------|------|------|
| United States | | | | |
| Admin. | 12.74 | 0.98 | 0.99 | 3.4 |
| Blue Chip | 7.40 | 0.57 | 0.75 | -3.6 |
| DRI | 14.34 | 1.10 | 1.05 | -6.8 |
| Greenbook | 18.07 | 1.39 | 1.18 | -4.7 |
| Canada | | | | |
| Admin. | 35.12 | 2.51 | 1.58 | -0.6 |
| DRI | 27.04 | 2.08 | 1.44 | -1.4 |

Table 7
 Errors in U.S. and Canadian Inflation Forecasts, 1980-90

| Country | Sum of squared errors | Mean squared error | RMSE | Bias |
|---------------|-----------------------|--------------------|------|------|
| United States | | | | |
| Admin. | 14.37 | 1.31 | 1.14 | 3.3 |
| Blue Chip | 15.79 | 1.44 | 1.20 | 7.1 |
| DRI | 27.98 | 2.54 | 1.59 | 0.8 |
| Greenbook | 12.70 | 1.15 | 1.07 | 1.2 |
| Canada | | | | |
| Admin. | 15.82 | 1.37 | 1.17 | 1.2 |
| DRI | 11.06 | 1.01 | 1.00 | -1.4 |

Table 8
 Errors in U.S. and Canadian Inflation Forecasts, 1980-90
 (largest error omitted)

| Country | Sum of squared errors | Mean squared error | RMSE | Bias |
|---------------|-----------------------|--------------------|------|------|
| United States | | | | |
| Admin. | 9.08 | 0.91 | 0.95 | 1.0 |
| Blue Chip | 11.38 | 1.14 | 1.07 | 5.0 |
| DRI | 12.77 | 1.28 | 1.13 | 4.7 |
| Greenbook | 10.14 | 1.01 | 1.01 | * |
| Canada | | | | |
| Admin. | 10.61 | 1.06 | 1.03 | -0.9 |
| DRI | 7.06 | 0.71 | 0.84 | 0.6 |

* The Greenbook bias is either 2.8 or -0.4, depending on whether one counts 1986 (+1.6) or 1990 (-1.6) as the largest error.

Table 9
 Errors in Administration and DRI Growth Forecasts, 1983-90

| Country | Sum of squared errors | Mean squared error | RMSE | Bias |
|----------------|-----------------------|--------------------|------|-------|
| United States | | | | |
| Admin. | 9.35 | 1.17 | 1.08 | 1.5 |
| DRI | 13.19 | 1.65 | 1.28 | -7.3 |
| Canada | | | | |
| Admin. | 17.63 | 2.20 | 1.48 | -2.9 |
| DRI | 16.78 | 2.10 | 1.45 | -4.8 |
| Japan | | | | |
| Admin. | 18.18 | 2.27 | 1.51 | -5.0 |
| DRI | 12.96 | 1.62 | 1.27 | -7.8 |
| France | | | | |
| Admin. | 8.99 | 1.12 | 1.06 | -3.9 |
| DRI | 5.86 | 0.73 | 0.86 | -3.0 |
| West Germany | | | | |
| Admin. | 22.54 | 2.82 | 1.68 | -4.8 |
| DRI | 10.07 | 1.26 | 1.12 | -4.5 |
| Italy | | | | |
| Admin. | 8.82 | 1.10 | 1.05 | 1.8 |
| DRI | 10.47 | 1.31 | 1.14 | 0.7 |
| United Kingdom | | | | |
| Admin. | 10.44 | 1.30 | 1.14 | -4.8 |
| DRI | 6.31 | 0.79 | 0.89 | -5.1 |
| G-7 total | | | | |
| Admin. | 99.95 | 1.71 | 1.31 | -18.1 |
| DRI | 75.64 | 1.35 | 1.16 | -31.8 |

