

QUARTERLY
ECONOMIC
COMMENTARY

Winter 2010

ALAN BARRETT
IDE KEARNEY
THOMAS CONEFREY
CORMAC O'SULLIVAN



THE ECONOMIC AND SOCIAL RESEARCH INSTITUTE

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*The forecasts in this Commentary are based
on data available by early-January 2011*

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Alan Barrett, Ide Kearney, Thomas Conefrey and Cormac O’Sullivan

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SUMMARY TABLE

	2009	2010(e)*	2011(f)	2012(f)
OUTPUT				
(Real Annual Growth %)				
Private Consumer Expenditure	-7.0	-1	- $\frac{3}{4}$	- $\frac{1}{2}$
Public Net Current Expenditure	-4.4	-5	-3 $\frac{1}{2}$	-3
Investment	-31.0	-24 $\frac{1}{2}$	-6	3 $\frac{1}{4}$
Exports	-4.1	8 $\frac{3}{4}$	6	5
Imports	-9.7	4	3 $\frac{3}{4}$	3 $\frac{1}{4}$
Gross Domestic Product (GDP)	-7.6	$\frac{1}{4}$	1 $\frac{1}{2}$	2 $\frac{1}{4}$
Gross National Product (GNP)	-10.7	-1 $\frac{1}{4}$	$\frac{1}{4}$	1 $\frac{1}{2}$
GNP per capita (constant prices)	-11.4	-1 $\frac{1}{2}$	$\frac{1}{2}$	1 $\frac{1}{2}$
PRICES				
(Annual Growth %)				
Harmonised Index of Consumer Prices (HICP)	-1.7	-1 $\frac{1}{2}$	1	1
Consumer Price Index (CPI)	-4.5	-1	2	1 $\frac{1}{2}$
Wage Growth	-0.8	-3	-1	0
LABOUR MARKET				
Employment Levels (ILO basis (000s))	1,929	1,851	1,826	1,831
Unemployment Levels (ILO basis (000s))	259	287	287	273
Unemployment Rate (as % of Labour Force)	11.8	13 $\frac{1}{2}$	13 $\frac{1}{2}$	13
PUBLIC FINANCE				
Exchequer Balance (€bn)	-24.6	-18.7	-17.9	-15.8
General Government Balance (€bn)	-23.0	-50.2	-15.4	-12.8
General Government Balance (% of GDP)	-14.4	-31 $\frac{1}{2}$	-9 $\frac{1}{2}$	-7 $\frac{3}{4}$
Excluding Bank Payments	-11.9	-11 $\frac{1}{2}$		
General Government Debt (% of GDP)	65.6	93 $\frac{1}{2}$	99	104 $\frac{1}{2}$
EXTERNAL TRADE				
Balance of Payments Current Account (€bn)	-4.9	-0.1	1.7	2.9
Current Account (% of GNP)	-3.7	-0	1 $\frac{1}{4}$	2 $\frac{1}{4}$
EXCHANGE AND INTEREST RATES (end of year)				
US\$/€ Exchange Rate	1.39	1.31	1.29	1.29
STG£/€ Exchange Rate	0.89	0.85	0.84	0.84
Main ECB Interest Rate	1.00	1.00	1.25	2.25

*In the tables and text we present percentages (rates of change or percentage shares) of historical data to one decimal point. For our forecasts such percentages are presented as fractions rounded off to the nearest quarter. This is to emphasise the distinction between historical data and forecast numbers. The figures for 2010 are estimates based on data for the first three quarters of the year.

SUMMARY

The forecasts in this *Commentary* see GDP growing by 1½ per cent in real terms in 2011 and by 2¼ per cent in 2012. The corresponding figures for GNP are ¼ per cent in 2011 and 1½ per cent in 2012. Following the pattern of 2010, the growth which is envisaged for 2011 and 2012 is made up of a strong export performance together with further contractions in domestic demand.

Exports are forecast to grow by 6 per cent in 2011 and by 5 per cent in 2012. By contrast, consumption is expected to fall by ¾ per cent in 2011 and by a further ½ per cent in 2012. On-going uncertainty with respect to job stability, wages and taxation are likely to act against any rebound in consumption spending over the forecast horizon. Government purchases of goods and services and public investment are expected to continue shrinking in both 2011 and 2012. We see the banking crisis as being a key factor in the continued depressed level of both consumption and investment through an absence of affordable credit.

Our GDP and GNP growth forecasts are lower than the corresponding forecasts which underpinned *Budget 2011*. As a result, we see the ratio of general government debt to GDP reaching 104.5 per cent in 2012, as compared to 102 per cent which is the forecast figure in *Budget 2011*. As we discuss in the *General Assessment*, given the uncertainties surrounding all forecasts, we would not place too great an emphasis on the difference. Instead, we take it as being an on-going indicator of the challenges which are faced in restoring the public finances to a sustainable path. We expect the general government deficit to be 9.6 per cent of GDP in 2011 and 7.8 per cent in 2012.

While our forecasts envisage positive growth in both GNP and GDP for the first time since 2007, the rates of growth are still slow. For 2011, we see the growth in GNP and GDP being accompanied by continued employment falls as output growth is achieved through productivity growth. Employment is expected to average 1.83 million in 2011, down 1¼ per cent on the 2010 number. We do expect employment growth in 2012 but at just 5,000, this is tiny relative to the labour force. The rate of unemployment is expected to average 13 ½ per cent in 2011 and 13 per cent in 2012. Net outward migration is forecast to be 100,000 over the two year period April 2010 to April 2012. The highest rate of net outflow in the 1980s occurred in 1989 when the rate reached 44,000. Hence, our forecast for an average annual net outflow of 50,000 is high in historic terms, albeit against a larger population base.

We expect the Consumer Price Index (CPI) to average 2 per cent in 2011 and 1 ½ per cent in 2012. For Harmonised Index of Consumer Prices (HICP), we expect 1 per cent in both 2011 and 2012. We expect wages to fall by 1 per cent in 2011 and for them to remain constant next year.

As referred to above, in our *General Assessment* we discuss how our forecasts compare to those in *Budget 2011*. We also make a brief comment on *Budget 2011* in which we express some disappointment that the tax measures were so heavily focused on income as opposed to the implementation of taxes or charges that might be expected to impact less on economic activity such as property taxes. We note the on-going concerns surrounding the debt crisis in the Euro Area and how this situation gives rise to uncertainty in the context of forecasting.

NATIONAL ACCOUNTS 2010 (Estimate)

A: Expenditure on Gross National Product

	2009	2010 Estimate	Change in 2010				
			€bn		%		
	€bn	€bn	Value	Volume	Value	Price	Volume
Private Consumer Expenditure	84.3	81.8	-2.5	-0.8	-3	-2	-1
Public Net Current Expenditure	27.7	26.1	-1.6	-1.4	-5 ¾	-¾	-5
Gross Fixed Capital Formation	24.7	18.0	-6.8	-6.1	-27 ¼	-3 ¾	-24 ½
Exports of Goods and Services (X)	144.8	156.9	12.2	12.5	8 ½	-¼	8 ¾
Physical Changes in Stocks	-2.3	-0.1	2.2	1.7			
Final Demand	279.3	282.8	3.5	5.0	1 ¼	-½	1 ¾
less:	0.0	0.0	0.0	0.0			
Imports of Goods and Services (M)	120.4	124.6	4.2	4.9	3 ½	-½	4
less:							
Statistical Discrepancy	-0.7	-0.7	0.0	-0.1			
GDP at Market Prices	159.6	159.0	-0.7	0.2	-½	-½	¼
less:							
Net Factor Payments (F)	-28.4	-30.8	-2.4	-2.1	8 ½	1	7 ½
GNP at Market Prices	131.2	128.1	-3.1	-1.8	-2 ¼	-1	-1 ¼

B: Gross National Product by Origin

	2009	2010 Estimate	Change in 2010	
			€bn	%
Agriculture, Forestry, Fishing	2.2	2.4	0.2	10
Non-Agricultural: Wages, etc.	72.7	67.9	-4.8	-6 ½
Other:	53.9	59.3	5.4	10
Adjustments: Stock Appreciation	1.0	-0.2		
Statistical Discrepancy	-0.7	-0.7		
Net Domestic Product	129.1	128.6	-0.4	-¼
less:				
Net Factor Payments	-28.4	-30.8	-2.4	8 ½
National Income	100.7	97.8	-2.8	-2 ¾
Depreciation	14.8	15.0	0.2	1 ¼
GNP at Factor Cost	115.4	112.8	-2.6	-2 ¼
Taxes less Subsidies	15.8	15.3	-0.5	-3
GNP at Market Prices	131.2	128.1	-3.1	-2 ¼

C: Balance of Payments on Current Account

	2009	2010 Estimate	Change in 2010	
			€bn	€bn
Exports (X) less Imports (M)	24.4	32.4	8.0	
Net Factor Payments (F)	-28.4	-30.8	-2.4	
Net Transfers	-0.9	-1.7	-0.8	
Balance on Current Account	-4.9	-0.1	4.8	
as % of GNP	-3.7	-0.1	3.6	

D: GNDI and Terms of Trade

	2009	2010 Estimate	2010 Volume Change	
			€bn	%
Terms of Trade Loss or Gain		0.5		
GNP Adjusted for Terms of Trade	131.2	130.0	-1.3	-1
GNDI*	130.3	128.2	-2.1	-1½
National Resources**	130.4	127.0	-3.4	-2½

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

** GNDI including capital transfers.

FORECAST NATIONAL ACCOUNTS 2011

A: Expenditure on Gross National Product

	2010 Estimate €bn	2011 Forecast €bn	Change in 2011				
			€bn		%		
			Value	Volume	Value	Price	Volume
Private Consumer Expenditure	81.8	81.6	-0.2	-0.6	- ¼	½	- ¾
Public Net Current Expenditure	26.1	25.0	-1.2	-0.9	-4 ½	-1	-3 ½
Gross Fixed Capital Formation	18.0	17.0	-1.0	-1.1	-5 ½	½	-6
Exports of Goods and Services (X)	156.9	166.8	9.9	9.4	6 ¼	¼	6
Physical Changes in Stocks	-0.1	0.0	0.1	0.1			
Final Demand	282.8	290.4	7.7	7.0	2 ¾	¼	2 ½
less:							
Imports of Goods and Services (M)	124.6	129.8	5.2	4.6	4 ¼	½	3 ¾
less:							
Statistical Discrepancy	-0.7	-0.7	0.0	0.0			
GDP at Market Prices	159.0	161.4	2.4	2.4	1 ½	-0	1 ½
less:							
Net Factor Payments (F)	-30.8	-33.7	-2.8	-2.2	9 ¼	2	7
GNP at Market Prices	128.1	127.7	-0.4	0.4	- ¼	- ¾	¼

B: Gross National Product by Origin

	2010 Estimate €bn	2011 Forecast €bn	Change in 2011	
			€bn	%
Agriculture, Forestry, Fishing	2.4	2.5	0.1	5
Non-Agricultural: Wages, etc.	67.9	66.1	-1.7	-2 ½
Other:	59.3	62.6	3.3	5 ½
Adjustments: Stock Appreciation	-0.2	-0.2	0.0	0
Statistical Discrepancy	-0.7	-0.7	0.0	0
Net Domestic Product	128.6	130.3	1.7	1 ¼
less:				
Net Factor Payments	-30.8	-33.7	-2.8	9 ¼
National Income	97.8	96.6	-1.2	-1 ¼
Depreciation	15.0	15.3	0.3	2
GNP at Factor Cost	112.8	111.9	-0.9	- ¾
Taxes less Subsidies	15.3	15.8	0.5	3
GNP at Market Prices	128.1	127.7	-0.4	- ¼

C: Balance of Payments on Current Account

	2010 Estimate €bn	2011 Forecast €bn	Change in 2011	
			€bn	%
Exports (X) less Imports (M)	32.4	37.1	4.7	
Net Factor Payments (F)	-30.8	-33.7	-2.8	
Net Transfers	-1.7	-1.7	0.0	
Balance on Current Account	-0.1	1.7	1.8	
as % of GNP	-0.1	1.3	1.4	

D: GNDI and Terms of Trade

	2010 €bn	2011 Estimate €bn	2011 Volume Change	
			€bn	%
Terms of Trade Loss or Gain		-0.4		
GNP Adjusted for Terms of Trade	128.1	128.1	0.0	0
GNDI*	126.4	126.4	0.0	0
National Resources**	126.5	126.5	0.0	0

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

** GNDI including capital transfers.

FORECAST NATIONAL ACCOUNTS 2012

A: Expenditure on Gross National Product

	2011 Forecast €bn	2012 Forecast €bn	Change in 2012				
			Value	Volume	Value	% Price	Volume
Private Consumer Expenditure	81.6	82.2	0.6	-0.4	¾	1 ¼	-½
Public Net Current Expenditure	25.0	23.8	-1.2	-0.7	-4 ½	-1 ¾	-3
Gross Fixed Capital Formation	17.0	17.6	0.6	0.6	3 ¾	¼	3 ¼
Exports of Goods and Services (X)	166.8	176.1	9.3	8.3	5 ½	½	5
Physical Changes in Stocks	0.0	0.1	0.1	0.0			
Final Demand	290.4	299.9	9.5	8.1	3 ¼	½	2 ¾
less:							
Imports of Goods and Services (M)	129.8	135.3	5.5	4.4	4 ¼	¾	3 ¼
less:							
Statistical Discrepancy	-0.7	-0.7	0.0	0.0			
GDP at Market Prices	161.4	165.3	4.0	3.7	2 ½	¼	2 ¼
less:							
Net Factor Payments (F)	-33.7	-36.2	-2.5	-1.8	7 ½	2	5 ¼
GNP at Market Prices	127.7	129.2	1.4	2.0	1 ¼	-½	1 ½

B: Gross National Product by Origin

	2011 Forecast €bn	2012 Forecast €bn	Change in 2012	
			€bn	%
Agriculture, Forestry, Fishing	2.5	2.6	0.1	2
Non-Agricultural: Wages, etc.	66.1	66.3	0.1	¼
Other:	62.6	65.3	2.8	4 ½
Adjustments: Stock Appreciation	-0.2	0.0	0.2	-100
Statistical Discrepancy	-0.7	-0.7	0.0	0
Net Domestic Product	130.3	133.5	3.2	2 ½
less:				
Net Factor Payments	-33.7	-36.2	-2.5	7 ½
National Income	96.6	97.3	0.6	¾
Depreciation	15.3	15.6	0.4	2 ½
GNP at Factor Cost	111.9	112.9	1.0	1
Taxes less Subsidies	15.8	16.2	0.4	2 ½
GNP at Market Prices	127.7	129.2	1.4	1 ¼

C: Balance of Payments on Current Account

	2011 Estimate €bn	2012 Forecast €bn	Change in 2012
			€bn
Exports (X) less Imports (M)	37.1	40.8	3.8
Net Factor Payments (F)	-33.7	-36.2	-2.5
Net Transfers	-1.7	-1.7	0.0
Balance on Current Account	1.7	2.9	1.3
as % of GNP	1.3	2.3	1.0

D: GNDI and Terms of Trade

	2011 €bn	2012 Estimate €bn	2012 Volume Change	
			€bn	%
Terms of Trade Loss or Gain		-0.5		
GNP Adjusted for Terms of Trade	127.7	129.2	1.5	1 ¼
GNDI*	126.0	127.5	1.5	1 ¼
National Resources**	126.1	127.6	1.5	1 ¼

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

** GNDI including capital transfers.

THE INTERNATIONAL ECONOMY

Main Developments

Great uncertainty surrounds the outlook for the international economy, even as the economic recovery continues. The resilient performance in 2010 of many of the world's major economies meant that their forecasts for 2010 have been revised upwards since the *Autumn Commentary*. Driving this more positive outlook is a stronger than expected recovery in Britain, the Euro Area and Japan. The output of the combined OECD countries is now estimated to have increased by 2.8 per cent according to the OECD *Economic Outlook*,¹ up marginally from 2.7 per cent in earlier forecasts. As mentioned in previous *Commentaries*, there is significant variation in international growth rates, although the division is no longer simply between developed and emerging economies. Consumption demand in the United States and China brought about export-led growth in Europe and the rest of Asia, leading to some convergence in global growth rates, even as the performance of the US economy as a whole faltered somewhat in mid 2010. Emerging economies continued to grow steadily throughout 2010, leading to an increase in their share of global GDP.

The outlook for OECD output growth in 2011 has been revised downward from 2.8 per cent to 2.3 per cent. The evidence for a protracted recovery in the USA, greater austerity in some European economies and the need for household deleveraging across the developed world are expected to depress economic activity throughout the year. With economic growth expected to remain robust in emerging economies, the pattern of the global recovery looks likely to become more unequal in 2011. In 2012, a return to more robust growth is expected in the USA and Europe, resulting in OECD output growth of 2.8 per cent.

Following disappointing mid-year results, fears of a return to negative output growth in the USA increased. GDP growth slowed to 0.4 and 0.6 per cent in the second and third quarters of 2010, respectively. However, these worries have abated in light of positive information regarding retail sales, discretionary consumer spending, manufacturing, productivity, and stock prices. Although a return to recession now looks unlikely, the recovery is predicted to be prolonged and arduous. Prospects for growth have been dampened by the need for American households to repair their balance sheets, with the savings rate estimated to have risen to 5.5 per cent in the third quarter of 2010. This process is likely to weigh on growth for some time, although it will eventually lead to a better balanced economy. Growth is also being frustrated by the problem of persistently high

¹ International forecasts used in this *Commentary* are taken from the OECD *Economic Outlook* No. 88, November 2010.

unemployment, which stands at 9.4 per cent as of November, and continued uncertainty in the housing market. On the upside, both fiscal and monetary policy makers have committed themselves to expansionary policies in the near-term, which should help support economic recovery. The US economy is estimated to have grown by 2.7 per cent in 2010, and is forecast to grow by 2.2 per cent in 2011. The outlook for 2012 is more upbeat, with GDP expected to rise by 3.1 per cent, assuming that no significant steps are taken to reduce the fiscal deficit.

The UK economy is experiencing a trade-led recovery as greater demand both domestically and in markets in Europe, America and Asia has led to increased exports and investment in the economy in the latter half of 2010. Growth is estimated to have been 1.8 per cent in 2010, and is forecast to be 1.7 per cent in 2011 and 2.0 per cent in 2012. In 2010, growth is expected to be mainly as a result of increased investment as companies seek to restock following the rundown of inventories that occurred during the recession. The growth profile is expected to change in 2011 and 2012, with exports becoming the leading determinant of output growth. Domestic consumption, although robust throughout 2010, is expected to flag over the coming years due to the need for households to repair damaged balance sheets and weak projected disposable income, which will dampen the recovery in the short run. The government's fiscal consolidation, as set out in the *2010 Spending Review*, will also act as a drag on growth in the short run, with government expenditure projected to fall by 8.3 per cent in real terms by 2015. According to the Office for Budget Responsibility, this consolidation will reduce net public sector borrowing from 11 per cent in 2010 to 1.1 per cent of GDP by 2015-2016. In the short run, fiscal austerity is expected to knock off 0.5 per cent off the growth rate. Monetary policy is expected to remain accommodative in 2011 at the cost of higher inflation. The increasing price level, coupled with a sustained recovery, is expected to lead to a tightening of monetary policy in 2012.

