

# QUARTERLY ECONOMIC COMMENTARY

Autumn 2008

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*The forecasts in this Commentary are based  
on data available by end-September 2008*

## **Special Article**

**An Analysis of Revisions to Growth Rates in the  
Irish Quarterly National Accounts**

by

Patrick Quill

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The *Commentary* and Article contained within have been accepted for publication by the Institute, which is not responsible for either the content or the views expressed. Draft completed October 2008.

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As part of the remit of the *Quarterly Economic Commentary*, articles on various aspects of the Irish economy and Irish economic policy are regularly published along with the forecasts and commentary. Authors are invited to submit papers for consideration to either of the *QEC*'s co-editors, Alan Barrett and Ide Kearney at: ESRI, Whitaker Square, Sir John Rogerson's Quay, Dublin 2 (e-mail [Alan.Barrett@esri.ie](mailto:Alan.Barrett@esri.ie) or [I.Kearney@planet.nl](mailto:I.Kearney@planet.nl)). The following guidelines should be followed:

All articles should be up-to-date and policy-oriented. The content should involve the application of economic theory, data analysis or the application of lessons from the international literature. Review articles are also welcome where lessons for policy are explicitly addressed. Articles should normally comprise 4-10,000 words, excluding tables. All articles will be anonymously refereed by members of the editorial board or by an external referee chosen by the editors. The editors may also, where appropriate, seek the comments of policy experts outside of the academic community.

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Alan Barrett, Ide Kearney, Jean Goggin, Martin O'Brien

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Patrick Quill

# SUMMARY TABLE

	2006	2007	2008	2009
<b>OUTPUT</b>				
(Real Annual Growth %)				
Private Consumer Expenditure	7.1	6.3	-0.5	0.5
Public Net Current Expenditure	4.8	6.0	4.0	-1.0
Investment	4.0	1.2	-19.8	-19.1
Exports	5.7	6.8	2.9	2.9
Imports	6.3	4.1	-1.7	-1.2
Gross Domestic Product (GDP)	5.7	6.0	-1.3	-0.7
Gross National Product (GNP)	6.3	4.1	-1.3	-0.7
GNP per capita (constant prices)	3.7	1.8	-3.1	-0.9
<b>PRICES</b>				
(Annual Growth %)				
Harmonised Index of Consumer Prices (HICP)	2.7	2.8	3.3	2.4
Consumer Price Index (CPI)	4.0	4.9	4.5	2.0
Wage Growth	4.9	4.8	3.5	2.5
<b>LABOUR MARKET</b>				
Employment Levels (ILO basis (000s))	2,044	2,117	2,103	2,056
Unemployment Levels (ILO basis (000s))	95	100	137	178
Unemployment Rate (as % of Labour Force)	4.4	4.5	6.1	8.0
<b>PUBLIC FINANCE</b>				
Exchequer Balance (€m)	2,264	-1,619	-12,064	-12,722
General Government Balance (€m)	5,214	555	-10,413	-10,019
General Government Balance (% of GDP)	2.9	0.3	-5.5	-5.4
General Government Debt (% of GDP)	24.7	24.8	31.5	38.8
<b>EXTERNAL TRADE</b>				
Balance of Payments Current Account (€m)	6,298.0	-10,303.0	-7,426.6	-3,885.8
Current Account (% of GNP)	-4.1	-6.4	-4.7	-2.5
<b>EXCHANGE AND INTEREST RATES (end of year)</b>				
US\$/€ Exchange Rate	1.32	1.43	1.50	1.50
STG£/€ Exchange Rate	0.67	0.70	0.80	0.80
Main ECB Interest Rate	3.50	4.00	4.00	3.25



# SUMMARY

This *Commentary* is being prepared at a time when the world's financial markets are in a state of unprecedented turmoil. The most recent events represent a serious escalation of the crisis. The failure of the US Congress to pass the Bush Administration's first bail-out plan dominated the financial landscape last week, along with bail-outs such as those of Fortis in the Netherlands and Hypo Real Estate in Germany and the nationalisation of Bradford and Bingley in the UK. While the passing of the second Bush bail-out plan last Friday is a welcome development in terms of halting the slide towards chaos, the international situation still remains critical. The Government here has moved to restore confidence to the Irish financial system through its guarantees of all deposits and borrowings of six financial institutions. Other economic news within Ireland which has impacted upon our analysis includes poor third quarter Exchequer returns and an alarming rise in the numbers on the Live Register.

Given this background, it is unsurprising that the forecasts in this *Commentary* contain substantial downward revisions to our previous forecasts. It is also unsurprising that we need to emphasise the uncertainty surrounding the forecasts and the possibility that further downward revisions may be applied.

We now expect GNP to contract by 1.3 per cent in 2008, down from our Summer forecast of a 0.4 per cent contraction. However, it is with regard to 2009 that we have introduced a more severe downward revision. We now expect real GNP to contract by 0.7 per cent next year.

Our forecast for a recession in 2008 is still largely the result of the housing downturn. This is reflected in our forecast for a contraction in investment of 19.8 per cent this year. However, a fall in the volume of consumption is also forecast. For 2009, a downturn in commercial building is expected, along with a fall in the Government's consumption of goods and services. Weak international conditions in both 2008 and 2009 leave little scope for external demand to fill the gap left by falling domestic demand.

Based on figures from the Department of Finance on October 2, it appears that the General Government Deficit will be 5.5 per cent this year. Forecasting the public finance situation for 2009 is difficult as any guidance provided, for example, in Budget 2008 is now largely irrelevant. Our analysis shows that even in a situation with voted current spending rising by only 0.6 per cent, voted capital spending falling by 13.5 per cent and extra revenue being achieved through the non-indexation of tax bands and allowances, the Gross Government Deficit (GGD) would just be stabilised at the 2008 level.

Employment is expected to fall in 2008 by 14,000 and by 47,000 in 2009. The rate of unemployment is expected to average 6.1 per cent in 2008 and to jump further in 2009, averaging 8 per cent. The net migratory outflow in 2009 is now expected to be 30,000.

With regard to inflation, the global downturn is expected to result in an easing in the demand for oil and hence in price moderation. The increased likelihood of interest rate cuts will also be positive for CPI inflation. Based on the assumption that ECB interest rates will be 3.25 by the end of 2009, we expect the CPI to average 4.5 per cent in 2008 before falling to 2 per cent in 2009.

In our *General Assessment*, we reflect on the policy choices available to Government in the current climate. We argue that the Government should aim to stabilise the General Government Deficit at 5.5 per cent of GDP in Budget 2009. This deficit level will imply that the Budget will be among the most deflationary budgets of the last quarter century. Ideally, it would have been preferable for the Government to avoid adding to the downturn through a fiscal contraction. However, given the poor state of the public finances and the uncertainties surrounding the prospects for the economy, we think that the 5.5 per cent level is prudent.

We also discuss how an increasing tax share may be unavoidable in the medium term, if desired levels of public services are to be maintained.

## NATIONAL ACCOUNTS 2007 (Estimate)

### A: Expenditure on Gross National Product

	2006 €m	2007 Estimate €m	Change in 2007				
			€m		%		
			Value	Volume	Value	Price	Volume
Private Consumer Expenditure	83,688	91,582	7,894	5,287	9.4	2.9	6.3
Public Net Current Expenditure	24,314	26,766	2,452	1,447	10.1	3.9	6.0
Gross Fixed Capital Formation	47,632	50,140	2,507	571	5.3	4.0	1.2
Exports of Goods and Services (X)	141,663	151,390	9,727	9,610	6.9	0.1	6.8
Physical Changes in Stocks	1,342	-95	-1,437	-1,453			
<b>Final Demand</b>	<b>298,640</b>	<b>319,782</b>	<b>21,142</b>	<b>15,462</b>	<b>7.1</b>	<b>1.8</b>	<b>5.2</b>
less:							
Imports of Goods and Services (M)	122,627	131,017	8,390	4,984	6.8	2.7	4.1
less:							
Statistical Discrepancy	-1,274	-1,838	-564	-207			
<b>GDP at Market Prices</b>	<b>177,286</b>	<b>190,603</b>	<b>13,316</b>	<b>10,685</b>	<b>7.5</b>	<b>1.4</b>	<b>6.0</b>
less:							
Net Factor Payments (F)	-24,830	-29,393	-4,563	-4,384	18.4	0.6	17.7
<b>GNP at Market Prices</b>	<b>152,456</b>	<b>161,210</b>	<b>8,754</b>	<b>6,300</b>	<b>5.7</b>	<b>1.5</b>	<b>4.1</b>

### B: Gross National Product by Origin

	2006 €m	2007 Estimate €m	Change in 2007	
			€m	%
Agriculture, Forestry, Fishing	3,084	3,456	372	12.1
Non-Agricultural: Wages, etc.	71,900	78,211	6,310	8.8
Other:	63,482	70,087	6,605	10.4
Adjustments: Stock Appreciation	157	-362		
Statistical Discrepancy	-1,274	-1,838		
<b>Net Domestic Product</b>	<b>137,351</b>	<b>149,555</b>	<b>12,204</b>	<b>8.9</b>
less:				
Net Factor Payments	-24,830	-29,393	-4,563	18.4
<b>National Income</b>	<b>112,520</b>	<b>120,162</b>	<b>7,642</b>	<b>6.8</b>
Depreciation	17,549	18,014	465	2.7
<b>GNP at Factor Cost</b>	<b>130,069</b>	<b>138,176</b>	<b>8,107</b>	<b>6.2</b>
Taxes less Subsidies	22,387	23,034	647	2.9
<b>GNP at Market Prices</b>	<b>152,456</b>	<b>161,210</b>	<b>8,754</b>	<b>5.7</b>

### C: Balance of Payments on Current Account

	2006 €m	2007 Estimate €m	Change in 2007	
			€m	%
Exports (X) less Imports (M)	19,036	20,373	1,337	
Net Factor Payments (F)	-24,830	-29,393	-4,563	
Net Transfers	-504	-1,283	-779	
<b>Balance on Current Account</b>	<b>-6,298</b>	<b>-10,303</b>	<b>-4,005</b>	
as % of GNP	-4.1	-6.4	-2.3	

### D: GNDI and Terms of Trade

	2006 €m	2007 Estimate €m	2007 Volume Change	
			€m	%
Terms of Trade Loss or Gain		-3,819		
GNP Adjusted for Terms of Trade	152,456	154,937	2,481	1.6
GNDI*	151,952	153,688	1,735	1.1
National Resources**	152,175	153,688	1,512	1.0

\* GNDI is GDP adjusted for terms of trade and net international transfers.

\*\* GNDI including capital transfers.

## FORECAST NATIONAL ACCOUNTS 2008

### A: Expenditure on Gross National Product

	2007 Estimate €m	2008 Forecast €m	Change in 2008				
			€m		%		
			Value	Volume	Value	Price	Volume
Private Consumer Expenditure	91,582	94,040	2,458	-458	2.7	3.2	-0.5
Public Net Current Expenditure	26,766	29,175	2,409	1,071	9.0	4.8	4.0
Gross Fixed Capital Formation	50,140	39,395	-10,745	-9,915	-21.4	-2.1	-19.8
Exports of Goods and Services (X)	151,390	155,643	4,253	4,382	2.8	-0.1	2.9
Physical Changes in Stocks	-95	-76	19	0			
<b>Final Demand</b>	<b>319,782</b>	<b>318,176</b>	<b>-1,606</b>	<b>-4,628</b>	<b>-0.5</b>	<b>1.0</b>	<b>-1.4</b>
less:							
Imports of Goods and Services (M)	131,017	131,913	896	-2,174	0.7	2.4	-1.7
less:							
Statistical Discrepancy	-1,838	-1,838	0	8			
<b>GDP at Market Prices</b>	<b>190,603</b>	<b>188,101</b>	<b>-2,502</b>	<b>-2,462</b>	<b>-1.3</b>	<b>0.0</b>	<b>-1.3</b>
less:							
Net Factor Payments (F)	-29,393	-29,873	-480	390	1.6	3.0	-1.3
<b>GNP at Market Prices</b>	<b>161,210</b>	<b>158,228</b>	<b>-2,982</b>	<b>-2,072</b>	<b>-1.8</b>	<b>-0.6</b>	<b>-1.3</b>

### B: Gross National Product by Origin

	2007 Estimate €m	2008 Forecast €m	Change in 2008	
			€m	%
Agriculture, Forestry, Fishing	3,456	3,525	69	2.0
Non-Agricultural: Wages, etc.	78,211	80,190	1,979	2.5
Other:	70,087	67,464	-2,646	-3.8
Adjustments: Stock Appreciation	-362	-200		
Statistical Discrepancy	-1,838	-1,838		
<b>Net Domestic Product</b>	<b>149,555</b>	<b>149,119</b>	<b>-436</b>	<b>-0.3</b>
less:				
Net Factor Payments	-29,393	-29,873	-480	1.6
<b>National Income</b>	<b>120,162</b>	<b>119,246</b>	<b>-916</b>	<b>-0.8</b>
Depreciation	18,014	18,854	321	1.7
<b>GNP at Factor Cost</b>	<b>138,176</b>	<b>138,100</b>	<b>-595</b>	<b>-0.4</b>
Taxes less Subsidies	23,034	20,128	-2,387	-10.6
<b>GNP at Market Prices</b>	<b>161,210</b>	<b>158,228</b>	<b>-2,982</b>	<b>-1.8</b>

### C: Balance of Payments on Current Account

	2007 Estimate €m	2008 Forecast €m	Change in 2008	
			€m	%
Exports (X) less Imports (M)	20,373	23,730	3,357	
Net Factor Payments (F)	-29,393	-29,873	-480	
Net Transfers	-1,283	-1,283	0	
<b>Balance on Current Account</b>	<b>-10,303</b>	<b>-7,427</b>	<b>2,876</b>	
as % of GNP	-6.4	-4.7	1.7	

### D: GNDI and Terms of Trade

	2007 €m	2008 Estimate €m	2008 Volume Change	
			€m	%
Terms of Trade Loss or Gain		-3,752		
GNP Adjusted for Terms of Trade	161,210	155,386	-5,824	-3.6
GNDI*	159,927	154,132	-5,794	-3.6
National Resources**	159,927	154,432	-5,494	-3.4

\* GNDI is GDP adjusted for terms of trade and net international transfers.

\*\* GNDI including capital transfers.



## FORECAST NATIONAL ACCOUNTS 2009

### A: Expenditure on Gross National Product

	2008 Forecast €m	2009 Forecast €m	Change in 2009				
			Value €m	Volume	Value	% Price	Volume
Private Consumer Expenditure	94,040	95,739	1,699	470	1.8	1.3	0.5
Public Net Current Expenditure	29,175	29,175	0	-292	0.0	1.0	-1.0
Gross Fixed Capital Formation	39,395	31,331	-8,064	-7,528	-20.5	-1.7	-19.1
Exports of Goods and Services (X)	155,643	160,511	4,868	4,500	3.1	0.2	2.9
Physical Changes in Stocks	-76	-61	15	0		0.0	0.0
<b>Final Demand</b>	<b>318,176</b>	<b>316,694</b>	<b>-1482</b>	<b>-2771</b>	<b>-0.5</b>	<b>0.4</b>	<b>-0.9</b>
less:							
Imports of Goods and Services (M)	131,913	132,916	1,003	-1,523	0.8	1.9	-1.2
less:							
Statistical Discrepancy	-1,838	-1,838	0	16		0.0	0.0
<b>GDP at Market Prices</b>	<b>188,101</b>	<b>185,616</b>	<b>-2485</b>	<b>-1264</b>	<b>-1.3</b>	<b>-0.7</b>	<b>-0.7</b>
less:							
Net Factor Payments (F)	-29,873	-30,198	-325	121	1.1	1.5	-0.4
<b>GNP at Market Prices</b>	<b>158,228</b>	<b>155,418</b>	<b>-2810</b>	<b>-1141</b>	<b>-1.8</b>	<b>-1.1</b>	<b>-0.7</b>

### B: Gross National Product by Origin

	2008 Forecast €m	2009 Forecast €m	Change in 2009	
			€m	%
Agriculture, Forestry, Fishing	3,525	3,596	71	2.0
Non-Agricultural: Wages, etc.	80,190	80,352	162	0.2
Other:	67,442	65,664	-1778	-2.6
Adjustments: Stock Appreciation	-200	-200		
Statistical .. Discrepancy	<b>-1,838</b>	<b>-1,838</b>		
<b>Net Domestic Product</b>	<b>149,119</b>	<b>147,574</b>	<b>149,412</b>	<b>- 8,130.9</b>
less:				
Net Factor Payments	-29,873	-30,198	-179,317	-120.3
<b>National Income</b>	<b>119,246</b>	<b>117,376</b>	<b>147,250</b>	<b>-492.9</b>
Depreciation	18,854	18,920	-100,326	-84.1
GNP at Factor Cost	138,100	136,297	117,443	622.9
Taxes less Subsidies	20,128	19,121	-118,979	-86.2
<b>GNP at Market Prices</b>	<b>158,228</b>	<b>155,418</b>	<b>135,290</b>	<b>672.2</b>

### C: Balance of Payments on Current Account

	2008	2009	Change in 2009
	Estimate €m	Forecast €m	€m
Exports (X) less Imports (M)	23,730	27,595	3,866
Net Factor Payments (F)	-29,873	-30,198	-325
Net Transfers	-1,283	-1,283	0
<b>Balance on Current Account</b>	<b>-7,427</b>	<b>-3,886</b>	<b>3,541</b>
as % of GNP	4.7	-2.5	2.2

### D: GNDI and Terms of Trade

	2008	2009	2009 Volume Change	
	€m	Estimate €m	€m	%
Terms of Trade Loss or Gain		-2,682		
GNP Adjusted for Terms of Trade	158,228	154,404	-3823	-2.4
GNDI*	156,945	153,146	-3799	-2.4
National Resources**	157,245	153,446	-3799	-2.4

\* GNDI is GDP adjusted for terms of trade and net international transfers.

\*\* GNDI including capital transfers.

