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ECONOMIC FORECASTS AND THEIR ASSESSMENT

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ABSTRACT

This paper looks at the accuracy of economic forecasts and whether it is possible to rank different forecasters by their degree of accuracy.

The first section examines the accuracy of economic forecasts in general and by examining a subset of twelve Australian forecasters over a five year period.

The second section addresses the question of whether it is possible to rank forecasters in order of merit. The paper concludes that the problems are sufficiently large for it to be unlikely that a meaningful and stable ranking could be obtained.

ECONOMIC FORECASTS AND THEIR ASSESSMENT

This paper attempts to do two things. First, it looks at the question of whether economic forecasts are accurate. Second, it looks at whether it is possible to distinguish between "good" and "bad" forecasters.[1] The points raised are illustrated by examples drawn from the economic literature on the subject, from some years of experience in economic forecasting and from a sample of twelve Australian forecasters over five years.

I. ARE ECONOMIC FORECASTS ACCURATE?

(a) The issues

The most common criticism of economic forecasts is that they are usually wrong. In a literal sense this is, of course, true; forecasters cannot hope to get things right to the last decimal point. In a general sense, however, the proposition is wrong; some economic variables can be forecast to a reasonable degree of accuracy most of the time. To illustrate this point, Table 1 shows recent forecasts of real GDP by the OECD and by the large U.S. forecasting firm, Data Resources Inc (DRI).[2] These were chosen because they are

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1. Several important questions about economic forecasting are not addressed in this paper. The first is whether econometric models give more or less accurate forecasts than those based on judgement. For discussion of this point see Zarnowitz (1972), Christ (1975), Jonson and Norton (1980) and McNees (1981). The second question omitted is whether structural econometric models give better or worse forecasts than those based on sophisticated auto regressive methods (such as ARIMA processes). For a discussion of this issue see Cooper (1972), Nelson (1972) Christ (1975), Hirsch et. al. (1974), McCarthy et. al. (1974) and McNees (1981).

2. This five-year period was chosen as it was used by Caton (1982) to show DRI results which he said "should sustain (him) at least through (his) next two bouts of scepticism of all forecasting methods". The OECD results were from the December issues of the "Economic Outlook".

respectively the best-known forecaster of the international economy and of the U.S. economy.

On the surface, the forecasts are astonishingly accurate. Judged by this sort of performance, it is hard to see why there should be such scepticism about the efficacy of economic forecasting. Unfortunately there is more to the story than appears from Table 1.

Table 1: Forecasts of growth of real GDP
per cent change, year-on-year

	OECD forecast of OECD area		DRI forecast of US	
	Forecast made in previous December	Outcome	Forecast made in previous September	Outcome
1977	3-3/4	3.7	5.7	5.3
1978	3-1/2	3.7	4.6	5.0
1979	3-1/4	3.3	2.8	2.9
1980	1	1.3	-0.9	-0.4
1981	1	1.2	1.5	1.9

GDP is one of the easier variables to forecast.[3] Even though economists give pride of place in their forecasting effort to GDP, and, to a lesser extent, inflation, businesses often have greater need for forecasts of more specific variables. These specific variables include

3. Real GDP is generally forecast better than the other major macro-economic variable - the inflation rate. The coefficient of variation of OECD forecasts for inflation is about 1-1/2 times larger than for GDP. Caton (1982) says of the DRI inflation forecasts over 1977 to 1981 that they are "uninspired, marginally outperforming the naive model, which they closely resemble". Zarnowitz (1979) and Daub (1981) also found that inflation forecasts were hardly distinguishable from extrapolations.

components of GDP, such as housebuilding, and key prices such as interest rates, exchange rates, commodity prices etc. In these areas the forecasting record is generally much poorer.

- These forecasts are only for one year ahead. It was no doubt useful to know in 1979 that GDP growth was going to be negligible in 1980. However, the really important thing to have known was that it was going to remain negligible for three years. Forecasters who correctly picked the 1980 turning point have been justifiably criticised for failing to see that the world was entering the longest recession in the post-war period. It has been established on numerous occasions (Zarnowitz (1967 and 1979), Christ (1975), Fromm and Klein (1976), McNees (1976), Su (1978)) that, in general, the accuracy of the forecast declines the further ahead is the forecasting period.[4]
- The period shown in Table 1 is flattering to the forecasts as it did not include a major shock i.e. an outcome for any one year outside the range of recent experience. It

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4. One neglected reason for this is that forecasters become excessively cautious when they extend the forecasting period. They are often prepared to forecast extreme outcomes (i.e. large rises or falls in economic variables) in the near future, but are reluctant to do so further ahead. Most quarterly or half yearly forecasts incorporate "a return to normality" after about six months or a year (this can be verified for OECD half yearly forecasts). This is because extreme forecasts are hard to defend. In the case of forecasts made for only six months or a year ahead, it is often possible to defend them by reference to current conditions, leading indicators, anticipations data etc. Forecasts out beyond a year cannot rely on such information for their defence.

is possible to find one by going back a few years further. Between 1973 and 1974 GDP growth in the OECD area fell from 6.1 per cent to 0.9 per cent, by far the sharpest turnaround in the post war period. In 1974 all the major forecasting groups failed to predict the severity of the downturn. (The OECD forecast was 3-1/2 per cent).

