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Working Paper

Competitiveness implications for Ireland of EU enlargement

Centre for Economic Research Working Paper Series, No. WP02/24

Provided in Cooperation with:

UCD School of Economics, University College Dublin (UCD)

Suggested Citation: Barry, Frank G.; Hannan, Aoife; Kearney, Colm (2002) : Competitiveness implications for Ireland of EU enlargement, Centre for Economic Research Working Paper Series, No. WP02/24, University College Dublin, Department of Economics, Dublin, <https://hdl.handle.net/10197/1326>

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CENTRE FOR ECONOMIC RESEARCH

WORKING PAPER SERIES

2002

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of EU Enlargement**

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WP02/24

October 2002

**DEPARTMENT OF ECONOMICS
UNIVERSITY COLLEGE DUBLIN
BELFIELD DUBLIN 4**

Competitiveness Implications for Ireland of EU Enlargement

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September 2002

Abstract

Ten states, primarily from Central and Eastern Europe, are likely to be admitted to the EU within the next few years. The present paper assesses the competitiveness implications of this enlargement for Ireland. Four specific topics are considered: the trade effects, the implications for Ireland's ability to attract FDI, the likely levels of immigration from Central and Eastern Europe and its consequences, and the budgetary implications for the Irish Exchequer.

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Introduction

A group of new member states will be admitted to the EU within the next few years. The timing and the precise number to join in the first wave will depend on the politics of enlargement within the EU15 and on the progress made by the individual candidate countries in meeting the accession conditions.

There are thirteen formal candidates for membership; ten Central and Eastern European countries (the CEEC10), plus Cyprus, Malta and Turkey. Negotiations with the five CEE countries that opened proceedings in 1995 - the Czech Republic, Estonia, Hungary, Poland and Slovenia - may be completed by the end of 2002. Another five CEE countries began negotiations in February 2000. Of these, Latvia, Lithuania and Slovakia have joined the front runners, while Romania and Bulgaria lag behind. Cyprus and Malta are also progressing rapidly, but the opening of negotiations with Turkey remains conditional on its meeting the political criteria for accession.

Given the small size of the Maltese and Cypriot economies and the continuing uncertainty over the status of the Turkish application, economic analyses have concentrated on the implications of accession by the CEEC10. This is the position adopted in the present paper, which seeks to evaluate the economic implications for Ireland of such an enlargement.

Previous enlargements saw the accession of Ireland, Denmark and the UK in the 1970s, Greece, Spain and Portugal in the 1980s and Sweden, Finland, and Austria in the 1990s. Enlargement to embrace the CEE10 would raise the land mass of the EU by 33 percent, the EU population by 105 million (28 percent), and EU GDP (evaluated at purchasing power parity, or PPP) by 11 percent. The population increase compares to the 1973 enlargement of 31 percent. The GDP increase of 11 percent compares to the 1986 enlargement of 12 percent, and the land mass increase compares to each of the previous enlargements.

A major difference in the present case however is the much lower level of development of the current candidate countries. The per capita PPP-based GDP of the current applicants is 39 percent of that of the existing EU-15, compared to an equivalent figure of 61.5 percent for the much smaller accessions (in population terms) of the 1980s. By contrast, the enlargements of the 1970s and 1990s barely affected average incomes.

The economic effects on incumbents of these earlier enlargements pale in comparison to the likely consequences of the accession of the CEEC10, because of this large income difference and because of the size of the agricultural sector in Central and Eastern Europe. Enlargement will double the number of EU farmers and increase the area under agricultural production by one-third.

These structural differences imply that the Common Agricultural Policy and the Structural Funds programmes must be modified if the budgetary costs of enlargement are to be contained. While the budgetary implications loom large in the general European policy debate, however, the welfare consequences over the longer term are likely to be dominated by the increased trade and factor flows to which enlargement will give rise. Because of the relative sizes of the two groups of economies, the economic effects of enlargement will be much more profound for the CEEC10 than for any of the current incumbents. Amongst incumbents, the strongest aggregate-demand and immigration effects at least are likely to be felt by the Western states that border the CEEC.

Enlargement will nevertheless have important implications for Ireland. It will open up new opportunities for Irish businesses in terms of exporting, outsourcing and outward foreign direct investment (FDI). Ireland's foreign-owned sector will also benefit from the expansion of trade, though the environment in which the country competes for inward FDI will become more competitive. Enlargement will also open up the possibility of labour migration from CEE countries. Most of the current EU15 member states are likely to phase this in over a ten-year transition period, on the assumption that continuing convergence in living standards between the CEEC and the EU15 will reduce the desirability of migration. The current stance of the Irish authorities is that no such

impediments to labour mobility will be raised, though they retain the right to review this position should labour-market conditions change.

The present paper deals with each of these issues in turn. Section 1 considers the trade effects and assesses the opportunities afforded by enlargement for outsourcing and outward investment. Section 2 considers the implications for Ireland's foreign-owned sector and for the country's ability to continue to attract technologically-advanced foreign industry. Section 3 analyses the likely pattern of migration flows and its consequences, and Section 4 assesses the implications of enlargement for both the EU budget, as it impacts on Ireland, and for the Irish exchequer.

1. Trade, Outsourcing and Outward FDI

Ireland currently trades over 40 times as much with the rest of the EU as it does with the CEEC10, as shown in Table 1. Yet the EU economy is only 20 times larger than the CEEC10 when evaluated in nominal terms, which is the correct measure to be used in this comparison. This summary measure suggests that there are large trading opportunities yet to be exploited.¹

Ireland's main trading partners among the CEEC are Hungary, Poland and the Czech Republic. Trade with each of the other states, and with Malta and Cyprus, is very small by comparison. Ireland runs a trade surplus with most countries other than Hungary, with which it has a large deficit that is driven largely by imports of Office and Data Processing parts and equipment, a perhaps surprising point that will be discussed in further detail later.²

¹ Brulhart and Kelly (1999), however, using a gravity model to take account of trade barriers represented by distance and other factors, find that the potential for trade expansion is relatively modest unless the forecasted partial income convergence of the CEECs on the EU is factored in.

² It also tends to run a very much smaller deficit with Latvia, largely driven by imports of Wood and Petroleum Products.