The fortunes of the economies that make up the Euro Area have been wildly divergent in recent times. Both Greece and Ireland were shut out of the sovereign debt markets and forced to seek assistance from the IMF and the EU in 2010. Question marks have also been raised over high debt levels in Portugal, Spain and Belgium. These developments contrast sharply with the stellar performance of the German economy and the more benign outlook for growth in France and Italy. Restocking and fixed investment spurred output growth in 2010, which is estimated to have increased to 1.7 per cent. Growth acceleration is not expected in 2011 as the persistent tension in financial markets stunts economic recovery. Assuming the crisis abates in 2012, more robust growth is expected in that year. However, there is considerable tail risk present in the European financial system due to the interconnected nature of bank and government funding, and since no credible solution to the crisis has yet been agreed upon. The Euro Area is forecast to grow by 1.7 per cent in 2011 and by 2 per cent in 2012. Monetary policy is expected to remain loose in the short term, with the current low interest rate regime and accommodative credit facilities set to remain in place.

Many Central Banks around the world have sought to aid domestic recoveries through relaxed monetary policies. In the US, Britain and the Euro Area effective interest rates were reduced close to zero and exceptional liquidity measures were provided to encourage economic activity. Quantitative easing, whereby Central Banks create money in order to purchase government bonds and other financial assets, was also employed by the Bank of England and the US Federal Reserve in order to depress interest rates and encourage investment. In November, the US Federal Reserve, citing the elevated unemployment rate and subdued inflation expectations, announced a continuation of this process. The stated intent is to buy \$600 billion in US Treasury bonds before June 2011 in an attempt to bring down long-term interest rates in order to stimulate spending in the economy and prevent deflation. This policy carries with it some risk, especially if inflation exceeds the Federal Reserve's expectations. There is also a worry that an expansionary fiscal policy will dampen the effect of quantitative easing by creating more debt, thereby increasing long-term yields.

In an international context, the impact of the Federal Reserve's policy will be to weaken the dollar on exchange markets, thus making American exports more competitive. The excess liquidity created will also have a knock on effect on commodity and emerging markets. The evidence of this is already becoming apparent. These effects, coupled with ongoing exchange rate controls in China, have induced a protectionist response from Central Banks around the world. Countries seeking to maintain their relative competitiveness have intervened in currency markets in order to depreciate their exchange rates, while emerging economies such as Brazil and Indonesia are seeking to prevent overheating caused by the inflow of foreign investment by limiting capital flows. Governments that managed to avoid implementing protectionist trade policies must now be wary of the destabilising effects of using monetary policy for the same purpose. Without international cooperation, the so-called currency wars could lead to dangerous imbalances developing in 2011.

Implications for Ireland

EXPORTS

The performance of Irish exports remains strong as the recovery in the global economy continues, and this trend is set to continue on the basis of the growth forecasts for 2011 and 2012 discussed above. Crucially, future export potential depends on the fortunes of our main trading partners in America, Britain and the Euro Area. In the US consumer demand is expected to record weak growth due to the ongoing problems of high unemployment and high household debt, but early indicators for 2011 suggest a brighter outlook than was envisaged in mid 2010. In Britain, consumption remained robust throughout the recession, but with government austerity measures set to increase in 2011, the prospects for significant growth in consumption over the forecast period is unlikely. In Europe, which accounted for nearly 43 per cent of total Irish exports in the first three quarters of 2010, demand has grown strongly as the core economies begin to restock, but recovery is being hampered by continuing difficulties in the financial markets. If considerable steps are taken in 2011

and 2012 to address these issues, the European market could experience a better balanced and more sustainable recovery.

EXCHANGE RATES

Due to the ongoing sovereign debt problems facing several Euro Area economies, the euro has weakened relative to other main currencies. The average dollar exchange rate for 2011 thus far has been \$1.31, which is significantly below the three year average of \$1.39. The euro exchange rate versus the yen shows a similar change, whereas the euro/pound exchange rate has remained far more stable. Dollar and sterling exchange rate movements in 2010 are shown in Figure 1 below. A weaker euro has helped boost Ireland's export performance in markets outside the Euro Area. Indeed, as the euro has been in the maw of a sovereign debt and financial crisis, it is surprising that it has remained as strong as it has relative to other major currencies. It is a testament to the seriousness of the crisis that the euro has weakened against the dollar even as the Federal Reserve has committed itself to adding \$600 billion in extra liquidity by June of this year. Normally, this would lead to the dollar becoming significantly more competitive against the euro, but instead we observe the opposite.

Figure 1: Euro Exchange Rates

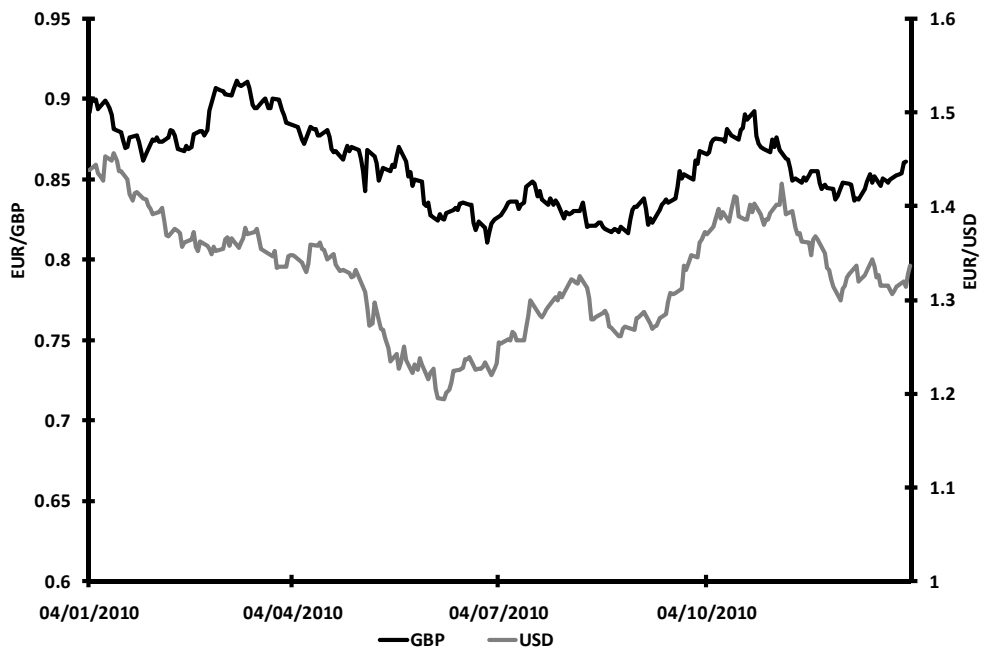


Table 1: Short term International Outlook

Country	GDP Output Growth			Consumer Prices* Inflation			Unemployment Rate			General Government Balance % of GDP		
	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
UK	1.8	1.7	2.0	3.1	2.6	1.6	7.9	7.8	7.6	-9.6	-8.1	-6.5
Germany	3.5	2.5	2.2	1.0	1.2	1.4	6.9	6.3	6.2	-4.0	-2.9	-2.1
France	1.6	1.6	2.0	1.6	1.1	1.1	9.3	9.1	8.8	-7.4	-6.1	-4.8
Italy	1.0	1.3	1.6	1.5	1.4	1.4	8.6	8.5	8.3	-5.0	-3.9	-3.1
Euro Area	1.7	1.7	2.0	1.5	1.3	1.2	9.9	9.6	9.2	-6.3	-4.6	-3.5
USA	2.7	2.2	3.1	1.6	1.1	1.1	9.7	9.5	8.7	-10.5	-8.8	-6.8
Japan	3.7	1.7	1.3	-0.9	-0.8	-0.5	5.1	4.9	4.5	-7.7	-7.5	-7.3
China	10.5	8.5	9.0	5.9	-0.1	0.6	9.8	7.8	8.6			
OECD	2.8	2.3	2.8	0.0	0.0	0.0	8.3	8.1	7.5	-7.6	-6.1	-4.7
Ireland	0.1	1 ½	2 ¼	-1.6	1	1	13.4	13 ½	13	-31.6	-9 ½	-7 ¾

Source: OECD *Economic Outlook* No. 88, November 2010.

*HICP for EU countries, consumption deflator for rest of world.

INTEREST RATES

Interest rates were cut to historically low levels during the course of 2009, and were maintained throughout 2010. Looking ahead to 2011 and 2012, there is likely to be some upward movement in interest rates as the European economy improves and attention turns to curbing inflation. Already in 2011, Euro Area inflation has surprised on the upside as oil and other commodities rise. These are inflationary pressures that were in place before 2008, and the global recession has provided only a momentary respite from the underlying trends that are driving these markets. Managing the twin goals of ensuring that the recovery is sustainable and yet avoiding the build-up of inflationary pressures will be a major task facing the ECB in 2011 and 2012.

The OECD is forecasting that inflation in the Euro Area is likely to remain below the target rate of 2 per cent in both 2011 and 2012, although these forecasts were arrived at before the recent rise in oil prices. Euro Areas Consumer Price Index is forecast to rise by 1.3 per cent in 2011 and by 1.2 per cent in 2012. These low forecasts indicate a large amount of excess capacity. As such, interest rates are forecast to remain low for much of 2011. We expect that the main refinancing rate will be kept unchanged in the first three quarters of the year, and will rise to 1.25 per cent in the fourth quarter. On the basis that the recovery is sustained in to 2012, we assume interest rates will to continue to increase throughout that year, rising to 2.25 by the fourth quarter.

THE DOMESTIC ECONOMY

The most recent Central Statistics Office estimates from the *Quarterly National Accounts (QNA)* for GDP and GNP suggest that the economy grew slightly in Q3. Cumulating estimated activity over the first three quarters of the year would suggest that the dramatic collapse in the economy over the course of 2008 and 2009 has finally come to an end. We estimate that volume GDP will broadly remain unchanged in 2010, while GNP could shrink up to 1¼ per cent. While the ending of the recession is a significant positive development, it is driven entirely by the contribution of net exports to overall growth. Exports have been growing strongly throughout 2010. However, the domestic economy, and in particular private consumption, has continued to contract. Our estimate for 2010 is that private consumption in volume terms will contract by 1 per cent, and is likely to continue to fall in 2011 and 2012. This is due to, inter alia, a significant deterioration in consumer confidence in the second half of 2010, the likely impact of the 2011 budgetary package on disposable income and the anticipated further job losses, particularly concentrated in the financial and public sector.

Using the *QNA* Q3 figures, we have calculated the implied carryover growth rate for 2010, as shown in Table 2. This is the growth rate that would occur if economic activity were to remain unchanged from the level recorded in the third quarter of 2010. Based on pure carryover, the latest *QNA* estimates suggest GDP would shrink marginally in 2010 by ½ per cent. Our estimate for 2010 GDP growth is very close to this, -¼ per cent. We expect the domestic economy to continue to shrink, counterbalanced by external demand, with exports performing strongly.

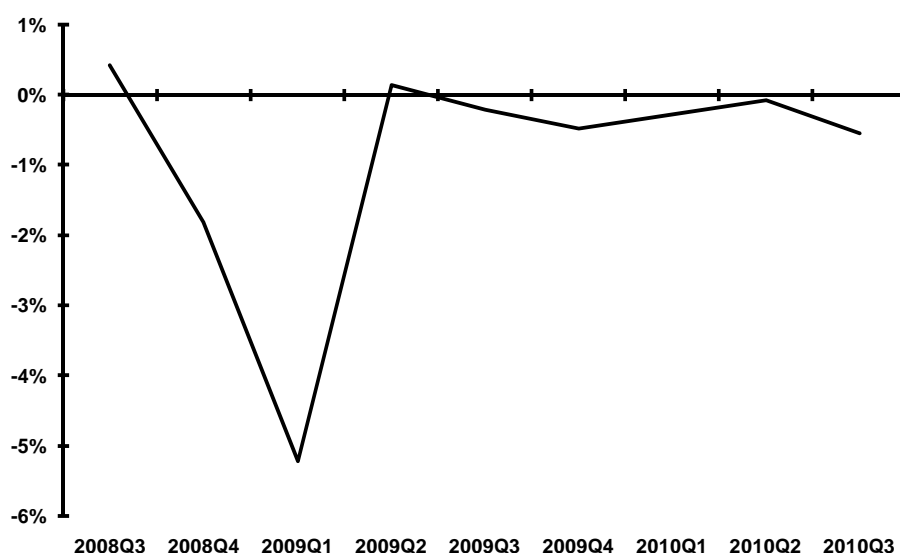
Table 2: Implied Carryover from Quarterly National Accounts Q3, Constant Price Growth Rates

	CSO Estimate 2009	Carryover Based on First Three Quarters 2010	QEC Estimate 2010
CONSTANT PRICES			
Consumption	-7.0	-1.0	-1.0
Government Expenditure	-4.4	-4.9	-5.0
Investment	-31.0	-27.4	-24.5
Exports	-4.1	9.9	8.7
Imports	-9.7	6.6	4.0
GDP at Market Prices	-7.6	-0.5	0.1
Net Factor Income	11.3	9.5	8.3
GNP at Market Prices	-10.7	-2.8	-1.3

Consumption

Domestic consumption decreased by 0.5 per cent in the third quarter of 2010 according to the latest figures from the *Quarterly National Accounts (QNA Q3 2010)*. Consumption was 1.3 per cent lower than Q3 2009, compared to a yearly decline of 1.1 per cent in Q2. The continuing weakness of domestic consumption is shown in Figure 2. Although the decline in consumption is not as dramatic as was seen earlier in the crisis, its ongoing contraction will weigh on future investment, employment and inflation prospects.

Figure 2: Quarter-on-Quarter Percentage Change in Volume of Consumption, Seasonally Adjusted



Source: Quarterly National Accounts, CSO

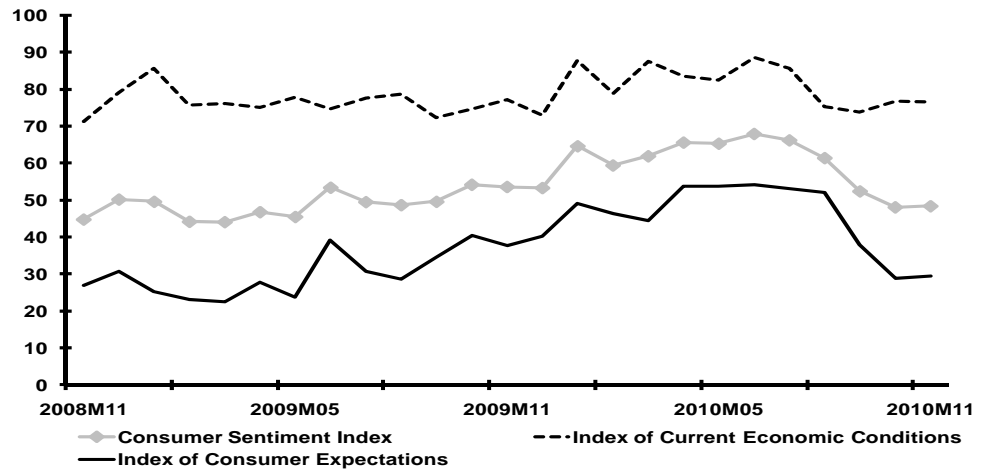
Table 3 presents recent trends in a range of indicators of consumption. The reduced pace of the annualised fall in retail sales is driven largely by the ongoing recovery of the motor industry, which is buoyed by the government's scrappage scheme. The retail sales index was down by 1 per cent in value terms in November compared to November of last year, but the index excluding motor sales was down by 2 per cent.

Table 3: Recent Indicators of Consumption (Annualised Volume Growth Rates)

	Retail Sales (Unadjusted)		Trips Abroad	New Vehicle Sales	All Vehicle Sales
	All Businesses	Excluding Motor Trade			
	Annualised Growth Rates				
	%	%	%	%	%
2008Q3	-3.0	0.6	6.2	-12.8	-18.0
2008Q4	-6.4	-2.5	2.1	-15.4	-20.9
2009Q1	-11.4	-5.1	-3.1	-31.9	-44.7
2009Q2	-13.1	-6.6	-5.0	-37.3	-53.3
2009Q3	-14.1	-6.9	-9.6	-46.1	-62.2
2009Q4	-14.0	-6.8	-10.5	-47.1	-62.5
2010Q1	-8.6	-5.7	-9.2	-32.1	-38.8
2010Q2	-4.2	-3.8	-10.4	-18.0	-8.1
2010Q3	-1.2	-2.9	-6.8	1.4	29.7

Consumer confidence has been badly shaken by the continued ill-health of the economy that necessitated intervention from the IMF and the EU, as well as a particularly difficult budget and an upward revision of the cost of the domestic banking crisis. The KBC/ESRI *Consumer Sentiment Index* has fallen from a height of 67.9 in June to 44.4 in December. The decline in confidence since mid 2010 can be seen in Figure 3 below.

Figure 3: KBC/ESRI Consumer Sentiment Index



In 2010 we estimate that consumption fell by 1 per cent, which is a downward revision of our previous estimate of a $\frac{1}{2}$ per cent drop, as a result of the worsening situation observed in Q3. In light of the greater fiscal austerity measures introduced in the budget, we have also revised downward our expectations for consumption growth in 2011. We now predict that consumption growth will fall by $\frac{3}{4}$ in 2011, which will in turn have implications for investment and employment prospects. Owing to the continued programme of fiscal austerity and poor employment prospects, the forecast for 2012 is for a contraction of $\frac{1}{2}$ per cent.

