ETLA ELINKEINOELÄMÄN TUTKIMUSLAITOS
THE RESEARCH INSTITUTE OF THE FINNISH ECONOMY
Lönnrotinkatu 4 B 00120 Helsinki Finland Tel. 358-9-609 900
Telefax 358-9-601 753 World Wide Web: http://www.etla.fi/

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Mika Erkkilä

EUROPEAN INTEGRATION AND FOREIGN DIRECT INVESTMENT: FINNISH FOREIGN DIRECT INVESTMENT FLOWS IN 1975-1994 WITH EMPHASIS ON THE HOST COUNTRY CHARACTERISTICS AND IMPLICATIONS FOR EMU MEMBERSHIP

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ABSTRACT: This paper is an attempt at explaining, according to host country characteristics, the determining factors of Finnish FDI outward flows to 14 European and 2 non-European (Canada and USA) countries in the 1975-1994 period and the implications for Finland participating in the third stage of EMU. It turns out that the host country GDP, the Single Market, the host country export share in Finnish total exports and the degree of structural similarity increase outward Finnish FDI flows. The results suggest that EMU might have an investment diversion effect away from non-EMU members, if EMU makes the production structures of the participants converging, thereby also increasing the share of intra-industry trade.

KEY WORDS: EMU, FDI, U-curve, structural similarity, intra-industry trade.

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TIIVISTELMÄ: Tämän tutkimuksen tavoitteena on selittää suomalaisten ulospäinsuuntautuvien suorien investointien määräytymistä maakohtaisten tekijöiden perusteella ja seurauksia Suomen EMU-jäsenyydelle. Tutkimuksessa on mukana 14 eurooppalaista ja 2 muuta maata (USA ja Kanada). Tutkimus kattaa periodin 1975-1994. Kohdemaan BKT, EU:n sisämarkkinat, kohdemaan vientiosuus Suomen kokonaisviennissä sekä Suomen ja kohdemaan rakenteellinen samankaltaisuus lisäävät suoria investointeja Suomesta. EMU saattaa suunnata investointeja pois EMUn ulkopuolelle jäävistä maista, jos EMU samanlaistaa maiden tuotantorakenteet. Näinollen myös ristikkäiskaupan osuus kasvaa Suomen kaupassa EMUn kanssa.

AVAINSANAT: EMU, suorat investoinnit, U-käyrä, rakenteellinen samanlaisuus, ristikkäiskauppa.

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SUMMARY

This paper studies, according to the host country characteristics, the determining factors of Finnish FDI outward flows to 14 European and 2 non-European (Canada and USA) countries in the 1975-1994 period and the implications for Finland participating in the third stage of EMU.

The results indicate that the host country GDP, the EU's Single Market, the host country's share in Finnish total exports and the degree of similarity in production between Finland and the host country explain Finnish outward FDI flows.

To the extent that the third stage of EMU will increase the participating countries' GDP and to the extent that the common currency will increase competition in the same way as the Single Market programme has done, Finnish FDI into the EMU area will increase. In order to minimise this "Single Market effect" on domestic fixed capital formation it might be worthwhile for Finland joining the single currency area from the outset.

Finnish firms tend to invest in countries, which are important trade partners to Finland. The share of the core EMU in Finnish exports is relatively small. The question then is how EMU will affect the relative importance of the Finnish trade partners. If the relative weight of EMU increases, then investments will increasingly be directed there.

Firms invest also in countries, which in terms of production structures resemble Finland the most. Given that Finland resembles more countries which initially are likely to stay out of EMU, Finnish FDI will be directed to these countries. A single currency could on the other hand make the EMU countries converge. Finland might have passed the stage where a common currency could increase specialisation between countries, and have reached a stage where countries will converge in terms of structural similarity. EMU could thus accelerate this trend, leading to investment diversion away from non-EMU countries in favour of EMU.

YHTEENVETO

Tässä tutkimuksessa tarkastellaan suomalaisten yritysten suorien sijoitusten määräytymistä maakohtaisten tekijöiden perusteella sekä seurauksia Suomen EMU-jäsenyydelle. Tutkimuksessa on mukana 14 eurooppalaista ja 2 Euroopan ulkopuolista maata. Tutkimus kattaa periodin 1975-1994.

Tulosten mukaan kohdemaan BKT, EU:n sisämarkkinat, kohdemaan osuus Suomen kokonaisviennistä ja kohdemaan ja Suomen tuotantorakenteiden samankaltaisuus lisäävät suomalaisten yritysten suoria sijoituksia kyseisiin maihin.

Jos EMU kasvattaa siihen mukaan menevien maiden BKT:ta ja jos EMU johtaa kilpailun kiristymiseen samalla tavalla kuin sisämarkkinat ovat tehneet, suorat sijoitukset Suomesta EMUuun lisääntyvät. Tämän sisämarkkinaefektin minimoiminen puoltaa Suomen EMU-jäsenyyttä.

Suomalaiset yritykset tekevät myös suoria sijoituksia maihin, jotka ovat tärkeitä kauppakumppaneita Suomelle. Ydin-EMUn osuus Suomen ulkomaankaupassa on kuitenkin kohtalaisen pieni. Kysymys kuuluukin jos ja miten EMU muuttaa maiden suhteellisia osuuksia Suomen ulkomaankaupassa. Jos EMUn suhteellinen osuus kasvaa, niin investoinnit tulevat enenevässä määrin suuntautumaan sinne.

Suomalaiset yritykset suuntaavat myös investointinsa maihin, joiden tuotantorakenteet muistuttavat Suomea. Koska Suomi muistuttaa eniten maita, jotka ainakin ensivaiheessa luultavasti jäävät ulos EMUsta, suorat investoinnit Suomesta säilyvät näihin maihin. Toisaalta yhteinen raha voi lähentää maiden tuotantorakenteita. Suomi saattaa olla jo nyt niin integroitunut EU:hun, että syvempi integraatio yhteisen rahan muodossa voi lähentää maiden tuotantorakenteita. EMU voi siten voimistaa tätä kehitystä, jolloin yhteinen raha johtaa investointien suuntautumiseen EMU-alueelle.

1. INTRODUCTION

As the realisation of the third stage of Economic and Monetary Union from the beginning of 1999 looks inevitable and irrevocable, speculation increases as to the country composition of EMU. Part of the final judgement will of course be made on the basis of the attainment of the convergence criteria, but at the same time EMU is also a political construction and political considerations will presumably play their part as well.

The Finnish government has stated clearly that it aims at joining EMU from the beginning of 1999. At the same time scepticism has been raised, whether the Finnish economy has the necessary adjustment capacity and flexibility in the case of adverse economic shocks.[1] Generally reference is made to the Finnish economic structure, which differs from the most likely countries to form EMU. Given that the Finnish post-war economic regime has been one of recurrent devaluations, it raises the question how and where firms will locate their production, once the third stage of EMU has come into being. A regime change took place in Finland in the 1980s, which stressed a stable and fixed currency and an inflation rate not exceeding that of the competitors'. Finnish (export) firms often used to be heavily indebted at the expense of own capital in an international perspective. In the 1990s, however, they have made consistent efforts at reducing their indebtedness, as a means of preparing themselves for EMU and the development of new, alternative adjustment mechanisms, when devaluation is not an option any more.