Table 1: Irish Trade with CEE Countries and with the rest of the EU

	£ million			
	1999	1999	2000	2000
	Exports	Imports	Exports	Imports
Poland	199	69	284	81
Czech Rep	154	49	273	86
Hungary	128	192	177	231
Rest of CEE	105	58	200	109
Total EU			40296	23667
CEE/EU			43	47

Source: CSO Trade Statistics

The growth in trade is also of interest. Table 2 shows that Irish exports to the CEEC have grown more than 40-fold over the 1990s, while imports have grown even more rapidly. Irish trade relations with the region have expanded much more strongly than have the UK's for example, as the table also illustrates.

Table 2: Growth in Trade with Eastern Europe: Ireland and the UK Compared

	\$000	\$000	\$mill	\$mill		
	1990	1990	1999	1999	1999/1990	1999/1990
	Exports	Imports	Exports	Imports	Exports	Imports
Ireland and Eastern Europe	16242	3969	728.7	445.8	45	112
UK and Eastern Europe	417985	160132	4495.5	3873.6	11	24

Source: UN International Trade Statistics Yearbook (New York)

Note: Eastern Europe comprises a somewhat different set of countries than the CEE10, since there were no separate data for trade with the Baltic States for example in 1990.

Trade liberalisation of course has sectoral as well as aggregate implications, which is the issue to which we now turn. Most bilateral tariffs on manufacturing trade between the EU and CEEC have already been removed under the terms of the Europe Agreements, though impediments to trade in agriculture and food processing remain. Accession will liberalise this dimension of trade and lead to the harmonisation of external tariffs. It will also allow the CEE countries access to the Single European Market.

The customs union dimension, it is generally agreed, will lead to the expansion of the food processing sector in CEE countries at the expense of food processing in the EU15; Francois and Rombout (2001), Lejour et al. (2001). The mechanisms generating this prediction are as follows. Current EU export subsidies are larger than for the CEEC.³ Removal of export subsidies between the two sets of states will reduce EU15 exports to the CEEC. A reduction in the higher CEE external tariff on agricultural imports will increase the competitiveness of the CEE food processing sector, while the removal of EU tariffs on CEE products is anticipated to increase CEE exports to the EU15.⁴ We deal below with the precise implications these developments might have for the Irish food processing sector.

The second trade effect comes about as a result of CEE accession to the Single Market. Since this entails fiercer competition on firms' home markets while enhancing firms' competitiveness on foreign markets, it will typically be beneficial for sectors that are already export-intensive. All studies to date agreed that CEE sectors such as textiles, clothing and footwear stand to benefit, generally to the detriment of the Southern EU member states. The major sector to expand among the EU15 is predicted to be Machinery and Equipment, in which the EU currently has a strong trade surplus with the CEEC. This will be further expanded by increased investment levels in the new EU member states.⁵

Studies disagree on the implications for the motor vehicles and transport sector, with some such as Baldwin, Francois and Portes (1997) suggesting that this sector will expand in the EU15 will gain while other such as Lejour et al. (2001) suggest that it will contract. The latter prediction we regard as incorrect as the Transport Equipment sector in the CEEC has been developed in recent years behind high tariff barriers, which will obviously disappear as a consequence of enlargement; Barry (2002).

³ Table 3.1 of Lejour et al. (2001).

⁴ Some more disaggregated studies predict that the CEECs will gain in sectors that are abundant in land and unskilled labour while affording opportunities for the skill-intensive segments of the EU food processing sector; Stolwijk (2000).

How will the individual EU incumbent countries fare according to this preliminary analysis? The effects will depend on the importance of these individual sectors in each incumbent country. To surmount transfer-pricing problems we evaluate this in employment terms. The data in Table 3 show the importance of each of these sectors in each country's manufacturing employment relative to the sector's importance in overall EU manufacturing employment.⁶ Each cell therefore measures, for sector *i* and country *j*, $(L_{ij}/L_j)/(L_i/L_{EU})$. We will refer to these as measures of a country's "revealed comparative advantage".⁷

Table 3: EU15 "Revealed Comparative Advantage" in Particular Sectors

	Transport Equipment (Nace 34+35)	Machinery and Equipment (Nace 29)	Food Beverages and Tobacco (Nace 15+16)	Textiles Clothing and Leather (Nace 17-19)
Belg+Lux	0.79	0.62	1.30	0.93
Denmark	0.50	1.54	1.63	0.41
Germany	1.24	1.35	0.72	0.42
Greece	0.70	0.38	1.90	2.31
Spain	0.81	0.60	1.43	1.29
France	1.20	0.75	0.99	0.89
Ireland	0.30	0.55	1.79	0.98
Italy	0.94	1.21	0.69	1.78
Austria	0.50	1.09	0.98	0.85
Portugal	0.40	0.38	1.05	3.60
Finland	0.44	1.25	1.00	0.48
Sweden	1.30	1.30	0.83	0.15
United Kingdom	1.02	0.83	1.19	1.05
Netherlands	0.58	0.98	1.48	0.41
Total EU15	1.00	1.00	1.00	1.00

Source: Own calculations.

This analysis suggests that Germany will do best as it has a strong comparative advantage in the EU sectors likely to expand and a low presence in the EU sectors which are likely to fare worst. The Cohesion countries, on the other hand - Greece, Spain, Portugal and

⁵ The material in this paragraph is based on Lejour et al (2001) and Baldwin et al. (1997).

⁶ These data depict averages over the years 1995-97, the latest years for which the Daisie database gives data for the entire EU.

Ireland - will fare worst according to this analysis because they have a comparative advantage in sectors likely to fare poorly while not having a strong presence in the sectors likely to fare best.

Barry and Hannan (2002a) have shown however that it is important to distinguish between foreign and indigenous industry in such comparative advantage analyses. If Ireland has a comparative advantage in some sectors because of the strong presence of foreign industry in the economy, this will serve as an inaccurate predictor of future developments in sectoral structure if the country fails to retain these foreign-owned sectors.

Fortunately we do not need to redo the analysis for each EU country as foreign industry is much less important in other EU countries as it is in Ireland.⁸ Replacing the numbers for total employment in Ireland with those for indigenous industry alone, and redoing the analysis generates the results reported in Table 4.

**Table 4: “Revealed Comparative Advantage”,
Irish Manufacturing and Indigenous Industry Compared**

	Transport Equipment (Nace 34+35)	Machinery and Equipment (Nace 29)	Food Beverages and Tobacco (Nace 15+16)	Textiles Clothing and Leather (Nace 17-19)
Ireland (all industry)	0.30	0.55	1.79	0.98
Ireland (indigenous)	0.41	0.53	2.48	1.03

Source: Own calculations from Daisie database and Irish Census of Industrial Production.

