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Summer 2006

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The forecasts in this Commentary are based on data available by mid-July 2006

Special Article

New Drivers of Growth? Sectoral Contributions to the Irish Economy

by

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CONTENTS

SUMMARY TABLE

OUTPUT (Real Annual Growth %)	2004	2005	2006	2007
Private Consumer Expenditure	3.8	6.6	6.8	7.4
Public Net Current Expenditure	1.8	4.6	4.0	4.0
Gross Fixed Capital Formation	7.4	12.8	8.3	6.5
Exports	7.3	3.9	6.2	6.2
Imports	8.6	6.5	7.8	8.2
Gross Domestic Product (GDP)	4.3	5.5	5.6	5.2
Gross National Product (GNP)	3.9	5.4	5.6	5.1
PRICES (Annual Growth %)				
Consumer Price Index (CPI)	2.2	2.5	3.8	3.5
Wage Growth	6.4	5.6	5.8	5.5
LABOUR MARKET				
Employment Levels (ILO basis (000s))	1,865	1,952	2,037	2,111
Unemployment Levels (ILO basis (000s)	87	89	93	96
Unemployment Rate (as % of Labour Force)	4.4	4.4	4.4	4.4
PUBLIC FINANCE				
Exchequer Balance (€m)	33	-499	-172	-165
General Government Balance (€m)	2,269	1,624	2,107	1,831
General Government Balance (% of GDP)	1.5	1.0	1.2	0.9
General Government Debt (% of GDP)	29.6	27.4	24.9	22.8
EXTERNAL TRADE				
Balance of Payments Current Account (€m)	-869.0	-4,059.0	-6,248.7	-8,894.5
Current Account (% of GNP)	-0.7	-3.0	-4.1	-5.4
EXCHANGE AND INTEREST RATES				
US$/€ Exchange Rate (Annual Average)	1.24	1.24	1.30	1.32
STG£/€ Exchange Rate (Annual Average)	0.69	0.68	0.68	0.68
Main ECB Interest Rate (%) (year end)	2.00	2.25	3.50	4.00

Source: ESRI *Quarterly Economic Commentary* Summer, 2006.

SUMMARY

The recently published *National Income and Expenditure* accounts for 2005 show that GNP and GDP grew by 5.4 per cent and 5.5 per cent respectively last year. Figures for the first quarter of 2006 point to continued strong growth this year, as real GNP expanded by 6.2 per cent and GDP grew by 6.0 per cent over the year to end March. Our forecasts suggest that growth will remain robust over the remainder of 2006 and in 2007. For 2006, we are forecasting a real GNP expansion of 5.6 per cent (5.6 per cent in GDP). For 2007, the corresponding forecast is 5.1 per cent for GNP (5.2 per cent for GDP).

The revised estimates for 2005 point to stronger growth in the volume of exports than previously thought, though the volume of imports also rose. The combined effect was for external trade to make a negative contribution to growth in the Irish economy, a trend which we expect to continue both this year and next. Domestic demand has, therefore, been the catalyst for growth over the year. Investment growth was particularly strong, expanding by 12.8 per cent, the largest increase so far this decade. Consumption also grew strongly at a rate of 6.6 per cent. The current account balance deteriorated noticeably in 2005. It increased to almost 3.1 per cent of GNP in the year from less than 0.7 per cent in 2004. The deficit is expected to widen further this year and next, with a forecast rate of 4.1 per cent of GNP in 2006 and 5.4 per cent in 2007.

Consumption is expected to continue to grow strongly over the forecast horizon, driven by a very robust labour market, healthy incomes growth and a contribution from the divestiture of the SSIAs. In 2006, the volume of consumption is expected to rise to 6.8 per cent while it is forecast to increase further to 7.4 per cent in 2007. Investment demand will also remain strong with growth rates forecast of 8.3 per cent in 2006 and 6.5 per cent in 2007. We expect to see an acceleration in the pace of government spending growth in both 2006 and 2007, as suggested by previous trends in public spending around elections. However, as government revenues are also expected to remain strong, the position of government finances will remain sound. The general government balance is expected to be positive in 2006, at 1.2 per cent of GNP. In 2007, this is expected to fall slightly to 0.9 per cent.

Given the robust state of the international economy, we forecast an improvement in Ireland's export performance over the next two years. In both 2006 and 2007 we forecast a growth rate of 6.2 per cent in exports, a relatively healthy outturn compared to 2005. The Euro Area, our largest export market, accounting for about 45 per cent of total exports, is expected to expand by 2.2 per cent in 2006 and to grow by 2.1 per cent in 2007. The US economy is also growing strongly, though a slight moderation in growth is expected in 2007. The prospect of an appreciation of the euro relative to the dollar as a result of continued interest rate increases in the Euro Area, when coupled with the moderation in US growth, suggests a more difficult time for Irish exports to the US in 2007 relative to 2006. On interest rates in the Euro Area, the inflationary pressures accompanying recent growth means that interest rate tightening is likely to continue. We expect the ECB main refinancing rate to reach 3.5 per cent by the end of 2006 and 4.0 per cent by the end of 2007.

Turning to employment, we expect 2006 and 2007 to produce increases of 85,000 and 74,000 respectively. Accounting for new labour market entrants and a marginal increase in participation, these employment increases imply gross immigrant inflows of 69,000 in 2006 and 62,000 in 2007. On inflation, we are forecasting a CPI rate of 3.8 per cent in 2006 and a moderation in 2007 with a rate of 3.5 per cent expected.

In the *General Assessment*, we discuss a number of features of the economy that emerged from the *2005 National Accounts* and which indicate concerns about the long-run sustainability of the current high rates of economic growth and the possibility of disruptive changes in the medium term. Low productivity growth, an increasing balance of payments deficit, an over-reliance on construction and the end of the stimulus provided by maturing SSIAs all point to poorer prospects in 2008 and beyond.

PRELIMINARY NATIONAL ACCOUNTS 2005

A: Expenditure on Gross National Product

	2004	2005	Change in 2005				
		Preliminary	€m		%		
	€m	€m	Value	Volume	Value	Price	Volume
Private Consumer Expenditure	68,719	74,114	5,395	4,563	7.9	1.1	6.6
Public Net Current Expenditure	20,785	22,952	2,167	966	10.4	5.5	4.6
Gross Fixed Capital Formation	36,243	43,582	7,338	4,626	20.2	6.6	12.8
Exports of Goods and Services (X)	124,049	131,001	6,951	4,812	5.6	1.7	3.9
Physical Changes in Stocks	248	98	-150	-82			
Final Demand	**250,045**	**271,746**	**21,700**	**14,885**	**8.7**	**2.6**	**6.0**
less:							
Imports of Goods and Services(M)	102,096	110,553	8,457	6,614	8.3	1.7	6.5
less:							
Statistical Discrepancy	380	30	-350	117			
GDP at Market Prices	**147,569**	**161,163**	**13,594**	**8,154**	**9.2**	**3.5**	**5.5**
less:							
Net Factor Payments (F)	-23,215	-25,107	-1,892	-1,437	8.1	1.8	6.2
GNP at Market Prices	**124,354**	**136,055**	**11,702**	**6,717**	**9.4**	**3.8**	**5.4**

B: Gross National Product by Origin

	2004	2005	Change in 2005	
		Preliminary		
	€m	€m	€m	%
Agriculture, Forestry, Fishing	2,904	3,399	496	17.1
Non-Agricultural: Wages, etc.	58,844	65,272	6,428	10.9
Other:	53,702	57,380	3,678	6.8
Adjustments: Stock Appreciation	-309	-578		
Statistical Discrepancy	380	30	-350	-92.2
Net Domestic Product	**115,521**	**125,503**	**9,982**	**8.6**
less:				
Net Factor Payments	-23,215	-25,107	-1,892	8.1
National Income	**92,306**	**100,395**	**8,090**	**8.8**
Depreciation	15,037	16,897	1,859	12.4
GNP at Factor Cost	**107,343**	**117,292**	**9,949**	**9.3**
Taxes less Subsidies	17,011	18,764	1,753	10.3
GNP at Market Prices	**124,354**	**136,055**	**11,702**	**9.4**

C: Balance of Payments on Current Account

	2004	2005	Change in 2005
		Preliminary	
	€m	€m	€m
Exports (X) less Imports (M)	21,953	20,447	-1,506
Net Factor Payments (F)	-23,215	-25,107	-1,892
Net Transfers	393	601	208
Balance on Current Account	**-869**	**-4,059**	**-3,190**
as % of GNP	-0.7	-3.0	-2.3

FORECAST NATIONAL ACCOUNTS 2006

A: Expenditure on Gross National Product

	2005	2006	Change in 2006				
	Preliminary €m	Forecast €m	€m Value	€m Volume	% Value	% Price	% Volume
Private Consumer Expenditure	74,114	81,924	7,810	5,040	10.5	3.5	6.8
Public Net Current Expenditure	22,952	25,247	2,295	918	10.0	5.8	4.0
Gross Fixed Capital Formation	43,582	50,370	6,788	3,600	15.6	6.8	8.3
Exports of Goods and Services (X)	131,001	141,593	10,593	8,122	8.1	1.8	6.2
Physical Changes in Stocks	98	108	10	10			
Final Demand	**271,746**	**299,242**	**27,496**	**17,679**	**10.1**	**3.4**	**6.5**
less:							
Imports of Goods and Services (M)	110,553	121,144	10,591	8,623	9.6	1.7	7.8
less:							
Statistical Discrepancy	30	30	0	-6			
GDP at Market Prices	**161,163**	**178,068**	**16,905**	**9,062**	**10.5**	**4.6**	**5.6**
less:							
Net Factor Payments (F)	-25,107	-26,998	-1,891	-1,476	7.5	1.6	5.9
GNP at Market Prices	**136,055**	**151,070**	**15,014**	**7,584**	**11.0**	**5.2**	**5.6**

B: Gross National Product by Origin

	2005	2006	Change in 2006	
	Preliminary €m	Forecast €m	€m	%
Agriculture, Forestry, Fishing	3,399	3,434	35	1.0
Non-Agricultural: Wages, etc.	65,272	72,268	6,996	10.7
Other:	57,380	62,707	5,327	9.3
Adjustments: Stock Appreciation	-578	-200		
Statistical Discrepancy	30	30	0	0.0
Net Domestic Product	**125,503**	**138,238**	**12,735**	**10.1**
less:				
Net Factor Payments	-25,107	-26,998	-1,891	7.5
National Income	**100,395**	**111,239**	**10,844**	**10.8**
Depreciation	16,897	18,377	1,481	8.8
GNP at Factor Cost	**117,292**	**129,617**	**12,325**	**10.5**
Taxes less Subsidies	18,764	21,453	2,689	14.3
GNP at Market Prices	**136,055**	**151,070**	**15,014**	**11.0**

C: Balance of Payments on Current Account

	2005	2006	Change in 2006
	€m	Forecast €m	€m
Exports (X) less Imports (M)	20,447	20,449	2
Net Factor Payments (F)	-25,107	-26,998	-1,891
Net Transfers	601	301	-301
Balance on Current Account	**-4,059**	**-6,249**	**-2,190**
as % of GNP	-3.0	-4.1	-1.2

FORECAST NATIONAL ACCOUNTS 2007

A: Expenditure on Gross National Product

	2006	2007	Change in 2007				
	Preliminary €m	Forecast €m	€m Value	€m Volume	Value	% Price	Volume
Private Consumer Expenditure	81,924	90,802	8,878	6,062	10.8	3.2	7.4
Public Net Current Expenditure	25,247	28,024	2,777	1,010	11.0	6.7	4.0
Gross Fixed Capital Formation	50,370	56,291	5,921	3,284	11.8	4.9	6.5
Exports of Goods and Services (X)	141,593	153,070	11,477	8,779	8.1	1.8	6.2
Physical Changes in Stocks	108	119	11	11			
Final Demand	**299,242**	**328,306**	**29,064**	**19,178**	**9.7**	**3.1**	**6.4**
less:							
Imports of Goods and Services (M)	121,144	133,372	12,227	9,934	10.1	1.7	8.2
less:							
Statistical Discrepancy	30	30	0	70			
GDP at Market Prices	**178,068**	**194,904**	**16,837**	**9,175**	**9.5**	**4.1**	**5.2**
less:							
Net Factor Payments (F)	-26,998	-28,894	-1,896	-1,423	7.0	1.7	5.3
GNP at Market Prices	**151,070**	**166,010**	**14,941**	**7,750**	**9.9**	**4.5**	**5.1**

B: Gross National Product by Origin

	2006	2007	Change in 2007	
	Preliminary €m	Forecast €m	€m	%
Agriculture, Forestry, Fishing	3,434	3,469	36	1.0
Non-Agricultural: Wages, etc.	72,268	79,205	6,937	9.6
Other:	62,707	67,761	5,054	8.1
Adjustments: Stock Appreciation	-200	-200		
Statistical Discrepancy	30	30	0	0.0
Net Domestic Product	**138,238**	**150,265**	**12,027**	**8.7**
less:				
Net Factor Payments	-26,998	-28,894	-1,896	7.0
National Income	**111,239**	**121,371**	**10,132**	**9.1**
Depreciation	18,377	19,968	1,591	8.7
GNP at Factor Cost	**129,617**	**141,339**	**11,723**	**9.0**
Taxes less Subsidies	21,453	24,671	3,218	15.0
GNP at Market Prices	**151,070**	**166,010**	**14,941**	**9.9**

C: Balance of Payments on Current Account

	2006	2007	Change in 2007
	€m	Forecast €m	€m
Exports (X) less Imports (M)	20,449	19,699	-750
Net Factor Payments (F)	-26,998	-28,894	-1,896
Net Transfers	301	301	0
Balance on Current Account	**-6,249**	**-8,894**	**-2,646**
as % of GNP	-4.1	-5.4	-1.2

The International Context

We begin our review of developments in the world's major economies by highlighting a number of issues:

- First, the world's major economies are all performing well in 2006 with both Japan and Europe showing stronger performances than in recent years.
- Second, oil prices have generally increased since June and broke the €78 per barrel mark in response to the conflict in the Middle East on July 14. Around mid-June the price of Brent Crude had eased to €67/68 from a high of over €74 in April but late June and early July have seen increases. Prices eased again in mid-July but we generally seem to be in a period of rising oil prices.
- Third, higher than expected inflation figures in the United States led the Federal Reserve to continue increasing interest rates.
- Fourth, indicators of strengthening activity and hence fears over inflation led the ECB to accelerate its pace of interest rate increases.

Below, we will comment on the implications for Ireland of these developments but first we will consider specific developments in the major economies.

United States

Real GDP grew by 3.5 per cent in the US in 2005. For the first quarter of 2006, the pace of activity accelerated – the Bureau of Economic Analysis estimate that GDP grew by 5.6 per cent (seasonally adjusted annual rate) in the period. This acceleration is partly explained by a large increase in consumer spending on durables (20.3 per cent) and also by increases in exports (14.7 per cent) and federal government spending (10.5 per cent). More recently, indicators point to a moderation in Quarter 2. For example, while the unemployment rate has remained steady in recent months (4.6 per cent in June) the pace of job creation has slowed between Quarter 1 and Quarter 2.

Inflation as measured by Consumer Price Index (CPI) stood at 4.2 per cent in May, up from 3.5 per cent in April. This increase in inflation, and particularly the increase in core inflation, led the Federal Reserve to increase interest rates again in June. The quarter point increase brought the federal funds rate to 5.25 per cent. While there was much speculation before the rate increase over whether further increases would be announced, the statement accompanying the announcement on June 29 dampened expectations of further increases. The Fed noted how "…recent indicators suggest that economic growth is moderating…" and so inflationary pressures may be easing. The Fed statement suggested that future decisions will be determined by the data on inflation and growth and that further increases, while possible, were not inevitable.

In the near term, one of the main concerns with the US economy relates to the extent of the moderation in activity in Quarter 2 and for the remainder of the year. Although there appeared to be limited reaction to rising interest rates and energy prices over the last year, it is possible that lagged effects are now being felt. It is also the case that the property market has cooled and so the consumption increases that were related to housing wealth are ending. The fiscal and trade imbalances remain of concern. With regard to the trade situation, the ongoing threat of an emergence in protectionism adds a political twist to underlying concerns about an economically-induced correction. In the context of these threats, it has been suggested that the Federal Reserve may have gone too far already in increasing rates. Overall, it appears that the US will grow in 2006 at a similar rate to that of 2005 but that growth will slow in 2007.

Euro Area

The Euro Area grew by a modest 1.4 per cent in 2005 but most commentators were forecasting an acceleration for 2006. A poor outcome in Quarter 4 2005 gave rise to concern that a tentative recovery had petered out again but a stronger first quarter in 2006 has helped to reinforce the view that 2006 will be a stronger year for the Euro Area. Adding to the good Quarter 1 figures are a range of sentiment indicators, all of which point to increased activity.

This improved picture, combined with the impact of higher energy prices on inflation, has led the ECB to engage in a series of interest rate increases. The most recent increase of 25 basis points occurred on June 15, bringing the main refinancing rate to 2.75 per cent. Although rates were left unchanged in July, a strong signal was sent that rates will be increased in August. Such an increase would mean that the European Central Bank (ECB) are accelerating the rate of increase, as the three previous increases had occurred at three-monthly intervals. Further rate increases after August are possible and we expect a 25 basis point increase in each of October and December, followed by two further rate rises of that magnitude in 2007.

Turning to specific Euro-Area economies, the German economy grew by 1.1 per cent in 2005. However, underlying this sluggish performance were vastly different outcomes for domestic demand and export demand. While exports grew by 6.6 per cent, consumption grew by only 0.2 per cent, as did investment.

