

Export Performance and Competitiveness of the Irish Economy

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ABSTRACT

This paper provides a review of Ireland's recent export performance, with particular emphasis on the reasons behind the strong gains in market share experienced by the economy over the past fifteen years. It shows that there was a substantial acceleration in export growth during the 1990s, which resulted in a doubling of the Irish share of world exports. This reflected a number of factors, including an increased specialisation in the production of some high-technology goods for which international demand grew strongly and also generally favourable competitiveness developments. The share of Irish exports going to North America, which was the world's fastest growing region during this period, also increased significantly. While the share of Irish exports going to the UK declined, the Irish share of UK imports increased which indicates reasonably strong export growth to the UK during the 1990s.

Export growth has slowed since 2000, partly as a result of weaker international demand conditions and the slowdown in the global ICT sector but also partly due to the weaker competitiveness position of the Irish economy. The latter reflects the rising cost base in the domestic economy, a steady increase in consumer prices relative to our main trading partners and the stronger value of the euro in recent years. This weaker competitiveness position leaves the economy more vulnerable to external shocks, the most damaging of which would be a sharp appreciation of the nominal exchange rate or a significant downturn in the US economy. Going forward, the challenges for economic policy will be (1) to maintain the strong competitiveness position of the most dynamic sectors of the economy, including attracting new inward investment projects in high value-added sectors and encouraging an indigenous presence in these sectors and (2) to improve productivity and competitiveness across other sectors of the economy which have experienced weaker export growth in recent years.

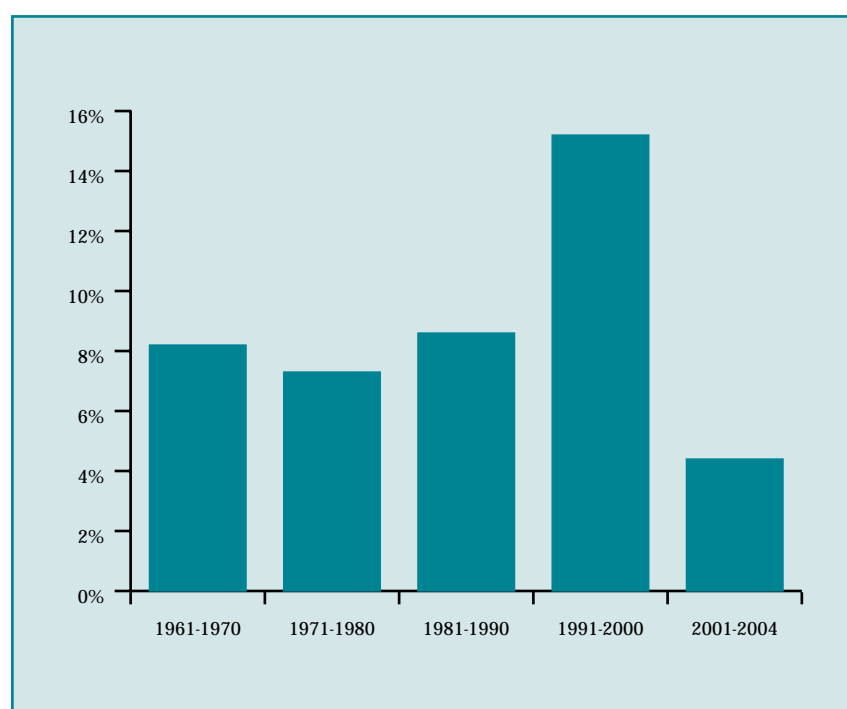
Section 1. Introduction

Ireland's impressive economic performance over the past two decades was largely driven by the exporting sectors of the economy. Robust export growth, particularly during the 1990s, largely reflected the success of the economy in attracting inward FDI flows, mainly from the US, in a small number of sectors characterised by strong productivity growth and strong international demand growth. While export growth in some Irish-dominated, less technology-intensive sectors was also quite strong, the share of these sectors in total Irish exports declined significantly.

¹ The authors are economists in the Economic Analysis, Research and Publications Department. The views expressed in this article are the personal responsibility of the authors and are not necessarily those held by the CBFSAL. The authors would like to thank Tom O'Connell and Maurice McGuire for helpful comments.

The slowdown in export growth since 2000 appears to be partly related to weaker international demand for some of the high-technology goods that the economy specialises in producing, as well as a more general downturn in international demand conditions. There is also substantial evidence of a deterioration in the competitiveness position of many exporting sectors in recent years, related to the rising domestic cost base and the stronger value of the euro, particularly against the dollar. In this paper, we first review Ireland's recent export performance, detailing in particular the strong gains in market share experienced by the economy over the past fifteen years. We then attempt to explain this successful export performance, in terms of changes in the sectoral composition and international destination markets of exports as well as price and cost competitiveness developments. This is followed by an assessment of Ireland's export performance and current competitiveness position in the context of the changed nature of the economy, in particular, the higher cost base and higher relative price level. Finally, the paper concludes by identifying some related challenges facing economic policy over the medium to long term.

Figure 1: Irish Export Growth (% Volume Change), annual averages



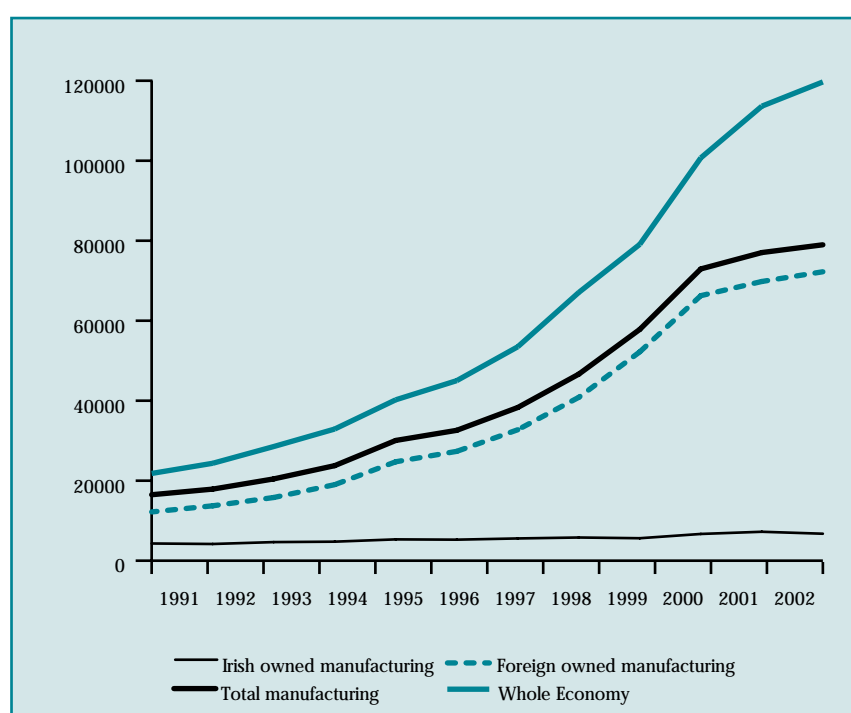
Section 2. Ireland's Export Performance

Since the opening up of the Irish economy during the late 1950s/early 1960s, the traded sectors have expanded rapidly. Between 1960 and 2004, export volume growth averaged around 9½ per cent per annum, with a significant acceleration during the 1990s (Figure 1). During the late 80's, the Irish economy benefited from a combination of positive developments including improved macroeconomic stability, stabilisation of the public finances and a more favourable

