

THE *QUARTERLY* *ECONOMIC* *COMMENTARY* FORECASTING RECORD 1994 TO 2004

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1. Introduction

A review of the *Quarterly Economic Commentary* (the '*Commentary*') forecasts produced by The Economic and Social Research Institute (ESRI) was last published in the Autumn 1995 *Commentary*. On that occasion, the forecasting record over the 1990 to 1994 period was reviewed. It was found that forecasts were generally quite accurate and unbiased, though a slightly pessimistic tendency was in evidence. On this occasion, the forecasts contained in the *Commentaries* relating to the 1994 to 2004 period are examined. At the core of this examination is a comparison of forecasts made in relation to the actual outturn. This analysis also seeks to identify patterns and biases in forecasts, and attempts to provide explanations for the measured divergences between forecasts and outturns.

2. Methodology

Each *Commentary* provides dozens of forecasts in relation to elements of the national accounts, public finances, prices, balance of payments and employment out to a maximum of two years into the future. Given that four *Commentaries* are issued every year, evaluating every forecast for every indicator relating to every *Commentary* would be unnecessarily costly in terms of time and effort, as well as being unduly cumbersome for the reader. Such a comprehensive study risks masking the most relevant results in terms of the quality of *Commentary* forecasts. For this reason, only a relatively small selection of *Commentary* forecasts is examined.

Three key economic indicators are examined. Those chosen were selected because of their suitability in portraying the state of the Irish economy, as well as being diverse enough to capture a broad perspective on the economic well being of the country. These are the real growth rate of Gross National Product (GNP), the rate of inflation and the unemployment rate.

In performing a review of a particular forecasting record, the danger exists that the reviewer has scope to skew the evaluation in order to create misleading perceptions about the forecasts' quality for reasons of personal or sectional interest. This scope stems from the fact that for any one year, and for any one indicator, numerous forecasts made at different stages exist. This is true of the *Commentary*, where for every indicator for a given year, approximately eight forecasts are available. In order to ensure an analysis that is systematic, impartial and readably brief, two *Commentaries* per year are examined.

The first to be considered is the *Commentary* in which the earliest forecasts for all three indicators for a particular year appear. This is normally the *Commentary* issued in the summer of the preceding year (the 'initial' forecast).¹

The second *Commentary* looked at is normally published in the spring of the year under review (the 'final' forecast).² There are two reasons why this *Commentary* is chosen. First, time has elapsed since the initial forecast has been made. New information that is more relevant to the forecast being made will have become available, providing a basis for forecast revisions if required. This opens up the possibility of significant differences existing between the initial and final forecast. Second, and more importantly, the 'Spring' forecast is the latest forecast not to be significantly contaminated by the release of official statistics relating to the period being forecast. For example, a forecast of GNP growth for 2004 made in autumn of that year will already incorporate preliminary GNP figures for the first half of the year provided by the Central Statistics Office (CSO). It is, therefore, as much a result as a forecast. Selecting forecasts published in the earliest *Commentary* in the year under review is an attempt to minimise this problem, while simultaneously allowing a chronologically advanced forecast to be examined.

In terms of an appropriate benchmark against which to evaluate forecasts, official statistics published by the CSO are assumed to be the best available measure of the actual outturn. GNP growth rates for 1994 to 2004 are taken from the *National Income and Expenditure* (NIE) report. The figure for the rate of inflation is calculated using the *Consumer Price Index* (CPI). Up until 1997, the unemployment rate is obtained from the *Labour Force Survey* (LFS). Thereafter, the *Quarterly National Household Survey* (QNHS) is used. The *Commentary's* forecasting record is then compared to that of other leading forecasting institutions, namely the Central Bank of Ireland and the Organisation for Economic Co-operation and Development (OECD).

¹ This is normally published as the Summer *Commentary*. However, a July *Commentary* was issued in 1997, a September *Commentary* appeared in 1996 and an August *Commentary* in 1999. Initial forecasts for 2001 and 2002 were published in the preceding March's *Commentary*. The initial forecasts for 2003 and 2004 appeared in the Spring 2002 and Spring 2003 *Commentaries* respectively.