Based on data for Quarter 1 of 2006 and sentiment indicators, it is expected that 2006 will produce a better overall performance with growth of 1.8 per cent forecast. It is also expected that growth will be better balanced with consumption growing by 0.6 per cent and investment by 2.9 per cent. The improved consumption performance will be partly related to employment which is set to grow by 0.2 per cent in 2006 compared to a fall of 0.2 per cent in 2005. The rate of unemployment is expected to fall from 9.1 per cent in 2005 to 8.5 per cent in 2006. The anticipated improvement in investment is based on improved profitability and increasing capacity utilisation. For 2007, GDP growth of 1.6 is forecast. The lower forecast for growth in 2007 relative to 2006 is partly explained by a planned increase in VAT in 2007 which is likely to induce a substitution in spending from 2007 back into 2006 particularly for consumer durables.

One of the variables which will impact upon the German economy over the short term is the ability of the Merkel-led coalition government to implement a package of reforms. The need to compromise within the coalition has led some commentators to wonder if far-reaching reforms can emerge. The coalition is currently discussing health reforms and the outcome may provide an indicator on the likelihood of significant reforms being achieved in other areas.

In some senses, France's growth performance in 2005 was the opposite to that of Germany in that strength in domestic demand was offset by a negative contribution from net exports. GDP grew by 1.4 per cent in 2005, with consumption growing by 2.1 per cent and investment by 3.4 per cent. However, net exports acted as a drag on GDP growth, reducing growth by 1 per cent.

GDP growth in 2006 is expected to increase to 2.1 per cent, with exports expected to grow by 6.7 per cent (as opposed to the 3.2 per cent rate registered in 2005). Employment in 2006 is expected to grow by 0.4 per cent, with the rate of unemployment falling to 9.5 per cent (from 9.9 per cent in 2005). For 2007, GDP growth of 2.2 per cent is forecast.

As with Germany, politics provide an important context to discussions of economics. In the case of France, the recent failure of the government to implement proposed changes in the labour laws as they relate to younger workers pointed to a broader difficulty in bringing about structural reforms.

United Kingdom

The UK economy grew at a relatively poor rate of 1.8 per cent in 2005. A large part of the explanation for the poor performance was weak consumption growth (1.7 per cent) which was explained in turn by a softening in the housing market. Expectations for both 2006 and 2007 are for improvements, with growth forecasts of 2.4 per cent for 2006 and 2.9 per cent for 2007. All of the pick-up is expected to come about through increases in domestic demand, in particular consumption and private investment, with net exports making either no contribution or even a small negative contribution.

CPI inflation has hovered around the 2 per cent mark in recent months. This relatively low rate has allowed the Bank of England to leave interest rates unchanged at 4.5 per cent since August of 2005 despite signs of increasing activity. Unemployment has drifted upwards since 2005 and now stands at 5.3 per cent.

Asia

The recovery in Japan continues, with GDP having grown by 2.7 per cent in 2005. One of the notable features of the expansion in 2005 is that it was more broadly based than the expansion of 2004. Domestic demand in 2004 grew by 1.5 per cent whereas exports grew by 13.9 per cent. In 2005, domestic demand grew by a much improved 2.6 per cent, with investment showing particular strength in response to improved business confidence. GDP is forecast to grow by 2.8 per

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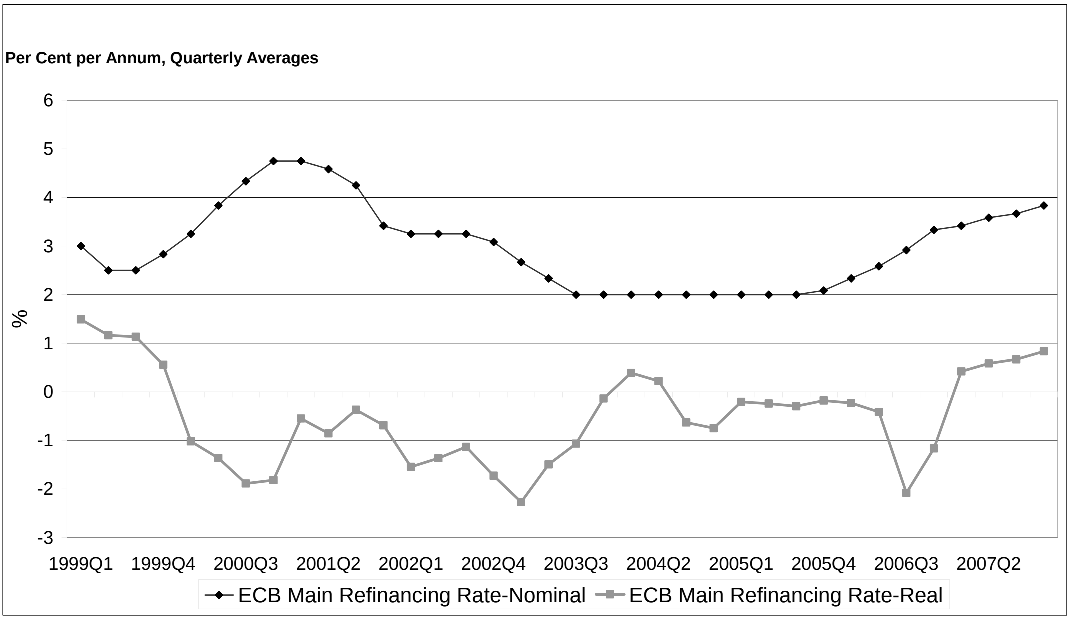
TABLE 1: Short-term International Outlook

	GDP Output Growth			Consumer Price Inflation			Hourly Earnings Growth			Unemployment Rate %			Current Account Balance % of GNP		
Country	**2005**	**2006**	**2007**	**2005**	**2006**	**2007**	**2005**	**2006**	**2007**	**2005**	**2006**	**2007**	**2005**	**2006**	**2007**
UK	1.8	2.4	2.9	2.0	2.2	1.7	4.4	2.3	2.7	4.8	5.3	5.2	-2.6	-2.4	-2.9
Germany	1.1	1.8	1.6	1.9	1.6	2.1	-0.3	0.5	2.7	9.1	8.5	8.1	4.2	4.0	4.6
France	1.4	2.1	2.2	1.9	1.7	1.4	3.5	1.9	1.7	9.9	9.5	9.2	-1.9	-2.6	-2.3
Italy	0.1	1.4	1.3	2.2	2.4	2.1	2.1	2.2	2.1	7.8	7.7	7.6	-1.6	-2.1	-2.2
Euro Area	1.4	2.2	2.1	2.2	2.1	2.0	2.0	2.3	3.3	8.6	8.2	7.9	-0.2	-0.4	-0.3
USA	3.5	3.6	3.1	3.4	3.3	2.4	4.7	4.6	5.1	5.1	4.7	4.7	-6.4	-7.2	-7.6
Japan	2.7	2.8	2.2	-0.3	0.7	0.8	-0.6	2.4	1.1	4.4	4.0	3.5	3.6	4.3	5.5
China	9.9	9.2	8.2	1.8	2.9	2.3							4.2	6.1	6.5
OECD	2.8	3.1	2.9	2.1	2.5	2.6				6.5	6.2	6.0	-1.8	-2.1	-2.1
Ireland	5.5	5.6	5.2	2.5	3.8	3.5	5.6	5.8	5.5	4.4	4.4	4.4	-3.0	-4.1	-5.4

Source: *National Institute Economic Review*, April 2006, *OECD Economic Outlook*, No. 79, June 2006.

Figure 1: Interest Rates



cent in 2006 and by 2.2 per cent in 2007. In addition, the deflation that has characterised the Japanese economy in recent years appears to be ending, with CPI forecasts of 0.7 per cent and 0.8 per cent in 2006 and 2007 respectively. This has prompted the Bank of Japan to end its policy of quantitative easing and it raised interest rates for the first time in six years in July.

The recovery in Japan has led to a renewed focus on the country's fiscal difficulties. Although the general government deficit has fallen from 8 per cent of GDP in 2003 to 5.2 per cent in 2005, progress towards further reductions is needed. Efforts to correct the fiscal imbalance may place a drag on growth in future years so a balance needs to be struck between maintaining the recovery and restoring order to the public finances.

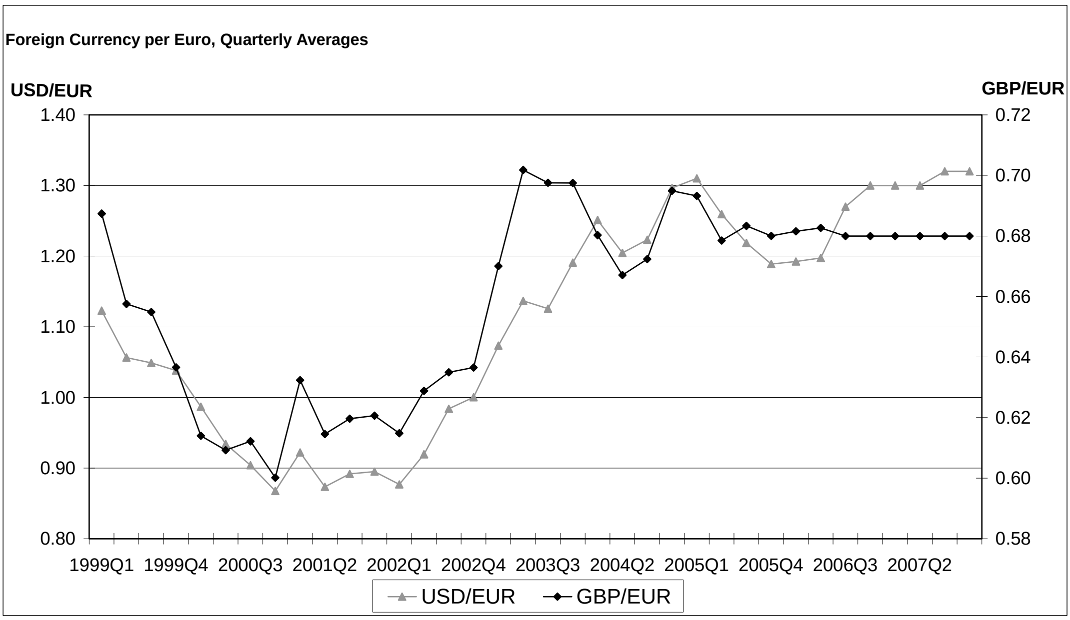
China continued to grow strongly in 2005 and recorded a GDP growth rate of 9.9 per cent, marginally down on the 2004 figure of 10.1 per cent. A recent revision to GDP figures (based on an economic census) showed GDP in 2004 to be 16.8 per cent higher than had previously been thought. The main reason for the upward revision was the previous underestimate of the size of the services sector. By factoring in this underestimate back to 1993, it now appears that growth in China was, on average, 0.5 percentage points higher than was previously reported. Based on 2005 figures, China is now the fourth largest economy in the world in dollar terms and the second largest in PPP-adjusted terms. However, income per capita remains low, at only US$7,204 (PPP-adjusted).

Looking forward, growth rates of 9.2 per cent and 8.2 per cent are forecast for 2006 and 2007 respectively.

Overall Context

Strong growth in the world's major economies continues to provide a favourable backdrop for the Irish economy. However, continuing high energy prices and increasing interest rates may lead to a slightly slower rate of world growth in 2007 relative to 2006. In the case of the Euro Area, this moderation in growth is forecast to be slight (from 2.2 per cent in 2006 and 2.1 in 2007). However, in the US, the moderation is forecast to be more pronounced, with growth forecast to decline from 3.6 per cent in 2006 to 3.1 per cent in 2007. The prospect of an appreciation of the euro relative to the dollar as a result of continued interest rate increases in the Euro Area, when coupled with the moderation in US growth, suggests a more difficult time for Irish exports to the US in 2007 relative to 2006.

Figure 2: Exchanges Rates



The Domestic Economy

General

The *National Income and Expenditure Annual Results for 2005* (*NIE* 2005), showed the economy growing by 5.4 per cent in GNP volume terms last year (5.5 per cent on a GDP basis). The growth was driven by domestic demand, with particularly strong growth in investment of 12.8 per cent. Consumption grew by a strong rate of 6.6 per cent but net exports made a negative contribution to GNP growth of over 1 per cent.

For 2006 and 2007, we foresee continued strong growth with GNP growth rates forecast of 5.6 per cent and 5.1 per cent respectively. Much of the impetus for growth will come from SSIAs and hence domestic sources. Net exports are expected to continue making a negative contribution to growth. On employment, we expect increases of 85,000 and 74,000 in 2006 and 2007 respectively. Given the tight labour market, we see real wage growth of 2 per cent in each of 2006 and 2007. We also expect continued immigration inflows of over 60,000.

Consumption

The *National Income and Expenditure Annual Results for 2005* (*NIE* 2005), show that consumption grew by 6.6 per cent in volume terms in 2005. This was an extremely strong rate of growth relative to the previous three years when consumption in real terms grew, on average, by 3.6 per cent. As real GNP grew by 5.4 per cent in 2005, the increasing relative importance of consumption in total expenditure can be viewed as a key feature of growth during the year.

The early indicators for 2006 point to continuing strong growth in consumption. For the first quarter, the volume of retail sales grew on an annual basis by 6.8 per cent. For May, annual volume growth was 4.4 per cent. Car sales grew by 3.5 per cent over the year to May while trips abroad by Irish residents were almost 25 per cent higher in April 2006 relative to April 2005. According to the *Quarterly National Accounts* for Quarter 1 2006, consumption was 6 per cent higher in Quarter 1 2006 relative to Quarter 1 2005 (for the year to Quarter 1 2006, consumption growth averaged 6.6 per cent). The IIB/ESRI *Consumer Sentiment Index* has recorded falls in both May and June but it remains to be seen if this will be reflected in consumer behaviour.

This strong growth in consumption is partly related to strong employment gains and wage increases. It appears likely that it is also being driven in part by growth in private sector credit. It could be that the growth in private sector credit involves SSIA savers borrowing on the expectation of cashing in their accounts. In this way, some of the SSIA-consumption impact may have occurred in 2005 even though the accounts did not start to mature until 2006. It could also be that Ireland is experiencing a wealth effect whereby house price increases are leading to increased consumption. While such an effect has been an important feature of the US economy in recent years, the econometric evidence for Ireland is unclear on this point so it is not possible to say whether there is a housing-related wealth effect or not.

Given our forecasts of continuing employment growth in 2006 and 2007 and the maturing of the SSIAs, we are forecasting continued strong growth for this year and next. Having assumed that 25 per cent of SSIA maturing funds will be spent on personal consumption in each of 2006 and 2007, this leads us to forecasts for consumption growth of 6.8 per cent in 2006 and 7.4 per cent in 2007.

Given the importance of SSIAs spending to our growth forecasts for 2006 and 2007, it is useful to explicitly quantify the likely effect. While it is as yet unclear what proportion of funds will be spent (as mentioned above some of the funds may have been spent already), using a relatively conservative assumption that one-quarter of funds will be spent on personal consumption, this in itself adds considerably to growth in the economy in 2006 and 2007 adding an estimated 2.1 and 2.7 percentage points to consumption growth in 2006 and 2007 respectively. In addition, we assume that up to 15 per cent of SSIA funds could be spent on housing investment (including investment in home improvements) to the end of 2007. This adds a cumulative 10 percentage points to the forecast level of housing investment by 2007. Taken together the impact of this spending would be considerable, adding over one percentage point to the growth in real GNP in 2006 and 2007 and adding over €2 billion euro to the exchequer balance by the end of 2007 (higher revenues due to the higher level of economic activity). Employment at end 2007 could be up to 43,000 higher and the balance of payments deficit 1.6 percentage points wider due to SSIA spending.

Investment

Investment grew by 12.8 per cent in volume terms in 2005, a rate which was substantially higher than the 2004 increase of 4.2 per cent and the annual average increase between 2002 and 2004 of 5.2 per cent. Of the €43 billion invested in 2005, almost half was accounted for by dwellings (€20.9 billion), with a further 15 per cent being accounted for by "other building and construction" (€6.3 billion). While the growth in housing investment (in real terms) at 12.6 per cent broadly matched total investment growth, investment in machinery and equipment grew by 19.8 per cent (including purchases of air transport equipment).

The early indicators for 2006 present a slightly mixed picture. Figures from the Department of the Environment show house completions at almost 17,000 for the first quarter of 2006 thereby suggesting a continuation of the high level of activity in 2006 (in 2005 86,000 houses were completed).[1] However, figures on planning permissions show that for the first quarter the number of planning permissions is down by 11.1 per cent on the number in the same period in 2005. According to the *QNA* Quarter 1 2006, investment to the year ended Quarter 1 2006 grew by 12.5 per cent so the pace of investment seen in 2005 is being maintained.

As argued above, part of this strong growth in housing investment may have been financed by borrowings against SSIA funds, and we assume that this SSIA-effect could lead to continued modest growth in housing investment out to 2007 with a volume growth of 4 per cent in 2006 and a further slowing in 2007 (with volume growth then of 1 per cent). This is despite the extraordinary high levels currently being recorded, where investment in housing now accounts for 15.4 per cent of GNP, exactly double the ratio recorded in 1998.

[1] The figures originally published by the Department of the Environment showed completions of 81,000 in 2005 and 22,000 in the first quarter of 2006. However, it subsequently emerged that 5,000 houses that had been counted in 2006 should have appeared as being completed in 2005.

TABLE 2: Gross Fixed Capital Formation

	2004 €m	% Change in 2005 Volume	% Change in 2005 Value	2005 €m	% Change in 2006 Volume	% Change in 2006 Value	2006 €m	% Change in 2007 Volume	% Change in 2007 Value	2007 €m
Housing	16,958	12.6	23.2	20,890	4.0	14.4	23,898	1.0	7.1	25,586
Other Building	10,057	6.5	12.2	11,279	12.0	18.2	13,327	10.0	16.6	15,539
Building and Construction	27,014	10.4	19.1	32,169	6.9	15.7	37,225	4.4	10.5	41,125
Machinery and Equipment	9,229	19.8	23.7	11,413	12.0	15.2	13,144	12.0	15.4	15,166
Total	**36,243**	**12.8**	**20.2**	**43,582**	**8.3**	**15.6**	**50,370**	**6.5**	**11.8**	**56,291**

Investment in "other building and construction" is expected to grow strongly this year and next, partly driven by strong public sector investment under the National Development Plans. With strong economic growth forecast in 2006 and 2007, and a recovery in exports and imports, we estimate that investment in machinery and equipment will perform strongly in 2006 and 2007, partly boosted by further purchases of aeroplanes by both Aer Lingus and Ryanair. We estimate that these aircraft purchases could add as much as 1.8 per cent to total investment in each of 2006 and 2007. Factoring this into our analysis leads to investment growth forecasts of 8.3 per cent in 2006 and 6.5 per cent in 2007.