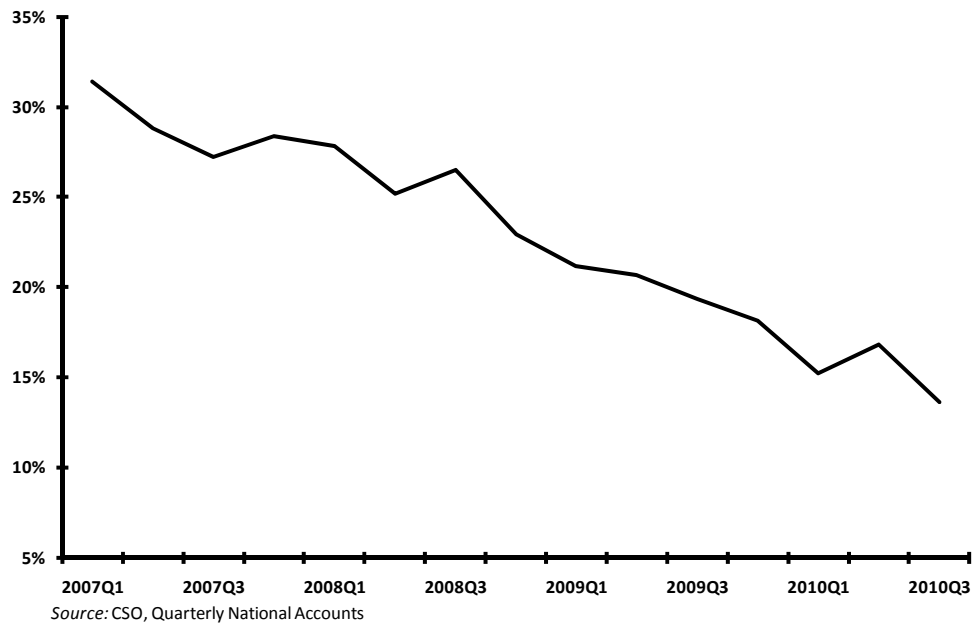
Investment

After surprising on the upside in Q2, investment contracted significantly in Q3, according to the latest data from the *Quarterly National Accounts*. Investment in transport equipment (principally aircraft) was the main driver behind this decline, falling by nearly €1 billion, with investment in other machinery and equipment down nearly €300 million. This decline is unsurprising given the anaemic outlook for domestic consumption. Comparing Q3 2010 with Q3 2009, investment is down 30.9 per cent with significant reductions recorded in housing (dwellings and improvements), other building and construction, transfer costs, and machinery and equipment. Investment now represents just 14 per cent of GNP, compared to an average of 26 per cent in 2008. Figure 4 shows the deterioration in investment as proportion of GNP over the past two years.

Table 4: Gross Fixed Capital Formation

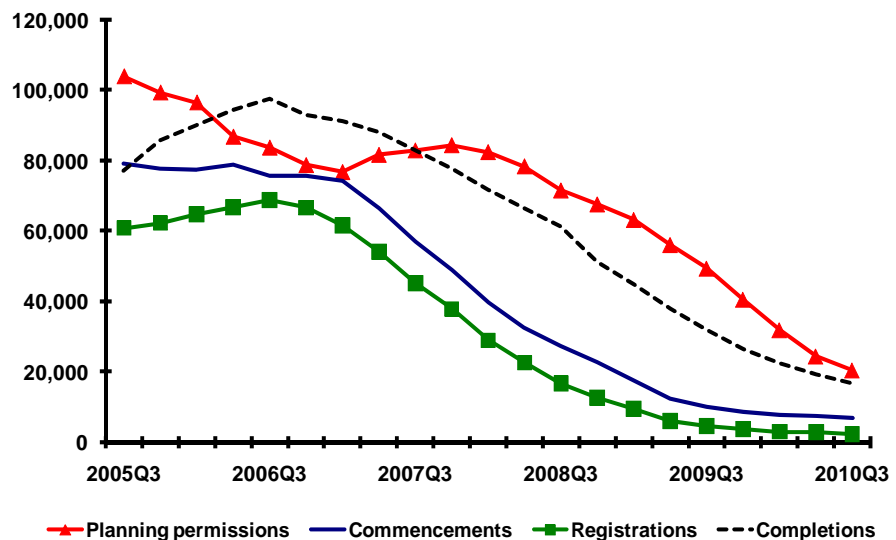
	2009	% Change in 2010		2010	% Change in 2011		2011	% Change in 2012		2012
	€bn	Volume	Value	€bn	Volume	Value	€bn	Volume	Value	€bn
Housing	7.4	-36 ¼	-37 ¼	4.6	-15	-15 ¼	3.9	5 ½	6 ¾	4.2
Other Building	8.6	-25	-32 ½	5.8	-10	-12 ¾	5.1	0	-3	4.9
Transfer Costs	0.6	-40	-60	0.2	-5	-10	0.2	0	0	0.2
Building and Construction	16.6	-30 ¾	-35 ½	10.7	-12	-13 ¾	9.2	2 ¼	1 ¼	9.3
Machinery and Equipment	8.1	-10	-10 ½	7.3	5	6 ¾	7.8	5	6 ¾	8.3
Total	24.7	-24 ½	-27 ¼	18.0	-6	-5 ½	17.0	3 ¼	3 ¾	17.6

Figure 4: Investment as a Share of GNP (Seasonally Adjusted)



Looking at the housing market, the contraction continued in 2010, as shown in Figure 5. On an annualised basis, planning permissions for houses and apartments stood at 20,493 in 2010 Q3, 58.5 per cent lower than in 2009 Q3. Completions are down 47.5 per cent and registrations are down 50 per cent on the same basis. We estimate that house completions reached 14,500 by the end of 2010, which is an increase on our previous estimate. Activity is expected to remain weak in 2011 and 2012, with 10,000 completions forecast for each of those years.

Figure 5: Housing Statistics, Annualised Numbers



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

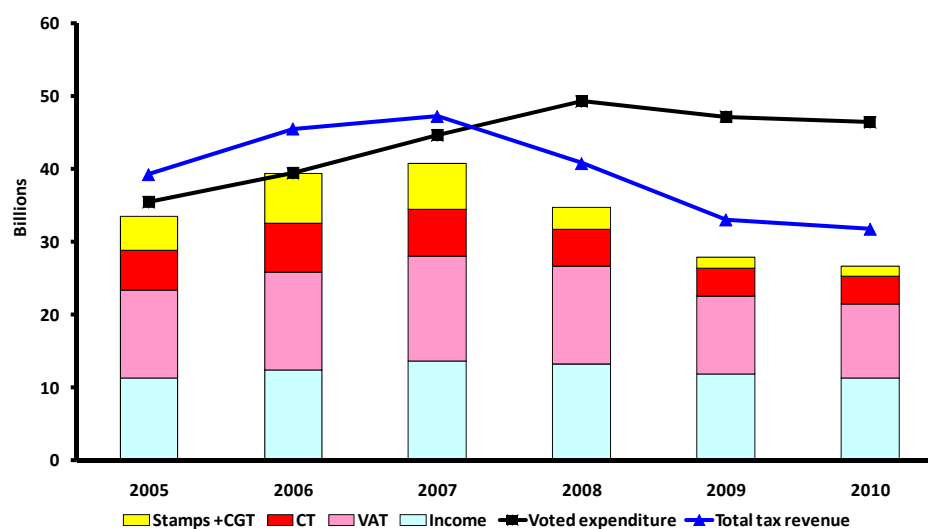
According to the *permanent tsb/ESRI House Price Index*, the pace of decline has continued to ease in the third quarter of 2010, falling by just 1.3 per cent compared to the second quarter and 14.8 per cent lower than in the third quarter of 2009. The House Price Index has thus far fallen by 36 per cent from its peak in early 2007, with the fall being most acute in Dublin where the index is down 45 per cent. We expect this trend to continue in to 2011, but to then bottom out in 2012. The peak to trough fall is expected to be in the region of 50 per cent, with prices remaining essentially flat thereafter.

Investment as a whole is expected to have contracted by 24½ per cent in 2010, which is in line with our earlier forecasts. Investment in building and construction is estimated to have decreased by 30¾ per cent, whereas investment in machinery and equipment fell by 10 per cent. Investment will fall by a further 6 per cent in 2011, with the moderated pace of decline coming from an expected increase of 5 per cent in investment in machinery and equipment. Building and construction is expected to be a drag on growth in 2011 and 2012, but continuing investment in machinery and equipment is expected to lead to an increase in total investment of 3¼ per cent in 2012.

Government

The Exchequer Returns for December 2010 confirmed the pattern on tax revenues which has emerged since the middle of 2010, namely that tax revenues have finally stabilised. In Figure 6 we can see the very rapid growth in the gap between tax revenues and voted expenditures between 2007 and 2009. From a position of surplus in 2007, the gap widened to over €14 billion within a two year period and at the end of 2010 stood at €14.6 billion. This measure of the deficit, which excludes the effects of all once-off payments to banks, debt interest payments or transfers to the National Pension Reserve Fund, and also excludes all once-off revenue windfalls, is a useful yardstick for gauging the success of budgetary policy in relation to the fiscal crisis. On the basis of this metric, the measures adopted over the past number of years have been sufficient to stabilise the deficit.

Figure 6: Exchequer Returns, Year Ended September



Source: Department of Finance

Table 5: Public Finances

	2009 €bn	% Change	2010 €bn	% Change	2011 €bn	% Change	2012 €bn
Current Revenue	33.9	1 ¾	34.4	6 ½	36.7	3.0	37.8
of which: Tax Revenue	33.0	-4	31.8	9 ¼	34.7	5.7	36.7
Current Expenditure	45.2	4	47.0	3	48.4	-2.3	47.3
of which: Voted	40.3	¾	40.5	3	41.7	-4.9	39.7
Current Surplus	-11.4		-12.6		-11.7	-18.7	-9.5
Capital Receipts	1.5	22 ¾	1.8	19	2.1	-23.6	1.6
Capital Expenditure	14.7	-46	8.0	4	8.3	-4.0	7.9
of which: Voted	6.9	-14 ¼	5.9	-27	4.3	-7.9	4.0
Capital Borrowing	-13.3		-6.2		-6.1	2.8	-6.3
Exchequer Balance	-24.6		-18.7		-17.9		-15.9
as % of GNP	-18.8		-14 ¾		-14		-12 ¼
General Government Balance	-23.0		-50.2		-15.4		-12.8
as % of GDP	-14.4		-31 ½		-9 ½		-7 ¾
Gross Debt as % of GDP	65.6		93 ½		99		104 ½
Net Debt as % of GDP*	38.2		68 ¾		88 ¼		94

*Net of liquid assets in NPRF and Exchequer Balances.

However, as discussed in the previous *Commentary*, the stabilisation of this deficit has been overtaken by the costs of the bank bailout. With an estimated €31.4 billion additional funds included in the 2010 General Government Deficit, this has led to the measured headline deficit as a percentage of GDP of 31¾ per cent of GDP.² This has in turn led to a significant jump in the Irish government debt burden, with gross government debt estimated at 93½ per cent of GDP³. Excluding these bank bailout monies, the underlying deficit is 11½ per cent of GDP.

The *Budget Book 2011* lays out in some detail the budgetary adjustments to be implemented in the years 2011 to 2014. We have implemented illustrative packages based on this information for 2011 and 2012 as follows. The total package for 2011 includes a total adjustment of €6 billion, which is composed of a €1.4 billion increase in direct taxation (of which €1 billion on income tax), €1.8 billion reduction in capital spending, €2 billion reduction in current expenditure (of which €1 billion savings on transfer payments) and €660 million on once-off revenues. The total package for 2012 includes an adjustment of €3.6 billion which is composed of €1.5 billion on income taxes, €400 million reduction in capital

² This figure is higher than in the previous *Commentary* which assumed a once-off bank bailout cost of €30.7 billion, the most recent data from the *Budget Book* suggest this number is closer to €31.4 bn.

³ This is marginally lower than the official estimate in the *Budget Book* because this *Commentary* has a higher estimate for the value of GDP in 2010.

expenditure, €1.7 billion reduction in current expenditure (of which €700 million is on transfer payments).

Over the two year period, these adjustments add an *ex ante* €3 billion to the burden of direct taxation with a direct negative effect on personal disposable income. This is reflected in the negative growth in personal consumption in 2011 and 2012. Together with direct cuts to current and capital expenditure, which mean we forecast volume declines in government consumption in both years and a significant scaling back in public sector investment, this means that domestic demand will continue to contract in 2011 and 2012.

Our estimates suggest that this package would be sufficient to bring the General Government Deficit to well below 10 per cent of GDP, at 9½ per cent. In general for 2011 our forecasts are close to those of the *Budget Book*. However in 2012 our forecasts for growth and employment are lower than the official forecasts. This in turn means that our forecast for total taxation is €1.5 billion lower than the official forecasts. This is mainly driven by lower forecasts of income taxation driven by our lower employment forecasts. Offsetting this, we have a lower estimate of the debt interest bill in 2012, the official estimate is €6.9 billion, and we estimate that this could be €6 billion.⁴

In relation to the forecast of gross and net debt shown in Table 5, we have assumed that Exchequer cash balances are run down in 2011 and 2012 so that by the end of 2012 net debt is forecast to be in the order of €155 billion or 94 per cent of GDP.⁵ More than €50 billion of this debt is related to funding the banking system (excluding NAMA).

Exports

The *Quarterly National Accounts* for Q3 2010 indicate that, having fallen in 2008 and 2009, there has been a vigorous recovery in exports in 2010. Based on carryover alone, the QNA data suggest that exports could have grown in volume terms by up to 10 per cent in 2010. Figure 7 shows the quarterly data on volume exports and imports from the QNA. Since the end of 2007 quarterly volume exports fell steadily until the end of 2009. Since the beginning of 2010 there has been a strong recovery in exports, with the total value of exports in 2010 Q3 reaching a record high at 103 per cent of GDP.

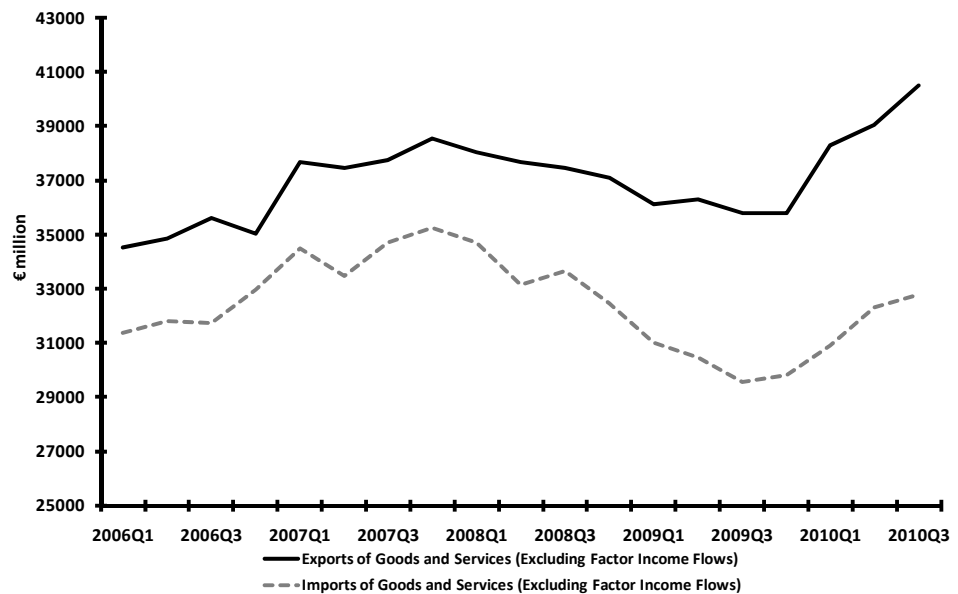
⁴ In calculating our debt interest bill for 2011 and 2012, we include the cost of refinancing rollover debt and net off the implied run down of exchequer cash balances and the NPRF as indicated in Table 6 of the *Budget Book* (p. D19). We assume an interest rate of 6 per cent on new borrowings and net of €1.5 billion from the final figure, reflecting the decision to introduce an interest holiday on promissory notes for 2011 and 2012.

⁵ The net debt is calculated by deducting liquid assets from the gross debt figures. These include Exchequer cash balances and the National Pension Reserve Fund. However we have excluded €17.5, an estimate of the directed investments into the Irish banking system of the NPRF by the end of 2011. From this calculation from 2011 onwards. Hence the discreet increase in the net debt figure in 2011.

Table 6: Exports of Goods and Services

	2009		% Change in 2010		2010		% Change in 2011		2011		% Change in 2012		2012	
	€bn	Volume	Value	€bn	Volume	Value	€bn	Volume	Value	€bn	Volume	Value	€bn	
Merchandise	77	7 ½	7 ½	83	6	6 ½	88	5	5 ½	93				
Tourism	4	- ½	-1	3	5 ¾	8	4	6 ¾	9	4				
Other Services	63	10 ½	10	69	6	6	74	5	5 ½	78				
Exports of Goods and Services	144	8 ¾	8 ½	156	6	6 ¼	166	5	5 ½	175				
FISIM Adjustment	1			1			1			1				
Adjusted Exports	145	8 ¾	8 ½	157	6	6 ¼	167	5	5 ½	176				

Figure7: Quarterly Volume Exports and Imports, Constant Prices, Seasonally Adjusted



The strong pick up in exports in 2010 has been largely concentrated in exports of services, in particular computer services and business services. In value terms, growth in non-tourism services averaged 8.8 per cent in the year ended 2010 Q3, while growth in merchandise exports was just 2 per cent. In volume terms merchandise exports grew slightly faster at 2.7 per cent, reflecting the fall in the export price deflator. This matches the fall in the wholesale price index for manufacturing of 0.5 per cent in the year ended 2010 Q3.

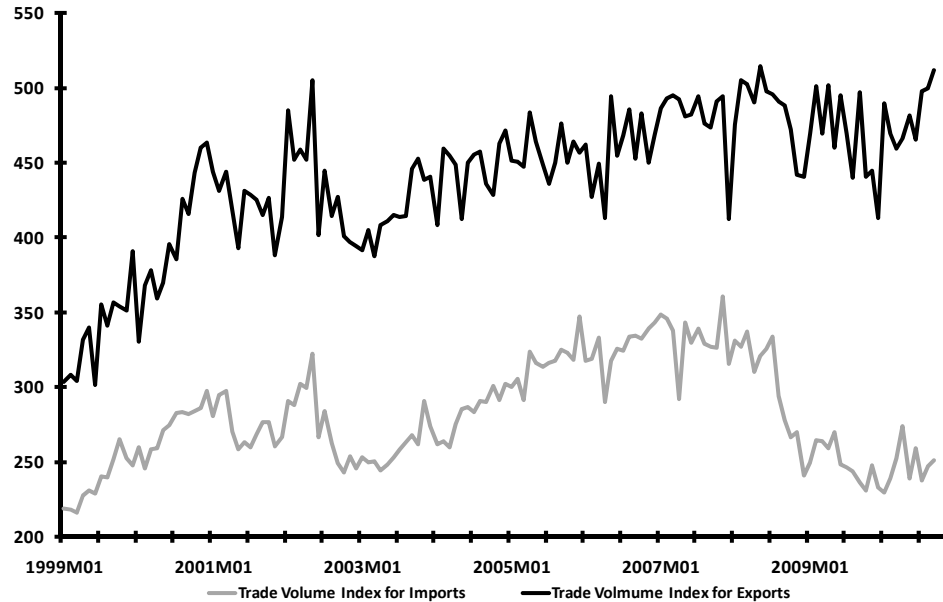
Since 2000 the total value of merchandise exports has not changed considerably. Continued price declines have meant that the volume of merchandise trade has continued to rise. However, the mainstay of growth in exports since 2000 has been in the services sector. Services exports in 2010 are estimated to account for over 46 per cent of total exports, up from 21 per cent in 2000.