Table 10
 Errors in Administration and DRI Inflation Forecasts, 1983-90

| Country | Sum of squared errors | Mean squared error | RMSE | Bias |
|----------------|-----------------------|--------------------|------|------|
| United States | | | | |
| Admin. | 13.00 | 1.62 | 1.27 | 3.0 |
| DRI | 9.16 | 1.14 | 1.07 | 2.8 |
| Canada | | | | |
| Admin. | 9.48 | 1.18 | 1.09 | 3.6 |
| DRI | 5.01 | 0.63 | 0.79 | 0.7 |
| Japan | | | | |
| Admin. | 7.21 | 0.90 | 0.95 | 2.5 |
| DRI | 12.78 | 1.60 | 1.26 | -0.2 |
| France | | | | |
| Admin. | 18.15 | 2.27 | 1.51 | 5.5 |
| DRI | 8.77 | 1.10 | 1.05 | 5.3 |
| West Germany | | | | |
| Admin. | 9.33 | 1.17 | 1.08 | 5.9 |
| DRI | 8.89 | 1.11 | 1.05 | 5.3 |
| Italy | | | | |
| Admin. | 29.79 | 3.72 | 1.93 | 6.7 |
| DRI | 11.46 | 1.43 | 1.20 | 3.6 |
| United Kingdom | | | | |
| Admin. | 26.47 | 3.31 | 1.82 | -4.3 |
| DRI | 18.32 | 2.29 | 1.51 | -2.0 |
| G-7 total | | | | |
| Admin. | 113.43 | 2.03 | 1.42 | 22.9 |
| DRI | 74.39 | 1.33 | 1.15 | 15.5 |

Table 11
 Ratios of Sums of the
 Administration's Squared Growth and
 Inflation Forecast Errors, 1976-90

| Country | Growth | Inflation |
|----------------|--------|-----------|
| United States | 0.51 | 0.52 |
| Canada | 0.71 | 0.82 |
| Japan | 0.88 | 0.58 |
| France | 0.50 | 1.13 |
| West Germany | 0.59 | 0.91 |
| Italy | 0.44 | 1.13 |
| United Kingdom | 0.55 | 0.64 |
| G-7 total | 0.59 | 0.81 |

Table 12
 United States: Economic Growth
 (percent)

| Forecasts | | | | | | | Forecast errors (forecasts minus outcomes) | | | | |
|-----------|---------|--------|------|-----|--------------|-----------|---|------|------|--------------|-----------|
| Year | Outcome | Admin. | OECD | DRI | Blue Chip | Greenbook | Admin. | OECD | DRI | Blue Chip | Greenbook |
| 1976 | 6.0 | 6.2 | N.A. | 6.2 | N.A. | 5.6 | 0.2 | N.A. | 0.2 | N.A. | -0.4 |
| 1977 | 4.9 | 5.7 | 4.5 | 5.7 | 4.9 | 4.7 | 0.8 | -0.4 | 0.8 | 0.0 | -0.2 |
| 1978 | 4.8 | 4.3 | 4.2 | 4.9 | 4.9 | 4.7 | -0.5 | -0.6 | 0.1 | 0.1 | -0.1 |
| 1979 | 2.3 | 3.2 | 2.0 | 2.0 | 2.1 | 3.3 | 0.9 | -0.3 | -0.3 | -0.2 | 1.0 |
| 1980 | -0.2 | 1.0 | -1.2 | 0.2 | 0.2 | -1.7 | 1.2 | -1.0 | 0.4 | 0.4 | -1.5 |
| 1981 | 1.9 | 1.4 | 0.8 | 1.4 | 1.1 | -0.6 | -0.5 | -1.1 | -0.5 | -0.8 | -2.5 |
| 1982 | -1.9 | 3.4 | -0.5 | 2.4 | 2.6 | -0.6 | 5.3 | 1.4 | 4.3 | 4.5 | 1.3 |
| 1983 | 3.7 | 2.8 | 2.0 | 2.2 | 2.8 | 1.4 | -0.9 | -1.7 | -1.5 | -0.9 | -2.3 |
| 1984 | 6.6 | 5.2 | 5.0 | 5.0 | 5.1 | 5.5 | -1.4 | -1.6 | -1.6 | -1.5 | -1.1 |
| 1985 | 2.7 | 3.7 | 3.0 | 2.1 | 3.1 | 2.7 | 1.0 | 0.3 | -0.6 | 0.4 | 0.0 |
| 1986 | 2.9 | 4.2 | 2.8 | 2.1 | 3.0 | 2.4 | 1.3 | -0.1 | -0.8 | 0.1 | -0.5 |
| 1987 | 3.4 | 4.0 | 3.0 | 1.5 | 2.9 | 2.6 | 0.6 | -0.4 | -1.9 | -0.5 | -0.8 |
| 1988 | 4.4 | 3.3 | 2.5 | 2.6 | 2.9 | 2.3 | -1.1 | -1.9 | -1.8 | -1.5 | -2.1 |
| 1989 | 2.5 | 3.1 | 3.0 | 2.7 | 2.4 | 3.3 | 0.6 | 0.5 | 0.2 | -0.1 | 0.8 |
| 1990 | 0.9 | 2.3 | 2.3 | 1.6 | 1.8 | 1.7 | 1.4 | 1.3 | 0.7 | 0.9 | 0.8 |

