

APPENDIX 2: FORECASTING

RECORD OF THE *MEDIUM-TERM*

REVIEW 1986 TO 2001

A2.1 Track Record

There have been eight *Medium-Term Reviews* (MTRs) published over the period 1986 to 2001, a timeframe that has witnessed extraordinary changes in both the structure and macroeconomic performance of the Irish economy. As documented in this *Review*, the Irish economy has undergone a transition over the last two decades that has involved exceptionally high rates of output growth by international standards. As a consequence there is a significant potential for error in forecasting the main indicators of economic performance.

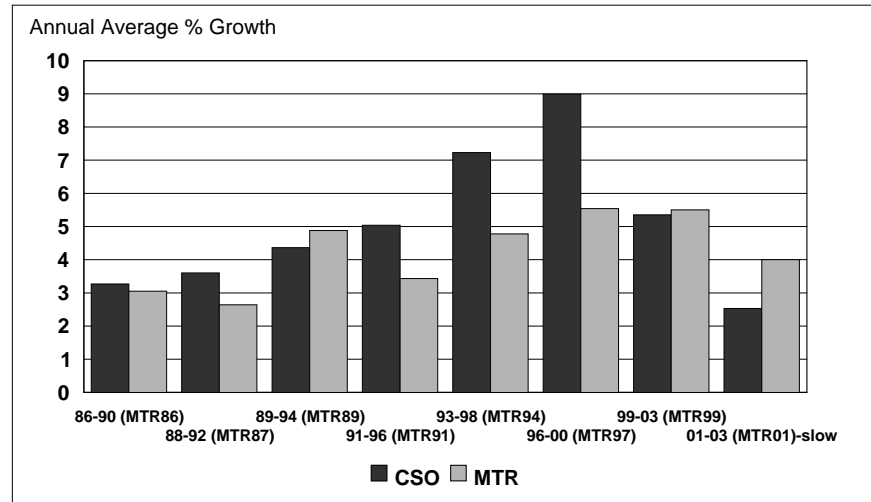
The last MTR was released in September 2001. The detailed analysis in MTR01 was undertaken before the appalling attacks on the USA on September 11th of that year, but because of the uncertainty that already existed two scenarios were considered: a relatively benign scenario, the *Benchmark*, and an alternative *Slowdown* scenario. Given the exceptionally uncertain environment created by the events of September 11th, the *Benchmark* scenario was acknowledged to be too benign while the more pessimistic *Slowdown* scenario was explicitly viewed to be more likely to reflect reality. For the purpose of comparison with actual outturns, and with previous MTRs, in the analysis in this Appendix we use the forecasts contained in the *Slowdown* scenario from MTR01.

There has been a tendency in the MTRs to underestimate output growth in terms of Gross National Product measured in volume terms. The comparison between actual real GNP growth rates and their MTR forecasts is illustrated in Figure A2.1. Most MTRs, with the exceptions of the MTR89 and MTR01, have been pessimistic on the actual growth of real GNP. The MTR89 failed to predict the slowdown in output growth in 1991-93 that occurred throughout the EU as a result of the interest rate rises which followed German reunification. Likewise the forecast in MTR01 was too optimistic on real GNP growth, given the international slowdown that has emerged over the last two years. The predicted average real GNP growth of 4 per cent between 2001 and 2003 is above the current forecast of average growth of 2.5 per cent for this period.¹ The gap between outturn and forecast grew from 1.6 percentage points in the MTR91 to 2.5 percentage points in the MTR94, peaking at just under 3.5 percentage points in the MTR97 as the boom took hold and was roughly on target in MTR99. The gap of 1.5 percentage points for the last MTR is broadly in line with the average absolute error of previous MTRs of 1.4 percentage points.

The MTR forecasts of employment growth, and the contrast with actual outturns, are set out in Figure A2.2. The pattern shows that, without exception, past *Reviews* have underestimated employment growth. The rate of employment growth at the start of the 1990s had been rather low, in what was referred to as a “jobless growth” era, but this gave way to exceptionally high rates of growth for the remainder of the decade. As a consequence, the MTR89 came closest to predicting actual employment growth, with an error

¹ The “outturn” data for 2002 and 2003 in this Appendix are based on the latest estimates and forecasts contained in the *Quarterly Economic Commentary*, Summer 2003.