international economic environment. Furthermore, a depreciation against sterling improved Irish competitiveness at a time when the UK was experiencing a boom. These factors aided Ireland in sustaining high growth in exports towards the close of the 1980s.

Despite a brief slowdown in growth at the beginning of the decade, coinciding with the currency crisis, the 1990s saw further improvements in Ireland's export growth performance. The economy's integration into the global economy was greatly advanced when the single market came into force in January 1993. The single market provided for the removal of technical and other barriers to the free movement of goods and services, labour and capital between member countries. Irish export growth in the late 1990s showed dramatic increases, reaching a peak of 22 per cent in 1998. The introduction of the euro reduced international transaction costs, *inter alia*, and provided further impetus to export growth. This growth in exports was mainly driven by the foreign sector. Data on the value of exports show that foreign-owned firms in Irish manufacturing accounted for around 95 per cent of the total increase in Irish manufacturing exports and around 63 per cent of the increase in total-economy exports during the 1990s (Figure 2). Foreign firms in the services sectors also contributed to the aggregate increase in exports, although precise data are not available to measure this contribution.

Figure 2: Irish Export Values, 1991-2002, euro millions



Ireland's export performance compares very favourably with its major trading partners in the euro area, UK and US, over the past two decades (Table 1). During the period 1987-1996, Ireland's

average export growth was almost 12 per cent, over twice the corresponding export growth for the euro area and UK. Indeed, export growth experienced in Ireland during this period was comparable to the high rates of growth observed for the region comprising the 'Asian Tiger' economies. In the subsequent eight-year period, the Irish economy exhibited sustained high growth in exports of almost 11 per cent per annum at about twice the rate of export growth observed for its major trading partners and also above the growth rates in the Asian Tiger countries.

Table 1: Export Volume Growth 1987-2004

	1987-1996	1997-2004	1987-2004
Ireland	11.7	10.7	11.2
Euro Area	5.5	5.8	5.6
UK	5.5	4.0	4.8
US	9.1	3.8	6.7
Japan	4.2	5.9	5.0
Newly Industrialised Asian Economies	12.1	9.2	10.8
World	6.5	6.5	6.5

Source: IMF World Economic Outlook

Note: Newly Industrialised Asian Economies include Korea, Singapore and Taiwan

Ireland's export growth slowed quite substantially after 2000 (Table 2). The slowdown began with a number of adverse shocks to the Irish and global economies in 2001. These included the foot and mouth problem for Irish agriculture, which also had a significant negative impact on the tourism sector, and the downturn in the global information and communication technology (ICT) sector. The Irish manufacturing sector was hit particularly badly by the latter due to our very high degree of export specialisation in the ICT sector. However, the deterioration in export performance can be explained only partly by the more subdued international economic environment and downturn in the global ICT sector. It also partly reflects the deterioration in Ireland's price and cost competitiveness position that has occurred in recent years. These competitiveness trends are discussed in more detail in Section 3.3 of the paper. Export growth picked up somewhat in 2004, to 4.4 per cent, with a recovery in the output growth of the ICT sector and other more traditional exporting sectors, including the food sector. A further acceleration in export growth is projected for 2005 and 2006, although a return to the large market share gains of the 1990s is not expected.

**Table 2: Ireland's Recent Export Growth Performance
(% volume change)**

	2000	2001	2002	2003	2004
Export Growth	20.4	8.4	5.7	-0.8	4.4

Note: the trend in exports in 2002 and 2003 needs to be interpreted with caution as it partly reflects the beginning and then ending of 'carousel' type trades with the UK in certain ICT products. The underlying picture over these two years was of flatter growth, somewhere in between the actual outturns over the two years.

Section 3. Explaining Ireland's Export Performance

3.1 Introduction

Export growth can be decomposed into three factors: (1) a world demand factor, (2) product and market effects and (3) competitiveness effects. The world demand factor reflects growth in exports that can be attributed to rising international demand, i.e. the stronger global import demand is, the stronger you would expect a specific country's export growth to be. However, an increase in a country's *share* of world trade can only be explained by factors beyond world demand effects. IMF data show that world trade volumes increased by around $6\frac{1}{4}$ per cent per annum over the period 1986-2003. Over the same period, Irish export volume growth averaged around $11\frac{1}{2}$ per cent per annum. As a result, the share of Irish goods and services in world exports has made large gains since the mid-1980s, particularly from the mid-1990s onwards. IMF data allow us to distinguish the market share for goods and services and goods alone although, as can be seen from Figure 3, the two follow a similar path.

Figure 3: Ireland's export market share (% of world exports) 1990-2003



In both cases, the Irish share of world exports has approximately doubled over the 14-year period, suggesting that the competitive performance of the Irish export sector has experienced dramatic improvements over this period. These *competitiveness effects* reflect export growth that can be attributed to an improvement in an economy's ability to sell its goods at a lower price (price and cost competitiveness). However, export performance can improve for reasons other than gains in competitiveness, namely through product or market effects. *Product and market effects*

refer to export growth that arises because an economy specialises in specific products or markets that are more dynamic than the world average. This section of the paper reviews recent developments in Ireland’s export performance in terms of competitiveness and also changes in the sectoral composition of Ireland’s exports and export destination markets over this period.²

3.2 Product and Market Effects

3.2.1 The Sectoral Composition of Exports

A country’s trade performance can be affected by the sectoral composition of its exports. For example, an increase in market share would be expected if exports mainly comprise products for which world demand is growing more rapidly than the global average.