# THE INTERNATIONAL ECONOMY

The general international context in which this *Commentary* has been prepared is one of remarkable turbulence. Recent weeks have seen a number of developments in international financial markets which might have been considered by many as unthinkable just twelve months ago. In the US, these events lead to the Bush Administration's bail-out proposal whereby \$700 billion was to be made available to the US Treasury to remove so-called "toxic waste" from the balance sheets of US institutions. Recent days have also seen bail-outs of Fortis in the Netherlands and Hypo Real Estate in Germany. These events have all contributed to large losses in international stock markets.

Given the speed with which events in the global economy are unfolding, agencies such as the European Commission have been cutting their growth forecasts for 2008. For those few agencies that have also produced forecasts for 2009 since the end of the Summer (such as the ECB), the outlook for 2009 has also been reduced.

Although our usual practice in producing the *Commentary* is to draw on the global forecasts and commentary of one of the major international agencies (such as the OECD), this has not been possible on this occasion. As just noted, the speed of events means that forecasts produced in the earlier part of the summer are now largely out of date. For this reason, we have had to rely on a set of forecasts for GDP growth in our major trading partners which are derived from a number of sources. In what follows here, we will present details of the most recent developments in the main economic regions. Much of the discussion is taken from the *European Commission's Interim Forecast Report*, September 2008.

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## Euro Area

One of the striking developments on the international front since the last *Commentary* has been a deterioration in both the performance of the Euro Area economy and in expectations regarding the short-term outlook. In the first quarter of this year, economic activity expanded at an above-trend rate of 0.7 per cent quarter-on-quarter (QoQ). This was in spite of the shocks impacting upon the Euro Area such as the international credit difficulties. As part of this strong performance was based on temporary factors such as favourable winter weather conditions, there had been an expectation that the second quarter performance would not be as strong. However, the Euro Area experienced a contraction in that quarter, of 0.2 per cent (QoQ), the first such contraction since the inception of the single currency.

The contraction resulted from a number of factors. Consumption was weak partly as a result of the impact on real incomes of increasing oil prices. Investment was also weak, partly because of the construction contraction. Exports were also weaker than had been expected, as the appreciation of the euro began to impact. These developments have led many commentators to cut their GDP growth forecasts for the Euro Area for 2008. The OECD cut their June forecast of 1.7 per cent to 1.3 per cent in September. The European Commission's forecasts (from April and September) are identical. According to the European Central Bank (ECB), growth in the Euro Area will be 1.4 per cent in 2008.

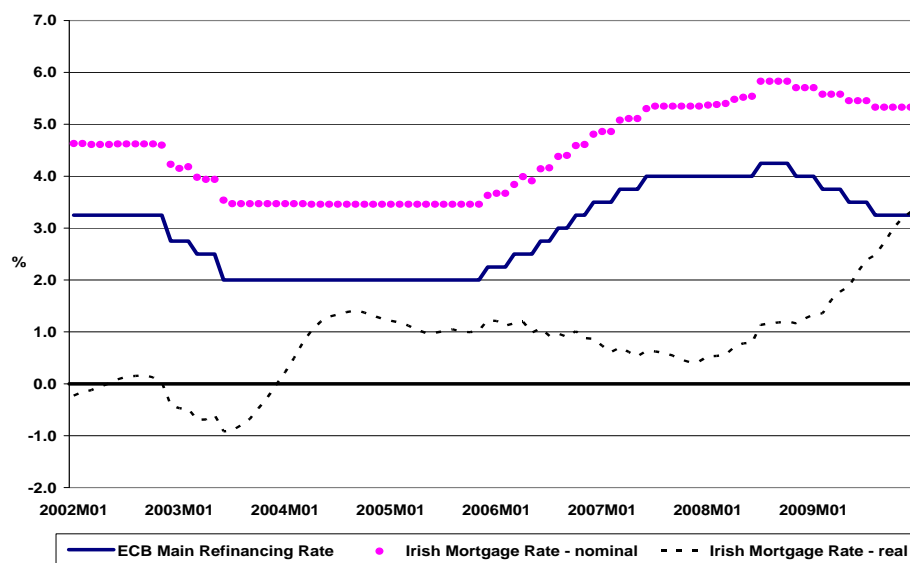
Looking ahead, sentiment indicators suggest that the slower momentum that has developed in 2008 will persist into 2009. For example, according to the European Commission's indicators, economic sentiment in the EU in August was at its lowest level since December 1993. Such factors have led the ECB to forecast that growth in the Euro Area will be 1.2 per cent in 2009.

Turning to individual countries within the Euro Area, the pattern of quarter-on-quarter growth for Germany in the first two quarters of 2008 mirrors that of the Euro Area in general. Output grew by a very strong 1.3 per cent in the first quarter but then contracted by 0.5 per cent in the second. The overall turnaround was partly the result of a turnaround in investment but this was compounded by on-going sluggishness in consumption. The growth outlook for the remainder of 2008 and 2009 suggests continued sluggishness, with the global slowdown taking its toll. While exports had been the main engine of growth for Germany in recent years, slowing external demand and the lagged effect of the euro's appreciation are expected to lessen the potential for exports to drive the overall growth performance. The stronger than expected performance for the first quarter has meant that the European Commission has stayed with its Spring forecast for GDP growth of 1.8 per cent for 2008. However, this unchanged figure disguises the lower growth momentum for Q2 onwards.

France has also experienced this pattern of economic expansion in Q1 of this year followed by contraction. The growth rate in Q1 was 0.4 per cent but the contraction of 0.3 per cent in Q2 was the weakest performance by the French economy since the last quarter of 2001. This poor performance reflected an unexpected steep decline in investment and also a negative impact from net trade. Indicators of activity point to real GDP being flat for the remainder of 2008. This has resulted in the European Commission cutting its forecast for French growth in 2008 from 1.6 per cent (April) to 1 per cent in September.

The Italian economy differed from that of Germany and France in that a slowdown had already begun in 2007. A rebound was anticipated at the beginning of 2008 and an expansion of 0.5 per cent was experienced. However, GDP is thought to have contracted by 0.3 per cent in Q2. For 2008, the European Commission now expects Italy to grow by just 0.1 per cent, down from its April forecast of 0.5 per cent.

**Figure 1: Interest Rates\***



\* Mortgage rate used is the Home Purchase Loans – Average Interest Rate.

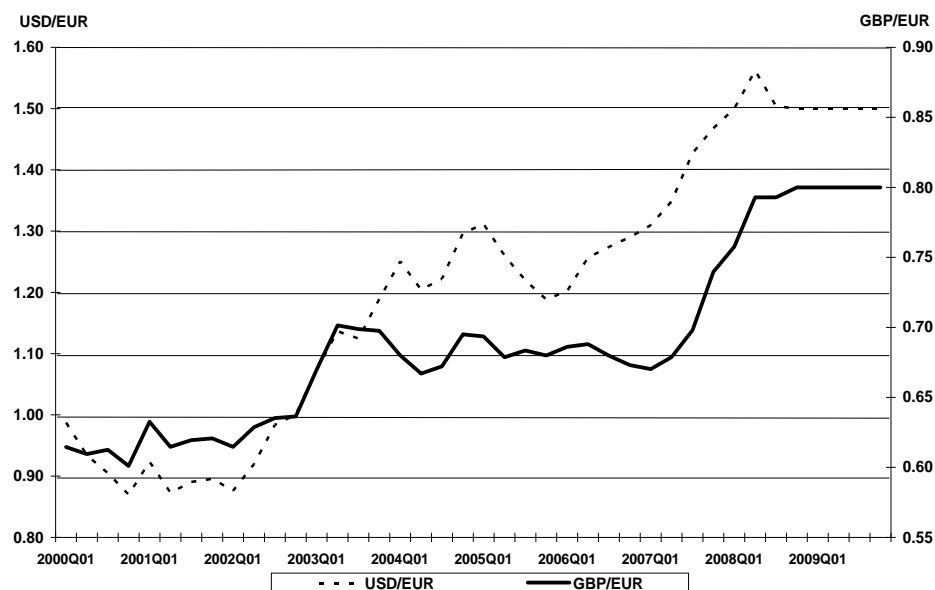
Source: Central Statistics Office.

## United Kingdom

The UK grew by an impressive 3.1 per cent in 2007. However, economic activity has slowed rapidly in 2008 with the rate of growth of real GDP halving to 0.3 per cent in Q1 (QoQ) and remaining static in Q2. Although consumption held up well in Q1, it fell slightly in Q2. However, investment contracted sharply in both quarters. This slower growth performance is now being reflected in the labour market, with the rate of unemployment increasing by 0.2 percentage points in the second quarter, rising to 5.4 per cent.

Looking ahead for the remainder of 2008, the European Commission is now of the view that the UK will experience a recession in the second half of 2008. Consumption is expected to fall due to tighter borrowing conditions, weakened housing and labour markets and the impact on real disposable income of higher inflation. Investment is also expected to weaken, again on account of credit conditions, but also because of weak business sentiment and the negative housing market outlook. Overall for 2008, the European Commission expects the UK to achieve real GDP growth of 1.1 per cent, well down on their April forecast of 1.7 per cent. For 2009, the only recent forecast which is available is from a comparison of recent forecasts by independent forecasters and published by HM Treasury. The average forecast for 2009 is for GDP growth of 0.8 per cent. The figure for 2008 from this source is 1.4 per cent.

**Figure 2: Exchange Rates**



*Source:* Central Bank & Financial Services Authority of Ireland (historic) and own forecasts.

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## United States

For the United States, the first half of the year has turned out to be more positive than many had expected but this is not expected to last. As of April, the OECD was forecasting real GDP growth of 1.2 per cent for the US in 2008. As a result of a particularly strong performance in Q2, the OECD has since revised this forecast to 1.8 per cent.

Part of the explanation underlying the Q2 performance was the temporary impact of the Federal Government's tax rebate measure. With this no longer present, the combined difficulties of financial instability and the weakening housing markets are expected to act as a drag on the US for the remainder of 2008 and into 2009. One positive for the US has been the weakening of the dollar and, as a result, the narrowing of the trade deficit. However, any lift from international trade is not expected to compensate for subdued domestic demand with the likelihood of sub-trend growth continuing through 2009.

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## Context for Ireland

It is clear that the global economy is in something of a crisis at the moment and so the context in which Ireland is operating is very challenging. With growth prospects in our major trading partners looking weaker as time progresses, it is apparent that the traded sector will not be able to compensate for declining domestic demand to any great degree in 2008 and 2009. To the extent that there are any positives in the international context, they relate to the impact of the slowing global economy on the price of oil and other commodities. At the time of writing, the price of oil is well down on its recent peaks and this will be positive for inflation. Perhaps more importantly, this will also be positive for inflationary developments in the Euro Area. Should inflationary fears subside, the prospect for interest rate cuts by the ECB will increase and the likelihood of this course was alluded to by the President of the European Central Bank on October 1. Based on his remarks, we have opted to base

our forecasts on an assumed fall in interest rates, with the ECB main refinancing rate now assumed to be 3.25 by the end of 2009. As always, we stress that this is a technical assumption as opposed to a forecast. We would also stress that on-going turbulence in financial markets may continue to produce a larger-than-usual gap between official and market interest rates. On exchange rates, our technical assumptions are for annual average rates €=US\$1.5 and €=UK0.8 in 2008 and 2009.

# THE DOMESTIC ECONOMY

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## General

The 2007 *National Income and Expenditure (NIE)* from the CSO suggest that despite strong growth on an annual basis in 2007, there was a marked slowdown in the pace of growth throughout the year and that output in the final quarter of 2007 was below the level of output produced in the first quarter. This slowdown has continued in the first two quarters of data from the *Quarterly National Accounts (QNA)*. In the first half of 2008 GDP fell by 1 per cent while GNP fell by 0.6 per cent.

Since the beginning of this year almost all the latest economic indicators – exchequer returns, consumption indicators, Live Register, etc. – point to a sharp slowdown in the pace of economic activity. Furthermore, the pace of deterioration in all of these indicators has accelerated since the time of writing of the Summer *QEC*. At that time our forecast of a recession in 2008 was based on a sharp contraction in the housing sector. Now we expect a contraction in the non-residential construction sector in 2009 together with a more gloomy outlook internationally affecting our forecast of exports. This in turn leads to a lower forecast level of employment, a lower rate of consumption growth and poorer prospects for exchequer tax returns.

We now expect that the economy will further contract in 2009. Uncertainty surrounding our international forecasts, together with a large degree of uncertainty about the length, depth and likely domestic consequences for Ireland of the ongoing financial crisis, mean that at the time of writing we consider there are substantial downside risks associated with these numbers. Even if these are not realised the short-term picture is sombre. Rising unemployment, rising debt, a return to emigration and the prospect of a relatively prolonged recession, mean that the economy faces considerable challenges over the next eighteen months.

### Technical Note on Forecast Numbers:

The forecast numbers in this *Commentary* were prepared using data available up to Thursday 2<sup>nd</sup> October and the text was finalised on that date. Given the speed with which the economic landscape has been changing in recent months we are placing increasing emphasis on the most recent changes in the various indicators of economic activity that are available. Where the *QEC* typically only cites annualised growth rates, readers will now find the text in many instances peppered with a more detailed examination of quarter-on-quarter changes.

These indicators include the most recent estimates from the *Quarterly National Accounts (QNA)* which at the time of writing cover the period to Q2 2008. However, as we have discussed in previous *Commentaries*, initial *QNA* estimates are often subject to quite large revisions, in particular in relation to detailed sub-headings.<sup>1</sup> This is illustrated in Table 1. The table compares *QEC* initial estimates (based on three quarters of *QNA* data), initial *QNA* estimates (four quarters of *QNA* data) and the most recent *NIE* estimates of real growth rates under detailed expenditure headings. In a number of cases the revised estimates are closer to the *QEC* estimate than the initial *QNA* estimate and this can cause technical difficulties with carryover in the forecasts prepared following publication of the initial *QNA* numbers. Take, for example, the *QEC* estimate of consumption growth and growth in exports in 2007. Our initial estimate (Spring 2008) was a growth rate of 6.5 and 6.6 per cent respectively. The *QNA* data suggested growth rates of 5.4 and 8.2 per cent respectively, a significant difference which meant that our Summer forecast numbers were prepared against a different base. The most recent *NIE* data now suggest that the growth rates were 6.3 and 6.8 per cent, much closer to the Spring *QEC* estimates; this means in this *QEC* we are using numbers closer to the Spring 2008 *QEC* than the Summer 2008 *QEC*.

**Table 1: Estimates of Real Growth Rates**

	2005		2006			2007			
	QEC*	QNA **	NIE ***	QEC*	QNA **	NIE ***	QEC*	QNA **	NIE ***
C	5.7	5.6	7.1	6.8	6.2	7.1	6.5	5.4	6.3
G	3.2	3.1	2.9	4.7	4.1	4.8	5.0	6.7	6.0
I	7.9	13.1	14.1	7.5	3.9	4.0	1.5	0.2	1.2
X	2.7	1.8	5.2	6.0	4.9	5.7	6.6	8.2	6.8
M	3.6	4.6	8.2	6.7	5.3	6.3	6.0	6.4	4.1
GDP	4.8	4.7	6.4	6.1	6.0	5.7	4.9	5.3	6.0
GNP	5.0	5.4	5.8	6.3	7.4	6.3	4.6	4.5	4.1
	* December 2005		* Spring 2007			* Spring 2008			
	** March 2006		** March 2007			** March 2008			
	*** NIE 2007		*** NIE 2007			*** NIE 2007			

## Consumption

The latest *NIE* results show that private consumption expenditure grew by 6.3 per cent in volume terms in 2007. Growth is estimated to have fallen marginally quarter-on-quarter in the first quarter of 2008 while in the second quarter it fell by 3 per cent. Since the beginning of 2008 all indicators of consumption have pointed to an accelerating pace of slowdown – see Figure 3. The volume of retail sales has fallen in each month since January 2008, the most recent data for July 2008 show the volume of retail sales fell by 3.5 per cent compared with July 2007 (-5.1 per cent excluding the motor trade). In terms of car sales, the sale of new vehicles fell by 18 per cent in the year ended August 2008, although this figure will inevitably be lower given the change in tax charges effective since July 1 2008. The August IIB/ESRI *Consumer Sentiment Index* suggested

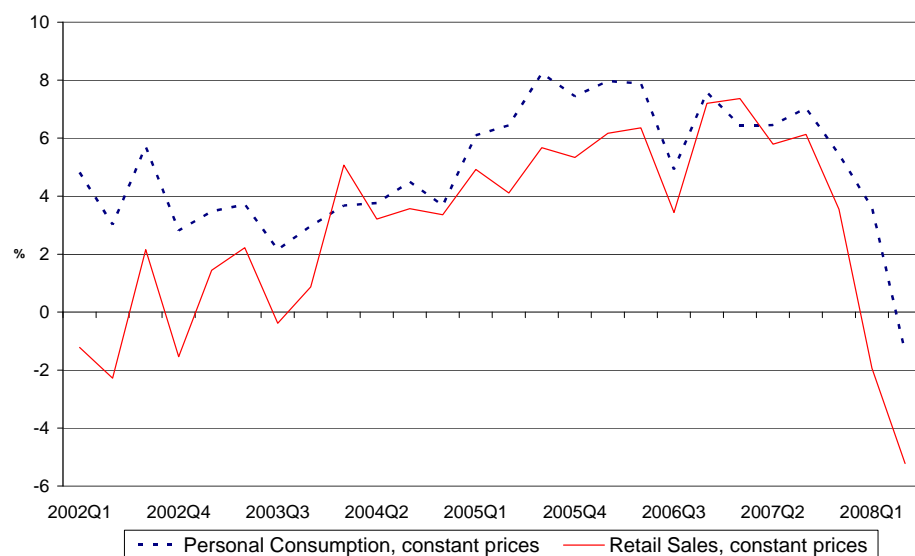
<sup>1</sup>A special article in this *Commentary* analyses in detail revisions to headline growth rates.



a slight improvement in sentiment, nevertheless, the index remains at a historically low level.