⁷ Revealed comparative advantage is conventionally measured by applying this formula to export rather than employment data. We use employment data to surmount the transfer pricing problems that arise in the Irish case, and also to allow us distinguish later between Ireland’s indigenous and foreign sectors.

⁸ Tables C.4.1 of the OECD (2001) publication Science, Technology and Industry Scoreboard, shows that foreign affiliates comprise 48 percent of Irish manufacturing employment. France is next highest at 28 percent, while the equivalent figures for the UK and Germany are 18 percent and 6 percent respectively.

These adjustments show that indigenous industry has a stronger presence than foreign industry in the EU sectors predicted to do badly, and has a weaker presence in the heavy capital goods sector that analyses are agreed is the EU sector that is likely to do best as a consequence of enlargement.

The international analyses from which the above sectoral predictions are drawn do not consider the specific circumstances of the various EU incumbents but instead treat them as a single group. One important point can be made about Ireland's food processing sector however, which is, in employment terms, both the most important indigenous industry and the most important manufacturing sector overall. This sector relies primarily on local agricultural inputs, as evidenced by the fact that it is the sector with the highest share of domestic materials inputs as a proportion of gross output. This tends to be the case internationally also. Irish agriculture produce is different from that in the CEE countries however. The vast bulk of Irish output is of beef and dairy products, with cereals comprising only a small proportion.⁹ In Poland, on the other hand, only 20% of agricultural Gross Value Added comes from livestock as opposed to crop production; in Hungary the figure is 25%, in Slovakia 33% and in the Czech Republic 50%. While milk production (along with pork) is important in the Czech Republic furthermore, in both Hungary and Poland pork and poultry are the most important livestock activities; Henrichsmeyer et al. (2000)

It can be surmised therefore that Irish and CEE food processing are not in direct competition. The output of the Central European EU incumbents, on the other hand – countries such as Germany and Austria and to a lesser extent France – is similar to that of the CEE countries. This is confirmed by Ferto and Hubbard (2001, page 6) who show that Irish-Hungarian trade in agri-food products is primarily inter-industry, as is Hungary's food trade with Italy, Spain and Greece, while that between Hungary and Austria, the Netherlands, France and Germany is primarily intra-industry. While the Irish sector may suffer alongside other EU incumbents by having export subsidies withdrawn,

⁹ For Ireland, Matthews (2000) shows that, for 1999, cattle accounted for 33% of gross agricultural output, milk for 35%, and crops, pigs, sheep and other for 14%, 6%, 5% and 8% respectively.

therefore, the growth of the CEE sector will not damage the Irish sector nearly as much as it will certain other EU states. In fact, if accession yields the expected growth benefits to the CEE countries, Irish food processing appears well-positioned to gain.¹⁰

The conventional predictions that EU15 Food Processing and the Textiles, Clothing and Footwear sectors will suffer also ignores the possibility of strategic responses on their part. We now briefly consider these issues – focusing first on outward FDI and then on outsourcing – again with a particular focus on Ireland.

Table 5 shows that the major sectors accounting for overseas acquisitions by indigenous Irish firms are (i) Financial Services, (ii) Construction and Property, (iii) Food and Agribusiness and (iv) Print, Paper and Publishing. While the importance of Irish Financial Services firms in overseas acquisitions reflects international norms, the same cannot be said for the other three sectors. Given the importance of agribusiness within Irish indigenous industry, where Food Drink and Tobacco accounts for 27 percent of indigenous manufacturing employment compared to 12 percent of total EU15 manufacturing employment, it is not so surprising that this sector should play a greater role in Ireland's outward FDI than is the case for the rest of the EU. The other two sectors, Construction and Print, Paper and Publishing appear to play a disproportionate role in outward FDI from Ireland however.¹¹

¹⁰ This more detailed account of Irish food processing contradicts the simulated prediction of Lejour et al. (2001, page 23) that “food processing declines in all EU countries”.

¹¹ For more on this see Barry, Gorg and McDowell (2002).

Table 5: Cross-Border M&A Activity by sector, average annual share 1993-1999: (i) by EU firms, (ii) with CEE countries and (iii) by Irish indigenous firms

Sector	Cross-border M&A purchases by EU firms worldwide	Cross-border M&A sales in Central and Eastern Europe	Cross-border M&A purchases by Irish firms
Food, Drink and Agribusiness	5.9	17.00	17.5
Print, paper and publishing	2.8	0.52	16.2
IT, Telecommunications and Electronics ¹²	5.1	3.75	4
Chemical and pharmac.	14.4	4.58	9.5
Other Manufacturing	24.2	21.25	5.8
Construction, property	1	0.53	22.2
Financial services	32.3	25.50	22.5
Services (consulting, retail, wholesale etc.)	14.3	26.87	2.3
Total	100	100	100

Source: Barry, Gorg and McDowell (2002) from UNCTAD (2000) and CFM Capital *Acquisitions Survey* (various years).

Irish firms have clearly developed valuable proprietary assets in management skills, experience and reputation in these sectors, and should be well-positioned to develop these assets further in the expanding markets of Central and Eastern Europe. Table 6 indicates that they have already begun to do so.

Table 6: Acquisitions by Irish Indigenous Firms in Central and Eastern Europe

Year	Bidder	Target	Country	Sector	Value €000
1993	Golden Vale	Vonk Pol	Poland	Food and drink	5969
1996	IWP plc	Polbita (60%)	Poland	Distribution	3683
1997	AIB	WBK to 60.1%	Poland	Financial Services	55118
1998	CRH	Holding Cement Polski	Poland	Construction & property	29210
1998	Kingspan	Sunip	Czech	Construction & property	8255
1998	AIB	Chase Fund Mgt Polska	Poland	Financial services	N/D
1999	AIB	Bank Zachodni (80% stake)	Poland	Financial services	563499
1999	CRH	Cementownia Rejowiec	Poland	Construction & property	28105
1999	CRH	Falbud	Poland	Construction & property	N/D
1999	CRH	Mirbud (72.5% stake)	Poland	Construction & property	N/D
1999	M'facturers Services (MSL)	Phillips (Polish PCB division)	Poland	IT & telecommunications	N/D
2000	Barlo Group	PSC	Slovakia	Print, paper & packaging	13589
2000	CRH	Gozdnica	Poland	Construction & property	7239
2000	CRH	Termo-Organika	Poland	Construction & property	N/D
2000	CRH	Polbet (75%)	Poland	Construction & property	N/D
2000	CRH	Creg (51%)	Poland	Construction & property	N/D
2001	CRH	PRD Budostal	Poland	Construction & property	N/D

Source: Chapman Flood Mazars acquisition surveys.