Table 3: Export Specialisation (% share of total merchandise exports)

	Ireland		World Exports	
	1990-1992	2000-2003	1990-1992	2000-2001
Food	23.0	7.8	10.1	7.7
Chemicals	17.6	38.2	10.4	10.7
ICT	27.6	36.5	21.0	29.1
Other	31.7	17.5	58.5	52.5

Source: CSO, WTA database, CBFSAI calculations.

The left-hand side of Table 3 shows the main trends in the sectoral composition of Ireland’s merchandise exports since the early 1990s. Most notable is the increasing share of the chemicals and ICT sectors.³ Both these sectors in Ireland are dominated by foreign multinationals, which export almost all the output they produce in this country.⁴ The share of these sectors combined in total exports has increased from around 45 per cent during the early 1990s to around 75 per cent during the early years of the current decade. The right-hand side of Table 3 shows that the share in total world exports of both the chemicals and, more particularly, ICT sectors also increased during the 1990s, which indicates that exports of these products grew at a faster rate than the average for all products. It is also evident that

2 Using a methodology called Constant Market Share analysis, it is possible to decompose export growth into world demand, product, market and competitiveness effects. While it is planned to undertake such an analysis, the current study merely presents a descriptive analysis of structural and competitiveness changes, which together help to explain Ireland’s successful export performance.

3 ICT sectors in world trade are here defined as SITC divisions 75 (Office machines and automatic data processing machines), 76 (Telecommunications and sound equipment), 77 (Electrical machinery and parts), 87 (Professional, scientific and controlling apparatus) and 88 (Photographic apparatus, optical goods, watches and clocks).

4 Industrial output data show that foreign firms account for around 98 per cent and 93 per cent of gross value added in the chemicals and ICT sectors, respectively. Meanwhile, around 96 per cent of gross output in the chemicals sector and around 95 per cent of gross output in the ICT sector is exported. These are much higher shares than in other sectors of the economy.

Ireland had a much higher degree of specialisation in the ICT and chemicals sectors than the world average, even at the beginning of the 1990s. The fact that Ireland had an above-average and increasing specialisation in the export of some of the high-technology products for which world demand grew the fastest during the 1990s meant that, *ceteris paribus*, you would have expected an increase in Ireland's export market share.

The increased specialisation in high-technology exports has come at the expense of a range of other sectors, most notably food products, which have a more significant indigenous presence. In absolute terms, export growth in some of these sectors has been reasonably strong since 1990 while many sectors have managed to improve the quality of exports, particularly in more recent years. Moreover, these sectors tend to be more embedded in the domestic economy than the high-technology sectors, in terms of domestic economy expenditures and also the lesser likelihood of them relocating production to other countries, and therefore remain extremely important for the Irish economy. Nevertheless, export growth in these sectors has not matched the very high rates experienced in the chemicals and ICT sectors and, consequently, the share of these sectors in total exports has declined quite substantially. Food products, for example, now account for less than 8 per cent of total Irish merchandise exports, down from around 23 per cent in the early 1990s.

The fact that the economy has substantially increased its specialisation in high-technology products and has reduced its specialisation in some sectors that have experienced weaker export growth means that if these high-technology sectors continue to out-perform the average, the economy can expect to benefit from further positive product effects going forward. As a result of strong export growth in the chemicals and ICT sectors, Ireland increased its share of world trade in these sectors. WTO data show the extent of this increase in world market share.⁵ Table 4 shows that Ireland's share of world exports in chemicals increased more than three-fold during the 1990s while our share in office and telecommunications equipment almost doubled.

**Table 4: Irish Share of World Exports in Selected Sectors
(% share)**

	1990-1993	2000-2003
Food	1.8	1.4
Chemicals	1.5	5.1
Office and Telecom Equipment	1.6	2.8
Other	0.4	0.4
Total Merchandise	0.7	1.3

Source: World Trade Organisation

⁵ The WTO data underlying the market shares presented here are in \$US, which means that the market share of Irish exports can be affected by exchange rate fluctuations. In addition, the only available data for the ICT sector are for "Office and Telecom Equipment". This sub-sector accounts for around 60 per cent of the total ICT sector as presented in Table 3 above.

3.2.2 Changes in Destination Markets

Export performance can also be affected by changes in the demand for exports across regions such that an increase in global market share would be expected if a country's exports are destined for markets that grow more rapidly than the global average. During the 1990s the Irish economy managed to substantially increase its share of exports going to the US, which was the world's fastest growing region during this period. This mainly reflected the ability of the economy to attract US multinational firms in high-technology sectors and much of the trade between Ireland and the US represents intra-firm trade between branches of US multinationals.

A number of observations can be made from Table 5 regarding Irish export destination shares and their relationship with trends in import market sizes. Significantly, the share of Irish exports to the US has more than doubled since 1990, partly reflecting the fact that growth in import demand in the US has been above the world average. In addition, although the share of UK imports in world trade has only dropped marginally, Irish exporters have become progressively less reliant on the UK market with exports to the UK in 2003 accounting for about 18 per cent of total exports, representing a gradual decrease from almost 34 per cent in 1990. In contrast, Irish exports to the other EU member states have climbed somewhat, despite the share of world imports of these countries decreasing slightly. Finally, a larger proportion of Irish exports are destined for Asian economies although the Asian share of world imports has not increased significantly.

Table 5: Market Effects on Export Performance

Region	Country Specialisation: Destination Shares of Irish Exports		Market Size: Region Share of World Imports	
	1990	2003	1990-1993	2000-2003
UK	33.7	18.1	0.06	0.05
EU less UK	41.0	43.2	0.33	0.29
US	8.2	20.6	0.15	0.18
Japan, South Korea, Taiwan, Singapore, China	2.6	5.2	0.14	0.15
Other	14.5	13.0	0.32	0.32

Source: IMF World Economic Outlook, CBFSAI calculations

A comparison of the shares of export destinations for individual sectors between 1990 and 2003, presented in Table 6, reveals some notable developments. While there do not appear to be large shifts in the share of food and animal exports destined for the UK and the rest of the EU, the export destinations for the more 'modern' sectors, such as the chemicals and ICT sectors, have been undergoing some significant changes. For example, the share of chemicals exports destined for the US has increased from 17 per cent to 28 per cent over the period 1990 to 2003, although this may be partly accounted for by a small number of

relatively recent market leading pharmaceutical products. The ICT sector has broadened its export base, as there are higher proportions of exports destined for non-traditional markets, with Asian markets figuring more prominently. Furthermore, the two 'modern' sectors showed a marked decline in reliance on the UK market, in contrast to the food and animals sector, which exhibits an increase in the share of exports destined for the UK.