What is relevant in the perspective of EMU is how firms' investment behaviour will change or if EMU will bring any change at all. In other words, exporting firms can hedge themselves against unfavourable (nominal and real) exchange rate developments against e.g. the US dollar by locating production in the US dollar zone. Witness the shift of some production back to Finland (as the ratio between domestic and foreign production) that took place in the metal industry (exclusive of electronics) and was accentuated in the forest industry after the markka was floated in September 1992. If firms value stability and predictability (in some sense) higher than a flexible exchange rate, they would thus appear to locate production inside EMU. If the inverse is true, then their investment flows would

[1] This applies inversely of course also to a boom and the ability to prevent over-heating.

increasingly be directed outside EMU, either to non-EMU European countries or third countries.[2] This relates closely to the question of the convergence vs. divergence of production structures. Will the replacement of national currencies by a common currency bring production structures closer to each other or will they become increasingly dissimilar? This will also be reflected in the structure of the mutual trade of the EMU countries. In the former case trade in similar goods (i.e. goods of the same industry) or so-called intra-industry trade will dominate over inter-industry trade, i.e. the exchange of goods of different industries and vice versa in the latter.

The purpose of this paper is to investigate the determinants of Finnish FDI flows between 1975 and 1994. If FDI flows are positively correlated with e.g. exchange rate fluctuations, we would expect Finnish firms to invest outside EMU (assumed that non-EMU EU countries will retain some exchange rate flexibility). If, on the other hand, FDI flows are negatively correlated with e.g. fragmented markets and barriers to goods and factor flows, firms would be inclined to locate production inside EMU. In this case and to the extent that a single currency will intensify competition, decrease price differentials and lower all kinds of barriers, EMU will attract increased Finnish outward investment flows, but also increase investment relative to non-members and partly redirect FDI flows between EMU and third countries

Section 2 includes a description of Finnish FDI flows and stocks by country and by main industries in a 20-year period 1975-1996. Section 3 gives an overview of different theories explaining FDI. Section 4 includes the specification and the estimation of an econometric model for Finnish FDI flows in 1975-1994.

The data in the descriptive section 2 cover the years 1975-1996, which are available from the Bank of Finland payments balance statistics. Included in this survey are the FDI flows between Finland and 14 European countries, both EFTA and EU members and two non-

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[2] To the extent that Finnish firms are too small and that Finland alone will not be able to influence the exchange rate policy of EMU, the development of the exchange rate of the euro vis-à-vis e.g. the US dollar could potentially be unfavourable from a Finnish point of view. This could of course be alleviated by a suitable composition of EMU, including as many economies as possible with an economic structure resembling Finland's. To the extent that the structures between Finland and the rest of EMU are identical and to the extent that the business cycle in Finland and the rest of the EMU correlates, Finnish firms will have the same needs as their competitors in EMU.

European countries.[3] The sample covers both big and small as well as rich and less rich countries and high and low inflation countries. It is worthwhile noting, that this study is concerned only with the country-specific determinants of Finnish FDI outflows. In addition to the country characteristics, also firm-specific factors affect FDI flows. Enterprises with a large amount of such firm-specific know-how are often characterised by a high degree of innovativeness. They invest heavily in R&D and are human-capital intensive. High-tech companies are a good case in point. Other firms rely more on country-specific factors - e.g. the supply of raw materials, cheap labour and a good infrastructure. Of course, it is impossible to make a clear distinction between the two groups of companies, given that all enterprises rely to some degree on both country- and firm-specific factors.

The FDI data from the Bank of Finland payments balance statistics include equity capital, reinvested earnings and loans (between the domestic and foreign units of the same company). Reinvested earnings and loans can from time to time make up a significant amount of the flows, in which case the gross flow gives a biased picture of the level of FDI. A more in-depth analysis should disaggregate the figures and adjust the overall flows for loans and reinvested earnings.

2. FINNISH FDI FLOWS 1975-1996

2.1. General Trends

The surge in Finnish FDI is a relatively recent phenomenon.[4] The annual flows in the late 1970s did not exceed FIM 900 million. Gradually the flows grew bigger. The big increase took place in the latter part of the 1980s, which at the same time saw a boom in terms of GDP growth. It grew by 3.5 per cent on average. This coincided also with the dismantling of the remaining exchange and capital flow restrictions. The Single European Act was adopted in 1986, with a view to establishing the Single Market by the end of 1992. The purpose of the plan for the Single Market was (and is) to remove all the remaining non-

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[3] The countries are: Austria, Norway, Sweden, Switzerland, the Netherlands, Belgium, Spain, Ireland, the UK, Italy, Portugal, France, Germany, Denmark, Canada and USA.

[4] A foreign direct investment is an investment by a resident entity in one country in a company abroad, if the domestic entity acquires 10 per cent or more of the shares or voting power of the foreign enterprise. Investments not exceeding the 10 per cent limit are classified as portfolio investments.

tariff barriers to the free movement of goods, services, capital and people. This undoubtedly affected and speeded up the FDI of Finnish firms in their desire to secure access to the Single Market at the same conditions as their competitors in the EC. Given the uncertainty in Finland's response to the decision to deepen integration among the EC countries, one way for outsider firms to adjust to the Internal Market was to become insiders by investing in the Single Market area. In Kuitunen, Ripatti and Widgrén (1990), it was argued that the Internal Market programme had become in the late 1980s one of the main factors which changed Finnish firms' investment behaviour and targeted them to the EC area.

Figure 1 depicts the FDI flows to and from Finland. Outward FDI has exceed inward FDI flows in almost every year, the exception being the years 1975-1976, and 1991. The period 1975-1977 was one of economic stagnation.[5] An unprecedented depression occurred in the beginning of the 1990s, when GDP decreased for three consecutive years.[6]

Figure 1 also reveals the big increase in outward FDI in the latter part of the 1980s and a new surge from 1993 onwards. In fact, the ratio between outward and inward FDI flows has been one of the biggest in Finland in an international comparison during the 1980s and 1990s. The ratio has been highest in Japan, followed by Finland and Sweden (Ali-Yrkkö 1996). Other high-ranking countries are USA and Switzerland. FDI flows have also grown fast compared to the growth of Finnish foreign trade, which increased 6-fold between 1975 and 1995. The value of outward FDI flows was 39 times higher in 1996 compared to 1975. In relative terms, integration through FDI flows has grown at the expense of the "traditional" way of integration, namely through goods and services trade.

In addition to what was said above about the determinants of Finnish outward FDI, factors exerting a positive impact on inward FDI are, according to company surveys, e.g. the proximity of Russian and Baltic markets in addition to the Finnish market in itself. The lack of labour market flexibility was seen as a negative trait of the Finnish economy (Puhakka 1995 and Ali-Yrkkö 1996).

