

# Services Offshoring into Ireland

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## Abstract

The share of services in the world FDI stock had grown to 60 percent by 2002, up from around only one-quarter in the early 1970s. Services, furthermore, have accounted for around two-thirds of global FDI flows in recent years (UNCTAD 2004). These facts notwithstanding, much more is known about manufacturing-sector FDI. The present paper seeks to redress this balance somewhat, by assessing what is known to date about the offshored services sector in Ireland. Ireland is an interesting case study for FDI in that its manufacturing sector is the most FDI-intensive in the EU. It is also an important EU location for three separate offshored services sectors – computer software, international financial services and other BPO (business process offshored) activities such as call centres and shared services. The paper describes Ireland's position in the European economic geography of these sectors and analyses the pattern of sectoral development in each case. It also seeks to identify the educational attainment levels of the workforce in each sector, to assist in evaluating their contribution to Irish development.

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## **Introduction**

Information technology allows knowledge to be codified and digitised. This in turn enables production processes in more and more services sectors to be split up, and for some elements to be offshored. These offshored services – produced in one location for ultimate consumption elsewhere – are the focus of the present paper.

The boundaries separating services sectors are not as sharply delineated as is the case with manufacturing. Among IT-enabled offshore services we here include the categories: (i) computer software, (ii) international financial services, and (iii) other business process activities, such as contact and shared services centres. There is a strong overlap between the categories however. Consider the case of IBM for example, which shifted focus in the 1990s from manufacturing PCs to selling IT services and solutions. About one-third of its Irish staff now works in its sales and support centre for the EMEA region, while most of the remainder are employed on its technology campus outside Dublin. The allocation of its staff across services categories is unclear. We will do what we can here to try to keep the categories separate.

The international financial services discussed in the paper are mostly undertaken under the auspices of the Irish Financial Services Centre (IFSC). The IFSC was established in 1987 on a dedicated site in the Dublin docklands area with participating companies eligible for a concessionary corporation tax rate. With the move to harmonise corporation tax rates intersectorally since 1999 however, the sector has now expanded beyond its original site, though the bulk of its employment continues to be located there. Our final category, of other business process activities, comprise call/contact centres, elements of shared services and a variety of other activities. Ireland is a leading EU location in each of our three sub-categories

The paper is structured as follows. Section 2 presents data on the relative FDI-intensity of the Irish economy and discusses the reasons why Ireland has proved so attractive as a location for export-oriented FDI. Section 3 focuses on the three sub-sectors of offshored services with which the paper is primarily concerned and shows that Ireland too has been relatively successful in these fields. Section 4 presents a more extensive discussion of each of these sub-sectors in turn, while Section 5 discusses the manpower and skills issues that arise in these sectors, and analyses how Ireland's system of tertiary education has developed in order to ensure that these specific manpower and skills demands are met.

## **2: The FDI-Intensity of the Irish Economy**

Table 1 presents two measures of Ireland's success in attracting FDI. The column on the left shows the share of foreign-owned firms in manufacturing employment, while that on the right shows the inward FDI stock per capita. In both cases Ireland's FDI-intensity relative to the average Western European EU country is readily apparent.

Table 1:

Share of foreign affiliates in manufacturing employment, and inward FDI stock

	Share of foreign affiliates in manufacturing employment (1998)	FDI inward stock (USD) per head of population (2000)
Ireland	48	37740
EU15	19	6032

Notes: share of affiliates in manufacturing employment comes from OECD (2001) Science, Technology and Industry Scoreboard; (EU15 here refers to the average of the 11 other member states for which the table provides data). FDI Inward Stock data come from the UNCTAD (2004) World Investment Report.

Ireland is a particularly important European export-platform location for manufacturing-sector FDI in computer hardware, pharmaceuticals and medical and precision instrument engineering (Barry, 2004) and for services-sector FDI in computer software, international financial services and other business-process offshored (BPO) activities.

The determinants of Ireland's success in attracting FDI are discussed below. These include:

- EU membership and an English-speaking environment (characteristics which the country shares with the UK of course)
- a low corporation tax rate
- the skills and experience of the country's Industrial Development Agency (IDA)
- the quality of the telecommunications infrastructure, and
- an educational system that is integrated to a large extent with the country's FDI-oriented development strategy.

The importance of the first set of factors is attested to by the fact that the UK and Ireland are particularly attractive destinations for US foreign investments, with the highest US FDI stocks per employee in the EU.

Numerous studies, including Gropp and Kostial (2000), Altshuler et al. (2001) and Slaughter (2003), have verified the importance of the corporation tax regime for FDI inflows.<sup>1</sup> Ireland, as is well known, has the lowest rate of corporation tax in the EU15 and usually shows up as having the lowest effective rate as well, apart from Luxembourg whose tax incentives are targeted primarily towards the financial sector. This is likely to be particularly important when combined with macroeconomic stability and adequate supplies of skilled labour.

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<sup>1</sup> On the role of corporation tax, with specific reference to financial shared services centres, Fahy et al. (2002) mention that, under the Commissionaire structure, sales are made by a central unit which then pays the local sales organisation a commission, making it possible to shift profits to a low tax-rate regime.

The skills and experience of the IDA have also been of importance. The organisation is recognised internationally as an example of best practice in terms of how it fulfils its role.<sup>2</sup> The IDA has also used its bureaucratic clout to press for continuous improvements in education and infrastructure.

In terms of its impact on infrastructure, MacSharry and White (2000) – the former an erstwhile Finance Minister in the Irish government and the latter a long-term Managing Director of the IDA – describe the role that the IDA played (in response to foreign firms’ criticisms of the state of Irish telecommunications) in wresting the state system from the hands of the moribund Department of Posts and Telegraphs in the 1970s. The telephone service was then commercialised and a digital-based network developed shortly thereafter which was the most advanced in Europe outside of France. This allowed Ireland capture a range of newly offshoring IT-enabled services sectors, ranging from software development to call centres, customer support and data-related services, in which first-class international telecommunications were a key factor. Ireland continues to offer the lowest cost in Europe for inbound international toll-free services (when discounts for volume use are taken into account) and offers a comprehensive range of business telephony services in addition; Fahy et al. (2002).<sup>3</sup>

MacSharry and White (2000) also describe the impact of the IDA on the availability of labour skills, telling of how a looming disparity between electronics graduate outflows and the IDA’s demand projections was speedily resolved through an inter-agency initiative to develop one-year conversion courses to furnish science graduates with electronics qualifications. Ireland also used a higher proportion of its Structural Funds receipts over the 1980s and 1990s on human capital development than did the other cohesion countries. The role of the Irish tertiary education system in attracting FDI inflows, particularly in high-tech sectors, is studied by Barry (2005).