In 2008 we estimate that the volume of consumption will fall by 0.5 per cent. Based on carryover to date<sup>2</sup> this forecast implies at least one quarter of increasing volume consumption. We expect growth in the private consumption deflator of 3.2 per cent. This forecast slowdown in consumption is very dramatic both in relation to growth in recent years and historically. It is predicated on the assumption, discussed later in the *Employment* section, that employment levels and hence wage income will fall throughout 2008 and into the first part of 2009. On that basis we expect only a very moderate volume growth in 2009 of 0.5 per cent.

**Figure 3: Year-on-Year Growth in Personal Consumption and Retail Sales, Quarterly Data**



## Investment

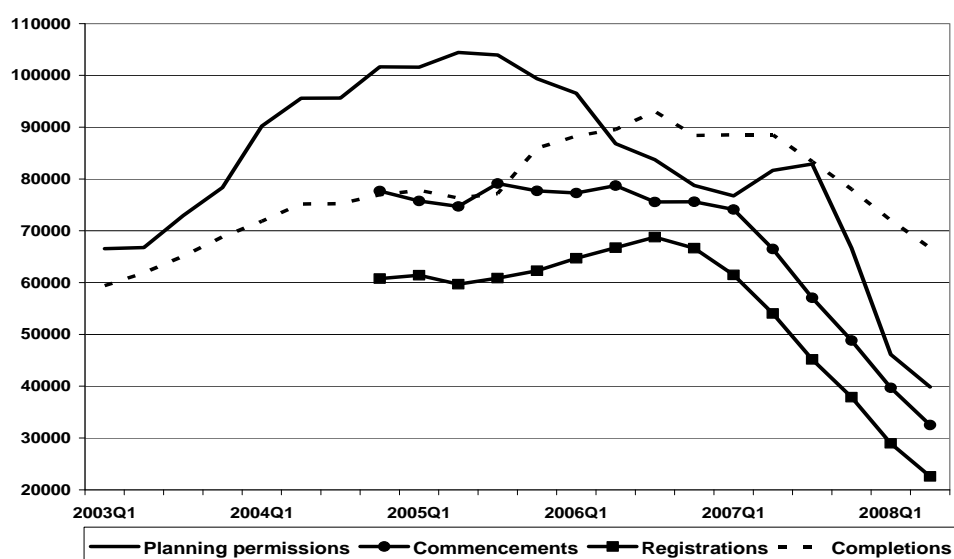
Investment growth in the Irish economy slowed in 2007 with the latest *NIE* data showing volume growth estimated at just 1.2 per cent. This dramatic slowdown was directly related to a fall of 9.2 per cent in investment in housing, with other building and construction growing by 8.8 per cent and machinery and equipment by 13.5 per cent. The decline in housing investment built up momentum during the year, as revealed in the quarterly data; in the second quarter of 2008 total expenditure on new dwellings was at its lowest level since the second quarter of 2003.

All of the indicators of investment activity suggest there will be a very sharp fall in housing investment in 2008. In the Summer *QEC* we estimated housing completions of 40,000 in 2008 and 30,000 in 2009. We have rebalanced these figures across the two years to 45,000 in 2008 and 25,000 in 2009. The upward revision for 2008 is due to the fact that total completions for the first eight months of the year are running slightly

<sup>2</sup>Carryover computes the annual change in a variable if it were to remain at its level in the last known quarter. It measures the impact of past changes, it is not a forecast. Based on the latest *QNA* data to 2008 Q2 carryover would imply a growth rate of -0.5 per cent in volume consumption.

above 35,500. For 2009 we have brought down our estimate based on the very rapid decline in commencements and house registrations data in recent months – see Figure 4. The data for commencements suggest an annual total of just over 30,953 houses for the year ended July 2008, while data on house registrations for the year ended August 2008 show an annual total of just under 18,158. Furthermore, as discussed more fully in the box below, indirect indicators of housing market activity all suggest that the contraction in the housing market still has a long way to go. In recent months there has been a sharp slowdown in borrowing for residential purposes; comparing the user cost of housing to rental costs suggests that there will be further significant falls in house prices over the next year, and estimates of overhang point to a large oversupply of houses in the market. We expect total housing investment over the next eighteen months to contract sharply with investment in new dwellings falling by 35.2 per cent in volume terms in 2008, and a further 32.6 per cent in 2009.

**Figure 4: Housing Statistics, Annualised Numbers**



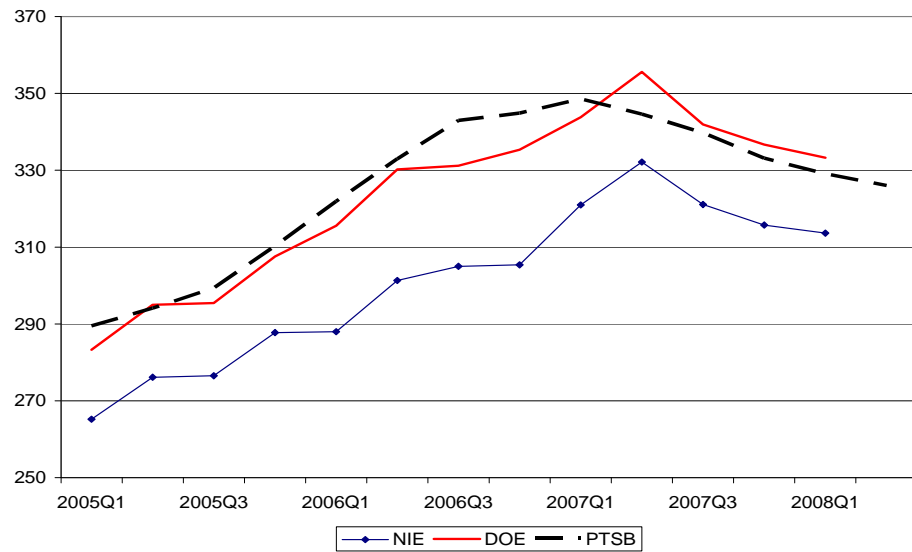
Source: Department of the Environment, Heritage and Local Government.

Turning to house prices, the latest *NIE* data suggest an annual growth in the dwellings investment deflator of 7.6 per cent in 2007. However, this annual average figure masks a steady decline in the pace of dwellings inflation through the year so that by the end of 2008 Q2 this figure had fallen to 0 per cent. Other measures of house prices all point to a strong downward trend. Quarterly data from the Department of the Environment, Heritage and Local Government (DoEHLG) suggest that new house prices peaked in the second quarter of 2007 (see Figure 5), falling over 6 per cent from that peak by 2008 Q1. Monthly data from the permanent tsb/ESRI new house price index suggest new house prices peaked in February 2007 and have been falling steadily since then, down 11.5 per cent from that peak by August 2008. As discussed in the Box, data in the first seven months of 2008 point to a gradual decline in rents together with a large increase in the stock of available properties.

**Table 2: Gross Fixed Capital Formation**

	2006	% Change in 2007		2007	% Change in 2008		2008	% Change in 2009		2009
	€m	Volume	Value	€m	Volume	Value	€m	Volume	Value	€m
Housing	22,664	-9.2	-2.8	22,037	-35.2	-38.0	13,652	-32.6	-33.9	9,021
Other Building	11,135	19.2	20.7	13,436	0.0	-1.0	13,301	-20.0	-23.2	10,216
Transfer Costs	4,168	-19.1	-13.5	3,606	-42.0	-40.0	2,164	-40.0	-40.0	1,298
Building and Construction	37,967	-1.9	2.9	39,079	-23.2	-25.5	29,117	-27.3	-29.5	20,535
Machinery and Equipment	9,665	13.5	14.4	11,061	-8.0	-7.1	10,278	4.0	5.0	10,796
<b>Total</b>	<b>47,632</b>	<b>1.2</b>	<b>5.3</b>	<b>50,140</b>	<b>-19.8</b>	<b>-21.4</b>	<b>39,395</b>	<b>-19.1</b>	<b>-20.5</b>	<b>31,331</b>

**Figure 5: Index of House Prices, 1997 Q1=100**



We have revised our forecast for changes in the dwellings deflator in 2008 and 2009 downwards to -6.5 per cent in both 2008 and 2009. These forecasts are based on long-run estimates from our equation for housing demand.<sup>3</sup> A separate issue arises in translating these figures into more widely cited measures of house prices, namely the DoEHLG house price measure and the ptsb/ESRI measure. Table 3 gives a rough indication of how these numbers can be related. Our forecast for the dwellings deflator in the *NIE* is consistent with a fall in the ptsb/ESRI new house prices measure of 10.5 per cent in both 2008 and 2009 and a fall of 8.7 per cent in the DoEHLG measure in both years. This means that prices in December 2009 could be up to 25 per cent below the 2007 peak in nominal terms and 30 per cent in real terms.

**Table 3: Growth Rate in Different Measures of House Prices**

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008f	2009f
Dwellings Deflator	12.7	10.7	9.8	11.1	15.3	13.0	6.5	8.3	7.6	-6.5	-6.5
DoEHLG new house prices	18.5	13.9	8.1	8.3	13.4	11.0	10.8	10.6	5.6	-8.7	-8.7
ESRI/TSB new house prices	21.3	18.8	15.3	4.1	10.1	12.8	8.7	12.5	1.7	-10.5	-10.5

<sup>3</sup>The equation is described in D. Duffy, J. Fitz Gerald and I. Kearney, 2005. "Rising House Prices in an Open Labour Market", *The Economic and Social Review*, Vol. 36, No. 3, Winter), the most recent estimation uses data out to 2007. This equation uses our forecast numbers for income, house building, population and real interest rates to forecast the implied equilibrium house price level.

## **Box: Indirect Indicators of the Housing Market**

**David Duffy**

The purpose of this Box is to examine some of the additional information that is available on the Irish housing market. A wide range of housing market indicators is available that include prices and rents, both asking and agreed, as well as information on mortgage lending and transactions. Initially we concentrate on market indicators.

In recent years data on asking prices, the price sought by sellers, has become available. DAFT.ie now provides data based on houses that are advertised on its website. The most recent data shows that asking prices were down 7.9 per cent in June compared with the same month a year earlier. A more recent estimate from Sherry FitzGerald suggests that these declines are continuing. Their data suggest that in September the average price of second-hand property had fallen by over 14 per cent compared with a year earlier.

Not only have prices been falling, there is growing evidence that rents are falling. Growth in rents, as measured by the CSO,<sup>4</sup> has been slowing throughout 2008 and the most recent data for August show a marginal fall (see Table A). An index of asking rents, rents sought by advertisers on their website, is produced by Daft.ie. This shows that asking rents have been falling since May 2008 and by July 2008 were 3.2 per cent lower than a year earlier.

Close links exist between the housing and mortgage market. The most recent figures show the value of borrowing for residential purchases grew by just 9 per cent in August, the slowest rate of growth since 1987. Data on activity levels are more difficult to come by. However, the quarterly IBF/PwC mortgage market profile does provide some insights on transactions, as well as the market share of different mortgage demand segments. Their data indicate that the volume of transactions has fallen substantially in recent months, particularly those transactions related to house purchase. For example, in 2008 Q2 the total volume of mortgages issued was down by 14.6 per cent. Within this figure, the volume of mortgages issued to first-time buyers (FTB) was 23 per cent lower than the same period a year earlier, while mortgages issued to repeat buyers were down by 29 per cent. Interestingly, the volume of mortgages issued to those who wished to “top-up” their mortgage rose by 18 per cent.

In addition to market data, insights can be gained from calculating a user cost of owner-occupied housing. While the user cost of housing is readily identifiable in the rental market as rent, it is not immediately obvious in the owner-occupier market. The everyday house price quoted is the asset purchase price which is not the same as user cost. A computed user cost typically includes a measure of interest rates, the tax rate, a depreciation

<sup>4</sup>This measure is based on rent for privately owned properties which is a component of the *Consumer Price Index*.

rate, the price of the house and expected capital gain.<sup>5</sup> In equilibrium the user cost measure should equal the rent of the house. If user costs exceed the market rent it would be cheaper to rent than to buy and demand for housing should fall, thereby reducing prices. However, it is difficult to compute the user cost since one of its main drivers is expected house price inflation, which itself is hard to estimate. Thus, an individual's estimate of user cost can vary substantially depending on how much he/she expects house prices to change.

**Table A: Indirect Indicators of the Housing Market**

	Asking Prices	CSO Rents for Privately Owned Property	Asking Rents	Residential Mortgage Lending (Value)	Total Mortgage Volumes
	Year on Year % change				
Jan-08	0.7	11.1	5.3	12.9	
Feb-08	-0.7	9.2	4.0	12.3	
Mar-08	-0.7	9.2	1.2	11.6	-25.4
Apr-08	-5.4	9.2	3.7	11.4	
May-08	-7.1	6.0	-1.4	10.9	
Jun-08	-7.9	6.0	-7.7	10.2	-14.6
Jul-08		6.0	-3.2	9.6	
Aug-08		-0.6		9.0	

*Sources:* Rents for private property supplied by CSO; Asking prices, asking rents from Daft.ie; Residential mortgage lending from Central Bank *Monthly Statistics*, Mortgage volumes from IBF/Pwc mortgage market profile (quarterly data).

The user cost helps explain why demand for dwellings continued to rise even at a time of rapid price growth. The user cost of housing has been negative in recent years (see Figure A), indicating that individuals have profited from owning their own house. Although houses have been highly priced to purchase, homeowners have benefited due to low interest rates and high capital gains. Conversely, falling house prices have reduced any expected capital gain and so the most recent data suggest that the user cost of owner-occupied housing is now higher than rents for privately owned housing.

The 2006 Census showed that approximately 15 per cent of the Irish housing stock was vacant and that of the vacant dwellings only 18.7 per cent were accounted for by holiday homes. To update this to 2008 information on completions, number of households and the housing stock can be used to calculate a time series of the vacancy rate for Irish property. This indicates that the vacancy rate increased sharply between 2003 and 2004 and that currently over 16 per cent of Irish houses are vacant. While some of these vacant properties will be holiday homes the rapid increase in

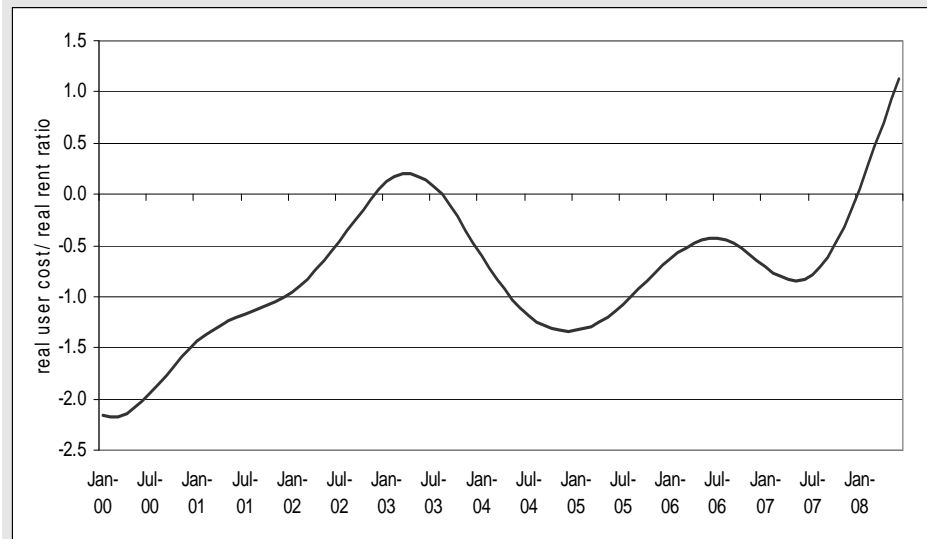
<sup>5</sup>There is extensive literature on user cost and its calculation, see Green and Malpezzi (2003) or in an Irish context Roche (1999).

Green, R. and S. Malpezzi, 2003. *A Primer on US Housing Markets and Housing Policy*, AREUEA Monograph Series No. 3, Washington DC: The Urban Institute Press.

Roche, M., 1999. "Irish House Prices: Will the Roof Cave In?" *The Economic and Social Review*, Vol. 30, No. 4, October.

vacant houses in recent times indicates that there is a large overhang of properties that are waiting to be sold.

**Figure A: Ratio of User Cost of Owner Occupied Housing to Private Rents**



The additional information on the housing market presented here indicates a dramatic slowdown across all type of housing market activity. While in some cases this slowdown started in 2007 it would appear to have accelerated in 2008. Furthermore, a relatively large overhang in the stock of houses, and the high user cost of housing relative to rents suggests that we are likely to see further slowdown in the housing market in 2009 as presented in this *Commentary's* forecasts.

We have made a slight alteration to the detailed investment table; we now separately identify transfer costs (costs associated with the transfer of land and buildings, a large part of which is stamp duty payments to the Exchequer), which in previous *QEC* investment tables were included with non-residential building and construction. Our forecast growth in transfer costs is driven by our estimates of growth in stamp duty and other property-related tax receipts to the Exchequer.