As discussed in the *International* section above, we expect the gradual upturn in the world economy to continue to support the demand for Irish exports over the forecast horizon. We estimate export growth of 6 per cent in 2011 and 5 per cent in 2012. While this is significantly slower than the 8.7 per cent estimated growth rate for 2010, it does underpin the positive growth forecast in 2011 and 2012. With strong growth in the industrial sector and in particular in the pharmaceuticals sector, we expect merchandise exports to grow in volume terms by 6 per cent in 2011 and 5 per cent in 2012. Tourism exports, which have fallen dramatically since 2007 (by over 30 per cent), are expected to pick up in 2011 and 2012. Non-tourism exports are expected to grow by 6 per cent in 2011 and 5 per cent in 2012. In relation to the terms of trade, we expect export prices to continue to lag the growth in import prices, with consequent terms of trade losses over the next two years.

Imports

The *Quarterly National Accounts* for Q3 2010 indicate that volume imports fell by over 15 per cent between 2007Q4 and 2009 Q4 (see Figure 7 above). In particular merchandise imports fell dramatically over that period as shown in Figure 8. During the course of 2010, the collapse in merchandise imports has ceased and we estimate growth of 3 per cent in volume merchandise imports.

Figure 8: Merchandise Trade Index, Seasonally Adjusted (Base 1990=100)



Source: CSO

By contrast, services imports have been growing strongly according to the latest data available for 2010, at a rate of 4.6 per cent in the year ended September 2010. This was largely due to growth in imports of business services and royalties. During this period tourism imports fell by 7.8 per cent, while transport imports fell by 4.1 per cent.

On the basis of these trends and our forecasts for continued falls in consumption and investment in 2011 and 2012, we expect the volume of merchandise imports to grow by 1 ½ per cent in 2011 and 2012. With regard to services imports, we expect non-tourism services imports to increase by 3 ¾ per cent in volume in 2011 and by 3¼ per cent in 2012.

Table 7: Imports of Goods and Services

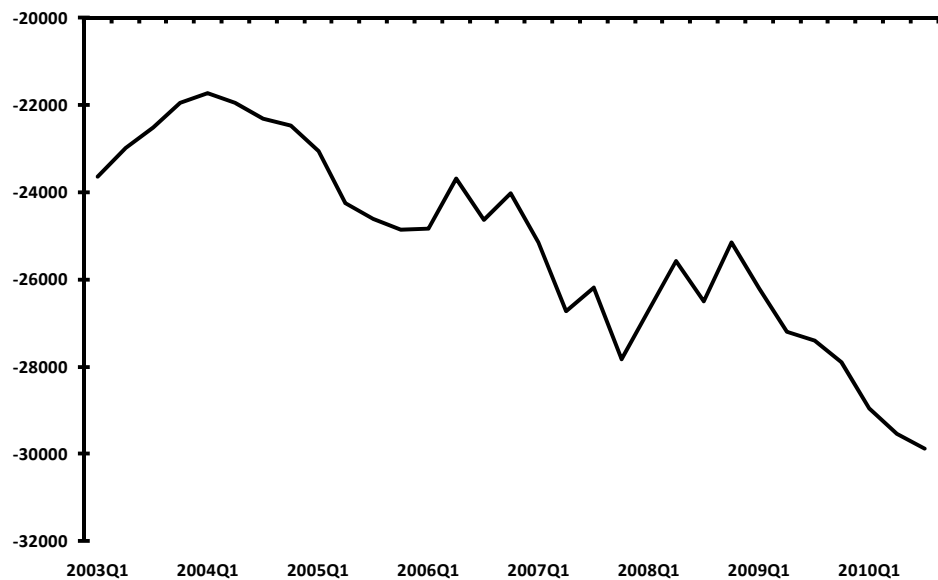
	2009	% Change in 2010		2010	% Change in 2011		2011	% Change in 2012		2012
	€bn	Volume	Value	€bn	Volume	Value	€bn	€bn	Volume	Value
Merchandise	45	2 ½	2	46	1 ½	3 ½	47	1 ½	3 ½	49
Tourism	6	-2 ½	-3	6	-1	0	6	0	1	6
Other Services	69	5 ¾	5	72	5 ½	5	76	4 ¾	5	80
Imports of Goods and Services	120	4	3 ½	124	3 ¾	4 ¼	129	3 ¼	4 ¼	135
FISIM Adjustment	1			1			1			1
Adjusted Imports	120	4	3 ½	125	3 ¾	4 ¼	130	3 ¼	4 ¼	135

Balance of Payments

Our forecasts for merchandise exports and imports imply an expansion of the merchandise trade surplus in 2011 and 2012. The merchandise surplus is expected to increase by €7 billion between 2010 and 2012. The services trade deficit is estimated to have narrowed significantly in 2010 as a result of strong growth in services exports. In 2011 and 2012, we expect the services trade deficit to stabilise at around -€4 billion. On the basis of our projections, in particular the expected increase in the merchandise trade surplus, we expect a significant expansion in the overall trade balance to over 30 per cent of GNP by 2012.

Regarding net factor flows, the latest *Balance of Payments* data indicate a steady increase in net investment income outflows since the beginning of 2009. We expect the net factor income deficit to increase by 9¼ per cent in 2010 and by a further 7½ per cent in 2011. However, overall the expansion in the merchandise trade surplus should contribute to a rapid narrowing of the current account deficit which we expect to be broadly in balance in 2010 before moving into a surplus of 2¼ per cent of GNP by 2012.

Figure 9: Annualised Net Factor Flows, Balance of Payments



Source: CSO, Balance of International Payments

Table 8: Balance of Payments*

	2009 €bn	Change %	2010 €bn	Change %	2011 €bn	Change %	2012 €bn
Merchandise Trade Balance	32.4		37.3		41.0		44.2
Service Trade Balance	-8.4		-5.4		-4.6		-4.0
Trade Balance in Goods and Services on BoP basis	24.0		31.9		36.5		40.2
% of GNP	18.3		24 ³ / ₄		28 ¹ / ₂		31 ¹ / ₄
Total Debit Flows	82.4	-3 ³ / ₄	79.2	¹ / ₂	79.7	2	81.2
Total Credit Flows	54.5	-10	49.0	-5	46.6	-2	45.6
Net Factor Flows	-27.9	8 ¹ / ₂	-30.3	9 ¹ / ₄	-33.1	7 ¹ / ₂	-35.6
Net Current Transfers	-0.9		-1.7		-1.7		-1.7
Balance on Current Account	-4.9		-0.1		1.7		2.9
Capital Transfers	-1.3		0.1		0.1		0.1
Effective Current Balance	-6.1		0.0		1.8		3.0
% of GNP	-4.7		-0		1 ¹ / ₂		2 ¹ / ₄

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

Measures of Performance

Table 9 includes a range of indicators of economic performance for recent years and for the forecast period. The first line shows the familiar GNP value, which we forecast will increase by ¹/₄ per cent in 2011 and ¹/₂ per cent in 2012. In terms of income per head, were this forecast to prove correct, this would mean that income per head at the end of 2012 would be at levels last seen in 2002.

Finally, the last line in the table can be viewed as an indicator of competitiveness. While it is not the case that there is some target level for labour's share of output, the increase in the value of the variable into 2009 points to declining competitiveness. If our forecasts are correct, there will be a significant improvement in competitiveness and this is reflected in the fall in labour's share out to 2012.

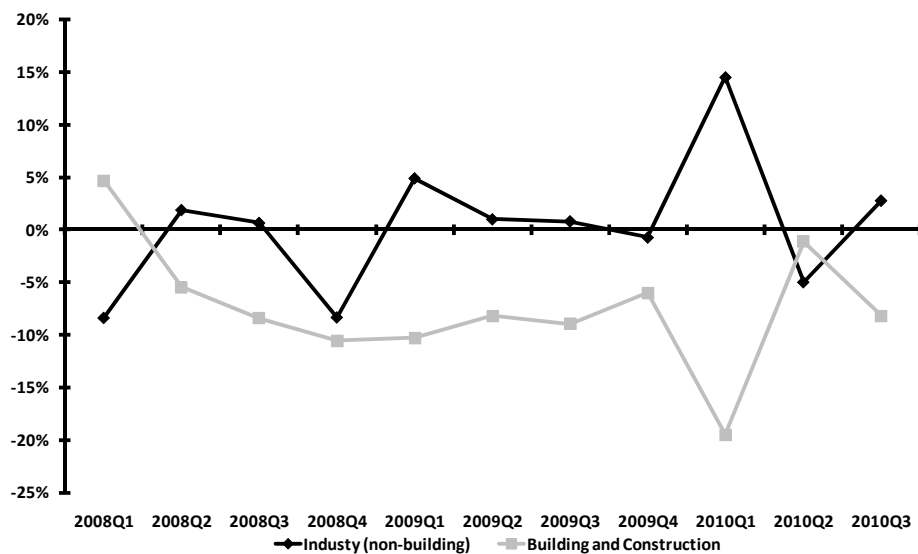
Table 9: Performance Indicators

Performance Indicators	2005	2006	2007	2008	2009	2010	2011	2012
GNP, in constant prices	6.0	6.5	4.5	-3.5	-10.7	-1 ¹ / ₄	¹ / ₄	1 ¹ / ₂
GNP adj for Terms of Trade	5.2	5.5	3.1	-5.9	-9.8	-1	0	1 ¹ / ₄
GNDI, constant prices	5.1	4.9	2.8	-6.0	-9.7	-1 ¹ / ₂	0	1 ¹ / ₄
GNP per capita (constant prices)	3.7	4.0	1.9	-5.3	-11.4	1 ¹ / ₂	¹ / ₂	1 ¹ / ₂
Consumption per capita (constant prices)	4.6	4.2	3.8	-3.3	-7.8	-1 ¹ / ₄	- ¹ / ₂	- ³ / ₄
Investment in Housing/GNP	14.9	14.7	13.2	9.8	5.6	3 ¹ / ₂	3	3 ¹ / ₄
Investment/GNP	31.4	31.2	30.8	25.7	18.8	14	13 ¹ / ₄	13 ³ / ₄
Domestic Demand	9.0	6.4	5.5	-5.2	-13.9	-5	-2	0
Labour share of GNP	47.5	46.8	48.0	51.3	55.4	53	51 ³ / ₄	51 ¹ / ₄

Sectoral Output

According to the *Quarterly National Accounts* for Q3 2010, industrial output grew by 1.4 per cent between Q2 and Q3 (seasonally adjusted). However, as can be seen from Figure 10, there continues to be marked differences within this sector across construction and non-construction industrial activity. Non-building industry grew by almost 3 per cent, thereby reversing the contraction which had been observed between Q1 and Q2. Comparing the year ending Q3 2010 to the year ending Q3 2009, output has increased by over 10 per cent, thereby echoing the strong performance of exports as discussed above. The on-going contraction in construction activity is also seen in Figure 10, with the latest quarterly fall measured at -8.2 per cent. Again comparing the year ending in Q3 2009 and 2010, construction output is down by almost one third.

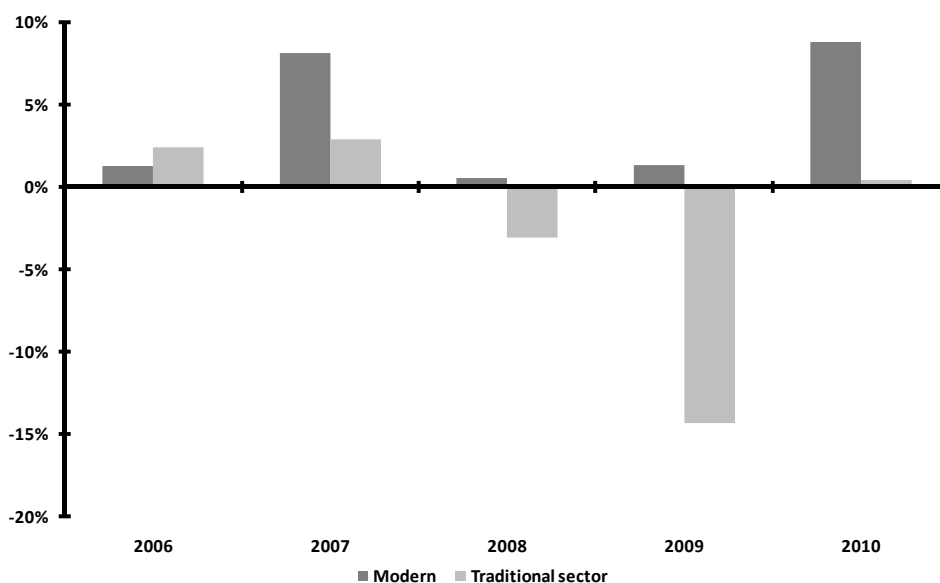
Figure 10: Quarter-on-Quarter Growth Rates in Industry, Seasonally Adjusted



Source: CSO, Quarterly National Accounts

With eleven months of data for 2010 now available from the CSO's *Index of Industrial Production*, it is possible to get a clear sense of what output figures for the full year will be. In Figure 11, we show output growth figures for the traditional and modern sectors for the twelve month period from November to November. As can be seen, the modern sector has seen output grow by 8.8 per cent in the twelve months to November 2010. Growth in the traditional sector, at just 0.4 per cent in the corresponding period, is a good deal lower. However, the most recent signs are more encouraging. Comparing the six month period June-November 2010 with the corresponding period in 2009, output in the traditional sector has increased by 10.7 per cent.

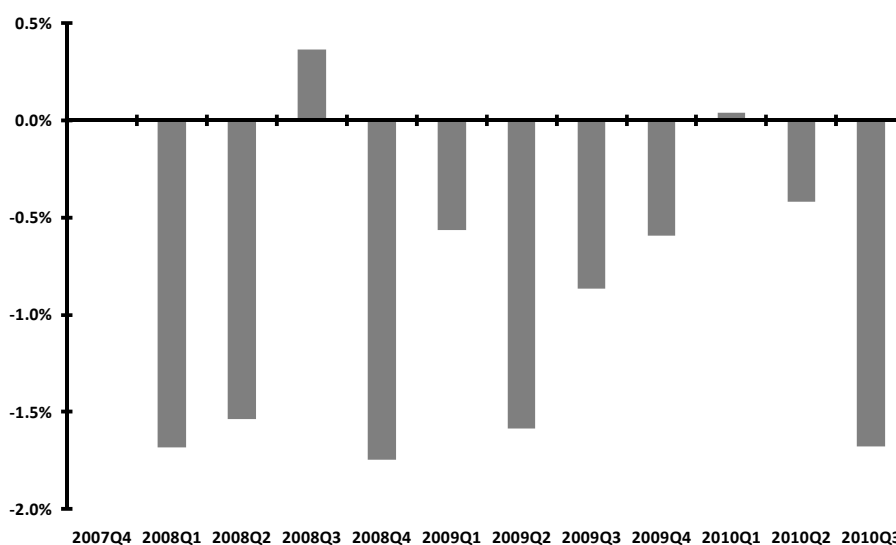
Figure 11: Rates of Growth in Industrial Output 2006 to 2010, Based on November to November Comparisons



Source: CSO, Index of Industrial Production

The services sector continued to shrink in Q3, according to the *Quarterly National Accounts*. As shown in Figure 12, services output fell by 1.7 per cent between Q2 and Q3 based on seasonally adjusted data. This rate of decline equalled the previous poorest quarters since the start of 2008. All three sub-sectors registered declines in output in Q3. For Distribution, Transport and Communication the decline was 2.4 per cent; the declines for Public Administration and Defence and Other Services (including Rent) were 0.1 per cent and 1.6 per cent respectively.

Figure 12: Quarter-on-Quarter Growth Rates in Services, Seasonally Adjusted



Source: CSO, Quarterly National Accounts

As regards our forecasts, we expect services output to grow by ½ per cent in 2011 and by 1 per cent 2012. We expect non-building industrial output to grow by 5 per cent in 2011 and 2012. We expect building and

construction output to fall by 12¼ per cent in 2011 and by a further 2¼ per cent in 2012. We expect agricultural output to rise by 2 per cent in 2011 and by 1 per cent in 2012.

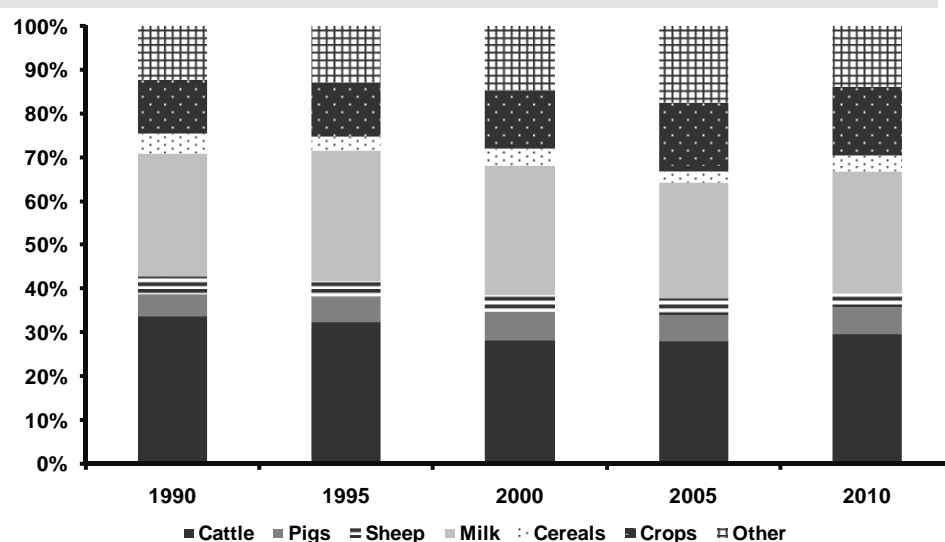
Box 1: Irish Agriculture in 2010

While overall GDP contracted by 7.6 per cent in 2009, the decline in agricultural output and incomes far exceeded the declines recorded in most other sectors of the Irish economy. Income in agriculture fell by almost a third in 2009, the largest annual decline in the operating surplus based on records dating back to 1973. Preliminary estimates from the CSO⁶ indicate that the agriculture sector is likely to have outperformed most other sectors of the Irish economy in 2010 with large increases in the value and volume of agricultural output recorded over the course of the year. The latest data indicate that the operating surplus increased by 46 per cent in 2010, making good the losses incurred in 2009.

The fall in agricultural income in 2009 was driven by sharp falls in the value of agricultural output, especially milk and cereals, with poor weather and flooding also likely to have contributed to the reduction in output. A reversal of this trend was seen in 2010 with output at farm gate prices increasing by over 16 per cent in value and 6 per cent in volume (Table 1A). Expenditure on inputs remained broadly unchanged in 2010 (the value of intermediate consumption increased by 0.3 per cent) while the deduction for depreciation fell by 4.5 per cent from 2008. Combined with the increase in output, this contributed to the dramatic increase in the overall operating surplus in 2010.

The structure of the agricultural sector is illustrated in Figure 1A which shows the share of gross output accounted for by the main commodities. In 2009, cattle and milk output accounted for almost 60 per cent of total gross output with cereals accounting for around 4 per cent of output.