Agglomeration and demonstration effects also appear to have kicked in to help Ireland remain ahead of the field. Work by Barry, Gorg and Strobl (2003) finds evidence of their importance in drawing further manufacturing firms to Ireland, while John Travers, former chief executive of Forfás, points out that “e-business related projects have been developed both by the existing base of business projects in Ireland in the fields of electronics, software, call-centres and shared-services centres and by new projects from internationally trading firms coming to Ireland for the first time”.

And finally, the Single Market initiative proved crucial for manufacturing-sector FDI and may have been important for international services as well. MacSharry and White (2000) describe how several larger EU countries, in the pre-Single Market era, “had suggested to potential investors that publicly funded purchases of their products might be blacklisted if the new investment was located in Ireland” (rather than in the countries making the threatening noises). Thus Ireland is likely to have gained substantially more from the Single Market than did most other EU countries.

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<sup>2</sup> See e.g. Loewendahl (2001).

<sup>3</sup> Problems have emerged recently however over the slow pace of broadband rollout under the privatised monopoly.

### 3: Employment Levels and Trends in IT-Enabled Services

Software employment records its highest share of private-sector employment in the EU15 in Sweden, the UK and Ireland. In Ireland, roughly equal numbers are employed in indigenous and foreign-owned software firms. Employment developments in the sector are depicted in Figure 1.

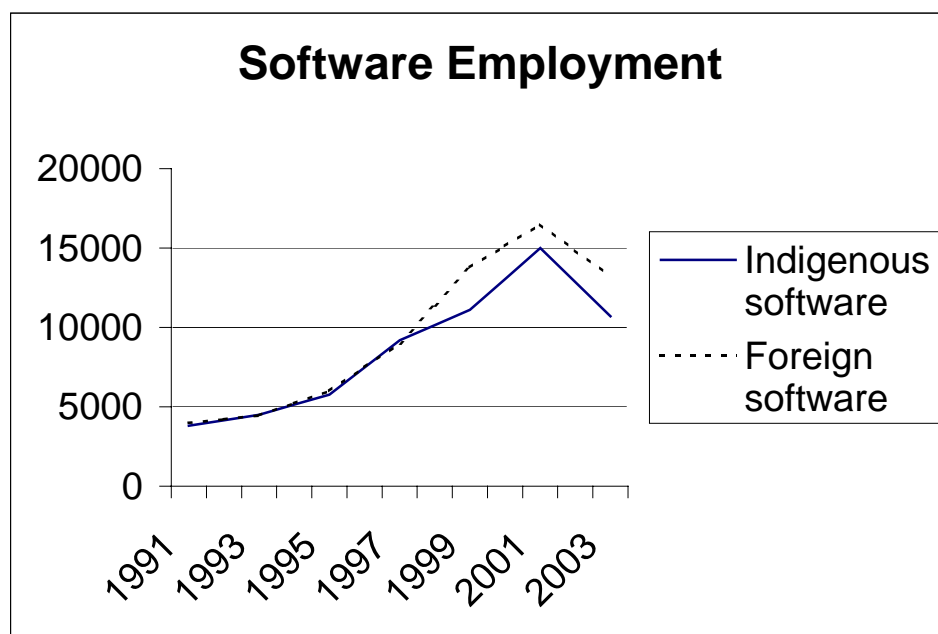


Figure 1

Since the inception of the International Financial Services Centre in Dublin in 1987 Ireland has become a leading offshore location for international financial services.<sup>4</sup> The sector now has an employment level of around 16,000, with about 70 percent located at the IFSC itself.<sup>5</sup>

The IFSC operates in all major areas of the sector but has a particular specialisation in four niche activities—fund administration, treasury operations, corporate banking and insurance. Employment growth in the sector is illustrated in Figure 2.

<sup>4</sup> International financial services employment in the Isle of Man comes to around 2000. The sector is substantially larger in the Channel Islands, where it employs around 24000, roughly evenly divided between Jersey and Guernsey. There are around 20,000 people employed in financial services (presumably mostly in the international sector) in Luxembourg. The extent of IFSC operations results in Ireland's appearing to be one of the most financially integrated countries in the world, in terms of the ratio of total foreign assets and liabilities to GDP; Lane (2003).

<sup>5</sup> <http://www.ifsconline.ie/>

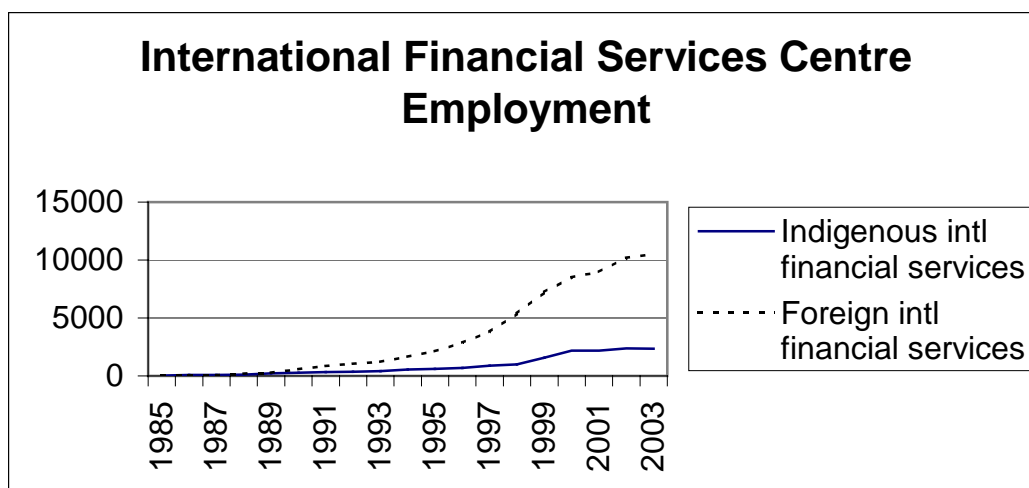


Figure 2

Other business process offshored activities, (i.e. apart from finance and software) includes front-office functions (call/contact centres), back-office functions (shared services), supply-chain management, sales and marketing, intellectual property licensing and regional headquarters.<sup>6</sup>