Note: N/D indicates value not disclosed.

¹² This sector comprises Electrical and Electronic Equipment and Precision Instruments.

Nor is enlargement necessarily detrimental to the EU15 Textiles and Clothing sector, given the possibility of outsourcing to CEE countries. Outsourcing entails splitting up the production process and importing intermediates which had formerly been sourced domestically. This process allows for increased specialisation, generating further gains from trade liberalisation. Austria's proximity to the CEE candidate countries means that outsourcing has advanced particularly rapidly in its case, and it has been found to be particularly important in less skill-intensive sectors including Wood Products and Textiles; Egger et al. (2001).¹³ They find it to have been an important source of total factor productivity growth in these sectors, though overall welfare effects depend on the extent of labour-market flexibility in the outsourcing countries since it can otherwise lead to unemployment. Other studies such as Anderton and Brenton (1999) find that outsourcing leads to an increase in both the wage-bill share and the employment share of skilled workers in companies located in the countries engaged in outsourcing. It therefore represents a step upwards on the ladder of comparative advantage.

2. Implications for Inward FDI

Enlargement will considerably enhance the attractiveness of the CEE countries as a location for export-oriented foreign direct investment, and as such will allow them compete more strongly for such investments. This will arise even though there is already almost complete free trade in manufactures between the EU and the CEEC.

Foreign investors are unlikely to see free trade as equivalent to EU membership for a number of reasons. First is the fact that efforts to remove any remaining non-tariff barriers are likely to be pursued more vigorously in the case of intra-EU trade. Secondly, accession will increase the confidence of foreign investors by allowing for the possibility of appeal beyond the courts of the associated countries to those of the European Union in the event of legal disputes arising. Thirdly, EU membership serves as some guarantee of transparency in the legal and business environment because of the *acquis communautaire* and the culture of checking the probity of Structural Funds

¹³ Proximity is also generally found to be an important factor behind outsourcing however, suggesting that Ireland's links with the CEEC along this dimension are unlikely to reach Austrian levels.

expenditures, and fourthly, entry to the Single Market will fully remove customs frontiers and trade barriers associated with differing technical standards, and will allow full access to government procurement contracts throughout the EU. For all of these reasons, accession is likely to represent as dramatic a change in the CEE climate for foreign investors as it did in the Irish case in 1973; Barry (2002).

Will Ireland compete directly with the CEE countries for foreign investment? There is some possibility that this could arise. A number of them have followed Ireland's lead in offering low rates of corporation tax, and the more advanced ones do not differ substantially from Ireland in terms of the skill levels of the population, while labour costs in CEE countries are very much lower. Furthermore, the productivity level of the workforce is arguably *endogenous*, reflecting success or failure at attracting FDI, rather than an *exogenous* factor that determines the likelihood of success or failure in this regard. Upon accession, several at least of the CEE countries will have equally easy access to the high-income markets of Western Europe and are likely to enjoy equally stable macro policy environments and equivalent regulatory and public administration systems. This opens up the possibility that they might compete directly with Ireland for the type of FDI that Ireland has been successful in attracting thus far; Barry and Hannan (2001).

As against this however, previous episodes of trade liberalisation in Europe have increased the pool of FDI both from within Europe and from outside; Dunning (1997a, 1997b). The goods produced by multinational firms also tend to have relatively high income elasticities of demand so that the expected growth in the CEEC10 consequent on enlargement should generate further flows of FDI into and within the newly expanded EU; Barry and Hannan (2002b). A further relevant detail is that the Single Market liberalisation was associated with an expansion in the average number of plants that the leading multinational firms in the EU maintained. Among such firms with plants in Ireland for example, the average number of other EU countries in which they maintained plants rose from 3 in 1987 to 5 in 1993; Pavelin (2000). This suggests that the development of the Single Market was associated with a further fragmentation of the

production chain. If this proves to be the case it will be efficiency-enhancing and should operate to the further benefit of Ireland's foreign-owned industry.

What is the evidence on this so far? Some indications can be gleaned from an analysis of Ireland's trade linkages with CEE countries in the sub-sectors of Irish manufacturing that are predominantly foreign-owned. The trade (SITC) sectors that are largely foreign-owned, according to the Irish output and employment data, are: Pharmaceuticals (SITC 54), Office and Data Processing Equipment (SITC 75), Telecommunications Equipment (SITC 76), Electrical Machinery, Apparatus and Appliances (SITC 77) and Professional and Optical Instruments (SITC 87/8).

Ireland has a substantial trade surplus against each of the CEE countries in Pharmaceuticals and Professional and Optical Instruments; Tables 7a and 7b.¹⁴ Office and Data Processing is different. Here Ireland has a strong trade surplus against each of the economies other than Hungary, with which it has a large deficit. The reasons for this are interesting and will be discussed below. A similar though less dramatic situation prevails in Telecommunications. In Electrical Machinery and Equipment Ireland ran a deficit against Poland in 1999 and against the Czech Republic in 2000.

Table 7a: Ireland's trade with selected CEE countries in Ireland's foreign-dominated sectors, 1999

1999 (euro 000)	Hungary		Czech Rep		Poland		Estonia	
	Ir X	Ir M	Ir X	Ir M	Ir X	Ir M	Ir X	Ir M
Total trade	162,586	243,714	203,169	62,662	254,021	87,612	9851	6427
54 (Md/pharm)	3305	1182	5769	60	11,148	13	174	0
75 (ODP)	43,871	210,542	81,372	2858	100,234	2512	5713	60
76 (Telecomm)	2214	13,088	44,140	6747	12,040	6934	488	23
77 (Elec)	10,926	6281	3239	2618	4010	6748	273	1
87/8 (Prof/opt)	742	224	1918	107	1230	132	95	0

Source: CSO Trade Statistics

¹⁴ We include data on Estonia as well as on Ireland's main trading partners in the region given the emerging strength of its telecommunications sector, based largely on overseas production by Finnish firm Nokia.