N.A.: Not Available

Table 13
 United States: Inflation
 (percent)

| Forecasts | | | | | | Forecast errors (forecasts minus outcomes) | | | |
|-----------|---------|--------|------|-----------|-----------|---|------|-----------|-----------|
| Year | Outcome | Admin. | DRI | Blue Chip | Greenbook | Admin. | DRI | Blue Chip | Greenbook |
| 1976 | 5.8 | 6.0 | 7.1 | N.A. | 5.6 | 0.2 | 1.3 | N.A. | -0.2 |
| 1977 | 5.8 | 6.5 | 4.9 | N.A. | 5.6 | 0.7 | -0.9 | N.A. | -0.2 |
| 1978 | 7.5 | 6.0 | 5.9 | N.A. | 6.3 | -1.5 | -1.6 | N.A. | -1.2 |
| 1979 | 8.5 | 6.5 | 7.9 | N.A. | 7.8 | -2.0 | -0.6 | N.A. | -0.7 |
| 1980 | 9.0 | 8.4 | 9.6 | 9.3 | 9.4 | -0.6 | 0.6 | 0.3 | 0.4 |
| 1981 | 10.4 | 10.3 | 10.4 | 10.2 | 10.6 | -0.1 | 0.0 | -0.2 | 0.2 |
| 1982 | 6.0 | 7.0 | 7.9 | 8.1 | 7.5 | 1.0 | 1.9 | 2.1 | 1.5 |
| 1983 | 3.2 | 5.2 | 5.2 | 5.2 | 4.6 | 2.0 | 2.0 | 2.0 | 1.4 |
| 1984 | 4.3 | 4.4 | 4.8 | 5.0 | 4.5 | 0.1 | 0.5 | 0.7 | 0.2 |
| 1985 | 3.6 | 4.6 | 3.8 | 4.5 | 4.0 | 1.0 | 0.2 | 0.9 | 0.4 |
| 1986 | 1.9 | 4.2 | 3.4 | 4.0 | 3.5 | 2.3 | 1.5 | 2.1 | 1.6 |
| 1987 | 3.7 | 2.8 | 2.9 | 3.2 | 2.4 | -0.9 | -0.8 | -0.5 | -1.3 |
| 1988 | 4.1 | 4.4 | 4.6 | 4.6 | 3.3 | 0.3 | 0.5 | 0.5 | -0.8 |
| 1989 | 4.8 | 4.2 | 5.0 | 5.0 | 4.0 | -0.6 | 0.2 | 0.2 | -0.8 |
| 1990 | 5.4 | 4.2 | 4.1 | 4.4 | 3.8 | -1.2 | -1.3 | -1.0 | -1.6 |

NOTE: For 1979 and 1980, the Administration inflation forecast pertained to the GNP deflator; for all other years, the forecast pertained to the consumer price index. Hence, 1979 and 1980 DRI and 1980 Blue Chip forecasts pertain to the deflator.