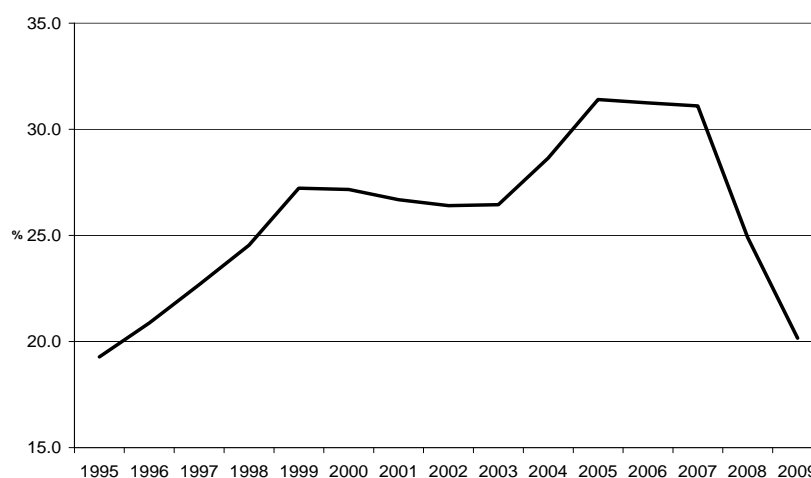
Excluding transfer costs we have brought down our forecast figures for other building and construction quite sharply from the Summer *QEC*. These revisions are mainly due to concerns for the commercial and retail sector. Investment in other building and construction (excluding transaction costs) grew by over 19 per cent in volume terms in 2007. We expect this to record zero per cent growth in 2008, this masks a growth of 8 per cent in public investment projects and a 7 per cent decline in investment from the commercial and retail sectors. For 2009 we are tentatively forecasting non-residential investment to contract by 20 per cent, partly due to the more general slowdown in the economy and partly due to the specific credit problems facing the commercial and retail sector. In relation to the National Development Plan (NDP), we have assumed that capital investment will fall by 10 per cent in volume terms in 2009 with commercial investment falling by an estimated 30 per cent. In terms of nominal expenditures we have pencilled in a 15 per cent fall in the value

of NDP expenditure, implying a 5 per cent decline in the public sector investment deflator, since the authorities now have the possibility to negotiate significant savings on NDP-funded projects.<sup>6</sup>

There was very strong growth of 13.5 per cent in machinery and equipment investment in 2007, in large part driven by purchases of aeroplanes; excluding investment in transport equipment, the growth rate was just 1.2 per cent. For 2008 we expect this to contract by 8 per cent, partly due to the base effect of the large investment in transport equipment in 2007 and partly due to the general slowdown in economic activity. For 2009 we expect a volume growth of 4 per cent. These forecasts are tentative in nature especially given the large discretionary impact that individual purchases can have on the overall headline growth figure for example, in the second quarter of 2008 machinery and equipment expenditures fell by 30 per cent relative to the second quarter of 2007.

These figures imply that investment is expected to contract by 19.8 per cent in volume terms in 2008, and by 19.1 per cent in 2009. If realised, this would mean that the share of investment in GNP would fall sharply from 31 per cent in 2007 to 20 per cent in 2009.

**Figure 6: Investment/GNP Ratio**




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## Government Spending and Public Finances

The September exchequer returns show that total tax revenues in the first nine months of 2008 were €3 billion lower than in the first nine months of 2007, and €3.6 billion below profile. The tax take fell across all the major tax revenue items as shown in Table 4. The largest fall of over €1.6 billion was in capital taxes, which is directly related to the sharp decline in residential property transactions in recent months. The second largest fall of €770 million was in VAT receipts. The sharp slowdown in residential construction also affects VAT receipts, since VAT is payable on new houses, so this is likely to be an important reason for the significant fall in

<sup>6</sup>Note this does not relate to NDP social housing expenditure where very significant cost savings can now be made. This falls under residential investment.



VAT receipts. However, since May of this year there has been a steady and accelerating decline in non-capital tax revenues reflecting the more general slowdown in economic activity of recent months. In March other (non-property related) taxes were down just 61 million on profile accounting for less than 10 per cent of the total shortfall. By September this gap had risen to €912 million, over 25 per cent of the total shortfall.

**Table 4: Change in 2008 Tax Revenues, €Millions**

	Shortfall			Difference on Previous Year		
	March	June	September	March	June	September
Total revenue	-650	-1,466	-3,627	-742	-1,655	-2,988
Capital Taxes*	-335	-620	-1,182	-769	-1,173	-1,694
VAT	-253	-597	-1,533	12	-201	-771
Other**	-61	-249	-912	14	-280	-523

\*Capital acquisitions tax, capital gains tax, stamp duties.

\*\* Includes income tax, corporation tax, customs, excise etc.

The speed with which the exchequer finances have deteriorated through the first nine months of 2008 far exceeds our forecast in the Summer *QEC* and confirms that the slowdown in the residential sector has spread more generally to other areas of the economy. So while our estimate of the residential housing sector is slightly higher than in the Summer *QEC*, our expectation of lower non-residential investment and lower employment and hence wage income has led to a further fall in our forecast for tax revenue in 2008. At end September total tax receipts were €3 billion below the same period in 2007 and we expect this to widen to €5 billion by the end of the year. November is a key month for corporation tax and capital gains tax payments. This year we expect a large slide in capital gains tax receipts (€2 billion lower than 2007) due to the slump in the property market. On corporation tax our forecast fall is more modest at €600 million, although we are conscious that this fall could well be larger were profits to fall further than our estimate. Overall our tax estimates now suggest that exchequer tax revenue in 2008 will total €42.3 billion, down €3.3 billion from our Summer forecast. This figure is in line with the latest Department of Finance estimate of a shortfall of €6.5 billion; our figures suggest tax revenues over €6.6 billion below the 2008 Budget day forecast.

These estimates mean that exchequer current revenue falls by over €4.8 billion in 2008 and highlights starkly the difficult budgetary arithmetic facing the authorities in framing Budget 2009. Against this background we are assuming a tight budgetary stance in 2009; we have implemented this within our tax forecasting model by assuming that income tax bands are not fully indexed in 2009 and that the PRSI ceiling is raised, so that despite further job losses the income tax take and PRSI receipts increase in 2009.<sup>7</sup> Overall we anticipate a fall of 2.5 per cent in total tax revenue in 2009 with

<sup>7</sup>While PRSI receipts do not feature in the exchequer returns and hence the EBR they do figure in the GGB. In the *QEC* we estimate the GGB deficit following national accounts definitions of revenue and expenditure as published in the *NIE* (Tables 10 and 21) and in the *Budget* book.

stagnation in overall economic activity and further job losses limiting the ability of the exchequer to raise funds.

The consequences of this dramatic turnaround in revenue numbers is an explosion in the estimated deficit numbers. Using official Budget day expenditure figures for 2008 adjusted upwards for the recent estimate of an overrun of €600 million on net expenditure,<sup>8</sup> our estimates for 2008 suggest that the exchequer balance and general government balance will deteriorate by more than €10.5 billion with the GGB moving into a deficit equivalent to 5.5 per cent of GDP.

In calculating the deficit figure for 2009 we assume that the authorities will adopt a tight budgetary policy as they have already clearly signalled. We implement this as follows.

1. Transfer payments: We assume there will be less than full indexation of transfer and welfare payments. This means that the total transfer payments bill remains approximately at its 2008 level, where a fully indexed payments system would imply an increase of €1.2 billion or 5.3 per cent.

2. Public consumption of goods and services: We forecast zero growth in public consumption of goods and services. Given our estimate of the public consumption deflator at 1 per cent this implies a 1 per cent fall in volume government consumption in 2009.

3. Capital expenditure: We assume a 15 per cent fall in total government investment (equivalent to a fall of 13.5 per cent in exchequer voted capital expenditure). In the current economic climate, and in particular given the sharp downturn in the construction sector, there are significant cost savings to be made on the capital side. We, therefore, estimate that the consequent fall in volume investments at 10 per cent is feasible with prices falling by 5 per cent.

These figures imply that total current expenditure in 2009 would increase by just over €650 million or 1.4 per cent. Given savings on capital expenditure of approximately €1 billion this would lead to a fall in expenditure of almost €400 million. On the basis of these numbers we forecast the General Government Deficit at 5.4 per cent of GDP by the end of 2009. The total net debt increases by over ten percentage points of GDP in two years<sup>9</sup> from 12 per cent in 2007 to 22 in 2009.

The last time the Government implemented spending changes at this level was in the two cutback budgets in 1988 and 1989. The assumption of 0.6 per cent growth in voted current expenditure is historically a very low growth rate – the average growth rate since 2000 was 12.1 per cent. Underlying that figure is a 1 per cent volume fall in public consumption of goods and services compared with an average of 4.7 per cent annual

<sup>8</sup>Exchequer Statement, October 2<sup>nd</sup>.

<sup>9</sup>Net debt calculations include losses incurred on the National Pension Reserve Fund in the first six months of 2008 but assumes no further losses since then.

growth since 2001. In practice bringing the growth in current expenditure down to such levels will involve very significant cutbacks and savings on current levels of public sector expenditure.

These figures highlight the difficult arithmetic facing the authorities. Despite a nominal cut in expenditure we do not see the deficit ratio fall significantly. A quick back-of-the-envelope calculation would suggest that a further €1 billion in savings – either higher taxes or lower expenditure – would be needed to bring the deficit below 5 per cent of GDP.<sup>10</sup>

**Table 5: Public Finances**

	2006 €m	% Change	2007	% Change	2008	% Change	2009
Current Revenue	46,145	3.8	47,887	-10.8	42,996	-2.5	41,922
Current Expenditure	37,077	10.3	40,890	9.6	45,427	1.4	46,084
of which: Voted	32,915	12.3	36,959	9.3	40,990	0.6	41,227
<b>Current Surplus</b>	9,068	-22.8	6,997	-130.4	-2,431	71.2	-4,162
Capital Receipts	1,871	-24.7	1,408	3.4	1,456	4.1	1,516
Capital Expenditure	8,675	15.5	10,024	10.6	11,089	-9.1	10,076
of which: Voted	6,476	18.1	7,650	11.9	8,562	-13.5	7,402
<b>Capital Borrowing</b>	-6,804	26.6	-8,616	11.8	-9,633	-11.1	-8,560
<b>Exchequer Balance</b>	2,264.3		-1,618.6		-12,063.7		-12,721.8
as % of GNP	1.5		-1.0		-7.6		-8.2
<b>General Government Balance*</b>	5,214.3		555.4		10,413.1		-10,019.4
as % of GDP	2.9		0.3		-5.5		-5.4
<b>Gross Debt as % of GDP</b>	24.7		24.8		31.5		38.8
<b>Net Debt as % of GDP**</b>	12.5		12.0		18.4		22.7

\* 2008 and 2009 figures are based on National Accounts estimates.

\*\*Net of Pensions Fund and Social Insurance Fund.

## Exports

Following a strong performance in 2007, export growth has slowed considerably in the first half of 2008. According to the *Quarterly National Accounts* for 2008 Q2, volume growth in the exports of goods and services was 3.7 per cent on an annual basis, compared to 6.8 per cent at the end of 2007. Having accelerated significantly throughout 2007, merchandise export growth has dropped back to 1.9 per cent. Growth in the volume of services exports slowed dramatically, falling to 6.3 per cent. This is the slowest pace of growth in services exports in five years.

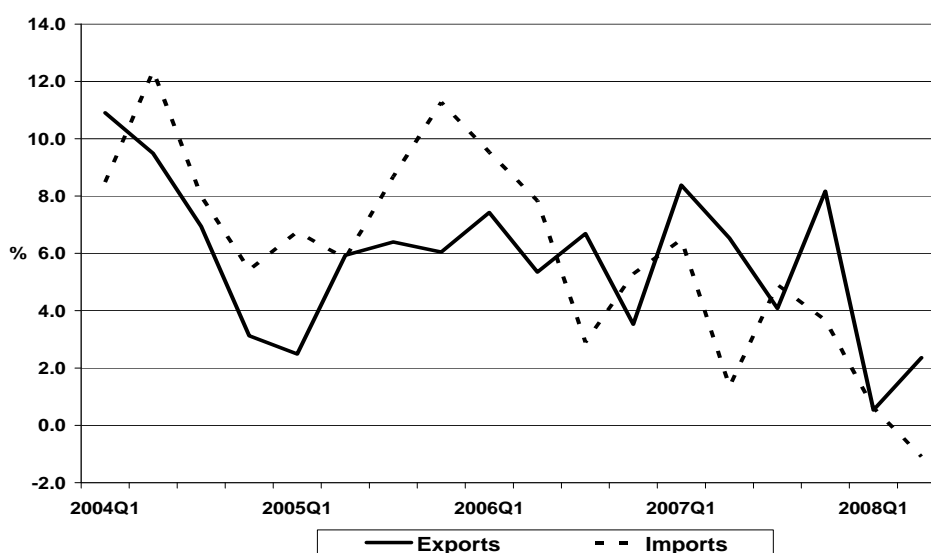
Merchandise export growth decelerated in the first half of 2008, following a strong performance in the second half of 2007. While the

<sup>10</sup>A further cut in expenditure of €740 million would bring the GGB to the 5 per cent ratio. However, when second-round effects are considered – lower employment, consumption and output leading to lower revenues and higher transfer payments – we estimate that the total cut needed would be at least €1 billion.

volume of merchandise exports grew by 1.9 per cent in 2008 Q2, in value terms they contracted by 2.6 per cent, signalling a continuation in the trend of falling merchandise export prices. The most recent *External Trade* statistics signal a further drop in merchandise export values, estimating a fall of 3.1 per cent in the year ending July 2008. Overall, we now expect growth in the volume of merchandise exports to be 2.1 per cent in 2008, and 2 per cent in 2009. We are forecasting a contraction of 1 per cent in the value of merchandise exports this year, with no growth expected in 2009.

The latest figures from the CSO show that services export growth slowed considerably in the first half of the year. According to the *Quarterly National Accounts* for 2008 Q2, growth in the volume of services exports was just 6.3 per cent on an annual average basis, compared to 11.2 per cent at the end of 2007. The latest *Balance of Payments* figures, which provide a breakdown of services exports in value terms, report a slower pace of growth across all sectors. Following a strong performance in 2007, export growth in financial services and trade-related business services has moderated significantly, to 8.3 per cent and 46.2 per cent respectively, on an annual basis. Meanwhile, tourism exports grew by just 1.8 per cent. In light of this moderation in the pace of growth, and the increasingly pessimistic international environment, we have cut our growth forecast for non-tourism services exports to just 4.4 per cent for 2008 (8 per cent in value terms). This figure is a stark contrast to the 12.1 per cent growth in 2007. While the outlook for 2009 is highly uncertain, we are forecasting growth in non-tourism services exports of 4.2 per cent (7 per cent in value terms). The volume of tourism exports is expected to contract by 0.7 per cent this year (2 per cent growth in value), and grow by 1.7 per cent next year (3 per cent in value).

**Figure 7: Exports and Imports Volume Growth Rates (Year-on-Year)**



Source: *Quarterly National Accounts*, CSO.

**Table 6: Exports of Goods and Services**

	2006		% Change in 2007		2007		% Change in 2008		2008		% Change in 2009		2009
	€m	Volume	Value	€m	Volume	Value	€m	Volume	Value	€m			
<b>Merchandise</b>	83,235	3.7	1.3	84,300	2.1	-1.0	83,457	2.0	0.0	83,457			
Tourism	4,258	1.0	3.9	4,426	-0.7	2.0	4,515	1.7	3.0	4,650			
Other Services	52,811	12.1	15.9	61,224	4.4	8.0	66,122	4.2	7.0	70,750			
<b>Exports of Goods and Services</b>	140,304	6.8	6.9	149,950	2.9	2.8	154,093	2.9	3.1	158,857			
FISIM Adjustment	1,359			1,440			1,549			1,654			
<b>Adjusted Exports</b>	141,663	6.8	6.9	151,390	2.9	2.8	155,643	2.9	3.1	160,511			

Our forecasts for overall export growth in 2008 have been revised downward significantly since the Summer *Commentary*, largely reflecting the deteriorating global economic conditions. In our main trading markets, the outlook for the remainder of the year is more bleak than previously anticipated, particularly in the UK and Euro Area. For 2008 we are now forecasting export growth of 2.9 per cent in volume, and 2.8 per cent in value. We now expect only a slight improvement in 2009, with just 2.9 per cent growth in volume and 3.1 per cent in value.

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## Imports

According to the latest *Quarterly National Accounts*, imports of goods and services grew by just 2 per cent in volume terms in the year ending 2008 Q2. While services imports grew by 6 per cent, the volume of merchandise imports contracted by 2.4 per cent. The value of overall imports grew by 4.5 per cent. According to the *Balance of Payments* statistics, growth in the value of tourism imports remained strong, estimated at 17 per cent in the year ending 2008 Q2. The value of non-tourism services imports grew by 8 per cent, while merchandise imports contracted by 0.2 per cent in value terms.

In the second quarter of the year, the volume of merchandise imports fell by 6.4 per cent, year-on-year. This is consistent with weaker consumption growth, and with the decline in expenditure on machinery and equipment. The value of merchandise imports contracted by 0.2 per cent in the year ending 2008 Q2. The latest *External Trade* statistics indicate that annual growth in the value of food and beverage imports has fallen considerably from 2007 levels. In the year ending June 2008, value growth in food imports was 7.9 per cent, while growth in beverage imports was 4.4 per cent. These have fallen from 11.7 per cent and 12.4 per cent respectively, at the end of 2007. Imports of petroleum products, on the other hand, have risen by 28.6 per cent in value terms. In spite of this, the total value of merchandise imports is estimated to have fallen by 2.8 per cent in the year ending July 2008. We now anticipate that the volume of merchandise imports will contract by 2.9 per cent in 2008 and by 2.5 per cent in 2009. In value terms, we expect merchandise imports to contract by 1 per cent in both years.

According to the most recent *Balance of Payments* statistics, growth in the value of non-tourism services imports is estimated at 8 per cent in the year ending 2008 Q2. Consistent with its performance in the export market, the financial services sector has experienced significantly lower growth in the value of imports, estimated at 6 per cent in Q2, on an annual basis. This is down from almost 20 per cent at the end of 2007. Annual growth in the value of tourism imports was 17 per cent in 2008 Q2. We expect this to moderate significantly, in line with our forecast for a sharp fall in private consumption. Tourism imports are now forecast to increase this year by 1 per cent in volume terms and 4 per cent in value terms, and by 2.9 per cent and 5 per cent in volume and value respectively in 2009. We expect non-tourism services imports to contract by 0.6 this year in volume terms, with growth of 2 per cent in value terms. In 2009, we expect a contraction of 0.3 per cent in volume, and 2 per cent growth in value.

**Table 7: Imports of Goods and Services**

	2006	% Change in 2007		2007	% Change in 2008		2008	% Change in 2009		2009
	€m	Volume	Value	€m	Volume	Value	€m	Volume	Value	€m
<b>Merchandise</b>	58,203	4.1	6.2	61,840	-2.9	-1.0	61,222	-2.5	-1.0	60,609
Tourism	5,446	15.0	17.3	6,389	1.0	4.0	6,645	2.9	5.0	6,977
Other Services	58,421	3.0	6.3	62,130	-0.6	2.0	63,373	-0.3	2.0	64,640
<b>Imports of Goods and Services</b>	122,070	4.1	6.8	130,359	-1.7	0.7	131,239	-1.2	0.8	132,226
FISIM Adjustment	557			658			674			690
<b>Adjusted Imports</b>	122,627	4.1	6.8	131,017	-1.7	0.7	131,913	-1.2	0.8	132,916

Consistent with our revised forecasts of private consumption and investment growth for both this year and next year, we have cut our overall import growth forecast. We now expect the volume of imports to contract by 1.7 per cent this year and by 1.2 per cent next year. In value terms, we are forecasting growth of 0.7 per cent this year and 0.8 per cent next year.