Table 6: Destination share of sector exports in 1990 and 2003

	UK		EU less UK		US		Japan		Other Countries	
	1990	2003	1990	2003	1990	2003	1990	2003	1990	2003
Food and Animals	0.42	0.47	0.34	0.32	0.01	0.01	0.01	0.01	0.21	0.20
Chemicals	0.19	0.10	0.45	0.48	0.17	0.28	0.05	0.01	0.05	0.01
ICT	0.22	0.17	0.53	0.47	0.08	0.17	0.01	0.05	0.17	0.14
Other sectors	0.41	0.25	0.42	0.37	0.08	0.22	0.01	0.04	0.09	0.11

Source: CSO Trade Statistics

The shares of Irish imports in total imports in its two main trading partners, the UK and US, for 1990 and 2003 are displayed in Table 7. A substantial increase in the overall Irish shares in US imports reflects the strong growth in Irish exports to the US, particularly in the high-tech ICT and chemicals sectors. Given also that the US import market has been relatively dynamic with the US increasing its share of world imports, these developments combine to account for the large US export market contribution to the impressive export growth performance of Ireland in the past decade or so. Although comparatively more muted, there has also been a significant increase in the share of imports to the UK from Ireland over the period. Indeed, the UK market for Irish exports remains very significant in the light of the high labour content of such exports and the stronger links to the domestic economy of firms that export to the UK. Between 1995 and 2003, the latest year for which data are available, the value of exports to the UK actually increased by around 65 per cent, i.e. around 8 per cent per annum.

Table 7: Irish import shares in two main trading partners (per cent)

	1990	2003
UK	3.62	4.20
US	0.35	2.05

Source: US Census Bureau

A breakdown by sector of the shares of Irish merchandise in UK imports reveals that while Irish producers have maintained their share of the UK food sector imports, substantial gains have been made in Irish import shares for the chemicals and ICT sectors in the UK. In particular, the Irish share of UK chemicals imports has more than doubled since 1990, as shown in Table 8.

Table 8: Irish share of UK imports (per cent)

	1990	2003
Food	11.4	11.5
Chemicals	4.4	9.4
ICT	4.7	6.3
Other	2.1	1.7

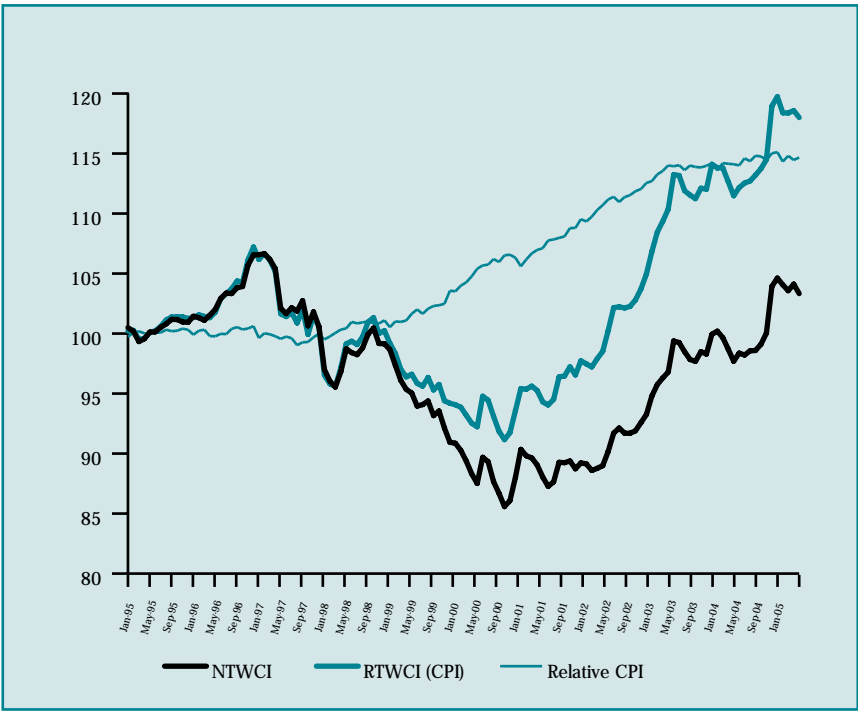
Source: OECD

3.3 Competitiveness Effects

3.3.1 Price Competitiveness

International competitiveness relates to an economy’s ability to compete in international markets by either producing goods at a lower cost or selling goods at a lower price than competitor countries. Obviously these two concepts are interrelated, as the lower the production costs the lower the price firms can charge for their products yet remain profitable. In the short term, competitiveness developments are often equated with the evolution of the real exchange rate. The real exchange rate is essentially a relative price or cost index expressed in some common currency. The Central Bank’s real trade weighted competitiveness index (RTWCI), for example, shows changes in the relative price of Irish goods expressed in a common currency. As a result, it takes into account changes in both the nominal exchange rate and prices relative to our major trading partners.

Figure 4: Nominal and Real Trade Weighted Competitiveness Indices, 1995-2004, Q1 1995=100



The evolution of the RTWCI over the past ten years provides some useful insight into the price competitiveness performance of the Irish economy over this period. Figure 4 shows changes in the index and its two components (the nominal exchange rate

and consumer prices relative to our major trading partners) between 1995 and 2004.⁶

Three sub-periods can be identified:

January 1995-January 1999

During this period, changes in consumer prices in Ireland were in line with those in our trading partners. As a result, changes in the RTWCI mapped those in the NTWCI (nominal exchange rate). By January 1999, the value of the nominal exchange rate was roughly the same as it had been in January 1995. However, during most of the period between these two dates the value of the exchange rate was above this reference value. The average value of the NTWCI between 1995 and 1999 was 101.2, which implies that the average exchange rate during this period was 1.2 per cent higher than it had been at the beginning of 1995 while the average value of the real exchange rate (RTWCI) was 1.3 per cent higher.

January 1999-April 2002

Following the inception of the euro in 1999, two clear trends became evident: a sharp depreciation of the nominal exchange rate and a sudden and substantial acceleration in the rate of consumer price inflation. In percentage terms, the change in the exchange rate was greater than the increase in the inflation rate and, as a result, the RTWCI fell quite sharply between January 1999 and October 2000. This implied a substantial (price) competitiveness gain for the Irish economy, which supported strong export growth and exacerbated the overheating pressures being felt in the economy at that time. Since October 2000, both the relative consumer price index and the nominal exchange rate have been on a steady upward trend, implying a worsening competitiveness situation. However, between October 2000 and April 2002 the real exchange rate was still below its position during the period 1995-1999 which implied that the economy was still in a strong competitive position during this period – albeit a vulnerable position as it was based upon the weak value of the exchange rate, which was generally considered to be undervalued. Between January 1999 and April 2002, consumer prices in Ireland had risen by 10 per cent relative to our trading partners.