This third point is the crucial criticism of economic forecasting. Economic forecasts, at least of real GDP growth, are usually quite good; they are near the mark in most years and over reasonable periods they outperform simple extrapolative methods. The problem is, that when something really large occurs, economic forecasts either fail to pick it or grossly underestimate its size.[5]

A better way of illustrating this is to look at some history. Between the first world war and the Great Depression there was a flourishing economic forecasting industry in the U.S.[6] Its failure to predict the latter event led to its demise. Forecasters that depended for revenue on the sale of

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5. The first of these points - that economic forecasts are better than simple extrapolation - has been made by Zarnowitz (1967, 1978), Mincer and Zarnowitz (1969), Christ (1975) and Shapiro and Garman (1981). The second point, namely that forecasts are worst when large changes are occurring, has been documented by Zarnowitz (1979) and Shapiro and Garman (1981).

6. By 1927 there were more than half a dozen commercial forecasting services with a national clientele. The academic world was also represented e.g. by the Harvard Economic Service and Irving Fisher who published an annual forecast in the American Economic Review. Systematic assessments of forecasting accuracy were also carried out. Some of these are described in Shapiro and Garman (1981).

their forecasts went out of business; others, such as those associated with banks, continued in spite of an equally poor performance.

In the post-war period there have also been a number of major failures by economic forecasters. The main ones were:

- the false prediction of a recession immediately after World War II;[7]
- the failure to predict the magnitude of the acceleration in inflation in the early seventies;
- the failure to predict the severity of the fall in output and employment in 1974;
- over recent years, the failure to predict the duration of the international recession (see above), and to predict the rise in interest rates (see below).

In summary, the legitimate criticism of the accuracy of economic forecasts is that they are only good at predicting the predictable. When the movements of economic variables are within the range of recently observed movements, forecasting accuracy can seem to be quite good. When movements are outside the range of recent experience, forecasts look poor. All the failures of forecasting listed above, except for the post-World War II recession, are examples of this tendency. It could be claimed that, as most years do not contain an extreme movement in an economic variable, economic forecasts are good most of the time. Unfortunately, users of economic forecasts have a disproportionate need to be alerted to the extreme movements.

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7. See Sapir (1949) and Zarnowitz (1978).

It is not much comfort to have been correctly told that GDP growth was going to rise from 2-1/2 per cent to 3-1/2 per cent, if you were not told that interest rates were going to rise to an all-time record.

(b) Some Australian results

This section looks at an interesting sub-set of Australian forecasts to illustrate some of the points made above; for reasons which will be made apparent later, it is not an assessment of the relative worth of different forecasters. The sub-set of forecasts is that collected each January over the last six years by Terry McCrann of The Age. This collection has covered over twenty forecasters in some years, twelve of whom have replied to all five of the completed years analysed in this paper. The calculations in this section are confined to this constant group of twelve forecasters and the five variables shown in diagram 1, namely, real GDP growth, the change in the CPI, the level of unemployment, the current account defict and the bond rate. The twelve forecasters include private forecasting companies, a university-affiliated economic institution, the economic departments of trading banks, other financial institutions and a public company. The forecasts made by the Treasury and published in Budget Statement No. 2 are not included in this list as they refer to financial years.[8]

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8. Pagan et. al (September 1982) point out that many private forecasters "seem to adjustment (their forecasts) towards those given in the Budget". This would suggest that the Treasury forecast would end up in the middle of the range of forecasts by January, even if it had not been moved. As all calculations in this section are based on ranges of forecasts, the omission of the Treasury forecast would not be likely to lead to major changes in the conclusions.

Diagram 1 shows the range of forecasts for each year for each variable, along with the outcome.[9] It was possible to compare the outcome with the range of forecasts for the five variables for five years. In these twenty-five observations the outcome was outside the range of forecasts on nine occasions or 36 per cent of the time. These are shown in Table 2.