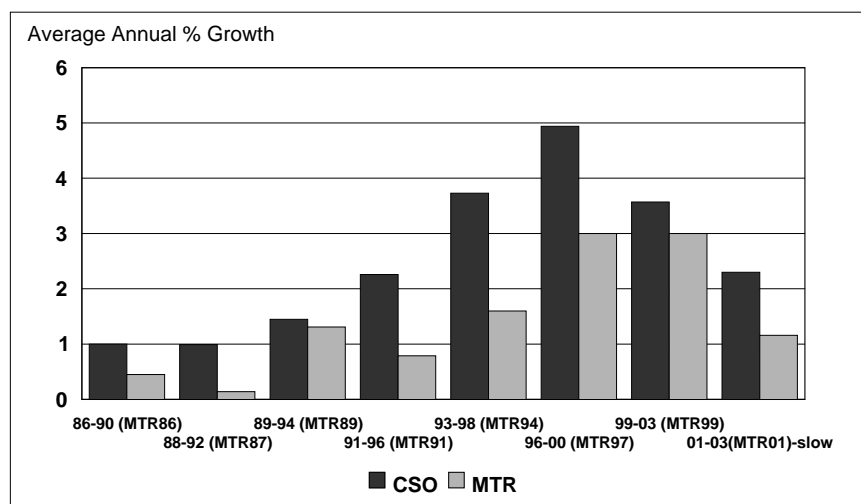
Figure A2.1: MTR Growth Forecasts vs. Outturn



of just 0.14 percentage points over the forecast period from 1988 to 1994. The average difference for the previous eight *Reviews* is 1.1 percentage points, although the MTR94 was more than 2 percentage points below the actual outturn. *Review* forecasts gradually became more accurate with MTR99 underestimating employment growth by just 0.6 percentage points. Employment growth in 2001-03 is currently expected to be considerably higher than that forecast in MTR01 by about 1 percentage point.

Forecasts of the unemployment rate in the *Reviews* have also tended to be higher than the outturns, as set out in Table A2.1. The exception was the MTR89, when the actual unemployment rate was underestimated by an average of 1.7 percentage points over the forecast horizon. The average absolute error has been about 1.5 percentage points for the last eight *Reviews*. The largest gap in the unemployment forecast occurred in the MTR88 when the error was 3.3 percentage points. The MTR97 and MTR99 both forecast very sharp decreases in the unemployment rate, yet the actual unemployment rate fell by even more. The forecast gap between these two MTRs narrowed from 1 percentage point to just 0.4 percentage points. The high margin of error in forecasting unemployment rates reflects the difficulties involved in forecasting migration flows. Relative to the size of the population, migration flows of the magnitudes experienced in recent years make it difficult to forecast the unemployment rate of an economy like Ireland with such mobile labour. The unemployment rate in Table A2.1 is measured using Principal Economic Status (PES) definitions. The MTR01 forecast the unemployment rate to be 7.1 per cent over the period 2001-2003, while the current expectation is that it will be 6.4 per cent, implying a gap of 0.7 percentage points, which is significantly lower than average absolute error in previous *Reviews*.

Rather than focusing on the accuracy of period averages, Table A2.2 outlines how individual year growth forecasts have performed against outturns. This can shed light on how forecasts have tracked “turning points” in the economic cycle. The evidence is quite mixed. The currency crisis of 1992 had negative implications for growth, and was not foreseen in MTR91. As a result, GNP growth was overestimated for 1992 and 1993. However, the subsequent upturn in GNP growth was forecast in each of the successive *Reviews*, although the actual strength of this growth was underestimated. And while the MTR01 underestimated the real GNP growth for 2000 and overestimated the following three years, it tracked the turning point in the economy successfully.

Figure A2.2: MTR Employment Growth Forecasts vs. Outturn**Table A2.1: Unemployment Rate (PES): Forecast vs. Outturn**

Period	MTR Forecast	Actual Outturn	Forecast Error
1986-1990	17.9	16.1	1.7
1988-1992	18.7	15.4	3.3
1989-1994	13.8	15.4	-1.7
1991-1996	15.9	15.0	0.9
1993-1998	15.7	13.3	2.4
1996-2000	10.7	9.7	1.0
1999-2003	7.1	6.7	0.4
2001-2003-slow	7.2	6.4	0.8

Given the nature of the uncertainty associated with such a forecasting exercise, a number of scenarios around the central forecast are undertaken in this *Review* to give an indication of the possible margin of error in our medium-term forecast.

Table A2.2: Comparison of Forecasts for GNP Growth Rate

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
MTR1986	2.5	3.3	3.5	3.0	3.0													
MTR1987			-0.4	3.0	3.3	3.7	3.6											
MTR1989				4.0	7.1	5.6	4.6	4.8	3.2									
MTR1991						2.0	3.7	4.3	3.3	3.6	3.7							
MTR1994								2.4	4.3	6.9	5.7	4.6	4.8	4.7	4.5			
MTR1997											6.4	5.7	5.9	5.3	4.5	3.7		
MTR1999													7.9	6.3	5.8	5.5		
MTR2001 - slow															9.9	6.0	1.8	4.2
Actual*	-0.2	3.3	1.5	5.0	6.9	2.3	2.3	3.4	6.3	8.3	7.8	9.5	8.2	8.8	10.7	4.6	0.6	2.4

* GNP growth rates: There is a discontinuity in 1991 due to methodological revisions.