April 2002-May 2005

Since April 2002, the RTWCI has been above its average position between 1995 and 1999 and, for the most part, rising – implying a worsening price competitiveness position. During 2004, inflationary pressures eventually began to moderate and the relative price index flattened out. However, during the final quarter of last year, the nominal exchange rate appreciated

⁶ Both the RTWCI and NTWCI, as they are currently compiled, are available only back as far as January 1995.

sharply (rising by almost 5 per cent between October and December) which resulted in a further substantial appreciation of the real exchange rate. As a result, by the end of 2004 the RTWCI was approximately 20 per cent above its value at the inception of the euro. Around one quarter of this loss of competitiveness (5 percentage points) reflects the fact that the nominal exchange rate is now above its value at the beginning of 1999 while three quarters of the loss (15 percentage points) reflects the higher inflation rate in Ireland than in our trading partners since 1999. Subsequently, the RTWCI has declined somewhat, largely driven by exchange rate developments as the euro weakened against the dollar, indicating a reversal on recent trends and a moderate improvement in our price competitiveness position.

Two final points worth noting about the real trade weighted competitiveness index, which are relevant for export competitiveness, are as follows. Firstly, the appreciation of the nominal effective exchange rate last year was mainly due to an appreciation of the euro against the dollar – at end-2004, the euro was around 55 per cent higher against the dollar and 16 per cent higher against sterling than at end-2001. While an appreciation of the euro against the dollar has a negative impact on export competitiveness, the effect is less than a proportionate increase against sterling. This reflects the different nature of our trade with the US, which is largely either trade between branches of multinational firms or trade in high-technology products that is denominated in dollars. Secondly, it is plausible that the economy was “super-competitive” up to 2001 leading to very strong demand for Irish exports. A resultant increase in relative prices and wages could be conceived as mainly reflecting an appropriate adjustment towards a more sustainable long-run output and employment growth rate. Notwithstanding these considerations, recent analysis carried out on behalf of the National Competitiveness Council indicates that by end-2003, Ireland’s real exchange rate was eight per cent above its sustainable level, while the appreciation of the nominal exchange rate during 2004 means that this overshooting of the real exchange rate probably worsened.⁷

3.3.2 Cost Competitiveness

The Real Trade Weighted Competitiveness Indicator provides one measure of export competitiveness. One advantage of this measure is that because it is based on consumer (or producer) prices it offers the most timely data, because prices are available monthly. However, it gives an incomplete picture for a number of reasons. For example, the index takes account of either

⁷ “Assessing Ireland’s Price and Wage Competitiveness”, P. Lane; Institute of International Integration Studies (IIIS) and Economics Department, Trinity College, Dublin and CEPR, July 2004. Referred to in National Competitiveness Council “Statement on Prices and Costs 2004”.

consumer or producer prices relative to our trading partners. It can be argued, however, that since this includes a very large number of non-traded goods and services it does not provide a very good indication of international competitiveness. An alternative would be relative export prices since they cover only tradable products. They suffer from other drawbacks, however, one of which is particularly relevant for Ireland. As a small open economy, Irish export prices are generally set in international markets and, effectively, “given” for Irish exporters. Therefore, changes in competitiveness manifest themselves through changes in profitability (export prices less the cost of producing exports) rather than changes in prices. For this reason, relative cost indicators, which overcome the difficulty with export prices, are a useful alternative measure of export competitiveness.

Wage costs are an important component in the total costs of producing exports and unit wage costs in the traded (manufacturing) sector relative to our main trading partners, expressed in a common currency, are generally accepted as a useful proxy for cost competitiveness. It is important to recognize, however, that unit wage costs do not take into account changes in non-labour business costs, including rents, energy, communications, insurance, waste and cost of capital. Recent analysis by the National Competitiveness Council has shown that a range of non-pay costs have increased significantly in recent years and are now higher in Ireland relative to other EU countries.⁸ In particular, electricity prices have increased sharply over the past four years such that in 2004 prices in Ireland for business users were 40 per cent higher than for firms in the UK. Other non-pay costs that are higher in Ireland include insurance and waste management charges.

Changes in unit wage costs in the traded sector reflect changes in three variables: (1) the nominal exchange rate, (2) relative wages and (3) productivity. Figure 5 shows that relative unit wage costs for the manufacturing sector in Ireland have declined substantially (by over 50 per cent) since the early 1990s, with an acceleration of this decline from the mid-1990s, indicating a strong improvement in cost competitiveness over the period. The reasons behind this improvement in the cost competitiveness of the *aggregate* manufacturing sector are also evident from Figure 5.

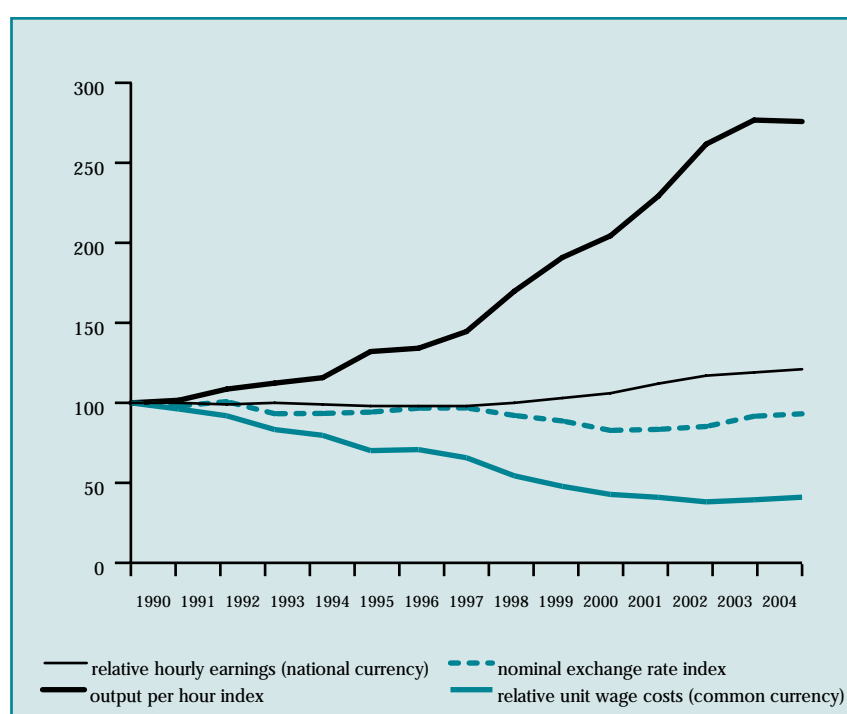
Examining each of the components in turn shows that:

- (1) Nominal exchange rate: As noted in the previous section, the value of the nominal exchange rate is now slightly above its average position during the first half of

⁸ National Competitiveness Council Statement on Prices and Costs 2004. For a more complete discussion of recent trends in non-labour costs see also the Annual Competitiveness Report 2004.

the 1990s and, consequently, fluctuations in the exchange rate have not contributed much to the improvement in competitiveness since the early 1990s – although, as noted, exchange rate developments did contribute to improvements in competitiveness during the years immediately following the inception of the euro.