These forecasts imply a continued increase in the share of total investment in GNP. In 2005 the implied investment GNP ratio was 32 per cent, an extraordinarily high rate only matched by Spain and Latvia within the EU, and this is forecast to increase to 34 per cent by 2007.

Government Spending and Public Finances

The most recent figures from the Department of Finance indicate that the general government balance recorded a surplus of €1,624 million in 2005, equivalent to 1.2 per cent of GNP. For 2006 we expect this surplus to increase marginally to 1.4 per cent of GNP. This increase is due to strong growth in all tax revenue heads with exceptional growth in capital gains tax and stamp duties fuelled by the continued boom in the property market. The mid-year returns indicate that tax receipts are growing at 13.6 per cent relative to the same period last year, with income tax receipts growing at just under 9 per cent; our forecast of employment and wages would suggest a full year growth of 9 per cent in income taxes. Given strong growth in consumption and investment we expect indirect taxes to grow by over 13 per cent with particularly strong growth in stamp duties, capital gains tax and capital acquisitions tax. Overall we expect tax revenue to increase by 12.9 per cent, slightly below the mid-year growth rate.

The mid-year exchequer returns indicate that current expenditure is running at 3 per cent below target. This means that in the second half of the year there will have to be a significant acceleration in spending if the target growth rate of 12.9 per cent is to be met. Assuming that this target is met our forecasts suggest that the current surplus will increase by an estimated €700m. For the capital account we use the latest Department of Finance forecasts which predict a slight widening of the capital deficit in 2006.

In 2007 our forecasts for current expenditure differ from the official forecasts because we anticipate further strong spending and some reduction in the average income tax rate in that year. We forecast a growth of over 10 per cent in current expenditure against the official forecast of 7 per cent. Despite this easing of fiscal policy the current surplus increases slightly and the general government balance remains close to €1.9 billion, or 1.1 per cent of GNP. These forecasts imply a further loosening of fiscal policy in 2007, following very strong growth in current expenditure towards the end of 2006. This scenario is based on recent pre-election experience that the pressures to increase public spending in the run up to an election can be intense. As discussed in the previous *QEC* (April 2006), it would be desirable to limit any such loosening of fiscal policy to the greatest extent possible to avoid aggravating the inflationary pressures evident in the economy at present.

TABLE 3: Public Finances

	2005	% Change	2006	% Change	2007
Current Revenue	39,849	12.6	44,883	11.0	49,802
Current Expenditure	33,496	12.9	37,829	10.4	41,775
Current Surplus	**6,353**	**11.0**	**7,054**	**13.8**	**8,026**
Capital Receipts	995	82.8	1,819	-8.6	1,663
Capital Expenditure	7,847	15.3	9,045	8.9	9,854
Capital Borrowing	**-6,852**	**5.5**	**-7,226**	**13.4**	**-8,191**
Exchequer Balance	**-499**		**-172**		**-165**
as % of GNP	-0.4		-0.1		-0.1
General Government Balance	**1,624**		**2,107**		**1,831**
as % of GDP	1.0		1.2		0.9
General Government Debt as % of GDP	**27.4**		**24.9**		**22.8**

Exports

Recently revised data from the Central Statistics Office (CSO) show that the volume of exports rose by 3.9 per cent in 2005, higher than the previously published estimate of 1.8 per cent. While the latest figure suggests that the deterioration in Ireland's export performance is not as severe as previously thought, nonetheless it represents a significant slowing from earlier years in the decade and points to a continuation of a pattern that began around 2002 when Ireland began to lose share in world export markets.

An examination of the quarterly trends throughout 2005 shows that the export performance was at its worst in the first quarter of the year, when an annual volume increase of only 1.2 per cent was registered. The rate of expansion increased consistently throughout the year and in the final quarter, a 6.1 per cent volume increase was recorded. The improvement in export volumes throughout the year is supported by a decline in the trade weighted competitiveness indicators produced by the Central Bank and Financial Services Authority of Ireland, which shows that both the real and nominal indicators fell between the start of 2005 and the end, thus signalling a gain in competitiveness.

In terms of the composition of exports in 2005, the value of exports rose by 5.6 per cent in 2005 and the *Balance of International Payments* shows that the value of merchandise exports rose by 3.9 per cent over the year, while the value of services exports rose by 8.7 per cent. In terms of merchandise exports in 2005, Chemicals and Related Products accounted for the largest proportion of the total value (at 45.6 per cent), and registered a 7.6 per cent increase over the year. Computer Services and Business Services accounted for the largest proportions of total services exports. However, Computer Services actually registered an annual decline in export values in

TABLE 4: Exports of Goods and Services

	2004 €m	% Change in 2005 Volume	% Change in 2005 Value	2005 €m	% Change in 2006 Volume	% Change in 2006 Value	2006 €m	% Change in 2007 Volume	% Change in 2007 Value	2007 €m
Merchandise	**80,544**	**4.1**	**3.9**	**83,692**	**5.9**	**5.5**	**88,295**	**5.1**	**5.5**	**93,151**
Tourism	3,536	5.2	7.8	3,813	3.1	7.0	4,080	3.4	7.0	4,366
Other Services	38,888	3.3	8.8	42,304	7.0	13.3	47,930	8.3	13.0	54,161
Exports of Goods and Services	**122,968**	**3.9**	**5.6**	**129,809**	**6.2**	**8.1**	**140,305**	**6.2**	**8.1**	**151,678**
FISIM Adjustment	1,081			1,192			1,288			1,392
Adjusted Exports	**124,049**	**3.9**	**5.6**	**131,001**	**6.2**	**8.1**	**141,593**	**6.2**	**8.1**	**153,070**

2005, of 0.6 per cent, while Business Services recorded a rise of over 40 per cent in export values over the year.

Turning to 2006, the latest *Quarterly National Accounts* point to a continued pick-up in exports, with a 5.5 per cent volume increase registered on an annual basis to end March. The *Balance of International Payments* shows that services exports performed very strongly in the year to end March, recording an annual value increase of 11.9 per cent, with the Business Services component registering the highest annual increase of almost 44 per cent. On the same basis, merchandise exports expanded by 5.5 per cent.

We are forecasting an improvement in export performance both this year and next, with volume increases of 6.2 per cent expected in both years, buoyed in both years by a robust international economy. Despite this, given our forecasts for continued strong growth in imports, as discussed in the next section, the contribution of net trade to total growth in the economy is expected to be negative in both years.

Imports

Revised CSO estimates for 2005 show that import growth was also stronger in 2005 than previously thought. Imports grew by an annual rate of 6.5 per cent in 2005, representing a slight slowing on the 8.6 per cent expansion of 2004, though outpacing the growth in exports for a second year.

Official figures from the *Balance of International Payments* show that the value of visible imports increased by over 10 per cent during 2005 while the value of invisible imports rose by 6.8 per cent. The increase in services imports was driven by a rise of almost 10 per cent in Business Services, the largest component of total services imports, accounting for 43 per cent in 2005. Royalties and Licenses account for 28 per cent of total services imports and registered an increase of 3.2 per cent over the year while Tourism and Travel, which accounted for 8.7 per cent of the total in 2005, rose by 16.7 per cent in value terms over the year. The *External Trade* statistics show that Machinery and Equipment imports, which account for almost 45 per cent of the total value of merchandise imports, registered a very significant increase over the year of 12.8 per cent, this includes the one-off effect of imports of aircraft purchases in 2005.

Turning to the *Quarterly National Accounts*, the pace of quarterly growth has picked up since the second half of 2005, notwithstanding the fact that import growth has been strong for the last two years. On an annual basis to end March 2006 import values rose by 9.8 per cent, as compared to an 8.5 per cent growth rate for the same period to end March 2005. This significant rise in import values coincides with an improvement in the performance of exports, which tend to be import intensive, as well as robust domestic demand. The growth rate of the value of imports of goods from several economies has increased in recent months. For the first quarter of 2006, goods imports from China rose by 32 per cent, so that imports from this source now account for about 7 per cent of the total value of our

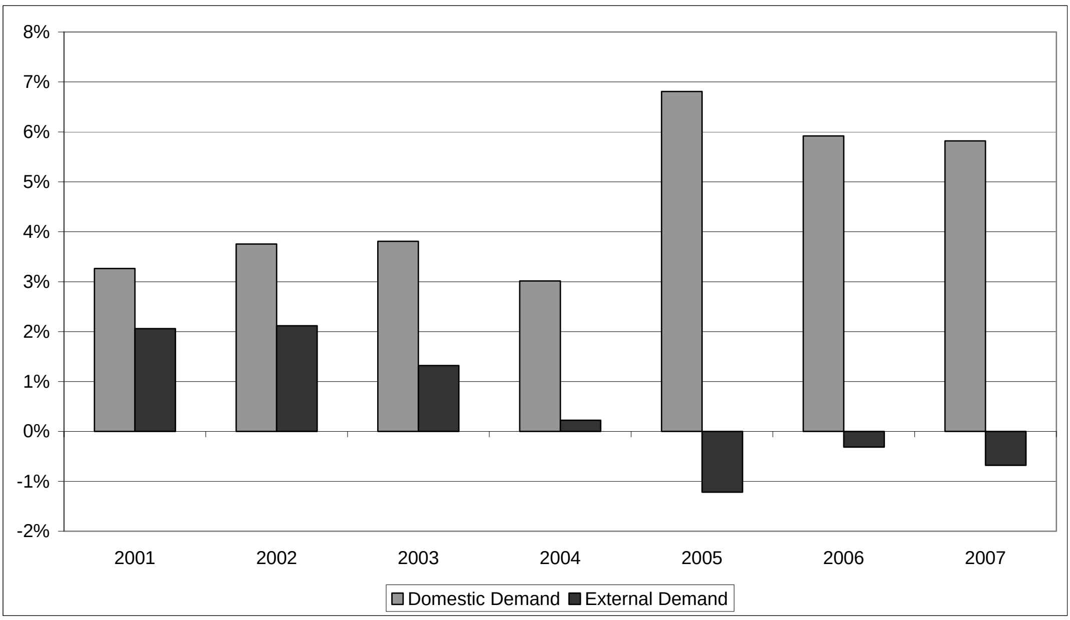
TABLE 5: Imports of Goods and Services

	2004	% Change in 2005		2005	% Change in 2006		2006	% Change in 2007		2007
	€m	Volume	Value	€m	Volume	Value	€m	Volume	Value	€m
Merchandise	**49,122**	**8.2**	**10.1**	**54,086**	**9.0**	**10.5**	**59,765**	**8.8**	**10.5**	**66,040**
Tourism	4,184	14.4	16.7	4,882	13.7	16.0	5,663	14.2	16.5	6,598
Other Services	48,441	3.9	6.0	51,325	5.9	8.0	55,431	6.9	9.0	60,420
Imports of Goods and Services	**101,747**	**6.5**	**8.4**	**110,293**	**7.8**	**9.6**	**120,859**	**8.2**	**10.1**	**133,058**
FISIM Adjustment	349			260			285			314
Adjusted Imports	**102,096**	**6.5**	**8.3**	**110,553**	**7.8**	**9.6**	**121,144**	**8.2**	**10.1**	**133,372**

merchandise imports. Imports from the USA rose by 12.3 per cent while EU imports increased by 10.4 per cent. Imports from the EU remain the largest component of total merchandise imports, at almost 60 per cent of the total value in the first quarter of 2006.

On the basis of our forecasts for exports and consumption over the next two years, we expect a rise in the volume of imports over the forecast horizon. In 2006 imports are expected to expand by 7.8 per cent in volume terms while in 2007 they are forecast to grow by 8.2 per cent. These estimates include the once-off effect of aircraft purchases in 2006 and 2007 which could add more than half of a percentage point to the total value of imports in each year.

Figure 3: Domestic and External Demand Contributions to GDP Growth



Balance of Payments

The revised Balance of Payments numbers for 2005 indicate a much wider current account deficit than previously estimated, equivalent to 3 per cent of GNP. This higher deficit is attributable both to a smaller trade surplus and larger net factor outflows. Such a dramatic widening of the Balance of Payments deficit has not occurred since the late 1980s and our forecasts suggest that it is due to widen further over the next two years. While within a monetary union it can be argued that there is no economic sanction attached to a widening current account deficit, it is nevertheless an important indicator of the rapidly changing structure of the Irish economy as discussed in the *General Assessment* below.

A current account deficit of €2.0 billion was also registered in the first quarter of 2006, equivalent to 5.7 per cent of GNP. The deficit was a result of a negative invisibles balance of €8.5 billion (20.1 per cent of GDP) exceeding a positive merchandise balance of €6.4 billion (or 15.3 per cent of GDP).

The merchandise surplus of €6.4 billion recorded in the first quarter of this year, was accompanied by a negative services balance of -€1.9 billion, so the overall result was a positive trade balance of €4.5 billion. However, the surplus on the trade account has been falling since the beginning of 2002, and in recent months the deterioration was a result of a fall in the merchandise surplus. At the same time there was an improvement in the services deficit.

TABLE 6: Balance of Payments*

	2004 €m	Change %	2005 €m	Change %	2006 €m	Change %	2007 €m
Merchandise Trade Balance	**31,422**	**-5.8**	**29,606**	**-3.6**	**28,530**	**-5.0**	**27,111**
Service Trade Balance	-10,201	-1.1	-10,090	-10.0	-9,084	-6.5	-8,490
Trade Balance in Goods and Services on BOP basis	**21,221**	**-8.0**	**19,516**	**-0.4**	**19,446**	**-4.2**	**18,620**
Total Debit Flows	57,450	18.0	67,765	12.1	75,985	12.3	85,333
Total Credit Flows	34,968	24.2	43,447	15.1	49,989	15.1	57,518
Net Factor Flows	**-22,482**	**8.2**	**-24,318**	**6.9**	**-25,995**	**7.0**	**-27,815**
Net Current Transfers	**393**	**52.9**	**601**	**-50.0**	**301**	**0.0**	**301**
Balance on Current Account	**-868**		**-4,201**		**-6,249**		**-8,894**
Capital Transfers	279	-4.7	266	12.8	300	0.0	300
Effective Current Balance	**-589**		**-3,935**		**-5,949**		**-8,594**

*This table includes adjustments to Balance of Payments basis.

The significant presence of multinational corporations in Ireland means that debit factor incomes flows such as repatriation of profits are substantial items in the latest *Balance Of Payments*. Accordingly, an incomes deficit equivalent to -€6.2 billion or 14.6 per cent of GDP occurred in the first quarter of 2006. On an annualised basis, the incomes deficit has risen to an all time high in the latest quarter, reaching almost €25 billion, representing an increase of 7.5 per cent on the same period last year or 79 per cent on the same period of 2000.

The strong performance of imports relative to exports expected for 2006, particularly in trade in services, is expected to contribute to a widening current account deficit in 2006 and 2007. The deficit is expected to amount to -€6.2 billion in 2006, or 4.1 per cent of GNP, and €8.9 billion or 5.2 per cent of GNP in 2007.

Gross National Product and Gross Domestic Product

We forecast that GDP will increase by 5.6 per cent in 2006 and 5.2 per cent in 2007 with similar growth rates for GNP (5.6 and 5.1 respectively). While GNP is generally used as the headline growth rate, GNDI (Gross National Disposable Income) is a more appropriate measure of a country's overall level of income since it also includes changes in the terms of trade and net international transfers. Our forecasts imply that GNDI will grow at a very similar rate to GNP in 2006 and 2007 at 5.5 and 5.2 per cent respectively.

The most recent *NIE* data suggest that for the first time in the decade the external sector made a significant negative contribution to the overall growth rate while domestic demand grew by almost 7 per cent. Despite our forecast of a recovery in export performance in 2006 and 2007 our overall forecast implies that growth in 2006 and 2007 will continue to be driven by domestic demand with a small negative contribution to growth from the external sector.

Agriculture

The *National Income and Expenditure Accounts for 2005* show that output in the agricultural sector expanded by a very significant 11.2 per cent between 2004 and 2005, much higher than the 1.7 per cent registered in 2004. However, a large portion of the rise in 2005 is due to inclusion of incomes received as a result of the movement to the Single Payment Scheme in the output measure for the sector. The same reasoning applies to the 11.2 per cent rise in agricultural output recorded year on year in the first quarter of 2006.

As the effects of the movement to the Single Payment Scheme on incomes and output in the agricultural sector are expected to fall this year, our forecasts point to a contraction of –0.6 per cent in gross output in the sector in 2006 and a slight expansion of 1.8 per cent in 2007.

Industry

The *NIE 2005* shows that gross value added in industry (including building) grew by 3.4 per cent last year. We do not have separate data on the relative contributions of construction and other industries to this overall growth figure, but it appears that the overall figure of 3.4 per cent hides significant differences between construction and "other industry". We know from the *Quarterly National Household Survey (QNHS)* that employment in "other industry" fell in 2005 by 2.5 per cent while employment in construction rose by 14.4 per cent. We also know that building and construction investment grew by 19.9 per cent in 2005. These indicators of strong growth in building and construction, when combined with the modest overall growth rate for industry (including building), point to 2005 as a static year for non-construction industry in Ireland.