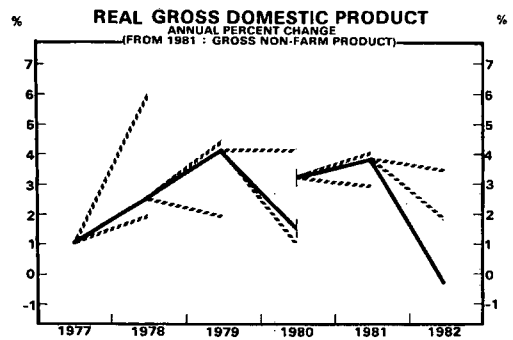
Table 2: Occasions on which outcome was outside the range of forecasts

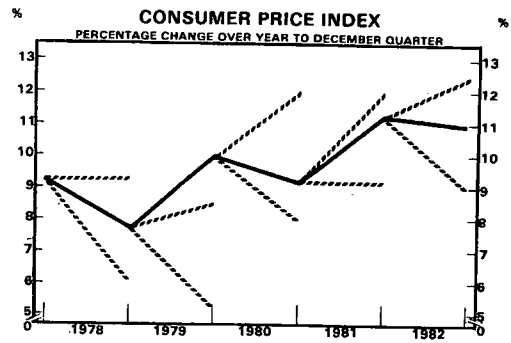
Variable	Year
GDP	1982
CPI	1979
Unemployment	1981
	1982
Current account	1978
	1981
Bond rate	1979
	1980
	1981

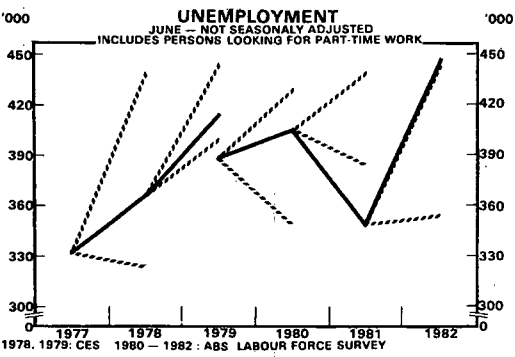
9. The outcomes used throughout this paper are the latest estimate available rather than the first estimate. Although it is possible to argue for either, the prevailing view is that "the main object of forecasting is to anticipate what will actually happen in the economy rather than what the data source agencies, on the basis of incomplete information, initially estimated had happened". McNees (1981b). Others have taken a different view. Suprisingly it makes little difference which estimate of the outcome is used for comparison. In fact some studies have found that forecasts have been closer to the final outcomes than to the preliminary ones.

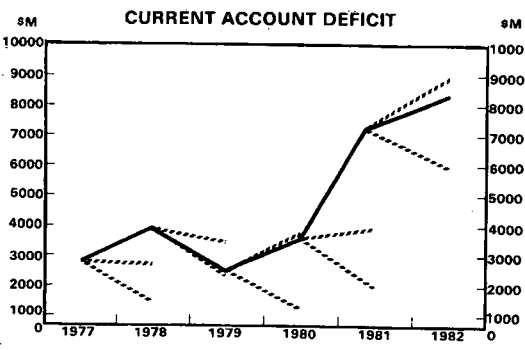
DIAGRAM 1

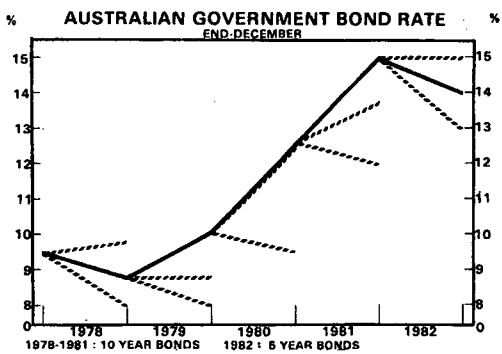
FORECASTS AND OUTCOMES AUSTRALIA











This is not a very impressive result, but it is, in a broad sense, consistent with the usual findings about the effectiveness of forecasting mentioned in the first section.

- The forecasts perform better than simple extrapolation. To test this proposition, another set of forecast ranges based on simple extrapolation were constructed. These effectively assumed that each variable followed a random process. The forecast ranges for each year were thus the outcome of the previous year plus or minus the average size of changes in the series. When this was calculated, the resulting forecast ranges failed in thirteen occasions out of twenty-five to include the actual outcome. Especially as the ranges were about one and a half times as large as those produced by the twelve forecasters, it is reasonable to conclude that they were inferior to the actual forecast ranges. (An appendix contains details of this extrapolation.)
- The forecasts are worst for the variable that showed the most extreme movement. For three years in a row all forecasters underestimated the bond rate. The bond rate was the only variable whose movements were outside the range of previous experience; the rise of 6.2 percentage points in a three year period was unprecedented. It is true that the number of unemployed and the dollar value of the current deficit were also at record levels. However, in relative terms, the movements in these variables were not exceptional.