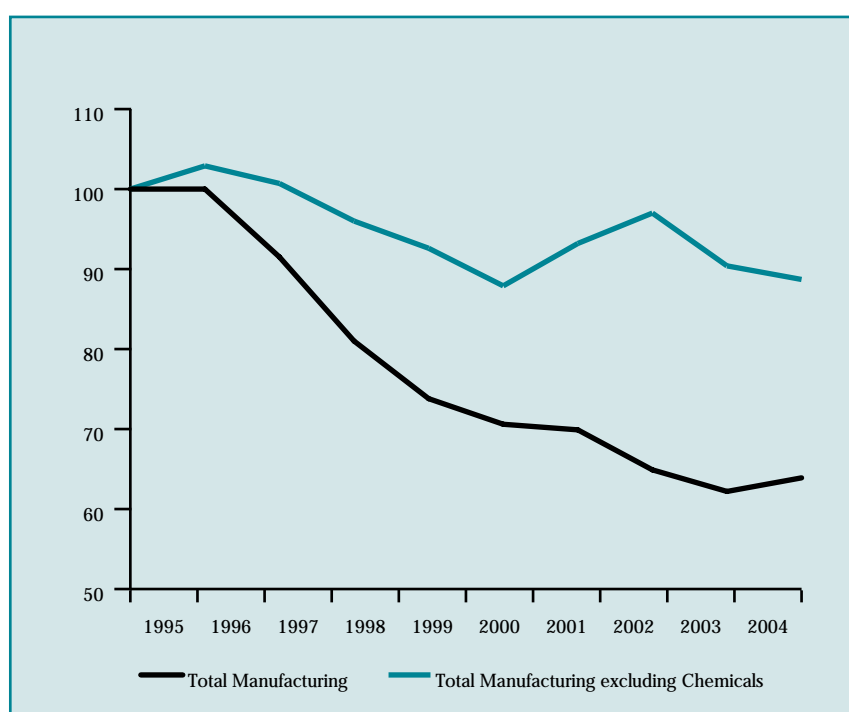
Figure 5: Relative Unit Wage Costs in Manufacturing Expressed in a Common Currency, and changes in components, 1990=100



- (2) Relative wages: Between 1990 and 1997, labour costs in Ireland increased at a similar rate to our major trading partners. However, since 1998, hourly earnings in Irish manufacturing have been increasing at a considerably faster rate, such that they are now around 20 per cent higher relative to our trading partners, compared with the situation in the period 1990-1997. Pay developments looked at in isolation, therefore, have had a negative impact on the economy's cost competitiveness over this period.
- (3) Productivity: Figure 5 shows clearly the dramatic increases in productivity recorded since 1990, in particular over the period 1997-2002. Since exchange rate fluctuations have not contributed much to the improvement in the competitiveness position of the manufacturing sector between 1990 and 2004 and pay developments have had a negative impact, it is evident that the improvement in cost competitiveness has been almost entirely driven by this exceptionally strong productivity performance.

However, as noted repeatedly by the Bank in its Quarterly Bulletins and elsewhere, trends in relative unit wage costs in manufacturing provide a very incomplete, potentially misleading, representation of the competitiveness of the Irish economy. Two reasons for this, discussed in turn below, are as follows: (1) The aggregate productivity growth figures have been unduly influenced by developments in the chemicals sector, which is heavily weighted in the CSO Index of Industrial Production and has experienced very strong productivity growth in recent years; (2) The index of unit wage costs in manufacturing ignores developments in the services sector, which can also have an important impact on export competitiveness.

Figure 6: Unit Wage Costs in Manufacturing (excluding Chemicals)



Unit Wage Costs in Manufacturing are distorted by the influence of a small number of high-technology sectors.

The decline in unit wage costs in manufacturing during the 1990s and the early years of the current decade was largely driven by extremely strong productivity growth in the chemicals sector. However, the chemicals sector is a much less relevant contributor to domestic economic activity than its weighting in the Industrial Production Index, which is based on output of the sectors, suggests. Hence, an Index of Unit Wage Costs that is dominated by developments in this sector gives a somewhat misleading picture of the health of the overall manufacturing sector. In particular, it would appear as if value-added in the chemicals sector might be overstated by neglecting service import payments, including royalty payments, and possible transfer pricing activity. Moreover, the chemicals sector is dominated by foreign multinational firms that repatriate most of their profits abroad, it employs relatively few persons in the Irish

economy (less than 10 per cent of total industrial employment) and has relatively low Irish economy expenditures. As can be seen from Figure 6, when the contribution of the chemicals sector is excluded, unit labour costs in manufacturing have decreased at a much more moderate rate and indeed a deterioration in competitiveness was recorded between 2000 and 2002 before a modest improvement in more recent years.

Figure 7: Unit Wage Costs in Manufacturing, weighted by Wage Share 1996=100



An alternative method, used recently by the IMF, to adjust for the disproportionate influence of the chemicals sector is to provide a weight to each sub-sector in manufacturing according to its share of *employment* in the aggregate manufacturing sector.⁹ This has the advantage of not totally excluding the chemicals sector but has the disadvantage of not giving any extra weighting to higher productivity sectors. One way of taking some account of divergent productivity levels in addition to labour shares is to weight manufacturing sub-sectors by *wage share* (i.e. employment in each sector multiplied by average earnings per sector), which will give a higher weight to higher productivity sectors, assuming they are associated with higher wages. This type of analysis provides similar results to those obtained when the chemicals sector is totally excluded, and indeed when manufacturing is weighted by employment share as in the IMF analysis. Unit wage costs declined during the second half of the 1990s, though not by as much as when the manufacturing sector is weighted by output share. However, in 2001 and 2002, the two series diverged as unit wage costs weighted by wage share increased. This largely reflected a substantial increase in unit

9 Cerra, V. and J. Soikkeli, "How Competitive is Irish Manufacturing?" IMF Working Paper WP/02/160, 2002.

wage costs in food products and a substantial decline in unit wage costs in the chemicals sector – the former having a much larger weight in the series weighted by wage rather than output share. More recently, however, the two series have moved reasonably closely in line with each other, with a modest decline in unit wage costs weighted by wage share in 2004, due to lower unit wage costs in a number of more traditional sectors including the food sector.