Sixty companies, mainly from the US, use Ireland as a base for their European call centres, of which Ireland accounts for one third of the European total. Call-centre employment stands at a level somewhere between 12,000 and 19,000.<sup>7</sup> On the basis of the latter number CM Insight (2004) calculates that Ireland has the highest proportion of call centre staff of any European country as a proportion of its working population, at 3.6%, compared to its nearest competitors, the UK at 2.8 and the Netherlands at 2.5. In the assessment of UNCTAD (2004, p 161) Ireland is also the leading location for shared service centres among developed countries.

<sup>6</sup> The numbers on which these series are based come from several different sources. IFSC employment levels come from the annual employment surveys of the state agency Forfás ([www.forfas.ie](http://www.forfas.ie)). Software levels come from the National Software Directorate ([www.nsd.ie](http://www.nsd.ie)), and employment numbers in 'other business processes' are determined by subtracting the latter series from the Forfás data on employment in grant-aided services other than IFSC-related. Some details of these other BPO activities are available at: <http://www.idaireland.com/home/index.aspx?id=60>

<sup>7</sup> The lower number comes from UNCTAD (2004, footnote 44, p 179) and the higher one from Datamonitor (2002).

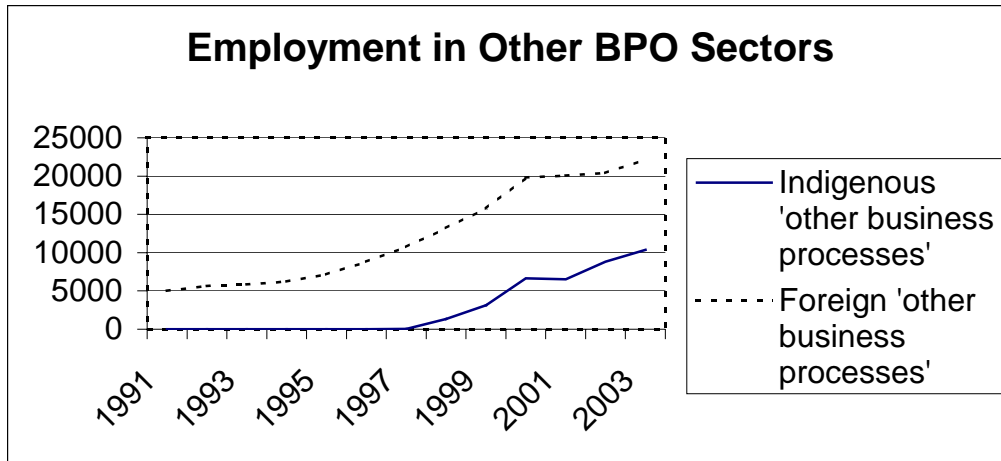


Figure 3

Ireland's continued strong showing in the field is demonstrated by the number of new FDI projects it has captured in recent years, as shown in Table 2.<sup>8</sup> The table also illustrates the experiences of a number of other EU countries that also made a strong showing in these sectors.

**Table 2:** Number of FDI Projects by Destination Countries, 2002-2003

	Call centres	Shared services	IT services	Regional HQ
EU15	169	38	198	185
Irl	29 (17% of EU15)	19 (50%)	14 (7%)	15 (8%)
UK	43	7	73	64
Germany	20	1	34	22
Netherlands	13	3	16	20

Source: UNCTAD (2004, p 162).

#### 4. The Evolution of the ITES Sectors in Ireland

##### *Computer Software*

Table 3 reports the importance of computer software employment as a share of employment in manufacturing and market services, measured relative to the EU15 average. Software employment records its highest share of private-sector employment in Sweden, the UK and Ireland.

<sup>8</sup> The Finance Act 2004 established a new headquarters regime aimed at attracting international corporations to establish their regional HQ in Dublin. This would often serve to attract other activities including shared services and treasury management; Finance Dublin Yearbook (2004).

**Table 3:** The relative importance of computer software employment in EU countries

Belgium	0.89
Denmark	1.25
Germany	0.61
Spain	0.62
France	1.05
Ireland	1.32
Italy	1.04
Netherlands	1.25
Austria	0.78
Portugal	0.27
Finland	1.25
Sweden	1.95
United Kingdom	1.47

Within software there is an important distinction between mass market packaged products, which tend to be produced by large TNCs, and other software activities – including custom and niche software and business solutions – in which domestic firms tend to dominate. The EU market is roughly evenly divided between the two sets of activities.

OECD (2002) reports that Ireland accounts for around 50 percent of all mass-market packaged software sold in Europe, though transfer pricing issues raise problems in evaluating true Irish output levels. Even in employment terms, however, the packaged software sector is more important in Ireland than in other EU economy. Eurostat data register employment in this sector (which is classified as a branch of manufacturing) in only eight EU countries. Ireland, with an employment level of 5500 (in 2000) and the UK with employment of 3500 are far ahead of any other EU country.

The mass-market packaged software sector in Ireland is engaged in the manufacturing, localisation and distribution (MLD) of software packages. Even though MLD is not very high tech in nature, Ireland has nevertheless moved up the value chain over time. The key players in the MLD sector (including Microsoft, Lotus, Oracle, Symantec, Informix and Corel) first established software manufacturing facilities in Ireland around the mid-1980s, duplicating and shrink-wrapping disk copies of software programmes developed by the parent company and arranging for the printing and assembly of manuals. The second phase, again beginning with Lotus and Microsoft, saw these companies adding localisation – involving translation into other languages and cultural and technical formats appropriate to the destination markets – to their Irish operations. The third phase saw the transfer of the responsibility for distribution to the Irish operations, making Ireland an operations hub.