Figure 1A: Structure of Agriculture Sector: Main Commodities



Source: Output, Input and Income in Agriculture 2010- Advance Estimate, CSO.

⁶ Central Statistics Office, 2010. *Output, Input and Income in Agriculture 2010- Preliminary Estimates*.

The main commodity outputs from Irish farms experienced substantial price falls in 2009 as shown in Table 1A. The downturn in the international economy impacted on global food demand and contributed to the decrease in commodity prices observed over the course of 2009. The value of milk output declined by almost 33 per cent, due almost entirely to a decrease in milk prices. Cereals output declined by over 50 per cent in value and 30 per cent in volume. There was also an 11 per cent decline in the value of livestock output in 2009, again primarily driven by price falls. The price of agricultural commodities recovered strongly in 2010 aided by the upturn in the world economy, renewed demand from emerging Asia and tighter supplies. Driven by these positive price developments, the value of milk output increased by almost 39 per cent in 2010 while the value of livestock and cereals output increased by 9 per cent and 89 per cent respectively.

Net value added at basic prices measures the prices farmers receive for their output, net of product specific subsidies and taxes. In 2009, this declined by 77 per cent to just €195.5 million. The increase in agricultural output in 2010 resulted in a strong recovery in net value added at basic prices which increased almost seven fold to €930 million in 2010. In addition, farmers receive direct payments which in 2010 amounted to €1.8 billion. Thus, the operating surplus in agriculture increased from €1.6 billion in 2009 to €2.3 billion in 2009, an increase of 46 per cent.

Table 1A: Output, Input and Income in Agriculture

	2009	2010	Value	Volume	Price
	<i>Euro Million</i>		<i>Annual % Change</i>		
All Livestock	2,197.8	2,400.5	9.2	8.0	1.1
Livestock - Cattle	1,450.2	1,627.8	12.2	12.8	-0.5
Livestock - Pigs	306.7	330.7	7.8	7.4	0.4
Livestock - Sheep	157.5	169.6	7.7	-7.5	16.4
All Livestock Products	1,142	1,571.2	37.6	7.1	28.5
Livestock Products - Milk	1,100.2	1,526.8	38.8	7.2	29.5
All Crops	1,371.7	1,507.2	9.9	1.6	8.1
All Cereals	107	202	88.8	7.6	75.5
Crops - Forage Plants	851.7	857.7	0.7	-1.5	2.2
Goods Output at Producer Prices	4,711.6	5,478.9	16.3	6.2	9.5
Contract Work	268.7	268.7	0.0	0.0	0.0
Subsidies less Taxes on Products	15.1	10.1			
Agricultural Output at Basic Prices	4,995.4	5,757.7			
Intermediate Consumption	4,070.8	4,083.1			
Gross Value Added at Basic Prices	924.6	1,674.6			
Fixed Capital Consumption	780.6	745.6			
Net Value Added at Basic Prices	144	929.1			
Other Subsidies Less Taxes on Production	1,843.8	1,773.4			
Factor Income	1,987.8	2,702.4			
Compensation of Employees	427.7	424.5			
Operating Surplus	1,560.1	2,277.9			

To derive a measure of farm income at basic prices, it is necessary to deduct from net value added at basic prices expenditure by farmers on hired labour, interest payments on borrowed capital and land rental. In 2010, these totalled €424.5 million, €271.8 million and €148.9 million respectively. This implies that in 2010, farm income at basic prices was just €84 million. The equivalent figure for 2009 was minus €713 million. The return to farm enterprises continues to depend almost entirely on direct payments paid for by the EU under the CAP and by the Exchequer.⁷ This highlights the dependence of farm enterprises on direct payments, a situation which leaves the agricultural sector highly vulnerable to future reforms of the CAP and to changes in the EU budget.

Nevertheless the prospects for the dairy sector, which has been gradually increasing its share of overall output over time, remains bright. Ireland's grass-based production model gives it a comparative advantage in this area. The sector should be well placed to take advantage of the expected strong demand for dairy products as a result of income growth, urbanisation and favourable demographic trends.⁸ The planned abolition of EU milk quotas in 2015 also presents opportunities for expansion in the dairy sector.⁹

Employment

According to the *Quarterly National Household Survey* for Q3 2010, there were 1.85 million people employed in that quarter. This represented a fall of 3.7 per cent on the total employed in the corresponding quarter of 2009. While this implies that the economy is still suffering significant job losses, this was the slowest pace of employment fall since Q3 of 2008 (as can be seen from Figure 13). The number unemployed stood at 299,000 in Q3, an increase of 6.9 per cent on a year earlier. This meant that the unemployment rate was 13.9 per cent in Q3 2010, and 13.6 per cent on a seasonally adjusted basis. By comparison, the average rate of unemployment across the Euro Area is 9.8 per cent (Q2). Within that group of countries, only Spain and Estonia have higher rates of unemployment, at 20.1 per cent and 18.6 per cent respectively.

⁷ In addition, payment of capital grants under the Farm Waste Management Scheme is expected to exceed €900 million. Payments to farmers under this scheme are being made on a phased basis over the period to 2011.

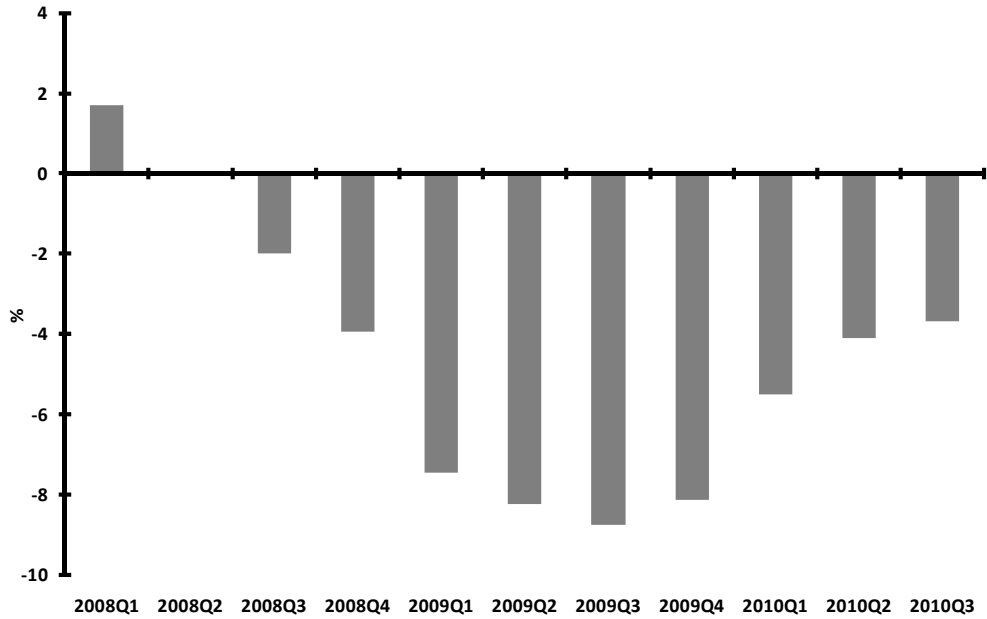
⁸ See the FAPRI 2010 *World Agricultural Outlook* <http://www.fapri.iastate.edu/outlook/2010/>

⁹ The *Food Harvest 2020* report published in mid 2010 sets out a strategy for the medium-term development of the agri-food sector in Ireland. See <http://www.agriculture.gov.ie/media/migration/agri-foodindustry/foodharvest2020/foodharvest2020/2020strategy/2020Foodharvest190710.pdf>

Table 10: GDP by Sector

	2009	% Change		2010	% Change		2011	% Change		2012
	€bn	Volume	Value	€bn	Volume	Value	€bn	Volume	Value	€bn
Agriculture	3.0	5	10	3.3	2	5	3.4	1	2	3.5
Industry:	45.6	¼	-1 ¼	45.0	2 ¾	2 ¼	46.1	4 ¾	4 ¼	48.0
Other Industry	37.5	7	6	39.7	5	4 ½	41.5	5	4 ½	43.4
Building & Construction	8.1	-30 ¼	-34 ¾	5.3	-12 ¼	-14	4.5	2 ¼	1 ¼	4.6
Services:	96.1	¼	0	96.1	½	¾	96.8	1	1 ½	98.4
Public Administration & Defence	6.4	-3	-3 ¾	6.1	-3	-4	5.9	-2 ½	-4	5.6
Distribution, Transport and Communications	21.8	-2	-4	20.9	½	½	21.0	½	½	21.1
Other Services (including rent)	67.9	1	1 ¾	69.1	1	1 ¼	69.9	1 ½	2 ½	71.6
GDP at Factor Cost	144.6	¼	- ¼	144.4	1 ¼	1 ¼	146.3	2 ¼	2 ½	149.9

Figure 13: Year-on-Year Percentage Change in Employment, Q1 2008 to Q3 2010



Source: CSO, Quarterly National Household Survey

The *Live Register* provides the most up-to-date indicator of trends in unemployment and had exhibited some positive signs in the latter part of last year. The number on the *Live Register* peaked in August at 455,000 (seasonally adjusted). Falls in September, October and November saw this number fall to 438,000 in November. However, an increase was seen again in December, with the number rising to 444,000.

In recent *Commentaries*, we have looked at various aspects of the employment fall and these all remain important and worrying features of Ireland's labour market. For example, the rate of long-term unemployment continues to rise (where long-term is defined as a spell of one year or more). In Q3, this rate was 6.5 per cent, up from 5.9 per cent in Q2 and up from 3.2 per cent in Q3 2009. The rate of unemployment among the youngest age groups is particularly high. It was 36.4 per cent for those aged 15 to 19 years in Q3 and 25.5 per cent for those aged 20-24 years. Participation rates have also fallen for the youngest age groups. For those aged 15-19 years, the rate has fallen from 25 per cent in Q3 2008 to 12.8 per cent in Q3 2010; the corresponding rates for those aged 20-24 years were 66.5 per cent in Q3 2008 and 50.7 per cent in Q3 2010. While part of the decline in participation may have a positive offset in terms of higher participation in education, the impact of the employment downturn on younger people is clear. The weakness in the labour market for younger people in particular has given rise to the return of emigration and our forecasts envisage a continuation of this.

Table 11: Employment and Unemployment

	Annual Averages 000s			
	2009	2010	2011	2012
Agriculture	96	86	89	90
Industry	411	360	345	345
Services	1,422	1,405	1,392	1,396
Total at Work	1,929	1,851	1,826	1,831
Unemployed	259	287	287	273
Labour Force	2,187	2,138	2,113	2,104
Unemployment Rate %	11.8	13 ½	13 ½	13
Net Migration	-7.8	-34.5	-60.0	-40.0
of which: Inward Migration	57.3	30.8	15.0	20.0
Change in Participation Rate*	-1.2	-1	¼	½

Note: Participation rate measured as share of population aged 15-64 years; Both participation rate and the migration figures are based on Q2 figures in each year.

Turning to our forecasts, we expect employment to average 1.83 million in 2011, down 25,000 on the 2010 figure (or minus 1¼ per cent). Although the economy is expected to grow in 2011, the output growth will be achieved through productivity growth alone. For 2012, we expect employment to rise although the pace of increase, at just ¼ per cent, is expected to be miniscule. As with 2011, productivity growth will dominate. For both 2011 and 2012, the expected absence of any significant employment growth is related in part to the fact that growth is expected to come via the export sector. This is less employment intensive than the domestic sectors of the economy. We expect the rate of unemployment to average 13 ½ per cent in 2011 and for it to fall to 13 per cent in 2012. But as noted in the preceding paragraph, a part of this fall in the rate of unemployment in 2012, and indeed the stability in the rate between 2010 and 2011, is explained by our view on emigration. We expect net outward migration to be 60,000 in the year to April 2011 and 40,000 in the subsequent twelve months.

Incomes

In Table 12, we show year on year changes in weekly earnings, hourly earnings and hours worked, covering all employees and for the year ending Q3 2010. Across all sectors, all three items show declines – weekly earnings have fallen by 1.4 per cent as a result of falls in hours worked (minus 0.3 per cent) and in hourly earnings (minus 1.2 per cent). Looking across the various sectors, the larger falls in hourly earnings are seen in the lower part of the table, in sectors such as public administration, education and health. Clearly these falls are related to the public sector pay cuts which were announced in *Budget 2010* and which took effect at the beginning of 2010. This point is illustrated more clearly if we look at the public/private comparisons which are included in the CSO's release on *Earnings and Labour Costs Q2 2010-Q3 2010 (Preliminary Estimates)*. Over the year ending Q3 2010, hourly earnings fell by 0.2 per cent in the private sector and by 4.6 per cent in the public sector. For weekly earnings, the corresponding figures are minus 0.3 in the private sector and minus 4.5 in the public

sector. Hence, although declining wages are evident across the economy, the pace of decline is much higher in the public sector.

Table 12: Year-on-Year Percentage Change in Earnings and Hours Worked, All Employees, 2010 Q3

	Weekly Earnings	Hourly Earnings	Weekly Hours Worked
All NACE economic sectors	-1.4	-1.2	-0.3
Industry (B to E)	5.8	1.4	4.4
Mining and quarrying (B)	-4.4	-11.9	8.5
Manufacturing (C)	6.0	1.4	4.7
Electricity, water supply and waste management (D,E)	6.1	5.3	0.8
Construction (F)	-6.2	-3.0	-3.4
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	0.8	1.6	-0.6
Transportation and storage (H)	-0.3	-1.5	1.4
Accommodation and food service activities (I)	-1.1	-0.7	-0.4
Information and communication (J)	5.8	3.8	1.9
Financial, insurance and real estate activities (K,L)	3.2	1.3	2.1
Professional, scientific and technical activities (M)	-3.1	-0.8	-2.5
Administrative and support service activities (N)	-4.5	-7.1	2.7
Public administration and defence; compulsory social security (O)	-5.8	-5.1	-0.6
Education (P)	-12.3	-5.1	-7.6
Human health and social work activities (Q)	-4.9	-6.7	2.0
Arts, entertainment, recreation and other service activities (R,S)	6.8	6.5	0.0

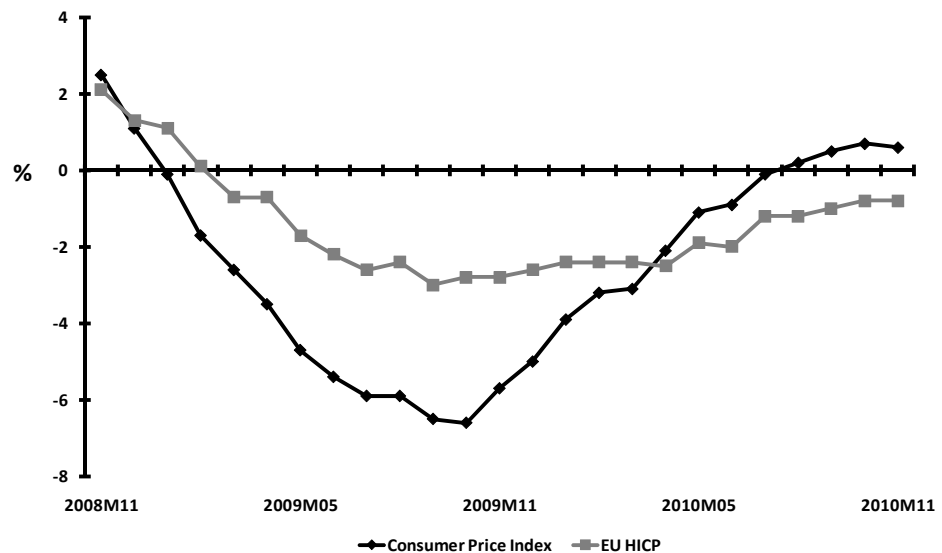
Source: Earnings, Hours and Employment Costs Survey (EHECS), CSO.

Turning to our forecasts, we expect nominal wages to fall by 1 per cent in 2011 and to be stable in 2012. As wages began falling in 2009 (when they fell by 0.8 per cent) this implies a prolonged period of falling or stagnating wages. The cumulated reduction by the end of 2011 will be around 5 per cent. Combining declines in wages and employment in 2011 and stagnation in 2012, non-agricultural wage income is forecast to fall by 2½ per cent in 2011 and to rise marginally in 2012, by ¼ per cent. Nominal cuts in social welfare rates will likely lead to falls in current transfer income in 2011 and 2012. We expect personal disposable income to fall by 1 per cent in 2011 before rising in 2012 by ¼ per cent. With consumption expected to be subdued in 2011 and 2012, we expect the savings rate to remain high at over 12 per cent in 2011 and 11¾ per cent in 2012.

Consumer Prices

Consumer prices, as measured by the *Consumer Price Index* (CPI), increased moderately throughout 2010. This trend reversed the year-on-year price decline in mid 2010, although the pace of price inflation slowed considerably in the later part of the year, as seen in Figure 14. The latest CPI figures indicate that prices were 0.6 per cent higher in November 2010 than in November 2009, but are still more than 6 per cent lower than their peak in 2008. Inflation for 2010 is estimated to have been -1 per cent on average.

Figure 14: Price Indices – Year-On-Year Percentage Change



Source: Consumer Price Index and Harmonised Index of Consumer Prices, CSO

Upward pressure on price inflation stems mainly from the mortgage interest rate component of the CPI. The average variable mortgage rate fell sharply from 5.87 in August of 2008 to 3.16 in June 2009, and remained low for the rest of 2009 and the beginning of 2010 due to the continuing low interest rate policy employed by the European Central Bank. Due to the ongoing difficulties faced by Irish banks seeking to borrow on international markets, mortgage interest rates began to increase in the latter half of 2010. The average variable mortgage rate stood at 3.87 in November 2010, 15 per cent higher than it had been twelve months previously. CPI excluding mortgage interest was down 0.7 per cent over the same period, indicating that the real economy remains in a deflationary mode.

Table 13: Personal Disposable Income

	2009	Change		2010	Change		2011	Change		2012
	€bn	%	€bn	€bn	%	€bn	€bn	%	€bn	€bn
Agriculture, etc.	2.2	10	0.2	2.4	5	0.1	2.5	2	0.1	2.6
Non-Agricultural Wages	72.7	-6 ½	-4.8	67.9	-2 ½	-1.7	66.1	¼	0.1	66.3
Other Non-Agricultural Income	16.6	10 ¼	1.7	18.3	13 ½	2.5	20.7	8 ¼	1.7	22.4
Total Income Received	91.4	-3	-2.9	88.6	1	0.9	89.4	2	1.9	91.3
Current Transfers	27.0	-2 ¾	-0.8	26.2	-4 ¼	-1.1	25.1	- ½	-0.1	25.0
Gross Personal Income	118.4	-3	-3.6	114.8	- ¼	-0.3	114.5	1 ½	1.8	116.3
Direct Personal Taxes	21.6	-3 ½	-0.8	20.8	3 ½	0.7	21.5	7 ¼	1.6	23.1
Personal Disposable Income	96.8	-3	-2.8	94.0	-1	-1.0	93.0	¼	0.2	93.2
Consumption	84.3	-3	-2.5	81.8	- ¼	-0.2	81.6	¾	0.6	82.2
Personal Savings	12.5			12.2			11.4			11.0
Savings Ratio	12.9			13			12 ¼			11 ¾
Average Personal Tax Rate	18.2			18			18 ¾			19 ¾

Further upward pressure on the price level has come from increased home and health insurance costs. The insurance component of the CPI had been a depressing influence on price inflation since the beginning of 2009, but health insurance in particular has been a significant contributor to inflation in the second half of 2010. The recently announced price increases in this sector will reinforce its inflationary impact in 2011.