The trends observed in Figures 6 and 7 are a consequence of much lower productivity growth across a range of sectors which account for a significant share of employment and wages in manufacturing but a much lower share of total output. For the purposes of this paper, trends in unit wage costs in each manufacturing sub-sector have been calculated for the period 1997-2004. These trends are shown in Table 8, which is presented in descending order of cost competitiveness. It can be seen that unit wage costs have declined in only four sectors over the period 1997 to 2004, namely chemicals, electrical and optical equipment, publishing, printing & reproduction of recorded media (these last two together essentially correspond to the ICT sector) and transport equipment. Clearly, the decline in aggregate unit wage costs has been driven by developments in the chemicals and ICT sectors which together account for almost 75 per cent of industrial output. However, these sectors combined only account for around 43 per cent of total wages paid in the Irish manufacturing sector and would therefore appear to be less important for the economy than their weighting in the industrial output index might indicate. The more traditional sectors, including food and engineering sectors, which together account for around 60 per cent of manufacturing employment and a similar share of wages have experienced rising unit wage costs over this period.

Table 9: Share of employment and output and average annual change in unit wage costs in manufacturing sectors

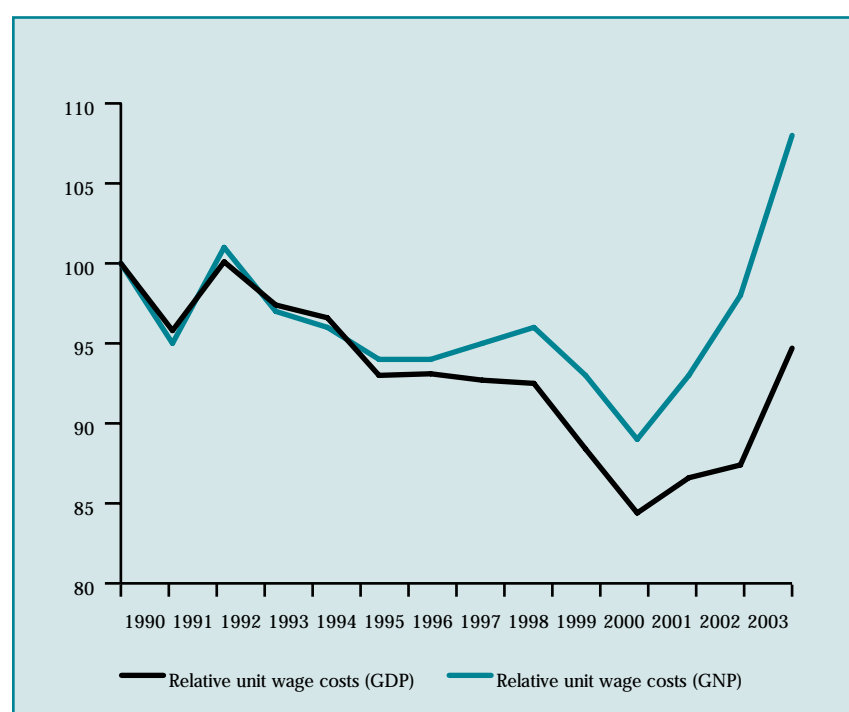
Sector	% share of total wages in manufacturing, 2004	% share of manufacturing output Q4 2004 (2000 prices)	Average % change in unit wage costs 1997-2004
Chemicals	13.4	35.2	-8.6
Publishing, printing & reproduction of recorded media	8.3	10.9	-5.5
Total Manufacturing	100.0	100.0	-5.0
Electrical and optical equipment	21.3	27.5	-4.8
Transport equipment	4.9	1.4	-0.8
Food, beverages and tobacco	20.3	14.4	+0.9
Textiles	1.9	0.5	+1.1
Other non-metallic mineral products	5.6	1.6	+4.0
Wood products	2.5	0.8	+4.1
Rubber and plastics	3.9	1.3	+4.3
Other machinery and equipment	5.1	1.7	+4.5
Pulp and paper	2.3	0.5	+5.3
Basic metals	6.9	2.1	+5.6
Leather products	0.1	0.01	+7.3

Source: CSO Industry Releases and authors' calculations

The decline in unit wage costs for the whole economy has been much less than for the manufacturing sector.

The services sector has often been neglected in analyses of competitiveness, owing largely to data constraints and also the perception that services are non-traded. However, with the expansion of financial and IT-related services as well as tourism, services are growing in importance in the overall tradable sector. Even non-traded services are often an input in the production process of the traded sector and hence are an important factor in export competitiveness.

Figure 8: Relative Unit Wage Costs, Whole Economy, 1990=100



For this reason, we also consider relative unit wage costs for the whole economy. Figure 8 indicates that the decline in unit wage costs (on a GDP basis) appears to have been much less dramatic in the economy as a whole relative to the manufacturing sector. In addition, there remains the underlying issue of extremely high value added and productivity in the chemicals sector for this measure. We also, therefore, consider economy-wide relative unit wage costs using GNP-based measures of productivity. It can be observed that both GDP and GNP unit wage cost indicators follow similar paths up to the mid-1990s but subsequently diverge as net factor income values begin to enlarge. As a result, the decline in unit wage costs was much less pronounced on a GNP basis during the late 1990s. Moreover, from 2000, economy-wide unit wage costs have been increasing quite substantially, in particular on a GNP basis, suggesting a more serious deterioration in cost competitiveness. Indeed on this basis, relative unit wage costs were around 8 per cent higher in 2003 than they were in 1990.

Section 4. Assessment of Ireland's Export Performance and Competitiveness Position

A number of considerations relating to price and cost competitiveness developments in Ireland over the past fifteen years have been raised in the previous section of the paper. In summary, price competitiveness developments were not very significant between 1995 and 1999 but were generally favourable between the beginning of 1999 and the middle of 2002, due to the depreciation in the value of the euro and despite the acceleration in domestic consumer price inflation. Since mid-2002, price competitiveness developments have been generally unfavourable, as a result of rising relative prices and the strengthening of the euro.

