

# Multinationals and the Knowledge Economy in Small Countries

## The cases of Finland, Ireland and the Netherlands

After a period of strong economic growth in the second half of the 1990s the Dutch economy is performing badly at the moment. The European Union Commission considers that the Dutch growth reduction is structural.<sup>1</sup> Table 1 shows the growth of GDP and productivity.

Relative to the large EU countries the Dutch GDP growth is reasonable, but compared with two other small countries it is low.<sup>2</sup> With regard to productivity, the Dutch economy has been performing badly for the last 25 years compared with both large and other small countries.

The Lisbon target of the European Union to become the most competitive economy in the world by 2010 requires each EU member to implement policy measures that facilitate the achievement of this goal. It leaves implicit that these policy measures are different for each country, depending on economic structure, existing policies, and also size of the country.

## Small countries

Small countries have specific characteristics that are of importance for their productivity development. One such characteristic is the small domestic market, which is a constraint on the emergence of R&D lines specific to the country concerned. The increasing complexity of modern technologies, e.g. in microelectronics, biotechnology and nano-technology, requires more fundamental research. As small countries have less means in an absolute sense than large countries they are more faced with a dilemma of priority setting. In which core technology niche should they specialise and how fragile is such a choice? A second characteristic is that small countries benefit relatively more from R&D spillovers through incoming foreign direct investments than large

nations. Up to the mid-1980s innovations in multinational firms were made mainly in the parent firm in the home country.<sup>3</sup> Since then internationalisation of foreign R&D investments has strongly intensified because of continuous pressure to acquire and update technological knowledge.<sup>4</sup> R&D has increasingly been outsourced from the parent firm to affiliates abroad. As a result, the quality of the knowledge available in a country has become more important as a location factor in investment decisions.<sup>5</sup> At the same time, these high-quality foreign investments are of particular importance so that small countries can acquire new knowledge.

Two other points are relevant at this stage. First, empirical work shows that the likelihood academic knowledge spillover declines substantially with geographical distance.<sup>6</sup> This shows why academic knowledge spillovers are an important asset for foreign high technology multinationals committing R&D investments in a host country. Second, the absorption capacity of a country is important. It consists of the available pool of active scientists and engineers and the domestic firms performing R&D, which must be sufficiently numerous.<sup>7</sup> Public investment in R&D and education makes a country more receptive to high-technology investments of foreign firms. Countries with a high absorption capacity have more potential for benefiting from R&D spillovers of foreign affiliates.

The Dutch economy is characterised by strong inward and outward FDI (cf. table 2), and therefore FDI is potentially an important source of productivity growth in the Netherlands through R&D spillovers from FDI. The Irish incoming FDI are also enormous, while those of Finland are small but strongly increasing.

## The Finnish model

The Finnish model is not explicitly focused on attracting FDI, but rather on improvement of the national domestic innovation system. It is focused on the creation of innovation centres and platforms for technological

<sup>1</sup> EU Commission (2002): 'Productivity, the Key to Competitiveness of European Economies and Enterprises', SEC (2002), 528, Brussels.

<sup>2</sup> GDP growth is lower in Finland than in the Netherlands but this can be attributed to four years of negative growth in 1990 to 1993 as a result of the collapse of the Soviet Union. Correction for these unusual shocks leads to GDP growth of 3% for Finland.

<sup>3</sup> J. Dunning: 'The Eclectic Paradigm of International Production: a restatement and some possible extensions', *Journal of International Business Studies*, no. 19, 1988, p. 1-31.

<sup>4</sup> 'World Investment Report 2001', Promoting Linkages, UNCTAD, Geneva.

<sup>5</sup> See also 'Top-Manager loben den Standort Deutschland', *Die Welt*, 28 May 2004.

<sup>6</sup> James D. Adams: 'Comparative Localization of Academic and Industrial Spillovers', *NBER Working Paper*, no. 8292, 2001; Wolfgang Keller: 'Geographic Localization of International Technology Diffusion', *American Economic Review*, no. 92, 2002, p. 120-142.