Table 7b: Ireland's trade with selected CEE countries in Ireland's foreign-dominated sectors, 2000

2000 (euro 000)	Hungary		Czech Rep		Poland		Estonia	
	Ir X	Ir M	Ir X	Ir M	Ir X	Ir M	Ir X	Ir M
Total trade	224,356	299,658	346,546	109,862	361,020	102,625	25,669	15,831
54 (Md/pharm)	5145	1310	12414	118	18,973	14	106	1
75 (ODP)	49,485	240,031	100,623	5802	130,058	1982	6949	76
76 (Telecomm)	3229	19,952	119,621	13,768	25,090	7455	654	975
77 (Elec)	38,985	15,022	6678	8006	9965	8525	7525	323
87/8 (Prof/opt)	512	389	2499	118	1847	177	31	0

Source: CSO Trade Statistics

We will concentrate primarily on Irish-Hungarian trade links in Office and Data Processing Equipment (SITC Division 75), as this is Ireland's main export sector, while Hungary has the most advanced foreign-owned and export-oriented ODP sector amongst the CEE countries.

Ireland had an overall trade surplus in the Office and Data Processing sector (SITC Division 75) in the late 1980s and this situation continues to prevail today. Hungary by contrast had a trade deficit in the earlier period, but runs a surplus now with the rest of the world, with a substantial surplus also against Ireland. The proposition we want to explore is whether Hungary's growing strength is threatening Ireland's position in the ODP sector.

Looking at Ireland's trade with the rest of the world in Office and Data Processing Machinery, but disaggregated now down to 5-digit SITC headings, we see that the important import and export sectors (i.e. comprising exports or imports of over 1 billion euro in any of the years 1999, 2000 or 2001) in recent years are as shown in Table 8, while the equivalent position for 1990 (for sectors trading more than £100 million at the time) before the Hungarian computer sector began to develop was as illustrated in Table 9.

Table 8: Ireland's external trade in SITC Division 75 (Office and Data Processing Machinery), recent period

SITC heading	Exports		Imports
752.20	√	>	√
752.30	√		
752.60			√
752.70	√	=	√
752.90			√
759.97	√√	>	√√

Source: Unpublished CSO Trade Statistics

Legend: A √ implies an important sector; √√ implies the most important export and/or import sector, and > implies exports greater than imports.

Table 9: Ireland's external trade in SITC Division 75 (Office and Data Processing Machinery), 1990

SITC heading	Exports		Imports
752.20	√		
752.30	√	>	√
752.60			√
752.70			√
752.90			
759.97	√√	>	√√

Source: Unpublished CSO Trade Statistics

Legend: A √ implies an important sector; √√ implies the most important export and/or import sector, and > implies exports greater than imports.

Thus Ireland has remained a net exporter of segments 752.20, 752.30 and particularly 759.97, while tending to be a net importer of 752.60, 752.70 and 752.90.

Ireland runs an overall trade surplus with the rest of the world in SITC 752 and 759, while Hungary runs a surplus with the rest of the world in 752 and a deficit in 759. It comes as little surprise therefore that the vast bulk of Irish imports from Hungary are in SITC 752.60 and SITC 752.70, sub-sectors in which Ireland has always tended to run trade deficits with the rest of the world, while the vast bulk of Ireland's exports to Hungary and the other CEE countries are in SITC 759.97, which is Ireland's major export sub-sector in the ODP industry. This suggests that Ireland's trade with Hungary in ODP-

related products are in complementary rather than substitute goods; i.e. that Ireland and Hungary form part of the same value-added chain in these products.¹⁵

Rather than displacing Ireland, Hungary has instead displaced other countries in entering the value-added chain of which Ireland's foreign-owned sector comprises one part.¹⁶

What of the Ireland's other foreign-dominated sectors? In Telecommunications, the Czech Republic is Ireland's leading CEE export market, while Ireland again has a trade deficit with Hungary in these products. The bulk of Ireland's exports in this case arise in subsectors 764.17 and 764.93 while most of Ireland's imports from Hungary are in subsector 763.81, again suggesting that Ireland and Hungary are producing complementary rather than competing products.

In Electrical Machinery, most of Ireland's exports go to Hungary but the country has run trade deficits in the recent past with both the Czech Republic and Poland. Analysis of the disaggregated data again shows that Ireland's exports to CEE countries and imports from these countries tend to be in different sub-sectors.

These data indicate that fears of direct competition between Ireland and the CEE countries within sub-categories of FDI may be overstated. One cannot be overly sanguine about this however as we know from the analysis of pre-EU accession Irish data that the measures of revealed comparative advantage which underlie this relatively optimistic assessment will not necessarily serve as accurate predictors of the post-enlargement environment if the pattern of FDI flows changes; Barry and Hannan (2002a).

If the more pessimistic scenario in which CEE countries divert FDI flows away from Ireland does come to appear likely, what steps could the Irish authorities take to counter

¹⁵ In terms of Irish-Hungarian intra-industry trade in section 759.97, the unit values (per tonne) have been consistently higher for Irish exports, indicating the simultaneous import of lower-quality and export of higher quality products within Ireland's main export sub-sector.

¹⁶ As to which countries were displaced: in 1989/90 43 percent of imports to Ireland of SITC 752.60 and SITC 752.70 products came from Western Europe, 32 percent from the US and 25 percent from Asia. In

the threat? One part of the required response would focus on cost competitiveness. It is clear that a major factor behind increased wage demands in Ireland in recent years is the price of housing. The government could consider more radical solutions to the problem than were embraced in the various Bacon reports on house prices.¹⁷ The other elements of the response are in more traditional areas of industrial policy. If the computer sector for example appeared to be in danger of relocating dramatically to some of the new EU member states, the development agencies could seek to narrow Ireland's specialisation into certain niche stages of the production and development process. The other necessity would be to focus more strongly on capturing new sunrise industries as they emerge into the international arena, which is consistent with the strategy advocated in the Forfás document *Enterprise 2010*.

3. Migration Issues

Enlargement brings with it the possibility of substantial migration flows from CEE countries to the EU15. Most studies that have been carried out suggest however that the inflow of migrants will in fact be quite modest for countries other than Germany and Austria, and that even in these latter countries the economic effects will not be substantial. Nevertheless, the EU incumbents generally favour only a gradual opening up of labour markets, in the knowledge that ongoing convergence in living standards will make migration a less desirable option. There is indeed a precedent for such a transition period; while Greece acceded to the EU in 1981 and Spain and Portugal in 1986, labour mobility was restricted until 1988 in the former case and until 1992 in the latter.