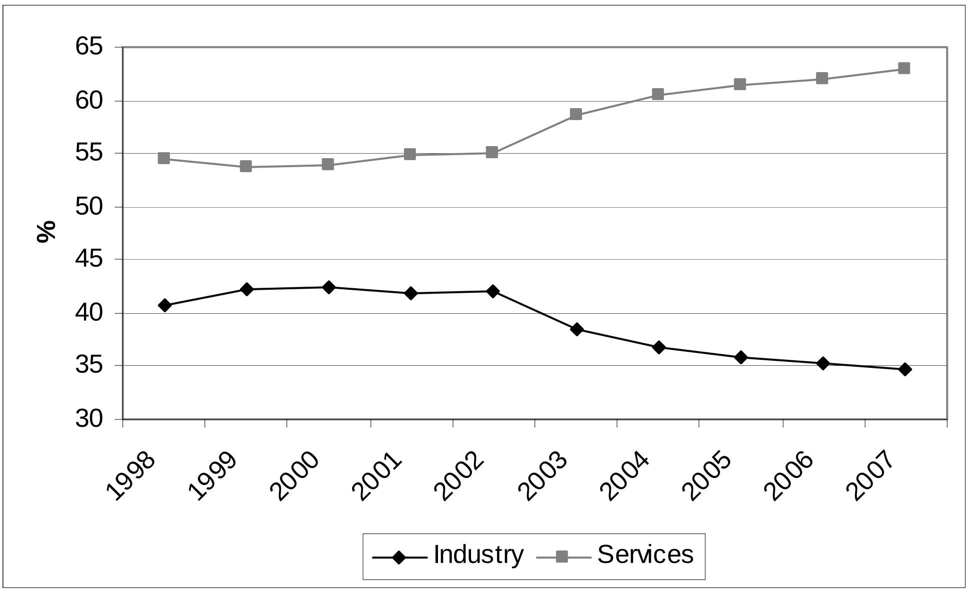
Up to the end of March 2006, the *Quarterly National Accounts* show industry (including building) growing by 3.3 per cent on an annual basis, while relative to the first quarter of 2005, growth was only 0.6 per cent. But again, this figure hides a vastly different experience for construction and other industry.

Turning to the Central Statistics Office's (CSO) figures on industrial production, the picture that emerges of non-construction industrial activity looks somewhat healthier than that which emerges from the national accounts. According to the industrial production figures, output grew by 3 per cent in 2005 across all industries and by 3.1 per cent in manufacturing. These figures represent significant rebounds from 2004 when output growth for all industries was 0.5 per cent and 0.4 per cent in manufacturing. For the first months of 2006, continued output growth is recorded – on a seasonally adjusted basis, output in the three-month period to May 2006 was

4.2 per cent higher than in the preceding three months. The latest *NCB Manufacturing PMI* also presents a more optimistic picture relative to the national accounts. The June index showed a fourth successive increase (reaching 55.4) and indicated the most improved business conditions since May 2000.

We expect output from industry (including building) to grow by 4.1 per cent in 2006 and by 3.4 per cent in 2007. The construction sector is forecast to grow relatively more strongly than the remainder of the sector in both 2006 (6.9 per cent versus 3 per cent) and 2007 (4.4 per cent versus 4 per cent). The gap will narrow in 2007 as growth in construction activity moderates.

Figure 4: Changing GNP Shares of Industry and Services, 1998 to 2005, with Forecasts for 2006 and 2007



Services

Services output grew by 6.4 per cent in 2005. As industry (including building) grew by only 3.4 per cent, the trend of recent years has continued of services making up an increasing share of total output (see Figure 4). In the year 2000, services accounted for 53.9 per cent of total output with industry accounting for 42.4. By 2005, service's share had risen to 61.3 per cent while industry's share had fallen to 35.8 per cent. Looking within the broad services category, the following growth rates were recorded in 2005:

Distribution, transport and communications: +5.3 per cent;
Public administration and defence: +1.8 per cent;
Other services (including rent): +7.3 per cent.

According to the most recent *Quarterly National Accounts*, services continued to grow strongly in Quarter 1 2006. On an annualised basis for the year ended March 2006, the following growth rates were recorded:

Distribution, transport and communications: +4.8 per cent;
Public administration and defence: +2 per cent;
Other services (including rent): +8 per cent.

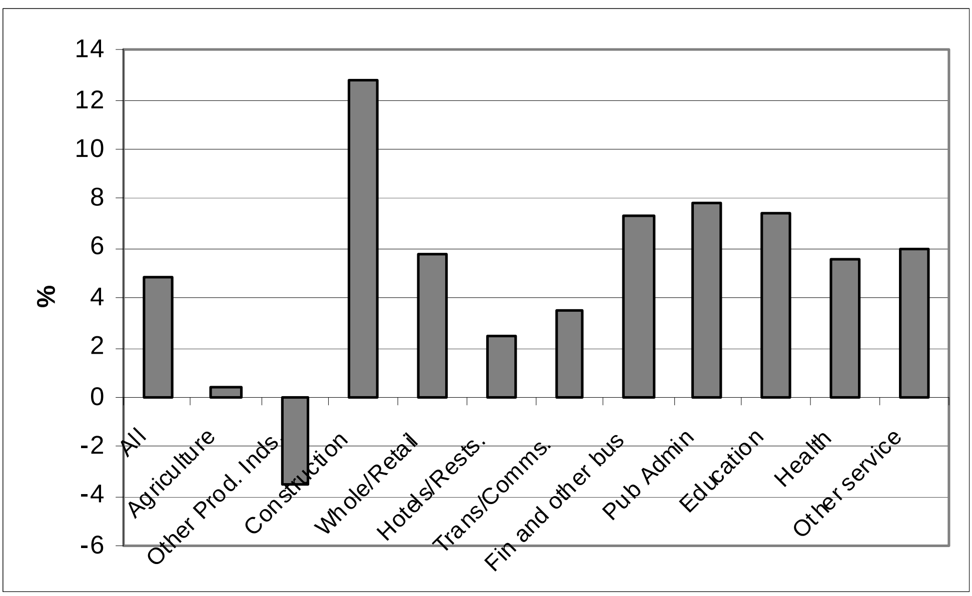
One other indicator of recent trends is the *NCB Services PMI*. The June reading was 65.3 which, although down from the May reading of 66.2, points to highly buoyant conditions in the sector.

We forecast that total services activity will grow by 6.9 per cent and 6.3 per cent in 2006 and 2007 respectively. As these growth rates exceed those for industry, the pattern will continue of services accounting for a greater share of national output (see Figure 4).

Employment

The *Quarterly National Household Survey* for Quarter 1 2006 shows employment continuing to grow at a very strong rate. Over the preceding twelve months, the number of people employed grew by 89,900 – this amounts to an increase of 4.7 per cent. The seasonally adjusted rate of unemployment has remained essentially unchanged through 2005 and into 2006. The participation rate edged upwards over this period, from 61 per cent in Quarter 1 2005 to 62.2 per cent in Quarter 1 2006. This participation increase added 32,000 people to the labour force in the year to Quarter 1 2006 out of a total labour force increase of 95,800. The remaining 64,000 labour force entrants are accounted for through immigration (51,000) or people reaching the working age (12,000).

Figure 5: Distribution of Employment Changes, Year Ended Quarter 1 2006



Source: CSO *Quarterly National Household Survey*, Quarter 1 2006.

While the overall level of employment creation remains impressive, the distribution of the growth by sector continues to give rise to concern. As noted in earlier *Commentaries*, and as depicted in Figure 5, construction continues to post vastly larger employment gains relative to all other sectors. Comparing the twelve months ended Quarter 1 2006 with the twelve months ended Quarter 1 2005, construction employment grew by 12.8 per cent. In contrast, "other productive industries" continue to shed jobs, employing 3.5 per cent fewer people in the year ended Quarter 1 2006 relative to the previous year.

In the last *Commentary* we noted how the rate of employment increases, when seasonally adjusted, pointed to a moderation in the pace of job creation over the course of 2005. This prompted us to conclude that this moderation would continue but the figures in the *QNHS* Quarter 1 2006 contradict this earlier view. In the first quarter of 2006 over 25,000 jobs were added (on a seasonally adjusted basis) which is larger than the increases in each of the quarters in 2005. While this does not signal a sustained acceleration in job creation, it does point to the ongoing strength of the Irish labour market.

As noted above, immigration continues to play an important role in providing a supply of labour to meet demand. Figures for the first six months of the year show applications for PPS numbers from nationals of the EU New Member States (NMS) running at the highest rate since May 2004. A total of 65,000 PPS numbers were issued to people from the NMS between January and June of this year. Although this number is far from being a perfect indicator of labour supply, it nonetheless points to continued strong inflows. As we have noted in previous *Commentaries*, the magnitude of the inflow is likely to be contributing to an easing in wage pressures which would otherwise emerge in the context of such buoyant labour demand.

For 2006 and 2007, we forecast employment gains of 4.4 per cent and 3.6 per cent respectively. We are also forecasting that the unemployment rate will remain unchanged at 4.4 per cent. This implies that inward migration will remain high, at 69,100 in 2006 and 61,600 in 2007. Even migration at this high rate would not be sufficient to fill all the extra jobs that are forecast so participation is also forecast to increase, by 1.5 percentage points in 2006 and 1.2 percentage points in 2007. In order for such participation increases to be brought about, we envisage real wages continuing to increase, as discussed in the following section.

TABLE 7: Employment and Unemployment

	Annual Averages 000s			
	2004	**2005**	**2006**	**2007**
Agriculture	117	115	115	114
Industry	516	539	555	564
Services	1,232	1,298	1,367	1,432
Total at Work	**1,865**	**1,952**	**2,037**	**2,111**
Unemployed	87	89	93	96
Labour Force	**1,952**	**2,041**	**2,131**	**2,207**
Unemployment Rate %	4.4	4.4	4.4	4.4
Inward Migration	50.1	70.0	69.1	61.6
Change in Participation Rate	0.7	1.5	1.5	1.2

Incomes

In Table 8, we present data on hourly earnings growth by sector for the last number of years. Overall nominal hourly earnings growth was 5.8 per cent in 2005 according to this index – this is very close to the figure implied by the 2005 NIE (5.6 per cent). The fastest wage growth was seen in construction where average hourly earnings grew by 6.8 per cent. The lowest increase, at 3.3 per cent, was in non-high-tech manufacturing.

TABLE 8: Average Hourly Earnings by Sector†

Sector	Hourly Earnings Q3 2005	Cumulative Growth Q1 2000 - Q3 2005	Annual Growth Rate 2000	Annual Growth Rate 2001	Annual Growth Rate 2002	Annual Growth Rate 2003	Annual Growth Rate 2004	Annual Growth Rate 2005
	Euro	*%*	*%*	*%*	*%*	*%*	*%*	*%*
Economy*	18.18	46.6	9. 8	7.7	5.1	5.1	6.4	5.8
Industry	14.43	43.2	6.3	8.2	7.4	5.0	4.5	4.0
High-Tech	14.78	46.6	4.1	7.6	11.0	4.3	6.7	4.6
Other Manufacturing**	14.04	39.3	8.7	9.0	3.3	5.7	2.1	3.3
Construction	19.11	56.4	12.8	6.7	6.2	6.5	5.3	6.8
Services								
Non-Market Services	23.95	45.4	10.7	7.8	2.7	1.6	11.6	6.4
Transport & Comm.	18.48	37.8	8.2	5.4	-1.7	9.2	3.2	4.7
Distribution***	16.84	45.2	12.8	8.3	8.9	3.2	3.5	6.3
Hotels and Restaurants	10.93	46.0	11.1	-1.0	8.2	5.2	10.5	5.3
Other Market Services	18.44	35.8	9.5	5.8	2. 6	5.9	4.6	3.9

Quarter 1 – March, Quarter 2- June, Quarter 3 - September, Quarter 4 – December.

Year on Year growth rates refer to year ending December.

* Excludes agricultural and health sector earnings.

** Excluding utilities and mining and quarrying.
***Includes retail.

† Nicola Doyle (ESRI) prepared these estimates.

Given strong employment growth in 2005 and earnings growth of 5.6 per cent, total non-agricultural wage income grew by 10.9 per cent. Transfers grew by a massive 14.5 per cent, this figure is artificially high because it includes accrued payments for nursing home charges which have yet to be disbursed. With other non-agricultural incomes growing by a more moderate 4.3 per cent, the overall figure for gross personal income growth was 10.4 per cent.

As can be seen in Table 9, the savings rate is estimated to have increased to 14.7 per cent in 2005 from 12.2 per cent in 2004. Part of the reason for this relates to the full allocation of the €1 billion of refunds in respect of nursing home charges to current transfers in 2005 in the national accounts. The full amount is recorded as having been paid out in 2005 on the grounds that this is when Government accrued the liability and when people (in theory at least) became aware that they would be receiving the refunds. As

TABLE 9: Personal Disposable Income

	2004	Change		2005	Change		2006	Change		2007
	€m	%	€m	€m	%	€m	€m	%	€m	€m
Agriculture, etc.	2,904	17.1	496	3,399	1.0	35	3,434	1.0	36	3,469
Non-Agricultural Wages	58,844	10.9	6,428	65,272	10.7	6,996	72,268	9.6	6,937	79,205
Other Non-Agricultural Income	18,645	4.3	803	19,448	7.8	1,509	20,957	8.7	1,831	22,788
Total Income Received	**80,393**	**9.6**	**7,726**	**88,119**	**9.7**	**8,539**	**96,658**	**9.1**	**8,804**	**105,463**
Current Transfers	15,815	14.5	2,299	18,114	4.4	793	18,908	10.4	1,963	20,871
Gross Personal Income	**96,209**	**10.4**	**10,025**	**106,233**	**8.8**	**9,333**	**115,566**	**9.3**	**10,768**	**126,333**
Direct Personal Taxes	17,953	7.8	1,401	19,354	10.4	2,010	21,363	7.6	1,618	22,982
Personal Disposable Income	**78,256**	**11.0**	**8,624**	**86,880**	**8.4**	**7,323**	**94,203**	**9.7**	**9,149**	**103,352**
Consumption	68,719	7.9	5,395	74,114	10.5	7,810	81,924	10.8	8,878	90,802
Personal Savings	**9,536**	**33.9**	**3,229**	**12,766**	**-3.8**	**-487**	**12,278**	**2.2**	**271**	**12,550**
Savings Ratio	**12.2**			**14.7**			**13.0**			**12.1**
Average Personal Tax Rate	**18.7**			**18.2**			**18.5**			**18.2**

the money was not actually paid out in 2005 (but merely debited in the Government's accounts), it is unlikely that it had an impact on consumption. For this reason, this apparent rise in the savings rate does not fully reflect the underlying position.

The most recent data from Quarter 1 2006 suggest that the rate of wage increase may have slowed in construction and industry. In construction, hourly earnings were 2.9 per cent higher in March 2006 compared to March 2005. For earnings in industry, the corresponding figure was 2.7 per cent. It remains to be seen if the first quarter of 2006 is signalling a general slowdown in earnings growth. Given the ongoing high rates of growth and the low level of unemployment, it seems that the labour market will remain tight and so wage pressures will remain.

We forecast that nominal wages will grow by 5.8 per cent in 2006 and by 5.5 per cent in 2007. These increases are higher than those implied by the recently agreed national wage agreement. Our view is that the level of labour demand in the economy which is implied by our forecasts will tend to raise wages. Despite this strong growth in incomes our forecasts suggest a rapid fall in the savings rate due to SSIA-fuelled strong growth in consumption.

Consumer Prices

Irish inflation rates have been rising throughout 2006. The latest data show that inflation in June, as measured by the Consumer Price Index (CPI), was 3.9 per cent year on year, much higher than the rate of 2.1 per cent for the same month of 2005. (Inflation developments over the last decade and key drivers are explored in more detail in Box A below). This 3.9 per cent annual rate of inflation recorded in both May and June is the highest registered since April 2003. Analysis of the CSO data shows this to have been driven mainly by increases in:

Housing related items (mortgage interest accounted for 30 per cent of the total annual inflation rate in June while heat energy accounted for around 9 per cent).

Transport (increases in petrol prices accounted for over 11 per cent of total inflation in June.)

Restaurants and Hotels (increases in the price of beer on licensed premises, accommodation services and fast-food each accounted for about 5 per cent of total inflation in June).

Food items (price increases in all food items accounted for about 6.5 per cent of the total increase in inflation in June within which beef accounted for almost 1 per cent of total inflation while price increases in potatoes accounted for about 1.7 per cent).

The average percentage contribution of each of these four categories to total inflation for the first six months of 2006 is as follows:

	%
Housing related items	45.2
Transport	19.9
Hotels and Restaurants	18.3
Food items	3.9

Categories making negative contributions to total inflation include:

- Clothing and Footwear; prices have fallen consistently since January 1995, so that the overall contribution of this category to total inflation has been negative since then.
- Furnishings, Household Equipment and Routine Household Maintenance; prices in this sector have registered sustained decreases since May 2003.
- Communications; prices have fallen consistently since July 2005, having registered substantial declines in earlier parts of the decade also.

Recently various commentators have raised concerns that core inflation has been rising, and this seems to be the case. One measure of core inflation is the CPI excluding mortgage interest; this has increased consistently since the start of the year, from 2.3 per cent in January to 2.8 per cent in June. The same is true of CPI excluding energy products, which has risen from 2.2 per cent in January to 3.2 per cent in June. The increase in core inflation points to rising inflationary pressures in domestically driven price components.

An item which has also attracted much attention of late is the contribution of food inflation to total inflation in the economy. Since March, inflation in Food Items has been making a positive contribution to total inflation (having in general made a negative contribution since the start of 2004). The contribution of almost 10 per cent of total inflation in May was at a high last seen in 2002. However, in June, the contribution to total inflation moderated slightly to 6 per cent. This 6 per cent is broken down as follows:

	Contribution to Overall CPI % Change	% of Total Inflation
Bread and Cereals	0.02	0.60
Meat	0.04	1.21
Fish	0.01	0.42
Milk, Cheese & Eggs	0.05	1.37
Oils & Fats	0.00	0.04
Fruit	0.01	0.22
Vegetables	0.06	1.59
Sugar, Jam, Honey, Chocolate & Confectionery	0.04	0.99
Other Food Products	0.00	0.00
Non-Alcoholic Beverages	-0.01	0.00
Food and Non-Alcoholic Beverages	**+0.22**	**6.4**

While a rise in the contribution of food and non-alcoholic beverages to inflation might be surprising given expectations of price declines following the abolition of the Groceries Order, the 0.22 percentage point CPI inflation rate accounted for by this component is nonetheless quite small.