## Balance of Payments

Based on our forecasts for merchandise exports and imports, we expect the merchandise trade surplus to contract by 1 per cent in 2008, and to grow by 2.8 per cent in 2009. In spite of our expectations of a significant slowdown in services export growth this year, the dramatic fall in imports means that we are now forecasting a surplus in services trade in 2008, for the first time since 1982. This surplus will extend further in 2009, in line with our expectations of a larger improvement in export growth than in import growth next year. The expected growth in the merchandise trade surplus next year, along with the services trade surplus, will have positive implications for the total trade balance, which is estimated at 12.2 per cent of GNP in 2007. We now expect this to rise to 14.4 per cent of GNP in 2008, and 17.1 per cent of GDP in 2009.

In the year ending 2008 Q2, the net factor income deficit widened by 1.3 per cent. Total debit flows increased by 8.2 per cent during this period. Direct investment income is estimated to have grown by 12.1 per cent, while portfolio and other investment income grew by 10.6 per cent, resulting in total credit flow growth of 10.7 per cent. Following a widening of the net factor income deficit by 19.1 per cent in 2007, we expect the deficit to widen by 1.4 per cent in 2008 and by 0.8 per cent in 2009. The effective current account balance for 2007 is estimated at -6.4 per cent of GNP. This is expected to narrow in the next two years, to -4.5 per cent of GNP in 2008 and to -2.3 per cent of GNP in 2009.

**Table 8: Balance of Payments\***

	2006 €m	Change %	2007 €m	Change %	2008 €m	Change %	2009 €m
Merchandise Trade Balance	25,032	-10.3	22,460	-1.0	22,235	2.8	22,848
Service Trade Balance	-6,798	-57.8	-2,869	-121.6	619	511.0	3,784
<b>Trade Balance in Goods and Services on BoP basis</b>	18,234	7.4	19,591	16.7	22,855	16.5	26,631
<b>% of GNP</b>	12.0		12.2		14.4		17.1
Total Debit Flows	90,114	23.8	111,566	4.0	116,082	3.9	120,652
Total Credit Flows	66,086	25.5	82,957	5.0	87,084	5.0	91,418
<b>Net Factor Flows</b>	-24,028	19.1	-28,609	1.4	-28,998	0.8	-29,234
<b>Net Current Transfers</b>	-504		-1,283		-1,283		-1,283
<b>Balance on Current Account</b>	-6,298		-10,301		-7,427		-3,886
Capital Transfers	223		0		300		300
<b>Effective Current Balance</b>	-6,075		-10,301		-7,127		-3,586
<b>% of GNP</b>	-4.0		-6.4		-4.5		-2.3

\*This table includes adjustments to *Balance of Payments* basis.



## Measures of Growth

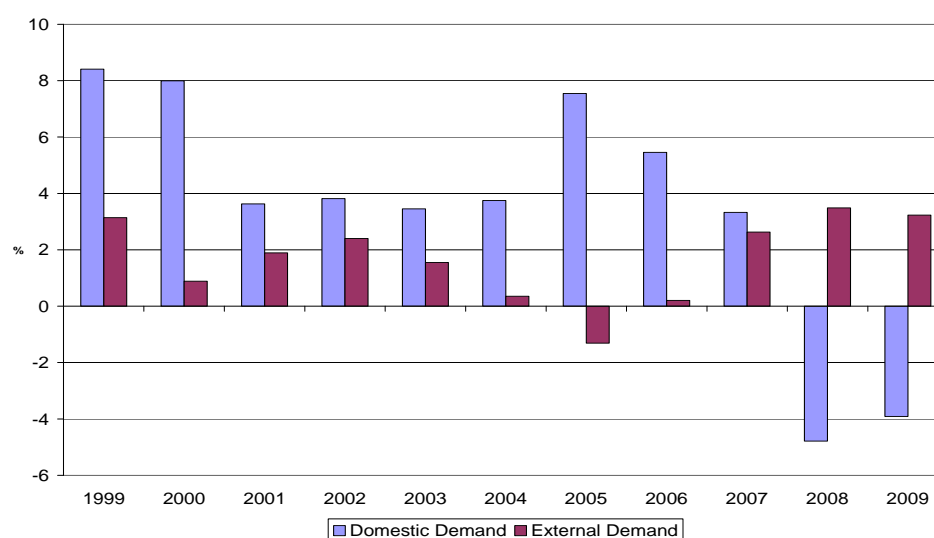
Our headline growth figures in this *QEC*, most especially in terms of disposable income, do not make pleasant reading. We forecast that GDP will fall by 1.3 per cent in 2008 and by 0.7 per cent in 2009. However, Gross National Disposable Income (GNDI) is a more appropriate measure of a country's overall level of income since it also includes changes in the terms of trade and net international transfers. Given a further deterioration in the terms of trade, with import price inflation expected to continue to outpace export price inflation, our forecasts imply that GNDI will fall by 3.6 per cent in 2008 and 2.4 per cent in 2009. GNP per capita, which adjusts for increases in the population size largely driven by inward migration, indicates a fall of 3.1 per cent in 2008 and of 0.9 per cent in 2009.

**Table 9: Measures of Growth**

Growth Indicators	2004	2005	2006	2007	2008	2009
GNP	4.5	5.8	6.3	4.1	-1.3	-0.7
GNP adjusted for Terms of Trade	3.7	4.7	5.4	1.6	-3.6	-2.4
GNDI	3.7	4.5	4.8	1.1	-3.6	-2.4
National Resources	3.8	4.5	4.7	1.0	-3.4	-2.4
GNP per capita	2.8	3.5	3.7	1.8	-3.1	-0.9
Consumption per capita	2.2	4.8	4.4	3.9	-2.4	0.4
Investment in Housing/GNP	13.4	14.9	14.9	13.7	8.6	5.8
Investment/GNP	28.6	31.4	31.2	31.1	24.9	20.2
Domestic Demand	4.1	8.7	6.2	3.7	-5.5	-4.5

The most recent National Accounts data suggest that in 2007 the external sector made its largest contribution to the overall growth rate since 2002. Our forecasts for 2008 and 2009 suggest that the recession will be entirely driven by domestic demand. The shrinking of the domestic sector is shown in Table 9, which shows that the investment to GNP ratio

**Figure 8: Contributions to Growth\***

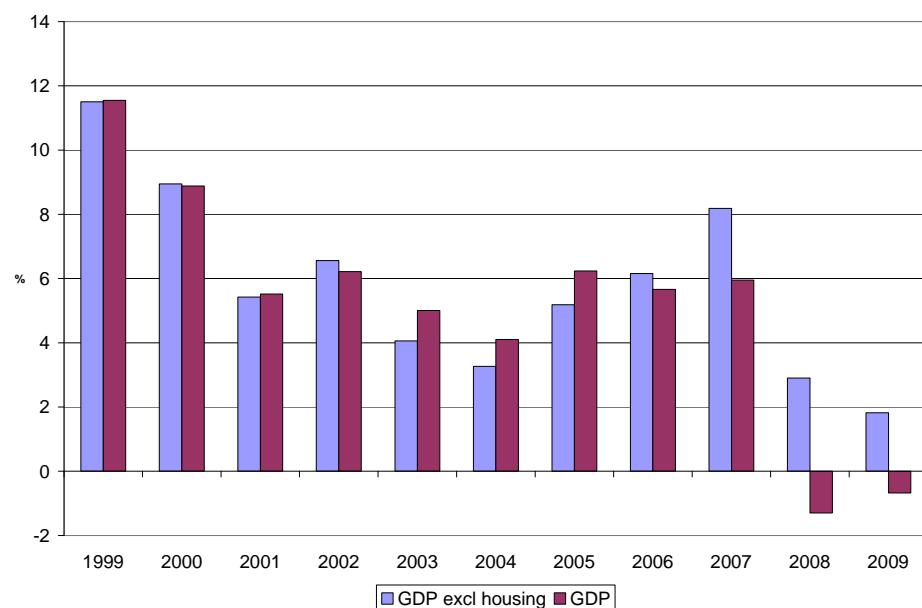


\*The growth rates in domestic demand and external demand are weighted by their respective share in GDP. Therefore these two growth rates sum to the overall growth in GDP.

plummets from 31 per cent in 2007 to just 20 per cent in 2009. As shown in Figure 8 the external sector is forecast to add over 3 per cent to the overall growth rate in 2008 and 2009. However, it is important to point out that some of this is due to a shrinking in the level of imports, reflecting the stagnation in consumption and sharp contraction in investment in the economy.

The role of the construction sector in the forecast recession is shown in Figure 9 which shows the growth rate in GDP including and excluding construction. Excluding construction, our GDP growth rate would be a modest increase of 1.8 per cent in 2008 and 1.4 per cent in 2009. While positive, this is far lower than any growth rates recorded in recent years and serves to illustrate the speed with which the economy is slowing down, even when the collapse of the construction sector is excluded.

**Figure 9: Growth Rates**



## Sectoral Output

The *Quarterly National Accounts (QNA)* for 2008 Q2 showed **industry** (including building and construction) growing by 2.3 per cent on an annualised basis. However, this broad annual figure hides divergent paths for construction and other industry. Building and construction showed a contraction in output of 8.1 per cent, again on an annualised basis. By contrast, growth of 6.6 per cent in non-building industry represented a good performance in the current context. The quarter-on-previous quarter comparison shows industry (again, excluding construction) growing by 5.1 per cent; comparing industrial output in Q2 2008 with that in Q2 2007 shows a rise of 5.8 per cent. Quarterly comparisons show the dramatic evolution of activity in the case of building and construction. Relative to output in Q1 2008, output in Q2 2008 was down by 2.2 per cent. The corresponding figure for the Q2 2007 and Q2 2008 comparison shows a contraction of 12.2 per cent.

**Table 10: GDP by Sector**

	2006		% Change		2007		% Change		2008		% Change		2009	
	€m	Volume	Value	€m	Volume	Value	€m	Volume	Value	€m	Volume	Value	€m	
<b>Agriculture</b>	3,812	1.3	10.3	4,206	1.0	2.0	4,290	1.5	2.0	4,376				
<b>Industry:</b>	52,610	7.9	7.2	56,403	-4.6	-7.5	52,193	-4.6	-7.0	48,560				
Other Industry	36,685	11.3	8.2	39,701	2.0	-0.5	39,502	2.0	0.0	39,502				
Building & Construction	15,924	0.1	4.9	16,702	-21.4	-24.0	12,691	-26.3	-28.6	9,057				
<b>Services:</b>	99,751	6.7	9.1	108,797	1.8	3.7	113,327	1.1	1.8	115,397				
Public Administration & Defence	5,396	2.5	7.4	5,797	0.0	4.5	6,058	0.0	2.0	6,179				
Distribution, Transport and Communications	25,258	5.8	8.5	27,411	0.0	2.8	28,180	1.0	2.4	28,856				
Other Services (including rent)	69,097	7.4	9.4	75,589	2.6	3.9	79,088	1.2	1.6	80,361				
<b>GDP at Factor Cost</b>	156,173	7.0	8.5	169,406	-0.4	-0.1	169,811	-0.7	-0.9	168,332				

The more recent data from the Industrial Production and Turnover series point to a weakening in activity. Although the index registered an increase of 4.9 per cent on an annualised basis for the year up to end-July 2008, the comparison of July 2007 and July 2008 shows a contraction of 4.5 per cent. While we are generally reluctant to focus on short time periods in assessing trends, the rapidly changing economic picture leads us to pay attention to such data.

For **services**, the *QNA* show growth of 3.6 per cent on an annualised basis across all services in the year-ended Q1 2008. The comparison between Q2 2007 and Q2 2008 shows growth of 1 per cent. Looking at Q2 2008 relative to Q1 2008, we see services contracting by just 2.1 per cent. This contraction was evident in distribution, transport and communications and in “other services”; the former contracted quarter-on-quarter by 5 per cent while the latter contracted by 1.6 per cent. During the same time period, public administration and defence grew by 5.6 per cent.

For **agriculture**, the annualised growth rate registered in the *QNA* was 0.7 per cent.

Turning to our forecasts, the sluggish picture which we have developed on the demand side will obviously be mirrored by a subdued performance of the output side of the economy. For 2008 and 2009 we expect non-building industry to post volume gains of 2 per cent, hugely reduced from the 2007 figure of 11.3 per cent. Building and construction itself will experience severe contraction, with output expected to fall by 21.4 per cent in 2008 and by 26.3 per cent in 2009. The reasoning behind these construction-related forecasts is provided in the *Investment* section above. Here, we will just briefly note that the much discussed housing downturn is now expected to be compounded by a downturn in commercial building in both 2008 and 2009. Services are expected to grow in volume by 1.8 per cent in 2008 and by 1.1 per cent in 2009. Public spending curtailments are likely to lead to no growth in public administration and defence in both years. While other services are expected to grow by 2.6 per cent in 2008 and by 1.2 per cent in 2009, these figures are well down on the forecasts contained in previous *Commentaries* and reflect in part our diminishing belief about the potential for growth in services exports this year and next.

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## Employment

The latest data from the *Quarterly National Household Survey* (Q2) confirm the softening in the labour market in the first half of 2008. While we generally focus on annual figures in the *Commentary* when presenting trends, the extent of the changed circumstances in the labour market can only be captured by looking at quarterly changes. In Q2 employment was down 26,600 relative to Q1, with the labour force contracting by 13,300. In percentage terms, the employment fall was 1.2 per cent. On a seasonally adjusted basis, the employment fall was a more modest 15,400 but this is still a remarkable figure relative to the recent experience of Ireland’s labour market. On an annualised basis, the figures in the *QNHS* Q2 did imply a growth in employment of 2.4 per cent but clearly the more recent dynamic is very different from 9-12 months ago.

Referring back to the 15,400 net job losses between Q1 and Q2 (seasonally-adjusted), 17,800 were recorded in construction, a fall of over 6 per cent in one quarter. Job losses were also recorded in transport, storage and communication (2.4 per cent) and in hotels and restaurants (1.7 per cent).

As regards unemployment, the *QNHS* Q2 registered a rate of 5.2 per cent which was a significant jump on the previous quarter of 4.6 per cent. On a seasonally adjusted basis, the increase was less dramatic – from 4.8 per cent in Q1 to 5.1 per cent in Q2. Nonetheless, even on a seasonally adjusted basis the rate of unemployment has increased by 0.5 percentage points in six months. In the same way that we tend not to focus on quarter-by-quarter trends in the *Commentary*, we also tend to discount the Live Register as a measure of unemployment. However, in the current context, it is important to look at the most timely indicators. As of September, the Live Register-based estimate of unemployment was 6.3 per cent. At the same time, there were 240,200 on the Live Register, up from 201,800 as recently as May. Once again, the seasonally-adjusted comparison is somewhat lower, rising from 206,800 in May to 244,500 in September but the trend is still clear and troubling.

Recent figures on migration from the CSO reveal a picture which is consistent with a decline in Ireland's attractiveness for mobile groups. The net inflow in the year ended April 2008 was 38,500, well down on the corresponding figures for 2007 (67,300) and 2006 (71,800). Given that the 2008 figure relates to the full year, it is likely that it hides a significant shift in the numbers entering and leaving over the course of the year.

**Table 11: Employment and Unemployment**

	Annual Averages 000s			
	2006	2007	2008	2009
Agriculture	116.0	116.1	120.9	118.0
Industry	564.4	577.6	528.1	483.3
Services	1,363.4	1,423.4	1,454.1	1,454.5
Total at Work	2,043.7	2,117.0	2,103.1	2,055.8
Unemployed	94.8	100.5	136.6	178.0
Labour Force	2,138.5	2,217.5	2,239.6	2,233.8
Unemployment Rate %	4.4	4.5	6.1	8.0
Net Migration	71.8	67.3	38.5	-30.0
of which: Inward Migration	107.8	109.5	83.8	25.0
Change in Participation Rate*	1.0	1.2	-0.3	-0.5

\* *Note:* Participation rate measured as share of population aged 15-64 years.

Turning to our forecasts, we expect employment to average 2,103,000 for the year. This will represent a decrease relative to the average level of employment in 2007 of 14,000. For 2009, we expect further employment falls and for employment to average 2,056,000. Combined, these employment falls would mean that employment was almost 3 per cent

lower in 2009 relative to 2007. On unemployment, we expect the rate to average 6.1 per cent this year and 8 per cent next year. On migration, for the year ending April 2009, we expect a net outflow of 30,000. All of these forecasts are consistent with a fall in participation of 0.3 percentage points in 2008 and by 0.5 percentage points in 2009.

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## Incomes

According to the *NIE* for 2007, economy-wide average earnings grew by 4.8 per cent, slightly below the growth recorded in 2006 of 4.9 per cent. On a sectoral basis the most recent data on earnings that are available from the CSO relate to 2008 Q1. They show hourly earnings growing by 5.4 per cent on an annual basis in construction and weekly earnings growing by 3.8 per cent, 3.9 per cent and 4.3 per cent in distribution, business services and the public sector (excluding health) respectively. Meanwhile, the latest data for industrial earnings, relating to 2008 Q1, report annual hourly wage growth of 5.6 per cent. Whereas earnings growth remained strong through most of 2007, we do not expect the same trend to continue as nominal wage growth is forecast to moderate significantly.