Estimates of likely migration patterns take into account income differences, distances and traditional ties between sending and receiving economies, the states of the relevant labour markets, the demographic profile of the home-country population, and the existence of emigrant networks. On the basis of analysis of previous migration experiences between e.g. Southern and Northern Europe or Eastern and Western Germany, results are then

2000/01 by contrast, 39 percent came from Western Europe, only 8 percent from the US, 50 percent from Asia and 3 percent from Hungary. This sub-sector of industry was therefore migrating from west to east.

¹⁷ One such is to increase densities considerably by easing height restrictions in new housing developments, and to build up state-owned land banks purchased at non-rezoned agricultural-use prices.

extrapolated, *mutatis mutandis*, to the post-accession situation prevailing between the CEEC10 and the EU15.

The percentage of the population of the CEEC10 of employable age is generally higher than is the case for Germany, current unemployment rates are rather similar, and income and wage differences are of course large. Studies generally find that the largest emigration rates can be expected from Poland, Romania and Bulgaria, mainly because of their relatively high income disadvantages. Of these, the Poles are generally better prepared for emigration, in terms of educational qualifications and access to emigrant networks.

Consensus estimates suggest that no more than 3 million Central and Eastern Europeans will migrate to Western Europe over the next 15 to 20 years. This would comprise 1 percent of the EU population and 2 to 3 percent of the CEEC population.¹⁸ Studies indicate a maximum of 335,000 immigrants to the West in the first year, falling to an annual flow of 100,000 in the medium term, based on an assumed convergence of 2 percent per annum between CEE10 and EU income levels and no strong changes in unemployment differentials. Most of these inflows, furthermore, will go to Germany and Austria, which are the end location for over 80 percent of CEE migrants at present.

On the basis of the Irish numbers however, these studies appear to us to underestimate the likely immigration flows. By the early 2000s CEE immigrants already comprised around 0.7% of the Irish population, even though immigration rules were quite restrictive.

There were over 15,500 CEE immigrants on work permits in 2001 while there had been a cumulative 11,500 applications from CEE citizens for refugee status between 1998 and 2002.¹⁹

¹⁸ Boeri et al. (2000); Fertig and Schmidt (2000); Bauer and Zimmermann (1999); Lejour et al. (2001).

¹⁹ By contrast Boeri et al (2000; part A, page 127), the most widely cited study on the immigration implications of enlargement, predict the stock of CEE resident in Ireland to rise from a figure of 200 that they quote for 1998 to a total of 900 by 2030!

Table 10: CEE Immigration to Ireland

	Work permits issued 2001	Applications for Asylum 1998-2002
Bulgaria	518	410
Czech	1454	735
Estonia	1072	164
Hung	557	46
Latvia	4365	223
Lith	2909	638
Poland	2497	1400
Romania	1776	7763
Slovakia	465	193
Slovenia	11	0
Total CEE	15624	11572

Data sources: Work permit numbers from Department of Enterprise, Trade and Employment; asylum seeker numbers from Department of Justice.

The impact of immigration on host-country labour markets and incomes per head will depend primarily on immigrant skill levels relative to the indigenous population. If skill levels are equivalent, then with international capital mobility the effects are minimal. If immigrants are less skilled, the distribution of income becomes less equitable as downward pressure is exerted on the unskilled wage. Unemployment may also rise, as it tends to be concentrated among the less skilled. The net fiscal costs of immigration will also be larger as unskilled immigrants use more government services and pay less tax. All of these effects are reversed of course if immigrants are more highly skilled than the indigenous population, though it must be noted that immigrants frequently work in occupations that do not fully employ their qualifications.

The studies cited above suggest that these effects on EU15 labour markets, whether positive or negative, will all be small, because of the modest increase in population size envisaged. There will also be a modest drop in the EU15 terms of trade because of the expansion of output that immigration will generate. Several studies suggest that German

GDP per head would fall by only 0.8 percent even if all CEE immigrants were low skilled.²⁰

These studies, understandably, do not focus much attention on Ireland, given that they do not predict substantial flows of workers into this country. Immigrant flows into the Irish labour force over the 1990s are known to have been relatively highly skilled, however. Suggested reasons for this include the fact that more highly educated people will have more information about Ireland as a destination, and relatively high income inequality levels may attract a higher ratio of skilled workers. The skill mix in turn has been found to have contributed to the slowdown in earnings inequality growth.²¹ One can only speculate as to whether this same skill mix will continue to prevail upon EU enlargement.

One finding from Germany that may be of interest however, given current cost over-runs in implementing the National Development Plan, is that temporary migration possibilities afforded to CEE construction workers were found to have increased competition substantially in the sector through increased subcontracting to CEEC firms; Boeri et al. (2000).

4. Macroeconomic and Budgetary Issues

Some commentators have suggested that the scale and effects of the CEEC10 enlargement can be gauged by reflecting on the experience of German reunification, implying that enlargement might involve substantial deficit spending and rising interest rates. This is most unlikely to happen because the scale of budgetary support offered will be much less than in the case of German reunification.

Several analyses have come up with estimates of a net cost of enlargement to the EU budget of around 20 billion euro per annum. The Berlin summit of 1999 earmarked a sum of 14.2 billion euro (in 1999 prices) for accession-related expenditures in 2006. This

²⁰ Bauer and Zimmermann (1999); Lejour et al. (2001).

²¹ Barrett et al. (2000).

would leave another 12.8 billion euro for further potential expenditures without violating the existing ceiling on the EU budget, which is set at 1.27 percent of EU GNP.