The annual rate of inflation for goods was 2.1 per cent in June while that of services was 5.4 per cent. This compares to respective annual rates of –0.2 per cent and 4.3 per cent in June 2005. The pick-up in the pace of growth in goods prices has to a large extent been driven by rises in energy related products.

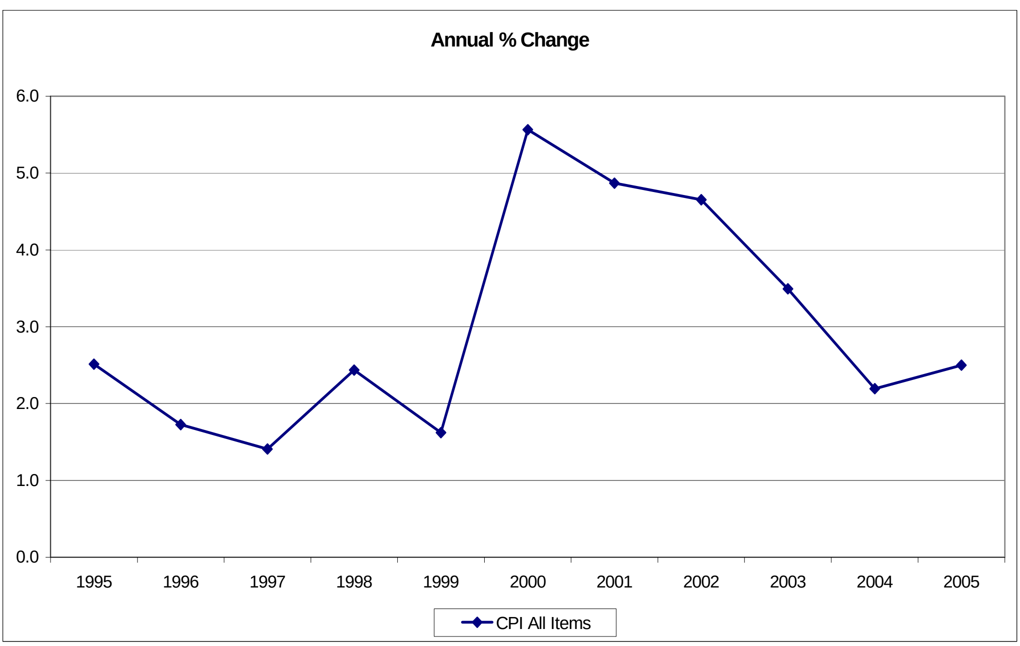
The average increase in the *Harmonised Index of Consumer Prices (HICP)* was 2.5 per cent in the year from May 2005 to June 2006. The index registered an annual increase of 2.9 per cent in June, as compared to the rate of 1.9 per cent in the same month of 2005. In May 2006, Ireland registered the fourth highest inflation rate in the EU-15 and the ninth highest in the EU-25.

The outlook for 2006 is for a higher rate of inflation than 2005, with a forecast increase of 3.8 per cent expected for the year. So far the average of the first six months inflation rates stands at close to 3.6 per cent. This forecast average of 3.8 per cent for the whole year, therefore, implies that annual inflation in the coming months will hit highs of over 4 per cent. In 2007, we expect a slight easing of price pressures, with a 3.5 per cent rise in the CPI expected for that year.

Box A: Inflation Developments Over the Past Decade

Over the past decade, Irish inflation as measured by the Consumer Price Index (CPI) has averaged 3.1 per cent per annum. However, as shown in Figure A, inflation spiked at a much higher annual rate of almost 6 per cent in 2000 and remained at a high level until 2002. Since then a downward trajectory was in evidence until recent months; since the beginning of 2006, annual inflation has ticked upwards and in both May and June the CPI registered a 3.9 per cent annual increase, reaching highs last seen at the start of 2003. The pick-up in the pace of inflation has sparked renewed concerns about spiralling inflation as projected future developments in interest rates, mortgage values, oil prices, and other key items, look set to keep inflation at current highs for the remainder of the year.

Figure A: Annual Percentage Change in CPI



In order to get a feel for what has been driving inflation over the last decade, we turn first to the annual rate in June 2006. In June, out of the twelve aggregated groups of the CPI index published by the CSO, the four main contributing categories were:

Housing, Water, Electricity, Gas And Other Fuels;
Restaurants and Hotels;
Transport;
Food and Non-Alcoholic Beverages.

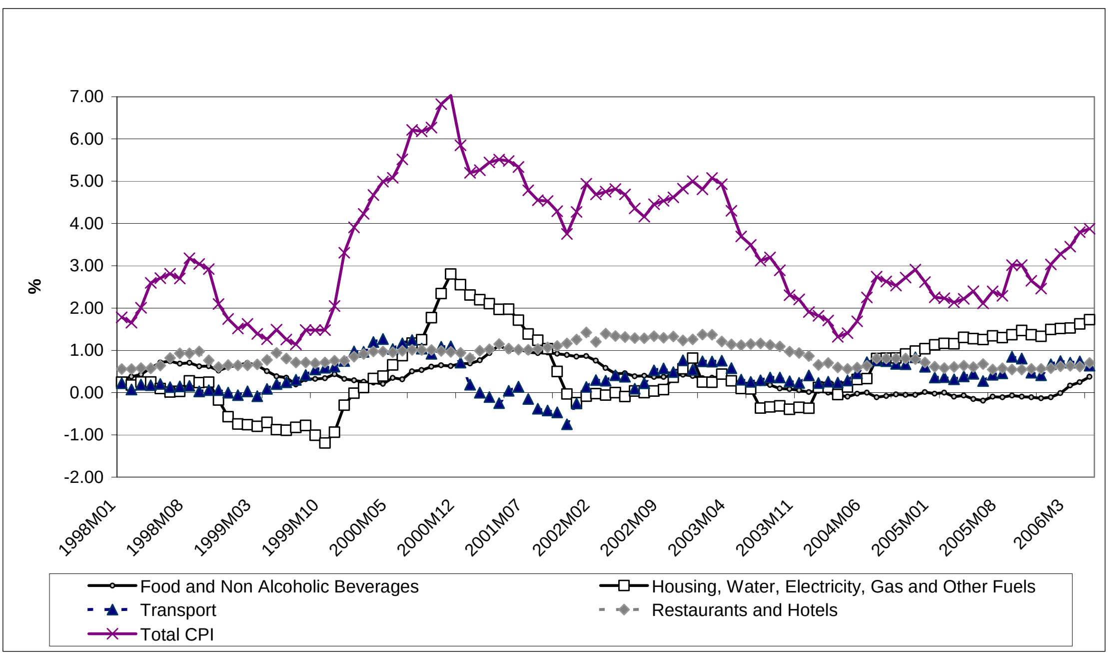
Table A shows the average percentage point contribution to total annual inflation of each of these four categories recorded between 1997 and 2005.

Table A: Contributions to Annual Inflation

	Dec. 2001 Base Exp. Weights	1997	1998	1999	2000	2001	2002	2003	2004	2005
Housing,Water,Elect.,Gas and other fuels	12.331	0.2	0.1	-0.8	1.2	1.3	0.1	-0.1	0.5	1.3
Hotels and Restaurants	17.760	0.5	0.7	0.7	1.0	1.1	1.3	1.1	0.7	0.6
Transport	13.183	0.4	0.1	0.3	1.1	-0.2	0.4	0.4	0.5	0.5
Food and Non Alcoholic Beverages	14.092	0.2	0.6	0.4	0.4	0.9	0.5	0.2	0.0	-0.1
All Items % Change	**100.00**	**1.4**	**2.4**	**1.6**	**5.6**	**4.9**	**4.7**	**3.5**	**2.2**	**2.5**

Of these categories, on average it is price changes in the "Housing, Water, Electricity, Gas and Other Fuels" that drives changes in the overall CPI most. Figure B, which shows the movement in these four categories and the All Items CPI over the last decade, illustrates this point more clearly.

Figure B: Contributions to Annual Inflation



The "Housing, Water, Electricity, Gas And Other Fuels" category has the fourth highest weight out of the twelve aggregate categories covered in the index. In turn, movements in this category were driven almost entirely by increases in the sub-category *Rents and other User Costs* of which the mortgage interest component accounted for almost all of the changes. In other words, the mortgage interest component was a key factor in the high inflation rate of 2000 (accounting for over 40 per cent of total inflation at the height of the spike in November 2000) and remained the main driver of growth in the "Housing, Water, Electricity, Gas And Other Fuels" category and total inflation until around the start of 2003 from which time energy related components became more important. Since the start of 2006, the mortgage interest component has taken up the baton driving price growth in the "Housing, Water, Electricity, Gas And Other Fuels" category once more and in June of this year, it accounted for around 30 per cent of total annual inflation.

The second key component in the June annual inflation rate was "Hotels and Restaurants". An examination of this category over the last decade shows that, price increases in the sub-component *Catering Services* have been the main driving forces behind the contribution of "Hotels and Restaurants" to total inflation. *Catering Services* includes items like restaurants, cafes and licensed premises (and includes alcoholic beverages consumed on licensed premises) as well as canteens. Within these items, in general it has been price rises in beer sold on licensed premises and increases in prices in restaurants, cafes and fast-food that have been most responsible for increases in contributions to overall inflation.

Since the start of 2006, increases in *Accommodation services* have also made significant contributions to the rise in inflation coming from this category, though the pace of increase has been faster in the *Catering services* component. In June, price rises in the *Catering services* component accounted for just over 70 per cent of the price rises in the "Hotels and Restaurants" category. Breaking the *Catering services* sub-category down further, beer on licensed premises accounted for around 30 per cent of the total contribution of "Hotels and Restaurants" while Restaurants, Cafes and Fast-food accounted for around 28 per cent.

Within the "Transport" category of total inflation, it is increases in items in the *Operation of Personal Equipment* sub-component that have been the main driving forces behind the contribution of "Transport" to total inflation. It is mainly in this category that increases in fuel prices are included and in general it has been price changes in petrol that have been most responsible for increases in contributions to overall inflation. In June 2006, petrol accounted for over 60 per cent of the total contribution of transport to total inflation.

Increases in items in the "Food and Non-Alcoholic Beverages" category have been buoyed by price rises in the sub-category *Food*. Within this sub-component, in general it has been price changes in Meat and Vegetables that have been most responsible for increases in contributions to overall inflation. In June 2006, Meat accounted for about 20 per cent of the total contribution of "Food and Non-Alcoholic Beverages" to total inflation while the contribution of Vegetables was over 25 per cent. More specifically, price rises in beef and potatoes were responsible for a lot of the increase in the contribution of "Food" to total inflation.

In general it has been price changes driven by external factors (like interest rates and energy prices) that have been most important for Irish inflation over the past decade. However, domestically generated inflation has also played an important role, particularly in the services sector in recent months. Given the increasing concern about high inflation and the implications of this for competitiveness, it is therefore important to control domestic inflation, as well as avoiding exacerbating inflation driven by external forces. While there are limits to what can be done, as discussed in previous *Commentaries*, there is an important role to be played by both fiscal and competition policy.

General Assessment

The publication of the *National Accounts for 2005* provides a good opportunity to reflect upon developments in the Irish economy and to distil lessons on what is implied for the near future. Here, we perform such an exercise and arrive at the conclusion that although 2005 was another year of impressive growth, there lurks beneath the surface of this aggregate figure a number of developing trends which lead to questions about the medium-term sustainability of the strong performance.

In terms of the drivers of growth in 2005, it is clear that domestic demand dominated, with the growth rate of investment, at 12.8 per cent, being particularly noteworthy. Investment in 2005 made up almost one-third of GNP (32 per cent), a rate which is extremely high by international standards. For example, in the EU-25 in 2005, investment as a share of GDP was approximately 20 per cent and no other country exceeded 30 per cent. While ordinarily a high investment rate would signal future output growth, the skewed nature of Irish investment means that this is not necessarily the case for Ireland. Of the €43.6 billion invested in Ireland in 2006, almost one-half (48 per cent) was accounted for by housing. This means that much of Ireland's investment does not involve assets which will lead to higher future output.

Remaining with housing and construction more broadly, over €32 billion was recorded as building and construction investment in 2005, an amount equal to 24 per cent of GNP. This is an extraordinary figure and captures the extent to which Ireland is heavily dependent on this sector. As we have discussed in previous *Commentaries*, reliance on a sector which by definition has a finite capacity for on-going growth is unwise. It may be that activity in the sector unwinds slowly and that the labour shed will move to other sectors. However, should the adjustment occur more rapidly, there is the strong possibility of the job losses not being met by gains elsewhere and of unemployment rising.

Employment growth, like GNP growth, was exceptionally high in 2005 by international standards. However, combining the employment growth figures from the *QNHS* with the output figures from the *NIE 2005*, we see that productivity growth was just 0.7 per cent in 2005 based on GNP. This may be the result of a changing sectoral composition within the economy but whatever the reason, it is still a concern. It is the lowest rate of productivity growth since 2001 but what makes the 2005 figure noteworthy is its low level in the context of a booming economy. Productivity growth is usually pro-cyclical because labour hoarding is eliminated so to see productivity growth below 1 per cent in an economy that is growing by over 5 per cent raises worrying questions.

The slow growth in productivity is a concern in and of itself because in the long run living standards are determined by productivity growth. However, when placed against increases in real wages, a new concern arises. The *2005 NIE* imply real wage growth of over 3 per cent. With output per worker rising by less than 1 per cent, labour's share in total output is rising. From a share of 49.6 per cent of GNP in 2002, labour's share has risen to 53.2 per cent in 2005. This trend points to decreasing competitiveness and cannot continue indefinitely.

Yet another indicator of underlying concern is the growth in the balance of payments deficit in 2005. From a level of 0.7 per cent of GNP in 2004, the deficit rose to 3 per cent of GNP in 2005. Such a deficit is not a concern in and of itself due to Ireland's membership of the Euro Area. However, it is an indicator of imbalances in the economy. It suggests a weak export performance and also increasing borrowing from abroad both of which may become constraints on future growth.

Given the issues just raised, the question might be posed of why we are forecasting continued strong growth in 2006 and 2007? The main reason is the maturing of the SSIAs this year and next and their impact on consumption and, to a lesser extent, investment. Even using the relatively conservative assumption that almost two-thirds of the funds released will be immediately re-saved, the impact is considerable. As next year is an election year, we are assuming a degree of generosity in the government's approach to the public finances and this too will add to growth in 2007. We are also assuming that the global economy continues to grow strongly. At the time of writing, the conflict in the Middle East appears to be escalating and so this assumption may prove to be overly optimistic.

Other main reasons for forecasting continued growth in 2007 are that the threats to growth identified in the earlier paragraphs are more medium term in nature. For example, although real wages cannot grow more rapidly than productivity indefinitely, they can diverge for a period. But ultimately, rising unit labour costs will put downward pressure on labour demand and employment growth will slow. With regard to private sector credit, growth can continue up until the point that lenders begin to worry about the level of indebtedness. At this point, credit may no longer be forthcoming, whether a demand exists or not.

In the long run, we can say with certainty that investment in building and construction will not continue to account for a quarter of GNP. The only question is whether the process of convergence to a more standard rate of building output is abrupt and disruptive in terms of labour allocation or smooth and orderly. While our theme in this *General Assessment* is not policy-prescriptive, the one point we will make is that Government can play a role in smoothing adjustment in the macro-economy by pursuing an anti-cyclical fiscal stance. As a slowdown in the Irish economy could occur in 2008, after SSIAs and the general election, an orderly roll-out of government spending would help in smoothing the economic cycle.

SPECIAL ARTICLE

New Drivers of Growth? Sectoral Contributions to the Irish Economy

by

Eoin O'Malley and Yvonne McCarthy

NEW DRIVERS OF GROWTH? SECTORAL CONTRIBUTIONS TO THE IRISH ECONOMY

Eoin O'Malley and Yvonne McCarthy

1. Introduction

The purpose of this article is to analyse the contributions of different sectors to the economy and to examine how those contributions have changed over time. There are two main reasons why it is of interest to examine this issue at present. First, there is a common perception that the growth of Manufacturing, which used to be very important, may now have run out of steam, with most economic growth in recent years seen to come from Services and Construction (e.g. Fitz Gerald *et al.*, 2005). A shift from Manufacturing towards Services would not in itself be unusual for an advanced industrial economy (Schettkat and Yocarini, 2003), but the trends seen in Ireland have given rise to some concerns about the sustainability of the pattern observed (e.g. O'Leary, 2005; Keenan, 2005). In particular, it is often suggested that weakness in Manufacturing implies weakness in major internationally traded activities while growth in sectors like Services and Construction may be too dependent on temporarily favourable domestic demand conditions.

Second, there are related concerns about the implications of these trends for productivity, defined as output per employee. Productivity growth in the Irish economy appears to have been low for the past year or two. Some observers have suggested that this has happened at least partly because a high-productivity sector – Manufacturing – has been in relative decline, while growth has mainly occurred in sectors with lower productivity such as Services and Construction (Central Bank and Financial Services Authority of Ireland, 2005; White, 2006).

An important factor that complicates consideration of these issues is the fact that there tends to be large outflows of profits from foreign-owned companies in Ireland, particularly from companies in the modern Manufacturing sector. This means that the role played by Manufacturing in driving output and productivity may be over estimated and thus that of sectors with little or no profit repatriations may be under estimated, if these outflows are not taken into account (O'Malley and Roper, 2003, Chapter 2).

We aim to shed some light on these issues by providing new information and analysis showing how different sectors have contributed to the economy over time. The timeframe chosen for the analysis is 1995 to 2004, during which time the Irish economy grew at historically high rates.