The other half of the jobs in the foreign-owned software sector in Ireland are in software development, which is substantially more highly skilled. One part of this segment consists of branches of major computing-services or IT consulting companies (including EDS, IBM, ICL and Accenture). The other is an adjunct to non-software



electronics corporations such as Motorola and Ericsson, with operations focussed on the production of embedded software and applications for products such as mobile phones. This latter segment can be seen as an unanticipated spin-off benefit from the country's success in attracting ICT hardware sectors.

The indigenous software sector produces custom software (which is provided for individual companies), niche software (written for specific business sectors) and other software services, which are provided both for organisations and consumers.

In this segment countries with high computer penetration rates such as Sweden, Denmark, Finland, the Netherlands and the UK have higher weights than the rest of Europe, reflecting the fact that many computer services are essentially non-tradeable. Irish indigenous software companies however are highly export-oriented. Exports account for 85 percent of their revenues, compared to only one-third for UK software and computer services companies, and for between 25 and 30 percent in the cases of France and Germany.

This strong export orientation is explained by the fact that about half of Irish indigenous software firms are engaged in the development and sale of niche products in sectors such as Banking and Finance, Telecommunications and computer/internet-based training. The emergence of this product-orientation is in part ascribable to the substantial presence of MNCs *across all manufacturing and services sectors* in Ireland. Ó Riain (1997), for example, describes how some indigenous firms began by providing custom services, expanding over time into producing consultancy kits which eventually mutated into exportable products.

### *International Financial Services*

Global developments in financial services over the course of the 1980s combined to create an opportunity for a regional location like Ireland – with its advantages in terms of language, location, education and technology – to create an offshore financial services industry. The technology to set up and run international data- and fund-management centres had created an electronic market place and global deregulation meant that an increasing number of such services could be provided from beyond national borders. In response to these developments, the Irish Government in 1987 established the International Financial Services Centre (IFSC) in Dublin, with a special low rate of corporation tax of 10 percent available to licensed companies. This allowed Dublin begin to compete against established offshore centres in the Isle of Man, Luxembourg and the Channel Islands.<sup>9</sup>

By 1999, when the special 10 percent tax rate was closed off to new entrants – to be replaced from 2003 by a standard tax rate of 12.5 percent levied on all manufacturing and services companies – employment in the IFSC had grown to almost 7000 and has grown by a further 4000 jobs since then.

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<sup>9</sup> The competition was not for 'brass plate' companies, as licensing restrictions were imposed to prevent the centre being used by them. The rate of corporation tax in the Isle of Man is 10 percent (set to fall to zero by 2006) and in the Channel Islands 20 percent. Luxembourg tax law is complex but studies on US corporations have shown that the effective tax rate in Luxembourg is substantially lower than Ireland's. Hines and Rice (1994) list the Channel Islands, Cyprus, Gibraltar, Ireland, the Isle of Man, Liechtenstein, Luxembourg and Switzerland as European tax haven countries.

With intersectoral corporation-tax harmonisation, the sector has expanded beyond the IFSC site. It now employs 16,000 people and pays an estimated 15 percent of all corporation taxes collected.<sup>10</sup> Almost 450 international financial institutions operate from Dublin, including half of the world's top 50 banks and half of the top 20 insurance companies. Over 80 percent of these financial institutions are non-Irish, with American companies representing the largest segment.

Dublin specializes in back office activities, and has a particular specialisation in four niche areas—fund administration, treasury operations, corporate banking and insurance.<sup>11</sup>

Deloitte (2004) estimate the employment allocation across categories as follows:

- Funds/Asset Admin                      42 percent
- Banking                                      37 percent
- Insurance                                    21 percent

While the marketing and management of funds is handled from the world's major financial centres, the associated administration is frequently offshored. Ireland now rivals Luxembourg in the area of fund administration, while FÁS (2005) reports a slow movement up the value chain towards fund management.

Similar to fund administration, treasury management involves routine back-office tasks like handling payments and receipts and coordinating lending and borrowing between different divisions of a company. Many IFSC-based treasury operations are recognizable names in other industries, e.g. companies such as Bristol-Myers Squibb, Ericsson and Volkswagen. The Netherlands and Belgium are seen as the main competitors in the area of treasury operations

The IFSC is also a corporate banking center, providing loans to corporations and governments for very large purchases. Here Ireland competes with Luxembourg, the Isle of Man and Jersey, while Dublin has come to rival London as a leading center for aircraft leasing.

Finally, the IFSC houses a significant number of life and non-life insurers. EU regulatory changes enacted during the mid-1990s allowed life insurers headquartered in one EU country to sell insurance elsewhere in the EU. This provides the IFSC with an advantage over other offshore centres such as Guernsey and the Isle of Man, which also specialise in insurance, since these are not classified as within the EU. Ireland's international life sector in 2001 overtook Luxembourg in terms of gross premia written, while recent statistics indicated that it may now also have overtaken the Isle of Man.<sup>12</sup> In spite of this strong recent growth in life insurance, non-life insurers remain more prevalent in the IFSC.

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<sup>10</sup> A total of around 50,000 people are employed in financial services in Ireland, the vast majority of whom are involved in the domestic segment; White (2005). Our concern here is solely with international financial services.

<sup>11</sup> Most of this material on the IFSC comes from White (2005). On Ireland's competitors in each of the industry segments see Coughlan (2000).

<sup>12</sup> Finance Dublin Yearbook (2004, p 168).

### *Other Business Process Activities*

Ireland is home to leading International Services companies offering business services on a pan-European/EMEA/Global basis. The sector includes a broad range of services activities including call centres, shared services, supply chain management, professional consulting and internet based business.