Given the expected softening in the labour market over our forecast horizon, it would be expected that real wages will have to adjust accordingly. It would also appear that at least a pay freeze will be in place in many sectors for most of 2009. If the recent draft social partnership agreement is implemented, public sector workers will only receive incremental increases given their respective salary scale for most of next year. Those private sector workers who are covered under partnership will receive their increases after a three month pay freeze, depending on when their employer signed up to the current partnership arrangement, *Towards 2016*. It is reasonable to expect market forces to provide significant downward pressure on the earnings of those workers not covered by social partnership. For 2008 we expect nominal wage growth of 3.5 per cent, easing further to 2.5 per cent in 2009. This is a significant slowdown in the rate of nominal wage growth experienced in recent years and when combined with our forecasts for changes in the personal consumption deflator it implies real wage growth of 0.3 and 1.2 per cent respectively in 2008 and 2009.

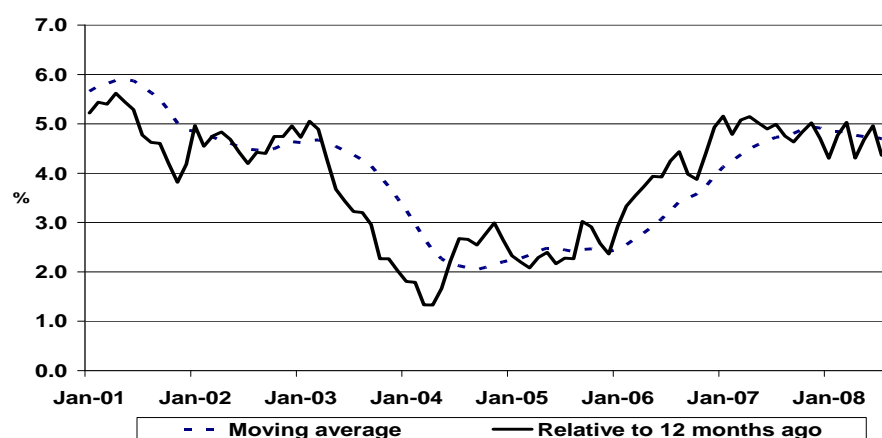
Our combined forecasts for nominal wage growth and employment in 2008 suggest that the non-agricultural wage bill will grow by 2.5 per cent in 2008. This would represent a remarkable slowing from the 2007 figure of 8.8 per cent. For 2009, our forecast for growth in the non-agricultural wage bill is even lower at 0.2 per cent. As outlined above we expect a significant slowdown in government expenditure in 2009, in the face of the slowdown in tax revenues, and this is reflected in a slight fall in transfer income in 2009. When combined with our forecasts for other elements of nominal income growth and with our forecasts for nominal consumption growth, we expect the savings rate to increase to 4.8 per cent this year and stabilise at that level in 2009.

## Consumer Prices

The *Consumer Price Index* increased by 4.3 per cent in August 2008 compared to August 2007. This year-on-year increase in the *CPI* was lower than in previous months, and for the first time in 2008 we have seen two successive months of lower consumer price inflation. Despite the reduction in the headline inflation rate of the past two months, the twelve month moving average inflation rate is estimated at 4.7 per cent in the year ending August 2008. This measure of inflation has prevailed since April of this year.

Using the EU *Harmonised Index of Consumer Prices (HICP)* Ireland's inflation rate remains above the Euro Area as a whole, although the gap has narrowed significantly. Inflation as measured by *HICP* averaged 3.4 per cent for the twelve months ending August 2008 in Ireland. The comparable rate for the Euro Area was 3.3 per cent.

**Figure 10: CPI Inflation Rate**



Source: *Consumer Price Index*, CSO.

Much of the volatility in the pace of increase in the *CPI* through 2008 results from developments in international commodity markets being reflected in the prices of food and oil-related products. On both these fronts, inflationary pressures have eased in most recent months. The pace of food price inflation peaked in March of this year at 9.6 per cent and has been falling ever since, reported as 6.4 per cent in August. As discussed in previous *Commentaries*, we expect this trend to continue over our forecast horizon, as global short-term supply constraints ease to match the longer term upward shift in demand driven by increasing living standards. The price of oil-related products, such as petrol, diesel and home heating oil, have increased significantly, being 10.5, 25.5 and 40 per cent higher in August 2008 than in August 2007. However, the fall in the price of oil on international markets since early July has already begun to feed through to consumer prices. In August the price of petrol, diesel and home heating oil fell by 4.4, 4.8 and 9.2 per cent respectively compared to July. When combined, these price developments in food and oil-related products account for 36 per cent of the total increase in the *CPI* between August 2007 and August 2008.

**Table 12: Personal Disposable Income**

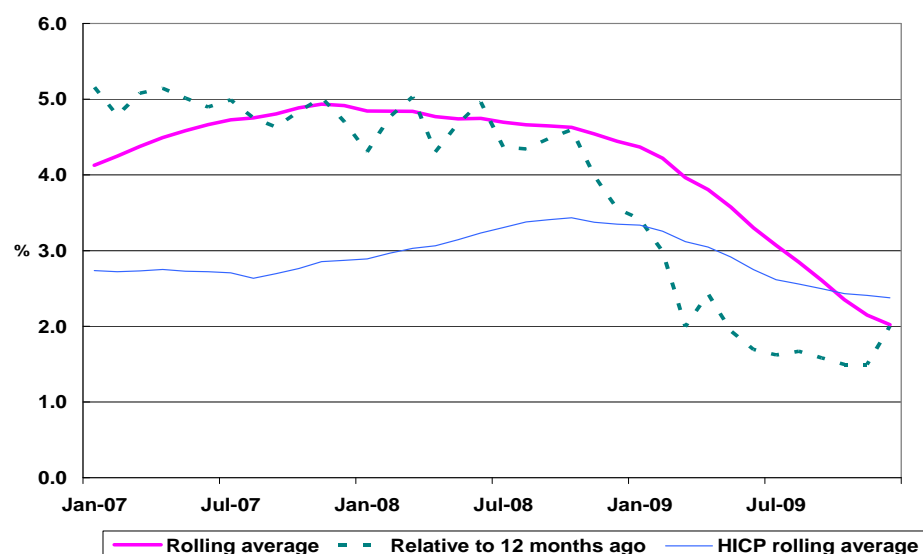
	2006		Change		2007		Change		2008		Change		2009	
	€m	%	€m	€m	%	€m	€m	%	€m	%	€m	€m	€m	€m
Agriculture, etc.	3,084	12.1	372	3,456	2.0	69	3,525	2.0	71	3,596				
Non-Agricultural Wages	71,900	8.8	6,310	78,211	2.5	1,979	80,190	0.2	162	80,352				
Other Non-Agricultural Income	14,807	15.2	2,255	17,062	-2.1	-361	16,701	14.3	2,391	19,092				
<b>Total Income Received</b>	<b>89,792</b>	<b>10.0</b>	<b>8,937</b>	<b>98,728</b>	<b>1.7</b>	<b>1,687</b>	<b>100,416</b>	<b>2.6</b>	<b>2,624</b>	<b>103,040</b>				
Current Transfers	19,293	5.0	964	20,256	10.4	2,113	22,386	0.0	-8	22,378				
<b>Gross Personal Income</b>	<b>109,084</b>	<b>9.1</b>	<b>9,901</b>	<b>118,985</b>	<b>3.2</b>	<b>3,800</b>	<b>122,801</b>	<b>2.1</b>	<b>2,616</b>	<b>125,418</b>				
Direct Personal Taxes	21,409	10.6	2,261	23,670	2.0	462	24,006	3.4	820	24,826				
<b>Personal Disposable Income</b>	<b>87,675</b>	<b>8.7</b>	<b>7,640</b>	<b>95,315</b>	<b>3.5</b>	<b>3,338</b>	<b>98,796</b>	<b>1.8</b>	<b>1,796</b>	<b>100,592</b>				
Consumption	83,688	9.4	7,894	91,582	2.7	2,458	94,040	1.8	1,699	95,739				
<b>Personal Savings</b>	<b>3,987</b>			<b>3,733</b>			<b>4,755</b>			<b>4,853</b>				
<b>Savings Ratio</b>	<b>4.5</b>			<b>3.9</b>			<b>4.8</b>			<b>4.8</b>				
<b>Average Personal Tax Rate</b>	<b>19.6</b>			<b>19.9</b>			<b>19.5</b>			<b>19.8</b>				



The largest single contributor to inflation in August, however, remained mortgage interest, accounting for 27 per cent of the increase in the *CPI* between August 2007 and August 2008. The recent decision of the European Central Bank to increase its main refinancing rate by 25 basis points to 4.25 per cent has begun to feed through to the mortgage interest component of the *CPI*. Added to this, the average home purchase loan interest rate charged during July was 46 basis points above that charged in January according to the CSO. This increase, in the absence of ECB rate rises, is solely due to lenders responding to their own higher cost of funds on the inter-bank lending markets. However, it remains the case that to date changes in the ECB rate still have a greater influence on the mortgage interest component than changes in EURIBOR rates.

The *HICP* does not include mortgage interest, and as such is not as sensitive as the *CPI* to different assumptions on the ECB main refinancing rate. From an economic perspective it also tracks the “true” rate of consumer price inflation, i.e., the change in the personal consumption deflator, to a greater extent than the *CPI*. Given the rising prices of food and oil related products, our forecast for *HICP* inflation in Ireland is higher in 2008 relative to 2007 at 3.3 per cent. We expect this measure to moderate again next year, averaging 2.4 per cent on an annual basis (Figure 11).

**Figure 11: Inflation Profile 2007-2009 (Forecast 2008M09 Onwards)**



We expect *CPI* inflation to average 4.5 per cent in 2008. Given the deteriorating outlook for the Euro Area economy, and the perceived reduction in inflationary risks due to commodity prices in the medium term, the ECB Governing Council clearly signalled after their meeting in early October that interest rate cuts will take place in the near future. As such, we assume a 1 per cent cut in the main refinancing rate to 3.25 per cent by the end of 2009. However, as mentioned above the past relationship between the ECB main refinancing rate and the average home purchase loan interest rate has changed in recent months as a result of the turmoil in credit markets. We have factored this into our analysis and assume a 0.5 per cent fall in mortgage interest rates over our forecast

horizon, leading to a 6.5 per cent fall in the mortgage interest component of the CPI next year. Combined with the moderation expected in food and oil related price inflation this leads us to a forecast total CPI inflation rate of 2 per cent in 2009.

**Table13: Inflation Measures (%)**

	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
CPI	3.5	2.2	2.4	3.9	4.9	4.5	2.0
Mortgage Interest	-8.3	5.4	12.3	31.4	40.4	18.0	-6.5
HICP (Ireland)	4.0	2.3	2.2	2.7	2.9	3.3	2.4
HICP (Euro Area)	2.1	2.1	2.2	2.2	2.1		

# GENERAL ASSESSMENT

While all forecasting exercises are conducted in a context of uncertainty, the background against which this *Commentary* has been prepared was one of remarkable uncertainty. For this reason, we need to emphasise that the confidence with which we are presenting the forecasts is a good deal lower than is usual.

Having said that, it now seems clear that the economic difficulties facing Ireland will persist well into 2009. Earlier in the year many commentators, such as the OECD, were of the view that the US economy would pick up in the middle of 2009 and that the Euro Area would remain somewhat insulated from global economic difficulties. Recent weeks have seen this view evaporate. A growing sense of pessimism has developed about the prospects for the global economy, with any hopes for a turnaround in 2009 largely extinguished. Against this background, we now foresee a second year of contraction in 2009. While we have not produced forecasts for 2010, we are mindful of a scenario presented in the *Medium-Term Review* in which a prolonged credit crunch meant that Ireland did not return to trend growth until 2011.

Given this situation, it is understandable that calls will be made on the Government to address the current difficulties and to implement policies to restore growth. A danger exists in this context, however, that the Government will take actions which are ill-advised and counter-productive. Here, we will set out some principles which we believe should guide economic policy formulation in this downturn.

Having sought to address the immediate problems in the financial sector, the Government's focus policy should now be on the more medium-term goal of ensuring that Ireland is well placed to participate in a global upturn. The harsh reality facing policymakers in the short run is that there are few policy-tools, if any, available to alleviate the current difficulties. The standard tool of short-run macro-demand management, i.e., a fiscal stimulus, is not an option due to the state of the public finances. More focused, or micro-measures can generally only provide short-run artificial boosts to certain sub-sectors. Of particular note here are measures to stimulate activity in the housing sector. These should be avoided so that a new equilibrium can be found in that market as quickly as possible, thereby bringing to an end the distorting impact that this sector had on the economy in recent years.

Medium-term prospects can be seriously damaged by policy mistakes now so the role of policy is still critical, even if it is limited in terms of short-run boosts for the economy. With regard to the public finances, we argued in the last *Commentary* that the 3 per cent deficit limit under the EU's Stability and Growth Pact (SGP) should not be viewed as a binding constraint in the short run and that a more medium-term approach to restoring balance to the public finances should be taken. We are still of this view, although the deterioration in the public finances since the last *Commentary* means that a greater degree of fiscal constraint is now called for, even in the context of breaching the SGP limits.

We would now agree that the Government should aim to stabilise the General Government Deficit at 5.5 per cent of GDP in Budget 2009. In making this recommendation, we are conscious of the need to balance two competing objectives. On the one hand, it is desirable that the Government should not add to the problems confronting the economy by further weakening demand through spending cuts or through tax increases. On the other hand, it is also desirable that the public finances be brought back onto a sustainable path. In recommending that the deficit be held broadly in line with the (projected) 2008 level, we are recommending a deflationary budget. However, we do so partly because of our uncertainty over when the economy will return to a period of economic growth.

Within the context of this deficit decisions will have to be made about the appropriate allocation across capital and current spending. It has been our view for a long time that the infrastructure needs of the economy were such that priority needed to be given to capital spending. While, in principle at least, this remains our view, the new budgetary arithmetic poses a real challenge for maintaining progress on capital spending under the National Development Plan at previously envisaged rates. It now seems clear that the continued roll-out of this spending at rates previously planned will mean cuts in current spending, if the overall deficit figure of 5.5 per cent is to be maintained. It is ultimately a political choice as to how to allocate spending and the Government may well form the view that while the benefits of capital spending are clear, the trade-off in terms of reduced (current) public services may not be warranted. In this context, we would make the following point.

- With a contraction in construction activity occurring, prices should also be falling. This means that a higher volume of output should now be achievable for a given nominal spend and every effort should be made to exploit this possibility. One clear example is with regard to social housing where significantly higher volumes should be achievable for a given nominal spend.

Remaining in the area of the public finances, we would make one further point. Ideally, attempts to bridge the emerging gap in the public finances through tax increases would be avoided at a time such as this because they would be likely to lead to a further contraction of activity. However, the state of the public finances is such that tax increases may be

necessary and increases have been factored into our analysis.<sup>11</sup> But whatever decisions are made in the short run, the longer-run situation with regard to tax increases will need to be reflected upon. Increased public spending was facilitated in recent years by property-related tax windfalls that are now drying up. Even when Ireland returns to its long-run growth path, it may well be the case that tax revenues are not sufficient to fund levels of public services which are (in some social sense) considered optimal. In this way, the current tax shortfall would have to be viewed as a structural problem and not simply a cyclical problem which will be corrected once the economy experiences a return to trend growth. At that time, the issue of the appropriate levels of taxation and public spending will have to be revisited.<sup>12</sup>

Moving beyond the public finances, the policies which focus on the medium term can generally be thought of as contributing to improving Ireland's competitiveness. Policy which reduces costs for business or which increases productivity should now be centre-stage. We would include in this list the need to improve the efficiency of the public sector, the need to develop the skills and competencies of the workforce and the need to ensure competition. These are familiar policy refrains but in the context of a potential rush for "quick fixes", it is important to focus attention on where policy can actually make a difference.

<sup>11</sup>As discussed in the *Public Finances* section above, this is achieved by assuming that income tax bands in 2009 are not fully indexed.

<sup>12</sup> Following the line of thought presented here, higher taxes are explicitly factored into the projections contained in the *Medium-Term Review 2008-2013*, published by the ESRI.

# SPECIAL ARTICLE<sup>\*</sup>

## **An Analysis of Revisions to Growth Rates in the Irish Quarterly National Accounts**

By

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\*Articles are published in the *Quarterly Economic Commentary* in order to foster high-quality debate on various aspects of the Irish economy and Irish economic policy. All articles, whether authored by ESRI staff members or others, are refereed to ensure that they contain a level of analysis that satisfies accepted academic standards. For most articles, the comments of policy experts from outside of the academic community are also sought. While the ESRI aims to ensure that the refereeing process is both fair and rigorous, it does not accept responsibility for any views expressed in the published articles.

# AN ANALYSIS OF REVISIONS TO GROWTH RATES IN THE IRISH QUARTERLY NATIONAL ACCOUNTS

*Patrick Quill\**

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## **Abstract**

*This article presents results of revisions analysis of GDP and GNP in the quarterly national accounts. It deals with quarterly GDP and GNP growth from 1998 to 2007 as well as seasonally adjusted quarter-on-quarter growth from 2003. Different stages of the revisions process are considered as well as how Ireland compares with other OECD countries. The components of GDP are analysed to ascertain the main drivers of revisions.*

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## **1. Introduction**

Users and analysts of the National Accounts face the problem of regular revisions to the early estimates of the main economic indicators. An analysis of the scale and direction of revisions over a time period can therefore be useful in assessing the validity of latest estimates. Revisions analysis is also an accepted way for statistics institutes to evaluate the accuracy of their estimates. See, for example, OECD (2006).

The Central Statistics Office (CSO) has published *Quarterly National Accounts (QNA)* since 1999. The *QNA* provides a timely description of the

\* I would like to thank many colleagues within the Central Statistics Office for helpful comments, suggestions and discussion in the preparation of this paper. Email: Patrick.Quill@cso.ie

Irish economy and present CSO's first estimate of levels and growth rates of gross domestic product (GDP), gross national product (GNP) and their main components. The release is currently published three months after the reference period.

Each *QNA* contains revisions to previously published data relating to the current year. The annual figures are revised once a year in the *National Income and Expenditure* publication (*NIE*) and these annual figures provide control totals for the quarterly GDP for the quarters in earlier years. Thus, depending on the quarter in question, there are up to three revisions to the data in the current year plus any number of yearly revisions following the current year. There is no policy whereby data of a particular vintage will not be revised. However, there is very little change to data that is more than 5 years old except for methodological reasons.