The remainder of this article is structured as follows: Section 2 examines the contributions to total output of the different economic sectors and the changing patterns of these contributions over time. In this section, we estimate profit outflows by sector and assess any changes in the sectoral contributions to total output after these outflows have been taken into account. Section 3 looks at the changing contributions of different sectors to total employment, and highlights those sectors that have been most important for employment growth over the last decade. In Section 4, we compare the results of the previous two sections by examining productivity, defined as output per employee. We look first at output per employee using the output data before adjustments for profit repatriations by sector, and then compare these results to output per employee after adjustments for profit repatriations. In the penultimate section, we examine sectoral net exports, defined as exports from a sector minus the imported inputs that are required to sustain production in that sector. We argue that it could be misleading to assess the contributions of different sectors to the economy simply on the basis of their contributions to production or employment. This is because sectors that have substantial net exports make a distinctive and important contribution in helping to facilitate production and growth in other economic sectors.[1] In Section 6, we present our conclusions.

2. Production

In most countries production and economic growth at the aggregate level are usually measured in terms of Gross Domestic Product (GDP). However, it has been widely accepted for many years that Gross National Product (GNP) is a measure that is more appropriate for the Irish economy. The difference between GDP and GNP is the net international flow of factor incomes. This difference is very important in Ireland, mainly because GDP includes all the substantial profits of foreign-owned multinational enterprises (MNEs) in Ireland, whereas profit outflows from foreign MNEs (after payment of tax and interest) are not included

[1] Models of open economies typically treat the internationally traded sector(s) as driving the growth opportunities of the non-traded sector(s). Our focus on the importance of net exports is similarly based on the idea that internationally traded activities make important indirect contributions, apart from their own direct production and employment. However, an explicit analysis of the pattern of indirect linkages between sectors is beyond the scope of this article. See McCarthy (2005) for a more formal discussion of indirect linkages.

in GNP. It is largely because of this that GDP in Ireland is as much as one-fifth larger than GNP. GNP is thus generally considered to be more suitable as an indicator of the amount that is retained in Ireland accruing to Irish residents.

Consequently, in order to examine the contribution of various sectors to the economy, it would be desirable to look at their contribution to GNP. However, sectoral data on a GNP basis are not available. Instead, the data that are available by sector are for Gross Value Added (GVA). GVA includes the profits of foreign-owned MNEs, and each sector's GVA is generally similar to its contribution to GDP rather than GNP.[2] Therefore, to examine the contribution of different sectors to the economy we look first at data on GVA by sector, and then we proceed to make some adjustments to the GVA data in order to take account of profit outflows from foreign MNEs.

GVA TRENDS

Table 1 presents data on sectoral contributions to total GVA.[3] In 1995, the five sectors accounting for the largest proportion of GVA amounting to almost 65 per cent, were:

Agriculture, Forestry & Fishing;
Manufacturing;
Distribution;
Financial Intermediation;
Real Estate, Renting & Business Activity.

Over the ten year period under examination, the proportion of total output accounted for by these sectors remained at close to 65 per cent, with the highest proportion accounted for by the Manufacturing sector each year. However, Table 1 also shows that there were changes in the structure of GVA during the period. In particular, there was a substantial reduction in the share of Agriculture in GVA during the whole time frame while the Construction sector accounted for a growing share of GVA. The Manufacturing sector increased its share between 1995 and 1999 but this was followed by decreases in the following years. Some of the Market Services sectors, in particular the Real Estate, Renting and Business Activities sector,[4] and the Financial Intermediation sector, also increased their shares in recent years.

[2] The sum of GVA in all sectors, after an adjustment for product taxes and subsidies, equals GDP.

[3] A detailed breakdown of each sector and its sub-components is available in Appendix 1.

[4] The largest components of "Real Estate, Renting and Business Activities" include Computer & Related Services and "Other" Business Services such as legal, accounting, market research and advertising services, as well as tax, management, engineering and other technical consultancy.

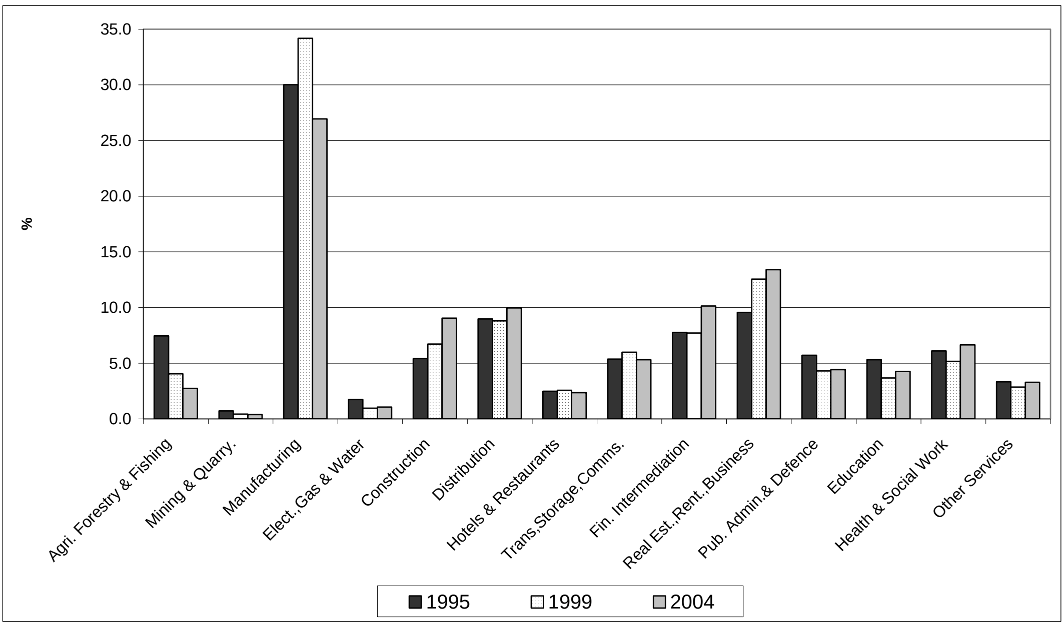
Table 1: Sectoral Proportions of Gross Value Added 1995-2004

	Percentage Contribution to Total Gross Value Added										Averages		
Sector	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**1995-2004**	**1995-1999**	**2000-2004**
Agriculture, Forestry & Fishing	7.5	6.9	5.7	4.9	4.1	3.8	3.4	3.0	2.8	2.8	4.5	5.8	3.1
Mining and Quarrying	0.7	0.6	0.8	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.5	0.6	0.4
Manufacturing	30.0	29.2	30.7	32.8	34.2	33.3	32.2	32.1	28.3	26.9	31.0	31.4	30.6
Electricity, Gas and Water	1.7	1.5	1.4	1.4	1.0	0.9	1.1	1.0	1.0	1.1	1.2	1.4	1.0
Construction	5.4	5.6	5.6	6.0	6.7	7.7	7.7	7.8	8.3	9.0	7.0	5.9	8.1
Distribution	9.0	10.1	9.7	9.0	8.8	8.9	9.0	9.5	10.4	10.0	9.4	9.3	9.6
Hotels and Restaurants	2.5	2.5	2.7	2.7	2.6	2.6	2.5	2.2	2.4	2.4	2.5	2.6	2.4
Financial Intermediation	7.8	8.1	8.2	7.9	7.7	7.6	8.1	8.5	10.1	10.1	8.4	7.9	8.9
Real Estate, Renting, Business	9.6	10.0	10.9	11.9	12.6	13.1	14.2	13.5	12.5	13.4	12.2	11.0	13.3
Public Admin. and Defence	5.7	5.5	5.1	4.6	4.3	4.2	4.1	4.1	4.3	4.4	4.6	5.0	4.2
Education	5.3	5.1	4.6	4.0	3.7	3.5	3.6	3.8	4.1	4.3	4.2	4.6	3.9
Health and Social Work	6.1	6.2	5.8	5.2	5.2	5.5	5.7	6.1	6.5	6.6	5.9	5.7	6.1
Other Services	3.3	3.1	3.1	3.0	2.9	2.7	2.5	2.8	3.3	3.3	3.0	3.1	2.9
Total GVA (€millions)	**47,220**	**52,279**	**60,310**	**70,975**	**80,490**	**92,755**	**105,167**	**117,238**	**123,583**	**130,862**	**88,088**	**62,255**	**113,921**

Source: Derived from data supplied by the CSO.

This preliminary review of the data, therefore, shows how the aggregate GVA growth statistic can obscure the changes in the underlying sectoral drivers of this growth. Between 1995 and 2004, Irish GVA increased by 117 per cent in nominal terms, but as shown in Table 1, the sources of this growth appear to have changed over time. The importance of the Services sectors increased and that of Manufacturing decreased over the last five years or so. The declining trend in the share of Agriculture and the rising trend in the share of Construction are longer established, going back at least to the mid-1990s; the Agricultural sector had been one of the five largest contributors to GVA in 1995 but the Construction sector replaced the Agricultural sector among the top five contributors from 1997 onwards. Figure 1 serves to illustrate the broad trends over time.

Figure 1: Sectoral Proportions of Gross Value Added



ADJUSTMENTS TO GVA

As already mentioned, GVA includes all the profits of foreign-owned MNEs in Ireland. Since most of these profits are taken out of the Irish economy and do not accrue as incomes to Irish residents, it would be preferable to deduct them from GVA in order to arrive at a more realistic assessment of the contribution of each sector to the Irish economy. Unfortunately, it is not possible to do that for each sector in each year. However, it is possible to make reasonable estimates for a few recent years, the latest being

Table 2: GVA Adjusted to Remove Profit Outflows and Imputed Rent, 2003

Sector	GVA 2003 € Million	GVA 2003 Proportion of Total	Estimated Profits of Foreign Companies	Allocation of Profit Outflow	Imputed Rent	Adjusted GVA	Adjusted GVA Proportion of Total
Agriculture Forestry and Fishing	3,501	2.8	-	-	-	3,501	3.9
Mining and Quarrying	488	0.4	-	-	-	488	0.5
Manufacturing	34,978	28.3	24,030	23,076	-	11,902	13.3
Electricity, Gas and Water	1,292	1.0	-	-	-	1,292	1.4
Construction	10,250	8.3	-	-	-	10,250	11.4
Distribution	12,910	10.4	669	642	-	12,268	13.7
Hotels and Restaurants	2,991	2.4	157	151	-	2,841	3.2
Transport, Storage, Communications	6,761	5.5	1,243	1,194	-	5,567	6.2
Financial Intermediation	12,537	10.1	2,360	2,266		10,271	11.5
Real Estate, Renting, Business Activities	15,397	12.5	1877	1,803	4,824	8,770	9.8
Public Administration and Defence	5,296	4.3	-	-	-	5,296	5.9
Education	5,087	4.1	-	-	-	5,087	5.7
Health and Social Work	8,058	6.5	-	-	-	8,058	9.0
Other Services	4,037	3.3	-	-	-	4,037	4.5
Total	**123,583**	**100.0**	**30,337**	**29,132**	**4,824**	**89,627**	**100.0**

Source: See Appendix 2.

2003, of profit outflows from those sectors in which they are of some real significance. Table 2 shows "Adjusted GVA" in 2003, in which estimates of profit outflows from the main sectors concerned are deducted from GVA. The methodology used in constructing this table is given in Appendix 2.

The first two columns of Table 2 show GVA by sector, and each sector's percentage of total GVA, as in Table 1. The third column shows estimates of profits of foreign-owned MNEs in a number of sectors. There are no such estimates for some sectors due to a lack of data, but there are good reasons to believe that profit outflows from foreign MNEs would not be very important in those sectors. (See Appendix 2 for further details).[5] The fourth column of Table 2 presents estimates of profit outflows from foreign companies. Thus, the difference between the third and fourth columns in the table is that the third column estimates profits of foreign companies whereas the fourth column estimates outflows of those profits.

The fifth column of Table 2 makes one further adjustment that only applies to the Real Estate, Renting & Business Activities sector. In the National Accounts, the GVA of that sector includes a substantial amount of "imputed rent" that is attributed to the owners of owner-occupied dwellings. Since this imputed rent is not really the output of a particular sector in the usual sense, we deduct this amount from the GVA of the sector where it is included, in attempting to arrive at a more realistic assessment of the contribution made by different sectors to the Irish economy. The final two columns of Table 2 show "Adjusted GVA" by sector, and the sectoral proportions of the total, after deducting profit outflows and imputed rent.

Compared to the original GVA figures in the first two columns, the post adjustment results show that the greatest change is the reduction in the Manufacturing sector's contribution to total GVA from 28.3 per cent, in unadjusted terms, to 13.3 per cent, after adjustment for profit outflows. These outflows arise primarily in the "modern" or "high-tech" sectors. There is also a substantial reduction in the Real Estate, Renting & Business Activities sector, from 12.5 per cent of GVA to 9.8 per cent of Adjusted GVA. This arises partly from the deduction of imputed rent, but also from the deduction of significant profit outflows that come mainly from Computer and Related Services and to a lesser extent from Other Business Services.

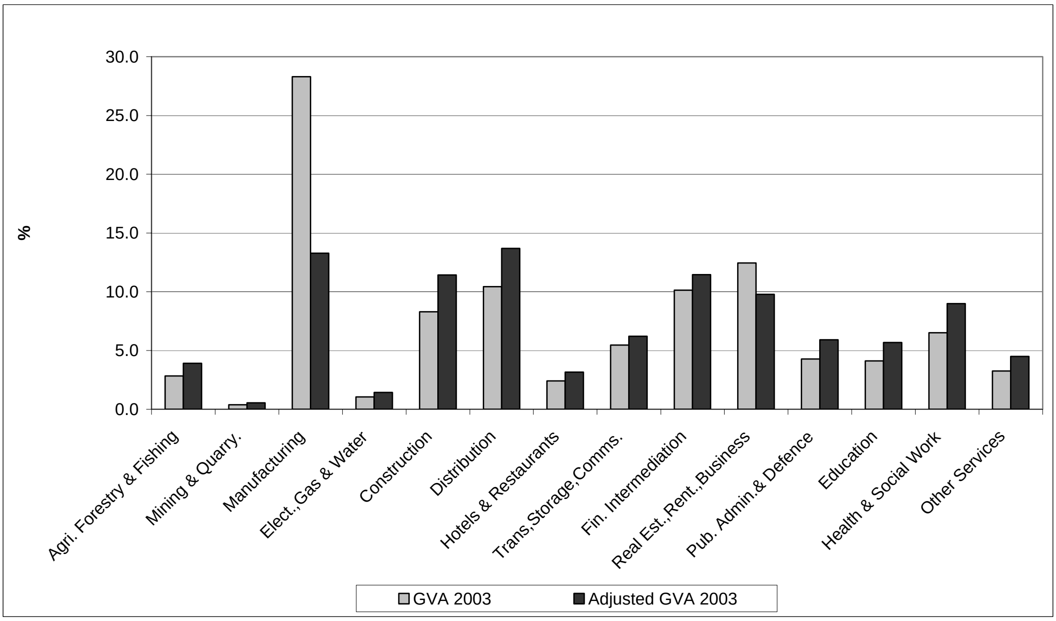
In contrast, for every other sector in Table 2 there is some increase in the share of Adjusted GVA compared to the share of Unadjusted GVA. This is true even for the sectors that had appreciable profit outflows such as Transport, Storage & Communication, and Financial Intermediation. This outcome is as a result of the very large reduction in the Manufacturing sector in particular. Naturally, however, the sectors that have the greatest

[5] It should be noted that, as explained in Appendix 2, the estimate of profits of foreign MNEs in the Financial Intermediation sector would probably be less reliable than the estimates presented for other sectors.

increase in share of Adjusted GVA compared to share of Unadjusted GVA are those that had little or no profit outflows. In Construction, for example, the share of Adjusted GVA is 11.4 per cent compared to 8.3 per cent of Unadjusted GVA.

Figure 2 illustrates the difference between the Adjusted and Unadjusted GVA by sector in 2003.

Figure 2: Sectoral Proportions of Gross Value Added (Adjusted and Unadjusted) 2003



Unfortunately, it is not possible to examine trends in this Adjusted GVA measure over a long period of time, because the *Annual Services Inquiry*, one of the main sources used to undertake the adjustments, did not include the necessary data to estimate profits of foreign-owned firms before 2001, while the *Census of Industrial Production (CIP)* did not include the necessary data before 1997.[6] However, we can make a few relevant observations about trends in Manufacturing over the period 1997 – 2001, based on the CIP data. Following that, we can then move on to examine trends in our Adjusted GVA measure in the subsequent period 2001-2003.

First, as foreign-owned MNEs in the modern or high-tech Manufacturing sectors were growing particularly rapidly in the second half of the 1990s, the profits of foreign companies were accounting for an increasing share of GVA in Manufacturing at that time. Consequently, profit outflows were probably taking a rising proportion of Manufacturing GVA in the second half of the 1990s. Therefore, although Manufacturing was increasing its share of total GVA at the time, this probably would not have been the case if profit outflows were deducted. To illustrate this, Manufacturing increased its share of total GVA from 30.7 per cent in 1997 to a

[6] The data needed from the CIP are data by nationality of ownership from the Census of Industrial Enterprises, rather than the Census of Industrial Local Units.

peak of 34.2 per cent in 1999 as shown in Table 1, which was a rise of 3.5 percentage points of total GVA. However, our estimated profits of foreign companies in Manufacturing amounted to 16.1 per cent of total GVA in 1997 increasing to 20.0 per cent in 1999, which was a rise of 3.9 percentage points of total GVA. Therefore, the growth in profits of foreign companies in Manufacturing was more than sufficient to account for Manufacturing's rising share of total GVA. This makes it unlikely that Manufacturing could have had a significant increase in its share of "Adjusted GVA" in the late 1990s.

In the years after 1999, Manufacturing's share of total GVA declined considerably as seen in Table 1. In particular, there were setbacks in Electrical & Optical Equipment and, after 2002, in Chemicals, though other branches of Manufacturing continued growing. Since the majority of profits of foreign MNEs in Manufacturing originate in the Electrical & Optical Equipment and Chemicals sectors, it could be expected that profit outflows would eventually have declined in importance in Manufacturing. If so, the decrease in Manufacturing's share of Adjusted GVA would have been less marked than the decline in its share of total GVA. To illustrate this, in the period 1999-2001, Manufacturing's share of total GVA declined from 34.2 per cent to 32.2 per cent, which was a reduction of 2.0 percentage points of total GVA. However, our estimated profits of foreign companies in Manufacturing amounted to 20.0 per cent of total GVA in 1999 decreasing to 19.3 per cent in 2001, which was a reduction of 0.7 percentage points of total GVA. Therefore, there was probably a reduction in Manufacturing profit outflows as a percentage of total GVA, which would have made the decline in Manufacturing's share of Adjusted GVA slower than the decline in its share of total GVA.