The Industrial Development Agency (IDA) introduced its call centre programme in 1992.<sup>13</sup> In addition to the existing grants and tax incentive schemes, the country offered the cheapest rates in Europe for international freephone calls. The IDA's target to reach 3000 jobs by 2000 was achieved by 1996 and by mid-1998 there were around 50 call centres employing 6000 persons, of whom females comprised around 70 percent.

American firms account for over 80 percent of employment in the sector. Among the major firms which have established call centres in Ireland (in areas outside sales and marketing of IT, some of which may be classified as part of the software segment) are American Airlines, Best Western, ITT Sheraton, Global Reservations, Korean Air, Radisson Hotels, Rand McNally and UPS.

The breakdown of the Irish call centre sector is shown in Table 4.

**Table 4:** Sectoral breakdown of firms in the Irish call centre industry

<b>Sector</b>	<b>Percentage</b>
Technology	35
Travel & tourism	16
Financial services	12
Outsourcing bureaux	12
Other	25
<b>Total</b>	<b>100</b>

Source: TMA (2002), from Datamonitor (November 2000).

The IDA has promoted the low-level call centre sector in order to encourage firms which have established such operations in Ireland to add on additional functions such as financial management and software development. Already Ireland has achieved some substantial success in these "shared services" back-office activities.<sup>14</sup>

The term 'call centre' generally embraces sales and marketing shared services and information technology shared services such as online technical assistance. The remaining shared services are largely financial in nature. Among companies which have located elements of their financial administration in Ireland are the US investment bank Bankers Trust, advanced storage and retrieval firm EMC, Merrill

<sup>13</sup> Much of this material on call centres is drawn from Breathnach (2000).

<sup>14</sup> Shared services centres (called managed services centres in the United States) perform key functions for global corporations, dealing with technical support for staff and business customers as well as HR, payroll, accounting, insurance and legal, and internal communications (such as running companies' inter and intranet sites). Some are operated by outsourced suppliers, but most in Ireland are managed by the companies they serve.

Lynch, Microsoft, Morgan Grenfell, National Instruments, Novell, Scottish Amicable and home appliances firm Whirlpool.<sup>15</sup>

## **5. Educational Attainment Levels in Offshored Services in Ireland**

Table 5 below shows the proportion of the workforce in each sector of the economy that possesses a third-level educational qualification.<sup>16</sup> Of these sectoral groupings, Insurance, Finance and Business Services – the sector in which our offshored services sub-sectors are included – records the highest proportion of its workforce as having both tertiary sub-degree and degree-level educational qualifications.<sup>17</sup>

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<sup>15</sup> Fahy et al. (2002) present a case study of Whirlpool's shared services operations.

<sup>16</sup> These are based on the 2002 Census of Population returns.

<sup>17</sup> Professional Services (which is not shown independently) records higher educational attainment levels. Fairly similar results to these are reported by Prais (1995) for the UK and Germany.

**Table 5:** Proportion of the workforce, by sector, in possession of third-level educational qualification

	Percentage with sub-degree tertiary	Percentage with tertiary degree and above
Agriculture, Forestry and Fishing	8.0	3.7
Mining	7.5	8.0
Manufacturing Industries	13.4	15.5
.....Food	10.0	11.6
.....Beverages and Tobacco	14.8	23.6
.....Textiles, clothing, footwear and leather	8.1	6.9
.....Wood and wood products	8.7	5.7
.....Paper, paper products, printing and publishing	14.3	17.9
.....Chemical, rubber and plastic products	14.9	23.9
.....Glass, pottery and cement	9.1	8.5
.....Metals, metal products, machinery and engineering	16.1	17.5
.....Other Manufacturing (incl transport equipment)	11.1	7.7
Electricity, Gas and Water	12.3	17.4
Building and Construction	7.3	5.2
Commerce	11.6	9.1
Insurance, Finance and Business Services	17.5	39.7
Transport, Communications and Storage	11.7	12.1
Public Admin. and Defence	17.2	21.4
Other Services	14.3	34.7
Other Industries	6.4	9.9
Total at Work in all Industries	12.7	20.7

Source: Population Census (2002).<sup>18</sup>

Some background on the structure of the Irish tertiary education system may prove useful at this stage. While Ireland has just matched the OECD mean in terms of the proportion of the population aged 25-34 with tertiary degree-level qualifications (“tertiary A”), it far surpasses the OECD mean in terms of the proportion of the population possessing tertiary sub-degree qualifications (“tertiary B”), as seen in Table 6. These are primarily certificates and diplomas from the vocational/technological (non-university) element of the tertiary system – the Institutes of Technology. Wickham and Boucher (2004) and Barry (2005) argue that this “binary system of education” has played a crucial role in enhancing Ireland’s ability to attract foreign direct investment.

<sup>18</sup> <http://www.eirestat.cso.ie/Census/TableViewer/tableView.aspx?ReportId=1933>. The apparent discrepancy between these data and those reported in Table 6 arises for two reasons. The present data refer to those at work – who are more highly educated – while Table 6 includes those not at work. Secondly, non-university degrees are included here but do not appear to be included in the measure of “tertiary A and above” in the OECD data.

**Table 6: Educational Attainment Rates: Ireland and the OECD**

	Post-secondary non-tertiary graduation rates	Percentage of cohort aged 25-34 that has attained tertiary level B	Percentage of cohort aged 25-34 that has attained tertiary level A and above
Ireland	25.8	13	16
OECD country mean	8.5	9	16

Source: OECD (2001).<sup>19</sup>

This extra Irish throughput in tertiary education, furthermore, is largely concentrated in the scientific and business fields. In recent years, for example, around 40 percent of non-university tertiary awards have been in business studies (compared to around 15 percent for the universities), while another 40 percent have been in science, engineering and information technology (compared to less than 30 percent for the universities).

These unorthodox aspects of the Irish tertiary system are likely to account for Ireland's very high ranking in surveys of MNC executives in response to questions as to whether the educational system meets the needs of a competitive economy.<sup>20</sup> Indeed, Gunnigle and McGuire (2001), in a survey of executives of 10 major US MNCs, find that education and the skills on offer rank second in importance after the corporation tax regime in drawing these firms to Ireland. It is our hypothesis that this applies to the offshored services sectors as well as to the much more heavily-researched area of manufacturing-sector FDI.<sup>21</sup>

We now provide some further details on manpower and skills issues in the three sub-categories of services with which we have been concerned.