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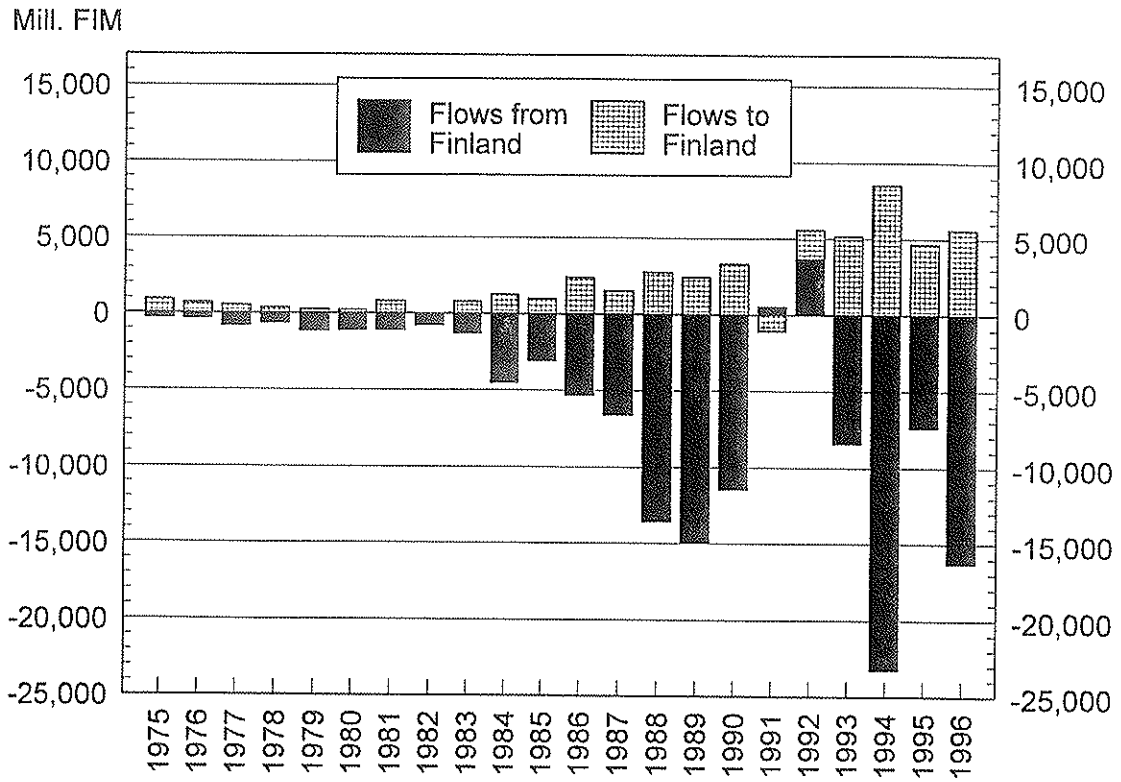
5 The GDP growth rate was 1.2, -0.4 and 0.2 per cent in 1975, 1976 and 1977, respectively.

6 The GDP growth rate was negative in 1991-1993 (-7, -3.5 and -1.2 per cent, respectively)

Figure 1 **FDI Flows to and from Finland in 1975-1996, million FIM at 1996 prices**



In Finland the ratio of outward FDI flows to gross fixed capital formation is among the highest in the OECD area. It averaged some 7 per cent in 1984-1989, but reached 31 per cent in 1994 and was some 10 per cent on average in 1991-1994 (United Nations 1996). However, compared to other industrialised countries of the same size - Switzerland, the Netherlands and Sweden - Finland lags somewhat behind in this respect and it is thus likely that the trend towards internationalisation will continue (Ali-Yrkkö and Ylä-Anttila 1997).

In conclusion, Finnish FDI flows at the aggregate level are characterised by a rapid increase during the last 10 years and the imbalance between outward and inward flows and stocks in favour of the former.

2.2. The Country and Industry Composition of FDI Flows

Finnish firms have invested mainly in the EU countries and former EFTA countries. Figure 2 shows that some 60 per cent of foreign investments have been made into the EU 15 area in the 1985-1996 period and some 40 per cent outside Europe. The share of the so-called core EMU, comprising Germany, France, Austria and the Benelux countries, is almost a third of total (EU and non-EU) outward FDI flows and the share of the "fringe" or "periphery" in the EU is 36 per cent.

Traditionally, firms have invested in Sweden, the UK, Germany and USA. The first two are former EFTA countries, although the UK joined the EC already in 1973. They were also for a long time the two most important Finnish western trading partners, but were subsequently over-taken by Germany as the single most important country. The importance of USA has likewise risen. The set-up of productive activities abroad is a logical continuation of exports. If a firm is successful on its export markets, it shows that it has an advantage or it possesses some knowledge that the competitors do not have. FDI can also be caused by the fact that the firm has grown big relative to the domestic market and that it can only grow further by expanding abroad.

Figure 3 shows the yearly FDI flows to the most important countries. The overall levels increased in the late 1980s and recuperated again in first half of the 1990s. Sweden and USA attracted a big part of FDI in the 1980s, whereas in particular the UK has replaced USA in the 1990s.[7] Outward FDI to France and Germany has also caught up in the 1990s. There was a sudden peak in the flows to the UK in 1994, which explains to a large extent the increased importance of the UK. France is closely followed by Denmark (not shown in figure 3). Similarly to the UK, there was also a peak in FDI flows to Denmark in 1994. By and large though, Sweden has accumulated the largest FDI stock of the host countries, followed by the UK and USA.[8] Of the whole Finnish FDI stock thus abroad, some 60 per

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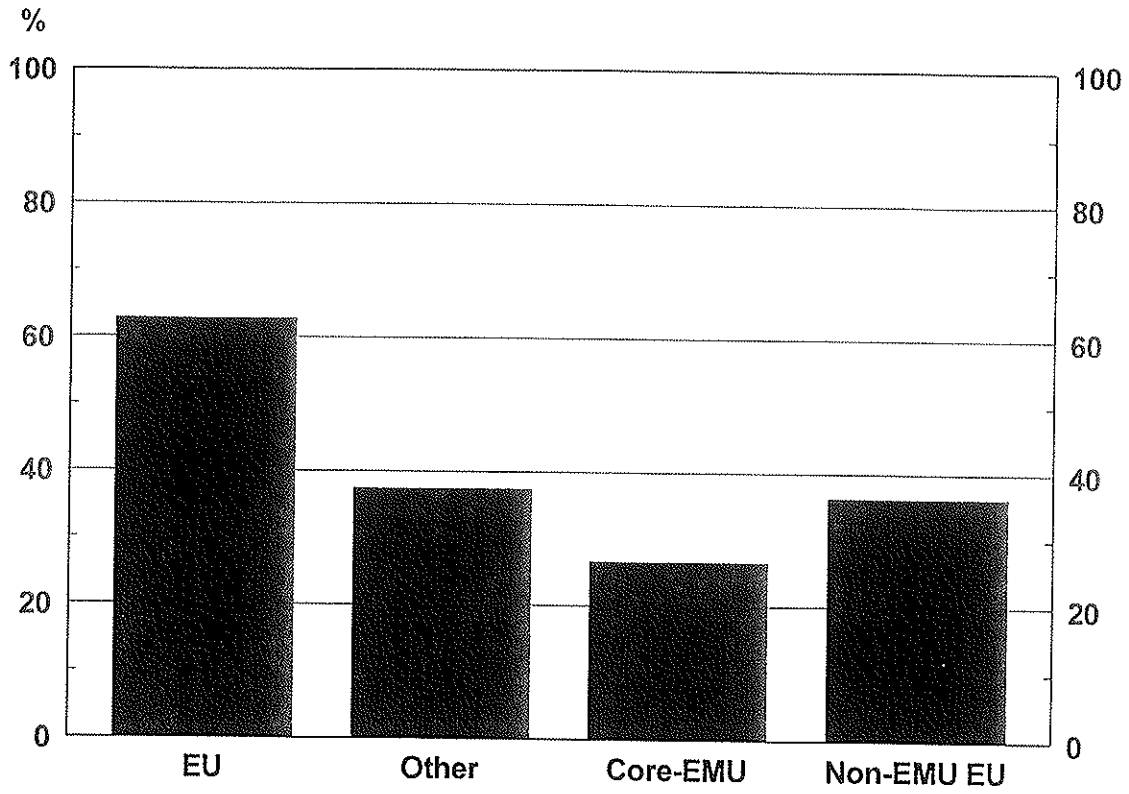
[7] The fact that outward FDI flows to the UK and USA were negative in 1996 is explained by net loan flows, which are recorded in the balance of payments statistics as FDI. In this case loans repaid by the foreign subsidiaries to their Finnish mother companies exceeded the outward flow of equity capital and reinvested earnings by Finnish companies.