Revisions are made to estimates of the components of GDP for a number of reasons including:

- the availability of firmer or more complete data;
- changes in methodology;
- correction of errors in source data;
- updating the base period used for constant price estimates.

Two significant changes to the methodology came about in the release of the first quarter in 2005. These were the incorporation of FISIM (financial intermediation services indirectly measured, a method of measuring the output of the financial sector) and the introduction of chain linking for the constant price series. The former of these changes, though significant in its impact on the level of GDP, had little or no effect on growth rates.

A particular feature of the Irish Economy is the impact of large multinational enterprises including financial service companies located in the IFSC. These enterprises frequently change their trading arrangements and structures with consequential effects on the reported data.

During the time under review, GDP growth in Ireland is consistently strong, with annual growth rate averaging 6.1 per cent. This may have a bearing on the results of this paper as the reliability of estimates may differ during periods of slow or negative growth.

The purpose of this paper is to analyse the revisions to *QNA* made by CSO in quarterly releases from 1999 to the present. Our investigation uses a model developed by OECD that provides summary statistics and tables of revisions to growth rates at certain periods after the initial publication. International examinations of this type, and the analysis carried out by OECD, concentrate on revisions to growth rate (as distinct from revisions



to the level) of GDP. A discussion of revisions to the levels of GDP is contained in Bermingham (2006).

Bermingham's article is the only other published examination of the revisions to *QNA* for Ireland, in recent times, that we know of, and deals with a shorter series than this paper. His results, where comparable, do not differ from ours except in one respect. Bermingham states that '...the magnitude of the final revision...is statistically significant.' In this paper we find that the mean of the total revision to GDP growth rate is positive but *not* significantly different from zero, see Section 2. Ruane (1975) also looks at revisions to Irish National Accounts relating to the period 1958 to 1968 and is limited to annual results.

The main part of this article (in Sections 2, 3 and 4) deals with the analysis of GDP growth based on one quarter relative to the same quarter in the previous year. Section 2 presents an overview of the revisions to GDP growth as well as some commentary and summary statistics. In Section 3 we make comparisons of CSO's revisions record with those of some other OECD countries. Section 4 attempts to discover the components of value added and of expenditure which contribute most to revisions. Section 5 presents a brief commentary on revisions of gross national product (GNP) growth rates. Section 6 looks at growth based on one quarter relative to the previous quarter. Section 7 concludes.

The publications from which data is used here are available on the CSO website at [www.cso.ie /Releases](http://www.cso.ie/Releases) and [publications/National Accounts/Archive](http://www.cso.ie/publications/National%20Accounts/Archive).

Tables of the revisions are contained in the Appendices.

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## 2. GDP Growth

The GDP growth rate is defined as the percentage change in GDP compared with the same period in the previous year, measured in constant prices. Thus if  $G_t$  is the GDP of a given quarter in constant prices, the quarterly growth rate is

$$100(G_t - G_{t-4}) / G_{t-4}.$$

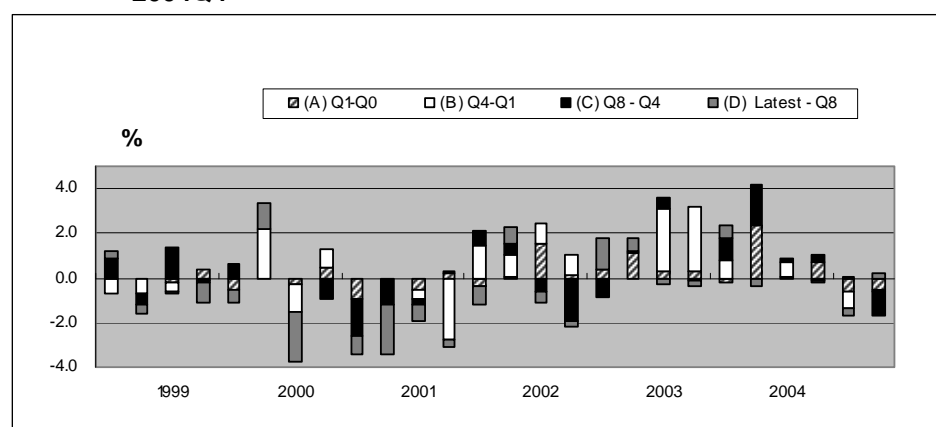
The GDP growth rates referring to quarters 1998Q3 to 2007Q4 as first published and then after 3 months, 1 year, 2 years as well as the latest estimates are shown in Table 1 below. These are the values on which we base our analysis.

**Table 1: First and Later Estimates of Quarterly GDP Growth 1998 -2007**

Relating to Period	First Estimate Q0	3 Months Later Q1	1 Year Later Q4	2 Years Later Q8	Latest Estimate
1998 Q3	10.3	10.3	9.7	10.5	10.7
Q4	6.7	6.7	6.0	5.5	5.1
1999 Q1	9.1	9.0	8.6	9.9	9.7
Q2	7.8	8.1	8.0	7.9	7.2
Q3	11.0	10.5	10.5	11.2	10.6
Q4	12.1	12.1	14.3	14.3	15.4
2000 Q1	11.7	11.4	10.2	10.2	8.2
Q2	12.2	12.6	13.4	12.5	12.5
Q3	11.0	10.1	10.1	8.4	7.6
Q4	12.1	12.1	12.1	10.9	8.7
2001 Q1	13.2	12.7	12.3	12.1	10.9
Q2	9.2	9.4	6.7	6.7	5.9
Q3	3.2	2.8	4.3	5.0	4.5
Q4	0.0	0.1	1.1	1.6	2.3
2002 Q1	2.9	4.4	5.4	4.8	4.6
Q2	6.5	6.6	7.5	5.6	5.6
Q3	6.9	7.3	7.2	6.5	7.5
Q4	6.4	7.5	7.5	7.7	8.0
2003 Q1	0.5	0.7	3.6	4.1	4.3
Q2	2.1	2.4	5.3	5.2	5.1
Q3	-0.1	-0.3	0.5	1.5	2.0
Q4	2.7	5.1	5.1	6.9	6.6
2004 Q1	6.1	6.1	6.8	6.9	6.7
Q2	4.1	4.8	4.7	5.0	4.7
Q3	5.8	5.2	4.4	4.5	5.2
Q4	2.8	2.3	2.2	1.1	2.4
2005 Q1	2.4	2.1	4.0	5.1	5.3
Q2	4.1	4.6	5.6	7.0	7.6
Q3	4.8	5.1	5.9	6.4	6.7
Q4	5.7	6.5	6.5	5.2	5.9
2006 Q1	5.8	5.7	6.4	6.7	6.7
Q2	5.0	4.9	4.0		4.8
Q3	7.7	7.6	8.1		7.4
Q4	5.0	4.6	4.6		4.0
2007 Q1	7.5	8.1	8.7		8.7
Q2	5.4	5.4			5.9
Q3	4.1	3.8			4.0
Q4	3.5	5.5			5.5

Figure 1 below shows the revisions for a given quarter, between 1998 and 2004, broken into different stages of the revision process. The revisions after 3 months (Q1-Q0), further revisions after 1 year (Q4-Q1), 2 years (Q8-Q4) and further revisions since 2 years are shown. The total revision for a given quarter is equal to the sum of the negative and positive parts of each bar.

**Figure 1: Revisions in Stages to Quarterly GDP Growth, 1998Q3 to 2004Q4**



The chart shows that revisions occur in both directions. Fifteen of the total revisions (to the twenty-six quarters) are positive and eleven are negative. One notable feature is that for a given quarter, the revisions tend to be either mainly positive or mainly negative. For ten out of the twenty-six quarters, revisions are entirely of one direction and at least six others are heavily biased in one direction. This contrasts with a similar table published by the UK statistics office, Meader (2007), where a smaller propensity for revisions to be in one direction is evident. Figure 1 also shows that after 2002, most of the revisions to the data have occurred within two years of first publication (blocks A, B and C of the bar chart).

Table 2 below provides summary statistics on the revisions stages. The mean revision is the aggregate of the revisions for a given stage in the revisions process divided by the number of quarters. The number of quarters is different for each of the stages and for this reason the total mean is not equal to the sum of all the parts. The *mean absolute revision* (MAR) and *relative mean absolute revision* (RMAR) are defined as

$$MAR = \frac{1}{n} \sum |l_i - p_i|$$

and

$$RMAR = \frac{1}{n} \frac{\sum |l_i - p_i|}{\sum |p_i|}.$$

where  $l_i$  is the later estimate,  $p_i$  is the earlier estimate and  $n$  is the number of observations. The mean absolute revision is a measure of the volatility of the revisions. The relative mean absolute revision which can be interpreted as the expected proportion of the first published estimate that is likely to be revised over the revision interval being considered. These measures are used later in international comparisons.

We show the range of revisions and the percentage of revisions that is upward (positive). We also test the significance of the revisions to the series, that is, to test whether the mean revision is statistically different from zero. Because the successive revisions may have different variances it

is necessary to use a modified t-statistic, see Robinson (2005). Table 2 shows the outcome at the 5 per cent level of significance of the t-test for each category of revision.

The final column shows the total revisions, thus comparing the latest estimate with the first published estimate of GDP growth.

**Table 2: Summary Statistics for Revisions to GDP Growth 1998-2007**

<b>Statistic</b>	<b>Q1-Q0</b>	<b>Q4-Q1</b>	<b>Q8-Q4</b>	<b>Since Q8</b>	<b>Total rev</b>
Mean revision	0.17	0.34	0.03	-0.09	0.45
Mean absolute revision	0.45	0.81	0.70	0.62	1.61
RMAR	0.07	0.12	0.10	0.07	0.24
Max revision (-)	-0.93	-2.73	-1.93	-2.12	-3.53
Max revision (+)	2.40	2.87	1.75	1.30	3.83
% positive	55	51	61	42	61
Mean revision significant?	no	no	no	no	no

Table 2 shows that the mean revision after the first quarter is 0.17 and the mean total revision is 0.45. That is to say that the initial estimate of GDP growth is on average 0.45 percentage points below the latest estimate.

Excluding the final column, it can be seen that the largest revisions occur between three months and one year after first publication. This might be expected as initial quarterly estimates are replaced with estimates aligned with the more comprehensive annual figures. Many of the significant revisions arise at this time from the examination of the consistency of returns by large multinational enterprises, which then includes an examination of the full audited accounts.

The Q4-Q1 revisions stage has the largest mean revision and the largest mean absolute revision. Revisions in this stage of the revisions process range from -2.73 to +2.87 percentage points. (It should be noted also that, because of the revisions policy outlined in the beginning of this article, revisions to the fourth quarter in every year do not generally occur in the Q4-Q1 time period.)

There is no particular trend towards positive revisions. Indeed, in the period after the second year only 42 per cent of revisions are upward. None of the mean revisions are found to be statistically different from zero. In other words, there is no systematic bias to the revisions.

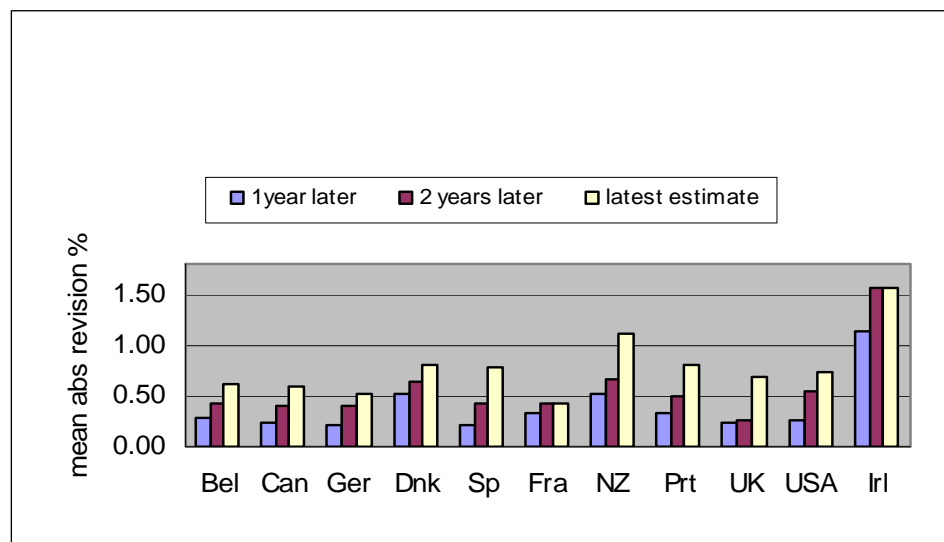
The final column of Table 2 displays the total revision, to date, to an initial estimate. As mentioned above, revisions to a given quarter tend to be either mainly positive or mainly negative. It is not surprising, therefore, that the cumulative effect of these revisions can be quite large.

### 3. International Comparison

The OECD has prepared a similar analysis for eighteen countries, see Adam and McKenzie (2007). The current analysis is based largely on the methods described there. We use their results to rank Ireland's revisions record against that of some of the other countries. There are two differences between the data of other countries and that of Ireland that might be noted. The OECD uses seasonally adjusted data, whereas the data for Ireland in this analysis is not seasonally adjusted. However, as we are comparing the GDP of one quarter compared with the same period in the previous year, this should not have an influence on the comparison. The OECD also uses data from 1995 to 2006, which is a longer time series than that available in Ireland.

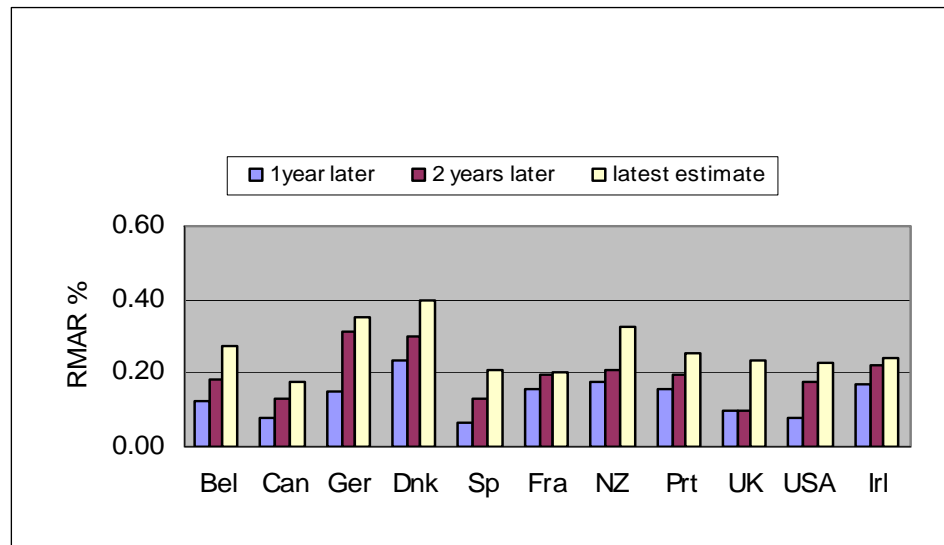
The mean absolute revision for Ireland is compared with ten other countries in Figure 2. The revisions for Ireland are considerably higher than the other countries. One reason for the difference may be that CSO's first *QNA* is as recent as 1999. USA and UK, for instance, have quarterly accounts that go back to 1947 and 1955, respectively. Thus, the process of compiling quarterly national accounts for Ireland is still relatively new.

**Figure 2: Mean Absolute Revision to First Published Estimates of GDP Growth Rates**



Probably a greater cause for difference is that Ireland's GDP growth rate is considerably higher than most other countries in this period. An interesting extra analysis provided by the OECD is to compare countries' revisions relative to their growth rate. This is done using the relative mean absolute revision, which is a measure of the robustness of the original estimate of the growth rate. Figure 3 shows a comparison of the same countries using the relative mean absolute revision. Ireland is midway in the table of countries, using this comparison measure.

**Figure 3: Relative Mean Absolute Revision to First Published Estimates of GDP Growth Rates**



Finally, it is worth observing in this section, that among these countries, Germany and Ireland are the only ones whose mean deviation is found to be statistically insignificant across all stages in the revisions process.

#### 4. Components of the Revisions

A different set of measures is used to identify the components of revisions to GDP growth rates. We deal only with the total revisions to a given quarter, that is, the difference between the first and latest estimates.

In this analysis we measure a component's contribution to the growth rate is as the difference between that component's contribution to the current quarter's GDP and its contribution to the GDP in the same quarter last year divided by the GDP of last year's quarter. Thus if  $C_i$  represents component  $i$  of GDP,  $G_t$ , in quarter  $t$ , we consider the factors,

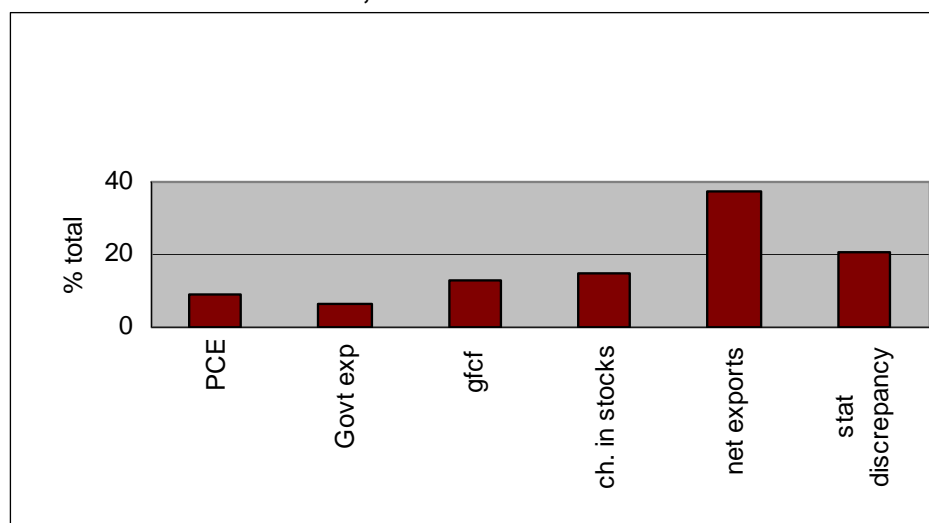
$$(C_t - C_{t-4}) / G_{t-4}$$

for all  $i$ .