### *Software*

Manufacturing, localisation and distribution (MLD) of software packages accounts for about half the jobs in the foreign-owned software sector in Ireland. This is not a

<sup>19</sup> Tertiary B refers to practically-oriented and occupation-specific tertiary programmes of at least 2 years full-time-equivalent duration, while tertiary A refers to university level programmes. The post-secondary graduation rate refers to the ratio of post-secondary graduates to total population at the typical age of graduation. In Ireland the whole cohort included here are categorised as ISCED4C, i.e. in possession of a qualification which prepares participants for direct entry into specific occupations. This will include part of the Institute of Technology cohort as well as some PLC (Post Leaving Certificate) courses.

<sup>20</sup> The International Institute for Management Development (2002) for example ranks Ireland number 2 (after Finland) out of a total of 49 countries in response to this question, while the country is ranked number 3 (after Finland and Canada) out of the same 49 countries in terms of a positive response to the proposition that "university education meets the needs of a competitive economy".

<sup>21</sup> One piece of evidence supportive of the contribution of the binary third-level system is provided by FÁS (1998, footnote 2), which points out that many of the software-industry people interviewed for this study "highlighted the fact that the Irish third-level system moved relatively early (in international terms) in establishing courses that treat computing as an applied science rather than an abstract theoretical science".

particularly high-skill segment. Around 50 percent of employees in these operations are typically engaged in the relatively low-skill manufacturing stage, while around 30 percent are involved in localisation. In the case of Microsoft’s Irish operations, some 90 percent of staff involved in localisation had third-level qualifications in information technology or linguistics, though FAS (1998, page 49) suggests that “many localisation companies are now happy to recruit people who have undergone relatively short courses in specific skills, particularly for routine software testing work”. They also suggest that, as the labour market tightened, such companies, having previously recruited people into positions for which they were overqualified, have now moved towards organising work so as to differentiate between a professional tier – staffed by degree holders – and a technician tier, staffed by people with lower qualifications.

The remaining half of foreign-sector software employment is in software development, which is more highly skilled. Most workers in the indigenous software sector are also thought to be highly skilled.

FÁS (1998) reports the results of a survey of the software sector which suggests that the vast bulk of workers in the sector have tertiary educational qualifications.

**Table 7: Educational Attainment of Recent Software Sector Recruitments (%)**

	Recent tertiary graduates (%)	Tertiary graduates with experience (%)	Percent of all recruitments
<b>Higher Degrees or Diplomas</b>			
Computing	8	9	
Engineering or Other Science	3	3	
Business	1	1	
Humanities	1	0	
<b>Sub-total</b>	<b>12</b>	<b>14</b>	<b>26</b>
<b>Primary</b>			
Computing	19	13	
Engineering or Other Science	7	2	
Business	2	1	
Humanities		1	
<b>Sub-total</b>	<b>28</b>	<b>17</b>	<b>45</b>
<b>Dip or cert</b>			
Computing	9	5	
Engineering or Other Science	2	0	
Business	1	0	
Humanities		1	
<b>Sub-total</b>	<b>12</b>	<b>7</b>	<b>19</b>
<b>Other</b>	<b>6</b>	<b>4</b>	<b>10</b>
<b>TOTAL</b>			<b>100</b>

Source: FÁS (1998, page 48).

If we assume that the educational attainments rates of these new entrants to the sector are broadly reflective of all employees in the sector, we can determine the skill level of the sector relative to the average of all sectors in the economy. Most employees in

the sector are likely to be below the age of 34. We saw in Table 6 above that 13 percent of the Irish cohort aged 25-34 had Tertiary B qualifications, compared to 19 percent of software sector entrants; 16 percent of the cohort had Tertiary A qualifications or above, while over 70 percent of software sector entrants had. Therefore it is unambiguous that this is a very high-skill sector relative to the average in Ireland. Comparison with the data in Table 5 also suggests that employees are more highly educated than the average for the aggregate Insurance, Finance and Business Services sector.

One further piece of evidence, which will prove useful later in comparing educational attainment levels in software and offshored financial services, is presented in Table 8, from a survey by White (2002). The vast majority of the 49 software firms surveyed reported that more than 70 percent of their employees had third-level educational qualifications.

**Table 8:** Educational Attainment in Irish Software Sector, 2000. (Percentage of firms surveyed).

Firm Size	Proportion of workforce with third-level educational qualifications			
	<40%	41-70%	71-90%	90%+
1-10 employees	0.0	0.0	2.0	2.0
11-24 employees	0.0	0.0	4.1	8.2
25-49 employees	0.0	2.0	4.1	8.2
> 50 employees	6.1	14.3	20.4	28.6
<b>All Software MNCs</b>	6.1	16.3	30.6	46.9

Source: White (2002).

### *International Financial Services*

Data from a survey conducted by the Institute of Bankers in Ireland (1998) allow us to compare skills and staffing issues in international financial services with those in the larger encompassing financial services industry (which comprises retail credit institutions, capital markets/corporate banking, fund administration, general insurance and life and pensions).

The encompassing sector emerges as more inclined to hire directly from school or college, with these hires comprising 54 percent of new entrants to the sector in the year surveyed, as opposed to only 38 percent for the international services segment. Thus the IFSC appears to prefer more experienced workers. Of those hired directly from education, the overall sector took 22 percent from second-level education while international finance took only 11 percent. Of those hired directly from tertiary education, the ratio of those with degrees relative to those with sub-degree qualifications (certificates or diplomas) was around 2 to 1 in the case of both the overall sector and the IFSC. Thus the IFSC on all counts appears to be more high-skill than the overall financial services sector; Table 9.<sup>22</sup>

<sup>22</sup> It is interesting however that IT specialists comprise around the same proportions of all staff – between 6 and 7 percent – in both segments.