Turning next to the period 2001-2003, as shown in Table 3, the share of Manufacturing in total GVA declined by 3.9 percentage points in 2001-2003. Meanwhile, its share of Adjusted GVA declined by a smaller figure of 2.3 percentage points. At the same time, Transport, Storage & Communications and Real Estate, Renting & Business Activities are two service sectors where the trends in share of Adjusted GVA were noticeably weaker than the trends in share of GVA. This was a result of rising profit outflows from those sectors, as well as rising imputed rent. In other sectors, the changes in share of GVA were similar to the changes in share of Adjusted GVA.

Table 3: Change in Shares of GVA and Adjusted GVA, 2001-2003

Sector	Unadjusted GVA 2003 Proportion of Total	Unadjusted GVA 2001 Proportion of Total	Difference 2003-2001	Adjusted GVA 2003 Proportion of Total	Adjusted GVA 2001 Proportion of Total	Difference 2003-2001
Agriculture Forestry and Fishing	2.8	3.4	-0.6	3.9	4.8	-0.9
Mining and Quarrying	0.4	0.5	-0.1	0.5	0.7	-0.1
Manufacturing	28.3	32.2	-3.9	13.3	15.6	-2.3
Electricity, Gas and Water	1.0	1.1	-0.1	1.4	1.6	-0.2
Construction	8.3	7.7	0.6	11.4	10.7	0.8
Distribution	10.4	9.0	1.4	13.7	12.2	1.5
Hotels and Restaurants	2.4	2.5	-0.1	3.2	3.4	0.2
Transport, Storage, Communications	5.5	5.3	0.1	6.2	7.2	-0.9
Financial Intermediation	10.1	8.1	2.0	11.5	9.4	2.0
Real Estate, Renting, Business Activities	12.5	14.2	-1.8	9.8	12.4	-2.6
Public Administration and Defence	4.3	4.1	0.1	5.9	5.8	0.2
Education	4.1	3.6	0.5	5.7	5.0	0.7
Health and Social Work	6.5	5.7	0.9	9.0	7.9	1.1
Other Services	3.3	2.5	0.8	4.5	3.5	1.0
Total	**100.0**	**100.0**	**0.0**	**100.0**	**100.0**	**0.0**

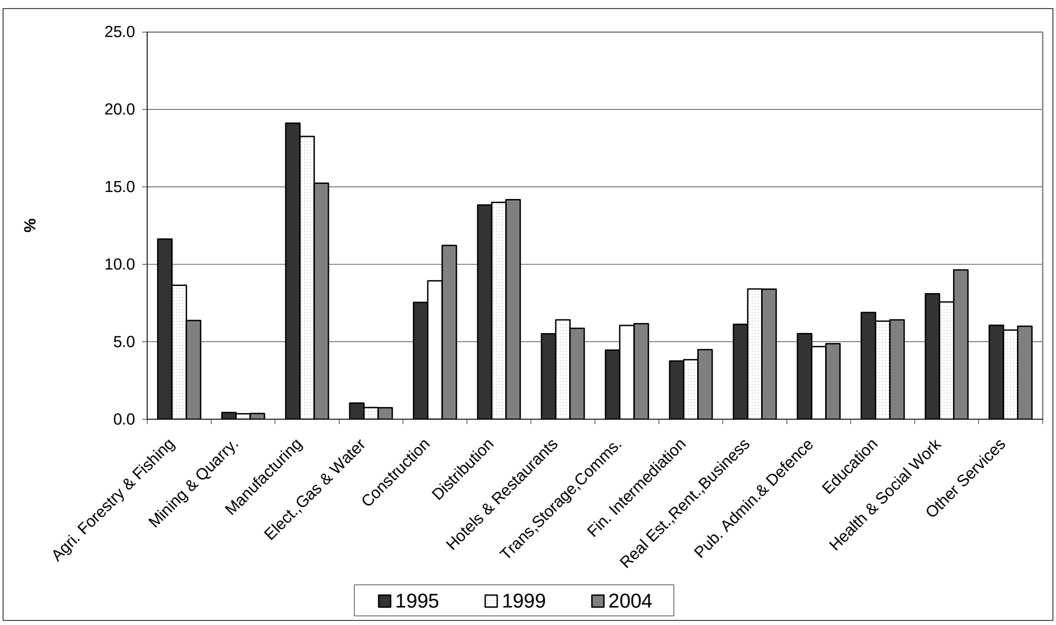
Source: Table 1 and Appendix 2.

3. Employment

Turning to employment trends, Table 4 and Figure 3 show that there have been changes in the structure of employment over the period 1995 to 2004. In particular, there was a marked reduction in the share of Agriculture in total employment, and less significant reductions in the share of Manufacturing, Public Administration & Defence, and Education. Agriculture experienced almost a halving of its contribution to total employment over the period; in 1995, 11.6 per cent of total employment was in Agriculture while in 2004 this figure had dropped to 6.4 per cent. Changes in the share of Manufacturing in total employment were more moderate than the changes seen in its share of GVA. Thus, its share of employment changed little in the late 1990s and then declined by only 2.1 percentage points in 2001–2004 while its share of GVA declined by 5.3 percentage points.

On the other hand, there was quite a substantial rise in the share of employment in Construction and Real Estate, Renting & Business Activities, with smaller increases in the share of some other Service sectors. Construction sector employment increased from 7.5 per cent of the total in 1995 to 11.2 per cent in 2004, while employment in Real Estate, Renting & Business Activities increased from 6.1 per cent of the total to 8.4 per cent.

Figure 3: Sectoral Proportions of Employment



Examining the proportion of total employment accounted for by each sector in each year is useful in highlighting the importance of the different sectors for the economy in terms of the level of employment. However, as a key aim of policy makers tends to be employment creation, it is useful to examine the contribution to growth, as measured by the percentage change in total employment between two time periods, accounted for by each

Table 4: Sectoral Proportions of Employment 1995-2004[7]

Sector	Percentage Contribution to Total Employment										Averages		
	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**1995-2004**	**1995-1999**	**2000-2004**
Agriculture, Forestry and Fishing	11.6	10.6	10.3	9.1	8.6	8.0	7.1	7.0	6.5	6.4	8.5	10.1	7.0
Mining and Quarrying	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4
Manufacturing	19.1	18.6	17.6	19.1	18.3	17.4	17.3	16.1	16.0	15.2	17.5	18.5	16.4
Electricity, Gas and Water	1.0	1.0	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.8	0.9	0.7
Construction	7.5	7.6	8.0	8.4	8.9	9.9	10.5	10.3	10.7	11.2	9.3	8.1	10.5
Distribution	13.8	13.9	14.0	14.1	14.0	14.1	14.4	14.0	14.0	14.2	14.0	14.0	14.1
Hotels and Restaurants	5.5	5.5	5.5	6.6	6.4	6.5	6.0	5.9	6.4	5.9	6.0	5.9	6.1
Transport, Storage, Communications	4.5	4.6	4.7	5.8	6.1	6.1	6.4	6.3	6.3	6.2	5.7	5.1	6.3
Financial Intermediation	3.8	3.8	3.7	3.7	3.8	4.1	4.0	4.0	4.1	4.5	3.9	3.8	4.1
Real Estate, Renting, Business Activities	6.1	6.3	6.1	7.8	8.4	8.5	8.6	9.0	8.6	8.4	7.8	7.0	8.6
Public Administration and Defence	5.5	5.7	5.2	4.7	4.7	4.7	4.7	5.1	5.2	4.9	5.0	5.2	4.9
Education	6.9	7.3	6.8	6.2	6.3	6.2	6.0	6.3	6.5	6.4	6.5	6.7	6.3
Health and Social Work	8.1	8.5	8.7	7.6	7.6	8.0	8.4	9.0	9.5	9.6	8.5	8.1	8.9
Other Services	6.1	6.0	8.1	5.6	5.8	5.6	5.4	5.7	5.3	6.0	6.0	6.3	5.6
Total Employment (000s)	**1,282**	**1,328**	**1,380**	**1,493**	**1,589**	**1,672**	**1,722**	**1,764**	**1,79**	**1,836**	**1,586**	**1,414**	**1,757**

Source: Derived from unpublished data from the CSO.

[7] Annual employment levels for 1998-2004 taken as the second quarter results from the *Quarterly National Household Survey*.

sector. Table 5 shows the total employment change (in levels and percentage terms) between 1995 and 1999 and also between 1999 and 2004.

Table 5: Change in Employment Between 1995 and 1999, 1999 and 2004

	1995 to1999		1999 to 2004	
Sector	**000s**	**%**	**000s**	**%**
Agriculture Forestry and Fishing	-11.8	(-7.91)	-20.3	(-14.79)
Mining and Quarrying	0.1	(1.82)	1.3	(0.95)
Manufacturing	45.1	(18.41)	-10.2	(-7.43)
Electricity, Gas and Water	-1.3	(-9.77)	1.6	(1.17)
Construction	45.5	(47.10)	63.9	(46.54)
Distribution	45.2	(25.49)	37.7	(27.46)
Hotels and Restaurants	31.4	(44.48)	5.8	(4.22)
Transport, Storage, Communications	39.0	(68.18)	17.0	(12.38)
Financial Intermediation	12.9	(26.82)	21.6	(15.73)
Real Estate, Renting, Business Activities	55.3	(70.54)	20.6	(15.00)
Public Administration and Defence	3.7	(5.23)	15.0	(10.92)
Education	12.3	(13.93)	17.3	(12.60)
Health and Social Work	16.5	(15.90)	56.7	(14.30)
Other Services	13.6	(17.48)	18.7	(20.46)
Total Employment (000)	**307.5**	**(23.99)**	**246.7**	**(15.52)**

Note: Values in parenthesis refer to percentage change in each sector's employment between 1995 and 1999 (in column 2) and between 1999 and 2004 (in column 3).

As shown in the table, between 1995 and 1999, total employment rose by over 307,000, an increase of about 24 per cent on the 1995 level. The largest proportion of this increase was accounted for by the Real Estate, Renting & Business Activities sector (whose employment rose by over 70 per cent between 1995 and 1999), with Construction, Distribution and Manufacturing also accounting for significant increases. Between 1999 and 2004, the level of total employment rose by 247,000, or 15.5 per cent. During this period the Construction and Health sectors were the most significant contributors. Manufacturing and Agriculture saw declines in employment levels over the period.

The results in Table 5 therefore corroborate the results of Table 4, highlighting the significant contribution of Construction and Services to total employment between 1995 and 2004. A noticeable result of Table 5 is the fact that apart from Agriculture, Manufacturing was the only other sector to make a negative contribution to employment growth between 1999 and 2004, although the actual decline in Manufacturing was not very large.

4. Labour Productivity

Comparing Table 4 and Table 1, it is noticeable that some sectors' share of employment is quite different to their share of GVA. Analysing these statistics further, Table 6 presents data for GVA per employee. The results show that productivity (defined here as output per employee) is much higher than average in the Financial Intermediation sector. GVA per employee in that sector was higher

Table 6: GVA Per Employee by Sector, €000

Sector	Productivity Levels – GVA per Employee (000s)									
	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Agriculture Forestry and Fishing	23.6	25.4	24.3	25.7	23.7	26.4	29.4	27.9	30.0	30.8
Mining and Quarrying	61.8	68.6	79.3	75.7	62.0	71.4	70.1	55.6	72.8	71.8
Manufacturing	57.9	61.6	76.2	81.5	94.8	105.9	113.3	132.2	122.0	126.0
Electricity, Gas and Water	61.6	56.1	70.2	79.6	64.1	74.2	100.6	95.4	101.7	103.4
Construction	26.4	28.8	30.4	34.0	38.1	43.1	44.8	50.0	53.6	57.5
Distribution	23.9	28.7	30.2	30.2	31.8	35.1	38.4	45.2	51.3	50.1
Hotels and Restaurants	16.7	18.0	21.3	19.3	20.3	22.5	25.1	25.1	26.1	28.6
Transport, Storage, Communications	44.4	47.9	53.4	50.1	50.2	52.4	50.4	54.7	60.3	61.4
Financial Intermediation	76.4	83.2	98.2	102.0	101.8	102.3	124.6	141.4	171.0	160.8
Real Estate, Renting, Business Activities	57.6	62.5	77.6	72.8	75.6	85.5	100.7	99.9	100.0	113.6
Public Administration and Defence	38.1	37.7	42.5	45.9	46.6	49.4	53.5	53.5	57.3	64.8
Education	28.4	27.4	29.9	30.7	29.5	31.8	36.5	40.2	43.8	47.3
Health and Social Work	27.8	28.7	29.3	32.2	34.6	38.0	41.4	44.9	47.4	49.1
Other Services	20.2	20.4	16.7	25.7	25.2	27.1	28.6	32.7	42.1	39.1
Total Services	*33.4*	*35.9*	*38.8*	*41.6*	*43.1*	*46.9*	*52.6*	*56.8*	*62.0*	*64.5*
Total	**36.8**	**39.4**	**43.7**	**47.5**	**50.6**	**55.5**	**61.1**	**66.5**	**68.9**	**71.3**

Source: Derived from data in Tables 1 and 4.

than for any other sector in the economy over the timeframe. Productivity levels are also high in Manufacturing, Real Estate, Renting & Business Activities, and Electricity. On the other hand, Construction, Agriculture and all the other Services sectors have relatively low productivity. This view is correct if we are thinking of productivity in terms of GVA per employee, which is similar to the contribution to GDP per employee.[8]

However, if we want to know about productivity in terms of the contribution to *GNP* per employee, the Adjusted GVA figures from Table 2 are much more informative. The results, given in Table 7, show that productivity in the Financial Intermediation sector continues to outperform any of the other sectors with output per employee in that sector being more than double the average for the whole economy in 2003. On the other hand, productivity in the Manufacturing sector, which boasted the second highest productivity level before adjustments to GVA, is much lower and more in line with the average for the economy. The same applies to the Real Estate, Renting & Business Activities sector. Thus, on the basis of this Adjusted GVA measure, the contribution to GNP per employee in Manufacturing and in Real Estate, Renting & Business Activities is not greatly different from the average level for all sectors, whereas it is much higher than the average level in Financial Intermediation. On the same basis, it can be concluded that the contribution to GNP per employee in Construction, and in most of the other services sectors, is about the same as the average level for all sectors.

These findings imply that a decline in the share of Manufacturing in GDP and a rise in the share of Construction and most Services would tend to reduce average productivity as measured by GDP per employee. However, when productivity is measured in terms of the contribution to GNP per employee, Manufacturing, Construction and Services as a whole all have productivity levels that are not greatly different to the average level. Consequently, a decline in the relative size of Manufacturing combined with a rise in Construction and Services would not have substantial adverse implications for overall productivity levels.

[8] A shift share analysis could be carried out at this point in order to get an idea of how aggregate productivity levels in the economy have been driven by changing productivity within sectors or by shifts of output and employment among sectors with different productivity levels. The authors undertook this analysis and found that almost all of the productivity change observed each year between 1995 and 2004 was due to "intra-sectoral effects", i.e. productivity changes within sectors rather than by shifts of output and employment among sectors.

Table 7: Adjusted GVA Per Employee by Sector (€000s), 2003

Sector	**2003**
Agriculture, Forestry and Fishing	30.0
Mining & Quarrying	72.8
Manufacturing	41.5
Electricity, Gas & Water	101.7
Construction	53.6
Distribution	48.8
Hotels & Restaurants	24.8
Transport, Storage, Communications	49.7
Financial Intermediation (after AFS)	140.1
Real Estate, Renting, Business Activities	57.0
Public Administration and Defence	57.3
Education	43.8
Health & Social Work	47.4
Other Services	42.1
Total Services	*52.7*
Total	**50.0**

Source: Derived from Tables 2 and 4.

5. Net Exports

In examining the contribution of different sectors to the economy, it is important to consider their *net exports*. By *net exports* of a sector we mean exports from that sector minus the imported inputs that are required to sustain production in the sector.[9] Sectors that have substantial *net exports* make a distinctive and important contribution that helps to facilitate production and growth in the other sectors.

The reason why this is so arises from the fact that nearly all sectors import significant amounts of inputs (although sectors do vary in import-intensity), while consumers also spend a large part of their incomes on imports. These imports usually tend to grow as the economy grows. However, consumers do not produce any exports to pay for their imports and some sectors do not export enough to pay for their own imported inputs. It is necessary, therefore, for the remaining sectors to export sufficient amounts to pay not only for their own imported inputs but also for many other imports into the economy.[10] The *net exports* of these sectors, or the surplus of their exports over their own imports, are therefore valuable for sustaining growth in the rest of the economy. Thus,

[9] Note that this is not the same thing as exports from a sector minus imports of the same category of products that are produced by the sector.

[10] If total exports are not sufficient to pay for total imports, this could constrain growth in the internationally traded activities in the economy. As firms engaging in the internationally traded sector purchase goods and services from domestic industries that produce non-traded goods and services, this could also lead to constrained growth in these domestically dependant industries.

sectors with negative *net exports* may look vibrant in terms of strong trends in production or employment, but their continuing prosperity usually depends to a significant degree on the success of *net exporting* sectors.[11]

In order to examine *net exports* by sector, we use the input-output tables that are produced by the CSO.[12] Since these tables are produced at infrequent intervals we can only produce three 'snapshots' showing the *net exports* position in 1990, 1998 and 2000. The results are presented in Table 8 below.