[8] It was some FIM 22 billion (at 1996 prices) in Sweden at the end of 1996 and somewhat smaller in USA and the UK or some 14 billion each. The Finnish FDI stock in France and Denmark was 8 billion.

Figure 2 Finnish FDI Flows 1985-1996 according to Host Country Group, %

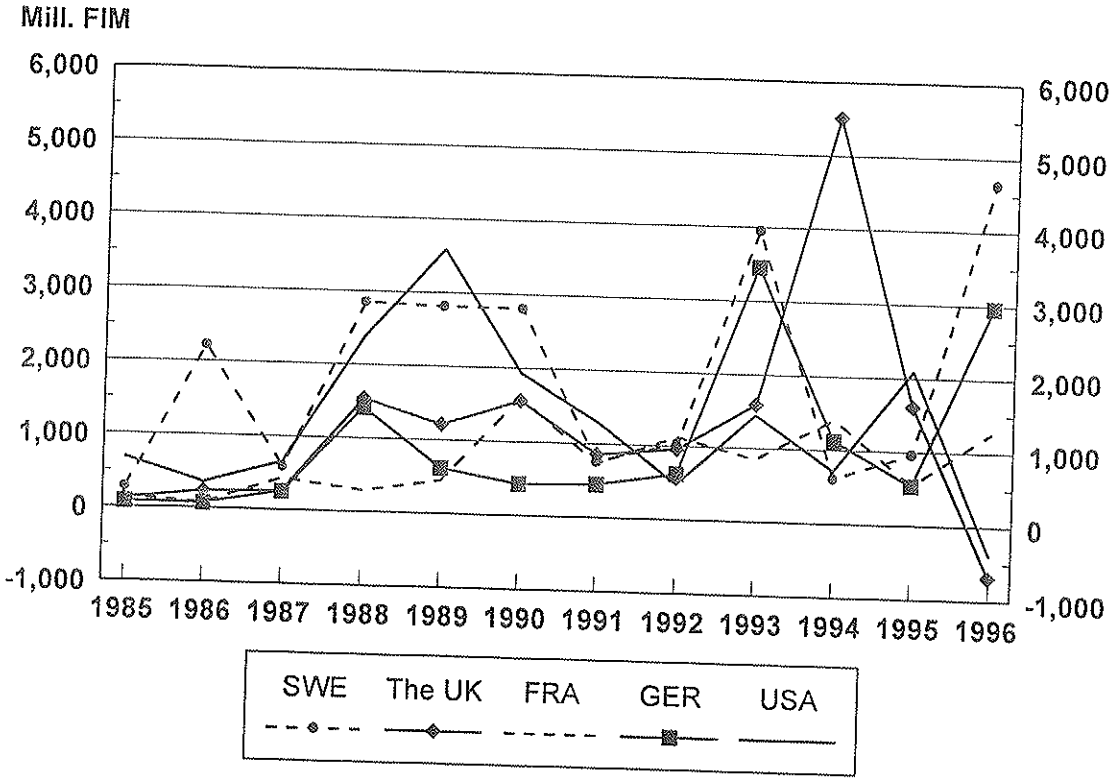


cent is in countries that will not (USA) or are unlikely (Denmark, the UK and Sweden) to join the third phase of EMU from the outset. The question that arises thus is, if and how these flows will be altered by EMU, given the trend of continued internationalisation of Finnish firms. In other words, how will the distribution between countries change?

The internationalisation of Finnish firms begun in the biggest branches of industry, i.e. the metal and forest sectors. The FDI stock of the forest industry was FIM 600 million in 1981 (at 1996 prices) and 1.7 billion in the metal industry. It has increased to 9 and 25 billion, respectively, by 1995. The forest sector has subsequently been passed by the chemical industry, whose accumulated FDI stock abroad was valued at FIM 10.5 billion at the end of 1995. The degree of internationalisation is also shown by the ratio of FDI (gross) stocks to the gross capital stock at home. Whereas it was on average 13 per cent in manufacturing, it had climbed to almost 40 per cent in the metal industry and slightly above the average or to 14 per cent in the forestry sector.

Germany (12 billion) ranks between France and the UK.

Figure 3 **The Yearly FDI Outward Flows to the Most Important Countries 1985-1996, million FIM at 1996 prices**



The wood and forest industry is naturally domestically oriented in its inputs, given that Finland is relatively well endowed with wood raw material, which it uses intensively.[9] The difference in the degree of internationalisation is also shown by the share of foreign production relative to turn-over, which is lower in the Finnish forest industry compared to the metal and electronics industries. This share of the forest industry has decreased in the 1990s, whereas it has remained by and large constant in the other two industries. The forest companies have thus moved production back home probably due to one devaluation and the subsequent floating of the markka, which made domestic production (and exports) more profitable relative to production abroad. On the contrary, the share of exports relative to turn-over is bigger in the forest sector.

[9] If the natural raw material will be replaced by recycled fibre in the future, it could very well induce forest firms to relocate even a bigger part of their production closer to their main markets, e.g. Central Europe.

On balance then, in terms of exports and foreign production relative to turn-over, all industries are equally international. The share is on average some 80 per cent, the difference being that the forest industry's domestic sales are marginal (the bulk being exported, but relatively modest foreign production), whereas the metal industry's production is to a greater extent located abroad and their sales to the domestic market are relatively more important (but a smaller share of total production being exported).

3. INTEGRATION AND FOREIGN DIRECT INVESTMENT

A common currency is bound *a priori* to have far-reaching consequences in terms of deepening European integration. The purpose of the Single Market project was two-fold: on the one hand it aimed at removing all remaining barriers to intra-EC trade and factor flows. The expected static effects of the ensuing improved resource allocation were comparatively small. On the other hand its aim was to increase competitive pressure by merging the nationally segmented markets into one larger market. In such an EC-wide market firms would not be able to discriminate between national markets in terms of charging different prices for the same good or service. Nor would the return on production factors differ. In fact, the term national market would thus lose its economic meaning, given that firms would lose their typically relatively strong home market dominance and pricing power.

The rationale of EMU is thus the logical continuation of this process, which aims at the reduction of relative price differentials and eventually the same price for the same good or production factor throughout the area.

Analogically, the single currency can thus facilitate or increase FDI flows, if exchange rate variability acts as a barrier to the free movement of capital. EMU could on the other hand lead to decreasing price differentials on capital, by removing or decreasing the degree of market segmentation and make (real) interest rates converge. The allocation of capital would thus become more efficient at the EMU level (Erkkilä and Widgrén 1996). EMU could thus lead to investment diversion away from non-EMU countries and hence impact on the production structures of the countries concerned.[10]

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[10] This investment diversion effect of EMU could be compared to the equivalent effect on the EFTA countries arising from the Single Market programme. The creation of the Single Market put the exporters in

Integration is bound to affect the production structure of a country in two opposite ways. These effects are the scope for scale economies and the degree of market integration or the costs of trade. Trade costs are positively related to the height of barriers to trade.

Firms in the periphery, with a relatively small domestic market, will reap the benefits of larger markets by exploiting scale economies. Often the best way to reap these benefits is to locate production close to the larger market in the centre, making thus the production structure of the peripheral country concentrate in a relatively few industries. Concentration of industry drives up wages in the centre relative to the periphery at the same time, given that some labour is immobile.