² This is normally published as the Spring *Commentary*. A February *Commentary* appeared in 1996 and 1999, April *Commentaries* were released in 1997 and 1998, while March *Commentaries* were issued in 2000 and 2001.

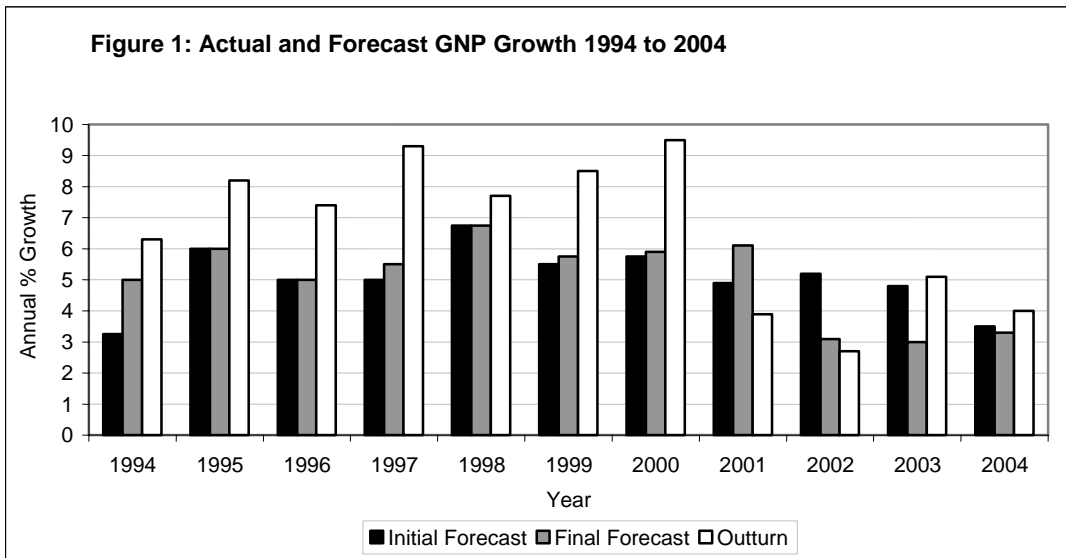
3. Results

3.1 GROSS NATIONAL PRODUCT

In terms of GNP growth forecasts, the most striking pattern is the underestimation of growth during the period between 1994 and 2000 (see Figure 1). Over this period, the initial forecast underestimated GNP growth by an average of just over 2.8 percentage points. The final forecasts were all at least as accurate as the initial ones. However, the final forecast error remained significant, averaging 2.4 percentage points.

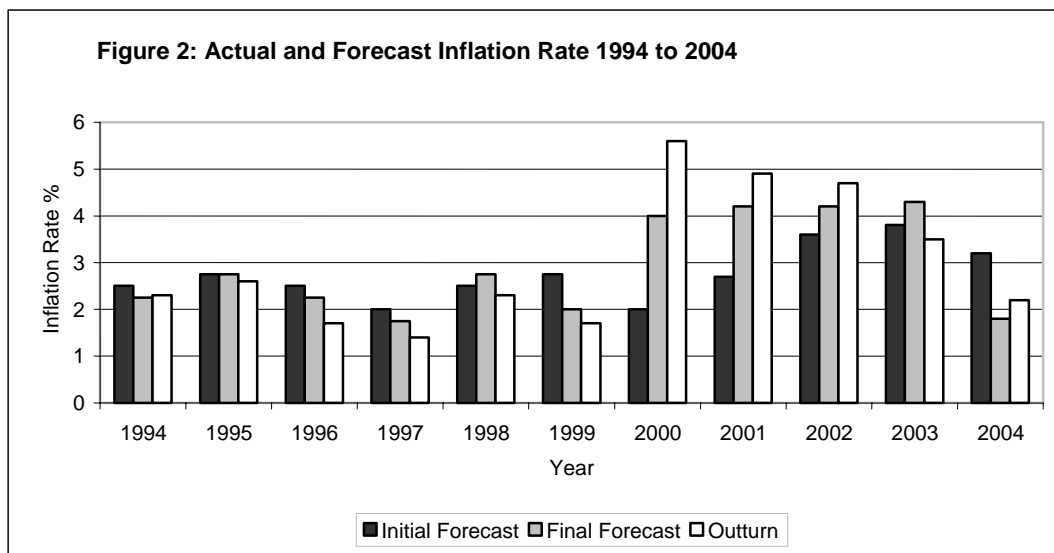
After 2000, forecasting accuracy was more volatile. Forecasts exceeded outturns in both 2001 and 2002, while the trend of underestimation was reverted to in 2003 and 2004. Final forecasts for 2001, 2003 and 2004 were actually less accurate than initial forecasts, with the final forecast for 2003 in particular showing a deterioration of 1.8 percentage points. The final forecast for 2002 was 2.1 percentage points more accurate than the initial forecast.