The total value of *net exports* for all sectors increased substantially between 1990 and 2000, from €6.9 billion to €31.5 billion. As regards the contribution of sectors, Manufacturing stands out as having by far the largest *net exports*, amounting to 99 per cent of the total in 2000. Its share of the total had increased from 99.5 per cent in 1990 to 118.3 per cent in 1998 before dropping back to 99 per cent in 2000. Only three other sectors had positive *net exports* in 2000, namely Hotels & Restaurants, Financial Intermediation, and Real Estate, Renting & Business Activities. These sectors had improved their *net export* position considerably since 1990, indicating that the internationally traded services were growing stronger within these sectors.

To make a more realistic assessment of *net exports* by sector, it would be desirable to subtract foreign MNEs' profit outflows from the net exports figures in Table 8. Unfortunately, it is not possible to estimate profits of foreign MNEs in any sector apart from Manufacturing in the years concerned. In 2000, profits of foreign MNEs in Manufacturing were about €22.4 billion, after capital expenditure. If we assume that all of those profits were taken out of the country and subtract that amount from Manufacturing *net exports* in Table 8, the *net exports* of Manufacturing in 2000 would be reduced to about €8.8 billion, and total *net exports* would be reduced to €9.1 billion. In that case, despite the large profit outflows, Manufacturing would still have been the dominant contributor to net exports with 97 per cent of the total. Of course, if the profit outflows coming from other sectors could also be deducted from their *net exports*, the share of Manufacturing in *net exports* would have been larger than 97 per cent.

[11] There are some circumstances in which this statement does not hold true, but they tend to be temporary in nature. For example, growth of imports could be financed for a time by growing debt rather than exports. Alternatively, the need to sustain growing imports could be reduced for a time if the pattern of domestic demand is shifting away from purchasing internationally traded goods towards non-traded products such as housing. However, unless there is reason to believe that this situation will continue, it will ultimately be necessary to have a sound export performance.

[12] Input-output tables give a detailed picture of the inter-sectoral transactions of all goods and services in the Irish economy in a single year. Thus they show the amount of home-produced inputs from each sector as well as the amount of imported inputs that were needed to produce the output that came from each sector.

Table 8: Net Exports By Sector

Sector	Net Exports 1990 € Million	% of Total	Net Exports 1998 € Million	% of Total	Net Exports 2000 € Million	% of Total
Agriculture, Forestry and Fishing	135	1.9	-929	-4.1	-179	-0.6
Mining & Quarrying	-99	-1.4	-50	-0.2	-65	-0.2
Manufacturing	6,905	99.5	26,648	118.3	31,208	99.0
Electricity, Gas & Water	-111	-1.6	-707	-3.1	-562	-1.8
Construction	-898	-12.9	-2,499	-11.1	-2,965	-9.4
Distribution	223	3.2	-1,171	-5.2	-1,121	-3.6
Hotels & Restaurants	222	3.2	281	1.2	1,161	3.7
Transport, Storage, Communications	490	7.1	-690	-3.1	-6	0.0
Financial Intermediation	7	0.1	1,224	5.4	1,265	4.0
Real Estate, Renting, Business Activities	212	3.1	1,448	6.4	4,255	13.5
Public Administration & Defence	-40	-0.6	-225	-1.0	-341	-1.1
Education	0	0.0	-174	-0.8	-137	-0.4
Health & Social Work	-56	-0.8	-498	-2.2	-939	-3.0
Other Services	-48	-0.7	-140	-0.6	-38	-0.1
Total	**6,942**	**100.0**	**22,521**	**100.0**	**31,536**	**100.0**

Note: Net exports here means exports from a sector minus the imported inputs that are required to sustain production in the sector.

RECENT EXPORT TRENDS

Although we cannot update the measurement of *net exports* without a more recent input-output table, we can at least give an indication of export trends in more recent years.

In 2000, according to the *Balance of International Payments*, "merchandise" accounted for 81.3 per cent of total exports while services accounted for the remaining 18.7 per cent.[13] In the period 2000-2005, however, merchandise exports increased by less than 1 per cent per year (in nominal values) while the value of services exports increased by 20 per cent per year. Consequently, the share of merchandise in total exports declined to 64.5 per cent by 2005 while the share of services rose to 35.5 per cent.

To some extent, however, this change was not quite as remarkable as it seems. This qualification relates to exports of "computer services", which is the largest category of services exports. Computer services accounted for 11.6 per cent of *total* exports in 2005, having increased from 6.1 per cent in 2000. It seems that part of this increase, and a corresponding part of the decline in merchandise's share of total exports, would simply reflect a change in the method of delivering software to customers. If software is sold on a physical medium such as a disk (or if it is pre-installed on a new computer), it is counted as a merchandise export. But if it is transmitted separately to the customer by electronic means, it is counted as a computer service export. Presumably, the

[13] In the period considered here, industrial products accounted for 90-95 per cent of "merchandise" exports, with the remainder being unprocessed primary products.

latter means of delivery has become increasingly common during the period since 2000.

Having said that, however, there is no doubt that there was a substantial genuine increase in the share of services in total exports. According to the *Balance of International Payments* the major categories of services exports in 2005 were: Computer Services (11.6 per cent of total exports, up from 6.1 per cent in 2000); Business Services (9.3 per cent of total exports, up from 3.3 per cent in 2000); Insurance (5.2 per cent of total exports, up from 1.2 per cent in 2000); and Financial Services (3.6 per cent of total exports, up from 2.3 per cent in 2000). The first two of these categories would largely come from the production sector "Real Estate, Renting and Business Activities" while the other two would mainly come from the production sector "Financial Intermediation". It seems clear, therefore, that the trend seen in Table 8 concerning these two production sectors must have continued, and they have made a strongly increasing positive contribution to net exports.

However, there is not necessarily a very clear and simple correspondence between trends in exports and trends in *net exports* for a number of reasons. For one thing, it is possible that the slowdown in Manufacturing exports has occurred mainly in branches that have a relatively high import content or relatively high profit outflows. If so, the trend in Manufacturing *net exports* in 2000-2005 could have been somewhat stronger than the trend in Manufacturing exports. Another point is that exports of services generally have a lower import content than Manufacturing exports, as discussed in Fitz Gerald *et al.* (2005, Chapter 2).[14] Other things being equal, this means that as services increase their share of exports, *net exports* rise faster than exports. On the other hand, some of the service sectors with rapid export growth have higher profit outflows from foreign companies than most service sectors would have. Thus, there are a number of considerations here that complicate the relationship between export trends and *net export* trends.

Nevertheless, in view of the high rate of growth in the relevant services exports seen in 2000-2005, it must be safe to say that that the services sectors "Real Estate, Renting and Business Activities" and "Financial Intermediation" have made an increasing positive contribution to *net exports*. This has been an important development at a time when Manufacturing exports were slowing down.

While exports of some services have become considerably more significant in recent years, it is worth noting that Manufacturing remains very important as a contributor to both exports and *net exports*. It should be borne in mind that, in 2000 when the share of merchandise in total exports was 81 per cent, Manufacturing accounted for about 99 per cent of total "net exports". Therefore, in 2005 when the share of merchandise in total exports was down

[14] Note that although it is true that exports of services have a lower import content than Manufacturing exports, Manufacturing still makes a much larger contribution than services to "net exports" as we have discussed it, because Manufacturing exports most of its output, unlike services.

to 65 per cent, Manufacturing's share of net exports was probably still much higher than that.[15] As a very rough estimate, Manufacturing's share of net exports was probably in the region of 80-90 per cent in 2005.

6. Conclusions

Over the past decade there have been some very noticeable changes in the contributions made by different sectors to the Irish economy and to economic growth. At the same time, some of the changes are rather less profound than they might appear at first sight.

The changes look most dramatic when presented in terms of sectoral shares of GVA, which is similar to a sector's contribution to GDP. While Agriculture's share of GDP declined continuously over the past decade, Manufacturing's share was increasing substantially in the late 1990s but then declined sharply after 1999. To balance these trends, there were increasing shares of GDP for Construction and for some Services such as Financial Intermediation and Real Estate, Renting & Business Activities.

When we take account of profit outflows from foreign MNEs so as to assess sectoral contributions to GNP, the trends look less dramatic in some respects. In particular, Manufacturing looks much smaller than it does in terms of share of GDP, its share of the economy was scarcely increasing at all in the late 1990s, and the decline in its share after 1999 was probably less marked than it seems in terms of GDP.

Trends in employment also tend to reflect this impression of more moderate change. The share of Manufacturing in total employment changed little in the late 1990s and then declined after that, but by less than the decline in its share of GDP. Meanwhile, there were increasing shares of total employment for Construction and for services such as Financial Intermediation and Real Estate, Renting & Business Activities.

There seems to be quite a widespread impression that particularly strong Manufacturing growth used to be the major component of overall economic growth up to about 2000, but that process has now run out of steam and has been replaced by new trends of strong growth in Construction and Services. Our findings modify that impression mainly by indicating that, in terms of the contribution to GNP or employment, Manufacturing was not increasing its share in the late 1990s while the increasing trends in the share of Construction and some Services are quite long established.

As regards productivity levels, we found that, when measured in terms of the contribution to GDP per head, the high-productivity sectors are Manufacturing, Financial Intermediation and Real Estate, Renting & Business Activities, while Construction and

[15] This effect arises largely because there are quite a number of sectors that make some positive contribution to exports, while at the same time having imports of inputs that are larger than their exports, so that their contribution to *net exports* is negative.

Other Services have relatively low productivity. Therefore, a decline in the share of Manufacturing in GDP and a rise in the share of Construction and Other Services would tend to reduce aggregate GDP per head. However, when measured in terms of the contribution to GNP per head, Manufacturing, Construction and Services as a whole all have productivity levels that are not greatly different to the average for all sectors. Only Financial Intermediation stands out as having a productivity level that is well above average when measured in those terms. These findings imply that a decline in the importance of Manufacturing combined with a rise in Construction and Services would not have substantial adverse implications for overall productivity change measured in terms of GNP per head.

Finally, we found that the really significant contribution of Manufacturing has been as the major contributor to net exports. Sustainable overall growth of the economy is not feasible over the medium to long term unless some sector or sectors generate growth in net exports. For a long time that was largely the role of Manufacturing, and this has been the way in which it has made a key contribution to the economy, more so than through its direct production or employment. In the 1990s, Manufacturing accounted for about 100 per cent or more of net exports.

However, already in the 1990s and increasingly in the present decade, some service sectors have emerged as substantial contributors to net exports. This applies particularly to Real Estate, Renting & Business Activities, to Financial Intermediation and to Hotels & Restaurants, with the major export service categories being Computer Services, Business Services, Insurance and Financial Services. The emergence of rapid export growth in these sectors has been very important at a time when Manufacturing exports were slowing down in recent years. In absolute terms, however, Manufacturing remains by far the largest contributor to net exports at present, although with a declining share of the total.

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APPENDIX 1. COMPOSITION OF SECTORS

Total Sector	Comprising of these sub-sectors
Agriculture, Forestry & Fishing	01 Agriculture
	02 Forestry
	05 Fishing
Mining & Quarrying	10 Mining of coal, lignite, peat
	11 Crude petroleum
	13 Mining of metal ores
	14 Other mining and quarrying
Manufacturing	15 Manufacture of food products and beverages
	16 Manufacture of tobacco products
	17 Manufacture of textiles
	18 Manufacture of apparel
	19 Tanning, etc
	20 Manufacture of wood products excl. furniture
	21 Manufacture of pulp, paper etc.
	22 Publishing, printing, recorded media
	23 Manufacture of coke etc.
	24 Manufacture of chemicals / chem products
	25 Manufacture of rubber and plastic products
	26 Manufacture of non-metallic mineral products
	27 Manufacture of basic metals
	28 Fab. metal products excl machinery
	29 Mfr. of machinery / equipment nec
	30 Mfr. of office machinery / computers
	31 Mfr. of electrical machinery / apparatus
	32 Mfr. radio, tele, comm equipment
	33 Mfr. medical, precision, optical etc.
	34 Mfr. vehicles, trailers etc
	35 Mfr other transport equipment
	36 Furniture, manufacturing nec
	37 Recycling
Electricity, Gas & Water	40 Electricity, gas, steam, hot water

	41 Collection, purification, distr. of water
Construction	45 Construction
Distribution	50 Sale, maintenance, repair of vehicles, fuel 51 Wholesaling excl, motor vehicles 52 Retailing except motor, repair of personal goods
Hotels & Restaurants	55 Hotels / restaurants
Transport, Storage, Communications	60 Land transport, transport via pipelines 61 Water transport 62 Air transport 63 Supporting transport activities, travel agents 64 Post / telecommunications
Financial intermediation	65 Finance, excl. insurance / pensions 66 Insurance / pensions excl. social security 67 Auxiliary to financial intermediation
Real estate, Renting, Business Activities	70 Real estate 71 Renting of machinery and equipment 72 Computer and related activities 73 Research and development 74 Other business activities
Public Admin. Defence, Social Security	75 Public Admin and Defence, social security
Education	80 Education
Health & Social Work	85 Health and social work
Other Services	90 Sewage etc. 91 Membership organisations 92 Recreation, culture, sport 93 Other services 95 Private households with employees

Appendix 2: Derivation of Adjustments to GVA

Table 2 presents data on "Adjusted GVA" in 2003, in which estimates of profit outflows are deducted from GVA in the sectors where the profit outflows mainly arise. The first two columns show GVA by sector, and each sector's percentage of total GVA. The third column shows estimates of profits of foreign-owned MNEs in a number of sectors. While there are no such estimates for more than half of the sectors due to a lack of data, there are good reasons to believe that profit outflows from foreign MNEs in those sectors would be such a small proportion of sectoral GVA that they can reasonably be ignored. Thus, profits of foreign MNEs could scarcely be significant in Agriculture. In addition, according to the *Census of Industrial Production 2003*, total profits in Mining & Quarrying were less than 9 per cent of GVA after deducting capital expenditure. Since profit outflows from foreign MNEs would probably be only a minority of that 9 per cent they would not be very important. The same source shows that total profits in Electricity, Gas & Water were actually negative in 2003 after deducting capital expenditure. In the case of the Construction industry, it is known, from the *Census of Building and Construction*, that profits of firms employing over 20 people in that sector accounted for just 10 per cent of the whole sector's GVA. Since it is likely that profit outflows from foreign MNEs in Construction would be quite a small minority of that 10 per cent of GVA, this is not a very significant issue in the Construction sector. It is clear that profits of foreign MNEs could not be a significant part of GVA in Public Administration & Defence, Education, and Health & Social Work, because they are mostly part of the public sector. Similarly, foreign MNEs are not likely to be an important part of the sort of activities that are included under Other Services.

Most of the estimates of profits of foreign companies that are included in the third column of Table 2 use data from either the *Census of Industrial Production* or the *Annual Services Inquiry*. These estimates of profits are based on GVA of foreign-owned firms minus their labour costs minus their capital expenditure. The Financial Intermediation sector is an exception since it is not covered by the *Annual Services Inquiry*. In this case the estimate was derived by summing up the profits of foreign-owned companies that are included in the list of the top 80 financial companies in *The Irish Times Top 1000 Companies*, May 2003, 2004 or 2005. Data from the annual *Business & Finance* list of *Top 1000 Companies* was used to fill some gaps, and some estimation was also necessary to fill gaps since profit figures were not reported for every company concerned. In view of the method and sources used, the estimate for Financial Intermediation would probably be less reliable than the estimates presented for other sectors.

In the fourth column of Table 2, the total profit outflow figure is taken from the *Balance of International Payments* for 2003. It is the debit or outflow side of Direct Investment Income on Equity. This total amount is distributed among the sectors in proportion to their share of the estimated profits of foreign companies in the third column of Table 2. Note that the third column estimates profits of foreign companies (after capital expenditure), whereas the fourth column refers to outflows of profits (after capital expenditure and tax). It is appropriate, therefore, that the total in the fourth column turns out to be less than but fairly close to the total in the third column.[16]

The fifth column of Table 2 makes a further adjustment concerning the Real Estate, Renting & Business Activities sector. In the National Accounts, the GVA of that sector includes "imputed rent" that is attributed to the owners of owner-occupied dwellings. This imputed rent is equivalent to the rent that owner-occupiers could obtain if they were to rent out the property in which they live. Or to look at it another way, it is the value of the income-in-kind that they receive through having a dwelling available to them without having to pay a rent. This amount is included in national accounts as it is considered to measure part of a country's economic welfare. However, since this amount is not really the output of a particular sector in the same sense that GVA usually is, we deduct it from the GVA of the sector where it is included, in attempting to arrive at a more realistic assessment of the contribution made by different sectors to the Irish economy.

The final two columns of Table 2 show "Adjusted GVA" by sector. A sector's GVA is similar to its contribution to GDP, apart from an adjustment for product taxes and subsidies, whereas we have suggested that its "Adjusted GVA" is more similar to its

[16] O'Leary (1999) previously applied a method that is somewhat similar to ours, at least in the sense that he allocated the total national-level profit outflow in accordance with the incidence of estimated profits of foreign companies. However, one difference is that he was estimating profit outflows from regions, with a view to estimating regional incomes, whereas our focus is on sectors rather than regions. Another difference is that, given the data available at the time, he used "remainder of net output" as an approximate measure of profit in foreign-owned companies. The data that are available more recently allow us to use GVA of foreign-owned companies minus their labour costs and their capital expenditure, which is a considerably more precise measure of profits in foreign-owned companies.

contribution to GNP. However, it should be recognised that Adjusted GVA is not actually the same thing as the contribution to GNP. The difference between GDP and GNP is the net international flow of all factor incomes. By deducting estimated profit outflows (i.e. the debit or outflow side of Direct Investment Income on Equity) from GVA, what we have done is simply to deduct the most important type of factor income outflow, which is an outflow that can be identified as coming from specific sectors. But there are also other less important types of factor income flows (both outward and inward) that contribute to the difference between GDP and GNP, such as income on debt and portfolio investment income. For the most part these flows cannot be readily attributed to specific sectors and we do not make any attempt to take account of them. Thus our Adjusted GVA is not actually the same thing as the contribution to GNP, but it is much more similar to that than GVA would be. We believe that, compared to GVA, the Adjusted GVA figures give a more realistic indication of each sector's contribution to the Irish economy.