N.A.: Not Available

Table 14
 Canada: Economic Growth
 (percent)

| Forecasts | | | | | Forecast errors (forecasts minus outcomes) | | |
|-----------|---------|--------|------|-----|--|------|------|
| Year | Outcome | Admin. | OECD | DRI | Admin. | OECD | DRI |
| 1976 | 4.9 | 4.0 | N.A. | 5.9 | -0.9 | N.A. | 1.0 |
| 1977 | 2.7 | 5.0 | 3.5 | 4.0 | 2.3 | 0.8 | 1.3 |
| 1978 | 3.4 | 4.2 | 3.8 | 4.6 | 0.8 | 0.4 | 1.2 |
| 1979 | 2.8 | 2.5 | 4.0 | 3.0 | -0.3 | 1.2 | 0.2 |
| 1980 | 0.0 | 2.5 | 1.5 | 2.2 | 2.5 | 1.5 | 2.2 |
| 1981 | 3.4 | 1.3 | 1.2 | 1.9 | -2.1 | -2.2 | -1.5 |
| 1982 | -4.4 | 3.2 | 1.0 | 3.5 | 7.6 | 5.4 | 7.9 |
| 1983 | 3.3 | 2.1 | 1.2 | 1.7 | -1.2 | -2.1 | -1.6 |
| 1984 | 5.0 | 4.7 | 5.0 | 5.0 | -0.3 | 0.0 | 0.0 |
| 1985 | 4.1 | 3.1 | 2.8 | 2.3 | -1.0 | -1.2 | -1.8 |
| 1986 | 3.0 | 4.4 | 3.0 | 2.7 | 1.4 | -0.3 | -0.3 |
| 1987 | 4.0 | 2.5 | 2.8 | 2.9 | -1.5 | -1.2 | -1.1 |
| 1988 | 5.0 | 3.0 | 2.8 | 2.8 | -2.0 | -2.2 | -2.2 |
| 1989 | 2.9 | 2.1 | 3.0 | 2.9 | -0.8 | 0.1 | 0.0 |
| 1990 | -0.5 | 2.0 | 2.0 | 1.7 | 2.5 | 2.5 | 2.2 |

N.A.: Not Available

Table 15
 Canada: Inflation
 (percent)

| Forecasts | | | | Forecast errors (forecast minus outcomes) | |
|-----------|---------|--------|------|--|------|
| Year | Outcome | Admin. | DRI | Admin. | DRI |
| 1976 | 7.5 | 10.0 | 9.0 | 2.5 | 1.5 |
| 1977 | 8.0 | 7.0 | 7.8 | -1.0 | -0.2 |
| 1978 | 9.0 | 6.3 | 6.9 | -2.7 | -2.1 |
| 1979 | 9.1 | 7.0 | 7.9 | -2.1 | -1.2 |
| 1980 | 10.2 | 9.0 | 8.8 | -1.2 | -1.4 |
| 1981 | 12.5 | 10.6 | 10.5 | -1.9 | -2.0 |
| 1982 | 10.8 | 11.5 | 10.1 | 0.7 | -0.7 |
| 1983 | 5.8 | 7.6 | 7.2 | 1.8 | 1.4 |
| 1984 | 4.4 | 6.5 | 3.3 | 2.1 | -1.1 |
| 1985 | 4.0 | 4.6 | 3.4 | 0.6 | -0.6 |
| 1986 | 4.1 | 3.3 | 4.0 | -0.8 | -0.1 |
| 1987 | 4.4 | 3.9 | 4.5 | -0.5 | 0.1 |
| 1988 | 4.1 | 4.8 | 5.3 | 0.7 | 1.2 |
| 1989 | 5.0 | 4.7 | 4.9 | -0.3 | -0.1 |
| 1990 | 4.8 | 4.8 | 4.7 | 0.0 | -0.1 |