More components of the CPI are exerting downward pressure on price inflation than upward pressure, which is a testament to the contraction in domestic demand. Deflationary components of CPI include new and second-hand motorcars, alcohol, clothing and footwear. Prices have also fallen significantly in the hotel and restaurant sectors, which is unsurprising given the struggling tourism sector and constrained domestic disposable income.

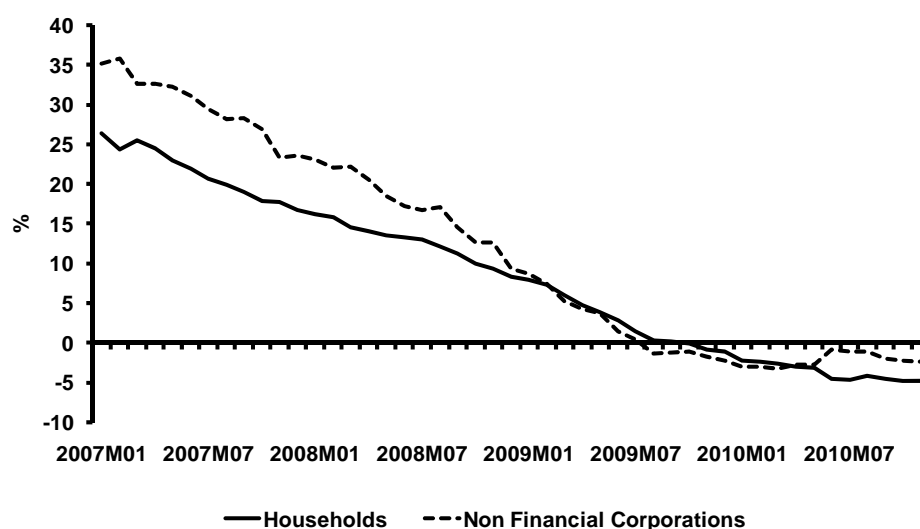
For 2011, we are forecasting CPI inflation to average 2 per cent, driven by the factors mentioned above, as well as high oil prices which are currently trading at over \$90 a barrel. Inflationary pressures will ease somewhat in 2012, when we are forecasting a 1½ per cent increase in the price level. In terms of HICP inflation, we are forecasting increases of 1 per cent in both 2011 and 2012.

**Monetary
Sector
Developments**

PRIVATE SECTOR CREDIT

The annual rate of change in lending to households and non-financial corporations turned negative during late 2009 and that trend has continued in recent months (Figure 15). The net flow of household lending (which accounts for around 43 per cent of the stock of private sector credit outstanding) has been negative in every month since the beginning of 2010. This indicates that the repayment of debt exceeded the drawdown of new credit in each month. The level of credit outstanding to households has declined by almost €20 billion from its peak of €157 billion in May 2008 to just over €137 billion in October 2010, reflecting the ongoing process of deleveraging underway in the household sector.

Figure 15: Private Sector Credit, Annual Rate of Change

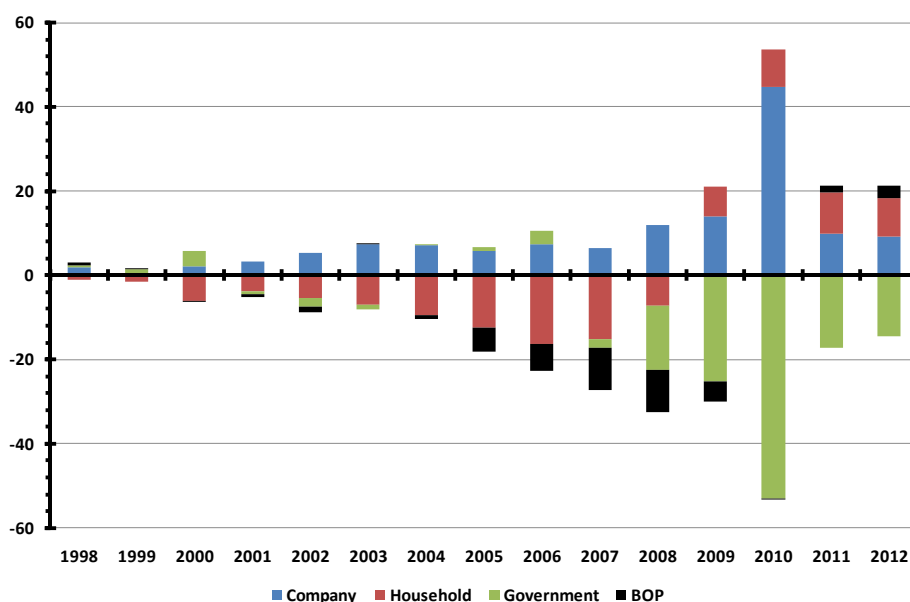


Source: Central Bank

The annual rate of change in lending to the non-financial corporate (NFC) sector has been negative since late 2009 and the contraction in lending to this sector has continued in recent months. The transactions data from the Central Bank indicate that loan repayment by the NFC sector exceeded the drawdown of new credit by over €190 million in November. The decline in lending to the NFC sector continues to be driven by the contraction in long-term loans with a maturity of over five years. The annual rate of change in loans to the NFC sector has been negative since late 2009 and the pace of decline has accelerated in recent months. The annual rate of change in lending to the NFC sector, which strips out the impact of reclassifications, revaluations, exchange rate valuations and any other changes which arise from transactions, stood at -2 per cent in November.

Recent *Commentaries* have drawn attention to changes in the flow of funds between sectors in the Irish economy. The decline in the financial liabilities of the household and company sectors, as shown in the latest statistics on private sector debt outstanding, is reflected by developments in the flow of funds. Our forecasts imply that as a result of the decline in the financing needs of the household sector as well as the increase in the savings rate (projected to average 13 in 2010), the rate of net acquisitions of assets by the household and company sectors should remain in surplus in 2011 and 2012 as seen in Figure 16.

Figure 16: Flow of Funds 1998-2010 (2011 and 2012 Derived from Forecasts)



CREDIT CONDITIONS

The latest results of the euro area *Bank Lending Survey* (BLS) point to a continuing weakness in credit demand while credit supply remains restrictive. Credit standards on loans to enterprises and households tightened substantially over the course of 2008 and the Q3 2010 results of the BLS contain no evidence of an easing in credit supply standards (Table 14 and Figure 17). Credit standards on loans to both enterprises and

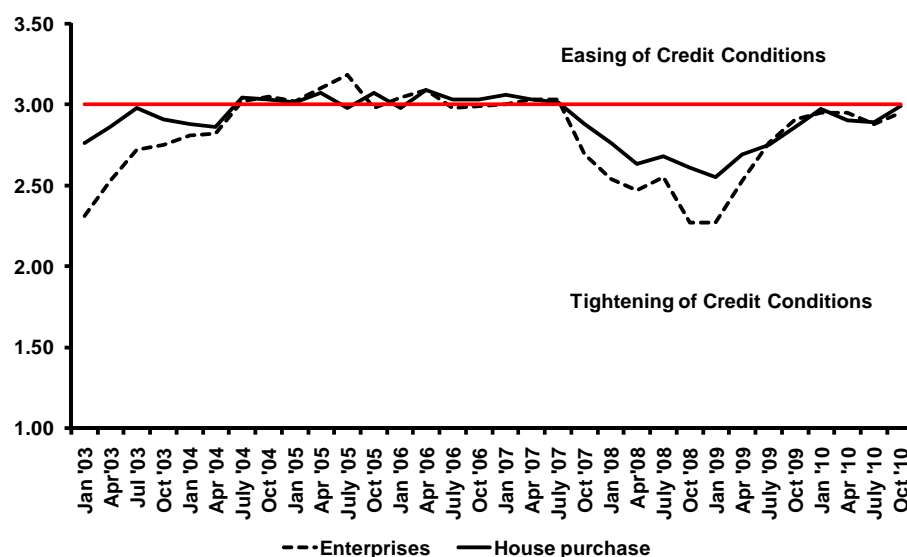
households were unchanged during Q3, indicating that the tight credit supply conditions which existed in the second quarter of the year persisted during Q3. Costs related to the banks' capital position, more restrictive liquidity positions and increased perception of risk all contributed to the restrictive credit environment during the quarter.

Table 14: Irish Responses to ECB Bank Lending Survey, Change in Credit Standards from Previous Quarter¹⁰

		Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010
Enterprises	Overall	2.9	3.0	3.0	2.9	3.0
	Loans to SMEs	2.9	3.0	3.0	2.9	2.9
	Loans to large enterprises	2.9	2.9	3.0	2.9	2.9
	Short-term loans	2.9	3.0	3.0	2.9	3.0
	Long-term loans	2.9	2.9	2.9	2.8	2.9
Households	House purchase	2.9	3.0	2.9	2.9	3.0
	Consumer credit and other lending	2.9	2.9	2.9	2.9	3.0

Credit standards on loans to households for house purchase and consumer credit and other lending also remained tight during the third quarter of 2010. Banks reported that access to wholesale funding markets deteriorated during the third quarter of 2010 and that ongoing financial market uncertainty impacted on costs related to banks' capital position.

Figure 17: Credit Supply Conditions as Reported by Banks, Change from Previous Quarter



Source: Euro Area Bank Lending Survey.

The Central Bank recently released new data¹¹ on lending to Irish small and medium sized enterprises (SMEs). The trends in SME lending in the

¹⁰ Banks were asked, using a five point scale, how credit standards on loans to enterprises and households changed during Q3 2010 relative to the second quarter of 2010. Banks were also asked two ad-hoc questions in the October version of the Bank Lending Survey.

¹¹ For details see <http://www.centralbank.ie/data/site/cmbs/SME%20Lending.pdf>

first nine months of 2010 are consistent with the findings from the *Bank Lending Survey* discussed above which point to tight credit supply conditions in lending markets. In the six months to the end of the third quarter, total SME lending declined by 5.1 per cent while lending to core SME sectors declined by 4.5 per cent over the same period. This indicates that repayments on SME loans have been greater than the amount of new SME credit extended over the period.

BANK FUNDING

The final months of 2010 have proven traumatic for the Irish banking system as fragile Irish banks faced the twin challenges of having to roll over large quantities of debt as well as coping with a loss of deposits. As a result of these difficulties, Irish banks were forced to draw heavily on funding from both the European Central Bank and the Central Bank of Ireland. Since the emergence of tensions in interbank lending markets in late 2008, the Eurosystem through the ECB has provided liquidity to Central Banks through its Longer-Term Refinancing Operations (LTROs) and through the adoption of a series of non-standard measures. These measures succeeded in bringing about a gradual improvement in international money market conditions over the course of 2009 and the early months of 2010.

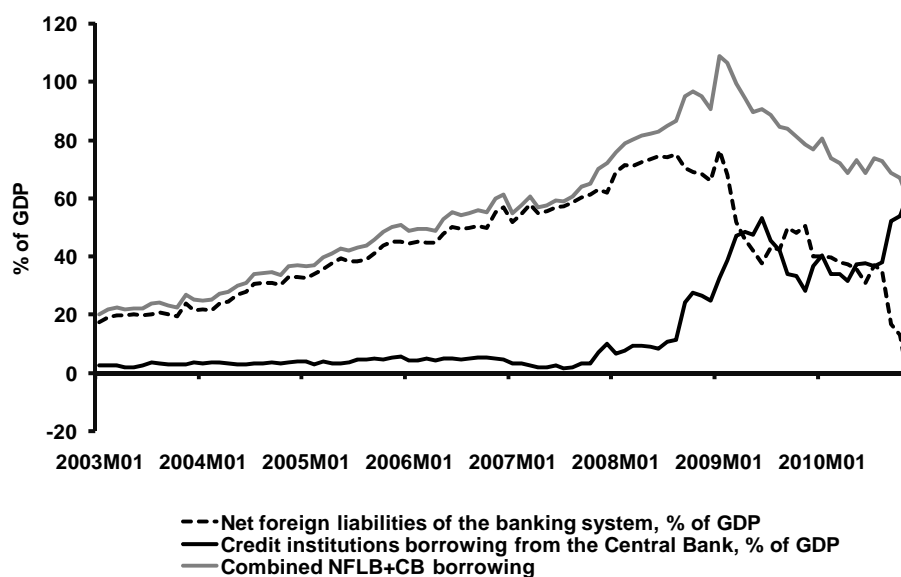
Table 15: Credit Institutions Borrowing from the Central Bank in Billions (€)¹²

		Lending by the Irish Central Bank to Credit Institutions in Ireland in Euro	Eurosystem Net Lending to Euro Area Credit Institutions in Euro, Related to MPO	Irish Share	Credit Institutions' Borrowing from the Central Bank, % of GDP
2007	March	24.0	421.6	5.7	12.7
	June	25.5	438.0	5.8	13.5
	September	23.8	420.2	5.7	12.5
	December	39.4	475.3	8.3	21.0
2008	March	34.4	483.6	7.1	19.0
	June	38.4	460.6	8.3	21.2
	September	58.7	471.4	12.4	39.2
	December	88.6	613.9	14.4	54.0
2009	March	120.6	607.4	19.9	79.8
	June	130.4	616.0	21.2	83.9
	September	91.6	583.9	15.7	53.9
	December	90.9	564.5	16.1	56.9
2010	March	82.6	511.5	16.1	52.0
	May	90.5	534.9	16.9	56.9
	August	95.1	427.3	22.2	59.8
	November	136.4	403.4	33.8	75.0

¹² These data relate to all credit institutions operating within the state, including those with no significant business with the Irish resident households and NFCs.

Credit Institutions' borrowing from the Eurosystem, which had peaked in June 2009 at over €130 billion, fell back gradually during the second half of 2009 to stand at around €83 billion by the end of March 2010, reflecting the gradual normalisation of interbank markets and the fall in interbank lending rates (Table 15 and Figure 18). The sovereign debt crisis in Greece which escalated during April and May this year sparked renewed tensions in euro area bank funding markets with the result that the ECB announced the establishment of the Securities Markets Programme (SMP) as well as the continuation of its three-month and six-month longer-term refinancing operations.

Figure 18: Net Foreign Liabilities of the Banking System (Domestic Group) and Banks' Borrowing from the Central Bank¹³



Source: Central Bank Money and Banking Statistics.

Contagion from the Greek crisis as well as renewed concern surrounding the extent of the property-related losses in the Irish banks resulted in increasingly hostile conditions for Irish banks in interbank lending markets. From July, banks' borrowing from the Eurosystem began to increase significantly and reached over €136 billion in November 2010, of which €97 billion was borrowed by domestic credit institutions. Table 16 below contains, in summary form, the balance sheets of the Central Bank of Ireland and these domestic banks. The bottom panel of Table 16 highlights the contraction in the balance sheet of domestic market credit institutions. The total liabilities of the domestic banking system were 3.4 per cent lower in November 2010 compared to November 2009 with a particularly large fall in the net foreign liabilities of the banking system as shown in Figure 18. A continuation of the recent trend of debt repayment

¹³ These data relate to domestic market credit institutions. Domestic market credit institutions are those who have a significant level of retail business with Irish households and NFCs, and would exclude the more internationally focussed banks in the IFSC but includes Rabobank and Ulster Bank. A full list of these institutions is available from <http://www.centralbank.ie/data/site/cmbs/Credit%20Institutions%20Resident%20in%20the%20Republic%20of%20Ireland.pdf>

exceeding the drawdown of new credit should result in a further decline in the balance sheet of domestic credit market institutions.

Table 16: Balance Sheet of the Central Bank of Ireland and Domestic Banks

Central Bank Balance Sheet	26/11/2008	27/11/2009	26/11/2010
	€bn	€bn	€bn
Total Liabilities	110.9	107.6	202.4
Assets	110.9	107.6	202.4
of which:			
Lending to euro area credit institutions relating to monetary policy operations in euro	88.3	78.7	136.4
Other Claims on Euro Area and Non Euro Area residents	14.8	18.2	21.1
Other Assets	7.6	10.6	44.7
Domestic Banks Balance Sheet	30/11/2008	30/11/2009	30/11/2010
Total Liabilities	819.9	793.9	766.6
of which:			
Deposits	587.3	553.2	469.7
of which:			
Irish residents, private sector	165.7	176.1	160.4
Non-residents	293.6	241.9	172.6
Other deposits	128.0	135.2	136.6
Capital and reserves	42.5	50.3	50.6
Borrowing from the Eurosystem relating to monetary policy operations	47.7	45.1	97.3
Other liabilities	142.4	145.4	149.1
Total Assets	819.9	793.9	766.6

The reduction in total deposits in domestic Irish banks is also evident from Table 16. It is important to note, however, that the fall in total deposits has been driven by a reduction in deposits from non-residents outside the euro area. Deposits from the Irish resident private sector (including households and NFCs) in November 2010 were €15 billion lower than in November 2009 while deposits from non-residents were over €68 billion lower.

The reduction in the deposit base of the domestic banking system as well as uncertainty regarding the extent of banks' property related loans which made it difficult for these banks to borrow on interbank markets has resulted in an increased level of dependence by domestic banks on funding from the Eurosystem as shown in the bottom panel of Table 16. In addition, domestic banks' borrowing from the Irish Central Bank has increased sharply with the "other assets" component of the Central Bank's balance sheet increasing from €9.1 billion in October 2009 to over €34.6 billion in October 2010 and almost €45 billion in November (Table 16). This increasing level of dependence on Central Bank funds and the related concern of the ECB regarding its exposure to Irish banks were undoubtedly important factors in precipitating the series of events which

culminated in Ireland's application for external EU/IMF financial assistance.

A critical component of the EU/IMF assistance package is the commitment by the ECB to maintain the funding it provides to the Irish banking system. Clearly the Irish banking system and consequently the Irish State would face severe difficulties in the absence of recourse to the exceptional funding provided by the Eurosystem. The commitment by the ECB as part of the EU/IMF deal to continue to provide this support to the Irish banking system is an extremely welcome aspect of the overall programme for financial assistance.

Nevertheless, the Irish banking system cannot rely on this support indefinitely. Following the agreement signed with the EU/IMF, Bank of Ireland and AIB are to receive an additional €10 billion in capital. The banks will also be subject to a new round of stress tests in early 2011 which it is hoped will provide greater certainty on the extent of the losses in the banks and the adequacy of their current capital buffers. While the additional capital being provided to the banks increases the gross cost of the bank rescue (Table 17), these steps are vital to ensuring that the Irish banking system is repaired swiftly and is in a position to lend to households and businesses as the economy recovers.