Two decompositions of GDP are presented in the *QNA*. Table 1 shows the industry components of value added, while Table 3 shows the composition by types of expenditure. In each table to ensure that GDP is consistent, it is necessary to show a statistical discrepancy.

Figure 4 presents the mean absolute revision for the main expenditure components of GDP. It shows to what extent revisions to the elements of final consumption and net exports contribute to the total revisions.

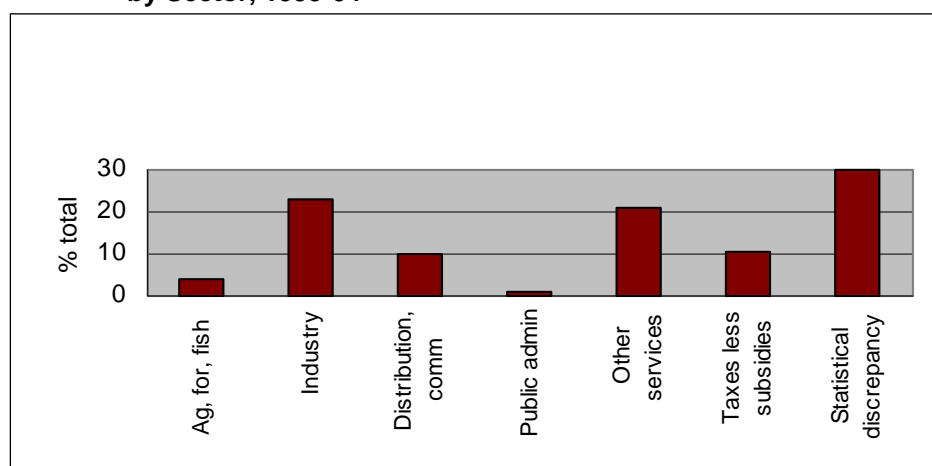
**Figure 4: Mean Absolute Revision for the Expenditure Components of GDP Growth Rates, 1999-04**



Immediately evident from Figure 4 is that net exports is the expenditure component of GDP that has the most significant effect on the revisions to GDP growth. The statistical discrepancy is also very large, followed by changes in stocks.

There is a certain interdependence between the different components in this chart. This is because a revision to any of the five components has a direct effect on the statistical discrepancy. This revision can also affect the other components indirectly if it adjusts the GDP of the previous year, which is the denominator of the growth rate.

**Figure 5: Mean Absolute Revision to Quarterly Value Added Growth Rates by Sector, 1999-04**



Revisions to one method of calculating GDP clearly also have a knock on effect on the other method. Figure 5 shows the mean absolute revision to the income components of GDP growth.

The revisions to industry, distribution and communication and to other services are roughly in line with the size of each sector. The revisions to the statistical discrepancy are, however, larger than revisions to any of the

component sectors. This may suggest that much of the revisions come about in the balancing of different measures of GDP. The revision to the discrepancy component of GDP growth does not have a very strong trend either upwards or downwards. The mean is -0.4 per cent and standard deviation is 1.7 per cent of GDP.

It appears, considering both Figures 4 and 5, that revisions to the expenditure components of GDP are the chief causes of revisions to GDP growth and that the main drivers of these, in turn, are revisions to net exports (of goods and services). This reflects the fact that Ireland is a small open economy with combined imports and exports equal to roughly 170 per cent of GDP, a big proportion of which is generated by large multinational enterprises and financial services companies.

## 5. Revision to GNP Growth

Gross national product (GNP) is equal to GDP *plus* net factor income from the rest of the world (NFI). Table 3 shows the summary statistics on the revisions stages to GNP growth.

**Table 3: Summary Statistics for Revisions to GNP Growth 1998-2007**

Statistic	Q1-Q0	Q4-Q1	Q8-Q4	Since Q8	Total Rev
Mean revision	-0.15	-0.20	0.42	0.31	0.19
Mean absolute revision	0.68	0.83	1.18	0.92	1.80
Max revision (-)	-4.56	-2.19	-2.96	-2.83	-4.95
Max revision (+)	2.41	2.34	4.94	1.87	6.99
% positive	50	31	61	68	45
Mean revision significant?	no	no	no	no	no

Once again, none of the mean revisions for any of the periods is statistically significant, that is, there is no bias in the revisions. However, the mean absolute revision is higher than the same statistic for the GDP growth for each period (see Table 2). Most remarkable is the range of the revisions. The range of revisions in this table is roughly double the range in Table 2. Some estimates to GNP growth are more than 4 percentage points different from a previous estimate. The latest estimate differs from the original, in one case, by almost 7 percentage points. This shows that early CSO estimates of GNP growth are prone to considerable revisions. In *QNA* 2004 quarter 1, large revisions to NFI, relating to 2001 to 2003, were made as a result of incorporating changes in trading arrangements of large multinationals. This is the main reason behind the three largest upward revisions to quarterly GNP growth rate. Another large revision occurs to the NFI of 2003Q4 due to certain company restructuring.<sup>1</sup> Apart from these outliers there are only two other quarters in the series of 38 quarters with a total revision greater than 3 percentage points.

Profit flows are, by far, the most unstable component of NFI. Quarterly estimates of profit flows are susceptible to revision due to changes of company structures, pricing and the domicile of intangible assets, such as

<sup>1</sup> These two events are noted in releases *Balance of Payments, 2004 Quarter 1* and *National Income and Expenditure, Annual Results for 2004*.



patents, which can have a retrospective impact. Furthermore, the volatility of the underlying data, as discussed by McCarthy (2004), cannot be discounted as a contributor to the volatility of the revisions. Caution regarding quarterly GNP, is also advised in the introductory paragraph of the *Quarterly National Accounts* release. In conclusion, although in Ireland GNP is seen as an important macro indicator, it appears that early estimates can be subject to large revisions which should be noted by users of the *QNA*.

## 6. Revisions to Quarter-on-Quarter Growth Rates

The CSO has published seasonally adjusted estimates of the main economic aggregates in the *QNA* since the second quarter of 2003. This is a relatively short timeframe, however, and trends exhibited here may change as the series matures. There is a further reason why care should be taken when interpreting these figures. In the case of the non-adjusted series, discussed above in Sections 2 to 4, changes in the growth rate are truly down to revisions in the data. In the case of the seasonally adjusted series, this is not so straightforward. As a new point is added to the series, all preceding values are necessarily adjusted due to this extension of the series. Thus changes in the growth rate can prevail where no revision has occurred. We include here a short revisions analysis as this series is of interest to commentators on the economy.

The quarter-on-quarter seasonally adjusted growth rate is defined as

$$100(G_t^* - G_{t-1}^*) / G_{t-1}^*$$

where  $G_t^*$  is the seasonally adjusted estimate of GDP at constant prices for a given quarter.

Figure 6 shows the different stages of the quarter-on-quarter revisions process for data from 2002 to 2005. As in Figure 1, the revisions after one quarter, after 1 year, after 2 years and further revisions since 2 years are shown. The chart shows a greater tendency for the revisions of a given quarter to swing from negative to positive or vice versa than was exhibited in the year on year analysis (see Figure 2).

**Figure 6: Revisions in Stages to Seasonally Adjusted Quarter-on-Quarter Growth 2002Q1-2005Q4**

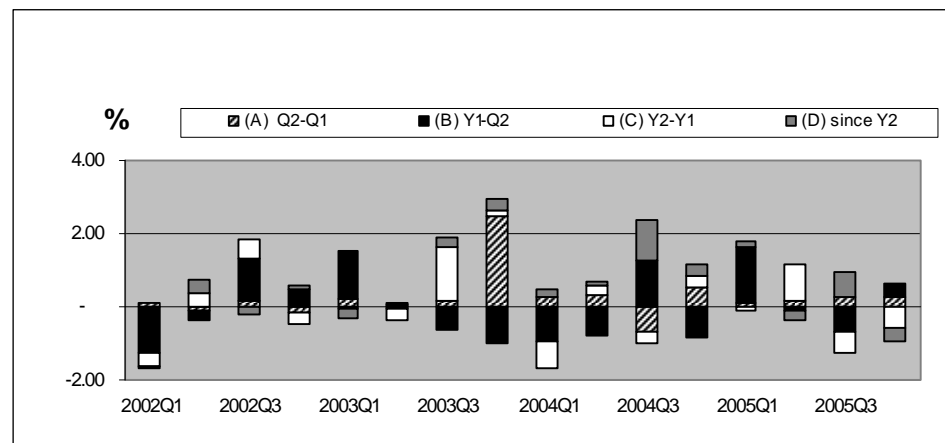


Table 4 presents summary statistics on the revisions stages to the quarter-on-quarter seasonally adjusted growth rates.

**Table 4: Summary Statistics for Revisions to Seasonally Adjusted Quarter-on-Quarter Growth 2002-2007**

Statistic	Q1-Q0	Q4-Q1	Q8-Q4	Since Q8	Total Rev
Mean revision	0.15	0.17	0.06	0.17	0.35
Mean absolute revision	0.43	0.83	0.45	0.31	0.94
RMAR	0.24	0.45	0.28	0.20	0.54
Max revision (-)	-1.59	-1.27	-0.73	-0.38	-1.60
Max revision (+)	2.47	1.58	1.47	1.12	2.33
% positive	71	48	46	69	54
Mean revision significant?	no	no	no	no	yes

The mean revisions and mean absolute revisions for the successive time periods is reasonably low. The relative mean absolute revision is greater than the same statistic in Table 2. This says that relative to the size of GDP growth, revisions to the quarter-on-quarter series are larger than revisions to the year on year series. It is notable perhaps that although the mean of first revisions to the quarter-on-quarter growth is not significantly different from zero, 71 per cent of these revisions are positive. This is a sample, however, of just 24 values. A straightforward test shows that this proportion is not significantly different from 50 per cent and that there is, therefore, no systematic bias towards the first revision being positive.

There is, however, evidence to suggest that the mean of the total revisions, which measures the difference between the latest and the first estimate, is statistically different from zero. As the figure of 0.35 per cent is positive, this indicates that there is a bias towards understatement. However, since this series is so short, this conclusion must remain very tentative at this stage.

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## 7. Conclusions

- The initial estimate of GDP growth is on average 0.45 percentage points below the latest estimate.
- Revisions to GDP growth rates are greatest in the time period of 3 months to 1 year after first publication; and most revisions have occurred by 2 years.
- In the period from 3 months to 1 year after first publication the mean revision to GDP growth is 0.34 and revisions range from -2.73 to 2.87.
- None of the mean CSO revisions or the mean cumulative revisions of GDP growth rate for any period is statistically significant. That is, there is no bias towards positive or negative revisions.
- Ireland's mean absolute revision of GDP growth rates is higher than other OECD countries. However, considering the relative mean

absolute revision, Ireland compares well against other OECD countries.

- In the expenditure approach to GDP, net exports is the component with the greatest absolute revisions.
- In the income approach to GDP the scale of revisions to the main sectors is in line with the scale of each of the sectors. The statistical discrepancy, however, comprises a large part of the revisions.
- Revisions to GNP growth are much more volatile than for GDP growth.
- The initial estimate of seasonally adjusted quarter-on-quarter GDP growth is on average 0.35 percentage points below the latest estimate.
- Relative to the size of GDP growth, revisions to the quarter-on-quarter series are larger than revisions to the year-on-year series.

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# APPENDIX TABLES

**Table A1: Revisions Stages to Quarterly GDP Growth 1998-2007**

Reference Period	Q1-Q0	Q4-Q1	Q8-Q4	L* -Q8	L-Q0
1998Q3	0.0	-0.7	0.9	0.2	0.4
Q4	0.0	-0.7	-0.6	-0.3	-1.6
1999Q1	-0.2	-0.4	1.4	-0.2	0.5
Q2	0.3	-0.1	-0.1	-0.7	-0.6
Q3	-0.5	0.0	0.6	-0.6	-0.5
Q4	0.0	2.2	0.0	1.1	3.3
2000Q1	-0.3	-1.2	0.0	-2.0	-3.5
Q2	0.4	0.8	-0.9	0.0	0.3
Q3	-0.9	0.0	-1.7	-0.8	-3.4
Q4	0.0	0.0	-1.2	-2.1	-3.3
2001Q1	-0.5	-0.4	-0.2	-1.2	-2.4
Q2	0.2	-2.7	0.1	-0.8	-3.3
Q3	-0.3	1.5	0.7	-0.5	1.4
Q4	0.0	1.0	0.5	0.7	2.3
2002Q1	1.5	0.9	-0.6	-0.2	1.7
Q2	0.1	0.9	-1.9	0.0	-0.9
Q3	0.4	-0.1	-0.8	1.1	0.6
Q4	1.1	0.0	0.1	0.3	1.6
2003Q1	0.3	2.9	0.5	0.2	3.8
Q2	0.3	2.9	-0.1	-0.1	3.0
Q3	-0.2	0.8	1.0	0.5	2.1
Q4	2.4	0.0	1.8	-0.3	3.8
2004Q1	0.1	0.7	0.1	-0.2	0.6
Q2	0.7	-0.1	0.4	-0.3	0.6
Q3	-0.6	-0.8	0.0	0.7	-0.6
Q4	-0.6	-0.1	-1.0	1.3	-0.4
2005Q1	-0.3	1.8	1.1	0.2	2.9
Q2	0.5	1.0	1.4	0.6	3.5
Q3	0.3	0.9	0.5	0.4	2.0
Q4	0.8	0.0	-1.4	0.7	0.1
2006Q1	-0.1	0.6	0.4		0.9
Q2	0.0	-1.0			-0.1
Q3	-0.2	0.5			-0.3
Q4	-0.4	0.0			-1.0
2007Q1	0.5	0.6			1.2
Q2	0.0				0.5
Q3	-0.2				-0.1
Q4	2.0				2.0
<i>n</i>	38	35	31	30	38

\* Latest estimate.

**Table A2: Revisions Stages to Quarterly GNP Growth 1998-2007**

Reference Period	Q1-Q0	Q4-Q1	Q8-Q4	L-Q8	L-Q
1998Q3	0.0	-1.9	1.0	-0.1	-1.0
Q4	0.0	0.5	-0.6	-0.4	-0.5
1999Q1	-0.3	1.0	0.8	0.7	2.3
Q2	0.6	-1.1	-0.9	0.1	-1.3
Q3	-2.0	0.0	-0.2	0.4	-1.8
Q4	0.0	1.6	0.0	0.4	2.0
2000Q1	-0.3	-0.6	0.0	-2.0	-2.9
Q2	0.5	1.9	-0.5	0.2	2.1
Q3	-0.1	0.0	1.4	-1.5	-0.2
Q4	0.0	0.0	1.7	-2.8	-1.1
2001Q1	-0.6	-0.3	0.3	-0.2	-0.8
Q2	0.2	0.0	-0.2	-1.5	-1.5
Q3	-0.3	-1.7	0.3	0.3	-1.3
Q4	0.0	-0.6	-3.0	1.5	-2.0
2002Q1	-1.6	-1.7	-1.0	0.9	-3.4
Q2	0.1	-1.9	-0.4	0.9	-1.3
Q3	0.4	-0.5	4.5	1.9	6.2
Q4	2.4	0.0	2.8	1.8	7.0
2003Q1	0.2	2.3	0.5	1.0	4.1
Q2	0.4	-0.3	2.2	0.6	2.9
Q3	-0.3	-2.2	1.5	1.3	0.2
Q4	-2.0	0.0	4.9	0.3	3.2
2004Q1	0.1	2.3	0.2	-0.2	2.3
Q2	0.8	-1.9	1.4	-0.3	0.1
Q3	-0.7	-0.3	0.1	0.9	0.0
Q4	-4.6	-0.1	-1.9	1.6	-5.0
2005Q1	-0.3	0.2	0.1	0.6	0.6
Q2	0.6	-0.8	1.1	1.2	2.1
Q3	0.3	-0.1	-1.1	0.8	-0.1
Q4	1.7	-0.1	-1.7	1.2	1.0
2006Q1	-0.1	0.7	-0.2		0.4
Q2	0.0	-1.6			-0.6
Q3	-0.2	0.4			-0.8
Q4	-2.1	0.0			-2.4
2007Q1	0.5	-0.4			0.2
Q2	0.0				-2.1
Q3	-0.3				-0.5
Q4	1.1				1.1
<i>n</i>	38	35	31	30	38

**Table A3: Revisions Stages to Seasonally Adjusted Quarter-on-Quarter Growth 2002-2007**

<b>Reference Period</b>	<b>Q1-Q0</b>	<b>Q4-Q1</b>	<b>Q8-Q4</b>	<b>L-Q8</b>	<b>L-Q0</b>
2002Q1	0.1	-1.3	-0.4	0.0	-1.6
Q2	-0.1	-0.2	0.4	0.4	0.4
Q3	0.2	1.1	0.5	-0.2	1.7
Q4	-0.1	0.5	-0.3	0.1	0.1
2003Q1	0.2	1.3	-0.1	-0.3	1.2
Q2	0.1	-0.1	-0.3	0.1	-0.2
Q3	0.1	-0.6	1.5	0.3	1.2
Q4	2.5	-1.0	0.2	0.3	2.0
2004Q1	0.2	-1.0	-0.7	0.2	-1.2
Q2	0.3	-0.8	0.3	0.1	-0.1
Q3	-0.7	1.3	-0.3	1.1	1.4
Q4	0.5	-0.8	0.3	0.3	0.3
2005Q1	0.1	1.5	-0.1	0.2	1.7
Q2	0.2	-0.1	1.0	-0.3	0.8
Q3	0.3	-0.7	-0.6	0.7	-0.3
Q4	0.3	0.4	-0.6	-0.4	-0.4
2006Q1	0.1	1.2	0.2		1.5
Q2	0.2	-0.4			-0.3
Q3	-0.5	1.0			0.0
Q4	-1.6	0.6			-1.6
2007Q1	0.7	1.6			2.3
Q2	-0.1				-0.6
Q3	-0.2				-0.7
Q4	0.9				0.9
<i>n</i>	24	21	17	16	24

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<b>Year</b>	<b>Author(s)</b>	<b>Title</b>	<b>Issue</b>	<b>Pages</b>
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