The depth and degree of integration, in the sense of barriers to and costs of goods and factor flows, exerts an opposite impact. At high trade barriers, firms choose to locate production near the main markets instead of exporting from the periphery, but as these barriers and costs decrease sufficiently enough and reach a critical point, the importance of locating in the centre will also decrease. At this critical point the relative wage in the centre is also at its highest and once firms start moving back to the periphery wages there will also rise. In the case of perfect integration, the centre and periphery produce exactly half of the combined production of area and wages have equalised in the two areas. The relationship is described as a so-called U-curve effect.[11]

Depending on which one of the two effects dominate, scale economies or the degree of market integration, production will either move to the centre, making the production structure of the periphery concentrate or move to (stay in) the periphery. In the latter scenario concentration is bound to decrease. EMU will thus deepen integration, to the extent that a common currency is bound to reduce market segmentation (both in the goods and capital

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the EFTA countries at a competitive disadvantage, which they tried to compensate by investing in the Single Market. Eventually, the EFTANs applied for full EC membership, which put the exporters of their countries at the same footing as their EC rivals. Thus, an idiosyncratic shock in terms of deepening integration in the EC triggered membership applications from non-members (Baldwin 1995).

[11] The critical point, where the positive effect of lower trade barriers starts dominating over the positive effect of scale economies, is at the minimum of the U-curve. On the downward sloping part of the curve, the scale economies and trade costs effects work both in the same direction, i.e. by concentrating production in the centre and driving up wages in the centre. On the upward sloping part, the two effects work in the opposite direction and at the same time wages in the periphery increase relative to wages in the centre.

markets) and lower trade barriers, but also facilitate the exploitation of scale economies (Krugman and Venables 1990).[12]

The degree of similarity of production structures will also determine the structure of trade between the countries. Similar production structures is conducive to the growth of intra-industry trade, i.e. the exchange of differentiated goods of the same industry. The similar exports and imports of cars would be a case in point. A relatively even distribution of production between the centre and the periphery would thus encourage intra-industry trade at the expense of inter-industry trade or the exchange of goods of different industries, e.g. forest products for electronics. This type of foreign trade is encouraged by the use of comparative advantage, e.g. the exploitation of differences in relative production costs between the countries. Trade based on comparative advantage dominates between countries with, and is caused by, dissimilar production structures. As long as a country is placed on the downward sloping part of the U-curve, concentration is bound to increase and inter-industry trade will dominate over intra-industry trade. At the upward sloping part, with production moving back to the periphery, intra-industry trade will take precedence.

The cause and effect can work in both directions: FDI flows can increase or decrease the structural similarity, but on the other hand, if the production structure is concentrated (similar), it could be so precisely because scale economies (the deepening of integration) dominate. EMU will then or will not accentuate this development. In the former case firms will continue moving production to the centre and in the latter case the opposite will hold. This becomes then essentially an empirical assessment of where exactly Finland stands on the U-curve.

A brief overview of the explanations and theories of foreign direct investment can be found in e.g. Aristotelous and Fountas (1996), which gives further references. They classify the main theoretical FDI models into five groups according to the methodology they employ. Some models use firm-specific variables (e.g. product technology, management skills, scale economies) and others country-specific or locational determinants to explain

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[12] FDI is not the only to concentrate production. If a Finnish-owned company expands abroad and finances this expansion locally, it does not show up in the balance of payments statistics. The same applies to greenfield investment financed locally and not by the Finnish mother company.

FDI flows. Given that the objective of this study is to scrutinise the direction of Finnish FDI flows according to host country and the possible impact EMU will have, the locational determinants are relevant in this context.

According to Aristotelous and Fountas (1996), FDI flows are determined by the following country-specific variables: GDP, the growth rate of GDP, the real exchange rate (as a measure of competitiveness or relative labour costs) and the height of (both intra- and extra-EC) tariff barriers. Some kind of dummy-variables are also typically included, e.g. in our case for the Single Market. Given that a great part of Finnish FDI flows go to countries which also are important trade partners, it would seem relevant to include the export shares of each country in Finland's total exports as one explanatory variable.

The host country GDP level measures market size and is expected to be positively related to outward FDI flows from Finland. A larger market allows the exploitation of scale economies. Some studies include the EU GDP as an explanatory variable, but given that the Single Market is incomplete and still somewhat fragmented, hence not allowing the full utilisation of scale economies, it would seem justified *a priori* to use the host country GDP instead of the Union GDP.

In addition to the income level term, FDI flows will increase as real income or the market grows and hence the growth rate of GDP is included as another independent variable. Likewise, it is expected to be positively correlated with outward FDI flows.

To take advantage of lower costs, firms will relocate production to countries with relatively low labour costs. A real depreciation of the host country's exchange rate (i.e. falling relative costs in the host country defined as the ratio of the host country's cost level adjusted by the nominal exchange rate to the source country's cost level) will thus lead to a capital inflow to the host country. The real depreciation will also increase the relative wealth of home firms and lead to an increase in purchases by source country firms of foreign assets. Outward FDI flows will thus be negatively related to the real exchange rate. Alternatively, the real exchange rate will be substituted by the nominal exchange rate.

Regarding tariff barriers, one has to distinguish between tariffs internal to the Single Market (i.e. between Union members) and external barriers towards third countries. The dismantling of all internal barriers would allow foreign firms to concentrate production in fewer plants and supply the whole area from them. This would tend to reduce outward FDI flows from Finland to the rest of the EU. On the other hand, the imposition of a common external tariff towards third countries would increase FDI into the area to secure access to the Single Market at the same conditions as the incumbent firms. Thus, it is difficult to make judgement *a priori* on the relation between a change in total (internal and external) trade barriers and FDI. It depends on their net effect. Here the ratio of revenues from international trade taxes to the value of total imports (both intra- and extra-EU) is used as a proxy for total trade barriers. Some changes in intra-EC tariffs took place, given that Greece joined in 1981, Spain and Portugal in 1986 and Sweden, Finland and Austria in 1995. At the same time, GATT negotiations brought changes to external tariffs. As an alternative, proxies that capture only intra- and extra-EC tariff changes will be used (instead of the value of total imports, the value of intra- and extra-EC imports, respectively).

Given what was said above in section 2 on the positive relationship between the direction of FDI flows and Finland's most important trade partners, the export shares of each country in Finland's total exports will be added as an explanatory variable. The decision to locate production abroad is usually a logical consequence of a good export performance to the same market. The firm may have outgrown the domestic market and it is deemed important to be as close as possible to the main customers to meet their demands. The set-up of new production facilities requires local market-specific knowledge, which is best available through the accumulated experiences of long-standing trade relations. Hence, we expect a positive relationship between outward FDI flows and the export share.

Given that FDI flows can increase or decrease structural similarity and that the effect works also in the other direction, an index measuring the similarity will be added as an explanatory variable. Depending on which one of the effects of scale economies or deepening integration is stronger, the measure will be either positively or negatively related to FDI flows. The index is computed as the sum of the absolute values of the differences

between the share of an industry in total value-added in Finland and the equivalent share of value-added in the foreign country.[13]

Lastly, a dummy-variable for the Single Market is included. It takes a value of 1 after 1987 for EC members (and 0 before 1987 and for EFTA countries), to account for the adoption of the Single European Act, assuming that firms then started preparing for the Single Market by increasing their investments into the area. This is also supported by the fact that Finnish firms wanted to secure access on equal terms to the area, given the uncertainty surrounding Finland's degree of integration, e.g. full or associated membership, into the EC-wide larger market in being. There should be a positive relationship between Finnish FDI and the Single Market dummy. Alternatively, the EFTA countries will also get a value of 1 to account for the agreement on the European Economic Area, that was subsequently negotiated between the EC and EFTA. The EEA extended the free movement of goods, services, capital and labour to the EFTA countries and made them thus members of the Internal Market. Negotiations between the two organisations started again in 1990, following a new initiative by Jacques Delors in 1989 (the EFTA and EC issued the so-called Luxembourg declaration already in 1984, but negotiations did not advance for a long time). The EEA agreement was approved in 1992 and started functioning in the beginning of 1994. Given that the EEA extended the Internal Market to the EFTA countries, it should thus have had a moderating impact on FDI flows to the EC countries in favour of EFTA countries, once Finnish firms were granted the same rights and obligations as their EC-based competitors. Thus there should also be a positive relationship between the EEA dummy variable and outward FDI flows.