**Table 9:**

Sources of new staff recruited into Financial Services and IFSC, 1997 (%)

	All Financial Services	IFSC
Second-level school leavers	12	4
Cert and diploma holders, directly from college	15	12
Business graduates, directly from college	18	17
Other graduates, directly from college	9	5
Recruited from other organisations in Ireland	37	48
Returning from work abroad	4	10
Other	5	4
<b>Total (%)</b>	<b>100</b>	<b>100</b>
Total numbers	3798	955

Source: Institute of Bankers in Ireland (1998)

Table 10 below suggests that, of those hired directly from college, both the encompassing financial services sector and the IFSC appear to prefer recruits with sub-degree qualifications relative to degree qualifications, when compared to other sectors in the economy.

**Table 10:** Qualifications of all tertiary award recipients entering employment directly from education

	Tertiary sub-degree, as % of all tertiary	Tertiary degree and above, as % of all tertiary
Overall Financial Services	36	64
IFSC	35	65
Entering employment	23	77
Entering manufacturing	30	70
Entering Chemicals	26	74
Entering Metals and Engineering	29	71
Entering Insurance, Finance and Business Services	17	83

Source: Institute of Bankers (1998) for first two rows; HEA (1997) for the remainder.

The relatively high educational attainment level of the overall IFSC workforce however (i.e. comprising the existing stock plus those recruited directly from education as well as from other workplaces) is evident from Table 11, which presents the results of a survey of 86 IFSC firms conducted by White (2002). This shows that upwards of 70 percent of employees are in possession of a third-level educational qualification.

Comparison of Tables 8 and 11 suggests that educational attainment in the IFSC is lower than in the software sector.<sup>23</sup> The IFSC nevertheless emerges as higher skill than the average for Insurance, Finance and Business Services and as substantially more high-skill than the overall economy.

**Table 11:** Educational Attainment in IFSC Sector, 2000.  
(Percentage of firms surveyed).

Firm Size	Proportion of workforce with third-level educational qualifications			
	<40%	41-70%	71-90%	90%+
1-10 employees	5.8	4.7	12.8	19.8
11-24 employees	1.2	4.7	11.6	10.5
25-49 employees	1.2	2.3	7.0	2.3
> 50 employees	0.0	2.3	7.0	7.0
<b>All IFSC-Firms</b>	8.1	14.0	38.4	39.5

### *Call Centres and Shared Services*

It has not proved possible to access data on the educational qualifications of call-centre employees in Ireland. Some comparative data from the UK may prove useful however. A study by Holman and Wood (2002) of the UK sector suggests that some 16 percent of employees had tertiary degrees, while another 13 percent had been educated to A levels; Table 12. If a UK 'A level' qualification were taken to be equivalent to an Irish tertiary sub-degree qualification, this would suggest (by comparison with Table 5) that the UK call-centre sector is less skilled than the average sector in Ireland.

**Table 12:** Educational Attainment Levels in the UK Call Centre Sector

Type	Percent of workforce	'A' Level	Degree
Core Employees	86	10	13
Team Leader/First-Line Supervisors	9	33	20
Managers	5	27	50

Source: Holman and Wood (2002)

There are indications that the Irish sector is more high-skill than the UK sector however. A UK report by CM Insight (2004, p 160) finds that Ireland attracts more high-value, less price-sensitive contact centre activity than other offshore locations. It notes the substantial element of technical and software support in the Irish sector as well as a relatively high ratio of team leaders to agents, the latter suggesting a focus on quality and more complex (less scripted) contact centre functions.

<sup>23</sup> The results in the bottom rows of the two tables are not directly comparable, given the difference in average firm size in the two sectors. Educational attainment in the median firm-size category in software is substantially higher than in the median firm-size IFSC category, however, confirming the implication drawn.

The educational requirements of the various segments of the call-centre sector differ substantially. Table 13, which is based on data derived from an Irish recruitment-company website, lists the minimum educational entry-level standards in the various segments.<sup>24</sup>

**Table 13:** Minimum educational entry-level standards in various segments of the call-centre sector

Educational Requirements	The Tele Business Computer Sector	The Tele Business Financial Services Sector	The Tele Business Professional Services Sector	The Tele Business Reservations Sector
	(consisting of management, telesales and tech support)	(customer services)	(customer services and telesales)	(reservations)
Secondary (Leaving Cert)	30	100	17	44
FAS <sup>25</sup>	4		33	11
Tertiary sub-degree	35		33	33
Tertiary degree	31		17	11

Source: Computer and Commercial Staff Recruitment website.

From this table it appears that the low-skill segments are in Reservations and Financial Services, which from Table 4 are seen to comprise less than one-third of firms in the Irish sector.<sup>26</sup> The other two segments – comprising tele-business in the computer and professional services sectors – appear to be more high-skill than the average for the economy as seen in Table 5.

Breathnach (2000) may go too far however in suggesting that the majority of call centre workers in Ireland have third-level (and primarily degree-level) qualifications. His argument is that while many call-centre activities would require only a secondary standard of education, only third-level Irish graduates tend to have the necessary foreign-language fluency.

The data from TMA (2002) do not support the implications that Breathnach draws from this. These data suggest that about 20 percent of the sector's employees in Ireland are employed in English-language-only call centres. Of the remaining 80

<sup>24</sup> The website, <http://www.csr.ie/csr99/index2.html>, also reveals a hierarchy of starting salaries in the sector, rising progressively from customer services to tele-sales, though tele-marketing to technical support. Different segments of the tele-business sector employ these various categories of workers in different proportions.

<sup>25</sup> FÁS provides a number of training courses aimed at the tele-services sector. It also developed a joint training initiative in conjunction with Hertz Europe to address the issue of supply of agents with foreign language skills. The 36-week programme provides training in French and German and includes 12 weeks classroom training, 12 weeks placement in France or Germany (if a satisfactory level is achieved in class); and 12 weeks work placement on return to Ireland. Entry qualifications include a minimum pass level in Leaving Certificate French or German (as appropriate) within the past 2 years.