. Somewhat surprisingly the forecast of the CPI was as good as that for GDP. The reason is that movements in the CPI were smaller than those for GDP over this period and so a basically extrapolative procedure for forecasting prices worked reasonably well. The coefficient of variation of GDP was about 50 per cent against 13 per cent for the CPI. An earlier draft of this paper covering the first four years' results was able to conclude that the forecasts of GDP were better than for the other variables considered, however the recession in 1982 altered that conclusion.[10] In short, GDP and unemployment experienced a very large shock within the evaluation period while prices did not.

II. IS IT POSSIBLE TO PICK GOOD FORECASTERS?

(a) The issues

Despite the rather chequered history of economic forecasting, there is a natural curiosity to know whether there is, perhaps, one forecaster who is consistently better than the others (or one who is consistently worse). The problem of

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10. Note that the specification of some of the forecast variables made it easier for the forecasters in 1982 than recent events might suggest. For example:

    . Unemployment had to be forecast for mid-year but the big shakeout did not occur until the second half of the year. Although the June outcome was slightly above the top of the forecast range, the end-year outcome was well above it;

    . The bond rate had to be forecast for the end of the year. By mid-year it had risen to an all-time high which was well above the top of the forecast range. It was not until December that the bond rate fell back into the forecast range.

assessing the relative accuracy of different forecasters is an extremely difficult one. So much so that the most experienced writer in this field - Zarnowitz - concluded that "the search for a consistently superior forecaster is about as promising as the search for the philosophers' stone".[11] The problems faced are both practical and conceptual. The main practical problems are that different forecasters may:

- use different definitions or measures of variables;
- forecast different periods - some use calendar years while others use financial. Some use end of quarter, while other use average of quarter;
- use different growth rates e.g. year-on-year, twelve months ended;
- be made at different times e.g. before the year being forecast, early in the year being forecast, half way through the year etc.;
- use different policy assumptions e.g. "no policy change" or "most likely policy outcome".

The above differences can cause a lot of difficulty especially if a large number of forecasters are being assessed. There is little that can be done to overcome these differences other than to avoid comparing the non-comparable. It is also wise to spell out the differences so that those wishing to make judgements are aware of the areas of non-comparability. An advantage of the constant group of twelve forecasters used in the present discussion is that these

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11. Zarnowitz (1978)

problems do not arise; they all forecast for the same period using the same definitions and types of growth rate and the forecasts are all made in late December/early January.

Another related practical problem, and one that is rarely overcome, is the need to find a long enough evaluation period. A relatively large number of observations is needed for purposes of statistical significance. More importantly, a period long enough to include a reasonable range of cyclical events is necessary before economic judgements can be made. It has already been pointed out that the five year period used in this paper can lead to uncharacteristic (and probably misleading) results such as the comparison between forecasts of prices and GDP. The same problem arises with comparing different forecasters; an evaluation period that includes a deep recession but not a boom will favour the habitual pessimist (and vice versa).

Even if these practical problems are overcome there are still conceptual difficulties. Indeed these are much more serious than are the practical ones. The main conceptual difficulties are:

- Forecasts may not be independent. Some forecasters are very serious about their job and can back up their numbers with strong arguments and a lot of background calculations. Others feel obliged to have a forecast but arrive at it by merely 'adding a point to, or subtracting a point from', one of the widely circulated serious forecasts. This factor, plus the natural risk-averting

strategy of seeking 'safety in numbers', gives rise to a tendency towards a bunching of forecasts around one or two market leaders.[12] The interdependence of various forecasters would not cause a problem if the other conceptual problems could be overcome. That is, if an effective means of assessing forecasts could be devised, then it should sort out the serious forecasters from the 'followers'. However, if there are defective assessment criteria, or a small number of observations, as is almost always the case, the forecasting prize could go to one of the "followers".

. There is no accepted criterion by which to judge forecasts. It is generally agreed that the criterion of minimising the difference between forecasts and outcomes, such as root mean square error, tells only part of the story. This is because it gives an advantage to the "play-safe" forecaster who may look good on this criterion even though he failed to pick any of the changes of direction in a cyclical series. Diagram 2(a) shows such a situation; forecaster B would be judged as the better forecaster over this six year period using the usual

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12. This bunching is the norm among published forecasts; for example Zarnowitz (1979) finds a higher correlation between different forecasts than between forecasts and outcomes. Among unpublished forecasts, it is not necessarily the case. In a recent interest rate forecasting competition run by the Australian Business Economists, only the winning forecast (and its forecaster) were made public. This anonymity, among other things, may explain the wide range of forecasts being put forward: between 13 and 21 per cent for the bill rate two weeks hence.

