CHAPTER IV. Trends in Foreign Direct Investment

Andre Jungmittag

1 Introduction

From a theoretical point of view, firms generally have three possibilities to supply foreign markets with goods and services: exports, foreign direct investment (FDI) and licensing. According to the OLI paradigm introduced by Dunning (1977), a firm will engage in FDI if ownership, locational and internalisation advantages coincide. Particularly, FDI is the first choice of means to supply a foreign market with services, which are often considered as non-tradable goods. In this case, FDI can replace the exports that are not possible because of the necessary double coincidence, which means that transactions of services in most cases require the spatial and temporal proximity of buyers and sellers simultaneously. For principally tradable goods, there can be trade barriers or high transport costs (generally spoken: very high transaction costs that discourage exports) which prompt firms to substitute exports by FDI. On the other hand, a complementary relationship can also exist between FDI and exports. Thus subsidiaries can be established abroad that provide direct contacts with the customers and additional services while the digitalized basic services, such as databases or software, can be provided by the firm headquarters. Furthermore, FDI can be a driving force of the fragmentation of production, which means the splitting-up of the value added chain allowing for a more in-depth specialisation. The reason therefore is that different stages of production correspond to different production functions so that a country may have a comparative advantage in one stage of production and a comparative disadvantage in other stages. Today, the ICT industry has one of the most globally fragmented productions in the manufacturing sector.

Furthermore, in the modern literature on the motives and effects of FDI we find the differentiation between horizontal and vertical FDI (cf. Nunnenkamp, 2006). The notion of horizontal FDI is closely linked to the substitional type of FDI and means that firms produce the same goods and services in their home country and in the host countries, which is – as already mentioned – often motivated by high transaction costs. Since this type of FDI is often driven by market consideration, it is also labelled as market-seeking FDI. Vertical FDI, on the other hand, is a means

1 A comprehensive presentation of the different theoretical approaches to explain substitional and complementary relationships between FDI and exports can be found in Jungmittag (1996), pp. 44 – 133.
of geographical production fragmentation. Since this FDI is driven by cost consideration, it is often labelled as efficiency-seeking FDI.

When we come from the theoretical to the empirical analysis of the internationalisation of ICT activities, of course we cannot differentiate solely from a view on the data between these different types of FDI, derived from economic theory. However, our classification of ICT related economic activities in two dimensions, knowledge intensity and the importance of scale, derived in the theoretical part of the project, can help us to narrow down the motives and effects of the FDI of the different ICT producing and using sectors.

In the following, we will consider the development of the outward and inward FDI stocks of the European ICT sectors between 1994 and 2003. Additionally, for the ICT services we will present some results from the statistics of foreign affiliates’ total sales and employment (FATS), which just has been published by Eurostat. However, with regard to the empirical analysis of the outward and inward FDI stocks of the European ICT sectors as well as for the FATS data, it has to be mentioned first of all, that the FDI statistics of Eurostat have more holes per cubic metre than a Swiss cheese. Altogether, we will use the available data for the following ICT sectors:

- Office, accounting & computing machinery (ISIC 30),
- Radio and television & communication equipment (ISIC 32),
- Telecommunication (ISIC 6420),
- Computer & related services (ISIC 72),
- Research and Development (ISIC 73),
- Business Services n.e.c. (ISIC 74).

While the first two sectors belong to the manufacturing industries, the remaining sectors belong to the service industries. With regard to the number of EU countries taken into account, we have outward FDI stock data for five countries – Austria, France, Germany, the Netherlands and the United Kingdom, which cover more or less the whole time span under consideration. Inward FDI stock data is additionally available for Portugal. Furthermore, FATS data is available for Belgium, Czech Republic, Germany, Greece, Austria, Portugal, Finland and Sweden. However, we can only analyse the employment data, because total production data, which is needed to calculate ratios, is not available in the OECD STAN database for some countries and sectors considered.

This analysis is divided into two parts, one for the outward and one for the inward FDI stocks, and at the end of each part, on the one hand, we undertake a variance analysis by means of a regression model with dummy variables to identify the effects explaining the degree of internationalisation by FDI, and, on the other hand, since the interaction effects between countries and sectors are particularly important, we make our classification of ICT related economic activities in two dimensions feasible by approximating knowledge intensity by country and sector specific R&D-intensity as well as importance of scale by employment per enterprise, and assign the sectors of those countries, for which the necessary data is available, to the four fields of our classification: innovative scale sectors, inno-