The basic regression model is as follows:

(1)

$$FDI_{it} = \alpha_0 + \alpha_1 GDP_{it} + \alpha_2 \overline{GDP}_{it} + \alpha_3 T_{it} + \alpha_4 RER_{it} + \alpha_5 SEA_{it} + \alpha_6 XSHARE_{it} + \alpha_7 SIMI_{it} + e_{it}$$

where FDI stands for real Finnish FDI outward flows (i refers to the 16 host countries and t to the years 1975-1994), GDP is real GDP of the host country, $\overline{GDP}$ refers to the host

[13] In other words, the index is as follows: $D_j = \Sigma \mid s_i - s_i^* \mid$. D_j is the index for structural similarity, s_i is the share of industry i in Finland in total value-added in manufacturing and s_i^* is the equivalent share in the foreign country. The absolute values of the differences for the individual industries are summed together.

country real GDP growth rate, T is the tariff barrier proxy between Finland and country i, RER is the real exchange rate between Finland and country i (measured both as unit labour costs and the GDP deflator), SEA is the Single Market dummy, XSHARE is the share of the host country in Finnish total exports and SIMI is an index of structural similarity in production between Finland and the host country.[14]

3.1. Related Empirical Studies

Several earlier studies have dealt with the empirical determinants of FDI flows into the EU. Aristotelous and Fountas (1996) gives a brief overview. Scaperlanda (1967) tested for a change in inward FDI flows to the EC following the creation of the EC, but found no evidence for an investment diversion of US flows into the EC away from non-EC members. Scaperlanda and Mauer (1969) again found evidence for a shift in FDI flows into the EC, which was due to relative market size. Lunn (1980) again found that the relative importance of market size, the market growth rate and trade barriers were statistically significant in explaining inward FDI flows to the EC in the 1957-1970 period. Scaperlanda and Balough (1983) came to the same conclusion although with data from the 1953-1977 period. In addition, they also speculated that exchange rate variability might affect FDI flows.

Culem (1988) introduced two new explanatory variables in his analysis of bilateral FDI flows between USA and five EC countries in 1969-1982. They were unit labour costs and export flows, both positively correlated with FDI flows. He also introduced the difference between the host and source country unit labour costs as a measure of the source country's investments' opportunity cost. He found that the cost differential was crucial in explaining FDI flows and that domestic investment is the opportunity cost of FDI. On the contrary, it turned out that market size (measured by the aggregated EC GDP) was not a statistically significant explanatory variable.[15] Eventually, Bajo-Rubio and Sosvilla-Rivero (1994), in

[14] This is essentially a gravity-type model for investment flows and can, as such, be compared to the equivalent gravity models for goods flows in foreign trade. It incorporates mostly country-specific pull factors. In fact, all variables except the bilateral real exchange rate relate exclusively to the host country. For an econometric model incorporating both push, pull, stimulus and friction factors, see e.g. Morsink and Molle (1991). The gravity model gives the potential level for FDI between Finland and any country, by substituting the relevant values for the independent variables of the host country in the equation.

[15] This could be explained by the fact that the EC was still at that time fragmented into national markets by numerous non-tariff barriers, although customs duties and quantitative restrictions had been

their time-series co-integration analysis, found that the Spanish accession to the EC (in 1986) was a statistically significant variable (measured by a dummy) in explaining Spanish manufacturing and non-manufacturing FDI into the EC in 1964-1989. They concluded that the expectations of a larger market following Spain's EC membership had increased Spanish FDI into the EC.

In addition, Morsink and Molle (1991) is a comprehensive econometric study on the determinants of intra-EC (net) FDI flows, with emphasis on exchange rate variability, in the 1975-1979 and 1980-1984 periods. Using altogether five different specifications of exchange rate variability, they conclude that exchange rate movements are relevant in explaining FDI flows. The other two relevant variables were the R&D intensity of the host country and the degree of trade intensity between the two countries. Trade and FDI flows and on the other hand R&D intensity and FDI are complementary to each other.

Earlier studies focusing on Finland include Paasonen (1994) and Puhakka (1995), which are questionnaire surveys on the determinants of inward FDI flows to Finland. They find e.g. that the proximity to Russian markets, in addition to the domestic market, are important factors when foreign firms decide to invest in Finland. Karppinen (1991) studied the determinants of FDI flows according to host country-groups (the EC, EFTA and North American countries were treated as three different groups) in 1965-1989. He found that exports to the EC were negatively related to the propensity to invest into the EC, exports to the EFTA again increased the Finnish firms' willingness to invest there, whereas export flows were not statistically significant in explaining FDI flows to North America. Regarding the host country unit labour costs, they had a negative impact on FDI flows to the EC (higher costs discouraging FDI), but were not statistically significant in the EFTA countries or North America. The profitability of production in the EC (i.e. the profitability of EC companies) had a positive impact on Finnish firms willingness to invest there. The same is true of relative profitability between EC and Finnish firms, which increased the investments of the latter into the EC.

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removed already by mid-1968, when the customs union was completed and a uniform common external tariff had been adopted by all six member countries.

Kinnunen (1993), which is a cross-section analysis, found that labour costs and the size of the host country market did not have any effect on outward FDI flows. Among firm-specific characteristics, the domestic market share, the share of exports in total sales and a high value-added in production had a positive impact on outward FDI flows. On the contrary, exports had a negative impact on foreign production, which means that the two are complements to each other.

Lindholm and Anckar (1995) is a test of the currency premium theory (and its inverse interpretation) with Finnish, Swedish, Norwegian and Danish data for the 1987-1993 period. According to the theory, the global pattern of FDI is determined by currency risk premiums inducing differentials in the capitalisation ratios of assets and revenue flows denominated in different currencies. Strong-currency countries should accordingly become source countries and weak-currency countries host countries to FDI flows. They find no evidence for the hypothesis. Instead they find relatively strong support for its inverse interpretation in the Finnish case and semistrong support in the Swedish case. In addition, they discuss other explanations to net Finnish FDI outflows and conclude that (other) country-specific factors, such as the creation of the Single Market most probably are crucial (although the constant in their regressions is not statistically significant in any of the four cases). Denmark, already an EC member at that time, had no such need for strategic outward FDI as Finnish and Swedish firms. Norwegian firms again may have felt secure, given the role of Norway as an important oil exporter and hence giving her a stronger bargaining position vis-à-vis the EC.

The inverse interpretation of the currency premium theory also lends some support to the hypothesis that firms in source countries with overvalued currencies (the positive risk premium being a measure of the currency's deviation from e.g. purchasing power parity) would engage in FDI because of their relative wealth to host country firms. Source country enterprises are thus able to offer a higher price for foreign-currency denominated assets than their host country competitors. The purchase of foreign-currency assets can also serve as a hedge against the anticipated future depreciation of the over-valued domestic currency.