Table 16
 Japan: Economic Growth and Inflation
 (percent)

| Economic growth | | | | | | Inflation | | |
|-----------------|---------|--------|--|--------|------|-----------|-------------|-------|
| Forecasts | | | Forecast errors (forecasts minus outcomes) | | | Outcome | Forecast | Error |
| Year | Outcome | Admin. | OECD | Admin. | OECD | | Admin. only | |
| 1976 | 6.3 | 4.5 | N.A. | -1.8 | N.A. | 9.3 | 9.5 | 0.2 |
| 1977 | 5.2 | 7.0 | 6.0 | 1.8 | 0.8 | 8.0 | 9.5 | 1.5 |
| 1978 | 5.1 | 6.0 | 5.0 | 0.9 | -0.1 | 3.8 | 6.0 | 2.2 |
| 1979 | 5.9 | 6.0 | 4.8 | 0.1 | -1.1 | 3.5 | 6.0 | 2.5 |
| 1980 | 4.2 | 4.8 | 4.8 | 0.6 | 0.6 | 8.0 | 8.5 | 0.5 |
| 1981 | 3.8 | 4.2 | 3.8 | 0.4 | 0.0 | 4.9 | 5.0 | 0.1 |
| 1982 | 3.3 | 5.1 | 3.8 | 1.8 | 0.5 | 2.7 | 4.1 | 1.4 |
| 1983 | 3.4 | 3.0 | 3.5 | -0.4 | 0.1 | 1.9 | 3.3 | 1.4 |
| 1984 | 5.1 | 4.5 | 4.0 | -0.6 | -1.1 | 2.2 | 2.3 | 0.1 |
| 1985 | 4.7 | 4.7 | 5.0 | 0.0 | 0.3 | 2.0 | 2.9 | 0.9 |
| 1986 | 2.4 | 4.5 | 3.5 | 2.1 | 1.1 | 0.6 | 2.0 | 1.4 |
| 1987 | 4.5 | 2.5 | 2.8 | -2.0 | -1.7 | 0.1 | -0.2 | -0.3 |
| 1988 | 5.7 | 3.0 | 3.5 | -2.7 | -2.2 | 0.7 | 0.9 | 0.2 |
| 1989 | 4.9 | 3.5 | 4.5 | -1.4 | -0.4 | 2.3 | 2.6 | 0.3 |
| 1990 | 5.2 | 5.2 | 4.5 | 0.0 | -0.7 | 3.1 | 1.6 | -1.5 |

N.A.: Not Available

Table 17
 France: Economic Growth and Inflation
 (percent)

| Economic growth | | | | | | Inflation | | |
|-----------------|---------|--------|------|--|------|-----------|-------------|-------|
| Forecasts | | | | Forecast errors (forecasts minus outcomes) | | Outcome | Forecast | Error |
| Year | Outcome | Admin. | OECD | Admin. | OECD | | Admin. only | |
| 1976 | 5.2 | 3.9 | N.A. | -1.3 | N.A. | 9.6 | 10.0 | 0.4 |
| 1977 | 3.0 | 4.0 | 3.0 | 1.0 | 0.0 | 9.5 | 6.5 | -3.0 |
| 1978 | 3.7 | 3.5 | 3.2 | -0.2 | -0.5 | 9.1 | 9.0 | -0.1 |
| 1979 | 3.3 | 3.2 | 3.5 | -0.1 | 0.2 | 10.4 | 9.0 | -1.4 |
| 1980 | 1.3 | 2.2 | 2.0 | 0.9 | 0.7 | 13.6 | 10.5 | -3.1 |
| 1981 | 0.2 | 1.6 | 1.0 | 1.4 | 0.8 | 13.4 | 12.0 | -1.4 |
| 1982 | 2.0 | 3.1 | 2.5 | 1.1 | 0.5 | 11.9 | 15.5 | 3.6 |
| 1983 | 0.7 | 0.7 | 0.5 | 0.0 | -0.2 | 9.3 | 12.0 | 2.7 |
| 1984 | 1.9 | 0.9 | 0.0 | -1.0 | -1.9 | 7.3 | 7.4 | 0.1 |
| 1985 | 1.4 | 1.7 | 2.0 | 0.3 | 0.6 | 5.5 | 6.3 | 0.8 |
| 1986 | 2.0 | 2.0 | 2.0 | 0.0 | 0.0 | 2.5 | 5.4 | 2.9 |
| 1987 | 2.3 | 2.5 | 2.2 | 0.2 | -0.1 | 3.3 | 2.1 | -1.2 |
| 1988 | 3.4 | 1.5 | 1.5 | -1.9 | -1.9 | 2.7 | 3.1 | 0.4 |
| 1989 | 3.7 | 1.7 | 3.0 | -2.0 | -0.7 | 3.5 | 3.1 | -0.4 |
| 1990 | 2.2 | 2.7 | 3.1 | 0.5 | 0.9 | 3.4 | 3.6 | 0.2 |