The main expenditure items in the EU budget are the Common Agricultural Policy, accounting for around half of the budget, and the Structural (and Cohesion) Funds which account for a further 30 percent or so. Negotiations are ongoing as to how the candidate countries will be treated on both these issues. The Commission wishes to cap structural assistance to any accession country at 4 percent of its GDP, for example, and to commence direct income subsidies to CEE10 farmers at 25 percent of those paid to farmers in existing EU member states, to be phased in to reach parity over a 10-year period.²²

The 20 billion euro estimate is broadly consistent with this position. Baldwin, Francois and Portes (1997) assume that Structural Funds expenditures will be capped at 5 percent of CEE GDP.²³ If average CAP payments per EU farmer were extended to CEE farmers, the cost could come to around 40 billion euro (in 1994 prices). The productivity of CEE agriculture is very low however, so if payments were allocated per hectare instead the cost would be reduced substantially, to around 10 billion euro for the Visegrad 4 (Czech Republic, Slovakia, Hungary and Poland). Summing these lower costs and subtracting a contribution of 1 percent of candidate countries' GDP generates a figure of less than 20 billion euro for these 4 countries; Baldwin, Francois and Portes (1997).²⁴

An alternative approach is followed de la Fuente and Doménech (2001). They calculate that the redistributive impact of the total EU budget is equivalent to a subsidy or tax of 5.76 percent of the difference (in purchasing power terms) between an EU citizen's gross income and EU average income. If this degree of redistribution were maintained and

²² In addition, it argues that reference levels for quotas should be set so as to reflect actual production levels in the period 1995-1999 (as opposed to potential levels).

²³ If Structural Funds payments were instead allocated per capita at around Greek and Portuguese levels, transfers would amount to between 10 and 15 percent of GNP for the four or five richest CEE countries, and to substantially more for the poorer states.

²⁴ It is important to note however that regardless of agreements reached in the near future over reform of the CAP and Structural Funds programmes, further renegotiations will occur in the wake of EU

extended to new member states the required transfers to CEE countries would sum to 19.5 billion euro or one-quarter of one percent of EU15 GDP; CEPR (2002).

Based on the current sharing of budgetary costs and benefits across EU member states, Ireland's contribution would be around 200 million euro, which is quite manageable.²⁵ The cost to Ireland escalates dramatically however when costs and benefits are redistributed within the EU in line with current income levels. It is well known that Germany bears a disproportionate share of the current burden while countries like Ireland and France contribute substantially less than the figure warranted by their current income levels. Over time it has to be envisaged that a more equitable sharing of the burden will be negotiated among EU member states. de la Fuente and Doménech (2001) calculate that Ireland is currently oversubsidised to the tune of 2 billion euro per annum. Given that the budgetary costs of enlargement will raise the profile of this item on the EU agenda, there may be a very substantial change over time in the flow of funds between Ireland and the rest of the EU.

The implications of these developments for the Irish exchequer will depend on how CAP reform proceeds. The present operation of the CAP entails a subsidy to farmers from Irish consumers as well as EU taxpayers.²⁶ This element of income redistribution is not done via the Irish exchequer, and its removal as part of CAP reform would not have exchequer implications. Redistributing the burden of agricultural subsidies back onto member-state governments would have major implications however.

The temporal dimension to these issues also needs to be borne in mind. Structural funding to CEE countries will be phased in only gradually, and, while it is being phased in, the CEE countries are likely to be converging on the EU15 in terms of income per head. This will reduce the need for transfers. EU budgetary reform, if and when it comes, will also be phased in over a reasonably long period of time.

enlargement. Baldwin, Francois and Portes (1997) offer some speculations as to the voting coalitions likely to emerge at this time.

²⁵ Baldwin, Francois and Portes (1997) and CEPR (2002) concur in this estimate.

²⁶ See Matthews (2001).

While the EU will clearly take great care to ensure that the budgetary and interest rate costs of enlargement are less than those entailed by German reunification, an EU-wide fiscal expansion would nevertheless exert upward pressure on interest rates, as could moves to hasten the entry of the candidate countries into EMU. We complete this section by looking at the sectoral implications for the Irish economy of such possible macroeconomic developments.

In its report on the economic implications for Ireland of participation in EMU, ESRI (1996) identified certain sectors of the Irish economy that are particularly vulnerable to high interest rates. Such vulnerability was argued to depend both on product characteristics and on industrial structure. Durable goods, occasional purchases, house-building materials and construction are all likely to be quite sensitive for example, while firms in low-margin sectors or with high levels of indebtedness will also be particularly vulnerable. Within manufacturing, the most sensitive sectors according to the ESRI analysis included Non-Metallic Minerals; Textiles, Clothing and Footwear; Wood and Furniture; Paper and Printing; Rubber and Plastics, and some segments of Food, Drink and Tobacco.

It is noteworthy that these are all low-technology sectors and all have declined as a share of manufacturing (and total) employment since the ESRI study was carried out. This suggests that Irish manufacturing employment is now less vulnerable to high interest rates, even if these should arise as a consequence of enlargement, than was the case even a decade ago.

Conclusions

Enlargement will have important economic implications for Ireland. Trade expansion for example seems certain. Baldwin, Francois and Portes (1997) estimate that Ireland will receive 0.3 percent of the total gains from trade accruing to the EU15.²⁷ Most Irish export sectors will gain. The Western European sectors threatened by enlargement are

generally agreed to include Food Processing and Textiles, Clothing and Footwear. Our analysis suggests that the Irish food processing sector is in fact likely to gain, as it produces a very different range of products from those into which the CEE countries will specialise. We expect that Irish companies in this and a number of other sectors will, on the basis of proprietary assets in management and sectoral experience, engage in outward FDI into Central and Eastern Europe. The development of trade with the CEEC will also offer outsourcing possibilities, particularly in labour-intensive sectors such as Textiles and Clothing. Most conventional trade analyses do not take these possibilities into account in assessing gains from further market integration.

While Ireland's foreign-owned sector stands to gain substantially from the opening up of export opportunities in Central and Eastern Europe, there is also the possibility that enlargement will divert inward FDI away from Ireland. There is no sign that anything of this nature has happened as yet however. In fact our analysis shows that Ireland and Hungary currently trade complementary Office and Data Processing products, and that Hungarian exports to Ireland represent one link in a value chain that generates strong Irish exports to the rest of the world. Further fragmentation of the value-added chain may be as likely an outcome as the diversion of FDI flows away from Ireland.

Enlargement will also open up the possibility of labour migration. Most studies estimate that inflows will be quite modest, summing to perhaps 1 percent of the EU15 population by the year 2030. The vast majority of these migrants will go to Germany and Austria. The impact on wages and living standards will depend on the skills of the migrants, but if inflows are as modest as studies suggest, these effects will be fairly negligible.