Reflecting these facts, the Mean Absolute Deviation (MAD) over the 1994 to 2004 period was 2.2 percentage points for the initial GNP growth forecasts, and 2.0 percentage points for the final forecasts. As regards forecasts made for the 2001 to 2004 period, relatively substantial revisions took place between the initial and final forecast of GNP growth. As a final note on GNP, forecasts for 2001 were particularly noteworthy for two reasons. First, forecasts of GNP growth made for that year overestimated the outturn, reversing the pattern of underestimation observed up until then. Also, 2001 was one of only two years under examination in which the final forecast of GNP growth was significantly less accurate than the initial one.



3.2 INFLATION

Inflation forecasts over the 1994 to 2004 period predicted the outturn relatively accurately (see Figure 2). The MAD was 1.0 percentage point for initial forecasts, and a smaller 0.5 percentage points for final forecasts. Generally, with the exceptions of 1998 and 2003, final forecasts were more accurate than initial ones. From 1994 to 1999, there was a slight tendency for forecasts to overestimate the inflation rate. In 2000 and 2001, forecasts substantially underestimated the rate of inflation. In 2000, the initial forecast underestimated the actual rate of inflation by 3.6 percentage points. The final forecast for 2000 was 2 percentage points closer to the outturn, but still 1.6 percentage points lower than the eventual inflation figure. The final forecast for 2000 represents the largest forecast revision to occur in the period under review. In 2001, the initial forecast was 2.2 percentage points lower than the actual outturn. The final forecast was a sizeable 1.5 percentage point upward revision on this, but remained lower than the outturn by 0.7 percentage points. This pattern is in common with GNP forecasts discussed above, where substantial forecast revisions took place during the early part of this decade compared with during the 1990s. In 2003, forecasts again exceeded the eventual rate of inflation for the first time since the 1990s.

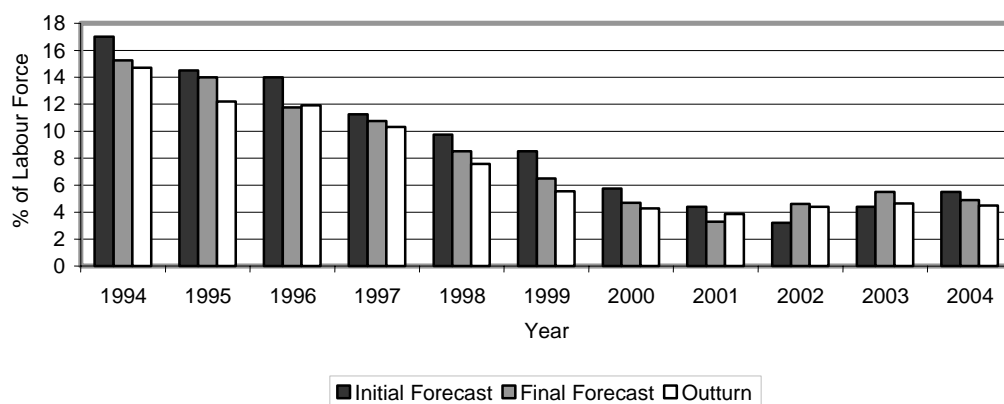


3.3 UNEMPLOYMENT

The most notable characteristic regarding forecasts of the unemployment rate over this period is the tendency for forecasts to overestimate the measured outturn (see Figure 3). This is particularly true of the 1994 to 2000 period, when the initial forecast was usually about 2 percentage points higher than the published unemployment figure. The *Commentary* appears to have been relatively successful in terms of identifying the nature of the decline in the rate of unemployment from 1994 to 2001, as movements in forecasts were roughly in tandem with changes in the actual rate over this time

frame. On only one occasion, in 2003, was the final forecast less accurate than the initial one. Between 1994 and 2004, the MAD of initial unemployment forecasts was 1.6 percentage points. The corresponding figure for final forecasts was 0.7 percentage points.