4. THE DETERMINANTS OF FINNISH FDI FLOWS

In the light of the theoretical considerations and earlier empirical studies, we will estimate the following regression model (which is a modification of the basic model in equation (1), which purports to explain Finnish FDI flows to the altogether 16 host countries between 1975 and 1994 (all variables are log transformations).[16]

(2)

$$FDI_{it} = \alpha_0 + \alpha_1 GDP_{it} + \alpha_2 \overline{GDP}_{it} + \alpha_3 T_{it} + \alpha_4 RER_{it} + \alpha_5 SEA_{it} + \alpha_6 XSHARE_{it} + \alpha_7 SIMI_{it} + e_{it}$$

$$\qquad\qquad + \qquad + \qquad ? \qquad - \qquad + \qquad + \qquad ?$$

where

FDI_{it} = real Finnish FDI abroad to country i at time t (nominal FDI deflated by the Finnish GDP deflator, which was used here instead of the gross fixed capital formation price index, due to data availability. Assuming the same trend of the two deflators, any differences in levels should show up in the constant in the regression),

GDP_{it} = real GDP level of the host country i at time t,

$\overline{GDP_{it}}$ = the growth rate of the host country i real GDP during time period t,

T_{it} = the height tariff barrier of host country i at time t,

RER_{it} = the bilateral real exchange rate of Finland and country i at time t measured as the foreign price level relative to the Finnish price level (GDP deflators) and alternatively relative unit labour costs,

SEA_{it} = the Single Market dummy for country i at time t,

$XSHARE_{it}$ = the share of country i in Finnish total exports at time t,

$SIMI_{it}$ = the index of similarity of production structures between Finland and the host country i at time t.

The anticipated signs of the coefficients are below each variable. Hence, we expect the host country GDP, GDP growth rate, the Single Market dummy and the export share to be positively related to outward FDI flows and the real exchange rate to be negatively related

[16] Due to lack of data, it was not possible to include the currency premium as an explanatory variable in accordance with the currency premium theory.

to FDI flows. Regarding the measure for tariff barriers, the effect is ambiguous *a priori*, given that intra-EU barriers would exert a negative impact on inward FDI flows to the EU countries and extra-EU barriers have the opposite effect. The sign of the index for structural similarity is also ambiguous.

The regression was carried out with ordinary least squares technique (with Newey-West standard errors, which allow for heteroskedasticity and autocorrelation in error terms). Table 1 reports the regression coefficients and results.

The original model (reported in column 2 of table 1) is the regression model according to equation 2 above. Neither the proxy for tariff barriers nor the real exchange rate proved statistically significant. They were substituted by proxies for intra- and extra EU tariffs, respectively, but it did not improve the model. Neither did the alternative measure for the real exchange rate (relative GDP deflators). In addition, the host country GDP growth rate had the wrong sign, although significant at the 10 % confidence level. As an alternative, the difference between the foreign country's and Finland's GDP growth rates was included as well, but it was not significant and had the wrong sign.

The tariff barrier proxy, T_{it}, has no explanatory power. Apparently neither extra- nor intra-EC tariffs (or their combination) have any impact on the direction and level of Finnish FDI. Intra-EC customs duties (and quotas) were removed by mid-1968, upon the completion of the customs union. However, Spain and Portugal joined the EC during the sample period (1975-1994) and aligned their tariffs to intra-EC tariff levels. Nonetheless, the effect of their accession was apparently too modest to matter for Finnish FDI. Extra-EU tariffs have changed within the framework of GATT, but neither can they alone explain FDI flows.

The real exchange rate was measured as relative unit labour costs (or competitiveness), i.e. the ratio of foreign costs adjusted for the nominal exchange rate to domestic costs. Cheaper labour costs abroad should induce FDI outflows to take advantage of cheaper production, particularly in labour-intensive industries. Although the right sign, it is not

Table 1 Regression Results

Explanatory variable	Original model	Explanatory variable	Reduced model 1	Explanatory variable	Reduced model 2
constant	-7.5 (-10.3***)	constant	-7.6 (-10.44***)	constant	-7.64 (-10.32***)
GDP_{it}	0.3 (2.09**)	GDP_{it}	0.28 (1.94**)	GDP_{it}	0.28 (1.94**)
$\overline{GDP_{it}}$	-0.19 (-1.78*)	$\overline{GDP_{it}}$		$\overline{GDP_{it}}$	
T_{it}	0.002 (0.05)	T_{it}		T_{it}	
RER_{it}	-0.72 (-0.7)	NER_{it}	0.93 (1.65*)	NER_{it}	
SEA_{it}	1.76 (6.67***)	SEA_{it}	1.85 (8.41***)	SEA_{it}	1.87 (8.21***)
$XSHARE_{it}$	0.58 (3.08***)	$XSHARE_{it}$	0.55 (3.31***)	$XSHARE_{it}$	0.56 (3.43***)
$SIMI_{it}$	-1.28 (-3.5***)	$SIMI_{it}$	-1.19 (-2.96***)	$SIMI_{it}$	-1.27 (-3.16***)
R^2	0.42		0.41		0.41

The t-values in brackets. *, ** and *** indicate significance at the 10 %, 5 % and 1 % confidence level, respectively.

statistically different from zero. The same holds for the alternative measure, i.e. relative price levels in terms of GDP deflators.

An EEA dummy was added to test whether the EEA had any impact on FDI. If Finnish FDI into the EC was predominantly defensive in nature, then the process leading to the EEA should have directed investment away from the EC. The dummy did not prove significant, neither together with the SEA dummy nor alone in the regression.

All the other explanatory variables, i.e the host country GDP, the Single Market dummy, the share of the host country in Finnish total exports and the index for structural similarity are significant at the 1 % confidence level, except the GDP variable, which is significant at the 5 % level. All variables except the one for similarity have a positive sign. Hence, larger host country markets, lower non-tariff barriers among EC countries and bigger export shares of the host country all increase FDI flows to the country concerned. FDI flows are also positively affected by the structural similarity of the host country.

The Single Market thus increased Finnish FDI flows to the EC, since domestic firms wanted to secure access to the EC-wide borderless market. In this sense it was a defensive measure in order to acquire the same benefits as their EC based competitors. The dummy variable for the EEA did not get a significant non-zero value. Hence, Finnish companies regarded market enlargement in the EC as more important than the extension of the four freedoms to the EFTA countries. The sign of the export share variable confirms the hypothesis that firms invest in countries, which are important export markets. Thus, high exports increase the probability of a firm investing in the same market. Finnish companies invest in countries with an economic structure similar to Finland's. This seems to confirm the convergence hypothesis of the centre and periphery. In other words, Finland stands to the left of the minimum on the U-curve, where the removal of barriers to trade and production factors have gone far enough to impact more on the location of production than scale economies.[17] The benefits of scale economies relative to trade costs are not great enough to make it worthwhile to locate production to the centre close to larger markets.[18]

Columns 2 to 6 in table 1 show the regressions, after excluding the variables with the wrong sign or no explanatory power. Hence, the host country GDP growth rate, the tariff barrier proxy and the real exchange rate were dropped. However, the nominal exchange rate was substituted for the real exchange rate.

It turns out that the nominal exchange rate has some explanatory power, given that it is significant at the 10 % level. It has, however, a positive sign, contrary to expectations (column 4, "reduced model 1"). According to this, Finnish firms would thus be inclined to locate production in countries with appreciating currencies.

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[17] This interpretation confirms to the one in Erkkilä and Widgrén (1996). They measure it empirically by the ratio of total imports to domestic supply (domestic supply=GDP adjusted for exports), which was 0.47 in 1995. To compute the equivalent figure for the EU or a hard core EMU would require substituting total imports by imports from the EU or hard core EMU and, in addition, that GDP be adjusted to take into account only that part of it, which directly competes with imports from the EU or the hard core EMU. The ratio need thus not change very much. However, this figure probably underestimates the degree to which Finland is integrated into the EU, given that the full increase in imports from the EU does not show up in its entirety in the statistics for 1995. A common currency is furthermore likely to strengthen this trend. They thus conclude that Finland is most probably situated on the part of the U-curve, where production shifts to the periphery and production structures converge instead of diverging and concentrating.