<sup>26</sup> In this, as Breathnach (1998) points out, the call centre sector in Ireland differs from the general pattern of suburban back offices in the USA, where the workforce tends to consist of older women with limited alternative work or migration options.

percent, about one-half of the agents use English only and the other half have some degree of fluency in a foreign language. The vast majority of this latter group however – around 85 percent – are found to be either native speakers who have immigrated to Ireland (5 percent) or are otherwise spending a period of time in the country (80 percent).<sup>27</sup> Only then of the remaining 15 percent of Irish national agents utilising foreign language skills would the majority need to be third-level foreign-language graduates.

### **A Note on Staff Turnover in Offshored Services**

Much of this paper has been devoted to analysis of the educational levels of employees in the offshored services sectors. All of these sectors however have unusually high rates of staff turnover. To the extent that this may imply that many entrants are over-qualified, the educational attainment data may not therefore provide an accurate picture of the educational standards actually required by these sectors.

It transpires however that the high rates of staff turnover may arise for different reasons across the sub-sectors. The labour turnover rate in software firms reached a very high 20 percent in 1996, for example, and is thought to have grown further in the immediately subsequent years; FÁS (1998, page 55).<sup>28</sup> Shortages of skilled staff in this sector, however, rather than overqualification, appears to be the main cause of the high turnover.

As FÁS (1998, page 54) reports:

“Many companies are prepared to pay well to attract staff, creating incentives and opportunities for people to leave their existing employment. While the companies they are leaving are typically prepared to pay their staff in line with market rates, many are reluctant to get into a bidding process to keep individual members of staff, partly because of the impact this would have on other staff members.”

Turnover rates are also high in international financial services and, at 16 percent, are substantially higher than the 9 percent reported for the entire Irish financial services industry. In this sector, interestingly, turnover rates among IT specialists are lower than for other specialists; Table 14.

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<sup>27</sup> Breathnach (2000) himself reports that 35 percent of the 700 workers at the Gateway personal computer sales and technical support call centre in Dublin are foreign nationals.

<sup>28</sup> The labour turnover rate measures the number of people leaving their current employment during the year expressed as a percentage of total employment at the beginning of the year.

**Table 14: IFSC Staff Turnover**

Junior - Administration/Customer Service	21%
Junior - IT Specialists	12%
Junior - Other Specialists	14%
Intermediate - Administration/Customer Service	11%
Intermediate - IT Specialists	16%
Intermediate - Other Specialists	22%
Senior - Administration/Customer Service	5%
Senior - IT Specialists	3%
Senior - Other Specialists	6%
<b>Total</b>	<b>16%</b>

Source: The Institute of Bankers in Ireland (1998)

Firms that employ greater numbers of highly skilled employees are not as affected by staff retention difficulties. This would indeed appear to suggest that IFSC entry-level staff may be overqualified and that the unchallenging and routine nature of the work, along with limited opportunities for advancement – with the exception of IT staff – creates an unstable labour pool; White (2005).

The call-centre sector internationally records an unusually high attrition rate. Staff turnover rates in European call centres are reported to be currently running at almost 26 percent.

Turnover rates in Ireland range from 37 percent per annum for telesales workers to 17 percent for technical support (which is the highest paid work in the sector); Tele Business Salaries and Skills Survey (1998). The situation is similar in Financial Shared Services Centres. Seventy per cent of respondents to a survey of the sector carried out by Fahy et al. (2002) answered that staff turnover was a major issue, with one company surveyed reporting a turnover rate of 28 percent in 1999. In the Irish case however, these high rates are ascribable not just to over-qualification and the repetitive nature of the work involved, but also to the fact that so much of the sectoral workforce is made up of foreign nationals who are interested only in temporary work in order to fund short stays in Ireland.

### **Concluding Comments**

Krugman (1997), in discussing the dramatic performance of the Irish economy over the last 15 years or so, has suggested that Ireland might be more appropriately thought of in theoretical terms as a regional rather than as a national economy, because of the extraordinary openness of its labour market to international migration flows.<sup>29</sup> In a typical national economy, labour supply creates new jobs via wage pressure. In the same way, increased educational throughput will largely be reflected one-for-one in increased educational attainment levels within the labour force.

This will not necessarily be true of the regional economy, where subsidisation of education or training can simply end up subsidising foreign economies (through the emigration of skilled labour) if increased demand for the more highly-educated labour

<sup>29</sup> A similar view is espoused by Blanchard (2002).

is not forthcoming in the home economy. Thus Markusen (1988) shows that a regional economy needs to focus on attracting industries that employ skilled labour as much or more than the provision of skilled labour itself.<sup>30</sup> For this reason, assessment of the education and skill levels of the sectors we have been analysing here is necessary in order to allow an ultimate evaluation of their contribution to Irish development.

Several key issues remain for future research. One is the question of whether Ireland has been climbing the value chain in these sectors. In manufacturing terms this typically involves becoming more deeply involved in R&D. Grimes and White (2005) note that achieving regional headquarters status represents an alternative path in the context of services, since RHQs deliver key functions such as sales, marketing and technical support.<sup>31</sup> They also note that in services moving up the value chain can be synonymous with becoming involved in and managing as much of the value-chain as possible. They note that corporate support services, even if they start off as quite low-skill, nevertheless provide opportunities for regional-based affiliates to broaden their participation by developing relationships not just with other parts of the corporation but also with key clients and customers.

This leads on to a second key topic, which is how Ireland and other currently successful services locations will manage the apparent competitiveness threat from India and elsewhere in Asia, and from Central and Eastern Europe. Within electronics hardware, for example, it is clear that global production sharing and product differentiation leaves room for existing players to co-exist with major new entrants such as China. It will be interesting to see whether such an outcome will be equally likely within offshored services.

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<sup>30</sup> Krugman states the issue slightly differently, noting that the regional perspective focuses attention on the economy's export base, as services employment - both public and private - arises largely to service that base. The bulk of Ireland's exports arises from the foreign-owned sector, which might therefore be viewed as the economy's export base.

<sup>31</sup> See Coe (2002) for example on how the service activities undertaken and organized by Singaporean-based RHQs made Singapore a strategic hub of corporate activity in Asia.

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