N.A.: Not Available

Table 18
West Germany: Economic Growth and Inflation
(percent)

| Economic growth | | | | | | Inflation | | |
|-----------------|---------|--------|------|--|------|-----------|-------------|-------|
| Forecasts | | | | Forecast errors (forecasts minus outcomes) | | Outcome | Forecast | Error |
| Year | Outcome | Admin. | OECD | Admin. | OECD | | Admin. only | |
| 1976 | 5.6 | 3.5 | N.A. | -2.1 | N.A. | 4.5 | 5.0 | 0.5 |
| 1977 | 2.6 | 4.5 | 3.5 | 1.9 | 0.9 | 3.9 | 5.0 | 1.1 |
| 1978 | 3.6 | 3.0 | 3.2 | -0.6 | -0.4 | 2.8 | 3.5 | 0.7 |
| 1979 | 4.5 | 3.5 | 4.0 | -1.0 | -0.5 | 4.1 | 3.0 | -1.1 |
| 1980 | 1.8 | 3.1 | 2.2 | 1.3 | 0.4 | 5.5 | 4.1 | -1.4 |
| 1981 | -0.2 | 0.4 | -0.2 | 0.6 | 0.0 | 6.0 | 4.4 | -1.6 |
| 1982 | -1.1 | 1.1 | 1.2 | 2.2 | 2.3 | 5.3 | 4.0 | -1.3 |
| 1983 | 1.3 | -0.2 | -0.2 | -1.5 | -1.5 | 3.3 | 3.9 | 0.6 |
| 1984 | 2.7 | 1.9 | 2.0 | -0.8 | -0.7 | 2.4 | 3.6 | 1.2 |
| 1985 | 2.5 | 3.8 | 2.8 | 1.3 | 0.3 | 2.2 | 2.5 | 0.3 |
| 1986 | 2.5 | 3.2 | 3.2 | 0.7 | 0.7 | -0.2 | 2.1 | 2.3 |
| 1987 | 1.8 | 3.7 | 3.0 | 1.9 | 1.2 | 0.2 | 1.5 | 1.3 |
| 1988 | 3.6 | 1.7 | 1.5 | -1.9 | -2.1 | 1.3 | 1.9 | 0.6 |
| 1989 | 4.0 | 1.5 | 2.5 | -2.5 | -1.5 | 2.8 | 2.5 | -0.3 |
| 1990 | 5.0 | 3.0 | 3.2 | -2.0 | -1.3 | 2.7 | 2.6 | -0.1 |

N.A.: Not Available

Table 19
Italy: Economic Growth and Inflation
(percent)