error minimisation rules. A better criterion is often thought to be the ability to pick turning points.[13] This certainly sounds fairer and is more in keeping with the needs of people who use economic forecasts. Unfortunately, it is extremely difficult, if not impossible, to apply. The main difficulties are:

1. A long run of years is needed to make a fair judgement. For example, in the five years shown in Table 1, GDP has only one turning point - the slowdown in 1980. If we want to have enough observations (i.e. turning points) to avoid the errors of small samples, we would need a very long run of years or decades.
2. It is hard to know what to define as a turning point. Business cycles do not show up as smoothly as sine curves. Monthly and quarterly data contain a lot of erratic movements and, in general, forecasters are not expected to be able to forecast the "noise" in the series. In principle, annual data are supposed to overcome this problem but they introduce further problems. For example
   (i) Year-on-year growth rates are very crude indicators of turning points. Diagram 2(b) shows a situation where a forecaster (A) who

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13. While several authors stress the need for analysis of turning points, Zarnowitz (1967)(1978), Christ (1975) and Su (1978), there is not a great deal of enthusiasm in their pleas. It is much more convenient to stick with error-minimisation as the criterion.

picked a slowdown (but one quarter too early) appears to be inferior to a forecaster (B) who failed to pick the slowdown at all. This is largely due to the distortions introduced by looking at year-on-year growth rates. The figures underlying this example are shown in the appendix. This effect is much more likely to occur (in the realistic case) where there is a lot of erratic quarterly fluctuation rather than in the smoother example shown in Diagram 2(b).

DIAGRAM 2(a)

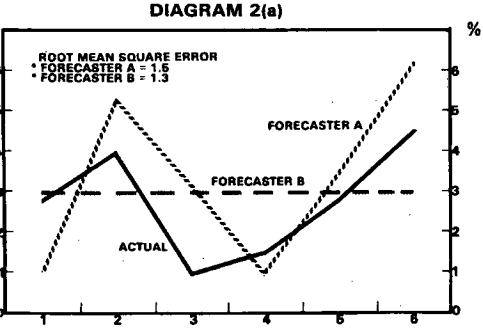
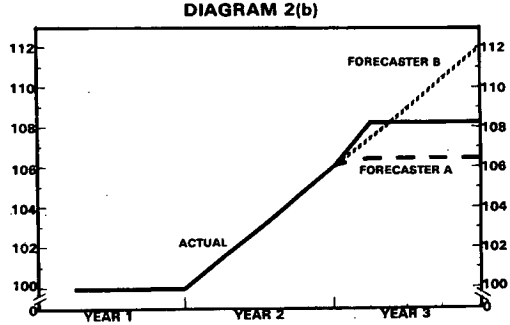


DIAGRAM 2(b)



(ii) It is difficult to decide what constitutes a turning point. If levels are used, there is only one downturn for GDP in the post-war period. It is common to use growth rates and so measure a downturn as a significant fall in the growth rate. But this still presents

problems - e.g. was the fall from 4.2 to 2.0 per cent in the growth of GDP in Australia between 1979 and 1980 a downturn? On the basis of GDP alone it would appear to be significant. On other criteria it was a relatively minor bump e.g. employment grew 2.9 per cent in 1980 (year-on-year) and the average unemployment rate was lower than the previous year.

(iii) The foregoing suggests that the recognition of turning points requires evidence from a variety of indicators. This means that a reference cycle has to be constructed in the manner of the NBER cycles before assessment can begin. Not only is this time consuming, it also introduces a host of arbitrary assumptions about series to be used, weights etc.

The consequence of the above difficulties is that most assessors of forecasts pay lip service to turning points and then go ahead and use error minimisation criteria,[14] often based on a very short sample, and in some unfortunate cases, one observation.

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14. An exception is Zarnowitz (1978). He uses correlation coefficients of rates of change in series to see "how well the predicted changes have tracked the actual changes over time". Two other alternatives are the Theil decomposition procedure, see Theil (1961), and simple regression between forecasts and outcomes. Although these techniques have much in their favour, they each yield at least three criteria by which to judge forecast accuracy. In the case of regression, the three criteria would be (a) the extent to which the constant term approached zero, (b) the extent to which the coefficient approached +1 (and was significant) and (c) the R^2.

(b) Some Australian Results

This section looks at characteristics of different forecasters and illustrates the difficulties of making judgements about their relative merits. In particular it attempts to address the issue of whether it is possible to identify a forecaster who consistently gets closer to the outcome than the others.

(i) On the basis or error minimisation there is little to choose between most of the forecasters. For example, for GDP, the RMSE of the average of the forecasts was 1.6 percentage points and only three forecasters were below this; the lowest having a RMSE of 1.4 percentage points.