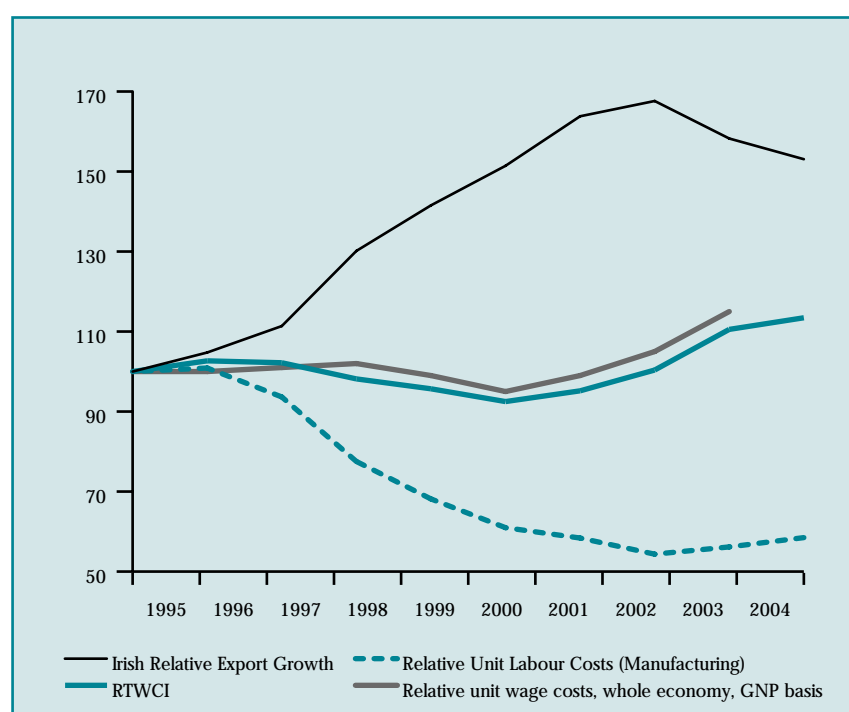
In terms of cost competitiveness, developments were generally favourable between 1995 and 2000, regardless of what measures are used, due to strong productivity growth in the economy as a whole and, more particularly, in the aggregate manufacturing sector. Since 2000, the picture has been more complicated with some measures (relative unit wage costs in manufacturing) showing continued improvements in competitiveness, at least until 2002, while other measures (unit wage costs in manufacturing excluding chemicals, unit wage costs in manufacturing weighted by wage shares and whole economy relative unit wage costs) have indicated a deterioration in competitiveness since 2000.

In order to gain some understanding of how well Ireland's very successful export performance during the late 1990s can be explained by competitiveness developments, it is possible to show relative export performance on the same graph as some price and cost competitiveness indicators (Figure 9). Relative exports are measured as an index of Irish export volumes divided by an index of world export volumes, so a decline in relative exports can reflect either weak Irish export growth or particularly strong global export growth. The competitiveness indicators chosen are the real trade weighted competitiveness index, the index of relative unit wage costs in manufacturing (common currency) and the index of economy-wide relative unit wage costs (GNP basis, common currency).

Figure 9 would appear to show a correlation between Ireland's export performance and cost competitiveness in the aggregate manufacturing sector. In particular, the very strong export growth during the late 1990s coincided with a substantial improvement in cost competitiveness in the aggregate manufacturing sector, which as already noted was mainly due to very strong productivity growth in a small number of foreign-dominated sectors. Since 2002, an increase in relative unit wage costs in

manufacturing has coincided with a slowdown in export performance. This improvement in the cost base, however, provides a rather incomplete explanation for the strong export growth of the Irish economy, as both the decline in unit wage costs and the acceleration in export growth reflected the success of the economy in attracting FDI flows in dynamic, high-productivity, sectors. In this regard, competitiveness needs to be understood in much broader terms than costs of production alone but also needs to incorporate all the factors that affect Ireland's attractiveness as a location for FDI (including the cost base, the rate of corporate tax, the regulatory environment, the quality of the labour force and the quality of infrastructure).

Figure 9: Irish Relative Export Performance, and Price and Cost Competitiveness Indicators



The remainder of the economy has also benefited from the presence of foreign multinationals, through higher economic and employment growth, spillovers to domestic firms, higher tax receipts etc. But for the other sectors, traditional price and cost competitiveness indicators are still extremely important in terms of determining export performance. In this regard, the indicators presented in this paper show some improvement in competitiveness during the 1990s but a much more mixed picture since around 2000 – indeed substantial evidence of a deterioration in competitiveness over the past four years.

Section 5. Future Challenges for Economic Policy

Ireland's continued high degree of specialisation in some dynamic, high-productivity sectors explains why, in most economic forecasts, Irish export growth is expected to continue to exceed the euro-area average over the coming years. A

potential risk to this scenario relates to the instability that might arise if the economy's attractiveness as a location for FDI was diminished or, alternatively, given the economy's high degree of sectoral specialisation, in the event of a sector-specific shock, as was evident during the recent slowdown in the global ICT sector. A further risk relates to the weaker competitiveness position of a range of more traditional, mainly indigenous, sectors which tend to be more labour-intensive and more embedded in the domestic economy than some of the high-technology sectors. In the event of further deterioration in competitiveness, the economy is also likely to become more vulnerable to external shocks, the most damaging of which would be a sharp appreciation of the nominal exchange rate or a significant downturn in the US economy. Going forward, the challenge for economic policy will be:

- (i) to maintain the strong competitiveness position of the most dynamic sectors of the economy, including attracting new inward investment projects in high value-added sectors and encouraging an indigenous presence in these sectors and
- (ii) to improve competitiveness across other sectors of the economy which have experienced weaker export growth in recent years.

Over the medium to long term, meeting these challenges will primarily require measures to enhance the productivity potential of the Irish economy. In particular, it is essential to ensure institutional structures and policy settings that are supportive of investment (including inward FDI in high value-added industries), entrepreneurship and risk taking, innovation and efficient working and managerial practices. As noted in this paper, price and cost developments are also important factors in determining export competitiveness, particularly in the short-run. Irish consumer prices and labour costs have increased significantly relative to our major trading partners over the past five years. Any further increase in relative prices and costs could have a potentially significant impact on competitiveness. This underlines the importance of implementing structural changes in the economy that can contribute to containing inflationary pressures in the short and medium term.¹⁰

¹⁰ For a discussion of some of the possible policy measures recommended for keeping wage and price inflation in check see, for example, the National Competitiveness Council Report on Prices and Costs (2004) and the recent Report of the Consumer Strategy Group (May 2005).