<sup>7</sup> W.M. Cohen and D.A. Levinthal: 'Innovation and Learning: the Two Faces of R&D', *The Economic Journal*, no. 99, 1989, p. 569-596.

Table 1

**Gross Domestic Product (GDP) in Constant Prices 1995**

Average annual growth (%)

	GDP				GDP per hour worked			
	1971 to 2002	1971 to 1980	1981 to 1990	1991 to 2002	1971 to 2002	1971 to 1980	1981 to 1990	1991 to 2002
Small countries								
Finland	2.8	3.7	3.1	1.9	2.8	3.0	2.8	2.7
Ireland	5.3	4.8	3.7	7.2	4.4	4.8	3.8	4.7
The Netherlands	2.6	2.9	2.3	2.5	2.3	4.1	1.9	1.2
Large countries								
Germany	2.2	2.8	2.3	1.7	2.6	3.6	2.1	2.3
France	2.5	3.3	2.5	1.8	2.8	3.6	3.0	2.0
United Kingdom	2.3	2.0	2.7	2.3	2.3	2.7	2.0	2.3

Source: OECD Productivity Base 2004.

firms. A special role is played by the organisation TEKES, which is a national technology agency. It provides funding for special innovative projects executed in firms located in Finland (including foreign firms) and in Finnish research institutes and universities.

Important criteria used are

1. expected impact on competition and growth of the firm;
2. kind of technology;
3. firm's capacities to co-operate in R&D with other firms, but particularly with public knowledge institutions and universities; and
4. expected influence of the financial support on the specific project's success.

A lot of these policy measures can also be found in such countries as Ireland and the Netherlands. However, the difference is that Finnish innovation policies constitute an integrated interdependent package of policy measures aimed at all aspects of innovation processes: knowledge development, knowledge diffusion, knowledge acquisition and knowledge application. It should be noted that most of the innovation policy measures in Finland started with a special focus on Nokia but that in the 1990s these became increasingly applicable to other firms as well.<sup>8</sup>

Although the FDI inflows in Finland are small compared with those in Ireland and the Netherlands, the

(technological) quality is high. It appears that almost 100% of all foreign firms in Finland perform their own R&D. For Ireland and the Netherlands these percentages are 40 and 50, respectively.<sup>9</sup>

### The Irish model

Ireland is more closely comparable with the Netherlands than with Finland. In the first place, its social economic policy also focuses on wage moderation just like the Dutch government's policy in the so-called Polder model. The aim was to reduce wages to give exporters a good competitive position in the world market and make the Netherlands an attractive location factor for FDI. The second point of resemblance is that both economies have a strong inflow of multinational firms. This is partly due to geographical circumstances, i.e. the proximity to large economies: Germany for the Netherlands and the United Kingdom for Ireland.

The main difference between Ireland and the Netherlands is that Irish policies are strongly focused on being attractive to foreign investors while this component is less dominant in Dutch policies. Irish economic development is strongly foreign based as the Irish government

<sup>8</sup> Francesco Daveri and Olmo Silva: 'Not only Nokia', *Working Paper*, no. 222, University of Bocconi, 2002.

<sup>9</sup> Cees van Beers: 'The Role of Foreign Direct Investments on Small Countries' Competitive and Technological Position', *VATT Research Report*, no. 100, Government Institute for Economic Research, Helsinki, Finland, 2003.

aims to attract foreign investors, especially from the United States. These firms are attracted by financial incentives, such as low corporate taxes, direct subsidies for R&D and several other measures, e.g. extra depreciation aimed at lowering the costs of or increasing the revenues from R&D.