LATEST STEPS IN RESOLVING THE BANKING CRISIS

As part of the programme of support negotiated by the Irish government with the European Union, European Central Bank and the IMF, the Central Bank set a new minimum capital requirement for AIB, Bank of Ireland, Irish Life and Permanent (ILP) and EBS of 10.5 per cent core tier 1. The Central Bank also instructed the banks to raise sufficient capital to achieve a capital ratio of at least 12 per cent core tier 1 by the end of February 2011 for AIB, BOI and EBS and end of May in the case of ILP. The implications of these new capital raising targets for each of the banks are as follows:

- AIB is now required to raise an additional €5.3 billion core tier 1 capital bringing the total amount of core tier 1 capital that the bank must raise before February 28 to €9.8 billion. In December 2010, the bank received a net capital injection of €3.7 billion from the State.
- Bank of Ireland is required to raise an additional €2.2 billion core tier 1 capital by end-February 2011.
- EBS has been instructed to raise an additional €438 million in core tier 1 capital by the February deadline bringing the total EBS must raise to €963 million. In December 2010 €525 million of capital was injected into EBS building society by the State, leaving it with €438 million to raise to meet the revised target.
- ILP must raise an additional €98 million in core tier 1 capital bringing the total amount to be raised by end-May to €243 million.

At the time of writing it is unclear how much of this additional capital will be raised from private investors. On the assumption that the state is required to provide all of the funds necessary to recapitalise AIB and EBS, this would increase the gross cost of the bank rescue to €53 billion or 33 per cent of GDP (Table 17).¹⁴

Table 17: Overview of Existing and Estimated State Support to the Banking System

Cost of Bank Recapitalisation	€ Billion	Percentage of GDP
Allied Irish Bank (1)	13.3	8.3
Bank of Ireland (2)	3.5	2.2
EBS Building Society (3)	1.3	0.8
Anglo Irish Bank (4)	29.3	18.4
Irish Nationwide Building Society (5)	5.4	3.4
Total gross cost to date (6)=(1+2+3+4+5)	52.8	33.1
Total net cost to date (7)=(4+5)	34.7	21.7
Potential Additional Cost		
Anglo Irish Bank (8)	5.0	3.1
Total gross potential cost (9)=(6+8)	57.8	36.2
Payment planned for loans under NAMA (10)	40.0	25.1
Total government involvement in the banking system (11)=(9+10)	97.8	61.3

¹⁴ This is a technical assumption. On 13 January 2011 AIB announced a liability management exercise which could raise between €1.1 billion and €1.7 billion based on a take-up of 40 per cent to 60 per cent by bondholders. To the extent that this LME is successful this will reduce the cost to the state as shown in Table 17. To date Bank of Ireland has raised some €740 million of its capital requirement through an LME exercise (€700m) and the sale of Bank of Ireland Asset Management to State Street Global Advisors (€40m). It intends to generate the remaining required capital through a combination of internal capital management initiatives, support from existing shareholders and other capital markets sources.

GENERAL ASSESSMENT

At the time of the last *Commentary*, the dominant immediate concern facing the country was whether Ireland was going to be able to continue borrowing on international markets to fund the public deficit. It became clear soon after the publication of that *Commentary* that the cost of borrowing was reaching levels whereby Ireland's funding needs could not be met on the international markets. In December, the IMF/EU bailout was agreed and so this is the first *Commentary* to be written in this new context.

The first point that should be addressed with relation to the bailout agreement is how the forecasts contained here compare to those contained in Budget 2011. Our forecasts allow us to assess whether we think the outcomes for 2011 and 2012 that were envisaged in Budget 2011 are likely to be met. This comparison suggests that there may be slippage. Looking firstly at the GDP forecasts, Budget 2011 contained forecast growth rates of 0.3 per cent, 1.7 per cent and 3.2 per cent for the years 2010, 2011 and 2012 respectively. Our forecasts are for GDP growth rates of $\frac{1}{4}$ per cent in 2010 followed by $1\frac{1}{2}$ per cent in 2011 and $2\frac{1}{4}$ per cent in 2012. Budget 2011 forecast a GDP level of €168 billion in 2012; based on our forecasts, we expect the level to be €165 billion, a difference of 2 per cent. Partly as a result of our lower forecasts for GDP growth, the debt to GDP ratio that emerges from our forecasts is higher than that in Budget 2011. We forecast that the debt ratio will be 104.5 per cent of GDP in 2012 while the forecast figure in *Budget 2011* was 102 per cent.

Given the uncertainty which surrounds all forecasts, we would not place too great an emphasis on the difference. Instead, we would see it as a reminder of the on-going challenges which the country faces in restoring the public finances to a sustainable path. In that context and as discussed above, tax revenues seem to have stabilised during 2010. Under our forecasts, the deficit is below 10 per cent of GDP in 2011 ($9\frac{1}{2}$ per cent), an important psychological threshold. It falls to $7\frac{3}{4}$ per cent in 2012 so the trajectory is in line with achieving a 3 per cent deficit by 2015/2016. We should also note that under our forecasts, the balance of payments surplus exceeds 2 per cent of GNP in 2012. As this points to a paying down of external debt by the public and private sectors combined, it can be viewed as a positive sign for the economy.

Budget 2011 was the first budget to be delivered as part of the National Recovery Plan 2011 to 2014 and under the terms of the EU/IMF bailout. The on-going determination of the Government to restore the public finances to a sustainable path is, of course, correct. In our view, the extent of income tax increases was one negative feature of the budget, especially when taken in the context of a failure to implement a tax on primary residential properties. The need to broaden the tax base has been a recurring theme in work undertaken by the ESRI. We expect that a

property tax will form part of future elements in on-going programme of adjustment, as indicated in the recovery plan.

While we expect the economy to register positive rates of growth in 2011 and 2012, the rates which we envisage will be sluggish, especially when compared to the scale of the recent decline. On-going uncertainty about employment stability and future movements in wages and taxation will continue to dampen consumption. The crisis in banking is likely to lead to continued funding difficulties for the SME sector. As a result of both depressed consumer demand and lower expansion by SMEs, employment growth will remain very weak. To the extent that employment creation would amount to the most tangible reality of the recession having ended, our forecasts imply on-going pressures for people. As discussed above, the rate of unemployment is expected to average 13 per cent in 2012 while the net outflow of people between April 2010 and April 2012 is forecast to be 100,000. When combined with the outflow which was recorded for the year ending April 2010, this would imply a net outflow of 135,000 between 2009 and 2012. The highest rate of net outflow in the 1980s occurred in 1989 when the rate reached 44,000. Hence, our forecast for an average annual net outflow of 50,000 between April 2010 and April 2012 is high in historic terms, albeit against a larger population base.

Looking beyond Ireland, the debt crisis in the Euro Area remains a source of concern and adds uncertainty to the forecasting context. Although Portugal and Spain were able to auction bonds in the week of January 10, yields were high and so the possibility remains of a need to expand the rescue measures that were extended to Ireland and Greece. Our European partners continue to discuss mechanisms through which greater certainty can be achieved with respect to dealing with acute sovereign problems among Euro Area countries. This is a positive development but policy initiatives in this area are likely to be accompanied by a greater surveillance of national fiscal policies by European bodies.

In summary, our forecasts suggest that the debt to GDP ratio in 2012 would be higher than the ratio which was forecast in Budget 2011. However, in the context of the uncertainties which surround our forecasts, we would not place any significant emphasis on this difference. What is of greater concern is the on-going debt crisis in the Euro Area, in terms of both financial instability and the possible negative policy consequences for Ireland.

A GOOD NEWS STORY ABOUT IRISH HEALTH CARE

**Richard Layte*

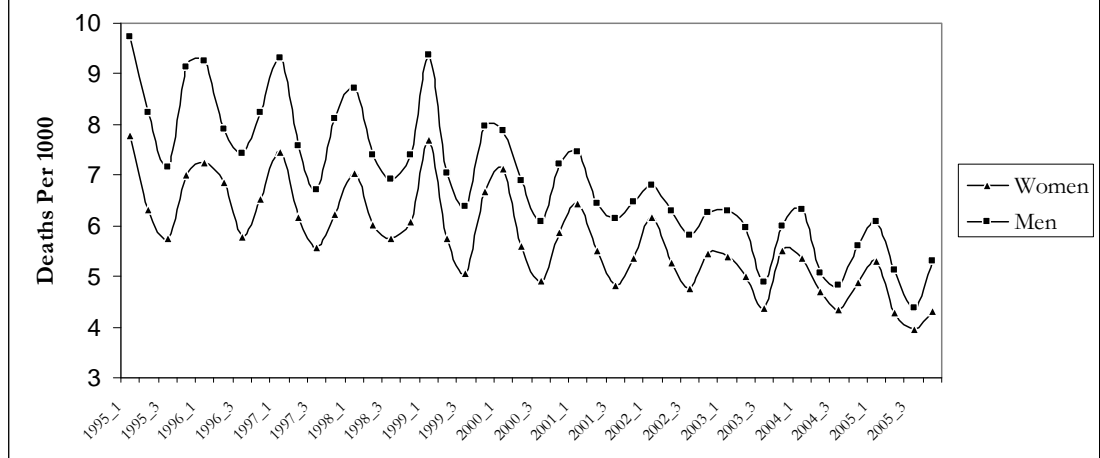
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Life expectancy for older people in Ireland has been increasing steadily since the 1980s. Despite this, Irish life expectancies for the over 65s lagged seriously behind the EU average as recently as the mid 1990s. But Irish death rates for the over 65s dropped dramatically between 2000 and 2005, moving Ireland closer to the European average. Whereas between 1996 and 1999 death rates (from all causes) in Ireland had fallen by just over 5%, between 2000 and 2004 the decrease was over 26%. What lies behind this rare and welcome good news story? An article** by researchers from the ESRI and the Department of Pharmacology and Therapeutics at Trinity College Dublin sets out the background to this sharp fall in death rates, and examines how the greater use of effective drug therapies contributed to this result.

The fall in mortality was particularly pronounced for diseases of the circulatory system such as heart disease and strokes where there was a 30% reduction between 2000 and 2005. This was an extraordinary development that, if sustained, had huge implications for the provision of services to older Irish people such as pensions and health care. Looking around for clues some noticed that the fall in the rate of deaths was particularly pronounced in the winter months (See Figure 1). Ireland sees 21% more deaths in the depths of winter than in high summer (almost twice the Danish proportion), largely from the interaction of low temperature with existing cardiovascular and respiratory conditions so analysts initially looked to global warming for an explanation. Analysis of weather trends showed no warming during recent winters so what could explain the drop in death rates?

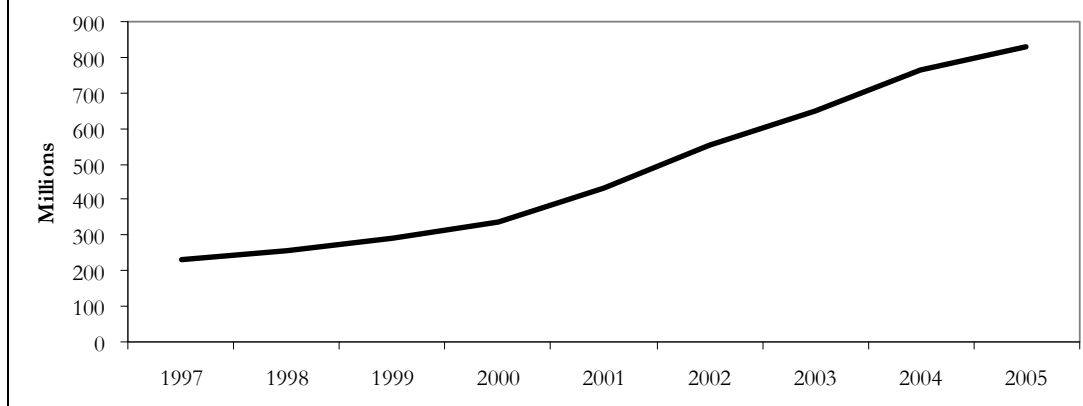
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Figure 1: Deaths from Circulatory Diseases In Ireland Per 1000 People Aged 65+



One possible explanation may lie in changing prescribing patterns in Ireland. Since 1995 there has been a steady year on year increase in the number of items prescribed but around the turn of the century, the rate of prescribing increased significantly. Between 1995 and 1999 the number of items per patient increased by 26% whereas between 2000 and 2004 the increase was 53%. Doctors also appeared to be prescribing more expensive medicines after 1999. The average cost per item increased by 64% between 1995 and 1999 compared to 122% 2000-2005 even though pharmaceutical inflation had been negligible. The increasing volume and cost of pharmaceuticals prescribed meant steeply increasing HSE expenditures on pharmaceuticals after 2000 (see Figure 2). A large part of this increase in items and expenditure was due to the increased prescribing of cardiovascular medicines. These had been increasing since the late 1990s following the Irish Cardiovascular Strategy but rates of prescribing grew quickly following the introduction of the medical card for over 70s in the July of 2001 and the subsequent increase in use of primary care by older people (see Layte et al 2009). Between 1999 and 2003 the volume of ace inhibitors prescribed almost doubled, the volume of beta blockers more than doubled, while the volume of statins prescribed more than trebled.

Figure 2: HSE Expenditure on Pharmaceuticals 1997-2005



Could this change in prescribing explain the sudden fall in mortality among older Irish people? The timing of the change in prescribing seems plausible and it is known that drugs such as beta blockers and ace inhibitors can counteract some of the strains placed on the cardiovascular system by cold weather.

Using data on patterns of mortality across age and sex groups and prescribing patterns by year and quarter between 1995 and 2005 the researchers showed that there was indeed a change, or 'structural break' in the pattern of mortality in Ireland around the turn of the century. After 1999 for instance, excess winter mortality fell by 9% among Irish men and 6.8% among Irish women. Further analysis showed that this change could be explained by increased prescribing of beta blockers, ace inhibitors and aspirin medications.

Such falls in mortality are a cause for celebration and mean thousands of people are alive today who would otherwise have died. It is likely that these cardiovascular medications are also contributing to the significant decrease in disability among older Irish people experienced in recent years. The effect also underlines the important role played by primary care in the Irish health care system. As well as keeping many people alive, this prescribing also prevented many older Irish people from experiencing the heart attacks and strokes that would have otherwise occurred and in so doing, saved the Irish hospital system a great deal of resources. This is a good example of the importance of treatment protocols since some of the change is attributable to the cardiovascular strategy and secondary prevention. However, the change in prescribing was most marked after the change in eligibility for the medical card. This shows the benefits that accrue from providing primary care free at the point of delivery and keeping prescribing fees modest. Early use of primary care prevents more serious illness later and helps to move healthcare from expensive public hospitals to relatively less expensive primary care settings. This research also suggests that taking medical cards from some over 70s and the recent introduction of the 50c prescribing fee may impact on health and mortality in Ireland. Drug budgets have increased strongly in recent years and there are good grounds to believe that we can and should reduce prescribing expenditure. In doing so we should not lose sight of the fact that medical treatments both save

lives and help people live productive lives with chronic illnesses that would have been profoundly disabling two decades ago.

**LAYTE, R., O'HARA, S. and BENNETT, K. (August .4th 2010). [Explaining structural change in cardiovascular mortality in Ireland 1995–2005: a time series analysis](http://dx.doi.org/10.1093/eurpub/ckq100), European Journal of Public Health, Advanced Access Publication (<http://dx.doi.org/10.1093/eurpub/ckq100>).

†LAYTE, R., NOLAN, A., MCGEE, H. and O'HANLON, A. (2009) [Do consultation charges deter general practitioner use among older people? A natural experiment](#). Social Science and Medicine, Volume 68, pp. 1432-1438.

ON INTERNATIONAL EQUITY WEIGHTS AND NATIONAL DECISION MAKING ON CLIMATE CHANGE

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Climate change is a moral problem. The main reason to reduce greenhouse gas emissions is a concern for faraway lands (Schelling 2000), distant futures (Nordhaus 1982), and remote probabilities (Weitzman 2009). The people who emit most are least affected by climate change, and the benefits of their abatement would be diffused. Carbon dioxide dwells in the atmosphere for decades and the effects on temperature and sea level play out over even longer periods. On central projections climate change and its impacts are a nuisance for rich countries and a problem for poor countries. But there is a chance that things will go horribly wrong. If you do not care about risk, the future, or other people, then you have little reason to care about climate change.

In a recent paper (Anthoff and Tol 2010), we propose a novel way to evaluate the impact of climate change on other people. In the early days of cost-benefit analyses of climate policy, researchers estimated the impacts of climate change on different countries, monetised them based on local values, and added up the dollar terms to arrive at an estimate of the world total damage (Pearce et al. 1996). In turn, this was used to estimate the social cost of carbon – the level at which greenhouse gas emissions should be taxed.

This method is simple but ignores the fact that a dollar is worth more to a poor woman than to a rich one. Another objection is that a risk to life in a poor country is valued differently than a risk to life in a rich country. Therefore, analysts proposed to use equity weights (Fankhauser et al. 1997). Essentially, impacts are valued locally but national estimates are weighted when aggregating to the global total, with the weights correcting for income differences.

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However, this method is inappropriate for national decisions. Equity weights presume a global welfare function. In other words, a global, benevolent planner would use equity weights. That does not mean, however, that a national government should do the same. Particularly, equity weights are less than one for rich countries. If the government of a rich country uses equity weights to estimate the carbon price, then it discounts the impacts on its own electorate while emphasizing the impacts in other jurisdictions (Anthoff et al. 2009).

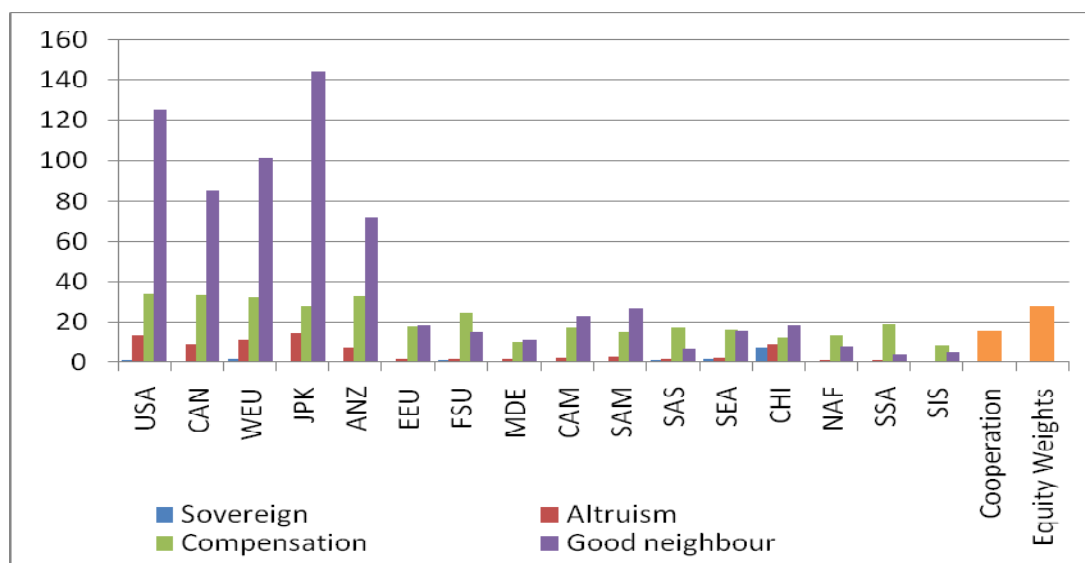
We propose four alternative ways in which a national government might value impacts in other regions of the world when computing a social cost of carbon that could be used in domestic cost benefit analysis. Each method considers the domestic impacts as valued in the home country, but the methods use different principles to consider impacts abroad:

1. Sovereignty: Ignore impacts abroad.
2. Altruism: Empathise with people abroad.
3. Good neighbour: Feel guilty if damage is done to people abroad.
4. Liability: Compensate if damage is done to people abroad.