(ii) On the basis of correlation coefficients there was more dispersion (this measure having the effect of magnifying differences). However, the bunching of forecasts still showed up in that eight of the twelve forecasts for GDP were more closely correlated with the mean forecast than with the outcome. This is in line with the usual findings.[15]

(iii) It is tempting to award points to the forecasts that did best on average, judged by both RMSE and correlation.

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15. There is a common view that the best forecast to use is the mean forecast. One expression of this is the widely read American forecasting newsletter produced by Eggert Economic Enterprises. Eggert subscribes to forty three commercial forecasting series, averages the forecasts received, then sells the resulting "consensus forecast" in their newsletter. The business seems to be flourishing and its consensus forecast is widely quoted.

Unfortunately, there is only a weak relationship between success as judged by each criterion. Diagram 3 illustrates this relationship by scatter diagrams of rankings by the two criteria for each variable. A high correlation between success by each criterion would show as a tight scatter along a 45^{0} line from the origin. This is not apparent for any of the variables; the only two for which the correlation is significantly different from zero are GDP and unemployment. In the case of the former, this is due to the three outlying observations (those that did badly by both criteria). If these three are disregarded, there is no correlation between the remaining nine (those from which the "best" forecaster would be selected).

(iv) Success in any one year does not increase the likelihood of success in the following year. In fact there is no correlation between performance in successive years. Table 3 shows rank correlation coefficients for each variable for each set of adjacent years. That is, the forecasters were ranked from one to twelve by the size of their RMSE for each variable for each year. Rank correlation coefficients were then calculated for adjacent years for each variable.[16] As can be seen from Table 3 the positive values are quite small, and

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16. A rank correlation coefficient of +1.0 would indicate the rankings were exactly the same and -1.0 that they were exactly reversed.

DIAGRAM 3

CORRELATION BETWEEN ALTERNATIVE CRITERIA

DIAGRAM 3(a)

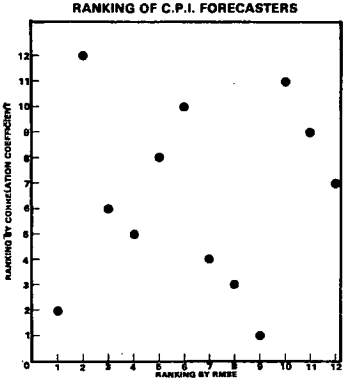


DIAGRAM 3(b)

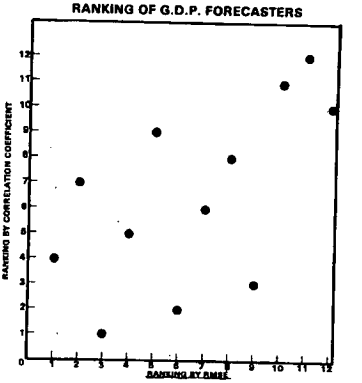


DIAGRAM 3(c)

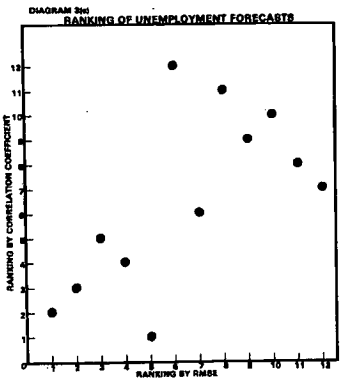


DIAGRAM 3(d)

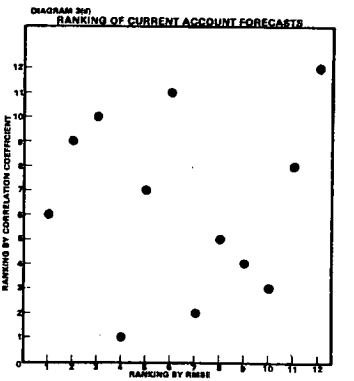
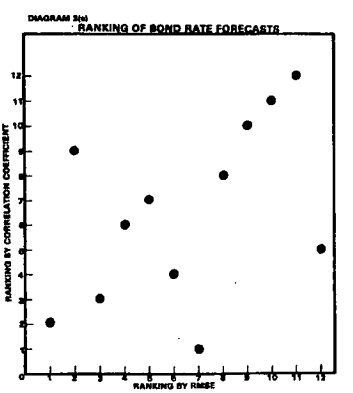


DIAGRAM 3(e)



would not pass the usual tests of statistical significance. The conclusion is that ranking by success in forecasting is distributed in a random fashion year by year.