Figure 3: Actual and Forecast Unemployment Rate 1994 to 2004



3.4 COMPARISON WITH OTHER FORECASTERS

In Tables 1, 2 and 3, the Spring *Commentary*'s forecasts are compared with the forecasts of the Central Bank of Ireland in its Spring *Quarterly Bulletin*. The Spring forecast was also compared with forecasts contained in the Organisation for Economic Co-operation and Development (OECD) June *Economic Outlook*. It is important to note that forecasts from different institutes are not directly comparable as they were not all formulated at the exact same time of year.

Table 1: GNP Growth Rate Forecast Comparisons³

Year	ESRI	Central Bank	OECD	Outturn (CSO)
1994	5.0	4.0	3.4	6.3
1995	6.0	5.5	4.5	8.2
1996	5.0	5.25	5.0	7.4
1997	5.5	5.5	5.0	9.3
1998	6.75	6.5	6.3	7.7
1999	5.75	6.5	6.4	8.5
2000	5.9	8.25	6.1	9.5
2001	6.1	7.0	7.0	3.9
2002	3.1	3.0	6.4	2.7
2003	3.0	1.75	5.1	5.1
2004	3.3	3.25	4.2	4.0

³ For years 1994, 1995, 1996, 1997 and 2004, the OECD did not produce GNP forecasts. For those years, the OECD's GDP forecast appears in Table 1 instead.

Table 2: Inflation Rate Forecast Comparisons

Year	ESRI	Central Bank	OECD	Outturn (CSO)
1994	2.25	2.7	3.1	2.3
1995	2.75	2.5	2.5	2.6
1996	2.25	2.5	3.0	1.7
1997	1.75	2.3	2.4	1.4
1998	2.75	2.8	2.7	2.3
1999	2.0	1.5	3.3	1.7
2000	4.0	4.0	2.8	5.6
2001	4.2	4.5	3.8	4.9
2002	4.2	4.3	3.8	4.7
2003	4.3	3.8	3.1	3.5
2004	1.8	2.0	3.2	2.2

Table 3: Unemployment Rate Forecast Comparisons

Year	ESRI	Central Bank	OECD	Outturn (CSO)
1994	15.25	15.25	20.0	14.7
1995	14.0	13.75	15.4	12.2
1996	11.75	11.75	13.6	11.9
1997	10.75	11.5	12.2	10.3
1998	8.5	9.5	10.5	7.6
1999	6.5	6.5	8.2	5.6
2000	4.7	4.7	5.9	4.3
2001	3.3	3.7	3.3	3.9
2002	4.6	4.6	3.9	4.4
2003	5.5	5.8	4.9	4.7
2004	4.9	5.0	5.2	4.5

4. Explaining the *Commentary's* Forecasting Record

Understanding how the *Commentary's* forecasts are prepared is the first step on the road to developing an explanation of its forecasting record. The *Commentary's* forecasts are short-term ones, in that a horizon of less than two years is at play. Short-term economic fluctuations are more susceptible to unpredictable factors and tend to be less amenable to formal statistical and econometric modelling. This is partly due to the fact that the short-term course of the economy is dictated more by demand side than supply side factors. The demand side, in turn, depends to a large degree upon intangible determinants such as consumers' and investors' expectations and confidence, which are quite abstract in terms of their measurability.

Given this situation, quantitative forecasting methods are drawn upon in the formulation of *Commentary* forecasts, but judgement based, qualitative forecasting techniques are also invoked. These techniques draw heavily on the mix of published data and a wider spectrum of other relevant information. The consensus as regards the international environment, and the likely trajectory of interest rates and exchange rates is especially important in framing forecasts for Ireland given the open nature of the economy.