| Economic growth | | | | | | Inflation | | |
|-----------------|---------|--------|--|--------|------|-----------|-------------|-------|
| Forecasts | | | Forecast errors (forecasts minus outcomes) | | | Outcome | Forecast | Error |
| Year | Outcome | Admin. | OECD | Admin. | OECD | | Admin. only | |
| 1976 | 5.6 | 2.9 | N.A. | -2.7 | N.A. | 16.5 | 11.6 | -4.9 |
| 1977 | 1.7 | 2.3 | -0.5 | 0.6 | -2.2 | 18.1 | 14.0 | -4.1 |
| 1978 | 2.7 | 2.0 | 1.0 | -0.7 | -1.7 | 12.1 | 8.0 | -4.1 |
| 1979 | 5.0 | 3.1 | 3.5 | -1.9 | -1.5 | 14.8 | 9.0 | -5.8 |
| 1980 | 4.0 | 2.3 | 2.0 | -1.7 | -2.0 | 21.2 | 14.5 | -6.7 |
| 1981 | -0.2 | 0.0 | -1.0 | 0.2 | -0.8 | 18.7 | 16.0 | -2.7 |
| 1982 | -0.3 | 1.8 | 1.0 | 2.1 | 1.3 | 16.3 | 17.5 | 1.2 |
| 1983 | -1.2 | 1.0 | 0.2 | 2.2 | 1.4 | 15.0 | 14.0 | -1.0 |
| 1984 | 2.6 | 2.5 | 2.0 | -0.1 | -0.6 | 10.6 | 13.5 | 2.9 |
| 1985 | 2.3 | 3.2 | 2.5 | 0.9 | 0.2 | 8.6 | 10.0 | 1.4 |
| 1986 | 2.7 | 2.8 | 2.5 | 0.1 | -0.2 | 6.1 | 10.0 | 3.9 |
| 1987 | 3.1 | 3.0 | 3.0 | -0.1 | -0.1 | 4.6 | 4.6 | 0.0 |
| 1988 | 3.9 | 2.4 | 2.0 | -1.5 | -1.9 | 5.0 | 6.1 | 1.1 |
| 1989 | 3.2 | 2.7 | 3.5 | -0.5 | 0.3 | 6.6 | 5.2 | -1.4 |
| 1990 | 2.2 | 3.0 | 3.2 | 0.8 | 1.0 | 6.1 | 5.9 | -0.2 |

N.A.: Not Available

Table 20
 United Kingdom: Economic Growth and Inflation
 (percent)

| Economic growth | | | | | | Inflation | | |
|-----------------|---------|--------|--|--------|------|-----------|-------------|-------|
| Forecasts | | | Forecast errors (forecasts minus outcomes) | | | Outcome | Forecast | Error |
| Year | Outcome | Admin. | OECD | Admin. | OECD | | Admin. only | |
| 1976 | 2.1 | 2.0 | N.A. | -0.1 | N.A. | 16.5 | 16.0 | 0.5 |
| 1977 | 1.8 | 3.9 | 1.5 | 2.1 | -0.3 | 15.8 | 11.0 | -4.8 |
| 1978 | 3.6 | 3.0 | 3.0 | -0.6 | -0.6 | 8.3 | 13.0 | 4.7 |
| 1979 | 1.5 | 2.5 | 2.2 | 1.0 | 0.7 | 13.4 | 9.6 | -3.8 |
| 1980 | -2.8 | -1.2 | -2.0 | 1.6 | 0.8 | 18.0 | 14.5 | -3.5 |
| 1981 | -2.4 | -0.9 | -2.0 | 1.5 | 0.4 | 11.8 | 13.0 | 1.2 |
| 1982 | 1.5 | 2.3 | 0.2 | 0.8 | -1.3 | 8.6 | 10.2 | 1.6 |
| 1983 | 3.3 | 1.8 | 1.0 | -1.5 | -2.3 | 4.6 | 5.3 | 0.7 |
| 1984 | 1.8 | 2.3 | 2.2 | 0.5 | 0.4 | 5.0 | 5.8 | 0.8 |
| 1985 | 3.6 | 3.0 | 3.0 | -0.6 | -0.6 | 6.1 | 5.9 | -0.2 |
| 1986 | 3.0 | 2.8 | 2.2 | -0.2 | -0.8 | 3.4 | 5.0 | 1.6 |
| 1987 | 4.2 | 2.2 | 2.8 | -2.0 | -1.4 | 4.1 | 4.1 | 0.0 |
| 1988 | 4.2 | 2.5 | 2.8 | -1.7 | -1.4 | 4.9 | 4.4 | -0.5 |
| 1989 | 2.3 | 2.2 | 3.0 | -0.1 | 0.7 | 7.8 | 4.6 | -3.2 |
| 1990 | 1.0 | 1.8 | 1.3 | 0.8 | 0.3 | 9.5 | 6.0 | -3.5 |

N.A.: Not Available