Table 3: Rank Correlation Coefficients: Forecast Accuracy

	1978 to 1979	1979 to 1980	1980 to 1981	1981 to 1982
GDP growth	-0.22	0.06	-0.28	0.04
Inflation	0.03	0.17	0.10	-0.52
Unemployment	0.19	-0.43	0.38	0.21
Current Account	0.05	0.41	-0.01	0.03
Bond Rate	-0.31	0.21	0.22	0.37

Another way of looking at this question is to ask whether an evaluation of forecasts over the period 1978 to 1980 would have told you anything about performance in the following two years. The rank correlation coefficients shown below indicate that such an exercise would have been of little value.

GDP Growth	0.30	Current Account	-0.22
Inflation	-0.18	Bond Rate	0.29
Unemployment	0.01		

The foregoing should not be taken to suggest that no characteristics are systematic from year to year; some forecasters are usually optimistic and some pessimistic. However, since the outcome varies from being near the top of the range in some years, to being near the bottom in other years, the size of error among forecasters shows no systematic variation from year to year.

CONCLUDING REMARKS

The foregoing discussion has presented a sceptical view of the accuracy of economic forecasting and of the value of trying to assess different forecasters. What then is the practical relevance of these generally negative conclusions?

It is easiest to look first at the question of the assessment of forecasts. Here, it is probably true to say that assessments of different forecasters will not be able to tell very much. In particular, they will not be able to unearth a consistently superior forecaster. There is also a great danger of making pronouncements about forecasters on the basis of a small number of observations. Even when a warning is given about the dangers of generalising from one or a few observations, the public will often wish to, and writers of assessments will inadvertently encourage them to do so.[17]

Some assessments of forecasts are not aimed at distinguishing between good and bad forecasters, but between easy-to-forecast variables and hard-to-forecast variables. Once again, the choice of evaluation period can have an extremely important influence on the conclusions reached.[18] Even the addition of one year to the evaluation period can significantly alter the results as was shown in part I(b).

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17. e.g. Statements such as "the best forecasters were ..." creep into Pagan et. al. (1982).

18. Zarnowitz (1979) summarises his findings as "the accuracy and properties of forecasts depend heavily on the economic characteristics of the periods covered but only weakly and not systematically on the differences among the forecasters".

Another example where the addition of one year to the evaluation period alters the conclusion is in Smyth and Ash (1975). They concluded that OECD forecasts of GDP between 1967 II and 1973 II were inferior to a naive model and that there was no evidence of improvement vis-a-vis the naive model. The addition of 1974 to the evaluation period reverses both conclusions, even though in absolute terms the OECD forecast in that year was poor (see part 1(a)).

The second practical issue concerns the usefulness of making forecasts. The earlier part of this paper suggests that accurate forecasts will only be possible in the cases of some variables forecast for a short period ahead in uneventful years. In which case, the question arises of whether there is any point in making forecasts at all.

One answer is to say that forecasts are useful because of their conservatism and tendency to cluster around an accepted view. These apparent shortcomings of published forecasts enable them to crystallise the conventional wisdom about what is likely to happen. Whether they subsequently prove to be accurate or inaccurate, they at least tell something about what the majority is thinking and how they will probably act. They also provide an insurance policy for the decision-maker who is faced with great uncertainty. If a decision (e.g. an investment decision) turns out to have been unwise, the decision-maker can placate an angry chief executive or board by pointing out that it was taken on the basis of the best information available. Economic consultancy and commercial economic forecasting owe a lot of their demand to these considerations.

A more fundamental reason for forecasting is that there is no choice; forecasts have to be made. This is true in the case of businesses making investment, hiring, lending or borrowing decisions and also in the case of governments making decisions about economic policy. In the case of macroeconomic policy, it would be impossible to devise a budget, a means of financing it, a monetary projection etc. other than on the basis of economic forecasts. Thus, even those who recognise the severe limitations of economic forecasting have to engage in it, and have to be serious enough about it to avoid obvious errors and inconsistencies. There are, however, ways of reducing the amount of reliance that has to be placed on the accuracy of forecasts. One view favours the replacement of "fine tuning" by "fiscal or monetary rules". This has happened in a number of countries over the last decade or so. It should be noted that this does not eliminate the need for forecasts, it merely reduces it.

Whether it is due to scepticism about the reliability of economic forecasts or not, there seems to have been a reduction in demands for the publication of official government forecasts. This would seem to be logical. If all forecasts are going to be misleading at times, is there a point in having one forecast with an official imprimatur on it? Would government be held responsible for adverse consequences experienced by the private sector as a result of their acting on the basis of it? Would governments, the press or lobby groups start to regard the official forecast as a target?