[18] On the other hand, the GDP variable could be interpreted as a proxy of the size of markets.

On the other hand, the nominal exchange rate and the index for structural similarity might measure the same phenomena. Given that Finnish firms locate production in countries with similar structure, e.g. Sweden and the UK, they do so precisely because the country in question has not converged towards the hard core EMU countries. This would explain why e.g. Sweden wants to stay out (for reasons of structural dissimilarity) and retain some degree of monetary and exchange rate independence. The more Finland resembles that country and the less it resembles the hard core EMU, the more inclined Finnish firms would be to invest in non-EMU EU countries. Finland gives up its own monetary policy in EMU, which structurally similar countries that stay outside EMU do not.

The positive sign of the nominal exchange rate means that Finnish firms on average invest in hard currency countries. This speaks in favour of investment being directed to EMU at the expense of outsiders. However, the sign is contrary to expectations.

Dropping further the nominal exchange rate, it leaves us with the host country GDP, the Single Market, the host country's importance to Finland, measured as its share of Finnish exports and the degree of similarity as the explanatory variables for Finnish outward FDI flows (column 6, "reduced model 2").

5. CONCLUDING REMARKS

This paper is an attempt at explaining, according to host country characteristics, the determining factors of Finnish FDI outward flows to 14 European and 2 non-European (Canada and USA) countries in the 1975-1994 period and the implications for Finland participating in the third stage of EMU.

It is relevant in the perspective of EMU to study how or if firms' investment behaviour will change. Exporting firms can insure themselves against unfavourable (nominal and real) exchange rate developments against e.g. the US dollar by locating production in the US dollar zone. The metal industry shifted back some of it production to Finland and the trend was accentuated in the forest industry after the markka was floated in September 1992.

To the extent that the third stage of EMU will have a positive impact on the participating countries' GDP levels or market size and to the extent that the common currency will increase competition (or at least facilitate the realisation of the four freedoms and particularly capital in this case) in the same way as the Single Market programme has done, Finnish firms will increase investment into that area and locate production there (presumably, at least in the short to medium run, at the expense of domestic and foreign non-EMU investment). Minimising this "Single Market effect" on domestic fixed capital formation, once the third stage of EMU starts functioning, speaks in favour of Finland joining the single currency area from the outset. The implications for domestic production and employment are hard to answer, although, by intuition, they could be negative in the short run. The parallel to the arguments of those favouring Finnish EU membership is however clear. However, it is beyond the scope of this paper to investigate the source country effects of FDI on employment.

The importance of the trade partner is an important explanation in determining the potential investment diversion effects of EMU. If, over time, the share of the EMU countries in Finland's overall exports grows, they will attract FDI. If outside countries retain their relatively great share (some 74 per cent in 1995, assuming a very small EMU comprising Germany, France, the Benelux countries and Austria) in overall exports, then of course investment diversion to these countries will take place. The question is then how EMU will affect the relative importance of the Finnish trade partners. If EMU increases its role, e.g. through the GDP effect of its individual countries - greater markets meaning increased exports - then investments will increasingly be directed there.

Given that the export share and outward FDI flows are complements, it has implications for factor prices. The Heckscher-Ohlin theory of comparative advantage states that trade and factor movements are substitutes and trade equalises factor prices. The regression results point in the other direction, i.e. that higher trade shares give rise to higher FDI. In this case, not trade, but factor movements - e.g. capital flows - themselves should make factor prices converge. This is partly in line with the predictions of the so-called U-curve effect, that the relative wage in the centre will be driven upwards as production moves there (on the downward sloping part of the curve). At the same we should see an increase in inter-

industry trade following concentration. On the upward sloping part the net FDI outflow from the periphery should turn into a net inflow, equalising production structures with a concomitant increase in intra-industry trade.[19]

The variable measuring similarity of production structures has a negative sign, meaning that the more similar the host country is compared to Finland, the more FDI flows it will attract. This essentially implies that domestic production will move to peripheral non-EMU countries, given that the countries most resembling Finland will stay outside EMU.[20] On the other hand, the production structure need not be exogenous, but instead a single currency could make the EMU countries converge. Although initially different, EMU could make production spread out more evenly regionally. As was argued earlier, EMU has two opposite effects. It could induce firms to move from the periphery (outside EMU) to the centre. In this case there are benefits to be reaped from the utilisation of scale economies. The single currency could on the other hand mean relatively little in terms of lower transactions costs, in which case joining EMU will not bring much benefit, given that integration has proceeded sufficiently far before EMU. Then location (EMU or outside) does not matter.

To resolve this dilemma is an empirical question of where Finland finds herself on the U-curve, i.e. on the down- or upward sloping part of it. To judge on the basis of the sign of the regression coefficient (negative) Finland is on the upward sloping part, where production moves to the periphery. [21] The ratio of imports to domestic supply, which was 0.47 in 1995, but probably underestimated, points also in the same direction.[22] This means that

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[19] Strictly speaking, the net inflow could arise from an increase in gross inflows relative to gross outflows. In this case outward flows could still be positively related to the export share, as the regression results give at hand.

[20] According to the index, Finland is structurally most similar to Sweden (an index value of 0.23), followed by Canada, Austria, Denmark, USA and the UK (index value 0.35). France and Germany get a value of 0.4 and 0.46, respectively. The trend is furthermore towards divergence in e.g. France (albeit very weakly) and Italy. It is horizontal vis-à-vis Germany, that is neither diverging nor converging. Finland's production structure is towards convergence with e.g. Denmark, the Netherlands, Sweden (relatively strongly), the UK and USA.

[21] Otherwise the regression coefficient would be positive, indicating that firms invest in countries with diverging production structures.

[22] Assuming the U-curve is symmetric. Then a value of 0.5 puts a country exactly at the minimum. A symmetric U-curve requires the centre and periphery to be of the same size. The smaller the periphery, the more symmetrically leaning to the left the U-curve will be, i.e. the minimum will be tilted to the left and the downward sloping part will be longer relative to the upward sloping part. In this case a value of 0.5 will be on the downward sloping part.

integration has proceeded so far, that there are no great benefits to be reaped from scale economies relative to the small savings in lower trade costs by concentrating production geographically. Joining EMU is thus not necessary from this point of view, given the prior trend towards convergence. On the other hand, the single currency will most probably, by further lowering barriers to trade and the flow of production factors, accelerate this trend towards convergence and, over time, direct investment to EMU.

Assuming that the net capital inflow to the periphery (making regional concentration fall) comes from a gross inflow over gross outflow, outward FDI flows should still depend positively on the export share on the upward sloping part as well. Intra-industry trade grows relatively to inter-industry trade and prices on capital and labour converge. In our case, given that Finland is already on the upward sloping part, this means that relative factor prices in Finland should rise or converge upwards with a concomitant increase in intra-industry trade.

Net capital inflows to the periphery emanating from a gross inflow over gross outflow seems quite a strong assumption however, given that outflows from Finland have exceeded inflows in almost every year. Refining the analyses in this respect and adjusting the aggregate figures for FDI by intra-firm loan arrangements between the domestic and foreign units should offer interesting opportunities for future research.

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ELINKEINOELÄMÄN TUTKIMUSLAITOS (ETLA)
THE RESEARCH INSTITUTE OF THE FINNISH ECONOMY
LÖNNROTINKATU 4 B, FIN-00120 HELSINKI

Puh./Tel. (09) 609 900
Int. 358-9-609 900
http://www.etla.fi

Telefax (09) 601753
Int. 358-9-601 753

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