The main question is whether financial incentives for investing abroad without a clear innovation policy aimed at improving the national innovation system produce FDI inflows of high technological quality. In other words, whether the offer of financial instruments alone guarantee that the incoming FDI will contribute to domestic economic growth in the long run.<sup>10</sup>

The economic performance of the Irish economy is outstanding and suggests that in Ireland FDI does contribute to long-term economic growth (cf. table 1). A closer look does not justify such a conclusion. First, a part of this high growth performance can be attributed to the catch-up phenomenon, which will disappear after some time.

Second, foreign firms in Ireland do not carry out much of their R&D in the host country. Table 3 shows that the business R&D expenditures in industry as a percentage of industrial value-added in Ireland are relatively low, especially compared with Finland. Combined with the fact (see above) that in Ireland only 40% of the incoming multinationals perform their own R&D, this suggests that foreign firms do not carry out much of their research in Ireland.

The average Irish economic growth in 1995 to 2001 was 9.3%, made up of capital deepening (1.5%: improvement of capital stock), increased labour input (3.0%: due to wage moderation) and multifactor produc-

**Table 2**  
**FDI Stocks**  
As % of GDP

	Incoming		Outgoing	
	1990	2002	1990	2002
Finland	3.8	27.0	8.2	52.8
Ireland	72.3	129.1	24.5	29.9
The Netherlands	23.3	74.9	36.3	84.7

Source: UNCTAD (2003) World Investment Report 2003, UNCTAD, Geneva.

<sup>10</sup> M. Blomström and A. Kokko: 'The Economics of Foreign Direct Investment Incentives', *NBER Working Paper 9489*, NBER, Cambridge, 2003.

**Table 3**  
**Industrial R&D Intensity**  
As % of industry value-added

	1991	1995	1998	2001
Finland	1.8	2.2	2.9	3.5
Ireland	0.8	1.3	1.2	1.1
The Netherlands	1.4	1.5	1.5	1.6

Source: Table A.4.1.2. in OECD (2003), OECD Science, Technology and Industry Scoreboard 2003, Paris.

tivity (4.8%).<sup>11</sup> How can the high multifactor productivity be explained with such a small percentage of R&D expenditures (cf. table 3)? Foreign firms in Ireland are investing mainly because of favourable financial conditions. Their main research activities are performed in their home countries (mostly USA), and profits are transferred to Ireland because of the favourable fiscal facilities. Value-added goes up while factor inputs hardly increase. As a result productivity figures rise.

## Comparison and lessons for the Netherlands

The incoming FDI in Ireland contribute to higher economic growth there. However, it is doubtful whether this can be considered sustainable. If the fiscal facilities are reduced or even eliminated the contribution of foreign firms to Irish economic growth will reduce even without the reduction that would have to be expected in actual investment.

The Finnish model appears more attractive. Investments in the quality of the national innovation system – in which co-operation between (foreign) firms and public knowledge institutions is also encouraged – attracts foreign firms to make a longer term commitment to the country than financial instruments only. This is of importance for small countries in particular, as short-term movements of FDI affect a small economy much more than a large economy. In addition, investments in the national innovation system attract multinationals with R&D facilities because they can benefit from the domestic knowledge available. Domestic knowledge institutions can also benefit from new technological developments that are necessary for the market.

<sup>11</sup> 'The sources of economic growth', OECD, Paris, 2003.

The Dutch government has set up a new forum, the so-called Innovation Platform, in which ideas for the development of a Dutch knowledge economy are intended to be developed. Up to now – a year after its establishment – the Platform has been conspicuous by its silence. It is strongly advisable for the Innovation Platform to develop a new Dutch model combining the positive elements of the Finnish and Irish models.

As the Netherlands has a high inflow of FDI, it is important to develop policies that address ways of enhancing the quality of incoming FDI and their R&D spillovers. The specifically Irish element is the explicit use of FDI for boosting economic growth, while the specifically Finnish element consists in investing in the development of a well-integrated national innovation system that can be considered an attractive asset facing foreign firms for location decisions.

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