These sorts of considerations have made many in government feel reluctant to publish comprehensive forecasts. While this reluctance is understandable, if taken too far it would deny the principle of public accountability. It is understandable that the public would wish to be assured that the government was not trying to pull the wool over their eyes when framing economic policies. It is reasonable, therefore, that the main assumptions (i.e. forecasts) on which such things as the budget and the monetary projection are based should be made public. To this extent there is a role for publication of official forecasts, but beyond that, the case is weaker.

DATA FOR DIAGRAMS

DIAGRAM 1

		Actual	Highest Forecast	Lowest Forecast
GDP Growth	1977	1.1		
	1978	2.6	6.0	2.0
	1979	4.2	4.5	2.0
	1980	1.6/3.3	4.2	1.1
	1981	3.9	4.1	3.0
	1982	-0.3	3.5	1.9
CPI	1977	9.3		
	1978	7.8	9.3	6.1
	1979	10.0	8.5	5.3
	1980	9.2	12.0	8.0
	1981	11.3	12.0	9.2
	1982	11.0	12.5	9.0
Unemployment	1977	333		
	1978	367	440	325
	1979	415/389	445	400
	1980	406	430	350
	1981	350	440	385
	1982	448	445	355
Current Account Deficit	1977	2820		
	1978	3960	2750	1500
	1979	2530	3500	2400
	1980	3640	3800	1300
	1981	7280	4000	2000
	1982	8390	9000	6000
Bond Rate	1977	9.50		
	1978	8.80	9.80	8.00
	1979	10.08	8.80	8.00
	1980	12.60	12.50	9.50
	1981	15.00	13.75	12.00
	1982	14.00	15.00	13.00

APPENDIX

EXTRAPOLATIVE FORECASTS

Extrapolative Range = 'No Change' ± Average Size of Changes in Past 5 Years

	Benchmark Range						Extrapolative Range/
GDP Growth	No Change	ASC	Upper (U)	Lower (L)	Actual (A)	U>A>L	Range of Forecasts
1978	2.4	2.1	4.5	0.3	2.6	Y	1.1
1979	1.5	1.4	2.9	0.1	4.2		1.1
1980	5.3	1.5	6.8	3.8	1.6		1.3
1981	3.3	1.8	5.1	1.5	3.9	Y	3.3
1982	3.9	1.5	5.4	2.4	-0.3		1.9
						Aver:	1.7
Inflation							
1978	13.1	3.9	17.0	9.2	7.8		2.4
1979	7.9	2.5	10.4	5.4	10.0	Y	1.6
1980	9.2	2.3	11.5	6.9	9.2	Y	1.5
1981	10.2	2.0	12.2	8.2	11.0	Y	1.7
1982	9.1	1.8	10.9	7.3	11.0		1.0
						Aver:	1.7
Unemployment							
1978	333	50	380	280	367	Y	0.9
1979	367	60	420	300	415	Y	2.7
1980	389	65	445	325	406	Y	1.9
1981	406	35	440	370	350		2.1
1982	350	30	380	320	448		0.7
						Aver:	1.7
Current account							
1978	2320	1090	3410	400	3960		2.4
1979	3070	1230	4300	1840	2530	Y	2.2
1980	2090	1110	3200	980	3640		0.9
1981	2380	1010	3390	1370	7280		1.0
1982	7220	1520	8740	5700	8390	Y	1.0
						Aver:	1.7
Bond rate							
1978	9.50	1.1	10.6	8.4	8.80	Y	1.0
1979	8.80	0.4	9.2	8.4	10.08		1.0
1980	10.08	0.8	10.9	9.3	12.60		1.4
1981	12.60	1.2	13.8	11.4	15.00		1.4
1982	15.00	1.6	16.6	13.4	14.00	Y	2.6
						Aver:	1.6

The 'no change' figures are based on the latest information available at the time the forecasts were compiled (i.e. September quarter for GDP and CPI, November for current account).

DIAGRAM 2(a)

	Actual	Forecaster (A)	Forecaster (B)
Year 1	2.8	1.0	3
Year 2	4.0	5.3	3
Year 3	1.0	3.2	3
Year 4	1.5	1.0	3
Year 5	2.8	3.5	3
Year 6	4.5	6.2	3
Root Mean Square Error		1.5	1.3
Mean Absolute Error		1.4	1.1

DIAGRAM 2(b)

		Actual	Forecaster (A)	Forecaster (B)
Year 1	March	100		
	June	100		
	Sept.	100		
	Dec.	100		
		100		
Year 2	March	101.5		
	June	103.0		
	Sept.	104.5		
	Dec.	106.0		
		103.8 (3.8%)		
Year 3	March	108.3	106.5	107.5
	June	108.3	106.5	109.0
	Sept.	108.3	106.5	110.5
	Dec.	108.3	106.5	112.0
		108.3 (4.3%)	106.5 (1.0%)	109.8 (5.7%)

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