One very significant factor affecting the forecasting environment since 1997 has been the increased availability of CSO data relating to the Irish economy. Since that year, more economic series have been published and existing series have been published more frequently. Prior to 1997, the CPI was compiled once every quarter but now appears on a monthly basis. The annual *Labour Force Survey* has been replaced by the *Quarterly National Household Survey*, while quarterly GNP figures have been available since 1997, as opposed to annually which was the case prior to then. This has provided the forecasting community with more information to work with. This is important because it allows a greater understanding of short-term economic dynamics to be garnered, and allows critical points in the economic cycle to be identified in a more timely fashion.

Returning to the forecasts themselves, in terms of the GNP growth, the repeated underestimation over the 1994 to 2000 period is notable. The fact that early outturns substantially exceeding these rates failed to translate into significant upward revisions in growth forecasts suggests that the *Commentary* was rather cautious about the potential for such large rates of growth to be sustained.

A turning point in the economic cycle was reached in 2001, characterised by a rapid deceleration of GNP growth and an increase in the rate of unemployment. The forecasts in the *Commentary* during this period highlights the dangers posed to forecasters by the incidence of turning points in the economic cycle and their often sudden and unpredictable occurrence. The *Commentary's* initial forecast for 2001 was too high, and its final forecast for that year was even higher. The *Commentary* failed to anticipate the severity and duration of this deceleration, with both forecasts for 2002 and 2003 being too optimistic, but the fact that final forecasts were reduced significantly suggests that the *Commentary* eventually incorporated the extent of the slowdown.

Another important issue attaching to GNP forecasts is the incidence of revisions to the official national accounts. National accounts data are revised on numerous occasions after the publication of preliminary figures, and final results may not be arrived at until several years afterwards. The resulting distortions and opacities have obvious negative consequences for the forecaster. This problem was demonstrated most dramatically in 2002, when initial NIE accounts showed GDP growth of 6.9 per cent and GNP growth of only 0.1 per cent for that year. Latest figures for 2002 now suggest growth of 6.1 per cent and 2.7 per cent respectively in the two measures. A flavour of the type of revision which can occur is given in Table 4.

Table 4: National Income and Expenditure (NIE) GDP Growth Rates

NIE Edition	Estimated GDP Volume Growth Rate for Year:								
	1988	1989	1990	1991	1992	1993	1994	1995	1996
1990	4.5	6.4	7.1						
1991	4.9	6.5	8.3	2.5					
1992	4.2	6.5	9.1	2.6	4.9				
1993	4.3	7.4	8.6	2.9	5.0	4.0			
1994	4.3	6.1	7.8	2.2	3.9	3.1	6.7		
1995				2.1	4.0	3.1	6.5	10.3	
1996				1.9	3.9	3.1	7.0	10.4	7.7
1997					4.2	3.1	7.3	11.1	7.4

One of the reasons why the *Commentary's* forecasting record on inflation was so commendable over the 1994 to 1999 period is because this was a benign forecasting environment characterised by low and stable inflation. The sudden upsurge in the inflation rate in 2000 was not immediately anticipated, with the initial forecast for that year proving far too low. The *Commentary* appears to have identified some but not all of this acceleration in producing its final forecast, and succeeded in revising its prediction significantly upwards, even though this forecast was still too low.

The tendency of the *Commentary* to overestimate the unemployment rate during the 1990s is in line with the cautious pessimism exhibited during that period, as manifested in its GNP growth forecasts.

5. Conclusion

In judging the *Commentary's* forecasting record, it is generally true to say that forecasts erred too much on the side of caution during the 1990s, and were a little too optimistic thereafter. Another interesting aspect of *Commentary* forecasting behaviour is the fact that revisions during the 1990s tended to be minor, while some of those occurring more recently have been sizeable. One explanation is that a more volatile forecasting environment has prevailed in recent times, both in terms of macroeconomic circumstances and wider geopolitical factors. Specifically, these include the 'Dot Com' bubble's collapse, the US recession, the outbreak of Foot and Mouth disease, the September 2001 terrorist attacks on the United States and the subsequent conflicts in Afghanistan and Iraq.