Finally, we looked at the macroeconomic and budgetary implications of enlargement. The consensus estimate is that the process in the early years will cost around 20 billion euro per annum, and the European Commission has budgeted for an amount close to this. On the basis of current net transfers Ireland's share of this cost would come to around 200 million euro, and these costs would ultimately fall as CEE living standards converge

²⁷ They estimate the EU15 gain at a modest 11.2 billion ecu (at 1992 prices).

on those in the EU15. A root and branch review of the distribution of the EU budget would cost the country around 10 times this amount, which reflects the extent to which the country is oversubsidised at present, given its relative level of income.

Even if the narrowly-defined economic benefits for EU incumbents turn out to be quite modest it is important to remember, as Baldwin, Francois and Portes (1997) point out, that the outcome of the narrow economic calculus employed here pales into insignificance when evaluated against the larger implications of enlargement. Eastwards expansion of the EU is primarily about the security and stability of the continent and the reconstruction of Europe's post-Cold War political architecture.

References

Anderton, B., and P. Brenton (1999) "Outsourcing and Low-Skilled Workers in the UK", *Bulletin of Economic Research*, 51 (4), 267-285.

Baldwin, R.E., J.F. Francois and R. Portes (1997) "The Costs and Benefits of Eastern Enlargement: the Impact on the EU and Central Europe", *Economic Policy* 24, 125-176.

Barrett, A., J. FitzGerald and B. Nolan (2000) 'Earnings Inequality, Returns to Education and Immigration into Ireland', IZA Discussion Paper N0. 167, Bonn, Germany, forthcoming in *Labour Economics*.

Barry, F. (2002) "EU Accession and Prospective FDI Flows to CEE Countries", in R. Lipsey (ed.) *Foreign Direct Investment in the Real and Financial Sector of Industrial Countries*, Frankfurt: Deutsche Bundesbank, (forthcoming).

Barry, F., Gorg, H. and A. McDowell (2002) "Outward FDI and the Investment Development Path of a Late-Industrialising Economy: Evidence from Ireland", *Regional Studies* (forthcoming).

Barry, F., and A. Hannan (2001) "Will Enlargement Threaten Ireland's FDI Inflows?", *Quarterly Economic Commentary*; Dublin: ESRI.

Barry, F., and A. Hannan (2002a) "FDI and the Predictive Powers of Revealed Comparative Advantage Indicators", unpublished ms, University College Dublin.

Barry, F., and A. Hannan (2002b) "Product Characteristics and the Growth of FDI", unpublished ms, University College Dublin.

Bauer, T. and K. Zimmermann (1999) 'Assessment of Possible Migration Pressure and its Labour Market impact Following EU Enlargement to Central and Eastern Europe, IZA Research Report No. 3, Bonn.

Boeri, T., H. Brücker et al. (2000) 'The Impact of Eastern Enlargement on Employment and Labour Markets in the EU Member States'. Final Report to European Commission; available at:

http://europa.eu.int/comm/employment_social/empl&esf/enlargement_en.htm

(A summary is also available as 'Eastern Enlargement and EU-labour markets: Perceptions, Challenges and Opportunities', forthcoming in *World Economy*).

Brulhart, M., and M. Kelly (1999) "Ireland's Trading Potential with Central and Eastern European Countries: A Gravity Study", *Economic and Social Review*, 30 (2), 159-174.

CEPR (2002) *Who's Afraid of the Big Enlargement?*, Policy Paper No. 7, Centre for Economic Policy Research, London.

de la Fuente, A., and R. Domenech (2001) The Redistributive Effects of the EU Budget: An Analysis and Proposal for Reform, *Journal of Common Market Studies.*, 39 (2), 307-30.

Dunning, J. (1997a) The European Internal Market Programme and Inbound Foreign Direct Investment, part 1, *Journal of Common Market Studies*, 35, 1, 1-30.

Dunning, J. (1997b) The European Internal Market Programme and Inbound Foreign Direct Investment, part 2, *Journal of Common Market Studies*, 35, 2, 189-223.

Egger, P., M. Pfaffermayr and Y. Wolfmayr-Schnitzer (2001) “The International Fragmentation of Austrian Manufacturing: the Effects of Outsourcing on Productivity and Wages” *The North American Journal of Economics and Finance* 12, 257-27.

ESRI (1996) *Economic Implications for Ireland of EMU*, Policy Research Paper No. 28; Dublin: ESRI.

Fertig M. and C. Schmidt (2000) “Aggregate-level Migration Studies as a Tool for Forecasting Future Migration Streams”, IZA Discussion paper No. 183, Bonn, Germany.

Ferto, I, and L. J. Hubbard (2001) “Intra-Industry Trade in Agri-Food Products between Hungary and the EU”, available at:
<http://www.mek.iif.hu/porta/szint/tarsad/kozgazd/elmelet/nyarimuh/html/ferto.pdf>

Forfás (2001) *Statement on Outward Direct Investment*.

Forfás (2000) *Enterprise 2010*

Francois, J., and M. Rombout (2001) “Trade Effects from the Integration of the Central and East European Countries into the European Union”, Sussex European Institute Working Paper 41.

Henrichsmeyer, W., J. Köckler, T. Möllmann and A. Quiring (2000) “Development of a Policy Information System for Agricultural Sectors in Transition Countries”, chapter 2 in S. Tangermann and M. Banse (eds) *Central and Eastern European Agriculture in an Expanding European Union*, Manchester: CABI; available at:
<http://www.cabi-publishing.org/Bookshop/Readingroom/0851994253.asp>

Lejour, A., R. de Mooij and R. Nahuis (2001) “EU Enlargement: Economic Implications for Countries and Industries”, Central Planning Bureau of the Netherlands, Working Paper No. 585. http://www.ifo.de/pls/ifo_app/CESifoSwitch?setPage=ifoinstitute.htm

Matthews, A. (2000) “Agriculture, Food Safety and Rural Development”, chapter 9 in J. O’Hagan, ed., *The Economy of Ireland*, 8th edition, Dublin: Gill and Macmillan.

Matthews, A. (2001) “How Important is Agriculture and the Agri-Food Sector in Ireland?”, *Irish Banking Review*, Winter.

Pavelin, S. (2000) “The Geographical Diversification of Leading Firms in the EU”, Centre for Economic Research Working Paper 15, University College Dublin.

Stolwijk, H. (2000) “The Dutch Food and Agricultural Sectors and the Enlargement of the EU”, Netherlands Central Planning Bureau Report 2000/1.

UNCTAD (2000) *World Investment Report*.