The first principle stands out. The differences between the other three principles are more subtle. An altruist cares about others in general, while a good neighbour cares about what she does to others. An altruist may be tempted to try and solve all the worlds problems through climate policy (although with the right separability conditions this point is moot at the margin). A good neighbour would consider the impacts as they are perceived by the victims and therefore use the victims' discount rates. If you are liable for future damage, you use your own discount rate.

We use [FUND](#), an integrated assessment model, to estimate the social cost of carbon, the additional damage done if one extra tonne of carbon dioxide is emitted today. Figure 1 shows the results, assuming a pure rate of time preference of 1% per year and an inequality aversion of 1. The sum of the regional social costs ("cooperation") is \$16/tC (in \$1995), well within the range of estimates in previous studies (Tol 2009). Split over 16 regions ("sovereignty") the social costs are obviously much lower. China stands out as very vulnerable. This is due to a range of factors, including its large size, aging population, precarious water supply, and economic concentration in the coastal zone. For regions with slow (fast) growth, the compensated social costs are higher (lower) than the cooperative costs. The equity-weighted social costs are \$28/tC, almost double the simple sum as more weight is placed on the higher impacts in the poorer regions. Good-neighbour social costs are much higher than equity-weighted damages for rich regions, and lower for poor regions. Altruistic social costs are somewhere in between the sovereign costs and the good-neighbour costs.

Figure 1: The Regional Marginal Damage Costs of Carbon Dioxide (in \$/tC)



USA=United States of America; CAN=Canada; WEU=Western Europe; JPK=Japan and South Korea; ANZ=Australia and New Zealand; EEU=Eastern Europe; FSU=Former Soviet Union; MDE=Middle East; CAM=Central America; SAM=South America; SAS=South Asia; SEA=Southeast Asia; CHI=China; NAF=North Africa; SSA=Sub-Saharan Africa; SIS=Small Island States; Source: (Anthoff and Tol 2010).

The policy implications are twofold. First, a wide range of carbon taxes can be defended. The highest carbon tax differs from the lowest carbon tax by up to a factor of 70. This large difference is solely due to different ethical positions on the kind of responsibility one country should have towards other countries. That is a political decision.

Second, without cooperation, different regions will have different carbon taxes. However, a lack of international cooperation on target-setting does not necessarily lead to low carbon taxes. If countries agree to compensate one another for the damage they do to one another, carbon taxes would be substantial. That obligation already exists in principle, but practice is different. A treaty making countries liable for the damage they cause would most likely reduce emissions further than an international treaty on emission reduction.

REFERENCES

- ANTHOFF, D., C.J.HEPBURN, and R.S.J.TOL (2009), 'Equity weighting and the marginal damage costs of climate change', *Ecological Economics*, 68, (3), pp. 836-849.
- ANTHOFF, D. and R.S.J.Tol (2010), 'On international equity weights and national decision making on climate change', *Journal of Environmental Economics and Management*, 60, (1), pp. 14-20.

- FANKHAUSER, S., R.S.J.TOL, and D.W. PEARCE (1997), 'The Aggregation of Climate Change Damages: A Welfare Theoretic Approach', *Environmental and Resource Economics*, 10, (3), 249-266.
- NORDHAUS, W.D. (1982), 'How Fast Should We Graze the Global Commons?', *American Economic Review*, 72, (2), 242-246.
- PEARCE, D.W., W.R.CLIN, A.N.ACHANATA, S.FANKHAUSER, R.K.PACHAURI, R.S.J.TOL, and P.VELLINGA (1996), 'The Social Costs of Climate Change: Greenhouse Damage and the Benefits of Control', in *Climate Change 1995: Economic and Social Dimensions -- Contribution of Working Group III to the Second Assessment Report of the Intergovernmental Panel on Climate Change*, J.P. Bruce, H. Lee, and E.F. Haites (eds.), Cambridge University Press, Cambridge, pp. 179-224.
- SCHELLING, T.C. (2000), 'Intergenerational and International Discounting', *Risk Analysis*, 20, (6), 833-837.
- TOL, R.S.J. (2009), 'The Economic Effects of Climate Change', *Journal of Economic Perspectives*, 23, (2), 29-51.
- WEITZMAN, M.L. (2009), 'On Modelling and Interpreting the Economics of Catastrophic Climate Change', *Review of Economics and Statistics*, 91, (1), 1-19.

PROGRESSION IN HIGHER EDUCATION: THE VALUE OF MULTI-VARIATE ANALYSIS

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While patterns of access to, and participation, in higher education are now well established in the Irish context, less is known about progression once students have entered the third level sector. For the first time, data gathered from all institutions funded by the Higher Education Authority allow us to examine the factors influencing student progression in Irish higher education institutions. Uniquely, these data track the full cohort of new entrants to higher education in 2007/08, to see if they progressed to second year in 2008/09. Drawing on these data, a recent study[†] examined student progression from first to second year across higher education institutions, sectors and courses. The study found that an average of 15 per cent of new entrants were not present one year later. Further, the results showed large differences across institutions – for example, the percentage of honours degree students not progressing ranged from 3 to 25 per cent across institutions.

What are the key factors accounting for this variation in progression rates? Are progression rates linked mainly to differences between the institutions themselves, differences in the difficulty of particular courses, or to differences in the characteristics of students enrolling in these institutions? Investigation of these issues requires an analytical approach going beyond simple descriptive statistics. Research findings based on a multivariate approach highlight the types of students most likely to struggle to progress, and illustrate the importance of taking account of the types of students enrolled in different courses and institutions in comparing progression rates. When results are adjusted to allow for such like-for-like comparisons of institutions, differences in student progression across the higher education sector are much smaller.

Student Progression

It is clear that academic preparedness plays a central role in student success in higher education. Leaving Certificate performance emerges as a strong predictor of successful progression within higher education, in line with research in a wide range of countries. Attainment in mathematics is a particularly important predictor – suggesting that students with poor mathematical skills, in particular, struggle to meet the academic demands of higher education. While at an overall level males are less likely to progress in their course, this reflects their greater entry into courses and fields of study

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which have higher dropout rates. Significant differences in progression are apparent across subject areas and fields of study - even when we take account of the types of students enrolled in different courses and institutions and their prior attainment. The results show higher levels of non-progression among students taking courses in computer science and greater levels of progression among students taking courses in the healthcare and education fields. Furthermore, the results show that students in receipt of a state maintenance grant display greater progression rates than those not in receipt of such support. This may be due to greater financial security for students in receipt of a grant, their reduced reliance on part-time work or simply students ensuring that they fulfil the requirements of their courses to retain grant eligibility (since students who fail their exams and are required to repeat the year lose their eligibility for a grant for that year).

Institutional Variation

The analysis highlights the importance of taking account of differences in the composition of student intakes in assessing the effectiveness of institutions in student retention. In examining institutional variation across the higher education sector, it is clear that wide overall differences across institutions to a large extent reflect differences in the types of students enrolling in different colleges. This provides some support for an argument that colleges cannot be held solely accountable for retention and graduation rates. Clearly, colleges vary widely in the 'quality' of students they enrol and hence taking account of student composition is of utmost importance in assessing variation in student progression. Taking such an approach, the picture that emerges is substantially different to that portrayed by unadjusted descriptive results. When results are adjusted to allow for like-for-like comparisons, differences across the whole higher education sector are substantially smaller. The main differences in progression rates emerge between the University, Institute of Technology and Other Colleges (predominantly Colleges of Education) sectors. Importantly, the research highlights that a simplistic focus on raw or absolute levels of progression/completion across institutions carries the danger of rewarding institutions with more selective student intakes.

† O. MOONEY, V. PATTERSON, M. O'CONNOR and A. CHANTLER, 2010. *A Study of Progression in Irish Higher Education*, Dublin: Higher Education Authority.

CULTURAL DIFFERENCES IN PARENTING PRACTICES

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There is an increasing acceptance across the disciplines of psychology, sociology and health that an individual's development does not take place in a social vacuum (see for example Bronfenbrenner's bio-ecological model, e.g. Bronfenbrenner & Morris, 2006). The development of infants, in particular, is influenced by their parents: relying on them for food, shelter, protection, health care and fostering development. Hence we might expect that those individuals and organisations which influence parents (grandparents, friends, the media) will also have an indirect, but important, influence on infants.

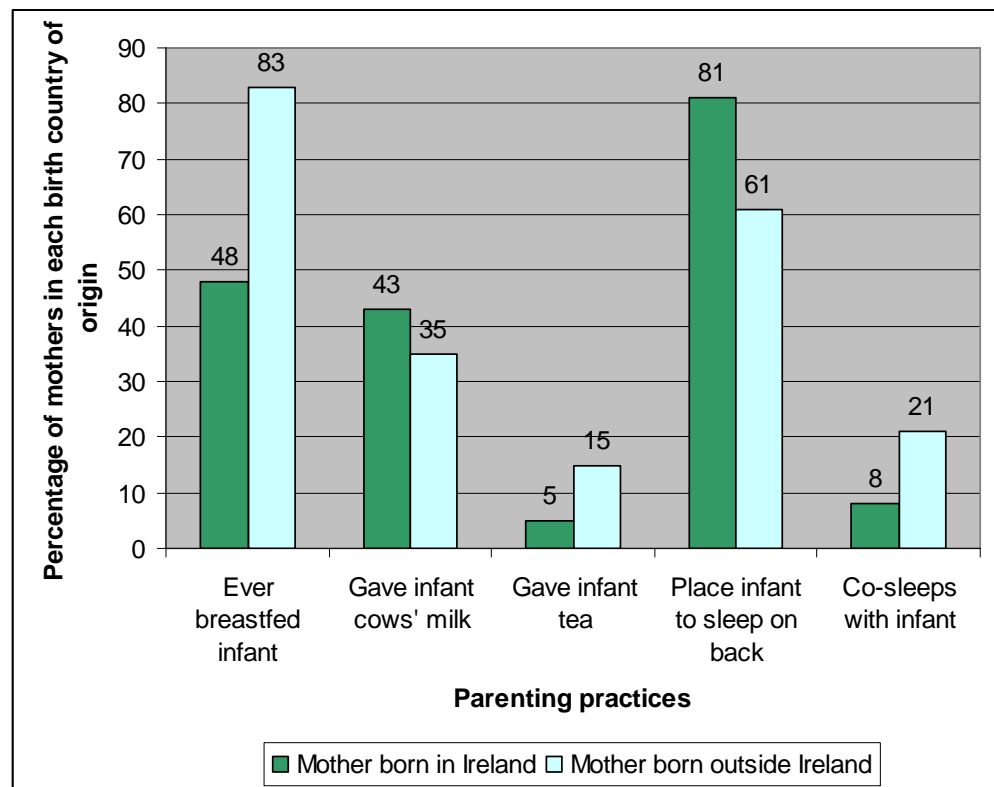
Variation across countries provide some useful evidence as to differences in the social and cultural contexts in which children are brought up. For example, one study noted that young children (aged 4-6 years) in the USA performed better on a task involving catching moving objects but their counterparts in Hong Kong did better on tasks requiring manual dexterity and balance. It was suggested by the authors that the differences in the manual dexterity could be related to early learning of writing and chopstick use (Chow, Henderson & Barnett, 2001). But cultural differences may also be observed among children born and living in the same country to parents whose country of origin differs. When comparing children within the same country influences such as climate, access to food, media and health or education policy might be expected to show less variation, allowing the role of differences in cultural child-rearing practices to be seen more clearly. The recent report** on 9-month-olds in the Growing Up in Ireland study finds some interesting differences in parenting practices according to mother's country of birth for infants living in the same country. Growing Up in Ireland is a nationally representative study that included 11,100 families with infants aged 9-months. Even with a fairly rudimentary distinction of mother being born within or outside Ireland (73% and 27% respectively), several notable differences in parenting practices emerged as outlined in the following paragraphs.

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FEEDING

Mothers born outside Ireland were much more likely to breastfeed than Irish mothers. This pattern applied when considering ever breastfeeding (83% to 48%), exclusive breastfeeding (64% to 38%) and duration of breastfeeding (14 weeks to 11 weeks). As might be expected from these figures, Irish-born mothers introduced formula milk earlier (28-days-old) than mothers born in other countries (59-days-old). In terms of other drinks, Irish-born mothers were more likely to have given their infants cows' milk (43% compared with 35%) but less likely to have given infants tea to drink (5% compared with 15%).

Figure 1: Comparison of Parenting Practices According to Mother's Country of Birth



SLEEPING

Mothers born in Ireland were more likely to be following recommendations in regard to sleeping position for infants, which is placing them on their back to sleep in order to reduce the risk of Sudden Infant Death Syndrome (cot death). More than four-out-of-five Irish-born mothers (81%) usually placed their infants to sleep on their back compared to just 61% of mothers born elsewhere. Co-sleeping or bed-sharing, where the infant's usual place of sleep is in the parental bed rather than their own cot, was more common among mothers born outside Ireland (21% compared with 8%). Whether co-sleeping is beneficial or otherwise for infant development is still much debated in the literature with some arguing that it facilitates breastfeeding (McKenna, Mosko & Richard, 1997) while others point to the increased risk of Sudden Infant Death Syndrome for some co-sleeping infants such as those whose mothers smoke (Fleming, Blair, Bacon et al, 1996).

Future Directions

The Growing Up in Ireland dataset will allow further examination of cultural differences in parenting practices through disaggregation of country of origin; for example greater differences might be expected between Western and non-Western cultures than between the UK and Ireland. The data will also allow consideration of the length of time a mother has lived in Ireland and how this might affect variations in parenting practices. In terms of Government policy, it does not appear that one group (based on this simple classification) is more likely to follow recommendations than the other: non-Irish-born mothers were more likely to breastfeed but less likely to adapt the recommended sleeping position. What is clear, however, is that cultural differences in parenting practices and the reasons underlying those differences need to be considered both in the development of new child-related policies as well as the implementation of existing policies.

**WILLIAMS, J., S. GREENE, S. MCNALLY, A. MURRAY and A. QUAIL (2010). [*Growing Up in Ireland – The National Longitudinal Study of Children: The Infants and their Families*](#). Dublin: The Stationery Office

REFERENCES

- BRONFENBRENNER, U. and P. MORRIS (2006). The bioecological model of human development. In R.M.V. Lerner, W. Damon & R.M.S. Lerner (Eds.) *Handbook of Child Psychology, Vol. 1: Theoretical Models of Human Development*, 793-828. Hoboken, NJ: Wiley.
- CHOW, S.M., S.E. HENDERSON and A.L. BARNETT (2001). The Movement Assessment Battery for Children: A comparison of 4-year-old to 6-year-old children from Hong Kong and the United States. *American Journal of Occupational Therapy*, 55, 55-61.
- FLEMING, P.J., P.S. BLAIR, C. BACON, D. BENSLEY, I. SMITH, E. TAYLOR, J. BERRY, J. GOLDING and J. TRIPP (1996). Environment of infants during sleep and risk of the sudden infant death syndrome: results of 1993-5 case-control study for confidential inquiry into stillbirths and deaths in infancy. *British Medical Journal*, 313, 191-195
- MCKENNA, J.J., S.S. MOSKO and C.A. RICHARD (1997). Bedsharing promotes breastfeeding. *Pediatrics*, 100, 214 - 219.

PUBLIC AND PRIVATE UTILISATION OF IN-PATIENT BEDS IN IRISH ACUTE PUBLIC HOSPITALS

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Health care systems in many developed countries have services financed and provided by both public and private sectors. In Ireland, though, the public/private mix is atypical: a private patient can be treated in an acute public hospital and seen by a consultant who may also treat public patients within the same hospital. Nationally, one in five beds in acute public hospitals is designated for use by private patients and existing legislation restricts accommodation of a private patient in a public-designated bed. Yet there are concerns that acute public hospitals may sidestep such restrictions on their private practice, resulting in public hospital resources potentially being diverted away from public patients towards their private counterparts. Indeed, Irish providers face financial incentives which favour the treatment of private patients. Consultants are rewarded on a fee-for-service basis for private care, but receive a salary for public practice. Public hospitals, meanwhile, receive a fixed daily payment for every private patient in a private bed. Added to these financial incentives is an increased opportunity to engage in private practice due to the substantial recent growth in private health insurance subscribers.

Our paper[†] uses data on the public/private status of discharges to examine the utilisation of designated private and public in-patient beds in Irish acute public hospitals over the period 2000-2004. In each year, estimated actual utilisation of beds by private and public in-patients at hospital level was compared with the bed capacity potentially available for each group. The annual number of bed days used, obtained from the Hospital In-Patient Enquiry scheme, measured actual utilisation. Potential utilisation was estimated using data on the number and designation of in-patient beds obtained from the Department of Health and Children.

The results of our analysis indicated that private in-patients used more bed days than were theoretically available to them in 14.1 per cent of hospital-year observations. The equivalent figure for public in-patients was 12.6 per cent. Although the prevalence of excess utilisation of private in-

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patient beds was relatively small and nearly balanced out across the public hospital system as a whole, it did increase over the study period.

It would appear, therefore, that some acute public hospitals have apparently been able to overcome restrictions imposed on them in relation to the volume of private practice. Our results are consistent with at least two competing hypotheses. Firstly, excess private utilisation may be compatible with the efficient use of scarce resources by hospitals where demand from public patients is low (and vice-versa where there is excess utilisation by public patients). Alternatively, given fixed capacity constraints in the short run, excess private utilisation could imply a re-distribution of resources from public to private in-patients and could be consistent with allegations of public patients being displaced by their private counterparts. Further research is required to determine which hypothesis is correct given this Irish experience, and thus ascertain the appropriate policy response. From an international perspective, our findings illustrate how differential payment mechanisms in a mixed public/private system may influence provider behaviour, potentially resulting in the preferential treatment of one patient group to the detriment of another.

† O'REILLY, J. and M. WILEY, 2010. Who's that sleeping in my bed? Potential and actual utilization of public and private in-patient beds in Irish acute public hospitals. *Journal of Health Services Research & Policy*, Vol. 15, No. 4, pp. 210-214.



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